

Audio

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On Turntables

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WHEN YOU'RE NOT
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160 watts per channel minimum RMS continuous power output at 8 ohms, from 20 to 20,000 Hz, with no more than 0.1% total harmonic distortion.

WHY THE FIRST HIGH POWERED RECEIVER IS STILL THE BEST HIGH POWERED RECEIVER.



When Pioneer first introduced the 160 watt* SX1250 last year, it prompted our competitors to hastily introduce a bevy of high powered receivers.

Unlike the others, however, the SX1250 wasn't a rush job. And the time and care that went into it can both be seen and heard.

EVERY SECTION SHIELDED.

Unlike most high powered receivers, every critical section in the SX1250 is shielded. Enveloped in aluminum. So spurious signals from one section can't leak into another. And dirt and dust can't slowly build up to affect performance. So the receiver not only produces crisp, interference-free sound when it's new, but still sounds great as it grows old.

A 22 POUND TRANSFORMER.

In our power supply, instead of finding a conventional transformer, you'll find a heavier, more advanced toroidal-core transformer. It's less susceptible to voltage fluctuations. And less likely to leak noise. Which means you get cleaner, clearer sound. And instead of finding the usual two electrolytic capacitors in the power supply, you'll find four. Because we've found that the two extra capacitors help improve low frequency response. And protect against tone burst distortion.

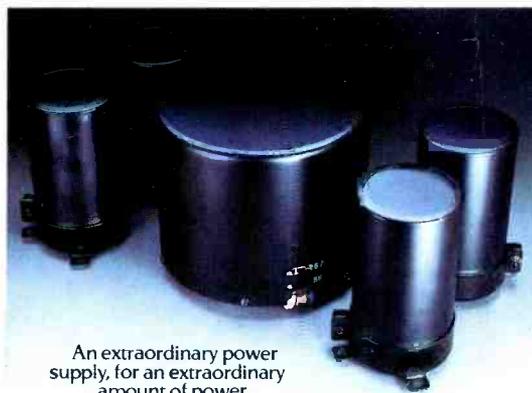
THE FM SECTION: A FIVE GANG VARIABLE CAPACITOR.

The average high powered (and low powered) receiver comes with a three, or four gang variable capacitor for FM tuning. Not the SX1250. It comes with a five gang zinc plated variable capacitor that cleans up FM reception much better. And helps to pull in stations that some three or four gang capacitors can't touch.

This same kind of thinking even went into things like our heat sinks. They're massive, and located around the outside of the 1250 to dissipate heat away from the innards, instead of into them. (In the Technics SA 5760, by comparison, the heat sinks are located right in the middle of the receiver.) And where many manufacturers choose to solve the heat problem with fans, we choose not to. Simply because electrical fans can cause noise and vibration. While our heat sinks can't.



Massive heat sinks to keep the heat off delicate electronics.



An extraordinary power supply, for an extraordinary amount of power.

OTHER POWERFUL ARGUMENTS FOR THE SX1250.

Our pre-amp circuit was designed with an unheard-of phono overload level of 500 millivolts. Which means that no magnetic cartridge in the world can make it distort. It was also designed to follow the RIAA curve (the recording standard of the record industry), to within 0.2 decibels. A figure that competes favorably with even the costliest separate pre-amps.

And where some high powered receivers give you two or three tone controls, the SX1250 gives you four. Two for regular treble and bass, and two for extended treble and bass. They're calibrated in 2 decibel click stops; which give you a total of 3,024 ways to make the most out of your music.

Given all this, it should come as no surprise that the SX1250 even weighs more than most of our competitors' high-powered offerings.

So before you run out and buy just any high powered receiver, consider all the time and engineering that went into the SX1250. And weigh your decision carefully.

High Fidelity Components
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PIONEER'S SX1250.



DiscTraker™

—a revolutionary tonearm damper from Discwasher

DiscTraker is a precision damping device that improves the performance of tonearm/cartridge systems by adding a protective cushion between the record and the tracking stylus.

- reduces low frequency resonance that colors the sound of even the best tonearm/cartridge systems on all records.
- reduces record-warp resonance—as witnessed by a dramatic reduction of woofer-flutter.
- permits accurate tracking of even badly warped records.
- reduces record wear and stylus damage from warps.
- reduces distortion caused by high velocity groove overload, mistracking and intermodulation.
- adaptable to most tonearms.

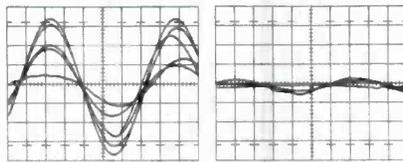


Figure 1 shows the amplitude of low frequency resonance in a typical tonearm/cartridge system using a "flat" record. Figure 2 shows the identical conditions with the DiscTraker damping system on the tonearm.

discwasher® inc.
1407 N. Providence Rd.
Columbia, Missouri 65201

Audio

October 1977

"Successor to **RADIO** Est. 1917" **Vol. 61, No. 10**

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About The Cover: It's October again, and time for us to pull out all of our file drawers and put together the specifications for our Annual Equipment Directory.

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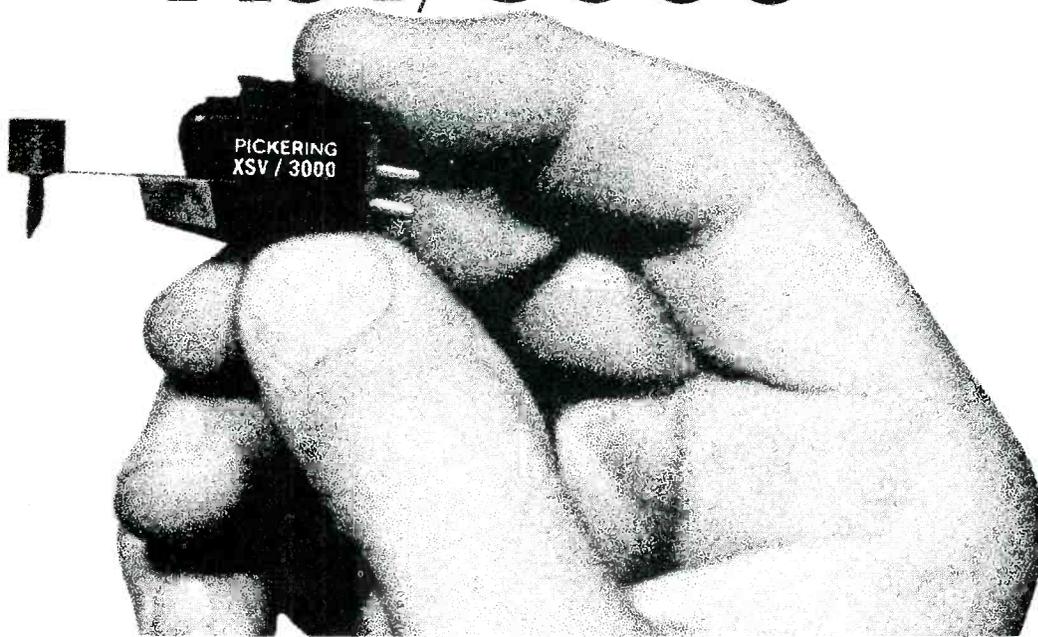


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The source of perfection in stereo sound... Pickering's new XSV/3000



3

The reviewers applaud as never before!

"... we don't see how you can do better at any price."

Hirsch-Houck Laboratories. Stereo Review. February 1977

"The new unit offers the stereo performance of the XUV/4500Q (or perhaps a little better than that) at a lower price. It seems hard to go wrong with such a combination."

High Fidelity. February 1977

"Congratulations to all concerned on a fine contender amongst the world's best stereo pick-ups."

John Borwick. Gramophone. United Kingdom 1977

Pickering's new XSV/3000 is a remarkable development. It possesses a totally new and different design that makes it the precursor of a whole new generation of sophisticated, advanced stereo cartridges.

This has been made possible by technological advances in two areas. **First**, it has an unusually tiny, samarium cobalt (rare earth) magnet of remarkably high power that

permits extremely low mass, and also offers high output.

Second, this cartridge features the new Stereohedron™ stylus tip, a Pickering first! This extraordinary shape has a far larger bearing radius, which provides increased contact area in the record groove. This assures gentler treatment of the record groove, longer record life, and also, far longer stylus life.

This cartridge provides remarkably smooth and flat frequency response; its channel separation is exceptional, its transient response possesses superb definition.

Truly, Pickering's XSV/3000 represents a whole new concept of excellence in stereo cartridges... the true **Source** of perfection in stereo sound.

For further information write to
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New York 11803

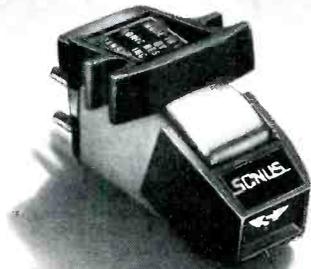


"for those who can [hear] the difference"

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If you've invested \$500 or even \$5000 in your high fidelity system, read on. Because what we have to say can have a lot to do with the quality of sound you're hearing.

Unfortunately, one of the most overlooked components in a fine sound system is the cartridge. And all too often, it can be the one place where you skimped on quality. (Out of sight, out of mind, as they say).

We sincerely believe that an investment in a Sonus cartridge will truly surprise you with the way it improves the quality of your record reproduction. The analytical quality of the Sonus brings out the inner voices of complex musical passages clearly and cleanly. Listening fatigue disappears. And a Sonus introduces no extraneous coloration of its own.

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Make sure your cartridge matches up to the rest of your system. Write us for further information and the name of the Sonus dealer nearest you.

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27 Sugar Hollow Rd., Danbury, Conn. 06810

SONUS

High Definition Phono Cartridges

Herman Burstein

Tape guide

Multiple Taping

Q. I have a 250-watt amplifier with a single input and output and am therefore only able to accommodate one tape deck. I would like to connect this to two tape decks, enabling me to record with either deck, or to play back from either deck without having to swap leads. Would it be possible to use simple "Y" connectors?—Albert Emrich, Dover, Del.

A. Frequently "Y" connectors will do the job you describe without the two tape machines interfering with each other. If there is interference, putting resistance on the order of several hundred to several thousand ohms in series with each hot lead may solve the problem. Another solution is to build your own switching system that simply switches the amplifier output between the hot lead inputs of decks A and B; and similarly for playback. Visit local audio dealers and look at commercial switch boxes which are intended for purposes like yours, such as the Russound TMS-1W or Sony's SB-300.

Multi-Track Conversion

Q. I have an Ampex Model FR-100 seven-track instrumentation tape transport which I plan to convert into a seven-track audio recorder. I would like to be able to erase any single track without disturbing the others, but the deck only has record and play head stacks. Would it be possible to use one of the head stacks for erasure?—James Kobs, Albuquerque, N.M.

A. I doubt that it is feasible to use either a play head or a record head for erasure. If you try to drive enough high frequency current through the head to achieve satisfactory erasure, you may burn out the head. However, if I am wrong, the head which seems most likely of doing this job would be the record head.

Tape Deck Hookup

Q. Which is the best way to play a tape deck connected to a receiver: (a)

Set the volume control on the receiver so you have a normal listening level for FM reception, then adjust the playback control on the tape deck to have the same listening level when playing tape? (b) Set the playback control on the tape deck to its maximum position, then adjust the volume control on the receiver until an agreeable listening level is reached? (c) Adjust the playback control on the tape deck to have a 0 VU reading on the loudest passages, then adjust the volume control on the receiver until an agreeable listening level is reached?—William Lawrence, APO, San Francisco.

A. I think that method (a) is at least as good as the other two methods and perhaps better. It would tend to avoid the possibility of overloading your receiver, unless the high level signal fed to the receiver goes directly to the volume control. I don't think that a 0 VU reading on playback would have much significance for a home receiver, although it might for a professional piece of equipment where it is essential to know absolute signal level.

Dropouts

Q. My Sony TC-230 tape recorder has a problem with dropouts. During playback of a tape, one or both channels suddenly suffer a complete loss of signal or a dramatic reduction in output which usually lasts only a fraction of a second. This does not occur when I monitor the input signal, nor does it occur when playing tapes recorded on other machines, or when playing records through the amplifier of the tape deck. I guess this narrows it down to the recording process.—Howard Sanner Jr., Hyattsville, Md.

A. Your analysis seems correct. A possible cause is a fault in the bias oscillator circuit which would cause it to stop momentarily or to drop in amplitude. However, this problem seems unlikely since the erase head would also quit and you would hear the previously recorded signal for a fraction

Pure Pleasure. The True Sound of Scott.

Scott speakers are designed and engineered for listeners who demand the ultimate in true sound reproduction.

All Scott speakers are designed and individually tested for low distortion, flat frequency response and the highest possible efficiency. Their crossover networks are built with low loss capacitors, and coils with exceptionally close tolerances to give you the truest sound possible.

Unlike many other speakers, Scott speakers neither add nor subtract from the original sound. And unlike so many of today's "fad" speakers, they don't distort the original sound for special effect. Nor do they color the sound for an exaggerated response.

Scott speakers provide pure listening pleasure by accurately reproducing music with qualities equivalent to live performances, and with a degree of authenticity limited only by the quality of the record, tape or broadcast signal.

It is this uncommon ability to reproduce sound in a truly natural fashion that has earned Scott

speakers their outstanding reputation and critical acclaim.

Listen for yourself. The true sound of Scott is pure pleasure. And true sound is built into every Scott speaker in every price range, from the Bookshelf Series to the distinguished PRO 100 shown here.

For specifications on our complete line of audio components, contact your nearest Scott dealer, or write H.H. Scott, Inc. Corporate Headquarters, 20 Commerce Way, Woburn, MA 01801. In Canada: Paco Electronics, Ltd., Quebec, Canada.



Individual Dispersion Control and Frequency Response Switches.

The PRO 100 provides a unique sound dispersion control that allows you to adjust the direction and amount of sound between the upward-firing and front-firing drivers. Two additional switches allow you to tailor the high end and midrange frequency response of the speaker to best match your room acoustics.



Three individual position switches allow you to tailor response to best match your own listening environment.

SCOTT Warranty Identification Card

Warranty Number: 24026
Model: PRO 100 Speakers (2)
Serial Number: 1001374/1001375
Expiration Date: January 1, 1983

Scott's unique, gold warranty card.

Individualized with your warranty, model and serial numbers, and expiration date. Scott's fully transferable, five-year parts and labor-limited warranty is your assurance of lasting pleasure.

Unique Bi-Directional Midrange and Tweeter Arrangement.

Pairs of midrange and tweeter drivers in two planes, one horizontal and one vertical, offer the advantage of steering high-frequency distribution to most favorably complement speaker placement and individual listening taste. Unlike many other speaker systems, the Scott PRO 100 is not dependent on the reflecting surface of the listener's walls for its response, and provides a truly omnidirectional effect in any listening environment.



Upward-firing midrange and high-frequency drivers, as well as front-firing drivers, provide an omnidirectional effect that surrounds you with sound.

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Introducing New Quantum by Memorex. Four Reasons It Sounds So Good.

1. Quantum offers low distortion. You get a true recording of any type of music at high output, with virtually no distortion.

2. Quantum has very high sensitivity. This maximizes output and allows you to effectively capture all signals at a greater level.

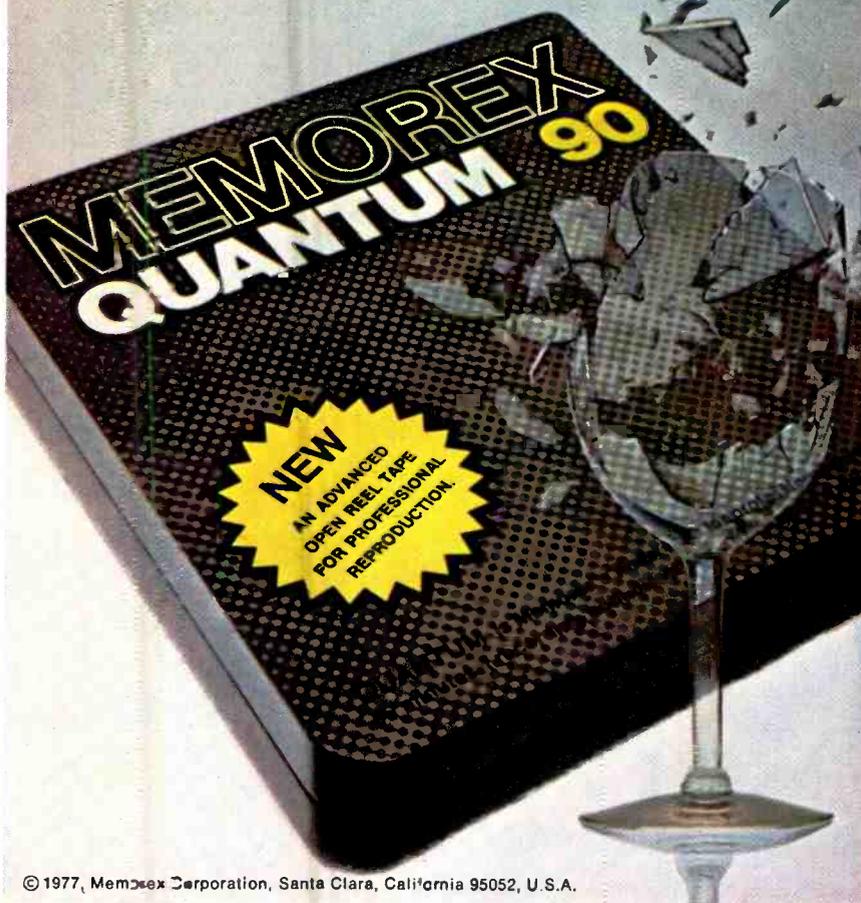
3. Quantum provides an excellent signal-to-noise ratio because its high sensitivity is obtained with no increase in noise level. This means a pure, brilliant sound.

4. Quantum gives you high saturation, resulting in a wide dynamic range and broad recording flexibility.

Quantum achieves improved recording performance while maintaining a high degree of mechanical excellence. With long life, durability, precision edge quality and excellent oxide adhesion.

The best way to hear the Quantum difference is to try it out for yourself. Available in 7" x 1800', 7" x 2400' and 10½" x 3600' reels.

MEMOREX Recording Tape.
Is it live or is it Memorex?



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of a second, unless you were using viroin or bulk-erased tape.

Another possibility is that you are recording at such a high level that momentary blocking occurs in the record amplifier. This could happen if the sound source contains high frequencies of substantial amplitude which are then subjected to substantial treble boost in the record amplifier. This could also be due to a poorly soldered connection. Finally, you might have an erratic capacitor, resistor, or transistor in the record circuit. Signal tracing would be necessary to find the point where this problem arises in the record amplifier.

Head Replacement

Q. I wish to replace the heads on my KLH 41 tape deck. Please don't say "ship it to an authorized service center" because, despite the risks involved, I'd much rather do the job myself. Could you tell me which head design would require the least modification to the KLH circuitry, what these modifications would be, what kind of equipment I might need, and what kind of parameters I should measure in the original heads to help me find a suitable replacement—?
Kurt Wiley, Rochester, N.Y.

A. I think you should try to get most of this information from a manufacturer of replacement heads, such as Nortronics. They can tell you which heads of theirs are most compatible with your machine and what changes, if any, are needed. The head parameter of dominant importance is impedance at a specified frequency, e.g. 1,000 Hz. Of course, head format is also important, that is whether the head is half-track, quarter-track, etc. In using a new record head you will probably have to adjust, or at least check, the bias current. Appropriate changes may also be necessary in the amount of signal current supplied to the record head and in the calibration of the record level indicator. Change may be required in the current supplied to the erase head. Perhaps, a slight change may be needed in playback equalization, although this is the least likely possibility. To make all these necessary changes you will need a signal generator going over 100,000 kHz, a VTVM, and an harmonic distortion tester, in addition to a test tape for azimuth alignment and to check the playback response.

If you have a problem or question on audio, write to Mr. Joseph Giovannelli, at AUDIO, 401 North Broad Street, Philadelphia, Pa. 19108. All letters are answered. Please enclose a stamped, self-addressed envelope.

AUDIO • October 1977

Presenting the \$200 cartridge that costs \$3000 to hear.

The Quest for Perfection. At \$200, the Micro-Acoustics 530-mp offers the same patented* direct-coupled transducing system as our other highly-praised stereo cartridges. The same twin-pivot design, for superior transient ability. The same dual-bearing construction, for outstanding tracking ability. The same built-in microcircuit. And, like the 2002-e, the same super-light beryllium cantilever and low-mass design. Plus more.

For those very few people whose pursuit of perfection overrides everything else, the 530-mp offers two subtle refinements not found on our other cartridges.

But the improvements these refinements provide can be realized only on a system representing, at the very least, an investment of \$3,000 in turntable/tonearm, preamp, amplifier and speakers. And even then, only by individuals with the most discriminating ears. In other words, less than 2% of component high-fidelity system owners.

An Analog Stylus. The new 530-mp features a Micro-Point™



Graphic Recorder
Plotting of individual 530-mp frequency response.



V-groove Lapidary
Final polishing of stylus, mounted on beryllium shank.

playback stylus. It is an exact analog of our Micro-Point recording stylus, used to master over 500,000,000 of the world's best stereo discs this year. By replicating the recording stylus geometry, the 530-mp stylus provides optimum groove contact. The result is unsurpassed definition.

Individual Curve. Like our other cartridges, each 530-mp undergoes numerous demanding QC tests, monitored by sensitive electronic equipment. In addition, each 530-mp

must run the gauntlet of further tests, culminating in an individual frequency response curve. After checking and initialling the curve (which is then packed with the unit), the senior quality inspector serializes the cartridge and approves it for shipment.

\$3,000 Later. With all these refinements, however, the sonic difference between our top-rated 2002-e and the new 530-mp is admittedly very subtle. (In fact, for most applications, the 2002-e is all you'll probably ever need.) But if you've invested \$3,000 or more in state-of-the-art equipment, subtle differences are obviously important to you. Important enough to audition our 530-mp.

For more information and the name of your nearest dealer, please write or call: Micro-Acoustics Corporation, 8 Westchester Plaza, Elmsford, NY 10523 (914) 592-7627. In Canada, H. Roy Gray, Ltd., Markham, Ont.

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"Because good tracking
isn't enough."



*Introducing 3 new ways
to get the truth out of your
cassette deck.*



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REW

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STOP

PLAY

REC

ON



**The MasterTM Series.
A Scotch[®] cassette for every
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Three totally different tapes. Each developed to deliver the truest, clearest sound possible at each tape selector switch position.

Our Master I cassette is for normal bias recording. It features an excellent dynamic range, low distortion, uniform high frequency sensitivity and output that's 10 dB more than standard tapes.

Our new Master II replaces chrome cassettes and is designed for use on hi-fi stereo systems with chrome bias (70 microsecond equalization). It features some spectacular performance characteristics, including a special coating that gives it a 3 dB better signal-to-noise ratio at low and high frequencies than chrome cassettes, yet it's less abrasive.

Our new Master III is for the ferri-chrome setting. It's formulated with the most advanced technology available, giving a 3 dB output improvement at low frequencies and 2 dB at high frequency. And the unique dual layer construction increases both low and high frequency sensitivity over chromium dioxide and ferric oxides.

All this, plus unique inner workings you can actually see. Our new Master line has a special bonus feature. A precision molded clear shell that allows you to monitor the inner workings of the cassettes. You can actually see the recorder head penetration and the unique roller guides in action. Look closely at the transparent shell and you'll see the water wheels which were specially designed to move the tape evenly across the head, reducing friction and noise. And two radially creased shims insure smoother wind, improved mechanical reliability and reduced wow and flutter.

Enough said. Now it's time for you to take the true test. Match up the right Master cassette with the bias you prefer. Then just listen.

You'll find that whichever switch position you use, a Scotch[®] Master is the way to get the most out of it.

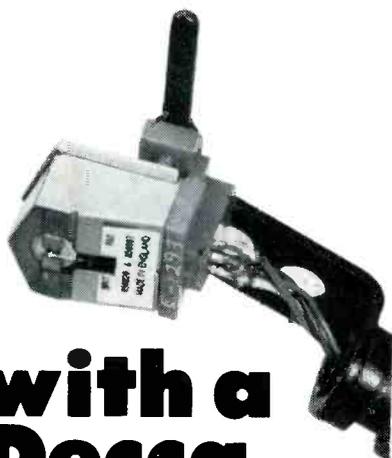
**Scotch[®] Recording Tape.
The truth comes out.**

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**3M
COMPANY**

Defog your ears

with a Decca



10

Cartridge makers are talking about how their shorter cantilevers reduce tip mass for better transient response. But just shortening the cantilever won't help much if it still pivots in the standard seesaw manner. Pivoting cantilevers cannot help but *add* their own friction and unwanted back-and-forth movement, to the vibrations of the stylus. These "cantilever haze" factors result in substantial loss of definition and transients available from all good recordings.

Decca MKVI cartridges use Decca's "Positive Scanning" system, meaning *no* cantilever in the conventional sense. The stylus is mounted on an incredibly light but strong "super-cooled" armature. Its vibrations are scanned by stationary pickup coils *directly above* the stylus, rather than at the far end of a pivoting cantilever. "Cantilever haze" is eliminated for unmatched realism and transient response. The difference from other cartridges is audible enough to make the discerning audiophile feel he is *really* listening to his records for the first time.

Decca MKVI's also feature extra quality control to ensure excellent uniform tracking, separation and channel balance as well as flat frequency response on every unit shipped. Two models to choose between: the Gold Elliptical (tracks at 1.5 grams) at \$159.50*, and the Plum Spherical (tracks at 2 grams) at \$139.50*. Gold or Plum, you'll defog your ears with a Decca.

*Suggested List Price

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160 Ronald Dr., Montreal,
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Audio etc.

Edward Tatnall Canby



Some of our readers would like more audio in our record reviews. Predictably, that sets me off. I'm all for it—but with reservations, which I can put in very few words. In 99 per cent of published recordings audio is but a part of the whole and not necessarily the primary intent. And there are also many aspects of audio.

I don't care whether a record is a disc or a tape, a classic, or jazz, pop, corn, even a sound effect—like the superbly artistic steam railroad recordings of the 1960s—every published recording embodies a composite of intentions, representing different sub-disciplines in the recording art and often enough, many different people, including the performers (or the synthesizer operators). Everybody is there to plug his own interest and specialty in the recording process. And yet in the final product all their efforts are frozen together into one result, in the singular—THE record. Inseparable—you get one aspect, you get them all. That's what a record is.

Of course you can write about the separate aspects, the various intentions, one at a time. They are there, and they are good or bad, work together or swear at each other, de-

pending. But you cannot forget that each element depends on the others, and the whole, the sum, is what counts—because that is the idea in the first place. Even a purely "audio" recording—short of a test record—must have some audio signal to work on, and the better the software, the more effective the audio.

I don't count the true test record as among normal published recordings. It is a basic audio tool, extremely useful, but it is not a record in the usual sense, which means a recording meant for listening. Listening pain, listening pleasure, listening boredom, you name it! But listening is the name of the recording game.

Phew—a hi-fi sine wave! How interesting to hear. That ubiquitous 1-kHz tone. Or those dreadful warbles and howls they use to set up CD-4 balances and adjustments. Some listening! Fine tool, if you can take the sonics. And how about those ultra clean supersonics? Fine, too, if you enjoy meter listening. You'll remember that CBS Labs launched its line of direct-to-disc test records a good many years back and since then they have sold a comfortable number of these tools but, I suspect, have acquired remarkably few *listeners*, even

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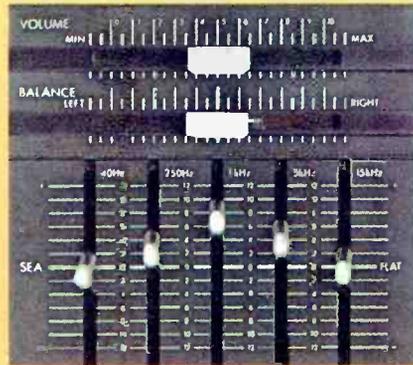
Only three receivers in the world give you master control of the entire music spectrum.

JVC believes that when you buy a full performance stereo receiver you should be able to get full performance from it. Without having to buy expensive add-on accessories.

That's why one of the very special features built into JVC's three new top-of-the-line receivers (JR-S300 II, JR-S400 II, JR-S600 II) is our exclusive SEA five-zone graphic equalizer system. It totally eclipses the capability of conventional bass/midrange/treble tone controls of other receivers. With SEA you're in complete command of every segment of the musical spectrum—from gut bucket bass to coloratura highs. SEA also permits you to custom tailor the sound to the acoustics of any room, and to compensate for the shortcomings of other components in your system.

And if you're a recording buff, you'll appreciate another exclusive JVC professional touch. You can switch the SEA equalizer section into the tape recorder circuit for simultaneous equalization while you're recording.

While these unique features alone set JVC's pace-setting receivers apart from the common herd, we're further insuring top performance with a solid combination of additional features.



Exclusive 5-zone SEA graphic equalizer system for better performance from components and listening room.

JVC

We build in what the others leave out.

And all the power you'll ever need to drive your favorite speakers.

So it's up to you. Which do you prefer? A JVC professional receiver with a built-in SEA graphic equalizer. Or one that leaves it out.

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For your nearest JVC dealer, call toll-free (outside N.Y.) 800-221-7502.

| | S600 II | S400 II | S300 II |
|---|---------|---------|---------|
| RMS power/channel, 8 ohms, 20Hz to 20,000Hz | 120 W. | 80 W. | 50 W. |
| Total harmonic distortion | 0.08% | 0.08% | 0.1% |
| Approx. retail value | \$650. | \$530. | \$400. |

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though the CBS fi is astonishingly hi. Really, we do NOT want to listen to pure fi, minus anything else! It bores us to death. Even when useful. This just isn't what we mean by recording.

What we often call a "hi-fi test record" is an altogether different thing, though occasionally useful as a tool. It is for listening, even if the auditor fancies he is hearing pure fi and not, say, music. Wrong! He hears the fi because the music is there and well chosen, if all too often in bits and pieces. Like all recordings, these "test discs" (and tapes) represent the tell-tale composite of interest and intentions which is the true nature of the

published record of every kind. Different aspects working or NOT working together.

Evaluating Records

So when we evaluate a recording, we have three aims, as I see it. First, we must be aware of the sum, the whole, the end result in all its aspects, whether musical or audio. Second, we should know what the record as a whole thinks it is doing—what are its aims, and whether it hits its apparent target, or whatever. Third, we must write not for one special group of listeners—even in our magazine—but as far as we can for all who might

be variously interested. With priorities, depending, from one type of record to another and one reviewer to the next. And this because on the far side of the playback stylus and the magnetic head we have a sort of mirror image of the recording studio. Many different listening interests, and highly trained ears to match.

Our best reviews, I think, are those which "get over the message" even to people who disagree, or who are negatively interested in some particular aspect. You want to find out what so-and-so record is like? So you read Canby, he says it's good and you know instantly that it's not for you. OK—that's one you don't have to bother about. Useful info. Neither one of us is flatly wrong, we are just interested in different things.

There are so many subdivisions! Recording (for listening) combines two major arts plus a technology, the audio chain from start to finish. Two arts? One, of course, is the art of music, enormous in its scope; history, and present activity. The other is the art of recording, now also enormous in its complexity and subtlety, from the most straight-forwardly beautiful ambience techniques for classical music—mikes, balance, acoustic surround—through all the immense complications of pop mixdown and synthetics. And the one science, audio, makes the whole thing go. Talk of composites! Each of these vast areas is full of different specialties and different people pushing their own, towards that one final end result. Wonder there aren't a million cat-and-dog fights in every studio. There are a few. And a lot of bad records. Most are due to lack of knowledge and/or skill in one or more departments; but many more simply represent internal warfare. The music at cross purposes with the mike setting and balance. The audio fighting the music it is supposed to represent. The musicians ignoring the necessities of the medium, or failing to take advantage of its special virtues. They will do that. The producers caught somewhere in between.

STOP, yells Audio through his squawk box. You're ruining my signal—I can't take that much dynamic range. I'm going to compress.

NO, SIR, says Producer, not at the expense of our music you won't!

Well then, says Audio, tell 'em to play softer.

WHAT? Desecrate our sacred art? say the musicians, overhearing. Never! (But they often do, resignedly, even so.)

Too much bass, says Audio. Not enough piccolo, says Producer. I can't

Phase Linear 400: The best selling amplifier in the world.

Since its introduction, the Phase Linear 400 Power Amplifier has been hailed internationally as the undisputed "best buy" and best performer among all the super amps available today. And for good reason.

For some time most serious listeners have considered a high powered amplifier a necessary component in a home stereo system. Most high quality speakers are inefficient and demand great reserves of power to play recorded music at realistic levels.

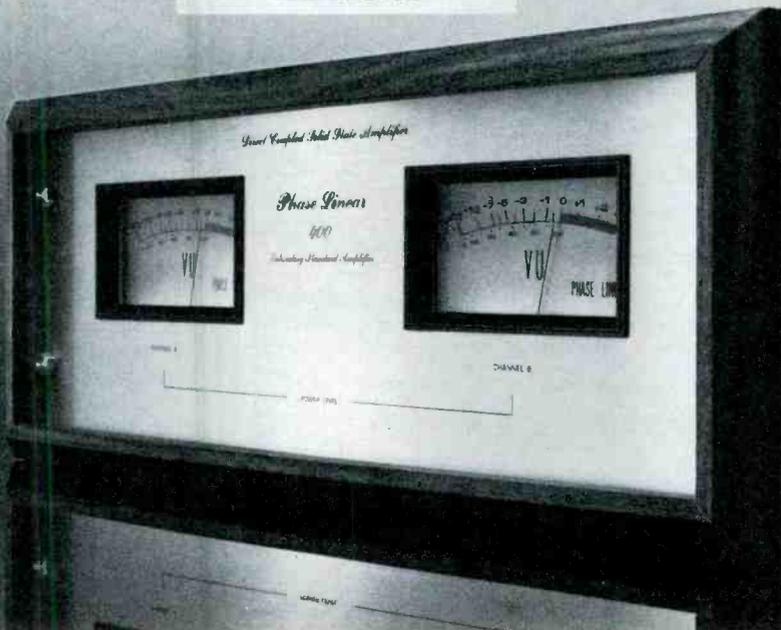
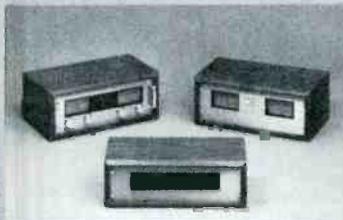
But until the introduction of the 400, this additional power

was an expensive extra few home stereo owners could enjoy. Advanced technology developed by Phase Linear has resulted in a high quality, high performance power amplifier that, at a suggested retail price of \$499, becomes a practical investment for a stereo component system.

The Phase Linear 400, with its tremendous power reserve, enables your sound system to deliver real-life listening levels with extremely low distortion levels without clipping... at a very reasonable price.

See your dealer for an audition.

Phase Linear
The Powerful Difference



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Precision and elegance. The newest Quartz-Servo by Sansui.

Introducing the Sansui SR-838, a luxurious new direct-drive turntable that performs silently with rare and fine precision. Free from howl and feedback, the SR-838 complements the superior tonal quality and the exacting standards of today's most sophisticated component systems.

The SR-838 Quartz-Servo delivers reproduction so accurate it may astonish you. With motor speed locked to the precise control of a highly refined quartz crystal, wow and flutter is unusually low, less than 0.025%, and platter speed deviation less than 0.002%. Absolute stability of the single strobe pattern³ always verifies this platter rotation accuracy.

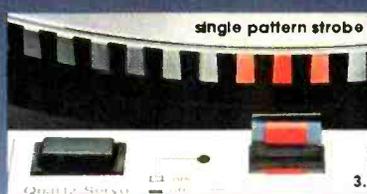
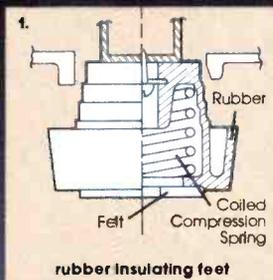
Sansui engineers have also designed a unique new tonearm for the SR-838. It features a Mass-Concentrated Fulcrum² design, with wide-set pivot points, to suppress unwanted front-back/left-right vibrations. Inside the tubular tonearm is a special resin* that prevents resonance. And the entire unit is firmly mounted on a zinc die-cast base for the most stable performance you can find.

The Sansui SR-838 offers all the performance advantages you'd expect from a super turntable, plus more. Such as fine pitch control, an electronic brake for speed changes, a skating force canceller, and an oil-damped cueing lever. And the newly designed rubber insulating feet¹ provide superior feedback isolation.

To top it all, the SR-838 is a feast for the eyes as well as the ears. All controls are positioned up

front for easy access and operation. And the satiny piano lacquer finish glows with the elegance of simplicity.

See the SR-838, at less than \$390,** including base and dust cover, at your nearest franchise Sansui dealer. Hear it, and you'll discover that advanced technology and precision design do indeed make a difference. All the difference in the world.



SANSUI ELECTRIC CO., LTD., Tokyo, Japan • SANSUI AUDIO EUROPE S.A., Antwerp, Belgium • In Canada Electronic Distributors

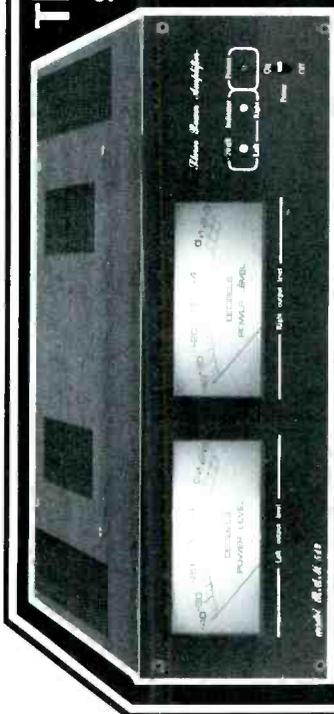
*Patent pending **Approximate nationally advertised value. Actual retail price is at the option of individual dealers

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The AUDIBLE JUSTICE of the RAM512 power amplifier.

Specifications: 300hp, dual overhead cam, 180 WATTS CONTINUOUS PER CHANNEL BOTH CHANNELS DRIVEN INTO 8 ohms, 20 TO 20KHz WITH LESS THAN .08% I.M. AND T.H.D. 0 to 100 mph to 0 in 23 sec., SLEWING BETTER THAN 20 VOLTS PER MICROSECOND. Four wheel disc brakes, DAMPING FACTOR 1000 OR GREATER 20-20KHz. 5 speed gear box, PROPAGATION DELAY LESS THAN 0.2 MICROSECONDS. 140 mph speed indicator, 43dB RANGE AVERAGE POWER READING METERS, WITH -20dB PEAK RESPONDING INDICATORS. SPECIFICATIONS ARE NOT THE WHOLE STORY, TEST DRIVE YOUR SPEAKERS WITH THE RAM512.



RAM audio systems inc.

17 JANSEN ST., DANBURY, CT. 06810

hear the violins, says Cello. What, not that same passage AGAIN? says conductor, to himself, of course, smiling cooperatively. By that time the musicians just look sodden. They're getting paid.

STOP! Right in the middle of a climax. That's the Musician in charge. Break. You CAN'T stop the music right there, we'll have to do it all over, says Producer, inaudibly to self. Oh yes, you can, says Musician. And so they do. Everybody has his rights, after all.

Direct Disc Dilemma

Let's go direct-to-disc, says the Exec. NO! shrieks the Producer, whose life depends on the re-take, whose art, nurtured over a quarter century and more, is about to be junked. YES! shout the buyers out there, the listeners—some of them. More fi in the music! Isn't that what we want? NO! shout a few listeners and a lot of studio men. Not, please, at the expense of recording flexibility. For a tiny bit of sonic improvement you want us to go through all that jazz, no repeats, no mistakes, no coughs, "live" band separations in real time, the perfect performance every time, LP-long—and, of course, the perfect disc cut? Phew—it's more than human beings can stand. Musicians and technicians alike.

That is, unless that is the aim of a given recording, and people really feel it is worth the effort. If so—fine. A lot of buyers (not having gone through the agony) are avid for the stuff. It sounds good, very good. The musicians, also, can rise to the occasion and do their sweating best. But this is a very limited medium, however you look at it, and I don't think anyone expects it to supercede the conventional tapings. Keep improving the tape, I say.

Incidentally, speaking of reviews, you will note that Bert Whyte thought the first Umbrella direct-to-disc was technically superb, but he didn't much like the music. I thought it was technically superb but I did like the music. OK? You take it from there. But remember those subdivisions. If you like big bass, stay away from Umbrella II. It just isn't that kind of music. No thump, no bang-bang. Just super-fi in the upperworks.

To sum up direct-to-disc, just think figuratively. In the old days, that system required musicians (and technicians), so to speak, to hold their breaths a maximum of four minutes. Now, everybody holds his breath for up to a half hour and can you imagine the strain of those last five minutes, when the goal is ALMOST achieved and one single, tiny fault ruins the

whole shebang? No, this is for heroes only! We do have them, I'll have to admit.

Sound Reviews

So you want more audio in our record reviews. OK, you understand what we are up against. All those different aspects, and so many records for so little space! We all of us have to economize, in every magazine. Have to use best judgment as to which element to plug at the expense of most of the others. We mustn't get too carried away by our own specialties, and thus forget the guy whose ears are mainly tuned to record scratch, or to fi in the bottom regions, as above, or cleanliness in the upper. But if we continue to think *composite*—not only what's there or isn't there but how each aspect affects the others—we'll come out with useful evaluations for all concerned. Except for the test record, the test tool, the composite review is the only one that makes sense at all. It simply reflects reality.

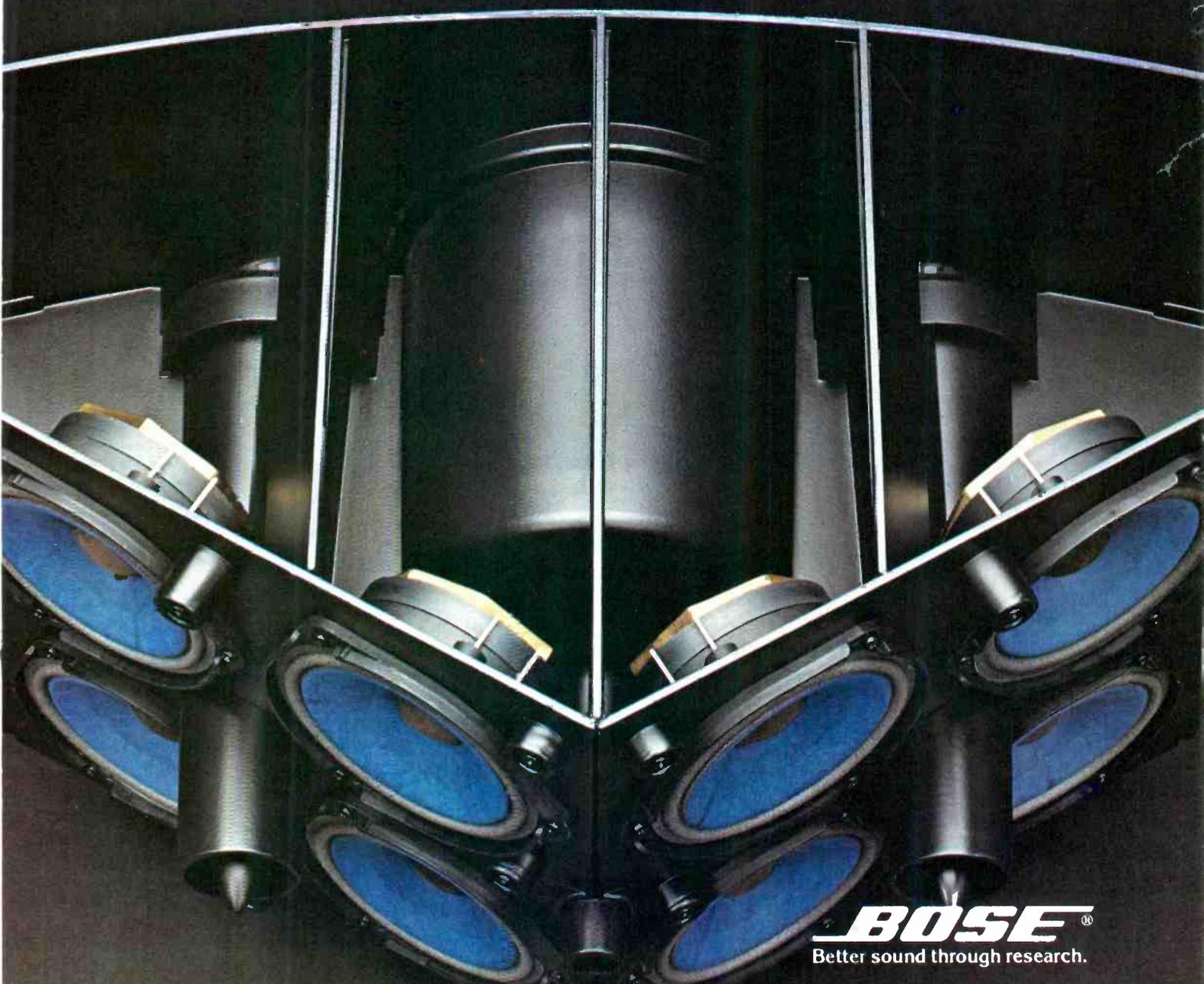
Yeah. I was going to add two or three typical reviews, specific examples from my own department, to round out these observations. On second thought, I think I'll put them back where they belong. So I have only one more pertinent thought to purvey. In record reviews, a complete listing of ALL the separate factors, for each record, is a literary no-no. Bore you stiff. Too many music-minded reviewers put down such essentially useless terms as "recording: satisfactory," over and over again. To me, that just sounds snippy. The readers deserve better.

Better, I have long since decided, is to assume a lot, save space, and take it for granted that you get the idea: if the record is technically average in its audio—that is, OK for the music, perfectly good and useful, up to normal standards, acceptable though not especially stunning, easily hi fi but not superbly super fi, adequately balanced but nothing unusual to write home about good or bad, if the dynamics are normal, not too high, not too low, the surfaces at least moderately silent, if the thing is minus noticeable warps and woofs and flutters and groove-jumps, lacking bubbles, gouges, swishes, reasonably cut and cleanish in the peaks, clear in the valleys, sharp in the transients, and so on etc.—then I just say nothing. And go on to discuss the music, which is the primary message on most discs.

That is the situation a lot of the time. And do we save space! How many times do you want me to write "recording: satisfactory"? A

No other speaker has ever looked like this, no other speaker has ever been built like this. And we believe no other speaker, regardless of size or price, can recreate the impact and feel of live music like the Bose 901 Series III.

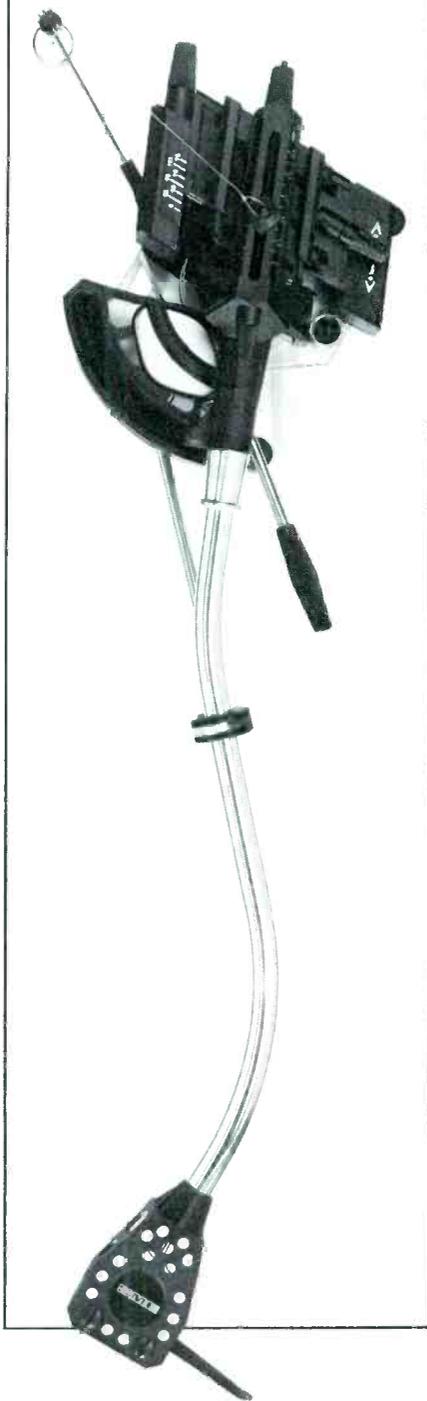
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In one page we cannot begin to describe the 901 Series III and the technology behind it. So we've put together a comprehensive literature package that includes a detailed 16-page color brochure, a 20-page owner's manual, and a copy of Dr. Amar Bose's paper on "Sound Recording and Reproduction," reprinted from Technology Review. To receive this literature, send \$1.00 to Bose, Dept. A10, The Mountain, Framingham, Mass. 01701. Patents issued and pending. Cabinets are walnut veneer.

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Behind the scenes

Bert Whyte

Last month, I pointed out that the 1977 Summer Consumer Electronic Show in Chicago was the biggest and most comprehensive ever...so much so that I couldn't finish my report in one column. So without further ado...I will continue my survey.

I hadn't quite finished my roundup of interesting power amplifiers...so here are a few more...RAM Audio Systems of Danbury, Conn., was demonstrating their Model 512, rated at 180 watts/channel into 8 ohms. The unit features minimum negative feedback (27 dB), low phase shift, a propagation delay of less than 0.2 microseconds, overload recovery of less than a microsecond from a level of 10 dB over clipping, and is priced at \$1100.00. Soundcraftsmen had a new MA-5002 250 watt/channel/8 ohm amplifier utilizing a dual power supply, which they have named Vari-Portional and have a patent pending. One power supply voltage is two-thirds of the larger one, which only functions when the output level reaches the voltage limit of the first supply stage. The advantages of this scheme are lower power consumption and less heat dissipation than with a conventional AB amp of the same output capability. Pioneer was showing the production version of their M22 Class-A, 30W/chan amplifier on which I have reported previously. From Harman Kardon comes the Citation 19, another of those power amplifiers built on the Ota/Curl concepts for low TIM. Power output is 100 watts/channel, and it can be bridged to 350 watts/ch. At the \$495.00 price, two of the units in the 350-watt mode cost less than a thousand dollars...a lot of watts for the money. Sony was showing its small, slim 150 watts/channel Class D switching amplifier, now slated for Fall delivery. Infinity, first on the market with Class-D amplifiers, was demonstrating their new 350 watts/channel unit. Here again, quite a small package for the high output. Before I close this section, there is a new company, A&E Technical Research, which was showing what they call their Model E-2000 equal-

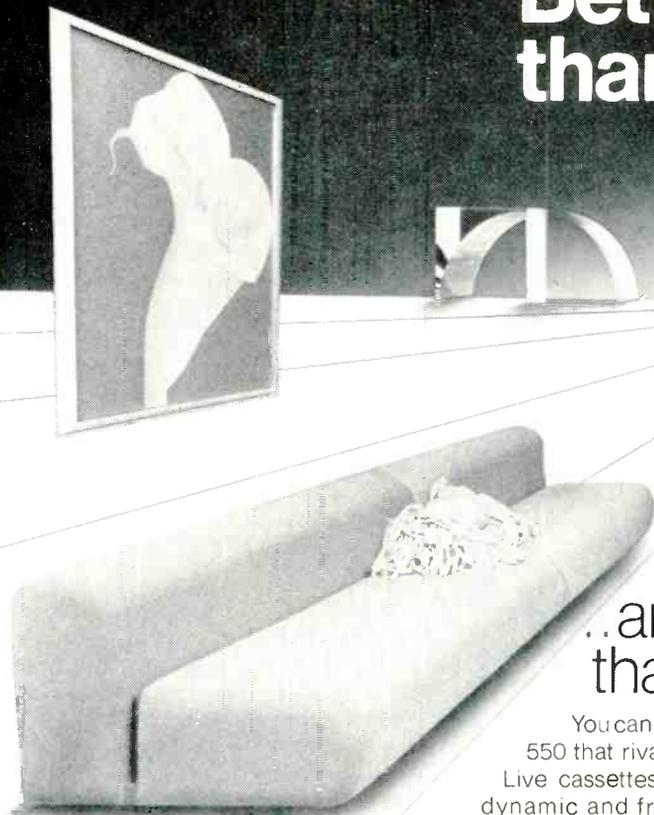
izing preamplifier. The unit features RIAA phono curve accuracy within ± 0.2 dB, six selectable phono input impedances, and claims only 0 to 3 degrees phase shift across the entire 20 Hz to 20 kHz range, and a group time delay of only 0.7 microseconds.

Tape Decks

Tape equipment was well represented at the Show. As you might expect, cassette decks dominated the scene, but there were strong showings of high-end open-reel equipment from the usual specialty sources...Teac, Revox, Tandberg, etc., and surprising new entries from Pioneer, the RT-701 and RT-707 tape decks. Take a quick look at them, and you'll do a double-take for they hearken right back to the good old days, looking very much like the famous old Magnecord PT-6 series of recorders. Made for rack mounting, they are 19 inches wide by 9 inches in height and can accept up to seven-inch reels. Both models use a.c.-servo direct-drive capstan motors, and two inner rotor induction motors for reel drive. The RT-701 has three permalloy heads and the RT-707 has four heads, the extra head being for automatic reverse play. This is especially significant now that we are having a renaissance of open-reel prerecorded tape. Stereotape is now issuing music from the RCA, London and DGG catalogs, while Barclay-Crocker is out with material from Vanguard, Musical Heritage, Desmar, Halcyon, and other catalogs. Tape reversal is accomplished via the foil strip method, and the unit has a repeat mode as well. Both decks are replete with the usual goodies, like logic controlled motion switching, two position bias and EQ switches, pause, and pitch control. Frequency response is ± 3 dB, 30 to 24,000 Hz @ 7½ ips, wow and flutter 0.05 W RMS @ 7½ ips S/N ratio is better than 58 dB. The Uher "Omega Drive" (no pinch roller) open-reel deck has undergone some revisions and is expected to be introduced this Fall.

Pioneer also had an interesting new cassette deck, the model CT-F1000.

Better than records



..and easier
than you'd think.

You can make recordings on the Nakamichi 550 that rival the best LP discs available today. Live cassettes produced on the 550 have wider dynamic and frequency range than today's most advanced disc recordings.

Prove it with some musician friends in your own home. With a 550, three high-quality microphones and our free booklet on tri-microphone recording, you can produce startlingly superb live cassettes much easier than you'd imagine. Your recordings will possess a sense of presence and occasion very often absent in commercial LP's.

You will find the 550's professional features indispensable. Three wide-dynamic range, low-noise microphone inputs (left, right and blend), built-in mixer, large peak level meters with 45 dB range and high-output stereo headphone amplifiers make recording simple and exciting.

With the 550, of course, you're not confined to the living room. Heavy-duty portable construction ideally suits the 550 to out-of-doors, on-location recording as well. It will operate for 15 continuous hours on eight internal standard D-size batteries. The rock-steady Nakamichi precision transport insures open-reel freedom from wow and flutter with the full convenience of cassettes.

But live recording is not the 550's *only forte*. It is equally at home as a component cassette deck in the finest stereo systems. So take a 550 home and give it a try. You'll amaze your friends —and yourself, too! For more detailed information on the Nakamichi 550, peripheral equipment and accessories, plus our free booklet describing the tri-microphone recording system, write Nakamichi Research, (U.S.A.) Inc., 220 Westbury Avenue, Carle Place, New York 11514.

Nakamichi 550

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This is a two-motor, closed-loop, dual-capstan tape drive, with three single-crystal ferrite heads (a la Ampex ATR-100). A dual Dolby circuit permits Dolby recording and Dolby monitoring off the tape. The unit has a two position bias and a three position EQ switch; tape motion is activated by logic-controlled solenoids. There is an automatic sensing system for CrO₂ tape. Wow and flutter is claimed to be less than 0.08 per cent W RMS, and frequency response is stated to be ± 3 dB from 30 to 17,000 Hz with CrO₂ tape. Most remarkably, the S/N ratio is said to be 69-70 dB with Dolby on

and using CrO₂ tape. Nakamichi was on hand with the Mark II versions of their three-head models 1000 and 700. These cassette units and all Nakamichi two-head machines are fitted with their new crystal permalloy "Superheads" with 1.5-mil gaps and a specially configured head face. The result is a claimed head life of over 10,000 hours before replacement is necessary. In the same rarified atmosphere of the Nakamichi 1000 was the \$1600.00 Teac 860 and the \$1500.00 Technics RS9900-US on which I have previously reported. Aiwa got a lot of attention with its Model AD-6800,

with such features as three heads, Dolby monitoring, what they call a "Flat Response Tuning System," a built-in 400- and 8000-Hz oscillator, with front panel "bias fine tuning" for standard type of tape, and an azimuth alignment system.

The latest Elcaset model at the Show was the JVC Model LD-777, which features solenoid operation, three heads for off-tape monitoring, ANRS noise reduction (if prerecorded Dolby Elcaset become available, inserting the tape automatically selects the decode mode), and Super ANRS as an option. The unit has six LED peak-reading indicators, as well as two VU meters, and a 400-Hz and 15-kHz oscillator is furnished for sensitivity and bias adjustments. The unit's suggested retail price is \$799.95.

Turntables

Not to be outdone by the tape medium, there was plenty of action in the disk camp with a raft of new turntables, arms and cartridges. Among the most talked about new designs was the Accutrac +6, a changer version of last year's super-automated turntable, the Accutrac 4000. This unit enables you to play any sequence of bands in a total of six records. As with the 4000, remote control of all the automated features is possible, and it goes a step further by remote control of volume. However, in contrast to the direct drive of the 4000, the +6 uses belt drive with an a.c. synchronous 24-pole motor. The +6 also has capacitance "touch" controls instead of pushbuttons. The price of the +6 is \$399.95, with several other changer models with fewer features than the +6 at lower prices. Technics was showing new lower-priced direct-drive turntables, the automatic SL-1950 at \$200.00, the SL-1650 at \$300.00, and the SL-1350 at \$350.00. They were also showing their very limited edition SL-1000, which consists of the new SP-10 Mark 2 turntable mounted in a magnificent 37-pound mirror-polished, black lava rock/epoxy base and their new EPA-100 arm. The arm is the pride of Dr. Obada of the Technics research dept. A group of us were shown this arm and its inner workings last December in Japan. The arm tube is extremely low mass, but very rigid titanium nitride. It has about a third less mass than carbon fiber, and there are 20 high-precision ruby bearings in the pivot assembly. The arm has a unique magnetic viscous silicone damping system for the correction of various arm/cartridge resonances. It works by determining

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with fantastic performance because its revolutionary new Patent Pending VARI-PORTIONAL® system uses Analog Logic Circuitry to anticipate, control and supply only the exact amount of power required for most efficient performance... Conventional Class AB amplifiers with 250 watt power ratings, operating at 1/2 power in accordance with FTC test requirements, WILL CONSUME OVER 40% MORE ENERGY than the Soundcraftsmen "NEW CLASS" amplifier... Here are just a few "NEW CLASS" benefits: 1. Greatly reduced average current drain resulting in SUBSTANTIAL ELECTRICAL ENERGY SAVINGS. 2. Reduced heat dissipation for cooler operation assuring trouble-free reliability and no need for noisy fans. 3. And perhaps the greatest benefit of all, manufacturing cost savings meaning more power, and more features for fewer dollars... SPECIFICATIONS: 250 watts per channel RMS 20Hz-20KHz both channels driven into 8 ohms, less than 0.1% THD. Noise - 105dB, Damping factor 100, Slew rate 50, Frequency response ± 1/4 dB 20Hz-20KHz. Size 7" x 19" x 15" deep. Side panels included. Suggested price \$699.00



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the PE2217 offers more flexibility and control than preamps costing twice the price. The 20-band OCTAVE EQUALIZER uniquely coupled with a versatile combination PUSHBUTTON PATCH PANEL and advanced phono preamp section (84dB S/N) allows you the capability of graphic "EQ" during the playback and recording process. Dual phono and triple tape control with 84 and 106dB S/N specs make the PE2217 an unsurpassed preamp value of \$529.50. And now the PE2217, rated "STATE-OF-THE-ART" and "BEST-BUY" in magazine Test Reports, is also available as the PE2217-R (not shown) in rackmount silver-black form as a matching mate for our new amplifier, priced at only \$549.00.

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We INCLUDE all the accessories and features that are a MUST to make equalizing easy, as well as an amazingly rewarding new experience... An Environmental Do-It-Yourself TEST RECORD edited and announced by Soundcraftsmen especially for use with the Soundcraftsmen equalizer... COMPUTONE CHARTS for making a record of, and resetting in seconds, any desired EQ curve... a Full-Channel Frequency SPECTRUM LEVEL CONTROL on each channel for instant "no distortion" in/out balancing... LIGHT-EMITTING DIODES for precise visual signal level balancing... A Graphic Display of each EQ curve... And a minimum 2.4dB range of adjustment for each octave... Specifications: S/N: better than 106dB at full output... THD: less than .05% @ 1v... Filter type: Toroidal and Ferrite Core. Prices start at \$299.50.

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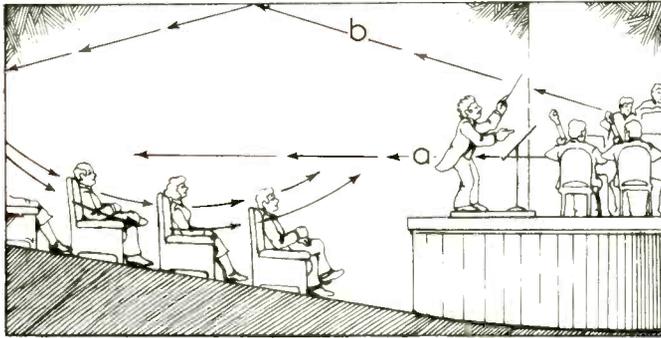
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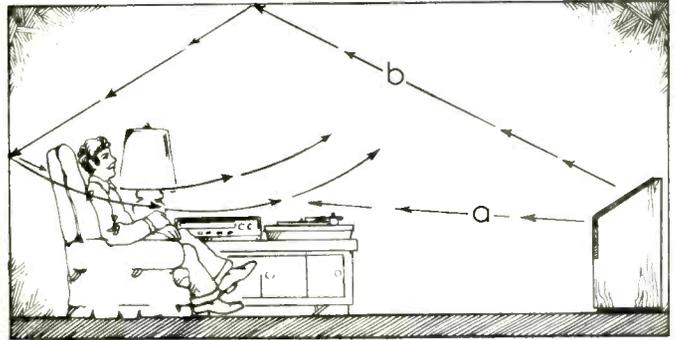
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AUDIO • October 1977

Before you spend \$600 on a pair of speakers, spend \$15 on a ticket to Carnegie Hall.

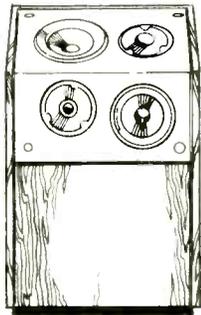


The way sound travels at Carnegie Hall.



The way sound travels from the Epicure 20+.

If you're shopping for a pair of speakers in the upper price range, you'll hear a lot of claims about "concert hall" sound.



The speaker's front-firing and top-firing modules.

So it only makes sense to check those claims out by actually going to a concert and hearing what that concert hall sound is really all about.

You'll discover that the sound comes to you from virtually every direction:

From straight ahead, as sound from the orchestra reaches you directly: "first-arrival" sound (a). From above you, behind you and

around you, as sound from the orchestra is reflected from the various surfaces of the concert hall: "second-arrival" sound (b).

The Epicure 20+ radiates sound in several directions.

Epicure's Model 20+ is a handsome, floor-standing loudspeaker with a dual-module design: a front-firing module and an angled, top-firing module. Each features our celebrated 1-inch air-spring tweeter and 8-inch low-frequency transducer.

The two modules work together to create a sound field not unlike the sound field you'd experience center row, Carnegie Hall:

There's direct sound, radiating from the front-firing module. And reflected sound, radiating from the top-firing module, then reflecting from the ceiling and walls of your listening room.

In other words, the Epicure 20+ successfully integrates first-arrival and second-arrival sound. For a first-rate musical experience.

And what a sound it is.

Like every Epicure speaker, the Model 20+ delivers only pure, accurate sound: from 20,000 Hz, all the way down to those deep, bass notes at 35 Hz.

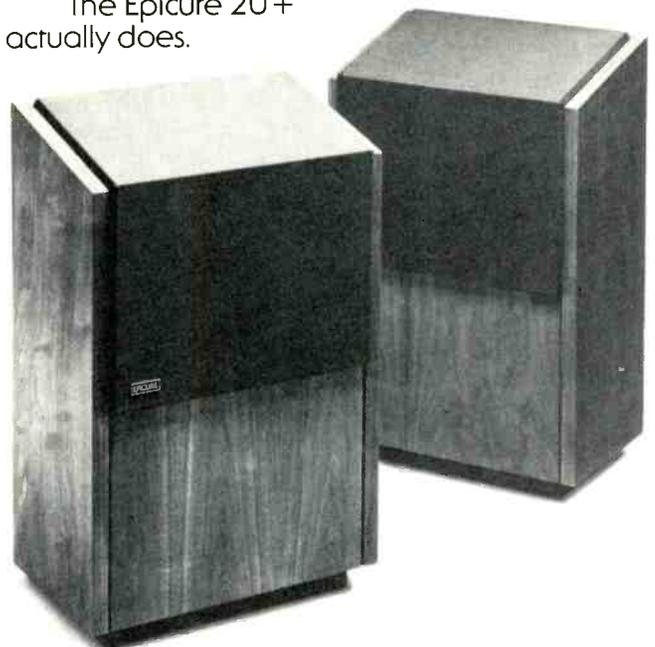
So if it wasn't in the concert, it won't be in your listening room.

On the other hand, if it was in the concert, it'll be everywhere in your listening room. Just the way it would be in Carnegie Hall.

There are plenty of speakers that claim to deliver concert hall sound.

The Epicure 20+ actually does.

21



The Epicure Twenty+

Epicure is a product series of Epicure Products, Inc., Newburyport, Mass. 01950.

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You'll think it's the best electrostatic you ever heard.

But it's dynamic! The SM-700 Studio Master

We designed the Studio Master to compete head-on with electrostatic headphones. And many who've auditioned it say we've succeeded.

An entirely new driver is fine-tuned with a special duct in the magnet-assembly and a critically-sized by-pass vent between the voice coil and the diaphragm. A newly-developed cushion seals the ear closely, to form a finite acoustic chamber with the transducer.

The results are astonishing! Frequency response is 10 Hz to 20 kHz at ± 3 dB. Distortion is 0.25 percent. And the dynamic range and transient response are extraordinary. All without the inconveniences of the electrostatic types.

Listen to the SM-700 Studio Master for yourself and see if you don't agree it's the best "electrostatic" you ever heard. Just remember—it's dynamic! And its price, only \$65.

SUPEREX
PRODUCTS WITH A DIFFERENCE

151 Ludlow St., Yonkers, N.Y. 10705
In Canada: Paco Electronics Ltd., Montreal

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the compliance of a cartridge, and then setting a calibrated dial for the particular compliance. It is all yours for \$1300.00. JVC was showing their quartz PLL turntable with its fascinating LED readout of rotational speed. Pioneer has entered the field of quartz PLL turntables with its Model PLC-590. It is sold without an arm, but there are pre-cut mounting plates for Pioneer arms and the SME arm. Blank plates are also available. You could hardly turn around without running into direct-drive turntables from a large number of Japanese companies.

Thorens was leading the belt-drive contingent with four new models, all featuring the unusual facility of interchangeable arm tubes, rather than cartridge heads. The top of the line TD-126C "Isotrack" table features 33 $\frac{1}{3}$, 45, and 78 rpm speeds, all pitch adjustable, and a 16-pole synchronous motor, with Wein-Bridge oscillator for motor control. DIN-weighted rumble is said to be -70 dB. Infinity was demonstrating their unique Black Widow turntable with an "air-bearing." The main platter has a subplatter and the pressurized "air-bearing" is between these elements. The highly regarded Infinity "Black Widow" arm is mounted on the turntable, and the combination is priced at \$400.00. Of arms, Sumiko was showing their extensive line of Grace arms, including the low-mass G-707 and their new metal frame G940 unipivot arm. Around the Show, quite a few people were using the Dynavector arm. This expensive (\$500.00) arm has a main section which pivots only horizontally and a smaller cartridge-bearing sub-arm, which pivots only vertically, attached to the end of the main arm section. The Pickering 190 D arm of more than 20 years ago had a somewhat similar idea.

There were quite a few new cartridges at the Show. The Satin moving-coil cartridges have been redesigned, and their top Model 118BX features a beryllium cantilever. All the Satin cartridges have user-replaceable styli and high enough output to obviate the need for transformers or preamps. The Ortofon MC20 moving-coil cartridge is the pride of a company long noted for this type of cartridge. Ortofon makes a pre-preamp for this cartridge, but other preamps and transformers can be used. There is a very smooth top end on these cartridges. ADC had their new ZLM cartridge on display, featuring low tip mass, a specially contoured "alliptic" stylus, and very high compliance. Stanton was demonstrating their

new 881S calibration standard cartridge. This unit has the Stereo-hedron stylus introduced on the Pickering 3000, but in this case a special samarium cobalt magnetic assembly is used which gives this cartridge the high output of 0.9 mV/cm/sec. A new patented suspension system is employed, and each cartridge is individually calibrated to 20 kHz. Price is \$150.00. The RAM people, who make the previously mentioned amplifiers, also make a phono cartridge system, the 9210SG. This is a semi-conductor strain-gauge unit which mates with the RAM 9210 Power Source-Pre-amplifier. I didn't hear the system, but the specs are impressive. . . 5 to 20,000 Hz, ± 1 dB. Price is \$299.95.

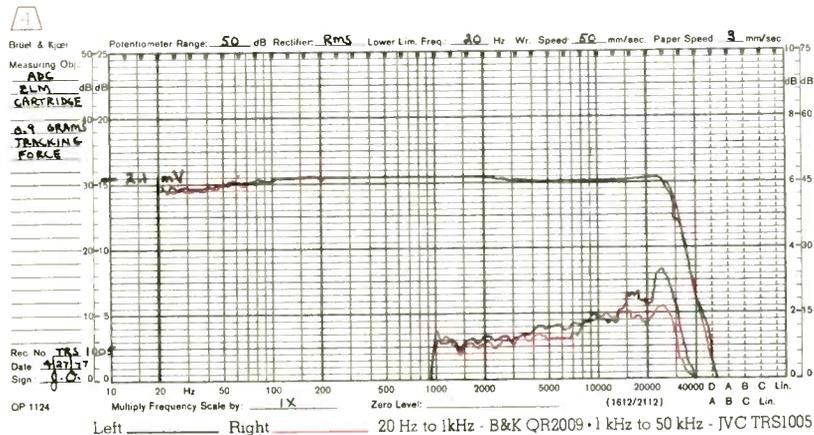
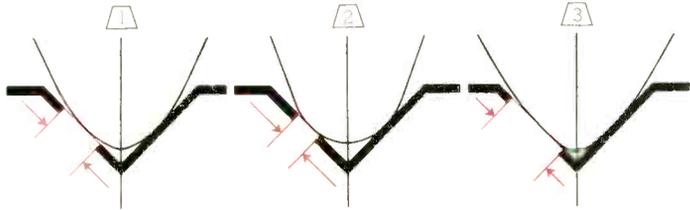
One last item in this section. . . Sony was showing a prototype turntable, which automatically turns over the record after the first play. Shades of Capehart and 1935! No mention of production, however.

Speaker Systems

Needless to say, there were more loudspeakers on demonstration than one could listen to in 10 days, let alone four! I must freely confess that a great many of these speakers leave me cold. Their stolid "sameness" is stupefying, and the sonic virtues they are touted as having, are conspicuous by their absence. Further, while I am in a curmudgeon-ish mood, most of these speakers are demonstrated by inept people, who choose absolutely execrable program material, and who grin fatuously at you, and say "isn't that great?" and all the while you are hearing this raucous cacaphony and God-awful distortion. One trend that seems to be growing is the attention being given to time delay distortion, or "time smear" if you will. In multiple driver speakers, the drivers are positioned. . . usually "staggered" on the vertical axis. . . so that their sound is propagated on the same acoustic plane. In some cases, the crossover network is also "time-compensated," and in still other cases, a combination of acoustic and electronic time compensation is used. There were a number of good examples of this kind of speaker at the Show; Technics had their ST7000 "linear phase" speaker on demonstration, as was Bower and Wilkins' DM6. The KEF 105 is an interesting example of this breed of speaker. A three-way system, the mid-range and tweeter are in separate enclosures, which are positioned in the same acoustic plane as the woofer enclosure, but they go a step further, and an LED is mounted in the mid-range and tweeter enclosures and is

1976: ADC CLAIMS THE XLM MK II SHOWS "NO PERCEIVABLE WEAR OVER THE LIFE OF A RECORD." AND PROVES IT.

1977: ADC CLAIMS THE NEW ZLM WITH THE ALIPTIC™ STYLUS HAS EVEN LOWER WEAR AND BETTER PERFORMANCE. AND PROVES IT AGAIN.



Introducing the ADC ZLM cartridge with the ALIPTIC ¹ stylus. It's a revolutionary new cartridge design that has taken the state of the art a giant step closer to the state of perfection.

Because of last year's XLM MK II record wear test results, we confirmed our thinking on how to design the perfect stylus tip shape. It combines the better stereo reproduction of the elliptical ² stylus shape with the longer, lower wearing, vertical bearing radius of the Shibata ³ shape. The result is our revolutionary new ALIPTIC stylus.

And that's only the beginning. The ALIPTIC shape is polished onto a tiny .004" x .008" rectangular nude diamond shank, which has reduced the tip mass of the XLM MK II by an incredible 50%. This tiny stone is mounted on our new, tapered cantilever, which reduces effective tip mass even further.

The XLM MK II tests also proved the importance of tip polish in reducing record wear. So the ZLM is polished with a new, more expensive, more effective patented polishing method.

The ADC XLM MK II has long been known for its uncolored, true sound reproduction. The ZLM goes even further. Sound reproduction is completely open and spatial. And individual instrument placement can now be identified with even greater ease.

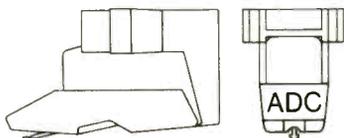
The ZLM tracks between 1/2 and 1 1/4 grams. Frequency response is ± 1dB to 20kHz and is flat to even higher frequencies; out to 26kHz ± 1 1/2dB.

As you can see, by reducing the tip mass even further, we've come closer to the ultimate in pure sound reproduction. To prove it, every ZLM comes with its own individual frequency response curve ¹, signed by the ADC technician who tested it.

This means that the ZLM cartridge will reach every sound lying dormant in your records, transmitting them faithfully through your hi-fi system without altering the sound or the health of your records.

Not only do we think the ZLM is one of the most exciting cartridge designs to come along in years, but we can prove it.

Superior performance we can prove.



ADC
A BSR COMPANY

CARTRIDGES

Audio Dynamics Corporation
Pickett District Road
New Milford, Conn. 06776

ALLISON:THREE

Press comment:



STEREO

Vol. 10
No. 2
Spring
1977

24

"The overall sound quality of the ALLISON:THREE was exceptionally clean and clear, with excellent definition. There were no signs of strain; distortion was very low, even at substantial power levels.

"On our pure-tone tests, the ALLISON:THREE proved to be one of the lowest-distortion bass reproducers that we've come across. There was no evidence of midrange or tweeter buzzing either.

"In its price range, we'd match the ALLISON:THREE with the best systems we've auditioned, and we wouldn't hesitate to compare it favorably with many loudspeakers that are considerably more expensive.

"All drivers are of Allison manufacture and appear exceptionally rugged.

"We'd like to digress for a moment and comment on this manufacturer's literature. Simply stated, it's the best we've seen. Loudspeakers generally come with a paucity of information, and what there is of it is frequently "hyped." This is hardly the case with Allison... If we were to give a "consumer-protection" award to a speaker manufacturer, our candidate would be Allison Acoustics."

A reprint of the entire review and our informative product catalog are available on request.

ALLISON ACOUSTICS

7 Tech Circle, Natick, Massachusetts 01760

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only visible when the speakers and the listener are in optimum listening relation. Both mid-range and tweeter enclosures are manually adjustable in aid of this feature. Another time-delay compensated speaker is the Symdex RST. This is a five-way hybrid loudspeaker, with a 12 in. subwoofer, 10 in. mid-woofer, mid-range, and mid-tweeter, all of which are dynamic drivers, and an electrostatic array handles the higher frequencies above 9 kHz. Here too, the drivers are all positioned for a common acoustic plane. This is a big speaker...nearly 4½ feet in height, and cosmetically it reminds one of the Fulton Model J speaker.

Speaking of the Model J, Bob Fulton was proudly demonstrating it as part of what he calls "The Music System." This comprises turntable, arm, cartridge, preamp and amplifier, and the Model J speakers. The equipment is from manufacturers like Shure, Audio Research, and Bravura and has been modified by Bob Fulton to the particular requirements of his system. He was feeling good because his "Music System" had been chosen by *The Stereophile* magazine as the "state-of-the-art" system. It certainly was one of the best sounding systems at the Show, with a smooth well-balanced spectrum which did justice to Bob's own fine recordings.

JBL was demonstrating what was for them a radical departure from the type of speakers they have been producing over the years...the model L212. This consists of two panels roughly 4 in. in depth, each containing a three-way speaker system. The reason for the shallow depth is that at 70 Hz, they crossover to a common bass commode. This commode has its own 50-watt amplifier and equalizer. Since frequencies of 70 Hz and below are non-directional, the "Ultrabass" as JBL calls it, can be placed almost anywhere in a listening room (and no doubt to the delight of the ladies, hidden from sight), which allows this system great flexibility. Although in their advertising the panels look almost monolithic, actually with their integral stands they are only about 38 inches in height. Quite efficient, the whole system puts out a very big sound. Price is \$1740.00.

You can always trust Gene Czerwinski of Cerwin-Vega to come up with something different. Gene has this new S1LS2 three-way speaker system that has what he calls a "thermo vapor suspension." Huh? It seems Gene has discovered a very heavy inert gas, much heavier than air, which he places in a sealed plastic bag and places in the speaker enclosure.

Because the acoustic impedance of the gas inside the box is greater than with air, it lowers the box compliance and aids in damping and loading the speaker cone for better bass response. As usual, Gene's speakers can "out-punch" practically anything, but he was very conservative this year.

Best sound at the Show? The honor has to go to Mark Levinson's HQD System. This consists of two Hartley 24-inch woofers in specially made 4x3x2-foot enclosures, stacked pairs of Quad electrostatic speaker panels in special frames built for this stacking, and two Decca ribbon tweeters. All this is driven by either Levinson ML-1 or LNP-2 preamplifiers, two LNC-2 electronic crossovers, a pair of the Levinson ML-2 Class-A amplifiers for the woofers, another pair of ML-2 for the mid-range, and still another pair for the tweeters. Crossover points are at 100 Hz and 7 kHz. The result with the very best program material is a sound of utter cleanness, of crystal transparency, razor sharp transient response, and solid, well-defined bass, a totally natural sound that is absolutely nonfatiguing. A stellar accomplishment, and a product for those who are totally committed to music and have the means to afford such a system.

Auto Hi Fi

Now for some special items...to Dr. Godehard Guenther of ADS must be accorded a hearty round of applause for one of the most sensational items at the Show...the ADS Compu-Tuner, a car tuner/preamplifier. This tiny unit (2 in. high by 7 in. wide by 6½ in. deep) is one of the most sophisticated products in all of audio. The Compu-Tuner is a micro computer-based FM/AM digital tuner-preamplifier for automotive high fidelity installations (it can be used in the home as well). This tiny system has no moving mechanical parts and employs calculator type keys for all functions, such as volume, tuning, tone control, source selection, store, recall, and others. The Compu-Tuner can electronically store up to 20 FM stereo and AM stations. A large four-digit LED readout displays operating modes, FM or AM frequency, memory locations, and auxiliary messages. The unit has a crystal-controlled frequency synthesizer. It contains a central processor unit which executes all instructions called for by its pre-programmed read-only-memory (ROM) and those entered through the tuner keyboard to the random access memory (RAM). Stored stations can be recalled at the touch of one key. Automatic scan,

AUDIO • October 1977

Remember the plug-in-shell?

Thorens Isotrack Series Turntables proudly introduce the Plug-In Arm.

Thorens introduces an exciting new tonearm design to complement its highly sophisticated, new manual turntable series. Thorens has eliminated the headshell and its collar connection by incorporating the headshell and tonearm rod in a straight tubular design only 7.5 grams in effective tonearm mass. This reduction in mass (up to 50% that of other tonearms) reduces the inertial forces that affect stylus pressure. Tracking is improved, distortion lowered and stylus and record life are extended. Thorens Isotrack tonearm assures optimum performance with the newest, light weight, high-compliance pick-up cartridges.

The accent is on quality

—The high-speed stability and silent opera-

tion of the belt-driven 16-pole synchronous motor is a tribute to Thorens traditionally advanced engineering. The natural elasticity of the belt filters motor vibrations from reaching the platter, and therefore, the pick-up stylus. In more than twenty years of continuous development, and the manufacture of nearly one-million Thorens turntables, Thorens has brought its belt-drive design to a level of technical perfection not approached by *any other drive system known today.*

Thorens Isotrack turntables featuring the "mini-mass" tonearm—now at your Thorens Isotrack series Dealer, or for further details write:

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ELPA MARKETING
INDUSTRIES, INC.

East: Thorens Bldg.,
New Hyde Park, N.Y. 11040
West: 7301 East Evans Road,
Scottsdale, Ariz. 85260



Pictured Above: Top Right—TD-126C • Lower Right—TD-145C
Lower Left—TD-166C • Top Left—TD-160C



416+100= Double Dyna

When sonic perfection is the goal, sheer power is not enough. The new "double Dyna" STEREO 416 is—there is no other term—State of the Art. Double the number of output transistors in the most proven high power amplifier, Dynaco's Stereo 400, to create the most advanced power house without a whisper of limiting. Absolute accuracy into the most difficult loudspeaker loads. 300 WATTS CONTINUOUS AVERAGE POWER PER CHANNEL INTO 4 OHMS*, and over 400 watts short-term continuous power per channel at 2 ohms. Circuits have been further refined with a switchable front end by-pass and close tolerance components for improved detail and smoothness. Two-speed fan cooling, rack mounting, and digital control LED readouts for the most accurate power monitors.

*Measured in accordance with the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

Then add the ultimate: The C-100 Energy Storage System. This supplemental power supply reserve adds 100,000 microfarads of capacitance for perfectionist listeners who distinguish the subtleties of reproduced music that defy conventional specifications. A single C-100 quick-connected to the STEREO 416 improves detail and transparency from the lowest bass to the most delicate highs. At any volume setting from background music to all-out demonstration—if you know your sound, you won't believe the difference.

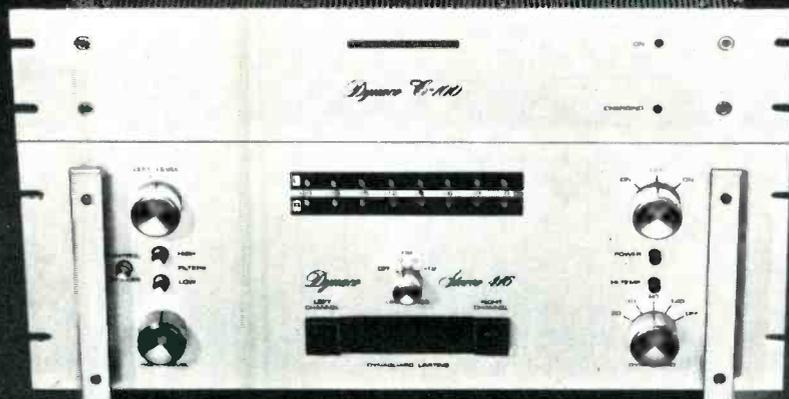
Write for the new Stereo 416/PAT-5 BI-FET brochure. Ask your dealer for an in-depth demonstration. Don't be switched. If not available at your dealer, phone Mike Patrick collect at 609/228-3200, or write Dynaco, Dept. A-10.

dynaco

Box 88, Blackwood, N.J. 08012



Stereo 416—kit, under \$650; assembled, under \$850.



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memory scan, and direct frequency keyboard entry of the desired station are possible for both AM and FM. The Compu-Tuner has a high quality preamplifier with a digital 2-dB stepped electronic volume control, which has a dynamic range of 82 dB. Digitally controlled contouring and filter circuits are also provided. The preamplifier has sufficient signal to drive ADS amplified loudspeakers and can also be interfaced with regular booster amplifiers. With all this fancy control functions, the Compu-Tuner has a full complement of all the goodies found in full size tuners, such as FM front end with dual-gate MOSFET input stage, a balanced IC mixer, and electronically tuned r.f. sections. The i.f. strip utilizes two IC limiters and cascaded phase-linear ceramic filters. A balanced quadrature detector and a phase-lock-loop decoder are utilized. Clearly, this unique ADS Compu-Tuner indicates the direction in which digital technology is moving and is a foretaste of new revolutions to come.

Sony showed its Betamax video tape recorder with the pulse code modulation adaptor, but I was never in the room with anyone who could demonstrate the unit. Videotape looms large in the future, as evidenced by the appearance of more recorders. JVC introduced its Vidstar, a unit with two-hour recording capability that elicited much favorable comment. Philips/Magnavox announced they would be using Matsushita VHS system video recorder with its four-hour recording capacity. RCA opted for the same unit.

Elcasetts were shown by Teac, Technics, and Sony, and things may start moving in this format since Sony has decided to license other companies to make the tape on a license-free basis.

Lastly, quadrasonics remains moribund, but everyone is eagerly awaiting the outcome of the FCC tests. JVC has the fine new noise-gate CD-4 demodulator, which does a great job on even some of the older CD-4 records. The unit can be purchased through the JVC cutting center in Los Angeles. Sansui still flies the flag with some quadrasonic receivers. Tate has their SQ chips in production as I related to you in my AES report. At the Show they were demonstrating the synthesizer function of their unit, and the results were very fine indeed with a wide range of program material.

That wraps up the summer CES for this year, and as usual, there were far more pieces of interesting gear than we can possibly cover. *A*

AUDIO • October 1977

TRUTH IN LISTENING



Call it accuracy.
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Or flat energy response.

We at AR simply call it "truth in listening," and when you think about that you realize it's what high-fidelity is all about.

And it's one of the reasons the hottest new name in speakers seems to be the one you've known for so many years: AR.

Because we've made some changes, always remembering that "truth in listening" made us what we are today.



We've refined styling.
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cover the market from about \$65 to about \$450.

We've improved power-handling with revolutionary liquid-cooled drivers.

We've even up-graded distribution so that now you'll find AR only in quality high-fidelity stores.

And if all this sounds good, ask about the AR warranty on performance.

You'll like what you hear, and that's a promise.

For information and "specs" pick up our new catalog from your high fidelity dealer or write to us at the address below.

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With a Keith Monks Record Sweeper. Built to provide day-to-day care for records, while they're being played, the Record Sweeper has low-friction all-metal pivot bearings and a solid metal pedestal.

And the Record Sweeper has a special non-ferrous static conductor built into the brush assembly. A simple connection to the turntable earth collects static charges from the record surface—so records stay cleaner longer!



SOUND CLEAN...

More than 5,500 Keith Monks Record Cleaning Machines are in use by professionals, throughout the world. Record dealers use them to provide a profitable on-the-spot record cleaning service, too.

For keeping records in immaculate condition—the Keith Monks Record Cleaner is unbeatable! Known the world over as the only effective method of cleaning records.

28

...ON THE LEVEL

With a Keith Monks Turntable Levelling Kit. High-accuracy spirit level and precision screw feet give a level turntable in seconds. So anti-skating works efficiently, rumble is minimised, mechanical wear is reduced!

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Audioclinic

Joseph Giovanelli

Tuner Selectivity

Q. Please explain to me selectivity, i.f. rejection, and image rejection.—Warren Laliberte, Ozone Park, N.Y.

A. By the term selectivity we refer to the ability of an FM tuner to reject stations which are nearby in frequency to the desired signal. Generally a tuner will not have tremendously good selectivity between the desired channel and the immediately adjacent channel, but this is not a problem because stations occupying adjacent channels are never assigned to the same listening area. Therefore what we usually are concerned with is "alternate channel selectivity," which is given in terms of the ratio of the desired signal to one removed by the distance of one FM channel, and not the adjacent one.

Every tuner or receiver has what is known as an i.f. (intermediate frequency) amplifier and all incoming signals are altered so they can enter the i.f. amplifier. The operating frequency of this amplifier is 10.7 MHz, which is a popular one used by overseas transmission for all kinds of information, voice, facsimile, and teletype traffic. If the tuner is poorly designed, some of these signals will find their way into the i.f. system and be heard along with the desired signal. The ability of the tuner to reject these signals is a measure of its i.f. rejection.

If you own an inexpensive FM portable radio you have, probably, at one time or another heard aircraft signals from planes, or perhaps from the control tower. These signals are not supposed to be there, and such undesired signals are called "images." The ability of a tuner or receiver to reject these images is a measure of the image rejection of the equipment.

Four-Channel FM

Q. Please enlighten me as to why it is taking the FCC so long to make a decision on broadcasting four-channel sound.—Gene Lake, Viriden, Ill.

A. The FCC has received a number of proposals regarding four-channel broadcasting. The FCC does not have a large staff of engineers and each

proposed system must be carefully considered with a view towards learning which one is actually better. Also, the implications for interference with the SCA services are becoming increasingly important.

Any proposed system which appears to have possibilities must then be tested on FM stations to see how it works out in practice. One thing which must be carefully considered is the possibility of one station interfering with another by the unexpected sidebands produced by a four-channel system. All these things take time.

Any four-channel system will be more complex, not only to broadcast but to be kept in adjustment by station personnel. It is highly likely that the means for this monitoring do not exist at present, but it would have to be designed, tested, and then built.

Cable Distortion

Q. If I want to have a headphone extension outlet in another room with, say 50 feet of cable, between the stereophone output of my receiver and the extension socket, would there be any loss of signal or signal distortion? I've heard that similar arrangements using extremely long cables can greatly lower signal strength.—Vion Sandor, New York, N.Y.

A. I see no problem with running this length of extension to feed your stereophones. By using no. 16 gauge wire for this purpose the results should be excellent. However, longer lengths or multiple outlets will probably require a 70-V system.

Speaker systems require a lot of driving power and any resistance in the interconnecting cable will steal some of this power. Furthermore, the greater the resistance in the cable, the less effective the amplifier will be in terms of maintaining accurate control of speaker cone motion. But, these conditions are not involved with headphones.

If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 401 North Broad Street, Philadelphia, Pa. 19108. All letters are answered. Please enclose a stamped, self-addressed envelope.

AUDIO • October 1977

It's time for everybody else to start playing catch-up. Again.

From the very beginning, experts have acclaimed the performance and feature innovations of Yamaha receivers as nothing less than spectacular.

But now, we've outdone ourselves.

Yamaha is introducing a new line of receivers with such unprecedented performance, it's already changing the course of audio history.

Real Life Rated.TM While traditional laboratory measurements provide a good relative indication of receiver performance, they simply don't tell you how a receiver will sound in your living room in actual operation. So Yamaha developed a new standard for evaluating overall receiver performance under real life conditions. It's called **Noise-Distortion Clearance Range (NDCR)**. No other manufacturer specifies anything like it, because no other manufacturer can measure up to it.

We connect our test equipment to the phono input and speaker output terminals, so we can measure the performance of the entire receiver, not just individual component sections like others do. We set the volume control at -20dB, a level you're more likely to listen to than full volume. We measure noise and distortion together, the way you hear them.

On each of our new receivers, Yamaha's Noise-Distortion Clearance Range assures no more than a mere 0.1% combined noise and distortion from 20Hz to 20kHz at any power output from 1/10th watt to full-rated power.

Four receivers, one standard. On each of our four new receivers, Yamaha reduces both THD and IM distortion to new lows—a mere 0.05% from 20Hz to 20kHz into 8 ohms. This is the kind of performance that's hard to come by in even the finest separate components. But it's a single standard of quality that you'll find in each and every new Yamaha receiver. From our CR-620 and CR-820 up to our CR-1020 and CR-2020.

What's more, we challenge you to compare the performance and features of our least expensive model, the CR-620, with anybody else's most

expensive receiver. You'll discover that nobody but Yamaha gives you our incredibly low 0.05% distortion and -92dB phono S/N ratio (from moving magnet phono input to speaker output).

You'll also discover that nobody else starts out with such a variety of unique features. Independent Input and Output Selectors that let you record one source while listening to another. A Signal Quality Meter that indicates both signal strength and multipath. The extra convenience of Twin Headphone Jacks. Or the accurate tonal balance provided at all listening levels by Yamaha's special Variable Loudness Control.

More flexibility. It's consistent with Yamaha's design philosophy that you'll find the same low distortion throughout our new receiver line. Of course, as you look at Yamaha's more expensive models, it's only logical that you'll find the additional flexibility of more power, more functions, and more exclusive Yamaha features.

For example, there's a sophisticated tuner, with unique negative feedback and pilot signal cancellation circuits (patents pending), that makes FM reception up to 18kHz possible for the first time on a receiver. Plus other refinements like a Built-In Moving Coil Head Amp, Fast-Rise/Slow-Decay Power Meters, and Yamaha's own Optimum Tuning System.

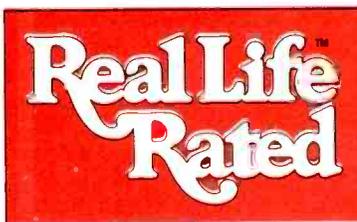
Now's the time to give us a listen. Our new receiver line is another example of the technical innovation and product integrity that is uniquely Yamaha. And your Yamaha Audio Specialty Dealer is an example of uncommon dedication to faithful music reproduction and genuine customer service. It's time you heard them both.

If your Yamaha Audio Specialty Dealer is not listed in the local Yellow Pages, just drop us a line.



YAMAHA

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TURNTABLES

Arm/Cartridge Resonance

Joseph F. Grado*

Is a low mass tonearm better than a high mass tonearm? The answer is a resounding NO! Well, then, is a high mass tonearm better than a low mass tonearm? Again, the answer is NO!

That sounds rather contradictory, doesn't it? But it isn't really. The solution is that there is only one *proper* mass for a tonearm with a given pickup. That particular mass is determined by the compliance of the pickup and the mass of the tonearm which results in the desired low frequency resonance of 8 to 10 Hz.

The terminology of a "low" or "high" mass in relation to a tonearm is really rather academic. If a pickup has a very high compliance (and more times than not, it is unnecessarily high), a low mass tonearm can have the proper arm mass so that the combination resonates in the 8 to 10 Hz range. On the other hand, a pickup with average compliance used in a high mass arm can also resonate at the proper 8 to 10 Hz. So you see the *actual* mass of the tonearm is relatively unimportant, as long as it is mated with a pickup of the proper compliance, so that the proper resonant frequency is achieved.

The danger in all this is that, unless a rare happening occurs, all pickup and tonearm combinations will be mismatched to some degree.

Effect of Improper Resonance

If a pickup of average compliance resonates at the proper frequency of 8 to 10 Hz in a high mass tonearm, then

when this cartridge is installed in a low mass arm, the combination will resonate at a higher frequency, e.g. 14 to 15 Hz. The audible result is mistracking in the high and low frequencies, that is a thin bass and rather frizzy highs with a loss of dimensional reproduction.

If a pickup with the proper compliance for a low mass arm, i.e. the combination resonates at 8 to 10 Hz, is mounted in a high mass arm, this results in a lower resonant frequency, e.g. 5 to 6 Hz. The result for the user is no reduction in tracking capability, but audibly there would be greater bass output. This increase in bass is not bass energy reproduced from the disc, but rather is a result of the interaction between the cartridge/tonearm's resonant frequency and the turntable suspension's resonant frequency. This could be considered as feedback which is just beginning to intrude into the sound. This sounds like overuse of a loudness contour control, where the audible bass becomes soft and spongy and there is a large dip in the mid frequencies.

If this same pickup were installed in a very, very high mass arm, then the above condition would be worse and the pickup/tonearm combination would be very susceptible to feedback. This is because the closer the tonearm/cartridge resonant frequency gets to the suspension resonant frequency, the more prone to feedback the system becomes. However, the further away the tonearm/cartridge resonant frequency is moved from the resonant frequency of the turntable's

suspension, the less prone the system is to feedback but the more prone it is to mistracking.

One can see from the above discussion that the low mass tonearm can cause mistracking, distortion, and record damage when used with a pickup of improper compliance. The use of a high mass tonearm will only tend to alter the character of the reproduced sound, making it bass heavy, and possibly alter the system's sensitivity to feedback. The presence of feedback sensitivity is a danger signal even the amateur audiophile can instantly recognize and make an effort to correct. However, between the light mistracking, which isn't always recognizable as it adds an "airy" quality to the reproduced sound that is in reality distortion, and actual mistracking, there is an awful lot of potential for record damage.

Adjusting Arm Mass

Looking at Fig. 1, it is easy to see what the effects are when the pickup compliance is not mated to an arm of proper mass so that the combination resonates at 8 to 10 Hz. (Please note that the graph is for illustrative purposes and is not calibrated.)

The obvious question is how one is to tell when the arm/cartridge combination is properly resonating at 8 to 10 Hz. Well, there are special test records which can be used with electronic test equipment to determine the resonant frequency of the combination. These records, however, are not of much use to the average audiophile, as they are designed for engineering and technical applications

*Grado Laboratories, Inc.,
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On the other hand, for the most carefully designed and engineered excursion into sound ever, the Koss ESP™/10 Electrostatic Stereo Headphone is an unparalleled instrument of beauty. It is a perfectly articulated statement of technological and electronic genius so thoroughly sensitive it belongs in a recording studio serving as the last word in monitoring production. The ESP/10's almost boundless frequency response lays out the entire spectrum of sound for your scrutiny, bringing you every spark of timing, a deep, rich flood of bass, and a smooth, clear lake of treble, with every note balanced and defined.

So if you're content to live with the impurities in second best stereo, the

Koss Auditors aren't for you. Only the high-end connoisseur who has taken all the necessary steps toward putting together a system that is true to perfection will acknowledge and appreciate these precise products as breakthroughs in scientific musical development. The personal signature of John C. Koss says that these headphones are for the audiophile. So if you're ready for the best, and you think your system can measure up to the Sound of Koss, hear the headphones that are designed to put it to the test at a specialist in audio products near you. Or write to Fred Forbes, Audiophile Products Division, for more information on the new Auditor Series by Koss.



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Dynamic/10



ESP/10

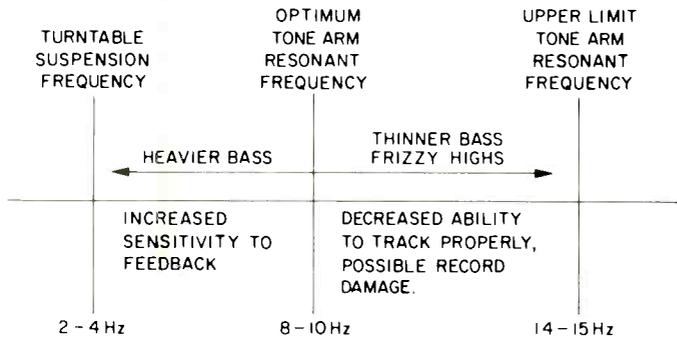


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Fig. 1—Sonic effects of improper resonant frequency of the tonearm/cartridge combination.



and require special test equipment for proper evaluation.

In addition, I believe that the audiophile has for years been misled by compliance figures which have no real meaning. Why? Because these figures are usually not calibrated to a standard. Imagine what a mess things would be if each amplifier maker had his own wattage reference and there was no information available on how each manufacturer made his calculations. Total chaos! And this is, I believe, what is generally happening in the compliance race, and yet this could be easily and quickly cleared up—with one tonearm and one record.

The tonearm would be of a fixed standard mass and would not be made for regular operational use in the home. In addition, it would have as small a tracking error as possible for a very short swing over the record. The test disc would have short sections cut with single frequencies from 4 through 20 Hz, and these sections would be placed on the disc coinciding with the tonearm's optimum tracking radius. Since the tonearm would be of a fixed standard mass, the engineer would simply play each band to determine the resonant frequency of the pickup.

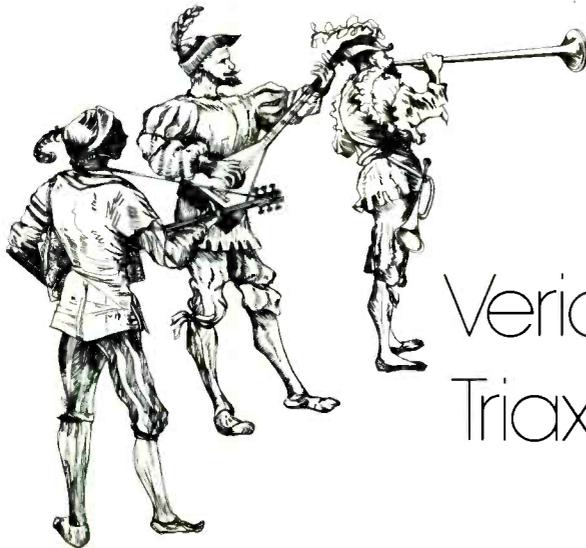
If the arm were a fixed, standard mass, then a calibrated chart could

be supplied with the tonearm and record which would give the figures for dynamic compliance for each recorded frequency. Further, the signals cut into the record could be vertical, lateral, and 45/45, allowing a reading for symmetry of the compliance.

It sounds great for the audio engineer, doesn't it, but not so great for the consumer. But let's take a look at the total picture.

If a phono pickup manufacturer had such a standard to work with, then he could specify a compliance rating according to the standard. If such were the case, then the tonearm manufacturer could specify the mass of his arm including the weight of the pickup for the proper resonant frequency of the rated compliance. The audiophile could easily consult the chart to determine the proper pickup and tonearm combination.

I'll go out on this limb even further. All arms should be and I hope will be made available with adjustable mass. A simple sliding weight on the tonearm tube is all that would be required. Slide the weight toward the pickup, as in Fig. 3, and the arm mass increases. Slide the weight toward the base or mounting of the tonearm, and the arm mass decreases, as shown in

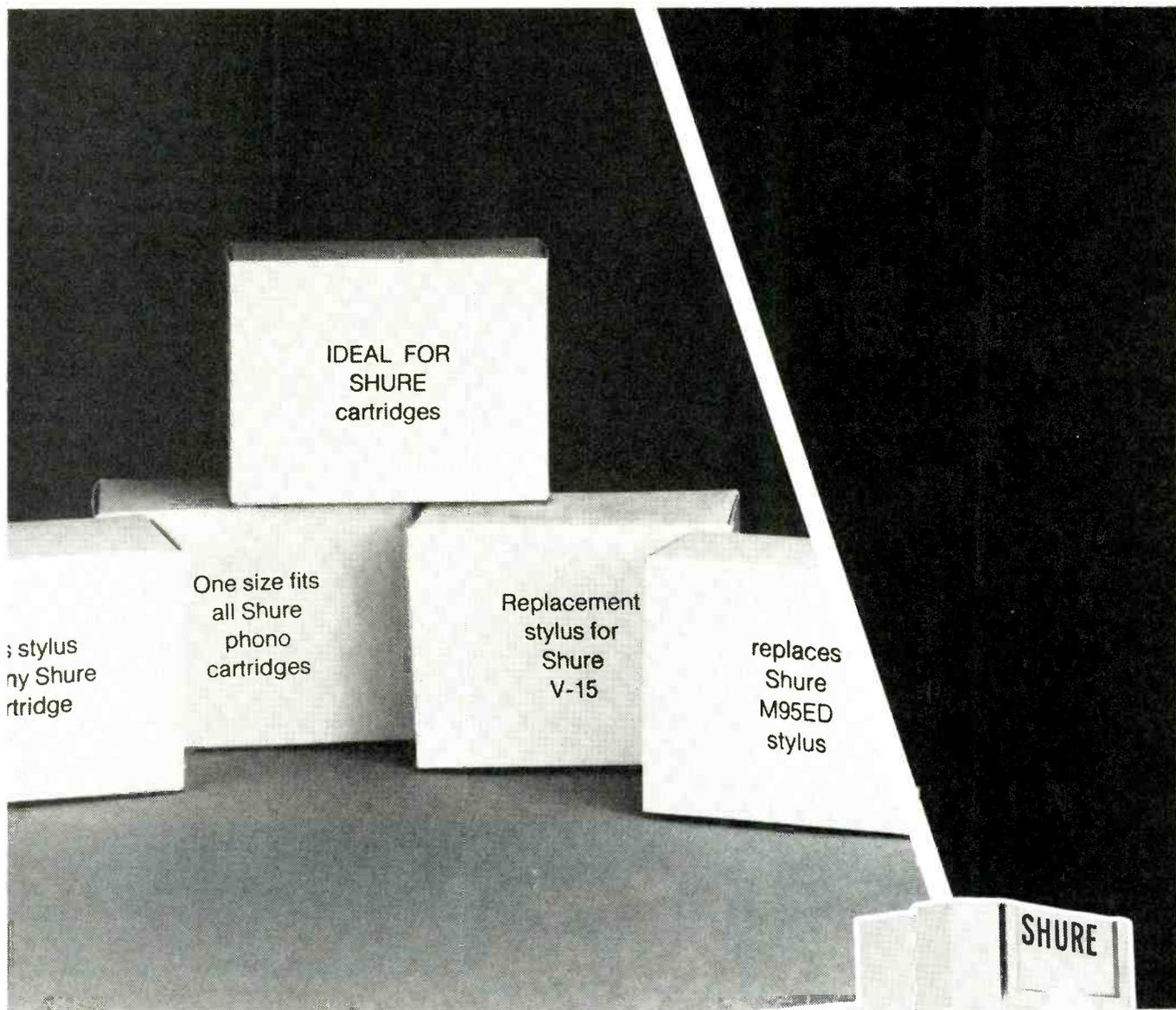


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Needle in the hi-fi haystack.

Even we were astounded at how difficult it is to find an adequate other-brand replacement stylus for a Shure cartridge. We recently purchased 241 random styli that were not manufactured by Shure, but were being sold as replacements for our cartridges. Only ONE of these 241 styli could pass the same basic production line performance tests that ALL genuine Shure styli must pass. But don't

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The criteria for these tests involved the eight standard production line inspections used for all Shure styli: Visual and mechanical inspection, tip configuration, trackability, vertical drift, 1,000 Hz output level measurement, channel separation at 1,000 Hz, channel separation at 10,000 Hz, and frequency response.

Only genuine Shure styli have the name SHURE on the stylus grip and the words "This Stereo Dynetic[®] stylus is precision manufactured by Shure Brothers Inc." on the box.



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Fig. 2—Idealized drawing of record and tonearm of standardized mass used to determine phono cartridge compliance.

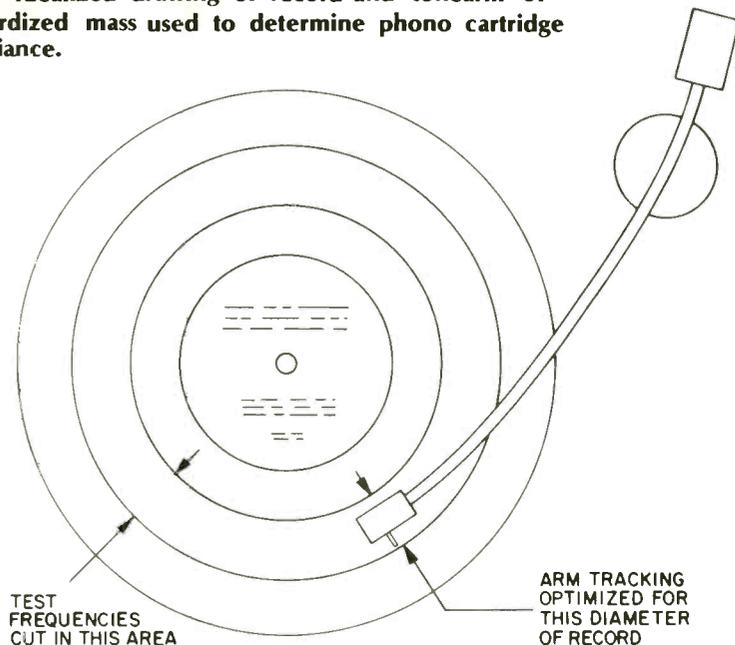


Fig. 4. It would then be a simple matter to tune the mass of the tonearm to the pickup's compliance for optimum results.

If such a standard system were available, it would be a simple matter for the pickup compliance specification

supplied by the maker to be checked against the proper tonearm mass to produce an optimum resonant frequency of 8 to 10 Hz. The consumer would then simply slide the adjustable weight along the arm to the point where the proper mass is produced,

and there you have an optimum pick-up compliance and tonearm mass situation.

Figure 5 shows you a possible graph, illustrative only of course, showing how the system might work using an average pickup and a tonearm with adjustable mass.

Step 1—See cartridge manufacturer's specification for pickup weight. For example, 5 grams.

Step 2—See pickup specification for compliance. For example, #6 on the 1 to 10 scale.

Step 3—Look at the chart to determine the proper mass to the combination to resonate at 8 to 10 Hertz. With the compliance of 6 for our example, go across to the right until you meet the diagonal line, and then read off the proper total arm/cartridge mass from the horizontal scale, 6.5.

Step 4—Mount the pickup on the tonearm, and adjust the tonearm mass for 1.5, which is the 6.5 total from the chart minus the 5 specified by the maker for the cartridge itself. You will then be set for optimum performance.

The procedure would depend somewhat on the cartridge manufacturer maintaining strict quality

New AGI 511A

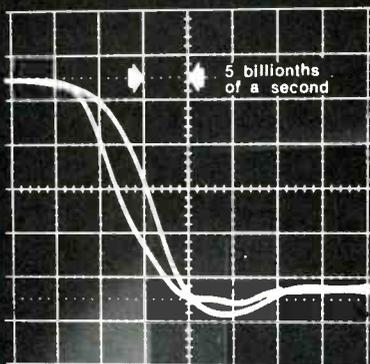
It's different, all right. It's everything the 511 was, plus direct coupled line inputs and a new high speed Bi-FET high level amp that's even quieter. And a choice of greater phono overload margin or high gain for low output cartridges.

It's different because the bi-amplified phono stage is more than 10 times faster than #2. The oscilloscope response shown below using a 2 volt step (input left, output right) indicates a 9 nanosecond phono fall time,

equal to that of the generator. This is so fast, it can reproduce a square wave at 200 kHz more accurately than any other pre-amp at only 20 kHz. So don't worry about TIM distortion. It just doesn't happen with a circuit this fast. And with a bandwidth such as this, RF interference caused by rec-tification is unlikely, even in problem areas.

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- 20 amp power switch
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preservative maintains sound fidelity by reducing record wear. And with its built-in, permanent anti-static property, it resists dust accumulation.

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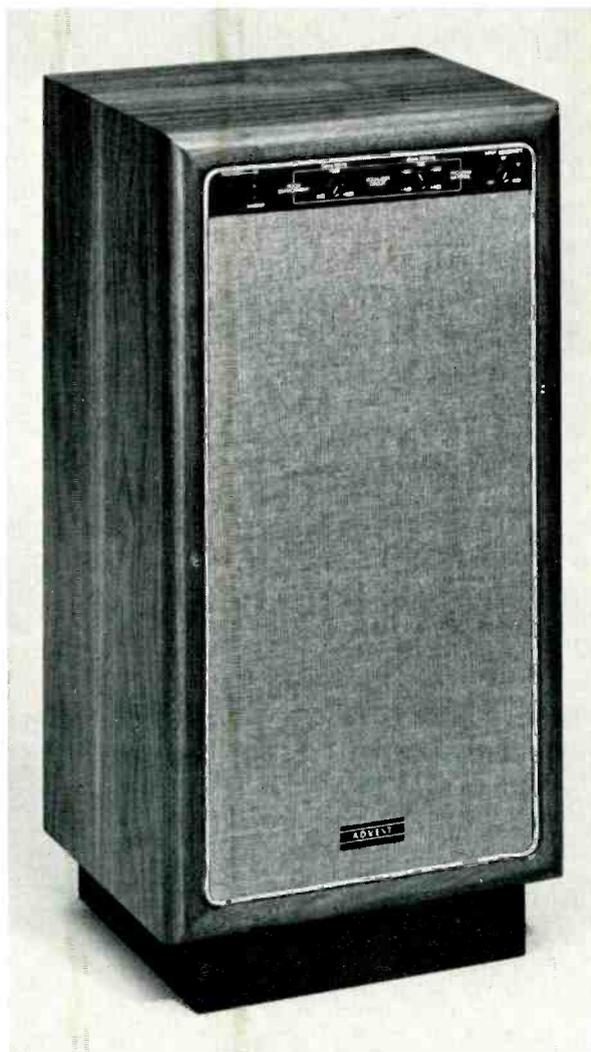


Sound Guard preservative—Sound Guard cleaner—Sound Guard Total Record Care System
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(A Bi-amplified Acoustic-Suspension Speaker System.)

The Powered Advent Loudspeaker.

In designing products at Advent, we take pains to sort out real improvements from those that have more to do with selling equipment than



with buying it. Our aim is to make exceptional products—not exceptionally expensive or complicated or space-hungry ones.

We have felt for quite a while that the only really meaningful advance beyond the loudspeaker performance level represented by the original Advent Loudspeaker, and more recently the New Advent Loudspeaker, might lie in the integration of a speaker and power amplifier. The more we investigated that possibility, the more we could see advantages both in absolute performance and performance-per-dollar that would not come easily (or at all) any other way.

The Powered Advent Loudspeaker is the result of two years' investigation of speaker-amplifier interaction. It is a two-way acoustic-suspension speaker system with built-in bi-amplification. Like the New Advent Loudspeaker, it covers the full audible frequency range, including the final half-octave of bottom bass supplied by very few speakers at any cost. It also offers:

- Very high acoustic output — as much output as a New Advent Loudspeaker driven by a 300-watt-per-channel amplifier. That is a level generally provided only at some sacrifice of frequency range (especially bottom bass) in large multi-speaker systems. The Powered Advent Loudspeaker will provide enough sound to satisfy any likely need for extreme levels in a home or studio listening situation. In reasonable multiples, it will also fill theaters and large dance-floor spaces — offering a level of sound quality that is still largely unknown in those settings.

- An exceptional listening ease that is the product of very low audible distortion. This audible ease is probably the speaker's most important characteristic. It is evident at all listening levels,

particularly the highest. And it very much resembles the open, unstrained "non-loud" quality that we have experienced before only in the best full-range electrostatic speakers.

■ Increased ability to tailor low-frequency and high-frequency response to the requirements of varying source material, room conditions, and speaker placements. The frequency response controls in conventional passive-crossover systems can contour a speaker's sound only by taking part of it away. In the Powered Advent Loudspeaker, the contour controls can boost as well as cut. The under-100Hz bass control provides up to 6 dB of boost at 30 Hz. The high-frequency control provides a range of ± 4 dB at 10,000 Hz, with a gentle slope (beginning at about 3,000 Hz) that is ideal for handling the requirements both of rooms and recordings.

■ A unique sub-sonic filter that prevents non-musical material such as record warp pulses, turntable rumble and acoustic feedback from causing distortion and wasting low frequency amplifier power. This filter reduces response at 30 Hz by only 1 dB, but is down by 24 dB at 5 Hz. The reduction in IM distortion it achieves has a great deal to do with the system's exceptional listening ease.

■ Unique protection both of the dual amplifiers and the loudspeaker drivers. Four separate circuits protect against tweeter or woofer damage, output transistor failure from overdriving or short-circuiting, and amplifier overheating. Three of these circuits are analog computers, and all offer two-stage protection – first the triggering of a warning light, and then, if the listener doesn't correct the situation, shut-down. It remains possible to override these safeguards and do damage in some instances, but it takes effort or concentrated inattention over a considerable period.

■ The ability to be driven by a preamp or tuner-preamp (such as the tuner-preamp section of the Advent 300 Receiver) or directly from the speaker terminals of a receiver or integrated amplifier.

■ A size (almost the same as the New Advent Loudspeaker's) that fits comfortably into a living room.

■ A price, \$450*, that represents the least expensive way to achieve the level of performance that we feel people are looking for in "ultimate" sound equipment.

*Suggested price, subject to change without notice.

Bi-amplification and Integration.

For several years, bi-amplification has been suggested as a better way to power separate drivers in a speaker system. But most of the people who have advocated it have presented it as a way to avoid conventional crossover limitations – which actually aren't all that serious in their effect on speaker performance.

The real potential of bi-amplification, which can be fully achieved only if the dual amplifiers are integrated with the speaker system they drive, is in the reduction of various distortion products at high volume levels.

When an amplifier is driven into clipping by the demands of mid-bass or mid-range musical material, audible distortion occurs in the form of harsh spurious harmonics at higher frequencies. But when separate amplifiers are used to drive a woofer and tweeter in an integrated system, effects of the clipping caused by the demanding mid-bass or mid-range material will not be reproduced by the tweeter and its amplifier.

This design prevents a sense of strain or compression on complex, heavyweight musical material. And it removes what is probably the biggest present obstacle to full-tilt enjoyment of reproduced sound by involved, demanding listeners who want full frequency range, clarity and convincing tonal balance at all listening levels – including the loudest.

There are speakers that offer some of the advantages of the Powered Advent Loudspeaker, but we know of none that combines all of them. We think you will have no trouble hearing what this genuinely new kind of speaker system has to offer. And we hope you will listen to it critically and at length.

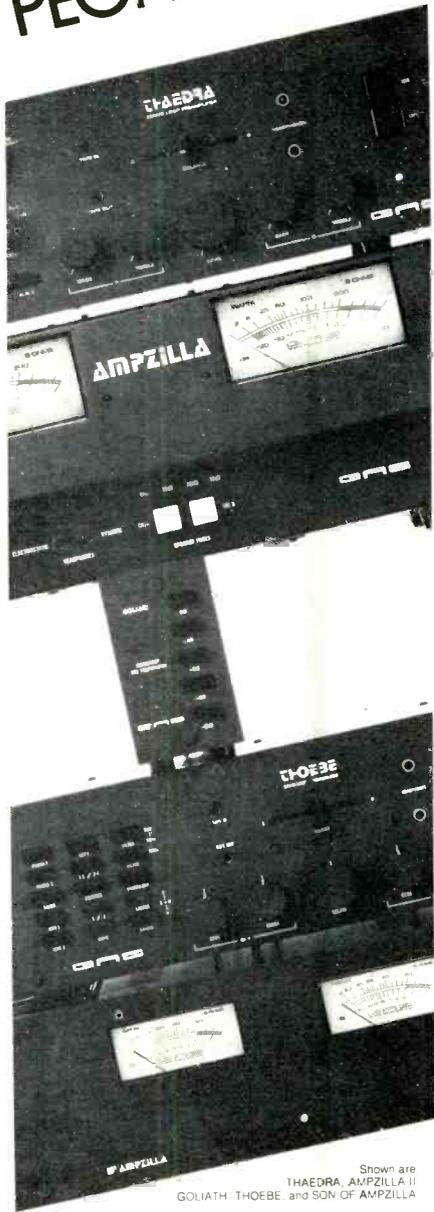
If you would like more information before or after hearing it for yourself, please send us the coupon.

Thank you.

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Advent Corporation, 195 Albany Street, Cambridge, Massachusetts 02139.

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Fig. 3—An adjustable weight, able to be moved along the tonearm tube, can be positioned toward the pickup to increase arm mass.



Fig. 4—If the weight is positioned toward the base or mount of the tonearm, then the mass will be decreased.

control of compliance. However, it is my feeling that if a manufacturer cannot maintain constant compliance, then he should not be in the business. I feel too that such a system as described above will soon appear, so that the audiophile will soon have the means, without any test equipment whatsoever, to very accurately determine the resonant frequency of his particular tonearm and cartridge combination. Knowing the basic resonance frequency and having an adjustable mass arm allows the audiophile to set up the system properly. Best of all, the procedures involved require a minimum of skill for accurate results.

I'd like to digress here to make a point. In the photographic business, the design of enlargers follows some of the design practice used for tonearms. The large negative enlargers are very sturdy and generally the enlargements made with these units are 4X or less (an enlargement

from a 4x5-in. negative to a 16x20-in. print is only 4X).

However, enlargers made for the small format negative, 35 mm, are generally rather flimsy when they should be super sturdy. An enlargement to 16x20-in. from a 35-mm negative is a 16X enlargement. The net result is that the print is not as sharp as possible with the particular camera.

I feel a similar situation exists with tonearms since it appears to me that when a designer makes an arm lighter, he usually makes it flimsier. Thus, if a high compliance designed into the cartridge of your choice requires a low mass arm, then be certain you purchase an arm of very sturdy construction or you will be courting disaster.

Beware of an arm tube which can be easily flexed or one where the pivots rattle easily. It really isn't that difficult to design and build a tonearm that is light in mass yet sturdy in construction. A

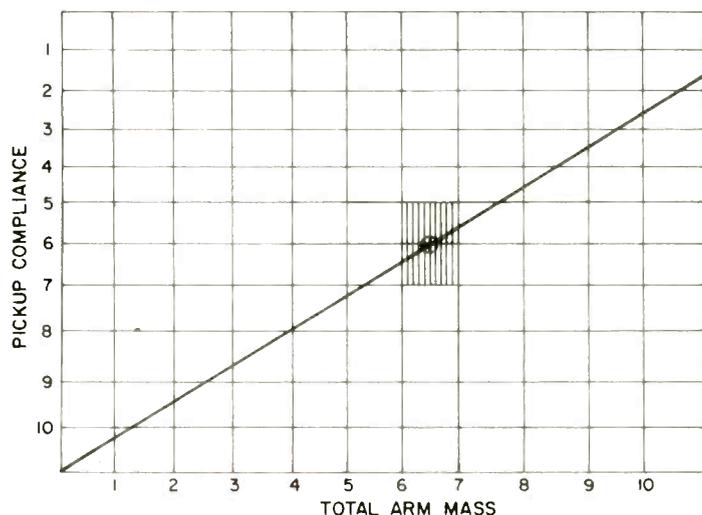


Fig. 5—To properly set the adjustable weight on a moveable-mass tonearm, first find the pickup's specified compliance and weight in the maker's literature. Then go from the compliance figure on the vertical scale until the diagonal line is met, then read off the proper total mass adjustment from the

horizontal scale. Subtract the cartridge weight from that figure and you have the mass adjustment setting. For our example, the .6 compliance gives a total mass figure of 6.5, and subtracting the weight, 5, gives a mass setting of 1.5 (Note: Scales are arbitrary.)



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The Alpha I basic high-power amplifier and Beta I all-FET preamplifier are classics of power and operational ease. Although they have been available for only a few months, they have already garnered critical acclaim.

Following in this tradition is the new Alpha II power amp, with a continuous power output of 110 watts* per channel, with no more than 0.03% THD.

The "rock-steady" Alpha V "Class A" laboratory standard amplifier with AC/DC

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The matching Beta V high voltage FET preamp, atop the Alpha V, is the last word in performance and reliability. It features 3-position mode switching, 5-tape position controls, adjustable impedance/capacitance controls and subsonic filter.

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any other manufacturer.

The professional group from Nikko Audio—each product crafted to provide the utmost in performance and reliability.

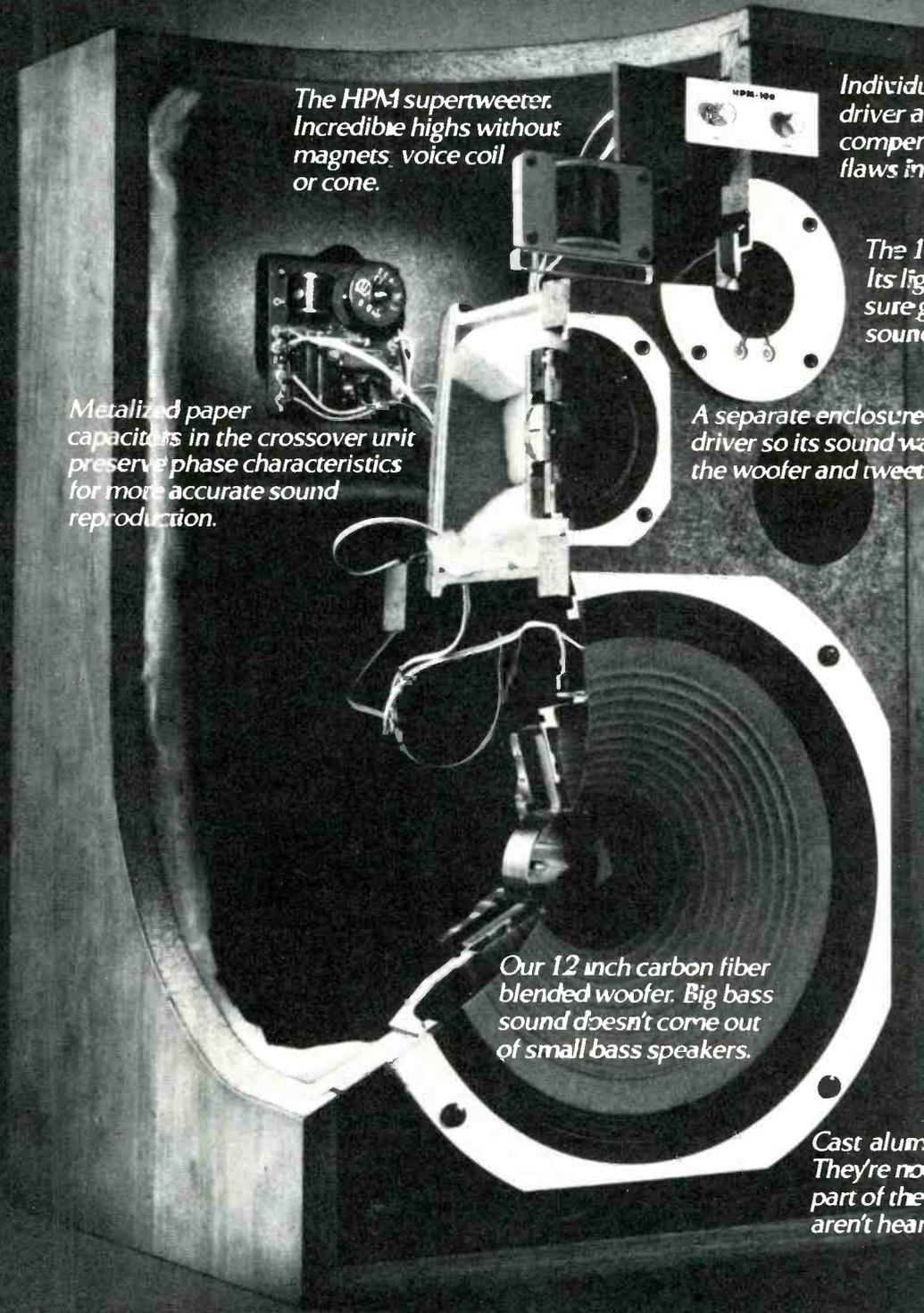
*Minimum RMS, per channel, both channels driven into 8 ohms from 20Hz to 20kHz.

Nikko Audio

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Its light but rigid cone makes
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Our speaker frames are made of heavy cast aluminum instead of the usual stamped metal, so you hear only the speakers vibrating and never their frames.

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Naturally, we could go on. About our 12-1/2 feet of damping material. Or about the aluminum screws that keep our speakers from falling out. They're ordinarily used to keep airplanes from falling apart.

But we figure at this point you'd rather hear our speakers in person than hear any more about them from us.

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The all-around great speaker.

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ANNUAL EQUIPMENT DIRECTORY

Since *Audio* published its first Equipment Directory 19 years ago, the listings have grown from 55 in the August, 1958, issue to more than 2,100 items in 13 different categories this year. Even so, it was impossible to list every product worthy of the adjective "high fidelity," as some makers do not wish to supply specifications, while others did not reply in time.

In such a massive undertaking we must, of necessity, rely on the manufacturer's data, and we have found through our *Equipment Profiles* that the data supplied is usually accurate. The tabular forms have once again been revised this year as an aid in supplying the most pertinent data for each category, although such features

as the letter codes have been retained.

Naturally it is impossible to list all the features for any piece of equipment, and should the reader desire more complete information we suggest that he write directly to the manufacturer.

Addenda to this directory will be published in the December issue.

Manufacturers Directory

42

AB Systems
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ADS
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AKG
91 McKee Drive
Mahwah, NJ 07430

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East Northport, N.Y. 11731

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Hollywood, FL 33020

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P.O. Box 60221
Sunnyvale, CA 94088

Acoustic Research
10 American Dr.
Norwood, MA 02062

Acoustique 3A International
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St. Laurent, Montreal P.Q.
H4T-1P5

Advanced Electronic Circuits
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Audire Labs
(See Roth/Sindell)

Auratone Products
P.O. Box 698
Coronado, CA 92118

Avid Corp.
10 Tripps Lane
E. Providence, RI 02914

BGW Systems
P.O. Box 3742
Beverly Hills, CA 90212

BML Electronics
P.O. Box 711E
Wheeling, IL 60090

BSR (USA) Ltd.
Rte. 303
Blauvelt, NY 10913

Bang & Olufsen
515 Busse Rd.
Elk Grove Village, IL 60007

Bauman Research
1400 Gardenia Circle
Rosenberg, TX 77471

Bertagni Electroacoustics
345 Fischer St.
Costa Mesa, CA 92626

Beta Sound
8120 Chancellor Row
Dallas, TX 75247

Harold Beveridge, Inc.
442 N. Milpas St.
Santa Barbara, CA 93103

Beyer
(See Hammond Industries)

Bigston Corp. of America
9829 W. Berwyn Ave.
Rosemont, IL 60018

Bolivar Speaker Works
Bolivar, TN 38008

Bose Corp.
100 The Mountain Rd.
Framingham, MA 01701

R.T. Bozak Mfg. Co.
Box 1166
Darien, Ct. 06820

Breuer
(See Sumiko)

British Industries Corp.
Westbury, NY 11590

Burhoe Acoustics
78 Stone Place
Melrose, MA 02176

Burwen Research
30 Cross St.
Cambridge, MA 02139

CSI
P.O. Box 2727
Oakland, CA 94602

Cambridge/Cybervox
(See Hammond Industries)

Cannon TLS
8218 Lankershim Blvd.
North Hollywood, CA 91605

Celestion Industries
P.O. Box 521
Holliston, MA 01746

Cerwin-Vega
12250 Montague
Pacoima, CA 91331

Cizek Audio Systems
149 California St.
Newton, MA 02158

Concept
1601 W. Glenlake Ave.
Itasca, IL 60743

Craig Corp.
921 W. Artesia Blvd.
Compton, CA 90220

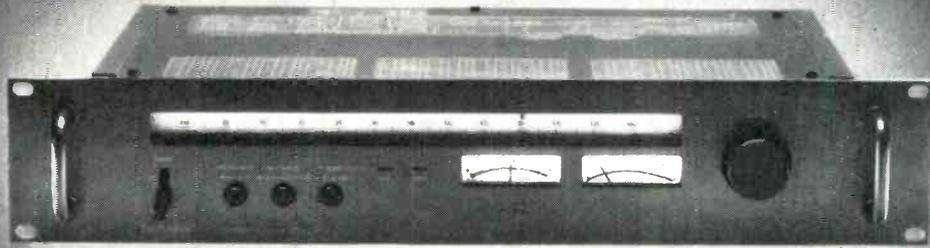
Crisman Speaker Co.
824 Pearl
Boulder, CO 80302

Crown International
1718 W. Mishawaka Rd.
Elkhart, IN 46514

Custom Electronics
1140 Floyd Dr.
Lexington, KY 40505

Continued

Introducing the Technics ST-9030 tuner. Purists would feel better if it cost over \$1,000.



To some, tuners that offer 0.08% THD, 50 dB stereo separation, a capture ratio of 0.8 dB and waveform fidelity should demand a price tag of over \$1,000. But with the ST-9030 this performance can be yours for under \$400*.

That's quite a feat for a tuner. But then the ST-9030 is quite a tuner. It has two completely independent IF circuits: A narrow band, for ultra-sharp selectivity. And a wide band, for ultra-high separation and ultra-low distortion. It even selects the right band, depending on reception conditions, automatically.

Both bands give you the same extended flat frequency response. Because, unlike conventional tuners, the ST-9030 utilizes an electronic pilot cancel circuit that cuts the pilot signal, without cutting any of the high end. It's ingenious. And a Technics innovation.

The Technics ST-9030 has one of the quietest, most sensitive front ends of any tuner. With an advanced linear frequency 8-ganged tuning capacitor and 3 double-tuned circuits plus dual gate MOS

FETs in the 2-stage RF amplifier and balanced mixer circuit. What's more, there's a servo tuning circuit that locks into the tuned frequency, regardless of minor fluctuations. The result: Negligible drift distortion and maximum stereo separation.

Technics ST-9030. Compare specifications. Compare prices. And you'll realize there's really no comparison.

THD (stereo): Wide—0.03% (1 kHz). Narrow—0.3% (1 kHz). S/N: 80 dB. FREQUENCY RESPONSE: 20 Hz—18 kHz +0.1, -0.5 dB. SELECTIVITY: Wide—25 dB. Narrow—90 dB. CAPTURE RATIO: Wide—3.8 dB. Narrow—2.0 dB. IF, IMAGE and SPURIOUS RESPONSE REJECTIONS (98 mHz): 135 dB. AM SUPPRESSION (wide): 58 dB. STEREO SEPARATION (1 kHz): Wide—50 dB. Narrow—40 dB. CARRIER LEAK: Variable —65 dB (19 kHz). Fixed —70 dB (19 kHz, 36 kHz). SUGGESTED RETAIL PRICE: \$399.95*

Technics ST-9030. A rare combination of audio technology. A new standard of audio excellence.

*Technics recommended price, but actual retail price will be set by dealers.

Technics Professional Series
by Panasonic

Enter No. 74 on Reader Service Card

The loudspeaker that listens to you

Most speakers reproduce sound with a certain, pre-determined timbre. Some are strong on bass, for rock music. Some accentuate midrange, for strings and vocals. Others offer flat response, preferred for classical music. But you can't adjust these "preset" speakers. They sound the way they sound, and that's that.

Cannon gives you a choice. Full-access controls let you contour treble, midrange and bass, with an infinite number of combinations possible.

And all Cannon speakers have passive radiators for deep, tight, believable bass. A brilliant piezoelectric tweeter delivers crisply detailed highs over a wide angle of dispersion.

The 1230 three-way 12-inch system shown is just one of four superb Cannon speaker systems, priced from \$169.95 to \$399.95. Audition a pair of Cannons soon. Compare them against the names you know. Listen critically. We're confident they'll speak for themselves.

CANNON-TLS

TRANSLINEAR SYSTEMS

8218 Lankershim Boulevard
North Hollywood, CA 91605
(213) 768-6001



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Manufacturers Directory

DB Systems

Box 187
Jaffrey Center, NH 03454

Dahlquist

27 Hanse Ave.
Freeport, NY 11520

Dayton-Wright

P.O. Box 419
Thornhill, Ontario, Canada

Delta-Graph Electronics

P.O. Box 247
Northgate Station
Seattle, WA 98125

Denon

(See American Audioport, Inc.)

Design Acoustics

2426 Amsler St.
Torrance, CA 90505

Dual

(See United Audio)

Dynaco

P.O. Box 88
Blackwood, NJ 08012

ESS

9613 Oates Dr.
Sacramento, CA 95827

Eastman Sound

Harmony Rd. & Rte. 295
Mickleton, NJ 08056

Electroacoustical Labs

16 E. 42nd St.
New York, NY 10017

Electro-Voice

600 Cecil St.
Buchanan, MI 49107

Elpa Marketing

Thorens & Atlantic Aves.
New Hyde, NY 11040

Empire Scientific

1055 Stewart Ave.
Garden City, NY 11530

Entré

(See American Audioport)

Epicure Products

1 Charles St.
Newburyport, MA 01950

Ercona Corp.

2492 Merrick Rd.
Bellmore, NY 11710

Fidelity Research

P.O. Box 5242
Ventura, CA 93003

Fisher Corp.

21314 Lassen St.
Chatsworth, CA 91311

Frazier, Inc.

1930 Valley View Lane
Dallas, TX 75234

GC

400 S. Wyman
Rockford, IL 61101

GLI

29-50 Northern Blvd.
Long Island City, NY 11101

Gollehon Co.

209 Front St. N.W.
Grand Rapids, MI 49504

Gotham Audio

741 Washington St.
New York, NY 10014

Grace

(See Sumiko)

Grado Labs

4614 7th Ave.
Brooklyn, NY 11220

Graphyx

1550 #F Fullerton Ave.
Addison, IL 60101

Great American Sound

20940 Lassen St.
Chatsworth, CA 91311

Green Dragon Sound

3704 U.S. 52 W
West Lafayette, IN 47906

H and H International

354 State St.
Rochester, NY 14608

David Hafler Co.

Suite 125
7616 City Line Ave.
Philadelphia, PA 19151

Hammond Industries

155 Michael Dr.
Syosset, NY 11791

Handic USA, Inc.

14560 N.W. 60th Ave.
Miami Lakes, FL 33014

Harman/Kardon

55 Ames Court
Plainview, NY 11803

Hartley Products

620 Island Rd.
Ramsey, NJ 07464

Haynes Microelectronics

625 Post St.
Box 413
San Francisco, CA 94109

Heath Co.

Benton Harbor, MI 49022

Hegeman Laboratories

555 Prospect St.
East Orange, NJ 07017

Hitachi Sales

401 W. Artesia Blvd.
Compton, CA 90220

IMF International

720 Marin Ave.
Montreal, P.Q. H4C-2H2
Canada

Impex

34 N. Gore Ave.
St. Louis, MO 63119

Infinity Systems

7930 Deering Ave.
Canoga Park, CA 91304

Innotech

42 Tiffany Place
Brooklyn, NY 11231

Innovative Product Eng.

P.O. Box 2509
West Lafayette, IN 47906

Itone Audio

745-5 S. 40th St.
Richmond, CA 94805

JBL

8500 Balboa Blvd.
Northridge, CA 91329

JR

(See H and H International)

JVC

58-75 Queens-Midtown Expwy.
Maspeth, NY 11378

Janis Audio

2889 Roebling Ave.
Bronx, NY 10461

Jansen

7516 42nd Ave. N
Minneapolis, MN 55427

Jennings Research

2811 Cahuenga Blvd. West
Los Angeles, CA 90068

Jensen Sound Labs

4136 N. United Pkwy.
Schiller Park, IL 60176

KEF Electronics

Intratec
399 Jefferson Davis Hwy.
Arlington, VA 22202

KLH

30 Cross St.
Cambridge, MA 02139

Keith Monks Audio

42 Tiffany Place
Brooklyn, NY 11231

Kelso Imports

41 Madison Ave.
New York, NY 10010

Kenwood Electronics

72-02 51st Ave.
Woodside, NY 11377

King Research

P.O. Box 125
Greenville, OH 45331

Klark-Teknik

(See Hammond Industries)

Klipsch & Assoc.

P.O. Box 280
Hope, AR 71801

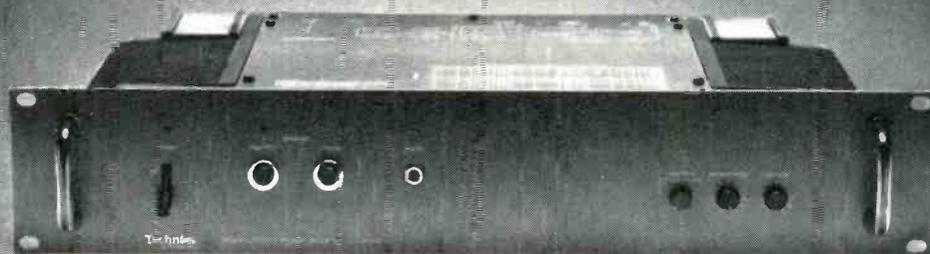
Koss Corp.

P.O. Box 2320
Milwaukee, WI 53212

Kustom Acoustics

6606 W. Irving Park Rd.
Chicago, IL 60634

There are few DC amplifiers in the world
with THD as low as 0.02%.
But there's only one priced under \$400.



Introducing the Technics SE-9060 stereo/mono DC amplifier. Its concept is simple: amplification with inaudible distortion.

How Technics achieved this elusive goal is not quite so simple. Like the difference our newly developed dual FETs make in the current mirror-loaded differential amplifier. They enable the SE-9060 to achieve the DC stability necessary for the highest gain in the crucial first stage.

Another difference is the constant current load and current feedback used in the voltage amplifier to reduce distortion to a minimum. A minimum so low it is barely detectable with the most advanced measuring equipment.

But inaudible distortion was not the engineers' only goal. That's why Technics SE-9060 is a DC amplifier. Each amp section and the NFB loop is direct coupled without the use of any capacitors. So the SE-9060 not only has inaudible distortion, it also

boasts flat frequency response from DC to 100 kHz with almost nonexistent phase shift.

In addition to all the improvements in the amplifier stages, Technics also eliminated all signs of transient distortion with completely independent power supplies for each channel.

Compare specifications and prices. And you'll realize there's no comparison for the SE-9060.

POWER OUTPUT: 70 watts per channel (stereo), 180 watts (mono) min. RMS into 8 ohms from 20 Hz to 20 kHz with no more than 0.02% THD. INTERMODULATION DISTORTION (60 Hz: 7 kHz, 4: 1): 0.02%. FREQUENCY RESPONSE: DC-100 kHz, +0 dB, -1 dB. POWER BANDWIDTH: 5 Hz-50 kHz, -3 dB. S/N: 120 dB (IHF A). RESIDUAL HUM & NOISE: 100 μ V. INPUT SENSITIVITY & IMPEDANCE: 1V/47k Ω . SUGGESTED RETAIL PRICE: \$399.95.*

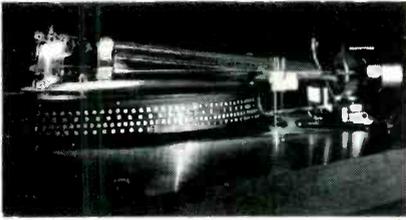
Technics SE-9060. A rare combination of audio technology. A new standard of audio excellence.

*Technics recommended price, but actual retail price will be set by dealers.

Technics Professional Series
by Panasonic

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Stylift... an uplifting idea.



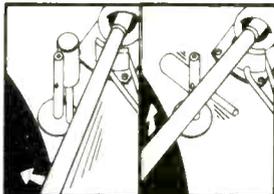
No more dropped tonearms, damaged cartridges and records. It's the Stylift — a revolutionary new device that automatically lifts the tonearm off the record surface at the end of play.

Designed especially for manual turntables

Stylift is a unique mechanical device that uses no magnets, solenoids or photoelectric devices. The precision device is absolutely maintenance-free — no wiring is necessary and mounting the Stylift is simple and easy.

Stylift easily lifts tonearms tracking up to two grams and even has a special counterweight attachment for heavier tracking tonearms.

Stylift is made of polished chromium steel (no plastic) and will provide years of trouble-free



“protection” and convenience for your tonearm and cartridge.

Order Now

To order your Stylift, enclose a check or money order (NO CASH PLEASE) for \$19.95 for each Stylift desired, plus \$1.50 for postage and handling. (California residents: add 6% for sales tax.) Use the attached coupon.

Please allow three to four weeks for delivery of your Stylift.

SATISFACTION GUARANTEED. If not completely satisfied, return within 10 days.

Stylift is distributed by AudioSource, Foster City, California.

AudioSource

1185 Chess Drive
Foster City, Calif. 94404

Please send _____ Stylift(s) for \$19.95 each. Total _____
Add postage and handling of \$1.50 (each). \$1.50
(California Residents: add 6% sales tax.)

TOTAL _____
I enclose check _____ or money order
Charge my BankAmericard _____ Visa _____ Mastercharge _____
Card No. _____ Expires _____
Signed _____
Mail Stylift(s) to:
Name _____
Address _____
City _____ State _____ Zip _____

Place this coupon in an envelope along with your remittance and mail to: AudioSource, 1185 Chess Drive, Foster City, Calif. 94404. Orders received will be processed immediately, however, please allow three to four weeks for delivery.

Manufacturers Directory

LTC Corp.
1401 E. Borchard St.
Santa Ana, CA 92705

H.J. Leak
(See Ercona Corp.)

Lenco
(See Neosonic)

Lentek
(See American Audioport)

Linn
(See Audiophile Systems)

Loudspeaker Design
2710 Garfield Ave.
Silver Spring, MD 20910

Lux Audio
200 Aerial Way
Syosset, NY 11791

MXR Innovations
P.O. Box 722
Rochester, NY 14603

Magitran
311 E. Park Ave.
Moonachie, NJ 07074

Magnepan
1124 First St.
White Bear Lake, MN 55110

Marantz
20525 Nordhoff St.
Chatsworth, CA 93112

Marjen Co.
P.O. Box 251
South Kent, CT 06785

Martel Electronics
970-A E. Orangethorpe
Anaheim, CA 92801

Mayware
(See Polk Audio)

McIntosh Labs
2 Chambers St.
Binghamton, NY 13903

McKay-Dymek
675 N. Park Ave.
Pomona, CA 91766

Melco Sales
3030 E. Victoria St.
Compton, CA 90221

Miller & Kreisel Sound
8719 Wilshire Blvd.
Beverly Hills, CA 90211

Meriton
35 Oxford Dr.
Moonachie, NJ 07074

Micro/Acoustics Corp.
8 West Chester Plaza
Elmsford, NY 10523

J.A. Mitchell
5930 Penfield Ave.
Woodland Hills, CA 91367

Mitsubishi
(See Melco)

Mordaunt-Short Ltd.
(See Hammond Industries)

Nagra Magnetic Recorders
19 W. 44th St., Rm. 715
New York, NY 10036

Naim
(See Audiophile Systems)

Nakamichi Research
220 Westbury Ave.
Carle Place, NY 11514

Neosonic Corp. of America
180 Miller Place
Hicksville, NY 11801

Nikko Electric
16270 Raymer St.
Van Nuys, CA 91406

Norman Laboratories
2278 Industrial Blvd.
Norman, OK 73069

OEM Audio
(See Parenthian Industries)

Oasis
(See Polk Audio)

Ohm Acoustics
241 Taaffe Place
Brooklyn, NY 11205

Onkyo
25-13 43rd Ave.
Long Island City, NY 11101

Optonica
(See Sharp Electronics)

Osawa & Co.
521 Fifth Ave.
New York, NY 10017

Otari Corp.
981 Industrial Rd.
San Carlos, CA 94020

PSB Speakers
P.O. Box 144
St. Jacobs, Ont. N0B 2N0
Canada

Paoli Hi-Fi
P.O. Box 876
Paoli, PA 19301

Paragon Audio
997 E. San Carlos
San Carlos, CA 94070

PS Audio
2734 Industrial Pkwy.
Santa Maria, CA 93454

Parenthian Industries
9301 Wilshire Blvd.
Beverly Hills, CA 90212

A.B. Pearl
(See Ercona Corp.)

Perfectionist Audio
P.O. Box 174
Pleasant Gap, PA 16823

Phase Linear
20121 48th Ave. West
Lynwood, WA 98036

Philips Audio Video Systems
91 McKee Dr.
Mahwah, NJ 07430

Philips High Fidelity Laboratories
P.O. Box 2208
Fort Wayne, IN 46801

Pickering & Co.
101 Sunnyside Blvd.
Plainview, NY 11803

Pioneer Electronics Corp.
75 Oxford Dr.
Moonachie, NJ 07074

Plessey, Ltd.
100 Commercial St.
Plainview, NY 11803

Polk Audio
1205 S. Carey St.
Baltimore, MD 21230

Power Research Products
6146 Reisterstown Rd.
Baltimore, MD 21215

Primo Co. Ltd.
2468 Delta Lane
Elk Grove Village, IL 60007

Professional Systems Eng.
2021 West County Rd. #C
St. Paul, MN 55113

Pyramid Loudspeaker
25-13 43rd Ave.
Woodside, NY 11377

Quadraflex
1301 65th St.
Emeryville, CA 94608

RCS Audio International
1061-B 31st St. N.W.
Washington, D.C. 20007

RTR Industries
8116 Deering Ave.
Canoga Park, CA 91304

Rabid Audiophile Notions
(See Roth/Sindell)

Ram Audio Systems
17 Jansen St.
Danbury, CT 06810

Rank Hi-Fi USA
675 Third Ave.
New York, NY 10017

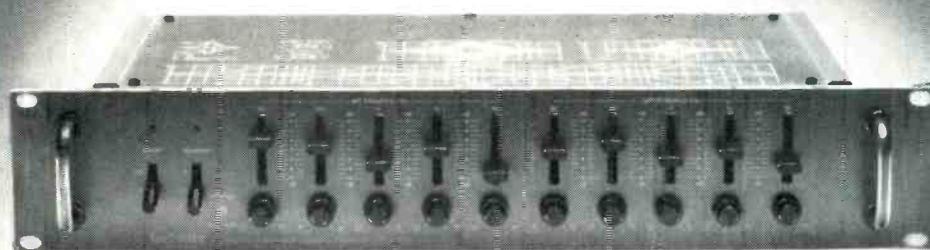
A.S. Rappaport
146 Bedford Rd.
Armonk, NY 10504

Rectilinear
107 Bruckner Blvd.
Bronx, NY 10454

Reference Audio Ltd.
1885 Darling, Suite 201
Montreal, P.Q. H1W 2W7
Canada

Reference Monitor Int'l.
Suite 309
4901 Morena Blvd.
San Diego, CA 92117

Introducing all the features you'd expect from a graphic and a parametric equalizer. At a price you don't. Under \$450.



A radical departure in circuit principles, Technics SH-9010 stereo universal frequency equalizer offers the experienced technician and demanding audiophile the flexibility of both a graphic and a parametric equalizer.

The five bands of each stereo channel have a center frequency that's independently variable. By turning the control knob below each slide pot, the center frequency can be varied up or down by as much as 1.6 octaves. So, unlike conventional equalizers with a fixed-center frequency, the SH-9010 has no frequency "blind spots." What's more, each band of the SH-9010 can adjust to overlap the adjacent band to further boost or attenuate a selected frequency width.

Incredible for the price? You're right. But what's even more incredible is that variable center frequency is just one of the SH-9010's advantages. Variable "Q" or bandwidth is another. With it you can broaden or

narrow any frequency band. Independently or both at the same time. Which means you can balance an entire string section or eliminate an annoying little hum.

Technics' SH-9010. Compare specifications. Compare prices. And you'll agree there's no comparison.

THD: 0.02%. FREQUENCY RESPONSE: 10 Hz-20 kHz (+0, -0.2 dB), 10 Hz-70 kHz (+0, -3 dB). GAIN: 0 ± 1 dB. S/N: 90 dB (IHF: A). BAND LEVEL CONTROL: +12 dB to -12 dB (5 elements x 2). CENTER FREQUENCY CONTROL: +1.6 oct. to -1.6 oct. BANDWIDTH (Q) CONTROL: 0.7 to 2.0. CENTER FREQUENCIES: 60 Hz (Variable 20 Hz ~ 180 Hz), 240 Hz (Variable 80 Hz ~ 720 Hz), 1 kHz (Variable 333 Hz ~ 3 kHz), 4 kHz (Variable 1.3 kHz ~ 12 kHz) and 16 kHz (Variable 5.3 kHz ~ 48 kHz). SUGGESTED RETAIL PRICE: \$449.95*

Technics SH-9010. A rare combination of audio technology. A new standard of audio excellence.

*Technics recommended price, but actual retail price will be set by dealers.

Technics Professional Series
by Panasonic

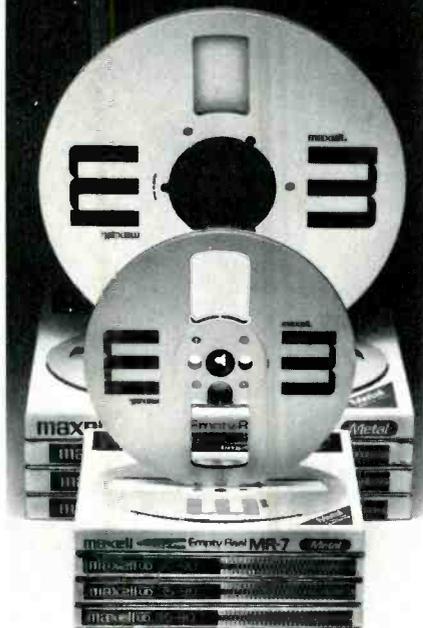
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HOW TO GET THIS MAXELL TAKE-UP REEL FREE.

Now when you buy three 7- or 10-inch, 1.0 mil, Maxell Ultra Dynamic Open Reel Tapes, aside from getting the best recording tape anywhere, you'll get a precision metal Maxell take-up reel at the best price anywhere.

Absolutely free.
Offer good while
supplies last.

Maxell Corporation of America, 130 West Commercial Ave., Moonachie, N.J. 07074.



Manufacturers Directory

Revox
(See Studer)

Rocelco
160 Ronald Dr.
Montreal, P.Q. H4X-1M8
Canada

Rogers
(See Reference Monitor)

Rogersound Labs
6319 Van Nuys Blvd.
Van Nuys, CA 91401

Rotel of America, Inc.
1055 Saw Mill River Rd.
Ardsley, NY 10502

Roth/Sindell
11046 Santa Monica Blvd.
Los Angeles, CA 90025

SAE, Inc.
P.O. Box 60271
Terminal Annex
Los Angeles, CA 90060

SAS Electronics
One Penn Plaza
New York, NY 10001

S.T.A.R. Industries
P.O. Box 22525
Sacramento, CA 95822

Sansui Electronics
55-11 Queens Blvd.
Woodside, NY 11377

Sanyo
1200 W. Artesia Blvd.
Compton, CA 90220

Saras of America
4150 Glencoe Ave.
Venice, CA 90291

Satin (Osawa) Inc.
521 Fifth Ave.
New York, NY 10017

Schlumberger
(See Reference Audio)

H.H. Scott, Inc.
20 Commerce Way
Woburn, MA 01801

Sennheiser Electronics
10 W. 37th St.
New York, NY 10018

Servolinear Audio Products
P.O. Box 4276
Modesto, CA 95350

Setton International
60 Remington Blvd.
Ronkonkoma, NY 11779

Shahinian Acoustics
1004 Old Medford Ave.
Farmingville, NY 11738

Sharp Electronics
10 Keystone Place
Paramus, NJ 07652

Sherwood
4300 N. California
Chicago, IL 60645

Showco
1225 Round Table
Dallas, TX 72547

Shure Bros.
222 Hartrey Ave.
Evanston, IL 60204

Sidereal Akustic
225 S. Poplar St.
Brea, CA 92621

Snell Acoustics
10 Prince St.
Newburyport, MA 01950

Sonab
1185 Chess Dr.
Foster City, CA 94404

Sonex
(See Sumiko)

Sonic Energy Systems
6910 Harwin Dr.
Houston, TX 77036

Sonic Research
27 Sugar Hollow Rd.
Danbury, CT 06810

Sonic Systems
6165 N. Rosemead Blvd.
Temple City, CA 91780

Sony Corp.
9 W. 57th St.
New York, NY 10019

Soundcraftsmen
1721 Newport Circle
Santa Ana, CA 92705

Source Engineering
P.O. Box 506
Wilmington, MA 01887

Speakerlab
5500 35th St. SE
Seattle, WA 98105

Spectro-Acoustics
1308 E. Spokane St.
Pasco, WA 99302

Spectra Sonics
770 Wall Ave.
Ogden, UT 84404

Stanton Magnetics
Terminal Dr.
Plainview, NY 11803

Stark Designs
12111 Branford St.
Sun Valley, CA 91352

Stax
(See American Audioport)

Willi Studer America
1819 Broadway
Nashville, Tenn. 37203

Sugden
(See Reference Audio Ltd.)

Sumiko
P.O. Box 5046
Berkeley, CA 94705

Superex Electronics
151 Ludlow St.
Yonkers, NY 10705

Superscope
20525 Nordhoff St.
Chatsworth, CA 91311

Supex
(See Sumiko)

Swan Trading Co.
Suite 277
2751 Monument Blvd.
Concord, CA 94520

Symdex Speakers
P.O. Box 927
Framingham, MA 01701

Synergistics
P.O. Box 1245
Canoga Park, CA 91304

Tamon
(See Swan Trading Co.)

Tandberg
Labriola Court
Armonk, NY 10504

TAPCO
3810 148th Ave. N.E.
Redmond, WA 98052

Teac Corp.
7733 Telegraph Rd.
Montebello, CA 90640

Toshiba America
280 Park Ave.
New York, NY 10017

Threshold Corp.
1832 Tribute Rd., Suite E
Sacramento, CA 95815

Transcriptors
(See Waech)

Uher
(See Martel Electronics)

Ultralinear
3228 E. 50th St.
Los Angeles, CA 90058

United Audio
120 S. Columbus Ave.
Mt. Vernon, NY 10553

Van Alstine Audio
2202 River Hills Dr.
Burnsville, MN 55337

Videoton
(See Kelso Imports)

Visonik-David
1177 65th St.
Oakland, CA 94608

R. Allen Waech Assoc.
2614 N. 68th St.
Milwaukee, WI 53213

Wharfedale
(See Rank Hi-Fi USA)

White Instruments
P.O. Box 698
Austin, TX 78767

Win Laboratories
158 Santa Felicia
Goleta, CA 93017

Yamaha
6600 Orangethorpe Ave.
Buena Park, CA 90620

1974



We still make them like we used to!
We also still price them like we used to!

Two interesting events just happened that will change everything you thought about the price of tape recorders. Most other machines will cost more. As new 15% tariffs push their price higher, those flashy inexpensive tape recorders will become just plain flashy tape recorders.

Revox machines will cost less. As we switch to direct US distribution, we are able to reduce prices to our 1974 level. Which will save you money on every product in our Revox line.

Times are rapidly changing. So you have to really keep your eyes open as well as your ears. When less costs more, and more costs less, here is the one name to remember.

Revox. You can't buy better at any price. Especially now that our price is less.

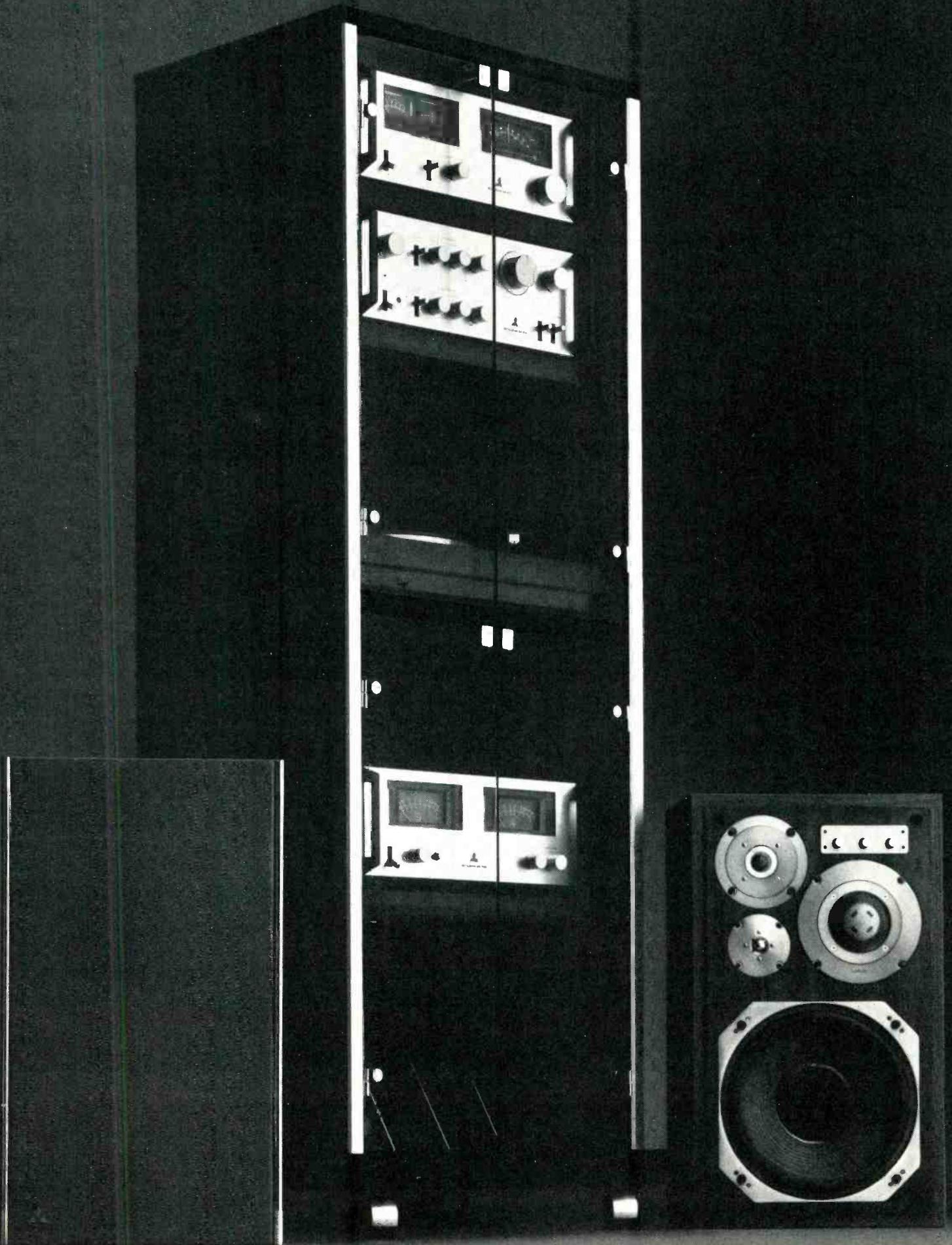
For more information about Revox contact:

STUDER REVOX

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You can't beat The System. You can only change it.

The System, from Mitsubishi.

The only one-name, one-look, high-performance system with speakers as good as the amplifier. An amplifier as good as the pre-amp. A pre-amp as good as the turntable. A turntable as good as the tuner. A tuner as good as the speakers.

And no weak links.

So, no matter how much you care to spend on alternatives, you simply cannot improve The System. You can only make it different.

Consider the loudspeakers, for example. You could substitute other legendary names in the speaker business. But none are so legendary as Mitsubishi, whose speakers are noted for superb design, meticulous construction and testing, and absolutely faultless response.

Or amplifiers. You could substitute others. But none would give you the 80dB inter-channel separation of the Mitsubishi dual-monaural amplifier in The System.

Or turntables. You could substitute something else. But something else wouldn't give you the benefit of our 3 years' exhaustive testing—covering all aspects of performance—that gave our Mitsubishi Logic Control Turntable its superb audio

quality and foolproof operation.

So, what all other names do for music, the one Mitsubishi name does for music. Without the time and trouble of collecting 7 different components from 7 different manufacturers with 7 different warranties to confuse you.

And since The System comes from one company, with one design philosophy and one standard of quality—it has to look better than any diverse assembly of components. (One Mitsubishi equipment rack is worth a thousand words.)

Still, The System isn't inflexible. You can tailor one to your needs, and your available funds. At prices ranging from about \$1,600 to about \$3,000.

Your audio dealer will be happy to audition all the possibilities for you.

All-Mitsubishi.

Or partly Mitsubishi, and partly alternatives.

And we think you'll agree. There aren't really any alternatives.



For more information write Melco Sales, Inc., Dept A,
3030 East Victoria Street, Compton, California 90221.

Preamplifiers



Apt Holman Preamp



Audire Diffet



Audionics BT-2



Audio General 511a

52

| MANUFACTURER | MODEL | Frequency response Hz - kHz, dB | | THD at rated output, % | IM at rated output, % | S/N, "A" wdr, phono re: 10 mV input, dB | Phono sens., mV, phono 1/phonos 2 | Phono overload, mV, phono 1/phonos 2 | Mike input sens., mV | High level sens., V | Tape monitor Z, ohms | Tape mon. output level, V | Dimensions, inches, W x H x D | Weight, lbs. | Price, \$ | NOTES |
|-----------------------|------------------------------|---------------------------------|------|------------------------|-----------------------|---|-----------------------------------|--------------------------------------|----------------------|---------------------|----------------------|---------------------------|-------------------------------|--------------|--------------------|---|
| | | Rated output, V | Gain | | | | | | | | | | | | | |
| ACE AUDIO | Zero-Distortion Basic Stereo | 0-67 +3db | 2 | 0 | 0 | 76 | 10 | 110 | | 2 | 1k | 0.2 | 11x7x3 | 3 | 122.50W | |
| | | 5-100 ±0.5 | 2 | 0.05 | 0.05 | 70 | 2.2 | 250 | | 0.1 | 1k | 0.2 | 11x7x3 | 3 | 99.50K | |
| | 3000 | 1-75 ±1.0 | 2 | 0.01 | 0.01 | 89 | 2.0 | 90 | | 0.2 | 2k | 0.2 | 2½x14½x7 | 4 | 149.50W | |
| | 3100 | 1-75 ±1.0 | 2 | 0.01 | 0.01 | 89 | 2.0 | 90 | | 0.2 | 2k | 0.2 | 2½x14½x7 | 4.5 | 250.00W | |
| ALL-TEST DEVICES | ATD-25 | 20-20 ±0.5 | 8 | | 0.005 | 80 | | 130 | | | | | 8½x7x3 | | 170.00 | Phono preamp only |
| ANALOG ENGINEERING | 520 | 10-60 ±0.5 | 2.5 | 0.004 | 0.001 | 92 | 1.7/10 | 125/125 | - | 0.15 | 600 | 0.5 | 14x10¼x4¼ | 11 | 590.00 | Pre-Preamplifier |
| | 515 | 10-30 ±0.5 | 0.3 | 0.005 | 0.005 | 127 | 0.0005 | 30 | - | - | - | - | 9x3¾x4¾ | 4 | 179.00 | |
| APT | Holman Preamp | 20-20 ±0.5 | 2.5 | 0.01 | 0.01 | 80* | 3/3** | 120/120 | - | 0.25 | 600 | 0.25 | 15x3¼x9 | 10 | 417.00 | *cart. con. **opt. pre-pre plugs in phono 2 |
| AUDIO GENERAL | 511A | 20-20 ±0.1 | 5 | 0.005 | 0.005 | 88 | 5.1 2.2* | 160 70* | - | 0.23 | 560 | 0.23 | 14x5¼x10 | 13 | 435.00 | *Optional high gain phono. |
| AUDIONICS | BT-2 | 20-20 ±1 | 6 | 0.01 | 0.01 | 82 | 2.0 | 150 | - | 0.1 | 10k | 0.2 | 19x3¾x7¾ | 10 | 379.00 | |
| AUDIO RESEARCH | SP-4 | 1-100 (-3) | 2 | 0.005 | 0.005 | 80 | 2 | 300 | * | 0.1 | 2k | 0.5 | 19x3¾x8¾ | 12 | 895.00 | *3 Low level inputs with options |
| | SP-5 | 1-100 (-3) | 2 | 0.005 | 0.005 | 80 | 2 | 300 | | 0.1 | 2k | 0.5 | 19x3¾x8¾ | 10 | 595.00 | |
| | MCP-1 | 5-100 (-3) | 1 | - | - | 80 | 100 | 100 | | | | | | 2 | 150.00 | Moving coil pre-preamp for SP-4/5 |
| AUDIRE (ROTH/SINDELL) | Diffet | 5-100 ±1 | 3 | 0.005 | 0.005 | 92 | 1.2 | 175 | - | 0.1 | 600 | 15 | 19x4x7 | 8 | 475.00 | |
| BGW SYSTEMS | 203 | 20-20 ±0.2 | 10 | 0.01 | 0.01 | 90 | 1.5 | 100 | | 0.2 | 600 | 10 | 19x5¼x10¼ | 18 | 649.00 | Class A |
| | 202 | 20-20 ±0.2 | 10 | 0.01 | 0.01 | 84 | 1.5 | 100 | | 0.2 | 600 | 10 | 19x5¼x10¼ | 18 | 399.00 | |
| BAUMAN RESEARCH | M200-01 | 10-500 ±1 | 10 | 0.01 | 0.01 | 82 | 2/2 | 150/150 | | 0.2 | 200 | 0.2 | 14x2½x8 | 5 | 395.95W 295.95K | |
| BEVERIDGE | "A" | 20-20 ±0.25 | 4 | 0.01 | 0.01 | 85 | 3/3 | 150/150 | | 0.5 | 600 | 0.5 | 16x4x12 | 15 | 800.00 | w/pre-Preamp |
| BOSE | 4401 | 20-20 ±0.2 | 2 | 0.2 | 0.2 | 86 | 2.0/2.0 | 70/70 | | 0.2 | 600 | | 18x6x13 | 12 | 599.00 | |
| BOZAK | 909 | 20-20 ±0.25 | 10 | 0.1 | 0.1 | 90 | 2.5/2.5 | 100/100 | | 0.26 | | 5 | 17½x5¼x6¼ | 12½ | 450.00 | |
| | 919 | 20-20 ±0.25 | 10 | 0.1 | 0.1 | 90 | 2/2 | 80/80 | 0.2 | 0.08 | | 4 | 17½x7x10¼ | 21 | 797.00 | |

Onkyo plays it by ear. We'd rather sell sound than specs.

We are proud of the specifications on our equipment. We have plenty of independent, expert audio testimony that they're good. But all you want is the best sound you can get.

That's all we want to give you.

Because you can listen to equipment with perfect space — if there is — and still not like the sound. We build for warmth and clarity with as little added as is technically possible.

Onkyo has stayed a step ahead of state-of-the-art by building audio equipment for the listener, not the reader of specifications. When you have pure, faithful, rich, transparent sound, the specs have to be right.

We build for a wide, minimally distorted frequency range for

uncolored electronic translation of everything that was put into the program material. If you want to change it to suit your preferences you have the facilities built in. But that's your change, not ours.

When you're buying audio equipment, look at specs if you want. But your best bet is still to play it by ear. And if we didn't have good specs to start with, we couldn't say this.

But specs are the same, whoever reads them. Only you know what you like to hear. Listen. You'll like us.

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Play it by ear
with these
Onkyo components.

A-10 Solid State Integrated Amplifier

85 watts per channel, minimum RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.005% THD. Phono S/N 75 dB. Class A Preamp. Dual power supply. MC Head-amp.

A-7 Solid State Integrated Amplifier

65 watts per channel minimum RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.1% THD. Phono S/N 82 dB. Class A Preamp.

A-5 Solid State Integrated Amplifier

45 watts per channel, minimum RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.1% THD. Phono S/N 75 dB.

T-9 Quartz-Locked Solid State Tuner

The only Quartz-Locked component tuner, featuring pinpoint, drift-free tuning. Dual gate MOSFET front end; 1.7 μ V usable sensitivity; 3 μ V 50 dB quieting. S/N 73 dB

(mono), 65 dB (Frec). 40 dB separation.

T-4 Servo-Locked Solid State Tuner

The only component tuner featuring Servo-Locked for driftless performance. 1.3 μ V usable sensitivity; 3.5 μ V 50 dB quieting. S/N 77 dB (mono), 60 dB (stereo). 40 dB separation.

P-303 Solid State Stereo Preamplifier

Dual line construction featuring Class A push-pull circuitry with no more than 0.006% THD; frequency response 3.5 Hz to 200 kHz. +0, -1.5 dB

(tuner). S/N 70 dB (MC). 83 dB (M/A). Built-in MC Head Amp.

M-505 Solid State Stereo Phonic Power Amplifier

105 watts per channel, minimum RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.05% THD. Frequency response 0-150 kHz, +0, -1.5 dB. S/N 110 dB. Protective relay circuitry.

Enter No. 45 on Reader Service Card

Preamplifiers



GLI 1000

db Systems DB1



GAS Thoebe



Bauman M-200

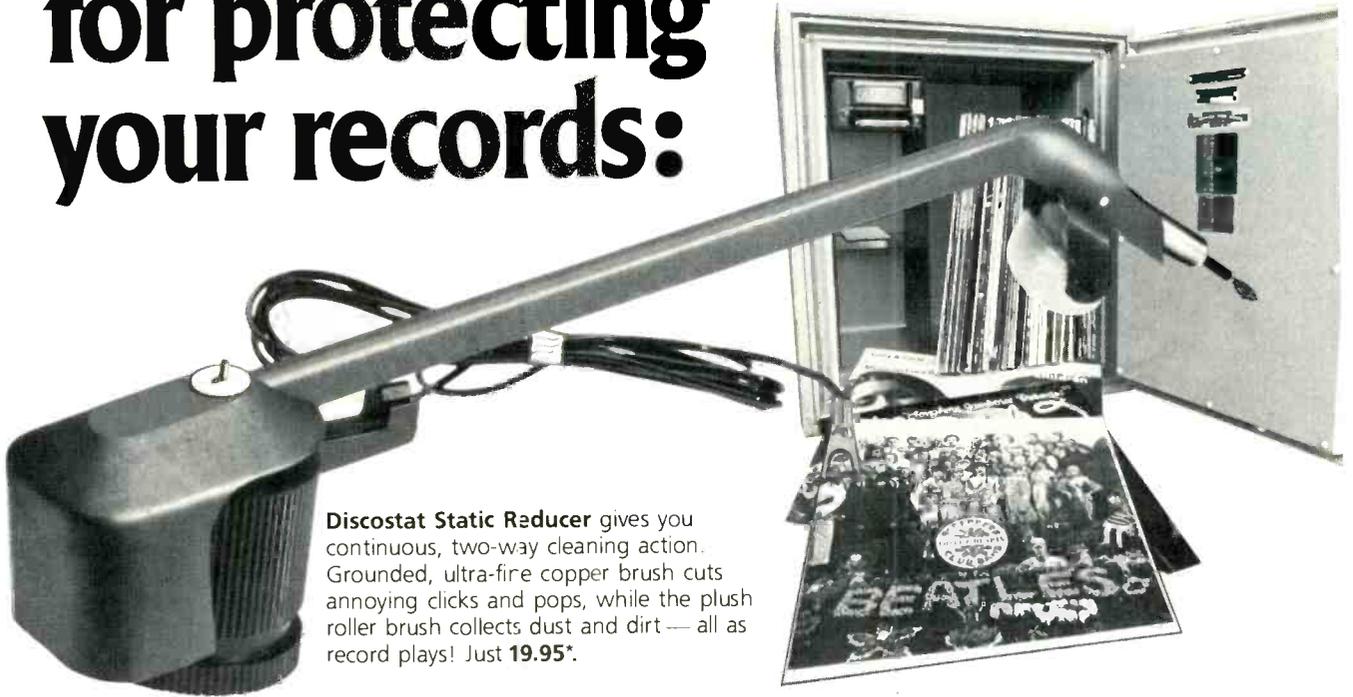


Dynaco PAT-5

54

| MANUFACTURER | MODEL | Frequency response Hz - kHz | dB | | THD at rated output, % | IM at rated output, % | S/N, "A" wtd, phono re. 10 mV input, dB | Phono sens., mV, phono 1, phono 2 | Phono overload, mV, phono 1, phono 2 | Mike input sens., mV | High-level sens., mV | Tape monitor Z, ohms | Tape mon. output level, V | Dimensions, inches, W x H x D | Weight, lbs. | Price, \$ | NOTES |
|----------------------|--------------|-----------------------------|------|--------|------------------------|-----------------------|---|-----------------------------------|--------------------------------------|----------------------|----------------------|----------------------|---------------------------|-------------------------------|--------------|-------------------------------|--|
| | | | 4 | 0.01 | | | | | | | | | | | | | |
| CERWIN-VEGA | PR-1 | 10-50 +0, -0.06 | 4 | 0.01 | 0.01 | 85 | 2.0 | 200 | | 0.25 | | | | 19x2½x13" | | | |
| CROWN | IC-150A | 3-100 ±0.6 | 2.5 | 0.05 | 0.002 | 85 | 1-10 | 33-330 | | 0.22 | | 0.22 | | 17x5½x9" | 10 | 399.00 | Separate power and phono modules. |
| | DL-400 | | | | | | | | | | | | | 17x7x14" | 20 | 1495.00 | |
| DB SYSTEMS | DB-1 | 10-20 ±0.25 | 3 | 0.0008 | 0.001 | 89 | 2 | 160 | | 0.12 | 1000 | 0.12 | | 8½x3¼x7" | 2.6 | 397.00 | Power supply, \$78.00. *Max. gain 30dB; head amp |
| | DB-4 | 10-100 ±0.1 | 1 | 0.0008 | 0.001 | 103 | * | 73 | | | | | | 6¼x4¼x2¼" | 1.1 | 150.00 | |
| | DBR-15 | 10-20 ±0.25 | 3 | 0.0008 | 0.001 | 89 | 2 | 160 | | 0.12 | 1000 | 0.12 | | 19½x3¼x7" | 5.2 | 799.00 | |
| DAYTON WRIGHT | SPS Mk 3 | 4-1000 ±1.5 | 1.5 | 0.001 | 0.0015 | 80 | 1.5 | 105 | - | 0.06 | 10k | 0.06-1.5 | | 6x6½x11" | 7 | 505.00 | inc. headamp & d.c. power supply, pre-preamp only. |
| | SPA | 1-1000 ±1.6 | 1.5 | 0.001 | 0.0015 | 80 | 0.03/1.5 | 14/105 | - | 0.06 | 10k | 0.06-1.5 | | 19x3½x13" | 20 | 1225.00 | |
| | DW535 | 9-500 ±1.5 | 0.01 | 0.002 | 0.0015 | 76 | 0.03 | 14 | - | - | - | - | | 10x2x7" | 7 | 425.00 | |
| DYNACO | PAT-4 | 10-100 ±5 | 2 | 0.05 | 0.05 | 70* | 4.0 | 80 | | 0.2 | 600 | | | 13½x4¼x9" | 10 | 139.00K 229.00W 159.00K | *Unweighted |
| | PAS-3X (T) | 10-40 ±5 | 2 | 0.05 | 0.05 | 70* | 2.0 | 250 | | 0.2 | 47k | | | 13½x4¼x9" | 11 | | *As above |
| | PAT-5 BI-FET | 10-50 ±1 | 2 | 0.007 | 0.007 | 70* | 2.1 | 115/45 | | 0.2 | 15k | | | 13½x4¼x9" | 13 | 289.00K 449.00W | *As above |
| GLI | 3880 | 20-20k ±0.05 | 9 | 0.05 | 0.05 | 78 | 2 | 175 | 2.0 | 0.2 | 600 | 0.2 | | 19x8¼x3½" | 14 | 450.00 | |
| | 1000 | 20-20k ±0.05 | | 0.05 | 0.05 | 85 | | | | | 600 | | | 19x3¾x4" | 8 | 250.00 | |
| GREAT AMERICAN SOUND | THAEDRA | 20-20 0.1 | 2 | 0.01 | 0.01 | 86 | 0.07/1.6 | 3.5/100 | - | 0.2 | 600 | 10 | | 17x6x12" | 33 | 899.00 | |
| | THOEBE | 20-20 0.1 | 2 | 0.01 | 0.01 | 86/86 | 1.6/1.6 | 100/100 | - | 0.2 | 600 | 10 | | 17x5½x8" | 28 | 499.00 | |
| | THALIA | 20-20 0.1 | 2 | 0.015 | 0.015 | 80/80 | 3.2 | 225/225 | - | 0.2 | 600 | 10 | | 19x3½x10" | 11 | 299.00 | |
| | GOLIATH | 20-20 0.1 | 0.2 | 0.01 | 0.01 | | 0.07 | 350 | - | - | - | - | | 2¼x5¼x8" | 5 | 149.00 | |
| DAVID HAFLER CO. | DH-101 | 20-20 ±0.1 | 3 | 0.001 | 0.001 | 88 | 6/6 | 200/200 | | 0.3 | 25k | 0.3 | | 13½x3¼x8½" | 7 | 199.95K 299.95W | |
| HARMAN KARDON | Citation 17 | 5-125 ±0.5 | 2 | 0.001 | 0.0025 | 80 | 2.8 | 180 | | 0.2 | 16k | 0.18 | | 16x4¼x12" | 20 | 575.00 | |
| HEATH | Q AN-2016 | 10-30 ±0.5 | 1.5 | 0.5 | .05 | 75 | 2/6 | | | | | | | 19x6½x14½" | 38 | 599.95K | Opt CD-4 Module, 79.95; Dolby FM, 39.95; SQ Module, 49.95. |
| | AP-1615 | 20-20 ±0.2 | 1.5 | 0.05 | 0.05 | 65 | 2 | 100 | | | | | | 8½x4½x17½" | | 129.95K | |
| HITACHI | HCA-8300 | 5-100 ±1.5 | 20 | 0.005 | | 75 | 2/2 | 100/100 | | | | | | 17¼x6x12" | 14.3 | 350.00 | |

Next best thing to a vault for protecting your records:

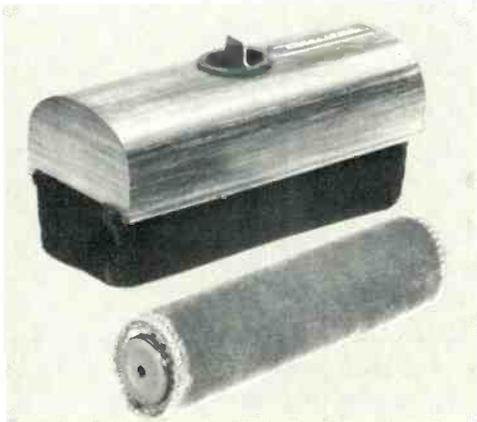


Discostat Static Reducer gives you continuous, two-way cleaning action. Grounded, ultra-fine copper brush cuts annoying clicks and pops, while the plush roller brush collects dust and dirt — all as record plays! Just **19.95***.

Realistic record care accessories

55

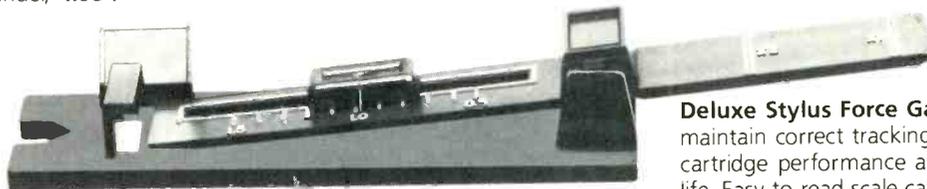
Realistic® makes it easy to keep your discs clean and free of electrostatic charges, so those silent passages stay silent a lot longer. Whether you're looking for a low-cost cleaner for casual use or a sophisticated system for critical applications, you'll find it in the Realistic line. Compare our prices with what you'd have to pay for the other big-name brands. Then take the money we save you and . . . put *that* in a vault!



Exclusive Hydro-Stor® Disc Cleaners — the most convenient manual system ever! Stores fluid for weeks, keeps correct moisture on cover for clean sweep every time. "Pro" model with stand, rosewood handle, **9.95***. Cylinder, **4.95***.



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Deluxe Stylus Force Gauge helps you maintain correct tracking force for top cartridge performance and longer stylus life. Easy-to-read scale calibrated from 0-3.0 grams. Only **1.99***.



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Preamplifiers

Marantz 3600



H/K Citation 17



Hafler DH-101



Hitachi HCA-8300



JVC JP-S7

| MANUFACTURER | MODEL | Frequency response Hz - kHz | | Rated output, V | THD at rated output, % | IM at rated output, % | S/N, A-wtd, 10 mV input, dB | Phono sens., mV, phono 1/phono 2 | Phono overload, mV, phono 1/phono 2 | Mike input sens., mV | High-level sens., V | Tape monitor Z, ohms | Tape mon. output level, V | Dimensions, inches, W x H x D | | Price, \$ | NOTES |
|---------------------------|--------------------|-----------------------------|---------|-----------------|------------------------|-----------------------|-----------------------------|----------------------------------|-------------------------------------|----------------------|---------------------|----------------------|---------------------------|-------------------------------|------|-----------|-----------------------------------|
| | | 1 | 2 | | | | | | | | | | | W | H | | |
| JVC | JP-S7 | 15-100 | +0 -0.5 | 1 | 0.02 | - | 89 | 2.0/2.0 | 350 | - | 0.2 | 50k | 0.2 | 22 1/4 x 6 1/4 x 10 1/4 | 19.1 | 699.95 | |
| | P-3030 | 10-40 | ±0.5 | 1 | 0.005 | - | 90 | 2.0/2.0/0.1 | 300/300/15 | - | 0.14 | 50k | 0.14 | 16 1/2 x 2 1/2 x 13 1/2 | 12.8 | 399.95 | |
| JENNINGS | Control Module One | 5-50 | ±0.25 | 5 | 0.02 | 0.02 | 90 | 2/2 | 500/500 | | 0.25 | 10k | 0.25 | 19 x 2.62 x 10 | 12 | 400.00 | |
| KENSONIC ACCUPHASE (TEAC) | C-200 | 20-20 | ±0.2 | | 0.05 | | 74 | 2.6/2.6 | 400/400 | 2.0 | 0.2 | 200 | 0.2 | 17 1/2 x 6 x 14 | 31 | 650.00 | |
| KENWOOD | L07C | 3-500 | +0-2 | 7 | 0.005 | 0.005 | 97 | 2/0.2 | 350/35 | | | 50k | 0.14 | 19 x 4 x 13 1/4 | | 550.00 | |
| KLARK/TEKNIK (HAMMOND) | DN 15 | 20-20 | ±0.5 | 6 | 0.1 | | 81 | 2.5 | | | 0.1 | 100 | 1.2 | 19 x 5.4 x 10 | 20 | 899.00 | Inc. 11 band octave eq. |
| LUX | 5C50 | 0.5-200 | +0.2 | 1.0 | 0.005 | 0.002 | 92 | 2.5/2.5 | 300/300 | | 0.15 | 50k | 150 | 17.7 x 4 x 16 | 18 | 845.00 | |
| | C-1000 | 2-80 | ±0.5 | 1.0 | 0.007 | 0.007 | 87 | 2.5/2.5 | 420/420 | | 0.15 | | 150 | 19 x 7 x 10 | 22 | 895.00 | |
| | C-1010 | 2-80 | ±0.5 | 1.0 | 0.007 | 0.007 | 87 | 2.5/2.5 | 420/420 | | 0.15 | | 150 | 19 x 7 x 10 | 22 | 645.00 | |
| | CL-32 | 10-40 | ±1 | 1.0 | 0.03 | 0.03 | 89 | 2.0/2.0 | 400/400 | | 0.16 | 560 | 160 | 17 x 3 x 12 | 12.5 | 645.00 | |
| | CL-35/III | 15-40 | ±1 | 2.0 | 0.06 | | 90 | 1.4/1.4 | 450/450 | 0.5 | 0.14 | 600 | 140 | 19 x 7 x 11 | 26.4 | 795.00 | |
| MARANTZ (SUPERSCOPE) | 3800 | 20-20 | ±0.25 | 3 | 0.01 | 0.005 | 82 | 1/1 | | 1 | 0.1 | | | 15 1/2 x 5 1/2 x 9 1/4 | 16 | | |
| | 3600 | 20-20 | ±0.25 | 3 | 0.01 | 0.005 | 82 | 1/1 | | 1 | 0.1 | | | 15 1/2 x 5 1/2 x 9 1/4 | 15 | 499.95 | |
| | 3250 | 20-20 | ±0.1 | 3 | 0.01 | 0.01 | 90 | 1.8/1.8 | 310/310 | 1.8 | 0.18 | 330 | 0.775 | 16 1/2 x 5 1/2 x 9 1/4 | 14.3 | | |
| MCINTOSH | C-26 | 20-20 | +0 | 2.5 | 0.1 | 0.1 | 74 | 2 | | | | 200 | 0.25 | 16 x 5 1/2 x 13 | 18 | 499.00 | |
| | C-28 | 20-20 | +0 -0.5 | 2.5 | 0.1 | 0.1 | 78 | 2 | | | | 150 | 0.25 | 16 x 5 1/2 x 13 | 25 | 649.00 | |
| MITSUBISHI | DA-P10 | 10-70 | ±0.5 | 1 | 0.02 | 0.02 | 73 | 2.2/2.2 | 270/270 | | 0.15 | 60k | 0.15 | 16 1/2 x 6 x 8 | 13 | 290.00 | |
| NAIM (AUDIOPHILE SYSTEMS) | NAC22 | 20-20 | ±0.5 | 1 | 0.02 | 0.02 | -65 | 2.0 | 200 | | 0.075 | 600 | 0.075 | 8 x 8 x 3 1/2 | 4 | 375.00 | Opt. moving coil boards |
| | NAC32 | 20-20 | ±0.5 | 1 | 0.02 | 0.02 | -65 | 0.1/2.0 | 10/200 | | 0.075 | 600 | 0.075 | 8 x 3 x 12 | 5 | 789.00 | Phono 1 magnetic, phono 2 m/c. |
| | NAC12S | 20-20 | ±0.5 | 1 | 0.02 | 0.02 | -65 | 0.1 | 10 | | 0.075 | | | 5 x 3 x 12 | 4 | 515.00 | Built-in moving coil phono stage. |
| NAKAMICHI | 410 | 20-50 | ±0.75 | 5 | 0.003 | 0.003 | 100 | select. 1,2,5 | 250 | | 0.1 | 50k | 0.1 | 16 x 3 1/4 x 8 1/2 | 9.0 | 310.00 | |
| | 610 | 20-100 | ±0.3 | 5 | 0.005 | 0.005 | 100 | 1/1 | 250/250 | 0.2 | 0.075 | 75k | 0.316 | 16 x 6 x 9 1/4 | 15.5 | 580.00 | |
| | 630 | 20-50 | ±0.75 | 5 | 0.003 | 0.003 | 100 | select. 1,2,5 | 250 | | 0.1 | 50k | 0.1 | 16 x 6 x 9 1/4 | 15.5 | 630.00 | Preamp section of tuner-preamp. |

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It's no wonder your records are flat. Before they're pressed, about half of the music's dynamic range has been squeezed out.

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ventional discs offer less than 50dB of dynamic range.

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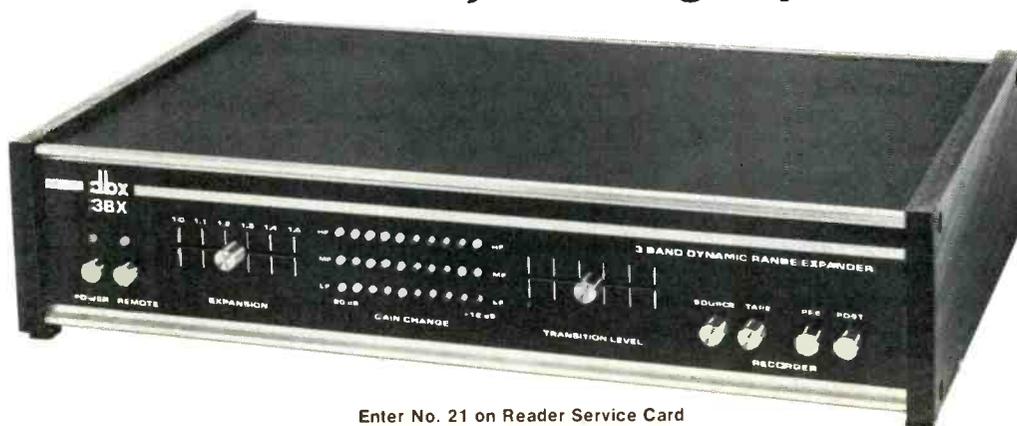
get-priced equipment and state-of-the-art systems. You won't need an audio engineer's ears to hear the remarkable improvement in the quality of your recorded music.

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dbx

dbx, Incorporated
71 Chapel Street
Newton, Massachusetts
02195
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3BX three band dynamic range expander



Enter No. 21 on Reader Service Card

Preamplifiers



Phase Linear 4000



Nakamichi 410



Mitsubishi DA-P10



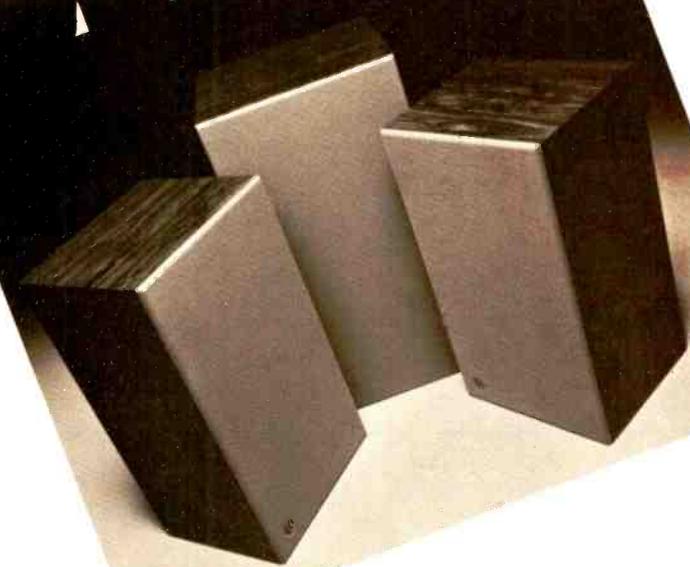
Nikko Beta V



Philips AH 572

| MANUFACTURER | MODEL | Frequency response Hz - kHz | | THD at rated output, % | | IM at rated output, % | S/N, "A" w/c, phono ref. 10 mV input dB | Phono sens., mV, phono 1/phono 2 | Phono overload, mV, phono 1/phono 2 | Mike input sens., mV | High-level sens., V | Tape monitor Z, ohms | Tape mon. output level, V | Dimensions, inches, W x H x D | Weight, lbs. | Price, \$ | NOTES |
|----------------------------------|-----------------|-----------------------------|-------|------------------------|-------|-----------------------|---|----------------------------------|-------------------------------------|----------------------|---------------------|----------------------|---------------------------|-------------------------------|--------------|---|-------|
| | | 1 | 0.015 | 0.015 | 72 | | | | | | | | | | | | |
| NIKKO | BETA I | 10-50 ±0.1 | 1 | 0.015 | 0.015 | 72 | 2.0 | 400 | | 0.1 | 50k | | 2½x19x11½ | 18 | 300.00 | | |
| | BETA II | 20-20k ±0.2 | 1 | 0.001 | 0.001 | 80 | 2.5 | 250 | | 0.15 | 50k | | 2½x19x11½ | | 200.00 | | |
| | BETA V | 10-20 ±0.1 | 1 | 0.01 | 0.01 | 72 | 2.0 | 400 | | 0.1 | 50k | | 2x14x17 | | 750.00 | | |
| ONKYO | P-303 | 3.5-200 +0 -1.5 | 1.5 | 0.006 | 0.01 | 89 | 0.1/2.5 | 13/330 | | 0.15 | 2k | 0.15 | 17½x3½x14½ | 16.5 | 399.95 | | |
| PS AUDIO | PS Phono Preamp | 20-20 ±0.5 | 1 | 0.05 | 0.05 | 75 | 1 | 350 | | | | | 10x2½x5½ | 2.2 | 89.95 | Phono stage only, no controls. | |
| PARAGON AUDIO | 12A (T) | 2-200 ±1 | 5 | 0.05 | 0.05 | 72 | 1.0 | 700 | | 0.1 | 1k | 5 | 19x6x13 | 17 | 895.00 | Separate power supply | |
| | E1 (T) | 3-175 ±1 | 5 | 0.05 | 0.05 | 74 | 1.0 | 700 | | 0.1 | 1k | 5 | | 12 | 495.00 | | |
| PHASE LINEAR | 4000 | 20-20 ±0.5 | 8 | 0.1 | 0.1 | 80 | | 85/85 | | | | | 19x7x10 | 18 | 659.95 | | |
| | 2000 | 20-20 ±0.5 | 2 | 0.1 | 0.1 | 84 | | 90 | | | | | 19x5½x6 | 9 | 299.95 | | |
| | 1000 | 20-20 ±1 | 2 | 0.25 | 0.25 | | | | | | | | 9½x5x12 | 6 | 349.95 | | |
| PHILIPS | AH572 | 10-50 ±0.5 | 2 | 0.01 | 0.01 | 85 | 1.5/18 adj. | 750/750 | | 0.2 | 100k | 1k | 18x5½x13½ | 22 | 599.95 | | |
| PIONEER | Spec-1 | 10-70 +0, -0.5 | 2/7 | 0.3/ 0.5 | | 70 | 2.5/10 | 500/1V | 2.5 | 1.0 | 2200 | 0.15 | 19x7¼x14¼ | 24½ | 500.00 | | |
| | C-21 | 10-100 +0, -0.2 | 1/20 | 0.005 | | 92 | 2.5 | 300 | | 0.150 | 50k | 0.15 | 16½x3¼x14 | 14 | 350.00 | | |
| PROFESSIONAL SYSTEMS ENGINEERING | Studio One | 20-20 ±0.25 | 2 | 0.01 | 0.005 | 88 | 1.6 | 160 | | 0.2 | 100k | 1.3 | 18x3.5x10 | 16 | 495.00 | Class A | |
| RAM AUDIO | RAM203 | 20-20 ±0.2 | 2.5 | 0.1 | 0.1 | 70 | 2.5/25 | 320/320 | | 0.25 | 50k | 0.25 | 15x3½x8 | 15 | 265.00 | | |
| | RAM200 | 5-30 ±0.1 | 2.5 | 0.02 | 0.02 | 80 | 0.25/1.4 | 320/320 | | 0.25 | 50k | 0.25 | 17x3½x14 | 25 | 1050.00 | | |
| RAPPAORT | PRE-1 | 0.5-50k ±1 | 2 | 0.02 | 0.01 | 80* | 14 | 125 | | 0.2 | 50k | 0.2 | 13x3.5x9 | 11 | 575.00 | *Unweighted | |
| | MC-1 | RIAA ±0.25 | 2 | 0.02 | 0.01 | 76* | 1.4 | 12.5 | | | | | 6.5x3.5x9 | 5 | 300.00 | *Re: 1 mv moving coil head amp. Gain=60db C1kHz reg. ext. power supply. | |
| ROTEL | RC-5000 | 5-100 ±1 | 1 | 0.005 | 0.005 | 85 | 2-8/2 * | 500-1V/ 500/10 | 5/5 | 0.15 | | 0.33 | 19x7 | | | *500µV for moving coil | |

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Preamplifiers



Sansui CA-2000



Setton AS 5500



Sony TAE-8450



Van Alstine I



Sugden C-51



Pioneer C-21

| MANUFACTURER | MODEL | Frequency response Hz - kHz, dB | | THD at rated output, % | IM at rated output, % | S/N, dB w/d. phono re. 10 mV input, dB | Phono sens., mV, phono 1/phono 2 | Phono overload, mV, phono 1/phono 2 | Mike input sens., mV | High-level sens., V | Tape monitor Z, ohms | Tape main. output level, V | Dimensions, inches, W x H x D | Weight, lbs. | Price, \$ | NOTES | |
|--------------------|-----------------|---------------------------------|------|------------------------|-----------------------|--|----------------------------------|-------------------------------------|----------------------|---------------------|----------------------|----------------------------|-------------------------------|--------------|-----------|---|--|
| | | Rated output, V | dB | | | | | | | | | | | | | | |
| SAE | 2100 | 20-20 ±0.25 | 2.5 | 0.005 | 0.005 | 85 | 1.4-2.8/ 1.4-2.8 | 90-180/ 90-180 | 0.14 | | | 19x7x6.5 | 20 | 900.00 | | All models solid-state except where model no. is preceded by (T). (K) indicates kit price; (W) wired. (O) with mod. no. indicates quad. | |
| | 2100L | 20-20 ±0.25 | 2.5 | 0.005 | 0.005 | 85 | 1.4-2.8/ 1.4-2.8 | 90-180/ 90-180 | 0.14 | | | 19x7x6.5 | 20 | 750.00 | | | |
| | 2900 | 20-20 ±0.25 | 2.5 | 0.01 | 0.01 | 80 | 2.5/2.5 | 150/150 | 0.25 | | | 19x5.25x3.5 | 15 | 450.00 | | | |
| | 30 | 20-20 ±0.25 | 2.5 | 0.03 | 0.03 | 77 | 2.5/2.5 | 90/90 | 0.40 | | | 19x5.25x8 | 10 | 200.00 | | | |
| SANSUI | CA-2000 | 10-80 +0.5 -1.0 | 1.0 | 0.03 | 0.03 | 75 | 2.4,8/2 | 1000 | 0.150 | 50k | 0.150 | 18½x6½x12¼ | 21.8 | | | | |
| H.H. SCOTT | Alpha 1 | 10-50 ±1 | | 0.05 | 0.08 | 75 | 2.0/11.2 | | | 50k | | 19x5¼x11¼ | 18½ | 399.95 | | | |
| SETTON | AS5500 | 30-15 ±0.2 | 2 | 0.01 | 0.01 | 74 | 1.5-6/ 2.5 | 150/200 | 4.0 | 0.15 | 4.7k | 0.15 | 19½x6½x11½ | 60 | 1099.95 | | |
| SHOWCO | S-2500 Mixer | 22-90 ±1.5 | 10 | 0.1 | | 90 | 2.5/2.5 | 20/20 | 7.5 | 0.25 | 100k | | 17½x8½x19 | 26 | 695.00 | Combination mixer pre-amplifier | |
| SONY | TAE-8450 | 10-100 +0-1 | 1/14 | 0.03/ 0.1 | 0.05/ 0.1 | 86 | 1.5/0.16 | 140/13 | 0.16 | 0.15 | 1k | 0.15 | 17½x13½x6½ | 26 | 1300.00 | | |
| | TAE-6450 | 10-100 +0-1 | 1/14 | 0.03/ 0.1 | 0.03/ 0.1 | 86 | 1.5/1.5 | 140/140 | | 0.15 | 1k | 0.15 | 18½x12½x6½ | 20½ | 450.00 | | |
| SOURCE ENGINEERING | UEA | 20-35 ±0.5 | 0.1 | 0.05 | 0.05 | 80 | 1.1 | 80 | | | 50 | | 2½x2½x3½ | 1 | 78.00 | Phono stage only, requires 30 V d.c. | |
| | PNS | 20-35 ±1 | 0.3 | 0.1 | 0.1 | 80 | 1.1/5 | 80/80 | | | 50 | 0.3 | 14x2x12 | 7 | 315.00 | Phono stage w. noise suppressor. | |
| | Specialist | 20-35 ±1 | 0.3 | 0.1 | 0.1 | 80 | 3.3 | 80 | | 0.3 | 50 | 0.3 | 16x2x12 | 8 | 385.00 | W. mono noise suppressor & vol. expander. | |
| SOUNDCRAFTSMEN | PE2217 | 5-100 ±0.25 | 1 | 0.05 | 0.05 | 84 | 1.0/1.0 | 105/105 | | 0.09 | 50k | 1.0 | 19x6x11 | 22 | 529.50 | | |
| | PE2217R | 5-100 ±0.25 | 1 | 0.05 | 0.05 | 84 | 1.0/1.0 | 105/105 | | 0.09 | 50k | 1.0 | 19x5¼x10 | 19 | 549.00 | | |
| SPECTRA SONICS | 101 | 10-200 ±0.1 | 7 | 0.01 | 0.04 | 127 | | | 40 | | 600 | | 2½x5x½ | ½ | 69.00 | Mike Preamp. | |
| | 110 | 10-200 ±0.1 | 15 | 0.01 | 0.04 | 127 | | | 40 | | 600 | | 2½x5x½ | ½ | 72.00 | As above. | |
| | 110A | 10-200 ±0.1 | 15 | 0.01 | 0.04 | 127 | | | 40 | | 2.5k | | 2½x5x½ | ½ | 72.00 | As above. | |
| SPECTRO ACOUSTICS | 217 | 5-100 ±1 | 2 | 0.05 | 0.0075 | 82 | 3/10* | 300/100 | | 0.3 | 600 | 10.0 | 17x3½x7½ | 10 | 250.00 | *Switchable gain. | |
| | 217R | 5-100 ±1 | 2 | 0.05 | 0.0075 | 82 | 3/10* | 300/100 | | 0.3 | 600 | 10.0 | 19x3½x7½ | 10 | 250.00 | *As above. | |
| | 1018 | 5-100 ±3 | 2 | 0.05 | 0.01 | 88 | 3 | 100 | | 0.3 | 600 | 10.0 | 17x6x5½ | 10 | 335.00 | | |

In the Black II

Performance, beauty, quality — three attributes that have always been the hallmarks of SAE products. SAE systems in the past have had them, this system's predecessor had them, and the new In The Black system has them and much more.

The 2900 Parametric Preamplifier offers our new flexible parametric tone control system, full dubbing and tape EQ. New phono and line circuitry results in unparalleled clarity and definition with distortion of less than 0.01% THD & IM.

The 2200 Stereo Power Amplifier with fully complementary circuitry delivers 100 Watts RMS per channel from 20-20K at less than 0.05% Total Harmonic Distortion, from 250mW to full rated power.

The 8000 Digital FM Tuner has linear phase filters, phase-lock multiplex, and of course, our famous digital readout tuning indicator system.

Combine these products together and you have a system that ensures superior performance in all areas, excellent control flexibility, and the sonic quality that is typically SAE.



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Preamplifiers

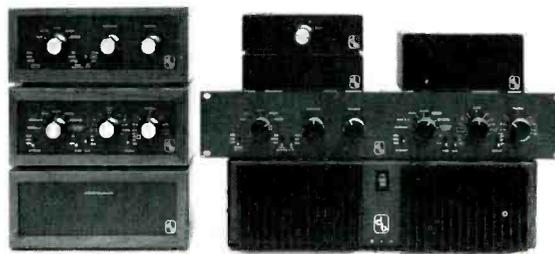
| MANUFACTURER | MODEL | Frequency response Hz - kHz | Rated output, V | THD at rated output, % | IM at rated output, % | S/N "A" wtd, phono re. 10 mV input, dB | Phono sens., mV, phono 1/phono 2 | Phono overload, mV, phono 1/phono 2 | Mike input sens., mV | High-level sens., V | Tape monitor Z, ohms | Tape mon. output level, V | Dimensions, inches, W x H x D | Weight, lbs. | Price, \$ | NOTES |
|---------------------------------|------------------|--------------------------------------|-----------------|------------------------|-----------------------|--|----------------------------------|-------------------------------------|----------------------|---------------------|----------------------|---------------------------|-------------------------------|------------------|-------------------|--|
| STANTON | Z10B | 30-20 ±1 | 8 | 0.1 | 0.15 | 66 | 150 | | | | | | 8½x3x7 | 5% | 240.00 | |
| STAX (AMERICAN AUDIOPORT) | SRA-12S R-11 | 30-15 ±0.5 | 7 | 0.007 | 0.05 | 68 | 1 | 100 | 0.1 | 1k | 7 | 7x4½x12 | 9% | 500.00 | | |
| SUGDEN (REFERENCE AUDIO) | C-51 Q-51 (Q) | 30-20k ±0.5 30-20k ±0.5 | 1 1 | 0.1 0.2 | 0.1 0.1 | 82 | 2.5/2.5 | 60/60 | 0.15 | 600 | 0.75 | 11x3½x6 11x3½x6 | 6% 6% | 250.00 300.00 | SO, QS, BMX. | |
| THRESHOLD | NS10 | 2.5-50 -0 -3 | 5 | 0.005 | 0.005 | 70 | | 2v | | 10k | 5 | 19x8x3 | 7 | 1010.00 | | |
| VAN ALSTINE | Model 1 | | | | | | | | | | | 17x3½x10 | 12 | 600.00 | | |
| YAMAHA | C-1 C-2 | 10-50 ±0.2 5-100 +0 -1.5 | 0.775 0.715 | 0.02 0.003 | 0.02 | | 2/8 2/2 | 800/- | 2.0 | 0.2 | 1000 | 0.15 | 18½x6½x15½ 17½x3x12½ | 28.3 17.3 | 1800.00 650.00 | FET, inc. signal generator. FET, inc. head amp. |

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We Make Much More Than Just An Excellent Preamp

As you can see, DB Systems takes care of everything between the cartridge and the speaker. Starting with the DB-4 Pre-preamplifier with its selectable gain for any moving coil cartridge, through the famous DB-1 Precision Preamplifier and the DB-5 Tone Control module which allows the tonal balance of the system to be changed without adding coloration, into the DB-3 Active Crossover which comes in bi- or tri-amped versions at any crossover frequencies you order, and finishing with the DB-6 Precision Power Amplifier with its vanishingly low distortion under actual use, even with reactive loads such as acoustic suspension and electrostatic loudspeakers, our products provide the discriminating listener with a full range of components whose ultra-low distortion is our trademark. Also shown is our DBR-15 Rack Mount Preamp and Tone Control, which combines the features of the DB-1 and DB-5 into an integrated unit.

DB Systems is a growing company whose products are sold world-wide, and is now in its third year of operation. Our founders and owners are audiophiles and perfectionists who were dissatisfied with available audio components. Their solution was to design equipment so radically better that no significant improvement would ever be possible, yet maintain the lowest possible cost consistent with our demanding standards. Our preamplifier, for instance, has a typical total harmonic distortion at 1kHz of .0003%, a performance that is unsurpassed today even as it was when it



was introduced. This unit is guaranteed to have a maximum THD (including the phono stage) of less than eight parts per million (.0008%) at any frequency from 20 Hz to 20 kHz, at any level below clipping. Our power amplifier is guaranteed to have less than .0008% THD at 1 kHz, and .005% from 20 Hz to 20 kHz. Every one of our products has a similar level of accuracy, guaranteed for five years. Each is extensively tested before it goes out the door, and performance must be well within our specifications. The testing and attention to detail which makes this sonic quality possible has not been sacrificed as we have increased production and introduced new products to satisfy a growing demand, and it never will be.

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THE TOSHIBA 3060 WITH DOLBY FM. BELOW \$200.*

Usually, a tape deck with all these features costs you a lot more. But at Toshiba we make our own parts, so we can add all these extra features without charging you a lot of

extra money. Before you buy any tape deck, get all the facts. They're right on this page.

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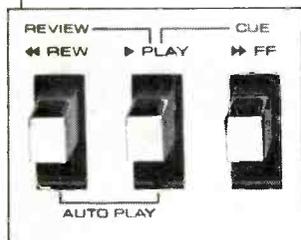
NOW ALL OUR COMPETITION CAN DO IS HISS.



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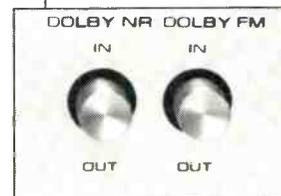
Auto Play and Auto Stop Function. This lets the tape play all by itself. With the PLAY and REWIND keys pressed at the same time, the tape will rewind to the beginning of the cassette, stop, and automatically begin playback. The Auto Stop mechanism automatically switches the tape off at the end—so it protects the tape deck and your tapes.



Cue and Review. Your fingers will do less walking on the keys. When you're looking for a certain portion of the tape, just push down to find the place. And lift your finger to start the tape playing.



Timer Setting for absent recording. Now you can record Janis Joplin at home while you're out listening to Mozart. Just use the PC-3060's timer setting switch with your own timer. Recording will begin automatically at the time you set. The Auto Stop mechanism will turn it off at the end.



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Amplifiers



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Akai AM-2800



A&E DCA-400



AB Systems 410



A.E.C. Thomas 7

| MANUFACTURER | MODEL | Ave. watts/chan. into 8 ohms | Freq. respon. at rated power, Hz- kHz | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd; phono re. 10 mV, dB | Phono sensitivity, in mV, Phono 1/Phono 2 | Phono overload, in mV, Phono 1/Phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES |
|--------------------------|----------------|------------------------------|---------------------------------------|--|---|-----------------------------------|---|--|----------------------|---------------------|---------------------------|------------------------|-----------------------------|-----------------------|-------------------------------|--------------------|-----------|---------------------------------|
| AB SYSTEMS | 410 (B) | 200 | 20-20 | 0.25 | 0.25 | | | | 0.75 | | 4 | 250 | 19x5 1/4 x 10 x 10 | 32 | 758.00 | | | |
| | 205 (B) | 100 | 20-20 | 0.25 | 0.25 | | | | 0.75 | | 4 | 250 | 19x5 1/4 x 10 x 10 | 22 | 528.00 | | | |
| | 810 (B) | 200 | 20-20 | 0.25 | 0.25 | | | | 0.75 | | 2 | 250 | 19x5 1/4 x 10 x 10 | 32 | 758.00 | | | |
| | 710 BI-Amp | 200/100 (4) | 20-20 | 0.25 | 0.25 | | | | 0.75 | | 2 | 250 | 19x5 1/4 x 10 x 10 | 24 | 658.00 | | | |
| A&E (Osawa) | DCA-400 (B) | 200 | 20-20 | 0.02 | | | | | 2 | | 4 | 300 | 19x17 1/4 x 6 x 19x11x3 1/2 | 55 | 3250.00 | | | |
| | DCA-120 (B) | 60 | 20-20 | 0.02 | | | | | 1 | | 4 | | | 16.5 | 800.00 | | | |
| A.E.C. CORP. | Thomas 7 (B) | 200 | 20-20 | 0.08 | 0.08 | 150 | | | 1 | 7 | 16 | 4 | 100 | 19 1/2 x 16 x 7 1/2 | 75 | 1400.00 | | |
| ACE AUDIO | 35x2-SUPER (B) | 35 | 20-20 | 0.1 | 0.1 | | | | 1 | | 4 | 100 | 14x3 1/2 x 8 1/2 x 8 1/2 | 10 | 225.00 | | | |
| | 35x2 (B) | 35 | 20-20 | 0.1 | 0.1 | | | | 1 | | 4 | 100 | 14x3 1/2 x 8 1/2 x 8 1/2 | 10 | 212.00w 149.50k | | | |
| AKAI | AM-2800 | 80 | | 0.08 | | 75 | 3/3 | | 0.15 | 4-16 | 4 | 60 | 17.3x6.5 x 16.6 x 13 | 28.9 | 400.00 | | | |
| | AM-2600 | 60 | | 0.1 | | 75 | 3/3 | | 0.15 | 4-16 | 4 | 60 | 17.3x5.6 x 13 | 22.0 | 300.00 | | | |
| | AM-2400 | 40 | | 0.15 | | 75 | 3 | | 0.15 | 4-16 | 4 | 60 | 17.3x5.6 x 13 | 20.0 | 200.00 | | | |
| | AM-2200 | 20 | | 0.5 | | 85 | 3 | | 0.15 | 4-16 | 4 | 60 | 15x4.9 x 10.3 | 12.1 | 150.00 | | | |
| ANALOG ENGINEERING | 555 (B) | 55 | 5-30 | 0.1 | 0.05 | 110 | - | - | 1.5 | - | 4 | 400 | 19x11 1/4 x 5 1/4 | 27 | 590.00 | | | |
| | 610 (B) | 150 | 5-40 | 0.08 | 0.05 | 110 | - | - | 1.2 | - | 2 | 500 | 19x12 1/2 x 5 1/4 | 42 | 690.00 | | | |
| | 620 (B) | 325 | 5-40 | 0.08 | 0.05 | 110 | - | - | 2 | - | 2 | 500 | 19x16 1/4 x 7 | 72 | 1090.00 | | | Bridging output |
| ARMSTRONG (ROTH/SINDELL) | 621 | 40 | 20-20 | 0.18 | 0.08 | 65 | 3.0 | 150 | 0.25 | 2.0 | 4 | 50 | 12x11x3 | 10.5 | 359.00 | | | |
| AUDIOONICS | PZ3 (B) | 100 | 20-20 | 0.03 | 0.03 | | | | 1 | | 4 | 50 | 19x6x15 | 29 | 449.00 | | | |
| | BA-150 (T) | 150 | 30-30 | | | | | | 1.5 | | 4 | | 19x7x15 | 85 | 2000.00 | | | *Depends upon feed back setting |
| AUDIO RESEARCH | D-100 (B) | 100 | 1-20 | 0.2 | 0.05 | 100 | | | 1.5 | | 4 | 200 | 19x10 1/2 x 5 1/4 | 40 | 995.00 | | | |
| AUOIRE (ROTH/SINDELL) | Model 2 (B) | 100 | 20-20 | 0.05 | 0.05 | 100 | | | 1.0 | | 2.5 | 150 | 19x13x6 | 32 | 450.00 | | | |
| | Model 2 M | 100 | 20-20 | 0.05 | 0.05 | 100 | | | 1.0 | | 2.5 | 150 | 19x13x6 | 32 | 575.00 | | | |
| BGW SYSTEMS | 410 | 200 | 20-30 | 0.05 | 0.01 | 110* | - | - | 2 | 10/40 | 8 | 4 | 500 | 19x11 1/4 x 5 1/4 | 35 | 699.00 | | *Unweighted. |
| | 100 | 30 | 20-20 | 0.05 | 0.01 | 106* | - | - | 0.75 | 10 | 8 | 4 | 500 | 19x12 x 1 1/4 | 18 | 329.00 | | LED Clip |
| BAUMAN RESEARCH | M-2120 B | 120 | 1-500 | 0.1 | 0.1 | | | | | | 4 | | 14x4 1/2 x 10 | 50 | 795.95w 695.95k | | | |
| | M-2060 B | 60 | 1-500 | 0.1 | 0.1 | | | | | | 4 | | 14x3 1/2 x 8 | 25 | 495.95w 395.95k | | | |

HEAVY.

Heavy technology, Heavy music, and our Hero — the Heavy.

Demanding music requires audio components with advanced designs, high technology, and the best component parts. A.E.A. has it all. One example is our new power amplifier, The Brute. The Brute weighs in at 72 lbs., half of that weight is the heavy duty power transformer inside. You see, the transformer used in an amplifier makes a decided difference in its sound quality—especially during heavy musical crescendos. So A.E.A. uses a heavy. In the 620 we use a four quadrant bridging output design to dramatically improve the amplifier's slew rate, and to enhance its power handling capability.

To make this Brute feel at home in a system we've added some creature comforts. Like peak-following power output meters, transient LED indicators, and electronic speaker protection circuitry. All this adds up to a true Brute—an amplifier that will provide 325 watts per channel into 8 ohms all day long without the need for forced air fan cooling. (Our

smaller A-610 at 150/150 RMS will do the same for smaller systems.)

What to plug into our Brute — low transient distortion . . . and our pre-amplifier.

Analog Engineering has done some original research on transient distortion, a type of distortion that's particularly audible in preamplifiers. The result was our A-520 modular stereo preamplifier with rated total transient error of 0.004%. (total I.M. distortion below 0.001%.) and a musical listenability that verifies the superior specs.

At A.E.A. quality is no accident. The 520 preamp also uses heavy technology. All 1% tolerance parts throughout. All modular epoxy sealed design. Highest grade, 24k. gold-plated plug-in interconnections. And all jack-to-printed-circuit board construction for consistent unit to unit excellence. The price of the A-520 is \$590.00 —one quarter the price of our main competitor. We

recommend that you purchase the A-520. It would be hard to design a better preamplifier at any price. We know . . . we've tried.



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On the cutting edge of technology, where nothing matters but the music.

For more information about A.E.A. and their advanced line of audio products, call 305/628-1665 or write direct to the factory. **SPECIFICATIONS:** POWER OUTPUT/325 watts/channel RMS (conforms to FTC rating requirements) both channels operating into 8 ohms (650 at 4 ohms). FREQUENCY RESPONSE AT RATED POWER: 5 Hz. to above 40 kHz. HIGHEST THD. from 1/4 watt to rated power is 0.08%. SIGNAL TO NOISE RATIO: 110 dB. INPUT SENSITIVITY: 2.0 volts. WEIGHT: 72 pounds. **CIRCUIT DESCRIPTION:** Four quadrant bridging outputs and differential FET input circuitry. **PROTECTION CIRCUIT:** computer logic. **DIMENSIONS:** 19"W x 16 1/4"D x

7"H. **PHYSICAL:** 19" rack mounts with cast alloy handles. **CONTROLS:** Meter sens., power on/of, electronic reset, gain. **METERS:** Large 5" illuminated peak following meters with "ballistometric differential slope peak detector circuitry." **INDICATORS:** LED (light emitting diodes) indicate transient peak overload.



REMOTE: Second line cord switches AC power, plugs into preamplifier and allows the Brute to be switched on from convenience outlet. This circuit is optically isolated from preamplifier and pulls less than 5 ma. from preamp. **PRICE:** With five year "limited warranty," \$1,090.00.

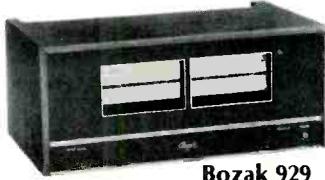
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Enter No. 7 on Reader Service Card

Amplifiers



Bozak 929



Bose 1801



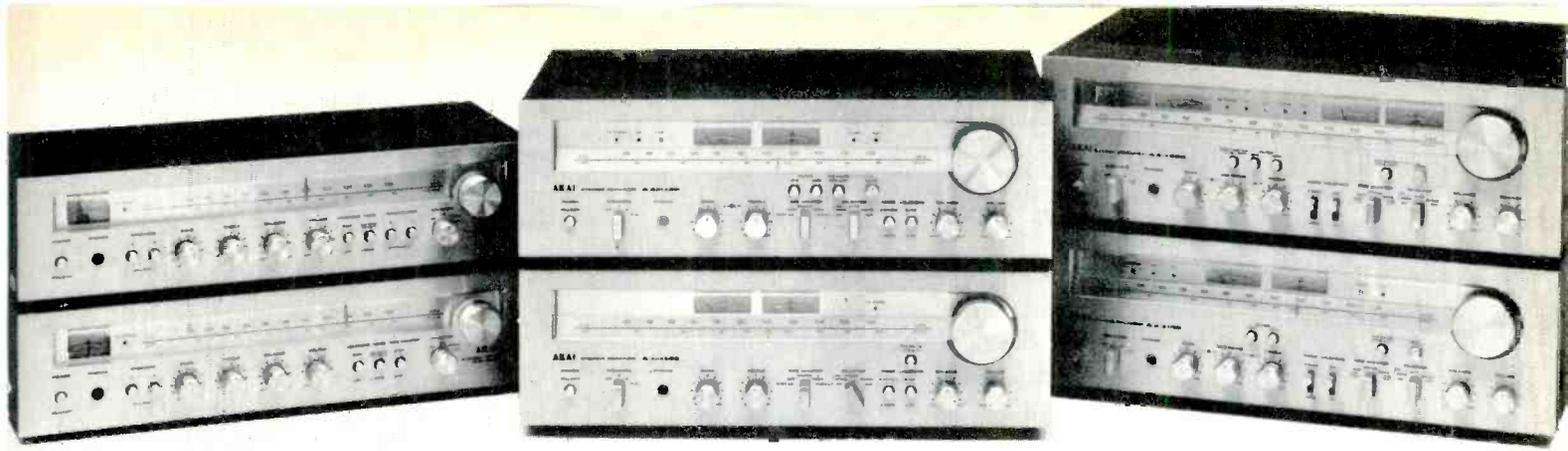
Cerwin-Vega A-1800I



Audionics PZ3

66

| MANUFACTURER | MODEL | Ave. weight/chan. into 8 ohms | Freq. respon. at rated power, Hz. | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd., phono req. | Phono sensitivity, in mV., Phono 1/Phono 2 | Phono overload, in mV., Phono 1/Phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES |
|------------------------------|-------------------------|-------------------------------|-----------------------------------|--|---|---------------------------|--|---|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|-------------------------------|--------------------|-----------------------|-------|
| BOSE | 1801 | 250 | 20-20 | 0.5 | 0.5 | 100 | | | 1.5 | | | 40 | 18x18 1/2 x7 | 84 | 986.00 | | | |
| BOZAK | 929B | 150 | 20-20 | 0.2 | 0.2 | - | - | - | 1.0 | - | - | 8 | 17x12 x7 | 44 | 849.00 | 749.00 w/o meters | | |
| | 939B | 70 | 20-20 | 0.2 | 0.2 | - | - | - | 0.7 | - | - | 8 | 17x10 1/2 x5 1/2 | 35 | 479.50 | | | |
| CAMBRIDGE CYBERVOX (HAMMOND) | P90 | 45 | 20-20 | 0.05 | | 85 | 1.5/5 adj. | 250 | 50-180 adj. | | | | 16x10 x2 | 12 | | | | |
| CERWIN-VEGA | A-1800 (B) | 225 | | 0.08 | 0.025 | 100 | | | 1.6 | | | | 19x11 1/2 x7 | 43 | 799.00 | | | |
| | A-1800I (B) | 225 | | 0.08 | 0.025 | 100 | | | 1.6 | | | | 19x11 1/2 x7 | 43 | 899.00 | | | |
| | A-1800M (B) | 225 | | 0.08 | 0.025 | 100 | | | 1.6 | | | | 19x11 1/2 x7 | 43 | 850.00 | | | |
| | A-4000 (B) | 350 | | 0.05 | 0.02 | 106 | | | 2.0 | | | | 19x16.5 x7.25 | | | | | |
| CROWN | D-60 (B) | 35 | 20-20 | 0.05 | 0.05 | | | | 0.75 | 35 | 4 | 4 | 17x8 1/2 x1 1/2 | 10 | 299.00 | | | |
| | D-150A (B) | 80 | 1-20 | 0.05 | 0.05 | | | | 1.19 | | | 2.5 | 17x8 1/2 x5 1/2 | 24 | 499.00 | | | |
| | DC-300A (B) | 155 | 1-20 | 0.05 | 0.05 | | | | 1.75 | | | 2.5 | 19x9 1/2 x7 | 45 | 849.00 | | | |
| | M-600 (B) | 600 | 1-20 | 0.05 | 0.05 | | | | 3.46 | | | 2.5 | 19x16 1/2 x7 | 92 | 1795.00 | | | |
| | M-2000 (B) D-440 (B) | 2000 221 | 1-15 | 0.05 | 0.1 | | | | 3.16 | | | 4 | 19x14x7 | 184 | 3590.00 1295.00 | | | |
| CUSTOM ELECTRONICS | 40 (B) | 40 | 5-100 | 0.1 | 0.1 | | | | 1.0 | | | 0.5 | 15x5 1/2 x9 | 22 | 299.00 | | | |
| | 80 (B) | 80 | 5-100 | 0.1 | 0.1 | | | | 1.0 | | | 0.5 | 15x5 1/2 x12 | 39 | 599.00 | | | |
| | 200 (B) | 200 | 5-100 | 0.1 | 0.1 | | | | 1.5 | | | 2 | 16 1/2 x7 x14 | 95 | 1299.00 | | | |
| OB SYSTEMS | OB-6 | 40 | 20-40 | 0.005 | 0.002 | 103 | | | 1 | | | 4 | 16x12 1/2 x5 | 18 | 650.00 | *20-20kHz | | |
| DYNACO | MK-VI (T) | | 20-15 | 0.1 | 0.1 | | | | 1.6 | | | 4 | 14 | 19x10 1/2 x8 1/2 | 55 | 425.00k 649.00w | MONO | |
| | ST-416 (B) | 200 | 20-20 | 0.25 | 0.1 | | | | 1.6 | | | 2 | 80 | 19x14x7 | 59 | 649.00k 949.00w | | |
| | SCA-50 | 25 | 20-20 | 0.25 | 0.1 | 72 | 1.65 | 100 | 1.25 | | 8 | 4 | 80 | 13 1/2 x12 x4 1/2 | 15 | 149.00k 249.00w | | |
| | SCA-80Q | 30 | 20-20 | 0.5 | 0.5 | 60 | 3.0 | 80 | 0.13 | | 8 | 4 | 40 | 13 1/2 x12 x4 | 16 | 199.00k 325.00w | | |
| | ST-80 (B) | 30 | 20-20 | 0.5 | 0.5 | | | | 1.3 | | | 4 | 40 | 14x8x4 | 13 | 149.00k 224.00w | | |
| | ST-120 (B) | 60 | 25-15 | 0.5 | 0.5 | | | | 1.5 | | | 4 | 40 | 13x10 1/2 x4 | 20 | 209.00k 289.00w | | |
| | ST-150 (B) | 75 | 20-20 | 0.25 | 0.25 | | | | 1 | | | 4 | 80 | 14 1/2 x13 1/2 x6 1/2 | 29 | 269.00k 399.00w | | |
| | ST-300 (B) | 150 | 20-20 | 0.25 | 0.125 | | | | 1 | | | 2 | 80 | 18 1/2 x14 1/2 x7 | 52 | 399.00k 599.00w | | |
| | ST-400 (B) | 200 | 20-20 | 0.25 | 0.1 | | | | 1.6 | | | 4 | 80 | 17x14x7 | 52 | 499.00k 725.00w | | |
| | ST-410 (B) | 200 | 20-20 | 0.25 | 0.1 | | | | 1.6 | | | 4 | 80 | 17x14 1/2 x6 1/2 | 45 | 399.00k 599.00w | | |
| | OSA-300 (B,Q) | 75 | 20-20 | 0.25 | 0.25 | | | | 1 | | | 4 | 80 | 18 1/2 x14 1/2 x7 | 52 | 399.00k 699.00w | Wired unit w. meters. | |
| | MK-III (B,T) | 50 | 50-10 | 1 | 1 | | | | 1.6 | | | 4 | 15 | 9x9x7 | 28 | 169.00k 225.00w | mono | |



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an audiophile demands — AKAI's for you. You can feel confident that dollar for dollar, spec for spec, you're getting the true-to-life sound you expect from the name AKAI. And a receiver that delivers better tuner sensitivity and less distortion at all volume levels is what a good receiver is all about.

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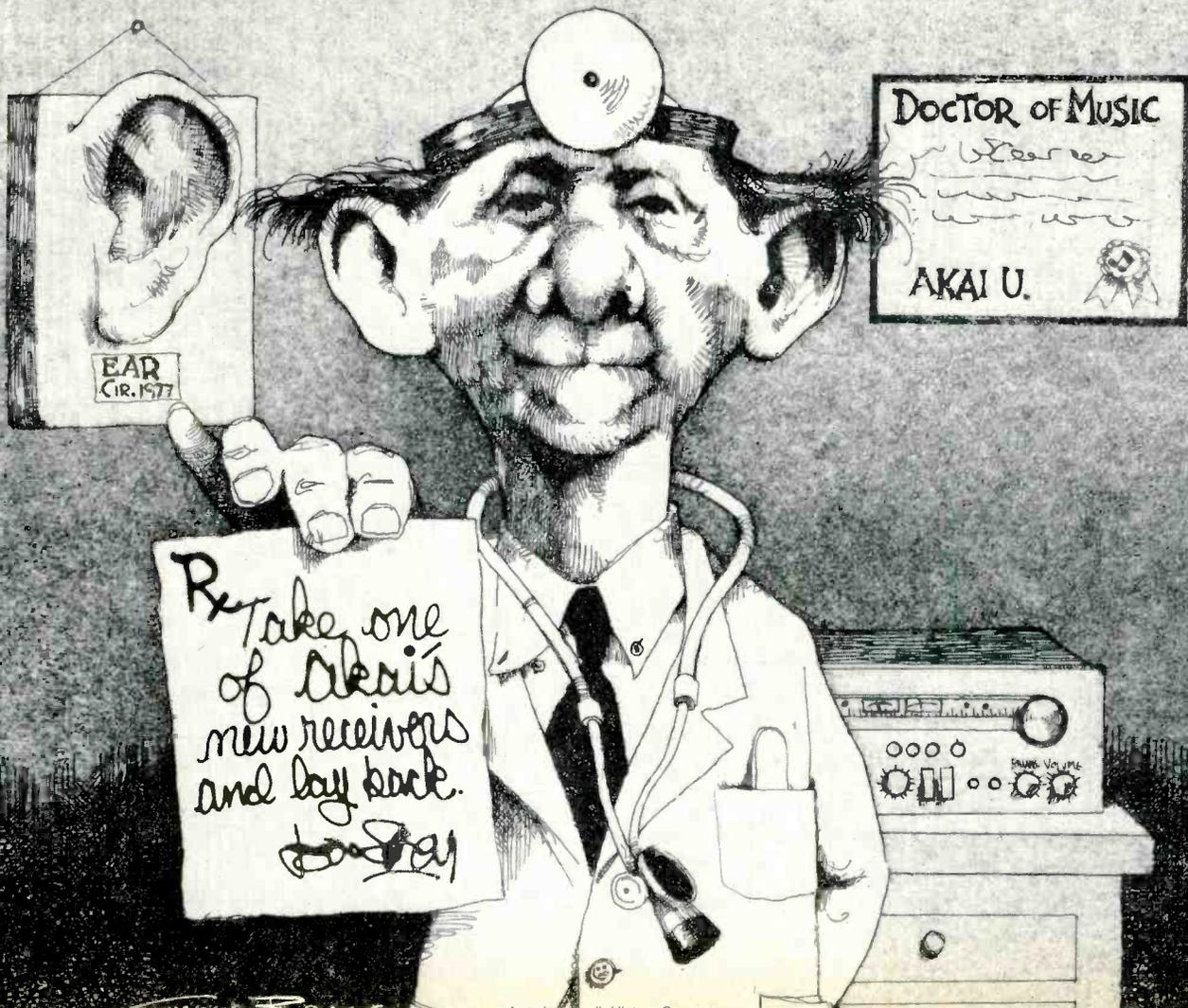
dealer. And start hearing what you've been missing.

| Model | Watts/ RMS | OHMS | Power Band Width | Total Harmonic Distortion |
|---------|---------------|------|---------------------|------------------------------|
| AA-1115 | 15 | 8 | 40-20,000 Hz | no more than 0.5% |
| AA-1125 | 25 | 8 | 20-20,000 Hz | no more than 0.3% |
| AA-1135 | 35 | 8 | 20-20,000 Hz | no more than 0.2% |
| AA-1150 | 50 | 8 | 20-20,000 Hz | no more than 0.1% |
| AA-1175 | 75 | 8 | 20-20,000 Hz | no more than 0.08% |
| AA-1200 | 120 | 8 | 20-20,000 Hz | no more than 0.08% |



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INTRODUCING SIX WAYS TO IMPROVE YOUR HEARING.



Amplifiers



Crown M-600



GAS Ampzilla II



db Systems DB-6



ESS 500C



Dynaco 416

68

| MANUFACTURER | MODEL | Ave. watts/chann. into 8 ohms | Freq. respon. at rated power, Hz. | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd., phono re. 10 mV, dB | Phono sensitivity, in mV., Phono 1/phonos 2 | Phono overload, in mV., Phono 1/phonos 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES |
|---------------------------|---------------------|-------------------------------|-----------------------------------|--|---|------------------------------------|---|--|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|-------------------------------|---------------------------------------|---|-------|
| ESS | 500C (B) | 250 | 5-40 | 0.25 | 0.25 | | | | | | 4 | 160 | 19x13 x7½ | 45 | 925.00 | Meters opt. | | |
| FISHER | CA2310 | 70 | 20-20 | 0.5 | 0.5 | 78 | 2 | 150 | | | 4 | 40 | 17½x15 x6 | 31.9 | 349.95 | | | |
| | CA2110 | 55 | 20-20 | 0.2 | 0.1 | 75 | 2 | 150 | | | 4 | 30 | 16½x13½ x5½ | 20.9 | 249.95 | | | |
| GREAT AMERICAN SOUND | Ampzilla II (B) | 200 | 20-20 ±0.1 | 0.05 | 0.05 | | | | 1.6 | 40 | 4 | 150 | 17½x9 x7 | 52 | 899.00 | | | |
| | Son of Ampzilla (B) | 80 | 20-20 ±0.1 | 0.08 | 0.08 | | | | 1.0 | | 2 | 150 | 17x11 x5½ | 25 | 399.00 | | | |
| | Grandson (B) | 40 | 20-20 ±0.1 | 0.08 | 0.08 | | | | 0.7 | | 2 | 150 | 19x11 x4½ | 20 | 299.00 329.00 | w/meters | | |
| HARMON KARDON | A-401 | 20 | 20-20 | 0.5 | 0.12 | 65 | 2.8 | 80 | 0.2 | 0.5 | 16 | 4 | 30 | 13x10½ x5½ | 13½ | 185.00 | | |
| | A402 | 40 | 20-20 | 0.1 | 0.08 | 69 | 2.2 | 90 | 0.125 | 0.5 | 16 | 4 | 50 | 15½x15½ x5½ | 24 | 375.00 | | |
| | Citation 19 (B) | 100 | 20-20 | 0.08 | 0.08 | | | | | | 4 | 125 | 16x14½ x5½ | 39 | 495.00 | | | |
| | Citation 16 (B) | 150 | 20-20 | 0.05 | 0.05 | | | | | | 4 | 300 | 19x14 x9½ | 55 | 795.00 | | | |
| HEATH | AA-1640 | 200 | 20-20 | 0.1 | 0.1 | 100 | | | | | | | 50+ | 19x18 x7½ | 58 | 449.95k | Add \$69.95 for output meters. | |
| | AA-1515 | 70 | 20-20 | 0.08 | 0.08 | 65 | 2 | 100 | | | | | 60+ | 17½x14½ x6½ | 27 | 299.95k | AA-2015 (Q) is 4-chan. version of the AA-1515 | |
| | AA-1506 | 60 | 20-20 | 0.1 | 0.1 | 95 | 1.5 | | | | | | 60+ | 8x14½ x5½ | 21 | 179.95k | | |
| | AA-1219 | 15 | 20-20 | 0.5 | 0.5 | 65 | | | | | | | | 12x12½ x4 | 15 | 109.95k | | |
| HITACHI | HA-610 | 60 | 10-30 | 0.05 | 0.05 | 75 | 1.6/6 | 280/ | | | | | 70 | 17½x5½ x15½ | 26.5 | 399.95 | | |
| | HA-1100 | 100 | 6-60 | 0.03 | 0.03 | 75 | 1.6/6 | 430/ | | | | | 70 | 18½x5½ x15½ | 35.3 | 599.95 | | |
| | HMA-8300 (B) | 200 | | 0.05 | | 110 | | | | | | | 100 | 17½x7½ x16 | 53 | 750.00 | Class G | |
| JVC | JA-S71 | 80 | 20-20 | 0.1 | 0.1 | 87 | 2.5/2.5 | 210/210 | — | 0.18 | — | 4 | 30 | 16½x15½ x6½ | 35.2 | 399.95 | | |
| | JA-S41 | 60 | 20-20 | 0.1 | 0.05 | 87 | 2.5 | 200 | — | 0.16 | — | 4 | 30 | 15½x13 x6 | 22.5 | 279.95 | | |
| | JA-S31 | 40 | 20-20 | 0.1 | 0.2 | 87 | 2.5 | 180 | — | 0.16 | — | 4 | 30 | 15½x13 x5½ | 17.6 | 199.95 | | |
| | JA-S11 | 30 | 20-20 | 0.1 | 0.1 | 87 | 2.5 | 150 | — | 0.15 | — | 4 | 30 | 16½x13 x5½ | 15.4 | 139.95 | | |
| | M-3030 (B) | 100 | 20-20 | 0.05 | 0.05 | — | — | — | — | 1.0 | — | 4 | 75 | 16½x11½ x6½ | 42.2 | 699.95 | | |
| JANIS AUDIO | Interphase I | 60 | 5-* | 0.2 | 0.2 | | | | | | 8 | 50 | 10x10 x4½ | 15 | 425.00 | *Mono, w. X-over, to drive subwoofer. | | |
| JENNINGS | THE B AMP | 200 | 20-20 ±0.25 | 0.25 | 0.25 | | | | 0.75 | | 4 | | 19x5½ x10½ | 35 | 650.00 | | | |
| KENSDNIC ACCUPHASE (TEAC) | E-202 | 100 | 20-20 | 0.15 | 0.1 | 74 | 2.5/2.5 | 300/300 | 0.160 | | 4-32 | 4 | 18x6x14 | 43 | 750.00 | | | |
| | P-300 (B) | 150 | 20-20 | 0.1 | 0.1 | | | | 1 | | 4-32 | 4 | 17½x6 x14 | 55 | 800.00 | | | |

Sometimes it just doesn't add up

What you want is better sound. But, the expense of replacing your whole system just isn't reasonable. MXR has a way to upgrade your sound significantly, without starting from scratch. MXR's Stereo Graphic Equalizer and Compander can give you the right sound at a cost that is much easier to take.

The MXR Compander can double the dynamic range of most open reel and cassette tape decks to allow professional results in home recording. The Compander increases the overall fidelity of your system while reducing noise. The softest sounds can be heard, while musical peaks can be reproduced without distortion.

The Compander compresses the dynamic range of the signal going onto the tape and expands it upon playback at a two to one ratio. The resulting increase in dynamic range allows your present system to produce the depth of sound that you want to have when you record.

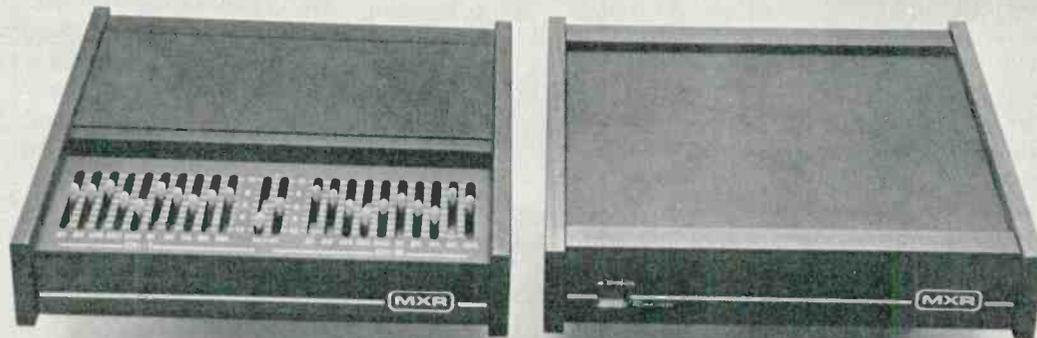
A natural companion, the MXR Stereo Graphic Equalizer is designed to provide precise

compensation for aural discrepancy that may be caused by room acoustics, speaker inadequacies or program source. The Stereo Graphic Equalizer allows you to tailor your sound to your own tastes. At the touch of a slide control, you can customize your playback to suit any number of variables. It can provide you with enough control over your present system to give you the sound that you want to hear.

The Compander, at \$129.95, and the Stereo Graphic Equalizer at \$199.95, with the equipment you already have, can add up to the sound that you want, at a reasonable price.

For more information see your nearest MXR dealer or direct inquiries to MXR Innovations, Inc. 277 N. Goodman St., Rochester, New York 14607 (716) 442-5320.

MXR Consumer Products Group



Amplifiers



Kenonic E-202



Hitachi HMA-8300



Kenwood 600



JVC JA-541

| MANUFACTURER | MODEL | Ave. watt/chan into 8 ohms | Freq. response at rated power, Hz- kHz | Highfreq THD from 0.25W to rated power, % | Highfreq IM from 0.25W to rated power, % | S/N, "A" wtd., phono re. 10 mV, dB | Phono sensitivity, in mV, Phono 1/Phono 2 | Phono overload, in mV, Phono 1/Phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES | |
|----------------------|------------|----------------------------|--|---|--|------------------------------------|---|--|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|-------------------------------|--------------------|-----------|-------|------|
| KENWOOD | 600 | 130 | d.c.-70 | 0.08 | 0.08 | 76 | 2.5 | 220 | | | | | | | | | | | |
| | 500 | 100 | d.c.-70 | 0.08 | 0.08 | 76 | 2.5 | 220 | | | | | | | | | | | |
| | KA-9100 | 90 | d.c.-70 | 0.03 | 0.03 | 83 | 2.5 | 250 | | | | | | | | | | | |
| | KA-7100 | 60 | d.c.-100 | 0.02 | 0.02 | 80 | 2.5 | 200 | | | | | | | | | | | |
| | KA-3500 | 40 | d.c.-200 | 0.2 | 0.2 | 76 | 2.5 | 200 | | | | | | | | | | | |
| | Lo-9M (B) | 300 | d.c.-100 | 0.02 | 0.02 | | | | | | | | | | | | | | Mono |
| | Lo-7A (B) | 150 | d.c.-150 | 0.008 | 0.008 | | | | | | | | | | | | | | Mono |
| LUX | L-100 | 110 | 20-20 | 0.05 | 0.05 | 84 | 3.0/3.0 | 450/450 | | | | | | | | | | | |
| | L-85V | 80 | 20-20 | 0.08 | 0.05 | 84 | 2.5/2.5 | 300/300 | | | | | | | | | | | |
| | L-80V | 50 | 20-20 | 0.08 | 0.08 | 87 | 2.5/2.5 | 200/200 | | | | | | | | | | | |
| | 5L-15 | 80 | 10-20 | 0.02 | 0.02 | 90 | 2.7 | 150 | | | | | | | | | | | |
| | 5M20 (B) | 100 | 20-20 | 0.008 | 0.008 | | | | | | | | | | | | | | |
| | 5M21 (B) | 100 | 20-20 | 0.008 | 0.008 | | | | | | | | | | | | | | |
| | M6000 | 300 | 20-20 | 0.05 | 0.05 | | | | | | | | | | | | | | |
| | M4000 | 180 | 20-20 | 0.05 | 0.05 | | | | | | | | | | | | | | |
| MARANTZ (SUPERSCOPE) | 510M (B) | 256 | 20-20 | 0.05 | 0.1 | | | | | | | | | | | | | | |
| | 250M (B) | 126 | 20-20 | 0.05 | 0.05 | | | | | | | | | | | | | | |
| | 1700C (B) | 86 | 20-20 | 0.03 | 0.03 | | | | | | | | | | | | | | |
| | 12600C | 130 | 20-20 | 0.03 | 0.03 | 80 | 1.8/1.8 | 300/300 | 1.8 | 0.18 | | | | | | | | | |
| | 11800C | 90 | 20-20 | 0.03 | 0.03 | 78 | 1.8/1.8 | 300/300 | 1.8 | 0.18 | | | | | | | | | |
| | 11520C | 76 | 20-20 | 0.03 | 0.03 | 78 | 1.8/1.8 | 300/300 | 1.8 | 0.18 | | | | | | | | | |
| | 11220C | 61 | 20-20 | 0.03 | 0.03 | 76 | 1.8/1.8 | 200/200 | 1.8 | 0.18 | | | | | | | | | |
| | 1090 | 45 | 20-20 | 0.1 | 0.1 | 76 | 1.8/1.8 | 100/100 | | 0.18 | | | | | | | | | |
| MCINTOSH | MC2200 | 200 | 20-20 | 0.1 | 0.1 | | | | | | | | | | | | | | |
| | MC2120 | 120 | 20-20 | 0.1 | 0.1 | | | | | | | | | | | | | | |
| | MC-2205 | 200 | 20-20 | 0.1 | 0.1 | | | | | | | | | | | | | | |
| | MC2125 | 120 | 20-20 | 0.1 | 0.1 | | | | | | | | | | | | | | |
| | MC2300 | 300 | 20-20 | 0.25 | 0.25 | | | | | | | | | | | | | | |
| | MC2105 | 105 | 20-20 | 0.25 | 0.25 | | | | | | Low | | | | | | | | |
| | MC2505 | 50 | 20-20 | 0.25 | 0.25 | | | | | | Low | | | | | | | | |
| | MC2100 | 105 | 20-20 | 0.25 | 0.25 | | | | | | | | | | | | | | |
| | MC250 | 50 | 20-20 | 0.25 | 0.25 | | | | | | | | | | | | | | |
| | MC50 | 50 | 20-20 | 0.25 | 0.25 | | | | | | | | | | | | | | |
| | MA6100 | 70 | 20-20 | 0.2 | 0.2 | 95 | 2.5 | | | | Low | | | | | | | | |
| | MITSUBISHI | DA-A10 (B) | 100 | 20-20 | 0.1 | 0.1 | 100 | | | | | | | | | | | | |
| DA-A15 (B) | | 150 | 20-20 | 0.1 | 0.1 | 101 | | | | | | | | | | | | | |

THE OPTIMUM.



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Now there's a cassette deck that plays it your way.

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Amplifiers

Marantz 510M



Mitsubishi DA-A-15



Nakamichi 620

Onkyo A7



Nikko Alpha V

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| MANUFACTURER | MODEL | Ave. watt/ch. into 8 ohms | Freq. respon. at rated power, Hz. | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd., phono eq., 10 mV, dB | Phono sensitivity, in mV., Phono 1/phono 2 | Phono overload, in mV., Phono 1/phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES |
|---------------------------|--------------|---------------------------|-----------------------------------|--|---|-------------------------------------|--|---|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|-------------------------------|----------------------|-----------|-------|
| NAIM (AUDIOPHILE SYSTEMS) | NAP160 (B) | 60 | 5-40 | 0.02 | 0.02 | | | | 1.4 | | | | | 17x12x5 | 18 | 889.00 | | |
| | NAP120 (B) | 40 | 5-40 | 0.02 | 0.02 | | | | 0.7 | | | | | 9x8x3½ | 12 | 515.00 | | |
| | NAP250 (B) | 70 | 5-40 | 0.02 | 0.02 | | | | 1.6 | | | | | 17x12x5 | 25 | 1599.00 | | |
| NAKAMICHI | 420 (B) | 50 | 5-20 | 0.008 | 0.002 | | | | 1.0 | | 4 | 100 | 16x9 x3½ | 15.4 | 330.00 | Opt. bridging adptr. | | |
| | 620 (B) | 100 | 5-20 | 0.005 | 0.002 | | | | 1.0 | | 4 | 100 | 16x9 x7½ | 27.6 | 630.00 | Opt. bridging adptr. | | |
| NIKKO | ALPHA I (B) | 220 | 10-100 | 0.08 | | 100 | | | | | 8 | 8 | 7x19 x11½ | 55 | 600.00 | | | |
| | ALPHA II (B) | 110 | 5-100 | 0.03 | | 115 | | | | | 8 | 8 | | | 400.00 | Class A | | |
| | ALPHA V (B) | 100 | 0-60 | 0.06 | | 110 | | | | | 8 | 8 | 9x19x17 | 60.6 | 3000.00 | | | |
| | NA850 | 60 | 10-40 | 0.05 | | 95 | 2.2 | 220 | 0.15 | | 8 | 8 | 5½x17½ x12 | 18% | 200.00 | | | |
| NA550 | 45 | 10-40 | 0.05 | | 95 | 2.2 | 190 | 0.15 | | 8 | 8 | 5½x17½ x12 | 20 | 200.00 | | | | |
| ONKYO | A-5 | 45 | 20-20 | 0.1 | 0.1 | 85 | 2.5/2.5 | 170/170 | 0.15 | | 4 | 50 | 17½x6½ x15 | 25.8 | 249.95 | | | |
| | A-7 | 65 | 20-20 | 0.1 | 0.1 | 86 | 2.5/2.5 | 230/230 | 0.15 | | 4 | 50 | 17½x6½ x15 | 29.7 | 349.95 | | | |
| | A-10 | 85 | 20-20 | 0.08 | 0.1 | 88 | 0.1/2.5, 2.5 | 230/230 | 0.15 | | 4 | 50 | 17½x6½ x15 | 39.6 | 449.95 | | | |
| | M-505 | 105 | 20-20 | 0.05 | 0.01 | | | | 1.5 | | 4 | 100 | 17½x6½ x12½ | 37.4 | 549.95 | | | |
| OPTONICA (SHARP) | SM-4646 | 85 | 20-20 | 0.02 | 0.08 | 80 | 2.5/2.5 | 370/370 | 0.15 | | 4 | 45 | 17½x14½ x5½ | 36% | 449.95 | | | |
| | SM-3636 | 65 | 20-20 | 0.03 | 0.09 | 75 | 2.5/2.5 | 220/220 | 0.15 | | 4 | 45 | 17½x14½ x7½ | 34% | 399.95 | | | |
| | SM-1515 | 40 | 20-20 | 0.03 | 0.09 | 70 | 3.0 | 240 | 0.15 | | 4 | 40 | 18½x10 x5½ | 19% | 229.95 | SM-1515 B Black | | |
| PAOLI | 60M (B,T) | 50 | 20-20 | 1.0 | 1.0 | - | - | - | - | - | 1 | 15 | 9x14x7½ | 28 | 350.00 | single channel | | |
| PHASE LINEAR | 700B (B) | 345 | 20-20 | 0.25 | 0.25 | | | | 1.75 | | 4 | 1000 | 19x11x7 | 45 | 879.95 | | | |
| | 400 (B) | 201 | 20-20 | 0.25 | 0.25 | | | | 1.75 | | 4 | 1000 | 19x10x7 | 35 | 549.95 | | | |
| | 200 (B) | 105 | 20-20 | 0.25 | 0.25 | | | | 1.5 | | 4 | 100 | 19x8½ x5½ | 16 | 399.95 | | | |
| | 200B (B) | 105 | 20-20 | 0.25 | 0.25 | | | | 1.5 | | 4 | 100 | 19x8½ x5½ | 16 | 329.95 | | | |
| PHILIPS | AH578 (B) | 210 | 20-20 | 0.08 | 0.08 | | | | 1 | | 4 | 90 | 18x8x15 | 63 | 699.95 | | | |
| PIONEER | Spec-2 (B) | 250 | 20-20 | 0.1 | 0.1 | | | | | | 4 | 50 | 19x17½ x17½ | 54 | 900.00 | | | |
| | Spec-4 (B) | 150 | 20-20 | 0.01 | 0.01 | | | | | | 4 | 100 | 19x17½ x7½ | 54 | 700.00 | | | |
| | M-22 | 30 | 10-30 | 0.01 | 0.01 | | | | | | 4 | 60 | 16½x14½ x6½ | 48% | 650.00 | | | |
| | SA-9900 | 110 | 20-20 | 0.1 | 0.1 | 70 | 2.5/10 | 500/IV | 6-24 | 0.15 | 4 | 30 | 16½x16 x6½ | 44 | 750.00 | | | |
| | SA-9500 II | 80 | 20-20 | 0.1 | 0.1 | 75 | 2.5/2.5 | 300/300 | | 0.15 | 4 | 30 | 16½x14½ x6 | 35% | 450.00 | | | |
| | SA-8500 II | 60 | 20-20 | 0.1 | 0.1 | 75 | 2.5/2.5 | 250/250 | | 0.15 | 4 | 30 | 16½x14½ x6 | 30.6 | 350.00 | | | |
| | SA-7500 II | 45 | 20-20 | 0.1 | 0.1 | 73 | 2.5 | 200 | | 0.15 | 4 | 30 | 15x12½ x5½ | 20 | 250.00 | | | |
| | SA-6500 II | 30 | 20-20 | 0.1 | 0.1 | 72 | 2.5 | 200 | | 0.15 | 4 | 30 | 15x12½ x5½ | 16% | 175.00 | | | |
| | SA-5500 II | 15 | 20-20 | 0.5 | 0.5 | 71 | 2.5 | 130 | | 0.15 | | 30 | 15x10½ x5 | 11 | 125.00 | | | |

IF YOU HAVE AN EAR FOR MUSIC, YOU NEED THREE HEADS TO TAPE IT.

2-Head Cassette Recorders made home recording convenient. Now the 3-Head Fisher CR5120 makes it professional.

It really isn't fair to compare the Fisher Studio Standard CR5120 to other cassette recorders. Its superior flexibility and performance are comparable only to the most sophisticated reel-to-reel tape decks. The CR5120 combines the convenience of cassette with 3-head tape/source monitoring. The CR5120 delivers exceptional performance with important recording features like Dolby* noise reduction, signal limiting, and LED peak indicators.

Eliminate

Guesswork. The only way to make consistently perfect high fidelity recordings is to compare the quality of the taped signal to the original while the tape is actually being made. Studio engineers call this "monitoring," and it can only be accomplished on a 3-head tape deck. Monitoring subjects every inch of tape to instantaneous analysis by the most sensitive acoustic device available—the human ear—assuring a perfect "take" without guesswork.

Better Sound. Nearly all cassette decks have two tape heads—an erase head and a record/playback head. Even the best of them exhibit certain unavoidable compromises due to the combination record/playback head configuration. These compromises, although accepted by the industry, were not acceptable to Fisher engineers. They created the CR5120, a major advancement in cassette deck technology utilizing three separate, precision long-life ferrite tape heads: erase, record, and playback. Fisher engineers developed a wide-gap

4-micron record head for high output with an incredible 64dB signal-to-noise ratio...and a playback head having a very narrow gap (1.6 micron) for extended frequency response—30 to 18,000 Hz, ± 3 dB. The result is sound recorded on

the CR5120 is exactly like the original. No more...and no less.

A recording studio engineer would never consider recording without the improved performance and monitoring capabilities of a 3-head tape deck—and neither should you.

The CR5120 provides

a tape/source monitor switch for instantaneous comparison while listening.

2-Motor, Dual-Capstan Tape Transport.

Professional recording requires tape alignment exactly perpendicular to the tape heads. To accomplish this, Fisher engineers equipped the CR5120 with two capstan/pinch roller assemblies: one preceding, the other following the tape heads. Both capstans are micro-ground for absolute concentricity; and each is fitted with a heavy, dynamically balanced flywheel for smooth operation. The capstans are driven by a servo-controlled

Hall-effect DC motor for absolute speed accuracy, independent of fluctuations in AC line voltage. A second, DC-controlled motor provides the proper hold-back tension. This configuration, standard for professional recording equipment, is responsible for the CR5120's exceptionally low wow and flutter specification of 0.04% WRMS... performance superior to most reel-to-reel decks.

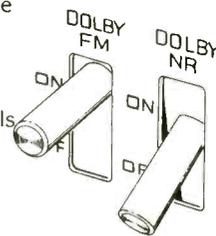
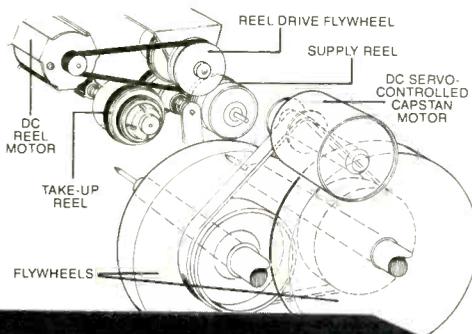
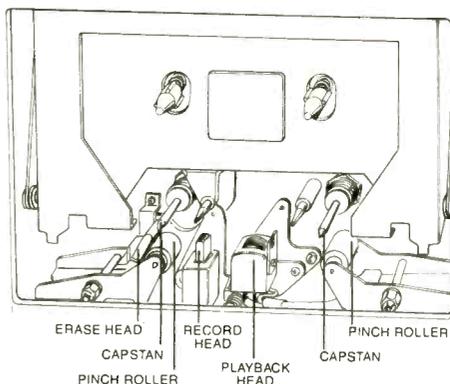
Dolby Noise Reduction For Tape and FM. The CR5120 utilizes Dolby noise reduction to suppress tape hiss, improving recorded dynamic range up to 10dB. It incorporates separate

record and playback Dolby IC circuitry so that both the source and monitored signals are simultaneously Dolby processed—a feature found only in the most advanced recording systems. Dolby circuitry is also provided to decode Dolby FM broadcasts.

Other Professional Features. Separate input and output controls for each channel provide maximum flexibility. Two illuminated VU meters, each with an LED peak indicator calibrated to +3 VU for accurate visual monitoring.

Switchable limiter circuitry prevents distortion due to tape saturation. A three-digit counter with memory is included to quickly, automatically, locate the start of a recorded program. Four preamplifiers are included—two for recording and two for playback. Two-head decks use only two preamplifiers.

The Final Word. The unique Fisher CR5120 is priced about \$350.** Available at fine audio stores or the audio department of better department stores.



CR5120



FISHER
The first name in high fidelity.

© 1977, Fisher Corporation, 21314 Lassen St., Chatsworth, Calif. 91311

*Dolby is a trademark of Dolby Labs, Inc. **Mfg. suggested retail price. Actual sale price is determined by dealer.

Specifications

| | |
|--------------------------------------|--|
| Frequency Response (record/playback) | Standard Tape 30-15,000 Hz, ± 3 dB CrO ₂ Tape 30-18,000 Hz, ± 3 dB |
| Wow & Flutter | 0.04% WRMS |
| Signal to Noise Ratio | 64dB |
| Dimensions (HxWxD) | 6 $\frac{1}{2}$ " x 17 $\frac{1}{8}$ " x 12 $\frac{1}{2}$ " |

Amplifiers



Pioneer Spec-4



Phase Linear 700B

Optonica SM-4646



RAM 512

74

| MANUFACTURER | MODEL | Awe. watt/chan. into 8 ohms | Freq. respon. at rated power, Hz- kHz | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd., phono re: 10 mV, dB | Phono sensitivity, in mV, Phono 1/phono 2 | Phono overload, in mV, Phono 1/phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES |
|----------------------------------|----------------|-----------------------------|---------------------------------------|--|---|------------------------------------|---|--|----------------------|---------------------|---------------------------|------------------------|-------------------------|-------------------------|-------------------------------|--------------------|-----------------------|-------|
| PROFESSIONAL SYSTEMS ENGINEERING | Studio Two (B) | 80 | 20-20 | 0.02 | 0.03 | | | | | | 4 | 200 | 18x10.5x3.5 | 30 | 495.00 | | | |
| RAM AUDIO | RAM 510 (B) | 100 | 20-20 | 0.08 | 0.1 | 100 | | | | | 4 | 100 | 15x3 1/2 x 10 | 25 | 399.99 | | | |
| | RAM 512 (B) | 180 | 20-20 | 0.08 | 0.1 | 100 | | | | | 4 | 1000 | 17 1/2 x 6 x 14 | 40 | 1150.00 | | | |
| REVOX | 8740 (B) | 100 | 20-20 | 0.1 | | 100 | | | | | 4 | 150 | 17 1/2 x 14 x 6 | 44 | | | | |
| | 8750 | 60* | 20-20 | 0.1 | | 70 | 3 | | 0.2 | 15 | 4 | 30 | | 24 1/2 | | *4 ohms. | | |
| ROGERS (REFERENCE MONITOR INT.) | A-75 Series 2 | 45 | 20-50 +0, -3 | 0.08 | 0.08 | 70 | * | 80 | 0.18 | 20 | 8-300 | 4 | 100 | 14 1/2 x 11 1/4 x 4 1/2 | 15 1/2 | 350.00 | *Adj. 2.7, 4.63, & 90 | |
| ROTEL | 5000 (B) | 500 | d.c.-100 | 0.009 | 0.009 | 120 | | | 1 | | 4 | 200 | 19x7 | 118 | 2250.00 | | | |
| | 1412 | 110 | 3-100 | 0.05 | 0.03 | 75 | 2.4, 8/2.4, 8/2.4, 8 | 300/300 | 2.8 | 0.15 | 2.8 | 8-16 | 4 | 80 | 21.6x17.2x7.2 | 49.5 | 780.00 | |
| | 1312 | 80 | 5-100 | 0.05 | 0.08 | 75 | 2.4, 8 | 250/250 | 2.8 | 0.15 | 2.8 | 8-16 | 4 | 70 | 19.3x16.2x7.2 | 38.5 | 570.00 | |
| | 913 | 60 | 5-70 | 0.05 | 0.06 | 75 | 2.0/2.0 | 200/200 | | 0.15 | 2.8 | 8-16 | 4 | 50 | 19.2x15x6 | 28.6 | 370.00 | |
| | 713 | 45 | 5-65 | 0.1 | 0.1 | 68 | 2.5 | 125 | | 0.15 | 2.8 | 8-16 | 4 | 45 | 17.2x12.6x5.2 | 22 | 260.00 | |
| | 413 | 35 | 5-65 | 0.2 | 0.1 | 65 | 2.5 | 115 | | 0.15 | 2.8 | 8-16 | 4 | 35 | 17.2x10.8x5.2 | 19.8 | 200.00 | |
| | 313 | 25 | 5-65 | 0.2 | 0.1 | 65 | 2.5 | 110 | | 0.15 | 2.8 | 8-16 | 4 | 35 | 17.2x10.8x5.2 | 17.6 | 170.00 | |
| SAE | 2600 (B) | 400 | 20-20 ±0.25 | 0.05 | 0.05 | 100 | | | 2.12 | | 4 | 150 | 19x14.5x7 | 65 | 1350.00 | | | |
| | 2400L (B) | 200 | 20-20 ±0.25 | 0.05 | 0.05 | 100 | | | 1.5 | | 4 | 150 | 19x10.5x7 | 47 | 800.00 | | | |
| | 2200 (B) | 100 | 20-20 ±0.25 | 0.05 | 0.05 | 100 | | | 1.0 | | 4 | 150 | 19x8.5x5.25 | 28 | 450.00 | | | |
| | MK 31B (B) | 50 | 20-20 ±0.25 | 0.10 | 0.05 | 80 | | | 1.0 | | 4 | 150 | 19x8.5x5.25 | 19 | 250.00 | | | |
| SANSUI | BA-5000 (B) | 300 | 20-20 | 0.1 | 0.1 | | | | 0.7 | | 2 | 10 | 19x18 1/2 x 8 3/4 | 108.0 | 1300.00 | | | |
| | BA-2000 (B) | 110 | 20-20 | 0.03 | 0.03 | | | | 1.0 | | 8 | 70 | 18 1/2 x 15 x 6 1/2 | 40.3 | 600.00 | | | |
| | AU-20000 | 170 | 20-20 | 0.05 | 0.05 | 80 | 1.5, 3, 6/1.5, 3, 6 | 800/800 | 0.13 | | 4 | 80 | 18 1/2 x 16 x 7 1/4 | 52.0 | 1000.00 | | | |
| | AU-11000A | 110 | 20-20 | 0.05 | 0.05 | 83 | 2.4, 8/2 | 1000/250 | 0.15 | | 4 | 70 | 18 1/2 x 16 1/4 x 7 | 42.3 | 750.00 | | | |
| | AU-9900A | 80 | 20-20 | 0.05 | 0.05 | 83 | 2.4, 8/2 | 1000/250 | 0.15 | | 4 | 70 | 18 1/2 x 16 1/4 x 7 | 38.8 | 600.00 | | | |
| | AU-717 | 85 | 10-20 | 0.025 | 0.025 | 78 | 2.5/2.5 | 350/350 | 0.15 | | 4 | 60 | 18 1/2 x 16 1/4 x 6 1/2 | 39.2 | 450.00 | | | |
| | AU-517 | 65 | 10-20 | 0.025 | 0.025 | 78 | 2.5/2.5 | 320/320 | 0.15 | | 4 | 60 | 19 x 16 1/4 x 6 1/2 | 36.4 | 370.00 | | | |
| | AU-5900 | 45 | 20-20 | 0.1 | 0.1 | 75 | 2.5/2.5 | 250/250 | 0.13 | | 4 | 80 | 17 x 12 1/4 x 5 1/2 | 25.4 | 260.00 | | | |
| | AU-4900 | 35 | 40-20 | 0.15 | 0.2 | 75 | 2.5 | 230 | 0.13 | | 8 | 50 | 15 1/2 x 9 1/2 x 4 1/4 | 14.8 | 200.00 | | | |
| | AU-3900 | 22 | 40-20 | 0.15 | 0.2 | 75 | 2.5 | 200 | 0.13 | | 8 | 50 | 15 1/2 x 9 1/2 x 4 1/4 | 13.2 | 160.00 | | | |
| SANYO | OCA1001 | 45 | 15-35 | 0.5 | | 2.5 | | | | | | | 140 | 15 1/2 x 13 1/2 x 5 | | 199.95 | | |

The designers of the state-of-the-art DDX 1000 present a direct-drive turntable at less than a third the price: The DD 20.

The Micro Seiki DDX 1000 with its three-tonearm capability and its optional highly-acclaimed MA 505 tonearms has taken turntable engineering in a new direction with its styling and audiophile convenience features.

And now these same minds have engineered a superb direct-drive turntable for \$200 (nationally advertised value).*

Like the DDX 1000, the DD 20 has a servo-controlled motor; changes in line

voltage have no effect upon rotation speed. A floating suspension system protects the turntable assembly and tonearm base, eliminating acoustic feedback and providing isolation from outside vibration.

Wow and flutter is less than 0.03 and signal-to-noise ratio is greater than 60 db.

Its precision-machined high mass platter has an engraved stroboscope pattern to attain absolute accuracy at 33 1/3 and 45.

The clean-lined base has an acoustic as well as an aesthetic function: formulated of a special compound of plastic and iron particles, it provides extremely high density. Result: a unique low resonance base.



DD 20



DDX 1000

Its specifications and engineering precision translate into a faithfulness of reproduction that will give you even greater enjoyment out of your favorite records.

Isn't it time to upgrade your pleasure?

MICRO SEIKI

Advanced engineering in turntables.



MA 505

Distributed by TEAC Corporation of America, 7733 Telegraph Road, Montebello, California 90640. ©TEAC 1977.

*Actual resale prices will be determined individually and at the sole discretion of authorized Micro Seiki dealers.

You've never heard anything like it. Not from us. Not from anyone. JBL's new L212: a totally new picture of high performance sound, from the people who wrote the book.

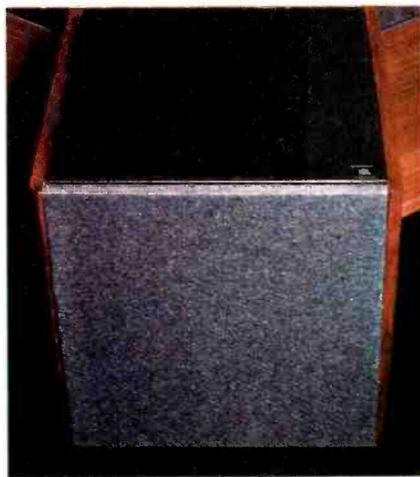
You hear the whole sound first. And when you catch your breath you search for words to describe the depth, the detail, the etched precision of the music.

That stunning pair of three-way speakers is sending clean, undistorted sound to every corner of the room. At every frequency. At every level. Loud or soft. High or low. It doesn't matter. The energy is constant.

You're experiencing three-dimensional imaging: Vocal up front. Lead guitar two steps back and one to the left. Drums further back. The piano closer, almost off the right edge of the sound.

Suddenly you're aware of a fullness in the music that you've heard before but never associated with recorded sound.

The bass! You've been hearing all of the bass, all of the fundamental tones you couldn't bring home from the concert. It's not only everything you've heard before. It's everything you haven't. The music is rich with sound at the lowest limit of your hearing.



Then you see the third speaker. The hero of the piece: The Ultrabass.

The Ultrabass is a system in itself – woofer, amplifier, equalizer and enclosure – designed, mated, blended to do one thing perfectly: reproduce sound at the threshold of sub-sonic frequencies.

It brings all the low frequency music within audible range, balancing it perfectly with the rest of the music. Without boominess. Without resonance. It also electronically sums left and right signals below 70 Hz – virtually eliminating turntable rumble and record warp noise. And, because of the non-directional character of the low frequency sound, the Ultrabass can be placed almost anywhere in the room. Without any loss of three-dimensional imaging.

The Ultrabass pays one final dividend: it allows the two three-way speakers to be specialists, too.

They can concentrate on the top 95% of the music. (Listen to the whole system, and you'll hear what that means. Even at a rug-curling, rock concert loudness, you'll get a clarity, a smoothness, an enthusiasm for detail you've never heard before.)

Finally, you look for the monster amplifier that's driving all that sound. There isn't one. The L212 takes one fourth the power you'd need with a conventional low efficiency loudspeaker.

That's the story. What you've been reading about is, essentially, a no-trade-off loudspeaker system. Now we'll tell you the trade-off: The price is \$1740. (The L212 may take a little while becoming a household word.)

In the meantime we have two suggestions:

If you'd like a lot more technical information, write us and we'll send you an engineering staff report on the L212. Nothing fancy except the specs.

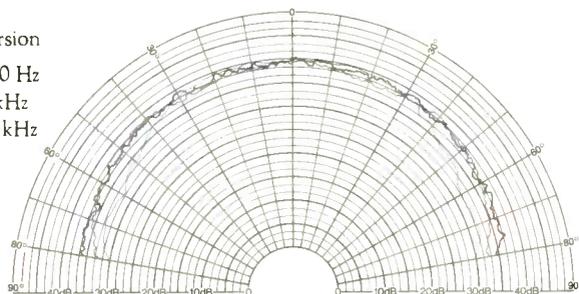
Or call your JBL dealer and ask him when you can hear the L212. You've never heard anything like it. Not from us. Not from anyone.

Frequency Dispersion

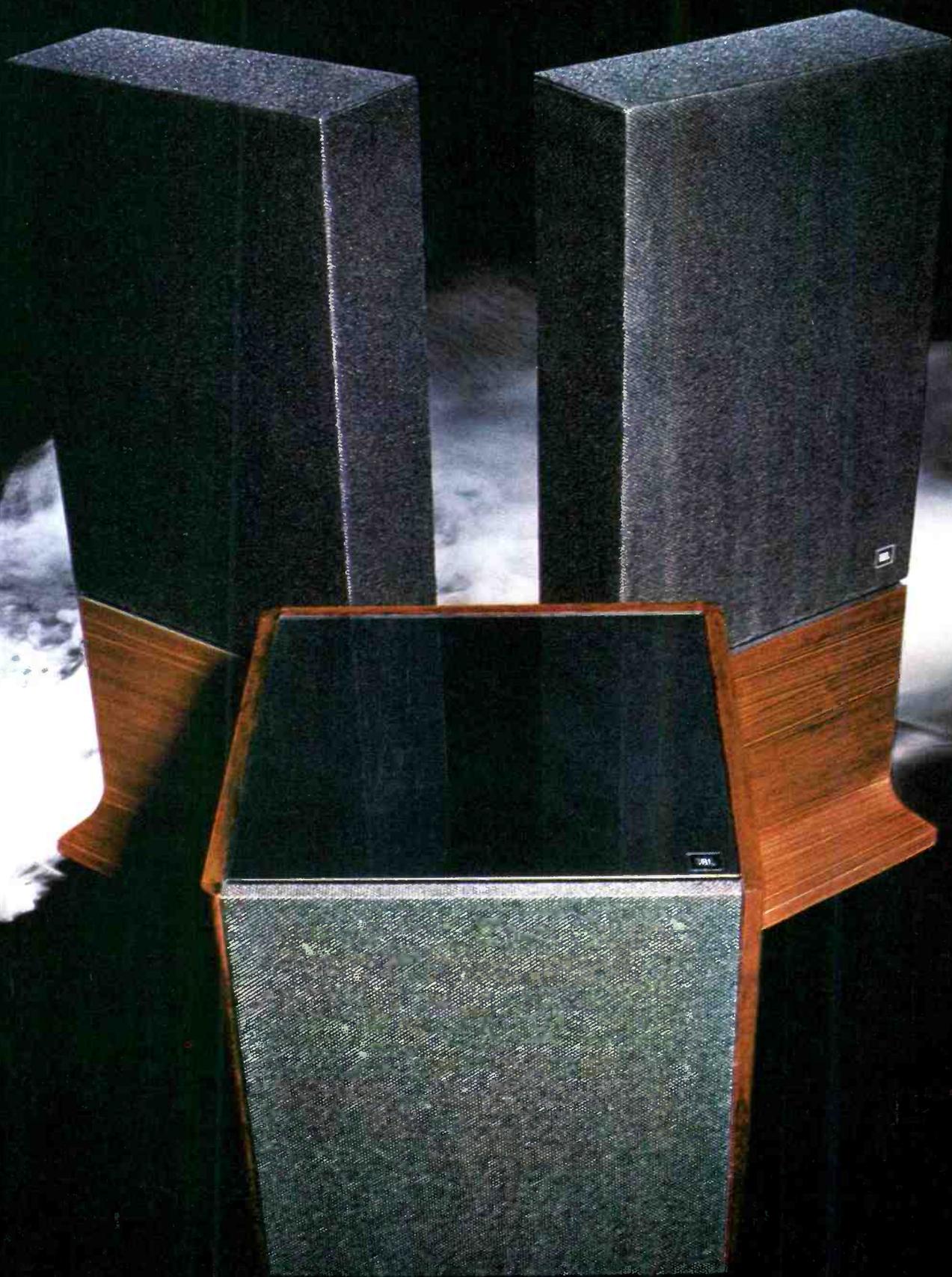
~~~~~ at 400 Hz

~~~~~ at 2 kHz

~~~~~ at 10 kHz



JBL CHANGES THE  
PICTURE OF SOUND.



# Amplifiers



Sanyo DCA 1001



Sansui BA-5000



SAE 2600

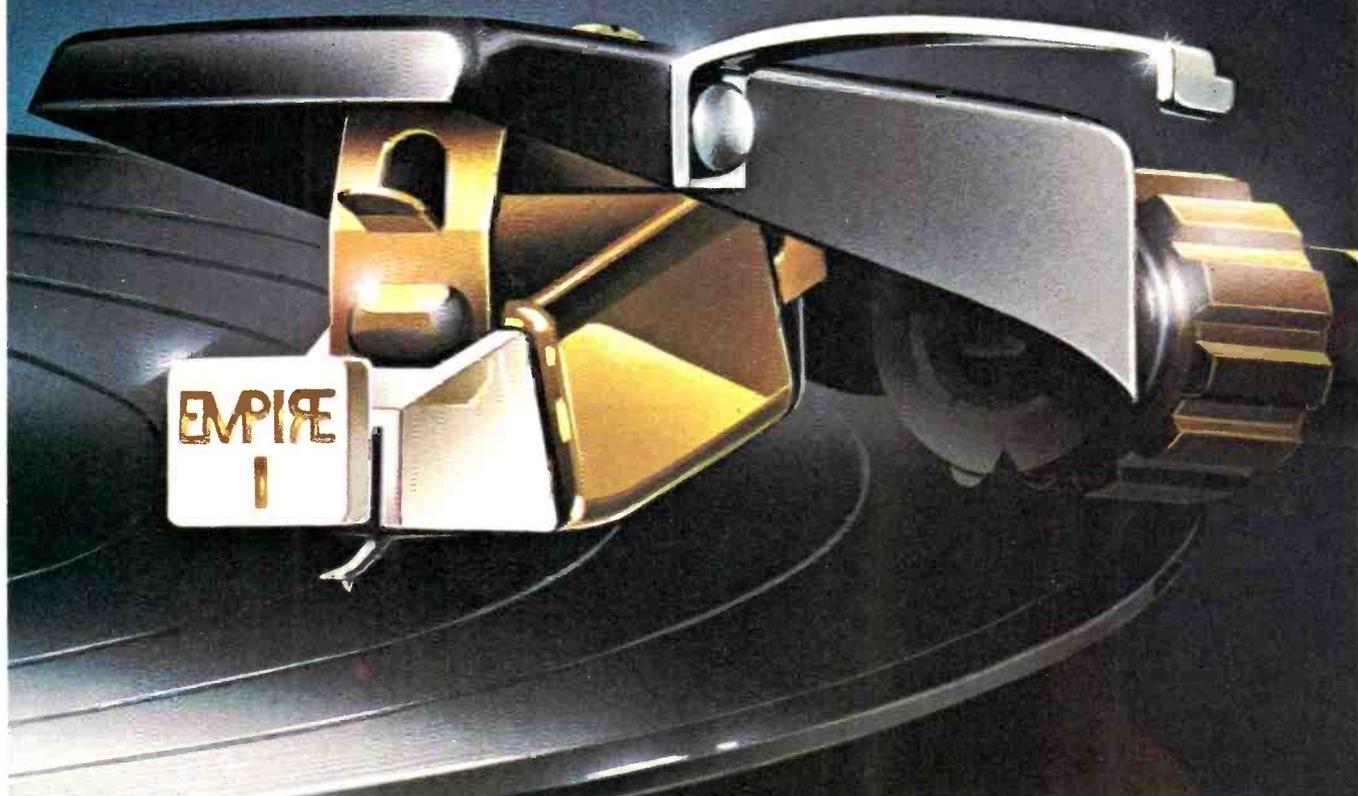


Rotel RB-5000

78

| MANUFACTURER    | MODEL        | Ave. watts/channel into 8 ohms |              | Freq. respon. at rated power, Hz- kHz | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wtd., phono re. 10 mV, dB | Phono sensitivity, in mV., phono 1/phono 2 | Phono overload, in mV., Phono 1/phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions inches, W x D x H | Weight, lbs. (net) | Price, \$                                           | NOTES |
|-----------------|--------------|--------------------------------|--------------|---------------------------------------|------------------------------------------|-----------------------------------------|------------------------------------|--------------------------------------------|-----------------------------------------|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|------------------------------|--------------------|-----------------------------------------------------|-------|
|                 |              | 15                             | 20-20        |                                       |                                          |                                         |                                    |                                            |                                         |                      |                     |                           |                        |                         |                       |                              |                    |                                                     |       |
| H.H. SCOTT      | A-407        | 15                             | 20-20        | 0.5                                   | 0.3                                      | 70                                      | 2.5                                | 100                                        | 6.0                                     |                      |                     | 8-600                     | 4                      | 35                      | 14x5x11½              | 15                           | 119.95             |                                                     |       |
|                 | A-417        | 25                             | 20-20        | 0.3                                   | 0.3                                      | 70                                      | 2.5                                | 100                                        | 6.0                                     |                      |                     | 8-600                     | 4                      | 35                      | 13¼x5 x11½            | 16                           | 149.95             |                                                     |       |
|                 | A-437        | 42                             | 20-20        | 0.3                                   | 0.2                                      | 75                                      | 2.5                                | 100                                        | 6.0                                     |                      |                     | 8-600                     | 4                      | 35                      | 16x6x13               | 23                           | 199.95             |                                                     |       |
|                 | A-457        | 60                             | 20-20        | 0.2                                   | 0.2                                      | 80                                      | 2.5                                | 100                                        | 6.0                                     |                      |                     | 8-600                     | 4                      | 35                      | 16x6x13               | 25                           | 249.95             |                                                     |       |
|                 | Alpha 6      | 60                             | 5-50         | <0.1                                  | <0.1                                     | 100                                     |                                    |                                            |                                         |                      |                     |                           | 4                      | 50                      | 19x5½ x11¼            | 28%                          | 399.95             |                                                     |       |
|                 | Alpha 10     | 100                            | 5-60         | <0.1                                  | <0.1                                     | 100                                     |                                    |                                            |                                         |                      |                     |                           | 4                      | 100                     | 19x5½ x11¼            | 30                           | 549.95             |                                                     |       |
|                 | Alpha 20     | 200                            | 5-60         | <0.1                                  | <0.1                                     | 105                                     |                                    |                                            |                                         |                      |                     |                           | 4                      | 100                     | 19x6 x11¼             | 33                           | 749.95             |                                                     |       |
| SETTON          | AS1100       | 50                             | 20-20        | 0.06                                  | 0.06                                     | 70                                      | *                                  | **                                         | 6                                       | 0.15                 | 0.05                | 8                         | 4                      | 30                      | 19x6x6 x11¼           | 36                           | 379.95             | *Adj. 3.5/7                                         |       |
|                 | AS3300       | 69                             | 20-20        | 0.08                                  | 0.08                                     | 75                                      | *                                  | **                                         | 6                                       | 0.15                 | 0.05                | 8                         | 4                      | 35                      | 19x6x6 x11¼           | 38                           | 459.95             | *Adj. 2.5/5                                         |       |
|                 | AS5500       | 125                            | 20-20        | 0.015                                 | 0.015                                    | 74                                      | *2.8                               | **                                         | 5.2                                     | 0.17                 | 0.05                | 8                         | 4                      | 40                      | 19x6x6 x11¼           | 60                           | 1089.95            | *Adj. 150/300<br>*Adj. 1.6/6.5<br>*Adj. 145/200/530 |       |
| SHERWOOD        | HP-2000      | 120                            | 20-20        | 0.08                                  | 0.08                                     | 83                                      | 2.2                                | 160                                        | 2.3                                     | 0.11                 |                     | 4                         | 8                      | 60                      |                       |                              | 750.00             |                                                     |       |
|                 | HP-1000      | 60                             | 20-20        | 0.08                                  | 0.08                                     | 78                                      | 2.2                                | 160                                        |                                         | 0.11                 |                     | 4                         | 8                      | 60                      |                       |                              | 500.00             |                                                     |       |
| SONY            | TA-8650      | 80                             | 20-20        | 0.1                                   | 0.1                                      | 82                                      | 2.5/0.1                            | 175/7                                      | 0.2                                     | 0.15                 | 0.3                 | 8                         | 4                      | 100                     | 17½x16¼ x5x6          | 44%                          | 1300.00            | V-FET                                               |       |
|                 | TA-5650      | 50                             | 20-20        | 0.1                                   | 0.1                                      | 82                                      | 2.5/2.5                            | 300/300                                    | -                                       | 0.15                 | 0.3                 | 8                         | 4                      | 50                      | 18¼x12¼ x6x6          | 30                           | 520.00             | V-FET                                               |       |
|                 | TA-4650      | 30                             | 20-20        | 0.1                                   | 0.1                                      | 82                                      | 2.5/2.5                            | 300/300                                    | -                                       | 0.15                 | 0.3                 | 8                         | 4                      | 45                      | 17x12¼ x6x6           | 25%                          | 400.00             | V-FET                                               |       |
|                 | TA-3650      | 55                             | 20-20        | 0.1                                   | 0.1                                      | 82                                      | 2.5/2.5                            | 210/210                                    | -                                       | 0.15                 | 0.3                 | 8                         | 4                      | 35                      | 18¼x13 x6x6           | 27                           | 300.00             |                                                     |       |
|                 | TA-2650      | 45                             | 20-20        | 0.2                                   | 0.2                                      | 82                                      | 2.5                                | 200                                        |                                         | 0.15                 | 0.3                 | 8                         | 4                      | 25                      | 15½x10½ x5x5          | 19                           | 220.00             |                                                     |       |
|                 | TAN-8550 (B) | 100                            | 20-20        | 0.1                                   | 0.1                                      | -                                       | -                                  | -                                          | -                                       | -                    | -                   | -                         | 4                      | 200                     | 17½x16¼ x6x6          | 42                           | 1000.00            | V-FET                                               |       |
|                 | TAN-5550 (B) | 50                             | 20-20        | 0.1                                   | 0.1                                      | -                                       | -                                  | -                                          | -                                       | -                    | -                   | -                         | 4                      | 100                     | 18¼x12¼ x6x6          | 27%                          | 450.00             | V-FET                                               |       |
| TA-3200F (B)    | 100          | 20-20                          | 0.1          | 0.1                                   | -                                        | -                                       | -                                  | -                                          | -                                       | -                    | -                   | 4                         | 170                    | 15x12¼ x6x6             | 30%                   | 400.00                       |                    |                                                     |       |
| SOUND-CRAFTSMEN | MA5002 (B)   | 250                            | 10-20        | 0.1                                   | 0.05                                     |                                         |                                    |                                            |                                         |                      |                     |                           | 4                      | 125                     | 19x7 x13              | 47                           | 699.00             |                                                     |       |
|                 | PA5001 (B)   | 250                            | 10-20        | 0.1                                   | 0.05                                     |                                         |                                    |                                            |                                         |                      |                     |                           | 4                      | 125                     | 19x7 x13              | 47                           | 599.00             |                                                     |       |
|                 | EA5003 (B)   | 250                            | 10-20        | 0.1                                   | 0.05                                     |                                         |                                    |                                            |                                         |                      |                     |                           | 4                      | 125                     | 19x7 x13              | 47                           | 849.00             |                                                     |       |
| SPECTRA SONICS  | 712 (B)      | 100                            | 20-20 ±0.10  | 0.02                                  | 0.2                                      | 120                                     |                                    |                                            |                                         | 1.38                 |                     |                           | 8                      | 40                      | 19x3¼ x12             |                              |                    |                                                     |       |
|                 | 109 (B)      | 3                              | 50-50k ±0.10 | 0.1                                   |                                          | 90                                      |                                    |                                            |                                         | 0.06                 | 15                  | 8                         | 8                      | 32                      | 2½x5x1                | 14oz.                        | 75.00              |                                                     |       |
|                 | 700 (B)      | 25/100                         | DC-50k ±0.10 | 0.01                                  | 0.1                                      | 120                                     |                                    |                                            |                                         | 1.38                 |                     |                           | 4                      | 40                      | 2½x10x2               | 20oz.                        | 84.00              | Bridgeable                                          |       |

# Here's a tip to make your records last longer.



79

One, no matter what system you own, a new Empire phono cartridge is certain to improve its performance, three ways.

One, your records will last longer. Unlike other magnetic cartridges, Empire's moving iron design allows our diamond stylus to float free of its magnets and coils. This imposes much less weight on the record surface and insures longer record life.

Two, you get better separation. The small, hollow iron armature we use allows for a tighter fit in its positioning among the poles.

So, even the most minute movement is accurately reproduced to give you the space and depth of the original recording.

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Cartridges  
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*We bring music to life*  
**EMPIRE**

# Amplifiers

Toshiba SB 420



Soundcraftsmen MA5002



Sony TA-2650

Stax DA-80M



80

| MANUFACTURER              | MODEL                  | Ave. watt/chan. into 8 ohms | Freq. respon. - all rated power, Hz - kHz | Highest THD from 0.25W to rated power, % | Highest IM from 0.25W to rated power, % | S/N, "A" wid., phono re. 10 mV, dB | Phono sensitivity, in mV, Phono 1/phono 2 | Phono overload, in mV, Phono 1/phono 2 | Mike input sens., mV | High level sens., V | Headphone output level, V | Headphone load Z, ohms | Minimum Speaker Z, ohms | Damping factor, 1 kHz | Dimensions, inches, W x D x H | Weight, lbs. (net) | Price, \$ | NOTES               |
|---------------------------|------------------------|-----------------------------|-------------------------------------------|------------------------------------------|-----------------------------------------|------------------------------------|-------------------------------------------|----------------------------------------|----------------------|---------------------|---------------------------|------------------------|-------------------------|-----------------------|-------------------------------|--------------------|-----------|---------------------|
| SPECTRO ACOUSTICS         | 500 (B)                | 250                         | 10-40                                     | 0.25                                     | 0.25                                    |                                    |                                           |                                        |                      |                     | 4                         | 150                    | 17x12x7                 | 40                    | 695.00                        |                    |           |                     |
|                           | 500SR (B)              | 250                         | 10-40                                     | 0.25                                     | 0.25                                    |                                    |                                           |                                        |                      |                     | 4                         | 150                    | 19x12x7                 | 40                    | 695.00                        |                    |           |                     |
|                           | 500R (B)               | 250                         | 10-40                                     | 0.25                                     | 0.25                                    |                                    |                                           |                                        |                      |                     | 4                         | 150                    | 19x12x7                 | 40                    | 595.00                        |                    |           |                     |
|                           | 202 (B)                | 100                         | 10-40                                     | 0.25                                     | 0.25                                    |                                    |                                           |                                        |                      |                     | 4                         | 150                    | 17x10x6                 | 25                    | 375.00                        |                    |           |                     |
|                           | 202C (B)               | 100                         | 10-40                                     | 0.25                                     | 0.25                                    |                                    |                                           |                                        |                      |                     | 4                         | 150                    | 19x10x7                 | 25                    | 375.00                        |                    |           |                     |
| SPENDOR (RCS)             | D40                    | 40                          | 30-20                                     | 0.2                                      | 0.2                                     | 76                                 | 4/2                                       | 300                                    |                      |                     | 4                         | 40                     | 13x9                    | 13 1/2                |                               |                    |           |                     |
|                           | M25                    | 25                          | 20-20                                     | 0.4                                      | 0.4                                     |                                    |                                           |                                        | 0.14                 |                     | 4                         | 40                     | *x4                     | 7                     |                               |                    |           | *integral w/speaker |
|                           | M50                    | 50                          | 20-20                                     | 0.4                                      | 0.4                                     |                                    |                                           |                                        | 0.2                  |                     | 4                         | 40                     | *                       | 8                     |                               |                    |           | *As above           |
| STAX (AMERICAN AUDIOPORT) | DA-80 (B)              | 45                          | d.c. -60                                  | 0.007                                    | 0.01                                    | 100                                |                                           |                                        | 0.89                 |                     | 2                         | 700                    | 17 1/2 x 16 1/2 x 6 1/2 | 43                    | 1480.00                       |                    |           |                     |
|                           | DA-80M (B)             | 95                          | d.c. -60                                  | 0.007                                    | 0.01                                    | 100                                |                                           |                                        | 1.26                 |                     | 2                         | 600                    | 17 1/2 x 16 1/2 x 6 1/2 | 44                    | 1400.00                       |                    |           |                     |
|                           | DA-300 (B)             | 150                         | d.c. -60                                  | 0.01                                     | 0.01                                    | 97                                 |                                           |                                        | 1.7                  |                     | 2                         | 700                    | 17 x 9 1/2 x 13 1/2     | 90                    | 3890.00                       |                    |           |                     |
| SUGOEN                    | A-48                   | 45                          | 20-20                                     | 0.1                                      | 0.1                                     | 82                                 | 2.5/2.5                                   | 110/110                                | 0.1                  | 10                  | 8                         | 40                     | 16x11x5                 | 24                    | 500.00                        |                    |           |                     |
|                           | P 51 (B)               | 50                          | 20-20                                     | 0.1                                      | 0.1                                     |                                    |                                           |                                        | 0.5                  |                     | 4                         | 40                     | 11x10x5                 | 24                    | 350.00                        |                    |           |                     |
| SUPERSCOPE                | A-235                  | 3                           | 30-15                                     | 1.0                                      |                                         |                                    | 3                                         | 100                                    | 0.15                 |                     | 8                         | 8                      | 15x5x7                  | 6 1/4                 | 84.95                         |                    |           |                     |
|                           | A245                   | 8                           | 20-30                                     | 1.0                                      |                                         |                                    | 2.5                                       | 100                                    | 0.15                 |                     | 8                         | 8                      | 15x5x7                  | 8                     | 104.95                        |                    |           |                     |
| TAPCO                     | CP120 (B)              | 50                          | 20-20                                     | 0.05                                     | 0.05                                    |                                    |                                           |                                        | 1.23                 | 11.3                | 8-600                     | 4                      | 50                      | 19x16.5               | 18                            | 339.00             |           |                     |
|                           | CP500 (B)              | 150                         | 20-20                                     | 0.05                                     | 0.05                                    |                                    |                                           |                                        | 1.23                 |                     |                           | 4                      | 50                      | 19x17 x3.5            | 35                            | 649.00             |           |                     |
|                           | CP500M (B)             | 150                         | 20-20                                     | 0.05                                     | 0.05                                    |                                    |                                           |                                        | 1.23                 |                     |                           | 4                      | 50                      | 19x17 x5              | 35                            | 779.00             |           |                     |
| THRESHOLD                 | 400A                   | 100                         | 5-200 +0-3                                | 0.1                                      | 0.1 20-20k                              |                                    |                                           |                                        |                      |                     | 4                         | 100                    | 19x11 x17               | 52                    | 1147.00                       |                    |           | Class A             |
| TOSHIBA                   | SB-420                 | 42                          | 20-20                                     | 0.3                                      |                                         | 70                                 | 2.5/2.5                                   | 350/350                                | 4.0                  |                     | 4                         |                        | 17 1/2 x 15 x 6         | 25 1/2                | 219.95                        |                    |           |                     |
| VAN ALSTINE               | Double 400 Stereo 150X |                             |                                           |                                          |                                         |                                    |                                           |                                        |                      |                     | 2                         |                        | 17x14x7                 |                       | 1200.00                       |                    |           | Write for data.     |
|                           |                        |                             |                                           |                                          |                                         |                                    |                                           |                                        |                      |                     | 4                         |                        | 14x13x6                 |                       | 450.00                        |                    |           |                     |
| YAMAHA                    | B-1 (B)                | 160                         | 5-100                                     | 0.02                                     | 0.04                                    | 100                                |                                           |                                        |                      |                     | 4-16                      | 100                    | 18x15 1/2 x 6           | 8 1/2                 | 1600.00                       |                    |           | V FET               |
|                           | B-2 (B)                | 100                         | 10-100                                    | 0.08                                     | 0.03                                    | 115                                | 2                                         |                                        |                      |                     | 4-16                      | 70                     | 17 1/2 x 14 1/2 x 6     | 57                    | 850.00                        |                    |           | V FET               |
|                           | CA-2010                | 120                         | 5-50                                      | 0.03                                     | 0.03                                    | 96                                 | 2                                         |                                        |                      |                     | 4-16                      | 45                     | 18x14 x 6 1/4           | 44                    | 750.00                        |                    |           | W. class A          |
|                           | CA-1010                | 90                          | 5-50                                      | 0.03                                     | 0.03                                    | 96                                 | 2                                         |                                        |                      |                     | 4-16                      | 45                     | 18x14 x 6 1/4           | 42                    | 600.00                        |                    |           | W. class A          |
|                           | CA-810                 | 65                          | 10-100                                    | 0.05                                     | 0.05                                    | 95                                 | 2.5                                       |                                        |                      |                     | 4-16                      | 30                     | 17 1/2 x 13 1/2 x 6 1/4 | 26 1/2                | 380.00                        |                    |           |                     |



**HS-330**  
Speakers Woofer: 10"  
Sandwiched Metal Cone  
Gathered Edge  
Midrange: 2½" Metal Cone  
Tweeter: 1½" Metal Cone  
Frequency Response:  
40 - 18KHz (±4dB)

**An edge over paper cone speakers.**

# Hitachi's Metal Cone.

Hitachi has created the Metal Cone Speaker because we believe it is superior to speakers made with paper cones.

Paper cones are fine but they have a tendency to respond partially and not "wholeheartedly" to a signal coming from the amplifier.

In other words, as the voice coil pushes or pulls at the cone center, part of the cones respond correctly while other parts don't.

What is needed is something that can provide the optimum piston movement.

A material with free circumferential elongation and contraction.

The result of extensive research into all possible (and sometimes impossible) cone materials, Hitachi's engineers created the Metal Cone with perfect low resonance characteristics.

Light, rigid, it also possesses a "gathered edge" supporting the metal cone firmly without disturbing piston movement.

Altogether producing far less distortions than conventional paper cones.

It responds "wholeheartedly" and not partially, giving your music full power of expression.

You might even say it gives your music an edge.

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# Now... more audiophiles than ever. Introducing the new

Since we entered the U.S. audio scene in late 1975, LUX has been primarily identified with separates. Now, LUX introduces three new components—tuner/amplifiers, as we choose to call them—for those who want their tuner, preamplifier and power amplifier on a single chassis.

Our new tuner/amplifiers share the same special qualities that have given LUX separates a worldwide reputation for excellence. Each is designed by the same LUX audiophile/engineers, whose ultimate concern is the way a component sounds under dynamic musical conditions, not just the way it measures during static lab testing.

Although the circuitry details that follow on the Luxman R-1050 may be of primary interest to only the technically-oriented, they suggest the quality you can expect from each of our new tuner/amplifiers. Quality that is anything but ordinary.

## Tuner section

For high sensitivity, there's a dual-gate MOSFET front end. And for excellent selectivity, lower distortion and higher stereo separation, the IF stage has a special linear-phase filter array. Wide stereo separation—45 dB at 1 kHz and 40 dB at frequency extremes—is enhanced by a phase-locked-loop multiplex IC.

## Amplifier sections

With a two-stage direct-coupled amp, the preamplifier provides accurate equalization (RIAA:  $\pm 0.5$  dB) and a good phono overload capability (150 mV). Quiet performance is also assured: phono S/N ratio is 66 dB with a 2.5 mV signal (85 dB re: 10 mV, IHF A).

The power amplifier is direct-coupled DC, in a true complementary symmetry configuration. This output design assures high phase linearity and excellent transient response in all three tuner/amplifiers. The

Suggested prices: Luxman R-1040 (top) \$445, R-1120, \$895.



# Can enjoy the sonic excellence of LUX. LUX tuner/amplifiers.

The basic difference lies in power output: 40, 55 and 120 watts for the R-1040, R-1050 and R-1120 respectively, minimum continuous power per channel, with both channels driven into 8 ohms, 20 to 20,000 Hz. At rated output, total harmonic distortion is no more than 0.05 per cent for the R-1040 and R-1050, no more than 0.03 per cent for the R-1120.

## Features

The features of these tuner/amplifiers are anything but conventional. For example, all three models have 12 LED's (with adjustable sensitivity) to monitor power output. In the R-1050 and R-1120, tape facilities permit deck-to-deck dubbing while you're listening to either FM, AM, phono or aux. Speakers are protected by a turn-on time delay, plus an

overload shut-down circuit. And, even the "standard" features have the special LUX touch.

## Performance—the ultimate criterion

As for how these tuner/amplifiers sound, here's what the British magazine *HiFi at Home* said about the R-1050: "... a high standard of performance... treble quality was light and delicate—something LUX engineers always seem to achieve... bass output seemed plentiful and strong, as is often the case with enormous, low impedance power supplies..."

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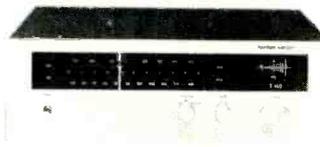
Luxman R-1050, \$595



# Tuners



Accuphase T-100



Harman/Kardon T-403



JVC JT-V71

| MANUFACTURER              | MODEL           | Mono I/F Sensitivity, $\mu$ V (dB) |             | Stereo I/F Sensitivity, $\mu$ V (dB) |        | Capture Ratio, dB | Aft. Chan. Select., dB | AM Supp., I/F, dB | Mono Signal Strength for 50 dB Quieting, $\mu$ V (dB) | Stereo Signal Strength for 50 dB Quieting, $\mu$ V (dB) |       | Separation, dB, 1 kHz | Separation, dB, 10 kHz | THD, 100% modulation | S/N, max., dB, monostereo | De-emphasis, $\mu$ S          | Dimensions, inches, W x H x D | Weight, lbs. | Price                          | NOTES |
|---------------------------|-----------------|------------------------------------|-------------|--------------------------------------|--------|-------------------|------------------------|-------------------|-------------------------------------------------------|---------------------------------------------------------|-------|-----------------------|------------------------|----------------------|---------------------------|-------------------------------|-------------------------------|--------------|--------------------------------|-------|
|                           |                 | 1.7                                | 1.0         | 1.75                                 | 1.0    |                   |                        |                   |                                                       | 45                                                      | 40    |                       |                        |                      |                           |                               |                               |              |                                |       |
| AKAI                      | AT-2600         | 1.7                                | 1.0         | 100                                  | 55     |                   |                        |                   | 45                                                    | 0.15/0.2                                                | 75/   | 75                    | 75                     | 17.3x5.6x13.2        | 16.7                      | 325.00                        |                               |              |                                |       |
|                           | AT-2400         | 1.8                                | 1.0         | 80                                   | 55     |                   |                        |                   | 42                                                    | 0.2/0.3                                                 | 75    | 75                    | 75                     | 17.3x6.6x13.2        | 14.5                      | 225.00                        |                               |              |                                |       |
|                           | AT-2200         | 1.9                                | 1.3         | 60                                   | 50     |                   |                        |                   | 40                                                    | 0.3/0.5                                                 | 70    | 75                    | 75                     | 15x4.9x10.3          | 9.2                       | 165.00                        |                               |              |                                |       |
| ARMSTRONG (ROTH/SINDELL)  | 624 (F)         | 1.0                                | 1.75        | 56                                   | 50     |                   |                        |                   | 40                                                    | 0.2/0.2                                                 | 65    | 75                    | 75                     | 12x3x11              | 7.75                      | 249.95                        |                               |              |                                |       |
|                           | 623             | 1.0                                | 1.75        | 56                                   | 50     |                   |                        |                   | 40                                                    | 0.2/0.2                                                 | 65    | 75                    | 75                     | 12x3x11              | 7.75                      | 359.00                        |                               |              |                                |       |
| DYNACO                    | FM-5 (F)        | 1.75 (10.1)                        | 1.5         | 65                                   | 58     | 5.0(19.2)         |                        |                   | 40                                                    | 0.5/0.9                                                 | 65*   | 75                    | 75                     | 13x4x4x9             | 11                        | 199.00k                       | *S/N unweighted               |              |                                |       |
|                           | AF-6            | 1.75 (10.1)                        | 1.5         | 65                                   | 58     | 5.0(19.2)         |                        |                   | 40                                                    | 0.5/0.9                                                 | 65*   | 75                    | 75                     | 13x4x4x12            | 13                        | 319.00w<br>269.00k<br>395.00w | *As above                     |              |                                |       |
| FISHER                    | FM2310          | 1.7(9.8)                           | 4.3(17.9)   | 0.8                                  | 75     | 65                |                        | 34 (35.9)         | 46                                                    | 0.1/0.15                                                | 75/70 |                       |                        | 17x14x6              | 17.6                      | 249.95                        |                               |              |                                |       |
|                           | FM2110          | 1.8 (10.3)                         | 4.6(18.5)   | 1.0                                  | 70     | 60                |                        | 38 (36.8)         | 40                                                    | 0.15/0.2                                                | 72/66 |                       |                        | 16x13x5.5            | 13.6                      | 159.95                        |                               |              |                                |       |
| HARMAN KARDON             | T403            | 1.7 (11.2)                         | 2.0         | 60                                   | 55     | 3.8(17.0)         |                        | 45 (38)           | 40                                                    | 0.6/0.7                                                 | 73/63 | 75                    |                        | 15x5x5x15            | 15.5                      | 195.00                        |                               |              |                                |       |
|                           | Citation 18 (F) | 2.0 (10.0)                         | 1.5         | 70                                   | 55     | 3.2(15.1)         |                        | 40(37.3)          | 50                                                    | 0.15/0.3                                                | 74/64 | 75/25                 |                        | 16x4x13              | 23                        | 595.00                        |                               |              | built-in 2-watt headphone amp. |       |
| HEATH                     | AN-2016         | 1.7                                | 35          | 1.3                                  |        |                   |                        |                   | 40                                                    | 0.3                                                     | 68    |                       |                        | 19x6x14              | 38                        | 599.95k                       |                               |              | 39.95 for Dolby.               |       |
|                           | AJ-1515         | 1.8                                | 1.8         | 1.5                                  |        |                   |                        |                   | 40                                                    | 0.3                                                     | 70    |                       |                        | 17x6x14              | 27                        | 379.95k                       |                               |              |                                |       |
|                           | AJ-1219         | 2                                  | 2           | 2                                    |        |                   |                        |                   | 40                                                    | 0.3                                                     |       |                       |                        | 13x3x11              | 12                        | 109.95k                       |                               |              |                                |       |
|                           | AJ-1510A        | 1.8                                | 1.8         | 1.5                                  |        |                   |                        |                   | 40                                                    | 0.3                                                     |       |                       |                        | 16x14x6              | 25                        | 499.95k                       |                               |              |                                |       |
| HITACHI                   | FT-520          | 1.7 (9.8)                          | 14.0 (28.0) | 1.0                                  | 80     | 55                | 3.5 (16)               | 39 (37)           | 45                                                    | 0.15/0.25                                               | 74/68 |                       |                        | 17x5x15              | 16.5                      | 229.95                        |                               |              |                                |       |
|                           | FT-920          | 1.6 (9.3)                          | 14.0 (28.0) | 1.0                                  | 80     | 55                | 3.1 (15)               | 34 (36)           | 45                                                    | 0.15/0.25                                               | 74/68 |                       |                        | 17x5x15              | 17.2                      | 299.95                        |                               |              |                                |       |
| JVC                       | JT-V71          | 1.8 (10.3)                         | 1.0         | 75                                   | 50     | 3.8(16.8)         |                        | 36.8 (38)         | 50                                                    | 0.1/0.1                                                 | 75/68 | 75                    |                        | 11x6x14              | 15.4                      | 269.95                        |                               |              |                                |       |
|                           | JT-V31          | 1.9 (10.8)                         | 1.2         | 60                                   | 50     | 4.0(17.3)         |                        | 40 (37.3)         | 45                                                    | 0.2/0.35                                                | 72/68 | 75                    |                        | 15x6x14              | 11.0                      | 169.95                        |                               |              |                                |       |
| KENSONIC ACCUPHASE (TEAC) | T-100           | 2.0(11)                            | 20.0(31)    | 1.5                                  | 70     |                   | 4.5(18.0)              | 45 (38.0)         | 45                                                    | 0.1/0.2                                                 | 75/70 | 75                    |                        | 17x6x14              | 31                        | 700.00                        |                               |              |                                |       |
|                           | T-101 (F)       | 2.0(11)                            | 20.0(31.0)  | 2.0                                  | 55/100 |                   | 4.5(18.0)              | 45 (38.0)         | 45                                                    | 0.1/0.2                                                 | 75/70 | 75                    |                        | 18x6x14              | 24                        | 450.00                        |                               |              |                                |       |
| KENWOOD                   | 600T            | 1.6(9.3)                           | 0.8         | 110                                  | 65     | 2.8(14.2)         |                        | 38 (36.8)         | 50                                                    | 0.05/0.08                                               | 84/80 | 75                    |                        | 17x6x15              | 29.8                      | 600.00                        |                               |              |                                |       |
|                           | KT-8300         | 1.6(9.3)                           | 1.0         | 110                                  | 60     | 2.8(14.2)         |                        | 30 (34.8)         | 50                                                    | 0.08/0.1                                                | 78/75 | 75                    |                        | 17x6x15              |                           | 400.00                        |                               |              |                                |       |
|                           | KT-7300         | 1.8 (10.3)                         | 1.0         | 80                                   | 60     | 3.8(16.8)         |                        | 45 (38.3)         | 40                                                    | 0.1/0.2                                                 | 73/68 | 75                    |                        | 17x6x15              | 17.6                      | 275.00                        |                               |              |                                |       |
|                           | KT-5300         | 1.9 (10.8)                         | 1.0         | 60                                   | 50     | 5.0(19.2)         |                        |                   | 30                                                    | 0.2/0.3                                                 | 70    | 75                    |                        | 15x5x11              |                           | 140.00                        |                               |              |                                |       |
| LEAK                      | 2300            | 1.6                                | 1.5         | 50                                   | 50     |                   |                        |                   | 35                                                    | 0.5/0.5                                                 | 65    |                       |                        | 5.3x16.3x12.2        | 13                        | 495.00                        |                               |              |                                |       |
| LUX                       | 5T50            | 1.7(9.8)                           | 4.5(18.3)   | 1.1                                  | 72     | 55                | 2.5(36.1)              | 35 (36.1)         | 45                                                    | 0.08/1.0                                                | 70/   | 75/25                 |                        | 17.7x4x16            | 19                        | 1495.00                       |                               |              | w/Dolby                        |       |
|                           | T-110           | 1.6(9.3)                           | 1.3         | 70                                   | 53     | 2.2(12.0)         |                        | 34 (35.8)         | 48                                                    | 0.08/0.08                                               | 78/72 | 75/25                 |                        | 19x4x9               | 17                        | 525.00                        |                               |              |                                |       |
|                           | T-88V           | 2.0 (11.2)                         | 1.8         | 60                                   | 50     | 2.8(14.1)         |                        |                   | 43                                                    | 0.2/0.3                                                 | 72/   | 75                    |                        | 17x6x11              | 15.4                      | 345.00                        |                               |              |                                |       |
|                           | T-310           | 1.7(9.8)                           | 1.5         | 75                                   | 53     | 2.2               |                        |                   | 42                                                    | 0.1/0.12                                                | 75/   | 75/25                 |                        | 19x7x12              | 28                        | 595.00                        |                               |              | w/Dolby                        |       |

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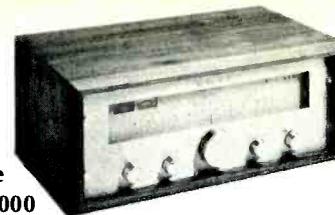
# Tuners



Nakamichi 630



Optonica ST-3636



Phase Linear 5000

| MANUFACTURER         | MODEL     | Mono IHF Sensitivity, $\mu$ V (dB $\mu$ ) |           | Stereo IHF Sensitivity, $\mu$ V (dB $\mu$ ) |           | Capture Ratio, dB | Att. Chm. Select., dB | AM Supp., IHF, dB | Mono Signal Strength for 50 dB Distorting, $\mu$ V (dB $\mu$ ) | Stereo Signal Strength for 50 dB Distorting, $\mu$ V (dB $\mu$ ) | Separation, dB, 1 kHz | Separation, dB, 10 kHz | THD, mono/stereo, 1 kHz, 100% modulation | S/N, max., dB, mono/stereo                             | Distortion, $\mu$ S                    | Dimensions, inches, W x H x D | Weight, lbs.                         | Price                                                                                    | NOTES |
|----------------------|-----------|-------------------------------------------|-----------|---------------------------------------------|-----------|-------------------|-----------------------|-------------------|----------------------------------------------------------------|------------------------------------------------------------------|-----------------------|------------------------|------------------------------------------|--------------------------------------------------------|----------------------------------------|-------------------------------|--------------------------------------|------------------------------------------------------------------------------------------|-------|
|                      |           | 0.8                                       | 90/50     | 60                                          | 2.2(12.1) |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        |                                        |                               |                                      |                                                                                          |       |
| MARANTZ (SUPERSCOPE) | 2140      | 1.5 (8.75)                                |           | 0.8                                         | 90/50     | 60                |                       | 2.2(12.1)         | 25 (33.3)                                                      | 50                                                               | 42                    | 0.07/0.1               | 83/75                                    | 75/25                                                  | 16 $\times$ 5 $\times$ 11 $\times$ 11  |                               | 389.95                               |                                                                                          |       |
|                      | 2120      | 1.8 (10.3)                                |           | 1.0                                         | 80/50     | 55                |                       | 2.5(13.2)         | 40 (37.3)                                                      | 50                                                               | 42                    | 0.1/0.15               | 80/70                                    | 75/25                                                  | 16 $\times$ 5 $\times$ 9 $\times$ 9    | 13.4                          | 279.95                               |                                                                                          |       |
|                      | 2100      | 1.8 (10.3)                                |           | 1.0                                         | 80        | 55                |                       | 2.5(13.2)         | 40 (37.3)                                                      | 45                                                               | 40                    | 0.15/0.3               | 75/65                                    | 75/25                                                  | 16 $\times$ 5 $\times$ 9 $\times$ 9    | 13.2                          | 199.95                               |                                                                                          |       |
| MCINTOSH             | MR78 (F)  | 2                                         |           | 2.5                                         | 55        |                   |                       |                   |                                                                | 40                                                               |                       | 0.2/0.2                | 75                                       |                                                        | 16 $\times$ 5 $\times$ 13              | 27                            | 899.00                               |                                                                                          |       |
|                      | MR77 (F)  | 2                                         |           | 2.5                                         | 50        |                   |                       |                   |                                                                | 40                                                               |                       | 0.2/0.2                | 75                                       |                                                        | 16 $\times$ 5 $\times$ 13              | 27                            | 699.00                               |                                                                                          |       |
|                      | MR74      | 2.5                                       |           | 1.5                                         | 58        |                   |                       |                   |                                                                | 35                                                               |                       | 0.3/0.5                | 70                                       |                                                        | 16 $\times$ 5 $\times$ 13              | 25                            | 699.00                               |                                                                                          |       |
| MCKAY OYMEK          | DR-22     |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 17 $\times$ 5 $\times$ 16              | 19                            | 995.00                               | AM with SSB CB tuner covers 50-29, 700kHz. digital synthesis tuning. Pre model of DR-22. |       |
|                      | DR-33     |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 17 $\times$ 5 $\times$ 16              | 20                            | 1500.00                              | AM hi-fi tuner, 540-1600 kHz.                                                            |       |
|                      | AM-5      |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 17 $\times$ 3 $\times$ 10              | 12                            | 295.00                               | AM hi-fi tuner, 540-1600 kHz.                                                            |       |
|                      | AM-7      |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 17 $\times$ 3 $\times$ 10              | 12 $\frac{1}{2}$              | 320.00                               | AM hi-fi tuner, 540-1600 kHz & 150-300kHz Antenna for DR-22 covering 50-30,000 kHz.      |       |
|                      | DA-100    |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 9 $\times$ 5 $\times$ 9                | 6 $\frac{1}{2}$               | 135.00                               | Active loop antenna for AM-5 & others.                                                   |       |
|                      | DA-5      |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 9 $\times$ 11 $\times$ 9 $\frac{1}{4}$ | 6 $\frac{1}{2}$               | 175.00<br>119.00K                    | Active loop antenna for AM-7 & others.                                                   |       |
| DA-7                 |           |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 9 $\times$ 11 $\times$ 9 $\frac{1}{4}$ | 6 $\frac{1}{2}$               | 195.00<br>129.00K                    | Active loop antenna for AM-7 & others.                                                   |       |
|                      | DA-7      |                                           |           |                                             |           |                   |                       |                   |                                                                |                                                                  |                       |                        |                                          |                                                        | 9 $\times$ 11 $\times$ 9 $\frac{1}{4}$ | 6 $\frac{1}{2}$               | 195.00<br>129.00K                    | Active loop antenna for AM-7 & others.                                                   |       |
| MITSUBISHI           | DA-F10    | 2.5 (13.2)                                | 7.8(23)   | 0.8/1.5                                     | 45/75     | 55/50             | 75                    | 70                | 45/35                                                          | 40/30                                                            | 0.06/0.1; 0.2/0.5     | 75/70                  | 75                                       | 16 $\times$ 6 $\times$ 10 $\frac{1}{2}$                | 16 $\frac{1}{2}$                       | 260.00                        | Swit. selectivity.                   |                                                                                          |       |
| NAKAMICHI            | 630 (F)   | 2.5(13)                                   | 25.0 (33) | 1.0                                         | 40/80     | 60                | 5.0(19)               | 50 (39)           | 50                                                             | 35                                                               | 0.05/0.08             | 70/68                  | 75/25                                    | 16 $\times$ 6 $\times$ 9 $\frac{1}{2}$                 | 15.5                                   | 630.00                        | tuner section of tuner-preamp.       |                                                                                          |       |
| NIKKO                | NT850     | 1.8/10.3                                  | 1.8/10.3  | 1.0                                         | 90/65     | 60                |                       |                   |                                                                | 35                                                               | 0.08/0.15             | 75/70                  |                                          | 5 $\frac{1}{2}$ $\times$ 15 $\times$ 13 $\frac{1}{2}$  | 13 $\frac{1}{2}$                       | 99.95                         | Swit. selectivity.                   |                                                                                          |       |
|                      | GAMMA I   | 1.8/10.3                                  | 1.8/10.3  | 1.0                                         | 85/35     | 60                |                       |                   |                                                                | 35                                                               | 0.05/0.08             | 78/72                  |                                          |                                                        |                                        | 350.00                        |                                      |                                                                                          |       |
| ONKYO                | T-4       | 1.9 (10.8)                                | 4.5(18.3) | 1.5                                         | 60        | 50                | 3.5(16.1)             | 40 (37.2)         | 40                                                             | 30                                                               | 0.2/0.4               | 70/60                  | 75/25                                    | 17 $\frac{1}{2}$ $\times$ 6 $\times$ 15                | 13.4                                   | 199.95                        |                                      |                                                                                          |       |
|                      | T-9       | 1.7(9.8)                                  | 4(17.2)   | 1.5                                         | 80        | 50                | 3(14.7)               | 35 (36)           | 40                                                             | 35                                                               | 0.15/0.3              | 73/65                  | 75/25                                    | 17 $\frac{1}{2}$ $\times$ 6 $\times$ 15                | 15.4                                   | 279.95                        |                                      |                                                                                          |       |
| OPTONICA (SHARP)     | ST-3636   | 1.7(9.8)                                  | 4.5(18.3) | 2.0                                         | 80        | 50                | 4.5(18.2)             | 45 (38.2)         | 50                                                             | 40                                                               | 0.2/0.3               | 75/70                  | 75                                       | 17 $\frac{1}{2}$ $\times$ 5 $\times$ 14 $\frac{1}{2}$  | 19 $\frac{1}{2}$                       | 299.95                        | Swit. i.f. bandwidth. ST-1515B Black |                                                                                          |       |
|                      | ST-1515   | 1.7(9.8)                                  | 5.0(19.2) | 1.2                                         | 60        | 50                | 5.5(20.2)             | 45 (38.2)         | 45                                                             | 35                                                               | 0.2/0.3               | 72/65                  | 75                                       | 16 $\frac{1}{2}$ $\times$ 5 $\times$ 11                | 10                                     | 179.95                        |                                      |                                                                                          |       |
| PHASE LINEAR         | 5000      | 2.2 (12.0)                                | 7.5(22.7) | 1.5                                         | 75        | 60                | 4.0(17.2)             | 30 (34.7)         | 40                                                             | 30                                                               | 0.2/0.25              | 74/72                  | 75/25                                    | 19 $\times$ 7 $\times$ 10                              | 17                                     | 499.95                        |                                      |                                                                                          |       |
| PHILIPS              | AH673     | 1.6(9.3)                                  | 3.0(14.8) | 1.0                                         | 110       | 50                | 2.5(13.2)             | 30 (28.7)         | 45                                                             | 38                                                               | 0.09/0.1              | 70/68                  | 75                                       | 18 $\times$ 5 $\times$ 13 $\frac{1}{2}$                | 22                                     | 599.95                        |                                      |                                                                                          |       |
| PIONEER              | TX-9500H  | 1.5(8.8)                                  |           | 0.8; 2.0                                    | 35; 85    | 65                | 2.5(13.2)             | 35 (36.1)         | 50; 45                                                         | 35; 30                                                           | 0.05-0.07; 0.07-0.25  | 82/77                  | 75/25                                    | 16 $\frac{1}{2}$ $\times$ 16 $\times$ 15 $\frac{1}{2}$ | 21                                     | 400.00                        | Swit. selectivity.                   |                                                                                          |       |
|                      | TX-8500H  | 1.8 (10.3)                                |           | 0.8; 2.0                                    | 35; 80    | 55                | 3.5(16.1)             | 40 (37.2)         | 45                                                             | 35; 30                                                           | 0.08-0.15; 0.1-0.4    | 79/75                  | 75/25                                    | 16 $\frac{1}{2}$ $\times$ 6 $\times$ 15 $\frac{1}{2}$  | 18                                     | 300.00                        | Swit. selectivity.                   |                                                                                          |       |
|                      | TX-6500H  | 1.9 (10.7)                                |           | 1.0                                         | 60        | 50                | 2.8(14.0)             | 44 (38.0)         | 40                                                             | 30                                                               | 0.15/0.3              | 75/68                  | 75/25                                    | 15 $\times$ 5 $\times$ 12 $\frac{1}{2}$                | 12 $\frac{1}{2}$                       | 200.00                        |                                      |                                                                                          |       |
|                      | TX-5500H  | 1.9 (10.7)                                |           | 1.0                                         | 60        | 50                | 2.8(14.0)             | 44 (38.0)         | 35                                                             | 30                                                               | 0.15/0.3              | 72/68                  | 75/25                                    | 15 $\times$ 5 $\times$ 10 $\frac{1}{2}$                | 7 $\frac{1}{2}$                        | 150.00                        |                                      |                                                                                          |       |
|                      | RAM AUDIO | RAM102                                    | 1.6(9.5)  | 6.0(21)                                     | 1.5       | 70                | 53                    | 2.2(12.2)         | 34.5 (36)                                                      | 46                                                               | 35                    | 0.08/0.08              | 75/71                                    | 75/25                                                  | 17 $\times$ 3 $\times$ 14              | 20                            | 639.00                               |                                                                                          |       |
| REVOX                | B760      | 2                                         | 20        | 0.9                                         | 80        | 70                |                       |                   |                                                                |                                                                  | 0.15                  | 75                     | 75/50/25                                 | 17 $\times$ 13 $\times$ 6                              |                                        |                               |                                      |                                                                                          |       |

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## Burwen Research

The English publication *Hi-Fi News & Record Review* and the prestigious German magazine *Stereo* are hardly known for their effusiveness. ("Acceptable" is tantamount to a rave review.) But reviewers in both publications adjudged PMB Stereo Headphones "Best" among those tested, included in the tests were Audio-Technica, Yamaha, Koss, Pioneer, Beyer and practically every other important name in the business). And *Hi-Fi Stereophonie*, perhaps the most important high fidelity journal in Europe, in an

uncharacteristic display of enthusiasm described the PMB 8 and the PMB 6 as "Outstanding." (Burwen Research markets two Orthodynamic Stereo Headphones, the PMB 8 and the PMB 6, and three Dynamic Stereo Headphones, the PMB 4, the PMB 40, and the PMB 20.) The line, styled and developed by Burwen Research, is manufactured in Germany. The combination of talents and techniques on both sides of the Atlantic has produced stereo headphones that are not only very beautiful, but, indeed,

*outstanding* within every important performance parameter. Burwen Research PMB Headphones are now available at a select number of audio dealers. Listen to a pair soon. We think you'll agree that they are worthy of your most critical attention.

For technical information and excerpts of reviews, write to Burwen Research, 30 Cross St., Cambridge, Mass. 02139. In Canada: The Pringle Group, Don Mills, Ontario, Canada.

# Tuners



Pioneer  
TX-9500 II



| MANUFACTURER                    | MODEL            | Mono IHF Sensitivity, $\mu$ V (dBf) | Stereo IHF Sensitivity, $\mu$ V (dBf) | Capture Ratio, dB | Alt. Chan. Select., dB | AM Supp., IHF, dB | Mono Signal Strength for 50 dB Queuing, $\mu$ V (dBf) | Stereo Signal Strength for 50 dB Queuing, $\mu$ V (dBf) | Separation, dB, 1 kHz | THD, mono/stereo, 1 kHz, 100% modulation | S/N, max., dB, mono/stereo | De-emphasis, $\mu$ S | Dimensions, inches, W x H x D | Weight, lbs.                                        | Price            | NOTES   |                              |
|---------------------------------|------------------|-------------------------------------|---------------------------------------|-------------------|------------------------|-------------------|-------------------------------------------------------|---------------------------------------------------------|-----------------------|------------------------------------------|----------------------------|----------------------|-------------------------------|-----------------------------------------------------|------------------|---------|------------------------------|
| ROGERS (REFERENCE MONITOR INT.) | T-75(F) Series 2 | 1.5                                 | 18.0                                  | 1.5               | 60                     | 50                | 4.0                                                   | 30                                                      | 40                    | 35                                       | 0.3/0.7                    | 70/65                | 75                            | 14 $\frac{1}{2}$ x4 $\frac{1}{4}$ x11 $\frac{1}{4}$ | 10.8             | 299.00  | 25-15 $\pm$ 1                |
| ROTEL                           | 1024             | 1.5(8.9)                            | 3.0(14.7)                             | 1.0               | 80                     | 60                | 2.1(11.5)                                             | 35 (36)                                                 | 47                    | 35                                       | 0.1/0.2                    | 75/70                | 75/25                         | 19.3x7.2x16.2                                       | 24.2             | 570.00  |                              |
|                                 | 925              | 1.7(9.9)                            | 3.1(15)                               | 1.5               | 80                     | 60                | 3.0(14.7)                                             | 35 (36)                                                 | 43                    | 31                                       | 0.1/0.3                    | 70/65                | 75/25                         | 19.2x6x15                                           | 19.8             | 340.00  |                              |
|                                 | 725              | 1.8(10.3)                           | 4.5(18.3)                             | 1.5               | 60                     | 50                | 3.0(14.7)                                             | 44 (38)                                                 | 42                    | 31                                       | 0.2/0.3                    | 70/65                | 75/25                         | 17.2x5.6x10.8                                       | 13.2             | 200.00  |                              |
|                                 | 425              | 1.9(10.7)                           | 4.9(19.0)                             | 1.5               | 50                     | 50                | 3.1(15)                                               | 44 (38)                                                 | 40                    | 30                                       | 0.2/0.3                    | 70/65                | 75/25                         | 17.2x5.6x10.8                                       | 11               | 170.00  |                              |
| SAE                             | 8000 (F)         | 1.6(8.5)                            | 4.5(18.1)                             | 1.5               | 120                    | 100               | 2.2(12.2)                                             | 25 (33.4)                                               | 45                    | 35                                       | 0.15/0.20                  | 70/70                | 75/25                         | 19x7x10.5                                           | 20               | 650.00  |                              |
| SANSUI                          | TU-9900          | 1.5(8.8)                            | (17)                                  | 1.0               | 90                     | 58                | (14.5)                                                | (36)                                                    | 50                    | 40                                       | 0.06/0.08                  | 80/76                | 75/50/25                      | 18 $\frac{1}{4}$ x6 $\frac{1}{2}$ x12 $\frac{1}{2}$ | 21.2             | 460.00  |                              |
|                                 | TU-717           | 1.75(10.1)                          | 4.9(19.0)                             | 1.2               | 80                     | 60                | (13.0)                                                | 40 (37.2)                                               | 45                    | 38                                       | 0.07/0.07                  | 80/77                | 75/50/25                      | 19x6x16 $\frac{1}{2}$                               | 20.3             | 320.00  |                              |
|                                 | TU-5900          | 1.8(10.3)                           |                                       | 2.0               | 60                     | 55                | 3.5(16.0)                                             | 45 (38.0)                                               | 40                    | 30                                       | 0.25/0.35                  | 70/60                | 75/50/25                      | 17x5 $\frac{1}{4}$ x9 $\frac{1}{2}$                 | 14.1             | 230.00  |                              |
|                                 | TU-3900          | 2.0(11.2)                           |                                       | 2.0               | 60                     |                   |                                                       |                                                         | 40                    |                                          | 0.3/0.4                    | 70/                  | 75/50/25                      | 15 $\frac{1}{2}$ x4 $\frac{1}{4}$ x9 $\frac{1}{2}$  | 11.0             | 160.00  |                              |
| SANYO                           | FM T1001K        | 300                                 | 2.0                                   | 1.0               |                        | 48                |                                                       |                                                         | 40                    |                                          | 0.4                        | 70/50                |                               | 15 $\frac{1}{4}$ x5x14                              |                  | 149.95  |                              |
| H. H. SCOTT                     | T-516            | 2.2(12)                             | 18(30.3)                              | 1.5               | 55                     | 50                | 3.5(16.1)                                             | 70 (42.1)                                               | 40                    | 34                                       | 0.3/0.5                    | 68/65                | 75/50/25                      | 14 $\frac{1}{2}$ x5x12                              | 13               | 149.95  |                              |
|                                 | T-526            | 1.9(10.8)                           | 18(30.3)                              | 1.5               | 55                     | 50                | 3.5(16.1)                                             | 40 (37.2)                                               | 40                    | 34                                       | 0.3/0.5                    | 68/65                | 75/50/25                      | 16 $\frac{1}{2}$ x5 $\frac{1}{2}$ x12 $\frac{1}{2}$ | 13 $\frac{1}{2}$ | 229.95  |                              |
|                                 | T-527            | 1.9(10.8)                           | 18(30.3)                              | 1.5               | 55                     | 50                | 3.5(16.1)                                             | 40 (37.2)                                               | 40                    | 34                                       | 0.3/0.5                    | 68/65                | 75/50/25                      | 16 $\frac{1}{2}$ x5 $\frac{1}{2}$ x12 $\frac{1}{2}$ | 14               | 249.95  |                              |
| SETTON                          | TUS600           | 1.8(10.3)                           | 4.3(18)                               | 1.25              | 80                     | 65                | 4(17)                                                 | 40 (37)                                                 | 55                    | 45                                       | 0.09/0.11                  | 70.5/71              | 75/25                         | 19 $\frac{1}{2}$ x6 $\frac{1}{2}$ x11 $\frac{1}{2}$ | 25               | 379.95  |                              |
| SHERWOOD                        | Micro/CPU-100    | 1.6(9.31)                           |                                       | 0.5; 1.0          | 18; 85                 | 65                | 3.0-2.1(13.5)                                         | 30.25(34.7)                                             | 50                    | 40                                       | 0.7; 1.0; 0.15; 0.2        | 75/72                | 75/50/25                      | 20x6 $\frac{1}{2}$ x15                              | 34               | 2000.00 |                              |
|                                 | HP-5500          | 1.6(9.31)                           |                                       | 1.0               | 85                     | 65                | 2.5(13.18)                                            | 25(33.2)                                                | 55                    | 38                                       | 1.2/0.2                    | 70/65                | 75/25                         | 20 $\frac{1}{4}$ x6x13 $\frac{1}{2}$                |                  | 500.00  |                              |
| SONY                            | ST-5950SD        | 1.5(8.7)                            |                                       | 1.0               | 85                     | 56                | 2.8(14.1)                                             | 35 (36.1)                                               | 50                    | 40                                       | 0.1/0.2                    | 76/70                | 75/25                         | 17 $\frac{1}{2}$ x6 $\frac{1}{2}$ x13               | 20 $\frac{1}{2}$ | 470.00  | W/Dolby                      |
|                                 | ST-4950          | 1.9(10.8)                           |                                       | 1.0               | 80                     | 53                | 4.0(17.2)                                             | 50 (39.1)                                               | 40                    | 35                                       | 0.15/0.3                   | 75/70                | 75                            | 17x6 $\frac{1}{2}$ x13                              | 17               | 350.00  |                              |
|                                 | ST-3950SD        | 1.7(9.8)                            |                                       | 1.0               | 80                     | 56                | 3.0(14.7)                                             | 40 (37.2)                                               | 40                    | 35                                       | 0.15/0.25                  | 75/70                | 75/25                         | 18 $\frac{1}{4}$ x6 $\frac{1}{2}$ x13               | 17 $\frac{1}{2}$ | 300.00  | W/Dolby                      |
|                                 | ST-2950SD        | 2.0(11.2)                           |                                       | 1.0               | 50                     | 54                | 4.0(17.2)                                             | 50 (39.1)                                               | 40                    | 35                                       | 0.2/0.3                    | 73/68                | 75/25                         | 15 $\frac{1}{2}$ x5 $\frac{1}{2}$ x12 $\frac{1}{4}$ | 13 $\frac{1}{2}$ | 220.00  | W/Dolby                      |
| SUGOEN                          | T-48             |                                     | 2                                     | 2                 | 60                     |                   |                                                       |                                                         |                       |                                          | 0.5                        | 75                   |                               | 16x5x5                                              | 6                | 290.00  |                              |
|                                 | R-51             |                                     | 2                                     | 2                 | 60                     |                   |                                                       |                                                         |                       |                                          | 0.5                        | 75                   |                               | 11x3 $\frac{1}{2}$ x7                               | 12               | 330.00  |                              |
| SUPERSCOPE                      | T-210            |                                     |                                       | 6                 | 25                     | 35                | 10                                                    | 55                                                      | 30                    | 15                                       | 1.0                        | 60                   | 75                            | 15x4 $\frac{1}{2}$ x7 $\frac{1}{2}$                 | 5 $\frac{1}{2}$  | 104.95  |                              |
| TOSHIBA                         | (F)ST910         | 1.8                                 |                                       | 1.0               |                        | 65                |                                                       |                                                         | 40                    |                                          | 0.15/0.2                   | 75                   | 75                            | 18x6x13 $\frac{1}{2}$                               | 17 $\frac{1}{2}$ | 1800.00 | *Digital synthesizer tuner.  |
|                                 | ST-420           | 1.9                                 |                                       | 1.0               |                        | 55                |                                                       |                                                         | 45                    |                                          | 0.2/0.3                    | 72/68                | 75                            | 17 $\frac{1}{2}$ x6x15                              | 18 $\frac{1}{2}$ | 219.95  |                              |
| YAMAHA                          | CT-7000          | 2.0                                 |                                       | 1.0               | 80                     | 60                |                                                       |                                                         | 50                    | 35                                       | 0.6/0.06                   |                      |                               | 17 $\frac{1}{2}$ x5 $\frac{1}{2}$ x12 $\frac{1}{2}$ | 28 $\frac{1}{2}$ | 1200.00 | CT-7000L, in black, 1250.00. |
|                                 | CT-1010          | 1.9(10.8)                           |                                       | 1.0               | 85                     | 65                | 3.2(15.3)                                             | 40 (37.2)                                               | 52                    |                                          | 0.07                       | 80/75                |                               | 18 $\frac{1}{2}$ x6 $\frac{1}{2}$ x16               | 17               | 350.00  |                              |
|                                 | CT-810           | 1.8(10.3)                           |                                       | 1.0               | 80                     | 65                | 3.2(15.3)                                             | 40 (37.2)                                               | 50                    | 45                                       | 0.08                       | 80/75                |                               | 17 $\frac{1}{2}$ x6 $\frac{1}{2}$ x13 $\frac{1}{2}$ | 13               | 250.00  |                              |
|                                 | CT-400           | 2.0                                 |                                       | 1.5               | 75                     | 55                |                                                       |                                                         | 40                    | 28                                       | 0.3/0.5                    |                      |                               | 17 $\frac{1}{2}$ x5 $\frac{1}{2}$ x12 $\frac{1}{2}$ | 11               | 210.00  |                              |



# ALL THREE-HEAD CASSETTES LET YOU HEAR AS YOU RECORD. OURS LETS YOU RECORD PRECISELY WHAT YOU HEAR.

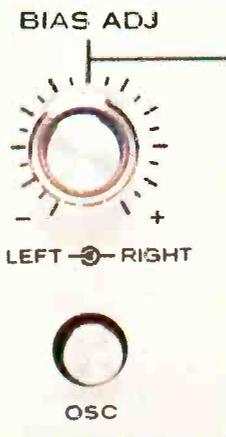
Not all three-head cassette decks are created equal. Some manufacturers have designed their decks with separate erase, record and playback heads primarily for convenience. So you can tape monitor as you record.

But our new KX-1030 uses separate heads primarily for performance. Each designed with the optimum gap to record or play back sound more accurately.

As a result, the KX-1030 has a frequency response of 35-18,000 Hz ( $\pm 3$  dB using CrO<sub>2</sub> tape).

And to let you take full advantage of the separate record and playback heads, the KX-1030 has a Double Dolby\* system with separate circuits for the record amplifier and the playback preamplifier. That way, as you record with Dolby, you can also tape monitor with Dolby, so you hear the sound precisely as it's being recorded.

The KX-1030 also has a Variable Bias Adjustment Control and a built-in oscillator,



Variable Bias Adjust compensates for tape differences.

so you can adjust the exact bias for the type or brand of tape you use.

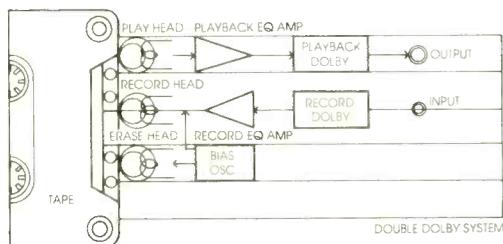
We also built in a number of other features like MIC/LINE mixing, memory rewind and peak indicator.

But as good as all this sounds, wait until you hear the price. Because at \$375.00\*\*, no other comparably priced cassette deck can match the performance and features of our new KX-1030.

As if all this weren't enough, for a limited time, we'll even get you a deal on the tape to put in the KX-1030. If you buy this or any other Kenwood cassette deck before Oct. 31, 1977, you'll receive discount coupons saving you 30% on 12 Maxell UD C-90 cassettes. That's more than 4½ hours of free tape.

Of course the only way you're really going to appreciate the KX-1030 is to visit your Kenwood dealer. Once you do, you'll understand why we put performance before convenience.

\*Dolby is the trademark of Dolby Laboratories, Inc.  
\*\*Nationally advertised value. Actual prices are established by Kenwood dealers.



Three-Head Design with Double Dolby.



Until Oct. 31, you can fill it up for 30% less.

# KENWOOD

For the Kenwood dealer nearest you, see your yellow pages, or write, KENWOOD, 15777 S. Broadway, Gardena, CA 90248



## Why Harman Kardon makes only ultrawideband components in a market full of narrowband components.

You can buy narrowband components, with flat frequency response from 20 to 20,000Hz, from every major high fidelity manufacturer.

Except one.

Harman Kardon makes only ultrawideband components.

Our lowest-priced receiver gives you flat frequency response from 5 to 70,000Hz, while other Harman Kardon components go from 4Hz or below to 100,000Hz and beyond.

Why we do it is simple.

The sound.

In sonic terms, ultrawideband components deliver two important benefits.

Phase linearity and outstanding transient response.

Outstanding transient response is the ability of a component to respond instantly to the onset of a sound.

Narrowband components can't respond quickly enough, softening transients and masking much of the clarity and excitement of the music.



Harman Kardon's ultrawideband components handle transients with ease. To give you a sound that's open, clear, accurate.

Phase linearity describes a component's ability to pass multiple frequencies without changing their time relationships.

Narrowband components tend to exhibit phase shift at low frequencies, which can dull the sound over the entire audible range. Bass may seem louder, but it will be less distinct.

Harman Kardon's ultrawideband components deliver near-perfect phase linearity at low frequencies. So you get a sound that's consistently open—clear on down to the bottom.

The way we check for phase linearity and solid transient response is to take our testing beyond the single-frequency sine wave other manufacturers rely on to the square wave made up

of many frequencies, just like music. In square wave response, Harman Kardon components are unrivalled.

All of which leaves just one very pleasant thing for you to do.

Go to your Harman Kardon dealer.

And listen.

Harman Kardon, 55 Ames Court, Plainview, NY 11803.

**harman/kardon**  
wide,  
open sound

# Receivers



**Bang & Olufsen 4400**



**Concept 16.5**



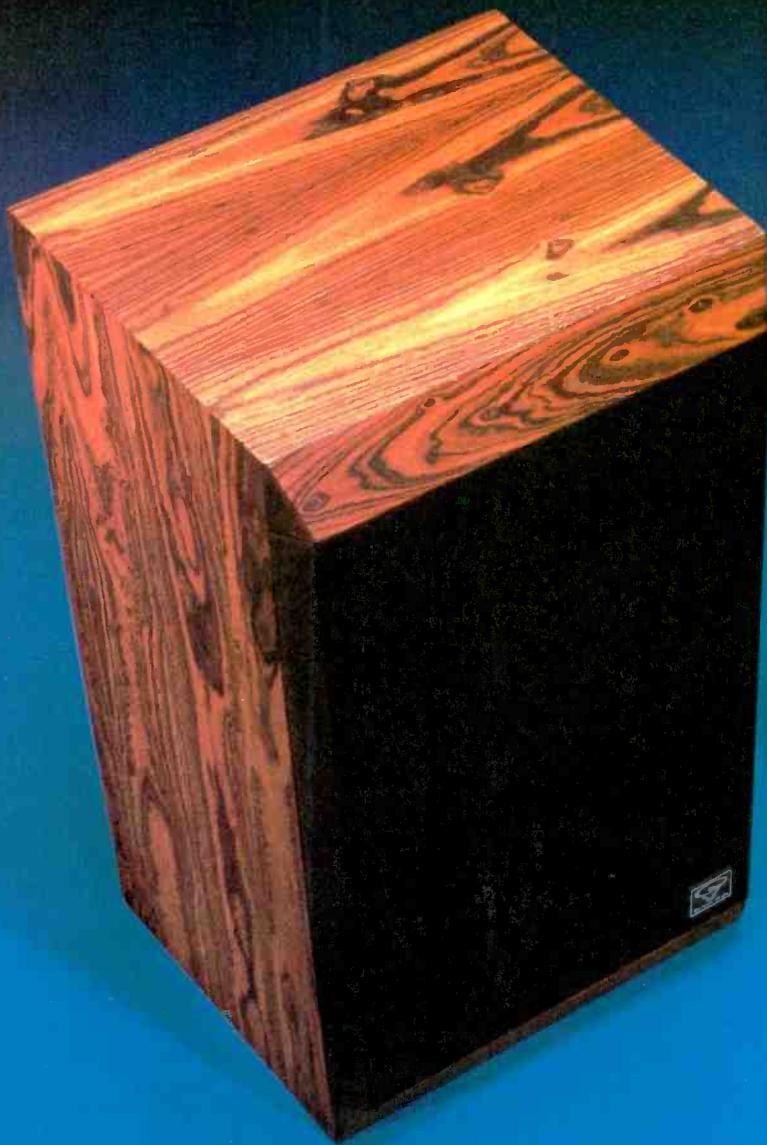
**Advent 300**



**Aiwa AX-7500**

Letter Key: (T) with model indicates tube type (K) with model indicates kit  
(Q) with model indicates 4-chan. (W) with model indicates wired kit  
(F) with model indicates FM only

| MANUFACTURER             | MODEL              | Ave. watt/ch. - 8 ohms | THD max. % watt to max. rated power | THD max. % watt to max. rated power | Rated power bandwidth, Hz to kHz | dB S/N, "A" w/d. phono, 10mV | Phono sens., mV | Phono overload, mV | Mono I/F Sensitivity, $\mu$ V (dB) | Stereo I/F Sensitivity, $\mu$ V (dB) | Mono Signal Strength for 50-dB Quieting $\mu$ V (dB) | Stereo Signal Strength for 50-dB Quieting $\mu$ V (dB) | Capture Ratio, dB | %THD, 100% Modulation, 1 kHz, Mono/Stereo | De-emphasis, $\mu$ V | Alt. Chan. Select., dB | Max. S/N, dB, Mono/Stereo | Dimensions, inches, W x H x D | Weight, lbs. | Price  |
|--------------------------|--------------------|------------------------|-------------------------------------|-------------------------------------|----------------------------------|------------------------------|-----------------|--------------------|------------------------------------|--------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------|-------------------------------------------|----------------------|------------------------|---------------------------|-------------------------------|--------------|--------|
| ADVENT                   | 300F               | 15                     | 0.5                                 | 0.15                                | 40-20                            | 80                           | 2               | 100                | 2.5                                |                                      |                                                      |                                                        | 1.6               | 0.15/0.2                                  | 75                   | 70                     |                           | 16x3 3/8 x9 9/8               | 11           | 269.95 |
| AIWA/MERITON             | AX-7500            | 30                     | 0.2                                 | 0.2                                 | 20-20                            | 75                           | 2.5             | 200                | 2.0 (11.2)                         |                                      |                                                      |                                                        | 1.5               |                                           | 75/25                | 60                     | 70                        | 17 1/2 x 6 1/2 x 14 1/4       | 24.2         | 360.00 |
| AKAI                     | AA-1200            | 120                    | 0.08                                |                                     | 6-50                             | 80                           | 3               |                    | 1.7                                |                                      |                                                      |                                                        | 1                 | 0.15/0.3                                  | 75                   | 80                     | 65                        | 18.9x6.5 x17                  | 40.8         | 649.95 |
|                          | AA-1175            | 75                     | 0.08                                |                                     | 6-50                             | 80                           | 3               |                    | 1.7                                |                                      |                                                      |                                                        | 1                 | 0.15/0.3                                  | 75                   | 80                     | 65                        | 18.9x6.5 x17                  | 36.3         | 499.95 |
|                          | AA-1150            | 50                     | 0.1                                 |                                     | 6-50                             | 80                           | 3               |                    | 1.8                                |                                      |                                                      |                                                        | 1.3               | 0.15/0.3                                  | 75                   | 70                     | 65                        | 18.9x6.1 x13.6                | 25.8         | 399.95 |
|                          | AA-1135            | 35                     | 0.2                                 |                                     | 6-50                             | 80                           | 3               |                    | 1.8                                |                                      |                                                      |                                                        | 1.3               | 0.2/0.4                                   | 75                   | 70                     | 65                        | 18.9x6.1 x13.6                | 23.8         | 299.95 |
|                          | AA-1125            | 25                     | 0.3                                 |                                     | 15-40                            | 75                           | 3               |                    | 1.9                                |                                      |                                                      |                                                        | 1.3               | 0.3/0.6                                   | 75                   | 70                     | 65                        | 18.9x4.8 x10.6                | 15           | 239.95 |
|                          | AA-1115            | 15                     | 0.5                                 |                                     | 15-40                            | 75                           | 3               |                    | 1.9                                |                                      |                                                      |                                                        | 1.3               | 0.3/0.6                                   | 75                   | 60                     | 65                        | 18.9x4.8 x10.6                | 12.8         | 189.95 |
| ARMSTRONG (ROTH/SINDELL) | 625 (F)            | 40                     | 0.18                                | 0.08                                | 20-20                            | 65                           | 3               | 150                | 1.0                                |                                      |                                                      |                                                        | 1.75              | 0.2/0.2                                   | 75                   | 56                     | 65                        | 20x3 x11                      | 15           |        |
|                          | 626                | 40                     | 0.18                                | 0.08                                | 20-20                            | 65                           | 3               | 150                | 1.0                                |                                      |                                                      |                                                        | 1.75              | 0.2/0.2                                   | 75                   | 56                     | 65                        | 20x3 x11                      | 15           |        |
| BANG & OLUFSEN           | Beomaster 1900 (F) | 30 @4                  | 0.2                                 | 0.15                                | 20-20                            | 60                           | 3               |                    | 2.5 (19.2)                         | 4.4(24.0)                            | 2.3(18.5)                                            | 24(38.9)                                               | 4.5               | 0.7/0.5                                   | 75                   | 58                     | 70/66                     | 24 1/2 x 2 1/2 x 9 1/2        | 16%          | 495.00 |
|                          | Beomaster 2400 (F) | 30 @4                  | 0.2                                 | 0.15                                | 20-20                            | 60                           | 3               |                    | 2.5 (19.2)                         | 4.4(24.0)                            | 2.3(18.5)                                            | 24(38.9)                                               | 4.5               | 0.7/0.5                                   | 75                   | 58                     | 70/66                     | 24 1/2 x 2 1/2 x 9 1/2        | 16%          | 595.00 |
|                          | Beomaster 4400 (F) | 70 @4                  | 0.1                                 | 0.1                                 | 20-20                            | 60                           | 2.2             | 80                 | 2(18.0)                            |                                      | 2(18.0)                                              | 20(38.0)                                               | 4                 | 0.7/0.7                                   | 75                   | 58                     | 63/62                     | 22 1/2 x 3 1/2 x 11           | 22%          | 695.00 |
|                          |                    |                        |                                     |                                     |                                  |                              |                 |                    |                                    |                                      |                                                      |                                                        |                   |                                           |                      |                        |                           |                               |              |        |
| CONCEPT                  | 16.5               | 165                    | 0.1                                 | 0.05                                | 20-20                            | 84                           | 1.9             | 200                | 1.6(9.3)                           | 3.0(14.8)                            | 2.5(13.2)                                            | 36.0 (36.4)                                            | 1.9               | 0.08/0.1                                  | 75                   | 90                     | 74/72                     | 22x7 x17                      | 67.1         | 845.00 |
|                          | 11.0               | 110                    | 0.1                                 | 0.05                                | 20-20                            | 84                           | 1.9             | 200                | 1.6(9.3)                           | 3.0(14.8)                            | 2.5(13.2)                                            | 38.0 (36.8)                                            | 1.0               | 0.1/0.1                                   | 75                   | 88                     | 74/72                     | 20 1/2 x 7 x 17               | 48.6         | 695.00 |
|                          | 5.5                | 55                     | 0.1                                 | 0.1                                 | 20-20                            | 81                           | 1.9             | 120                | 1.6(9.3)                           | 3.0(14.8)                            | 3.0(14.8)                                            | 38.0 (36.8)                                            | 1.0               | 0.1/0.15                                  | 75                   | 85                     | 74/72                     | 19x6 x13 1/2                  | 35           | 495.00 |
|                          | 3.5                | 35                     | 0.1                                 | 0.1                                 | 20-20                            | 81                           | 1.9             | 100                | 1.7(9.8)                           | 3.2(15.3)                            | 3.2(15.3)                                            | 39.0 (37.1)                                            | 1.5               | 0.2/0.25                                  | 75                   | 78                     | 72/70                     | 18 1/2 x 6 x 15               | 27 1/4       | 395.00 |
|                          | 2.0                | 20                     | 0.1                                 | 0.1                                 | 20-20                            | 81                           | 2.1             | 100                | 1.8 (10.3)                         | 3.5(16.1)                            | 3.5(16.1)                                            | 40.0(37.3)                                             | 1.7               | 0.2/0.3                                   | 75                   | 75                     | 68/66                     | 18x6 x14                      | 23           | 295.00 |
| CRAIG                    | 5503               | 50                     | 0.1                                 | 0.2                                 | 20-20                            | 60                           | 2.5             | 150                |                                    |                                      | (20)                                                 | (38)                                                   | 1.4               | 0.1                                       | 75/25                | 55                     | 65/60                     | 22 1/2 x 6 1/2 x 14 1/2       | 30%          | 369.95 |
|                          | 5502               | 25                     | 0.9                                 |                                     | 20-20                            |                              | 2.5             | 150                |                                    |                                      |                                                      |                                                        | 3                 | 0.9                                       | 75/25                | 48                     | 65/60                     | 19 1/2 x 5 1/2 x 13           | 19           | 249.95 |
|                          | 5501               | 17                     | 0.9                                 |                                     | 50-20                            | 60                           | 2.5             | 150                |                                    |                                      | (13)                                                 |                                                        | 4                 | 0.9                                       | 75/25                | 40                     | 65/60                     | 19 1/2 x 5 1/2 x 13           | 16 1/2       | 199.95 |
|                          | H500               | 7                      | 5.0                                 |                                     | 50-15                            |                              |                 |                    |                                    |                                      |                                                      |                                                        | 5                 |                                           | /46                  |                        |                           | 17 1/2 x 5 1/2 x 9 1/2        | 8%           | 119.95 |
| FISHER                   | RS1080             | 170                    | 0.08                                | 0.08                                | 20-20                            | 80                           | 2               | 300                | 1.6(9.3)                           | 3.5(16.1)                            | 2.2(12.0)                                            | 34.0(35.9)                                             | 0.8               |                                           |                      | 75                     | 80/75                     | 23 1/2 x 18 1/2 x 7 1/2       | 66.7         | 999.95 |
|                          | RS1060             | 125                    | 0.08                                | 0.08                                | 20-20                            | 80                           | 2               | 300                | 1.6(9.3)                           | 3.5(16.1)                            | 2.2(12.0)                                            | 34.0(35.9)                                             | 0.8               |                                           |                      | 75                     | 80/75                     | 23 1/2 x 18 1/2 x 7 1/2       | 55.7         | 799.95 |
|                          | RS1058             | 90                     | 0.1                                 | 0.1                                 | 20-20                            | 75                           | 2               | 180                | 1.7(9.8)                           | 4.3(17.9)                            | 2.5(13.2)                                            | 34.0(35.9)                                             | 0.8               |                                           |                      | 75                     | 75/70                     | 20 1/2 x 14 1/4 x 7           | 32.4         | 549.95 |
|                          | RS1056             | 68                     | 0.1                                 | 0.1                                 | 20-20                            | 75                           | 2               | 180                | 1.7(9.8)                           | 4.3(17.9)                            | 2.5(13.2)                                            | 34.0(35.9)                                             | 0.8               |                                           |                      | 75                     | 75/70                     | 20 1/2 x 14 1/4 x 7           | 31.3         | 449.95 |
|                          | RS1052             | 50                     | 0.2                                 | 0.2                                 | 20-20                            | 70                           | 2               | 110                | 1.9 (10.8)                         | 4.6(18.5)                            | 2.8(14.2)                                            | 38.0(36.8)                                             | 1.0               |                                           |                      | 68                     | 70/66                     | 19 1/2 x 13 x 6 1/2           | 23.8         | 349.95 |
|                          | RS1035             | 35                     | 0.2                                 | 0.2                                 | 20-20                            | 70                           | 2               | 110                | 1.9 (10.8)                         | 4.6(18.5)                            | 2.8(14.2)                                            | 38.0(36.8)                                             | 1.0               |                                           |                      | 68                     | 70/66                     | 19 1/2 x 13 x 6 1/2           | 22.9         | 299.95 |
|                          | RS1022             | 22                     | 0.5                                 | 0.5                                 | 20-20                            | 70                           | 2               | 110                | 1.9(0.8)                           | 4.6(18.5)                            | 2.8(14.2)                                            | 38.0(36.8)                                             | 1.0               |                                           |                      | 68                     | 70/66                     | 17 1/2 x 12 x 4 1/2           | 17.2         | 249.95 |
| MC2000                   | 10                 | 1.0                    | 0.5                                 | 60-20                               | 65                               | 2                            | 100             | 2.8 (14.1)         | 5.5(20.0)                          | 5.0(19.2)                            | 45.0(38.3)                                           | 1.0                                                    |                   |                                           | 50                   | 65/60                  | 17 1/2 x 13 1/2 x 5       | 14.5                          | 179.95       |        |



# Thermo-Vapor Suspension

The Cerwin-Vega S1 is the most elegant and exotic shelf speaker currently available. The rare Yucatan rosewood<sup>1</sup> facade only hints at the marvels inside. A sophisticated sixth order Butterworth vent tuning, integrated with an active equalizer filter, increases the effective bass performance to surpass much larger enclosures. The wave of the future in quality shelf speakers surely will be such a system.

Even this is not good enough for the S1.

We have developed an elegantly simple improvement in bass enclosure technology; we call it Thermo-Vapor Suspension.<sup>2</sup> By filling the S1 cabinet with a soft, inert gas which is more

compressible than air, a lower system response and more controlled damping is achieved.

The drivers are precision aligned die-cast units having the highest magnetic motor drive efficiencies in the industry. The low crossover of 300 Hz to a 6" midrange driver assures low intermodulation at loud levels. A damped dhorn, high frequency unit (moving mass, .1 gram), operates at a low pressure density extending response to 20 kHz with vanishing coloration.

The S1 has impeccable technical credentials too numerous to detail here so write Cerwin-Vega for full performance specifications or see it, hear it, Feel it, at a selected dealer.



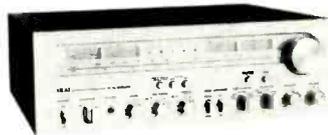
**Cerwin-Vega!**

Cerwin-Vega! 12250 Montague Street, Arleta, California 91331, 213/896-0777  
In. Canada: Cerwin-Vega Canada Ltd., 19 Malley Road, Scarborough, Ontario, 416/752-7530  
Enter No. 18 on Reader Service Card

<sup>1</sup>Walnut is standard  
<sup>2</sup>Patent Pending

# Receivers

Akai AA-1200



JVC JR-S600 II

Heath AR-1515



| MANUFACTURER    | MODEL             | Ave. watts/chann., 8 ohms | THD max., % watt to max. rated power | IM max., % watt to max. rated power | Rated power bandwidth, Hz. to kHz. | dB S/N, "A" wtd., phono, 10mV | Phono sens., mV | Phono overload, mV | Mono I/F Sensitivity, $\mu$ V (dB) | Stereo I/F Sensitivity, $\mu$ V (dB) | Mono Signal Strength for 50-dB Quieting, $\mu$ V (dB) | Stereo Signal Strength for 50-dB Quieting, $\mu$ V (dB) | Capture Ratio, dB | %THD, 100% Modulation, 1 kHz, Mono/Stereo | De-emphasis, $\mu$ V | Alt. Chan. Select., dB | Max. S/N, dB, Mono/Stereo | Dimensions, inches, W x H x D | Weight, lbs. | Price  |                                                                                                                        |
|-----------------|-------------------|---------------------------|--------------------------------------|-------------------------------------|------------------------------------|-------------------------------|-----------------|--------------------|------------------------------------|--------------------------------------|-------------------------------------------------------|---------------------------------------------------------|-------------------|-------------------------------------------|----------------------|------------------------|---------------------------|-------------------------------|--------------|--------|------------------------------------------------------------------------------------------------------------------------|
|                 |                   |                           |                                      |                                     |                                    |                               |                 |                    |                                    |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        | Letter Key: (T) with model indicates tube type<br>(Q) with model indicates 4-chan.<br>(F) with model indicates FM only |
| HARMAN KARDON   | 230e              | 15                        | 0.5                                  | 0.3                                 | 10-37                              | 60                            | 3               | 70                 | 4.0 (17.4)                         |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | 330c              | 20                        | 0.5                                  | 0.3                                 | 10-37                              | 65                            | 2.8             | 80                 | 2.2 (12.8)                         |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | 430               | 25                        | 0.3                                  | 0.15                                | 10-40                              | 65                            | 2.7             | 85                 | 2.0 (11.2)                         |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | 730               | 40                        | 0.1                                  | 0.12                                | 10-40                              | 67                            | 2.5             | 95                 | 1.9 (10.5)                         |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | Citation Receiver |                           |                                      |                                     |                                    |                               |                 |                    |                                    |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        | 1170.00                                                                                                                |
| DATA ON REQUEST |                   |                           |                                      |                                     |                                    |                               |                 |                    |                                    |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
| HANDIC          | 3030              | 28                        | 0.15                                 | 0.2                                 | 5-50                               | 65                            | 2               | 95                 | 2.0                                | 20                                   |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | 5050              | 35                        | 0.12                                 | 0.15                                | 5-40                               | 65                            | 1.2             | 130                | 2.0                                | 18                                   |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | 7070              | 55                        | 0.12                                 | 0.15                                | 5-40                               | 65                            | 1.2             | 150                | 1.5                                | 15                                   |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
| HEATH           | AR-1515           | 70                        | 0.08                                 | 0.08                                | 20-20                              | 65                            | 2               | 100                | 1.8                                | 1.8                                  |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | AR-1500A          | 60                        | 0.25                                 | 0.1                                 | 20-20                              | 60                            | 1.8             |                    | 1.8                                |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | AR-1219           | 15                        | 0.5                                  | 0.5                                 | 20-20                              | 60                            | 2               |                    |                                    |                                      |                                                       |                                                         |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
| HITACHI         | SR303             | 15                        | 0.5                                  |                                     | 10-50                              | 50                            | 2.5             |                    | 1.9 (10.8)                         | 6.3(21)                              | 3.9(17)                                               | 39(37)                                                  | 1.0               | 0.15/0.3                                  |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR503             | 20                        | 0.4                                  |                                     | 10-50                              | 50                            | 2.5             |                    | 1.9 (10.8)                         | 6.3(21)                              | 3.9(17)                                               | 39(37)                                                  | 1.0               | 0.15/0.3                                  |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR603             | 30                        | 0.4                                  |                                     | 10-50                              | 50                            | 2.5             |                    | 1.8 (10.3)                         | 6.3(21)                              | 3.9(17)                                               | 39(37)                                                  | 1.0               | 0.15/0.3                                  |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR703             | 40                        | 0.3                                  |                                     | 20-30                              | 50                            | 2.5             |                    | 1.8 (10.3)                         | 14(28)                               | 3.9(17)                                               | 39(37)                                                  | 1.0               | 0.2/0.3                                   |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR803             | 50                        | 0.1                                  |                                     | 10-40                              | 50                            | 2.5             |                    | 1.7(9.8)                           | 14(28)                               | 3.5(16)                                               | 39(37)                                                  | 1.0               | 0.15                                      |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR903             | 75                        | 0.1                                  |                                     | 10-50                              | 50                            | 1.9             |                    | 1.6(9.3)                           | 14(28)                               | 3.1(15)                                               | 34(36)                                                  | 1.0               | 0.15                                      |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | SR2004            | 200                       | 0.3                                  |                                     | 10-40                              | 50                            |                 | 500                | 1.5(8.7)                           | 15                                   | 12.5                                                  | 36(34)                                                  | 1.0               | 0.1/0.2                                   |                      |                        |                           |                               |              |        |                                                                                                                        |
|                 | JVC               | JR-S600 II                | 120                                  | 0.08                                | 0.1                                | 20-20                         | 87              | 2.5                | 250                                | 1.7(9.8)                             |                                                       | 3.5(16.1)                                               | 38(36.8)          | 1                                         | 0.1/0.25             | 75                     | 80                        | 80/70                         | 22x6x17      | 42.2   | 599.95                                                                                                                 |
| JR-S400 II      |                   | 80                        | 0.08                                 | 0.1                                 | 20-20                              | 87                            | 2.5             | 200                | 1.7(9.8)                           |                                      | 3.5(16.1)                                             | 38(36.8)                                                | 1                 | 0.1/0.25                                  | 75                   | 80                     | 80/70                     | 22x6x17                       | 37.4         | 499.95 |                                                                                                                        |
| JR-S300 II      |                   | 50                        | 0.1                                  | 0.1                                 | 20-20                              | 87                            | 2.5             | 200                | 1.9 (10.8)                         |                                      | 3.5(16.1)                                             | 40(37.3)                                                | 1.2               | 0.2/0.4                                   | 75                   | 60                     | 78/65                     | 19x6x13                       | 23.5         | 399.95 |                                                                                                                        |
| JR-S200 II      |                   | 35                        | 0.5                                  | 0.5                                 | 20-20                              | 87                            | 2.5             | 170                | 2.0 (11.2)                         |                                      | 3.5(16.1)                                             | 40(37.3)                                                | 1.2               | 0.2/0.4                                   | 75                   | 60                     | 78/65                     | 19x6x13                       | 20.9         | 299.95 |                                                                                                                        |
| JR-S100 II      |                   | 20                        | 0.5                                  | 0.5                                 | 40-20                              | 87                            | 2.5             |                    | 2.2 (12.1)                         |                                      | 3.8(16.8)                                             | 45(38.3)                                                | 1.5               | 0.2/0.6                                   | 75                   | 55                     | 75/65                     | 19x6x13                       | 17.2         | 199.95 |                                                                                                                        |
| 4VR-5456 (Q)    |                   | 43                        | 0.1                                  | 0.1                                 | 20-20                              | 82                            | 1.9             |                    | 1.8 (10.3)                         |                                      | 3.5(16.1)                                             | 40(37.3)                                                | 1.2               | 0.15/0.3                                  | 75                   | 60                     | 78/65                     | 20x7x16                       | 44           | 799.95 |                                                                                                                        |
| KENWOOD         |                   | KR-9600                   | 160                                  | 0.08                                | 0.08                               | 5-50                          | 76              | 2.5                | 500                                | 1.5(8.7)                             |                                                       | 2.8(14.1)                                               | 35(36.1)          | 1.3                                       | 0.15/0.2             | 75                     | 83                        | 75/70                         | 23x6x16      | 52.9   | 750.00                                                                                                                 |
|                 | KR-7600           | 80                        | 0.3                                  | 0.3                                 | 7-50                               | 75                            | 2.5             | 180                | 1.7(9.8)                           |                                      | 3.0(14.8)                                             | 37(36.6)                                                | 1.5               | 0.15/0.25                                 | 75                   | 80                     | 75/70                     | 20x6x14                       | 38.1         | 530.00 |                                                                                                                        |
|                 | KR-6600           | 60                        | 0.3                                  | 0.3                                 | 7-50                               | 75                            | 2.5             | 180                | 1.7(9.8)                           |                                      | 3.0(14.8)                                             | 37(36.6)                                                | 1.5               | 0.15/0.25                                 | 75                   | 80                     | 75/70                     | 20x6x14                       | 35.9         | 450.00 |                                                                                                                        |
|                 | KR-4070           | 40                        | 0.1                                  | 0.1                                 | 10-40                              | 73                            | 2.5             | 190                | 1.9 (10.8)                         |                                      | 3.1(15.0)                                             | 40(37.2)                                                | 1                 | 0.15/0.25                                 | 75                   | 60                     | 72/67                     | 18x6x15                       | 20.7         | 300.00 |                                                                                                                        |
|                 | KR-3600           | 22                        | 0.8                                  | 0.8                                 | 7-35                               | 70                            | 2.5             | 150                | 2.3 (12.5)                         |                                      | 4.0(17.3)                                             | 47(38.7)                                                | 2                 | 0.2/0.4                                   | 75                   | 60                     | 73/68                     | 19x5x12                       | 19.2         | 250.00 |                                                                                                                        |
|                 | KR-2600           | 15                        | 0.8                                  | 0.8                                 | 10-45                              | 70                            | 2.5             | 140                | 2.5 (13.2)                         |                                      | 4.5(18.3)                                             | 50(40)                                                  | 2.5               | 0.3/0.5                                   | 75                   | 50                     | 70/64                     | 17x5x12                       | 14.3         | 200.00 |                                                                                                                        |
|                 | LEAK              | 2000                      | 30                                   | 0.1                                 | 0.1                                | 10-40                         | 80              |                    |                                    | 1.6                                  |                                                       | 0.5/0.5                                                 |                   |                                           |                      |                        |                           |                               |              |        |                                                                                                                        |
| LUX             | R-1120            | 120                       | 0.03                                 | 0.03                                | 20-20                              | 90                            | 2.6             | 160                | 1.8 (10.3)                         | 4.6(18.2)                            | 2.8(14.1)                                             | 38.0(36.8)                                              | 1.5               | 0.08/0.1                                  | 75                   | 80                     | 74/70                     |                               | 45           | 895.00 |                                                                                                                        |
|                 | R-1050            | 50                        | 0.05                                 | 0.05                                | 20-20                              | 89                            | 2.5             | 150                | 1.8 (10.3)                         | 4.6(18.2)                            | 2.8(14.1)                                             | 38.0(36.8)                                              | 1.3               | 0.1/0.2                                   | 75                   | 70                     | 74/70                     | 19x14                         | 29.7         | 595.00 |                                                                                                                        |
|                 | R-1040            | 40                        | 0.05                                 | 0.05                                | 20-20                              | 88                            | 2.5             | 150                | 2.0 (11.2)                         | 4.8(19.0)                            | 4.5(18.2)                                             | 51.0(39.8)                                              | 1.2               | 0.2/0.3                                   | 75                   | 55                     | 74/70                     | 19x7x14                       | 26.4         | 445.00 |                                                                                                                        |

RECORD

DOLBY NR

TAPE COUNTER  
2 1 6



+7dB

+3dB

PEAK

COUNTER RESET

MEMORY

METER

INPUT SELECTOR

DOLBY NR (M=X)

OFF ON

VU TAPE TIME

LINE MIC/EIN

OFF ON (MPX ON)

# 3 Minute Warning from AIWA

With the AD-6550's unique new Remaining Tape Time Meter you never have to worry about running out of tape in the middle of recording your favorite music. In the past you monitored your tape visually and hoped that the musical passage and tape would finish together. Now, this extremely easy to use indicator gives you plenty of warning. It shows you exactly how many minutes remain on the tape. So that when you record the "Minute Waltz" it won't end in 45 seconds.

## Wow and Flutter: Below 0.05% (WRMS)

The AD-6550 cassette deck achieves an inaudible wow and flutter of below 0.05% (WRMS) thanks to a newly designed 38-pulse FG servo motor and AIWA's special Solid Stabilized Transport (SST) system. And because we use Dolby\* we also improve the S/N ratio to 65dB (Fe-Cr). So you can listen to the music instead of tape hiss. The AIWA AD-6550. Be forewarned.

# AIWA®

LH BIAS FINE (%)

## Bias Fine Adjustment

But there's a lot more to the AD-6550. AIWA has included a Bias Fine Adjustment knob that permits the fine tuning of frequency response to give optimum performance of any brand of LH tape on the market.



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Enter No. 3 on Reader Service Card

# Receivers



Marantz 2500



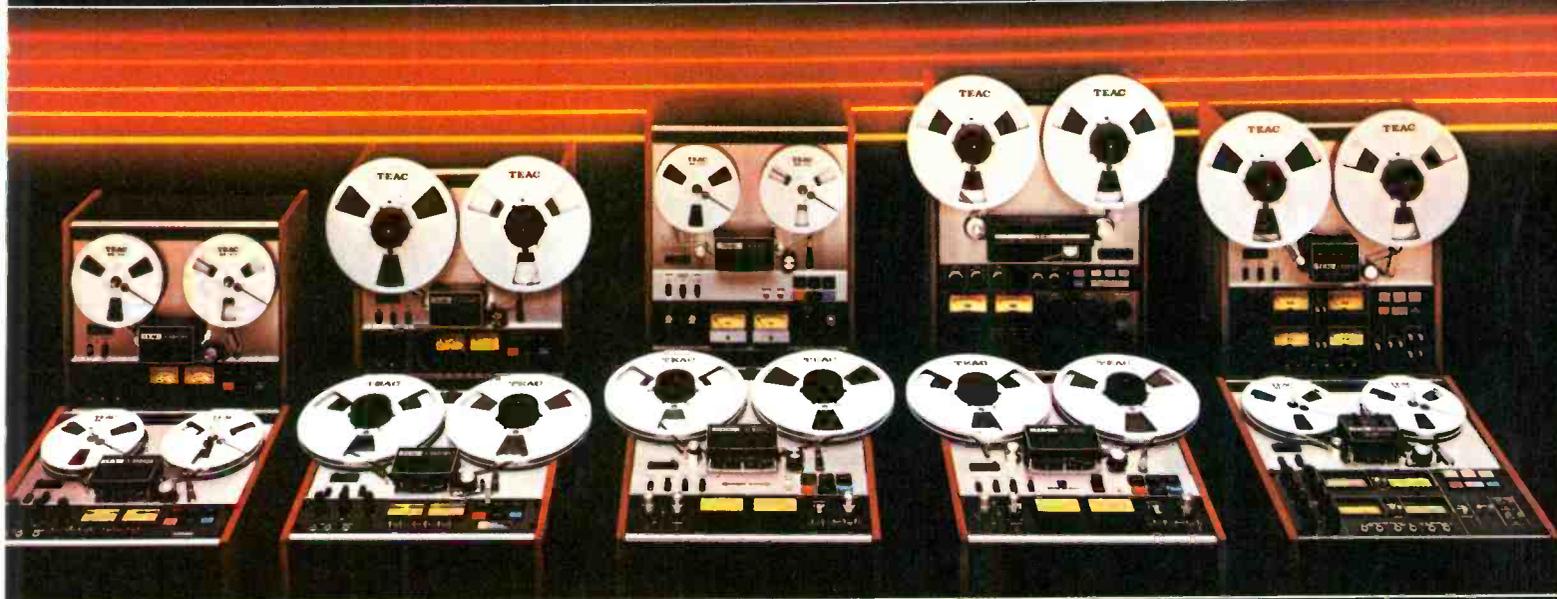
Kenwood KR-9600



Nikko NR-1415

| MANUFACTURER         | MODEL       | Ave. watt/ch. - 8 ohms |      | THD max. - 1 watt to max. |       | THD max. - 1/2 watt to max. |     | Rated power bandwidth, Hz to kHz |            | dB S/N, "A" wtd., phono, 10mV |           | Phono sens., mV |         | Mono I/F Sensitivity, $\mu$ V (dB) |         | Stereo I/F Sensitivity, $\mu$ V (dB) |                     | Mono Signal Strength for 50-dB Quieting |                         | Stereo Signal Strength for 50-dB Quieting |        | Capture Ratio, dB |  | %THD, 100% Modulation, 1 kHz, Mono/Stereo |  | De-emphasis, $\mu$ V |  | Alt. Chan. Select., dB |  | Max. S/N, dB, Mono/Stereo |  | Dimensions, inches, W x H x D |  | Weight, lbs. |  | Price |  |
|----------------------|-------------|------------------------|------|---------------------------|-------|-----------------------------|-----|----------------------------------|------------|-------------------------------|-----------|-----------------|---------|------------------------------------|---------|--------------------------------------|---------------------|-----------------------------------------|-------------------------|-------------------------------------------|--------|-------------------|--|-------------------------------------------|--|----------------------|--|------------------------|--|---------------------------|--|-------------------------------|--|--------------|--|-------|--|
|                      |             | 0.05                   | 0.05 | 20-20                     | 80    | 1.8                         | 200 | 1.5 (8.75)                       | 1.5 (8.75) | 2.2(12.1)                     | 25(33.2)  | 1.0             | 0.1/0.2 | 75/25                              | 85      | 82/75                                | 19 1/4 x 7 x 17 1/4 | 59.4                                    | 1595.00                 |                                           |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| MARANTZ (SUPERSCOPE) | 2500        | 250                    | 0.05 | 0.05                      | 20-20 | 80                          | 1.8 | 200                              | 1.5 (8.75) | 1.5 (8.75)                    | 2.2(12.1) | 25(33.2)        | 1.0     | 0.1/0.2                            | 75/25   | 85                                   | 82/75               | 19 1/4 x 7 x 17 1/4                     | 59.4                    | 1595.00                                   |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2385        | 185                    | 0.05 | 0.05                      | 20-20 | 79                          | 1.8 | 200                              | 1.5 (8.75) | 1.5 (8.75)                    | 2.2(12.1) | 25(33.2)        | 1.0     | 0.1/0.2                            | 75/25   | 85                                   | 80/75               | 19 1/4 x 7 x 17 1/4                     | 49.5                    | 1095.00                                   |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 23308       | 130                    | 0.05 | 0.05                      | 20-20 | 78                          | 1.8 | 200                              | 1.8 (10.3) | 1.8 (10.3)                    | 3.0(14.8) | 35(36)          | 1.0     | 0.1/0.3                            | 75/25   | 80                                   | 78/70               | 19 1/4 x 5 1/2 x 15 1/4                 | 35.2                    | 790.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2285B       | 85                     | 0.05 | 0.05                      | 20-20 | 78                          | 1.8 | 200                              | 1.8 (10.3) | 1.8 (10.3)                    | 3.0(14.8) | 35(36)          | 1.0     | 0.15/0.3                           | 75/25   | 80                                   | 78/70               | 17 1/4 x 5 1/2 x 14 1/4                 | 37.4                    | 670.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 22658       | 65                     | 0.05 | 0.05                      | 20-20 | 78                          | 1.8 | 200                              | 1.8 (10.3) | 1.8 (10.3)                    | 3.0(14.8) | 35(36)          | 1.0     | 0.15/0.3                           | 75/25   | 80                                   | 76/70               | 17 1/4 x 5 1/2 x 14 1/4                 | 49.5                    | 570.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2252B       | 52                     | 0.05 | 0.05                      | 20-20 | 76                          | 1.8 | 100                              | 1.9 (10.8) | 1.9 (10.8)                    | 3.2(16.1) | 40(37.3)        | 1.0     | 0.15/0.3                           | 75/25   | 70                                   | 75/65               | 17 1/4 x 5 1/2 x 14 1/4                 | 20.9                    | 460.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2238B       | 38                     | 0.08 | 0.08                      | 20-20 | 76                          | 1.8 | 100                              | 1.9 (10.8) | 1.9 (10.8)                    | 3.2(16.1) | 40(37.3)        | 1.0     | 0.15/0.3                           | 75/25   | 70                                   | 75/65               | 17 1/4 x 5 1/2 x 14 1/4                 | 26.4                    | 360.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2226B       | 26                     | 0.1  | 0.1                       | 20-20 | 75                          | 1.8 | 100                              | 1.9 (10.8) | 1.9 (10.8)                    | 3.2(16.1) | 40(37.3)        | 1.0     | 0.15/0.3                           | 75/25   | 70                                   | 75/65               | 17 1/4 x 5 1/2 x 14 1/4                 | 26.4                    | 310.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 2216B       | 16                     | 0.15 | 0.15                      | 20-20 | 74                          | 2.5 | 100                              | 1.9 (10.8) | 1.9 (10.8)                    | 3.2(16.1) | 40(37.3)        | 1.0     | 0.2/0.4                            | 75      | 70                                   | 75/65               | 17 1/4 x 5 1/2 x 11 1/4                 | 30.8                    | 240.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| MCINTOSH             | MAC1900     | 55                     | 0.2  | 0.2                       | 20-15 | 45                          | 2   | 2.5                              |            |                               |           |                 | 1.8     | 0.3/0.7                            |         | 55                                   | 70                  | 16 x 5 1/2 x 15                         | 33                      | 949.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| NIKKO                | NR1415      | 175                    |      |                           | 20-20 | 100                         | 2.2 | 350                              | 1.7(9.8)   |                               |           |                 |         | 0.07/0.15                          | 0.1/0.3 | 100                                  |                     | 22 x 7 1/4 x 20                         | 58                      | 800.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR1015      | 85                     | 0.05 |                           | 20-20 | 95                          | 2.5 | 250                              | 1.8 (10.3) |                               |           |                 |         | 0.1/0.3                            |         | 95                                   |                     | 21 x 6 1/2 x 16                         | 36.6                    | 530.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR815       | 55                     | 0.07 |                           | 20-20 | 95                          | 2.5 | 250                              | 1.8 (10.0) |                               |           |                 |         | 0.1/0.3                            |         | 95                                   |                     | 21 x 6 1/2 x 16                         | 31 1/4                  | 430.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR715       | 38                     | 0.02 |                           | 20-20 | 90                          | 2.2 | 130                              | 2.0 (11.2) |                               |           |                 |         | 0.15/0.3                           |         | 90                                   |                     | 18 x 6 1/2 x 13                         | 21                      | 290.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR615       | 28                     | 0.03 |                           | 20-20 | 90                          | 2.2 | 130                              | 2.0 (11.2) |                               |           |                 |         | 0.15/0.3                           |         | 90                                   |                     | 18 1/2 x 6 1/2 x 13                     | 21                      | 250.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR515       | 18                     | 0.05 |                           | 20-20 | 85                          | 2.3 | 100                              | 2.2 (12.1) |                               |           |                 |         | 0.3/0.6                            |         | 85                                   |                     | 17 1/4 x 5 1/2 x 17 1/4                 | 14.7                    | 200.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | NR315       | 10                     | 0.08 |                           | 40-20 | 80                          | 2.3 | 80                               | 2.2 (12.1) |                               |           |                 |         | 0.3/0.5                            |         | 80                                   |                     | 17 1/4 x 5 1/2 x 17 1/4                 |                         | 160.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| ONKYO                | TX-1500     | 15                     | 0.5  | 0.5                       | 20-20 | 87                          | 2.5 | 100                              | 2.3 (12.4) | 5(19.2)                       | 4.5(18.3) | 50(39.2)        | 2       | 0.25/0.5                           | 75      | 60                                   | 65/60               | 17 1/4 x 6 x 12                         | 16.1                    | 199.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | TX-2500     | 27                     | 0.5  | 0.5                       | 40-20 | 85                          | 2.5 | 150                              | 2(11.2)    | 5(19.2)                       | 4(17.2)   | 40(37.2)        | 2       | 0.2/0.4                            | 75/25   | 60                                   | 65/60               | 19 1/4 x 6 1/2 x 17                     | 26.4                    | 299.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | TX-4500     | 55                     | 0.1  | 0.3                       | 20-20 | 87                          | 2.5 | 200                              | 1.8 (10.3) | 5(19.2)                       | 4(17.2)   | 40(37.2)        | 1.5     | 0.2/0.4                            | 75/25   | 70                                   | 70/65               | 21 1/4 x 6 1/2 x 17                     | 36.5                    | 449.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | TX-8500     | 110                    | 0.1  | 0.1                       | 20-20 | 88                          | 2.5 | 250                              | 1.7(9.8)   | 4(17.2)                       | 3(14.7)   | 35(36)          | 1.5     | 0.15/0.3                           | 75/25   | 70                                   | 70/65               | 22 1/2 x 7 x 18                         | 55                      | 699.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| OPTONICA (SHARP)     | SA-5151     | 85                     | 0.03 | 0.09                      | 20-20 | 80                          | 2.5 | 240                              | 1.8 (10.3) | 4.5(18.3)                     | 4.0(17.2) | 35(36.1)        | 1.0     | 0.2/0.4                            | 75      | 70                                   | 72/65               | 22 x 6 1/2 x 19 1/4                     | 44                      | 499.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SA-4141     | 65                     | 0.03 | 0.09                      | 20-20 | 75                          | 2.5 | 150                              | 1.9 (10.8) | 5.0(19.2)                     | 4.5(18.3) | 40(37.2)        | 1.0     | 0.2/0.4                            | 75      | 60                                   | 72/65               | 22 x 6 1/2 x 19 1/4                     | 35 1/2                  | 399.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| PIONEER              | SX-1250     | 160                    | 0.1  | 0.1                       | 20-20 | 87                          | 2.5 | 500                              | 1.5        | 2.9                           | 2.1       | 35              | 1       | 0.1/0.2                            | 25/75   | 83                                   | 80/74               | 22 x 7 1/4 x 18 1/4                     | 64 1/2                  | 900.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-1050     | 120                    | 0.1  | 0.1                       | 20-20 | 87                          | 2.5 | 300                              | 1.8        | 3.4                           | 2.9       | 35              | 1       | 0.1/0.25                           | 25/75   | 80                                   | 78/73               | 20 1/2 x 6 1/2 x 18                     | 51 1/2                  | 700.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-950      | 85                     | 0.1  | 0.1                       | 20-20 | 87                          | 2.5 | 200                              | 1.8        | 7.1                           | 4         | 44              | 1       | 0.15/0.3                           | 25/75   | 80                                   | 72/67               | 20 1/2 x 6 1/2 x 16 1/4                 | 42                      | 600.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-850      | 65                     | 0.1  | 0.1                       | 20-20 | 82                          | 2.5 | 200                              | 1.8        | 7.1                           | 4         | 44              | 1       | 0.15/0.3                           | 25/75   | 80                                   | 72/67               | 20 1/2 x 6 1/2 x 16 1/4                 | 42                      | 500.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-750      | 50                     | 0.1  | 0.1                       | 20-20 | 82                          | 2.5 | 200                              | 1.9        | 4.9                           | 4         | 50              | 1       | 0.15/0.3                           | 25/75   | 80                                   | 72/67               | 19 x 6 x 16 1/4                         | 30 1/2                  | 400.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-650      | 35                     | 0.3  | 0.3                       | 20-20 | 82                          | 2.5 | 200                              | 1.9        | 4.9                           | 3.1       | 44              | 1       | 0.15/0.3                           | 25/50   | 60                                   | 70/65               | 19 x 6 x 16 1/4                         | 29                      | 300.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-550      | 20                     | 0.3  | 0.3                       | 20-20 | 82                          | 2.5 | 200                              | 2          | 5.5                           | 4.5       | 50              | 1       | 0.15/0.3                           | 25/75   | 60                                   | 70/65               | 18 x 5 1/2 x 12                         | 20 1/2                  | 250.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | SX-450      | 15                     | 0.5  | 0.5                       | 20-20 | 82                          | 2.5 | 150                              | 2          | 5.5                           | 4.5       | 50              | 1       | 0.15/0.3                           | 25/75   | 60                                   | 70/65               | 18 x 5 1/2 x 12                         | 19                      | 200.00                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | QX-949A (Q) | 40                     | 0.3  | 0.3                       | 20-20 | 82                          | 2.5 | 100                              | 1.8        |                               |           |                 |         | 1                                  | 0.2/0.4 | 25/75                                | 80                  | 70/                                     | 21 1/4 x 6 1/2 x 17 1/4 | 49 1/2                                    | 750.00 |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
| QUADRAFLEX           | 979         | 50                     | 0.5  | 0.1                       | 20-20 | 72                          | 1.5 | 100                              | 1.8 (10.3) | 3.5(16.1)                     | 2.6(13.5) | 36(36.4)        | 1.3     | 0.14/0.2                           | 75      | 80                                   | 70/68               | 20 x 5 x 14                             | 40                      | 399.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 878         | 35                     | 0.5  | 0.1                       | 20-20 | 72                          | 1.8 | 100                              | 1.8 (10.3) | 3.5(16.1)                     | 2.6(13.5) | 36(36.4)        | 1.5     | 0.16/0.33                          | 75      | 75                                   | 70/68               | 19 1/4 x 5 x 14                         | 24                      | 329.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 777         | 25                     | 0.5  | 0.2                       | 30-20 | 70                          | 2   | 90                               | 1.8 (10.3) | 3.6(16.4)                     | 2.6(13.5) | 39(37.1)        | 1.6     | 0.2/0.38                           | 75      | 65                                   | 68/66               | 18 1/2 x 5 x 12 1/2                     | 20 1/2                  | 279.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 676         | 18                     | 0.5  | 0.2                       | 35-20 | 70                          | 2   | 90                               | 1.9 (10.8) | 3.8(16.8)                     | 2.6(13.5) | 40(37.3)        | 2.0     | 0.22/0.4                           | 75      | 60                                   | 66/64               | 16 1/2 x 5 x 12 1/2                     | 17 1/2                  | 229.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |
|                      | 575         | 12.5                   | 0.5  | 0.2                       | 35-20 | 70                          | 2   | 75                               | 2.4 (12.8) | 4.0(17.3)                     | 4(17.3)   | 42              | 2.5     | 0.4/0.6                            | 75      | 60                                   | 64/62               | 16 1/4 x 5 x 12 1/2                     | 17 1/2                  | 199.95                                    |        |                   |  |                                           |  |                      |  |                        |  |                           |  |                               |  |              |  |       |  |

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One of the reasons is that we've been *making* them for a long, long time. In 1955, TEAC came on the scene with the first in a long line of fine open reel tape recorders.

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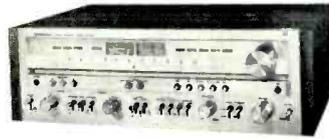
\*Dolby is a trademark of Dolby  
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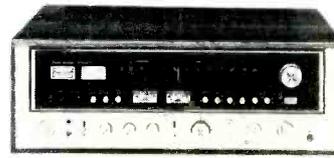
# Receivers



Rotel TX-7707



Pioneer SX-950



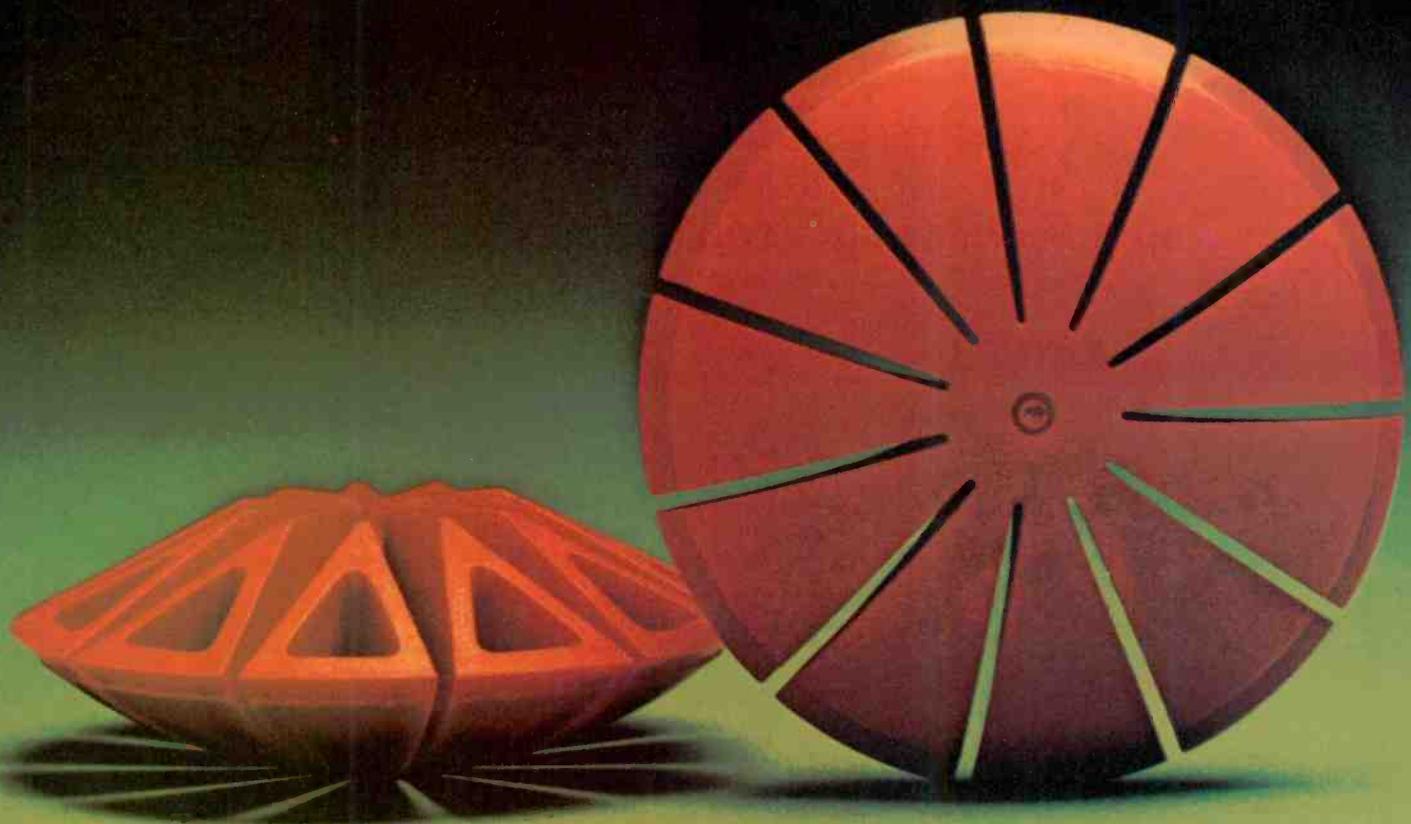
Sansui 9090DB



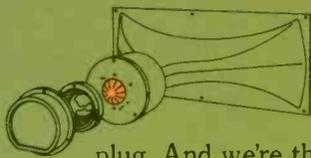
Sanyo JCX 2400K

| MANUFACTURER | MODEL     | Ave. watts/chan., 8 ohms | THD max. % wait to max. rated power | IM max. % wait to max. rated power | Rated power bandwidth, Hz to kHz | dB S/N, "A" wtd., phono, 10mV | Phono sens., mV | Phono overload, mV | Mono I/F Sensitivity, $\mu$ V (dB) | Stereo I/F Sensitivity, $\mu$ V (dB) | Mono Signal Strength for 50-dB Quieting $\mu$ V (dB) | Stereo Signal Strength for 50-dB Quieting $\mu$ V (dB) | Capture Ratio, dB | % THD, 100% Modulation, 1 kHz, Mono/Stereo | De-emphasis, $\mu$ V | A/C Chan. Select., dB | Max. S/N, dB, Mono/Stereo | Dimensions, inches, W x H x D | Weight, lbs. | Price   |
|--------------|-----------|--------------------------|-------------------------------------|------------------------------------|----------------------------------|-------------------------------|-----------------|--------------------|------------------------------------|--------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------|--------------------------------------------|----------------------|-----------------------|---------------------------|-------------------------------|--------------|---------|
|              |           |                          |                                     |                                    |                                  |                               |                 |                    |                                    |                                      |                                                      |                                                        |                   |                                            |                      |                       |                           |                               |              |         |
| ROTEL        | 1603      | 180                      | 0.05                                | 0.06                               | 20-20                            | 75                            | 2               | 350                | 1.5(8.8)                           | 3.1(15)                              | 2.1(11.5)                                            | 35(36.0)                                               | 1                 | 0.1/0.2                                    | 75/25                | 80                    | 80/75                     | 24x7.2x19.2                   | 72.6         | 1100.00 |
|              | 1203      | 120                      | 0.05                                | 0.06                               | 20-20                            | 75                            | 2               | 200                | 1.6(9.3)                           | 3.5(16.1)                            | 2.1(11.5)                                            | 33(35.8)                                               | 1                 | 0.1/0.2                                    | 75/25                | 80                    | 80/75                     | 22.4x7.2x17.6                 | 44           | 750.00  |
|              | 803       | 75                       | 0.1                                 | 0.1                                | 20-20                            | 75                            | 2.5             | 180                | 1.7(9.8)                           | 4.0(17.3)                            | 3.0(14.5)                                            | 44(38)                                                 | 1.5               | 0.1/0.2                                    | 75/25                | 75                    | 70/65                     | 19.6x5.8x15.2                 | 30           | 480.00  |
|              | 7707      | 35                       | 0.5                                 | 0.1                                | 20-20                            | 70                            | 2               | 130                | 2.0(11.2)                          | 4.9(19)                              | 3.6(16.3)                                            | 44(38)                                                 | 1.5               | 0.3/0.5                                    | 75/25                | 50                    | 65/60                     | 22.6x4.8x13.2                 | 19           | 480.00  |
|              | 603       | 50                       | 0.1                                 | 0.1                                | 20-20                            | 75                            | 2.5             | 130                | 1.8(10.6)                          | 4.9(18.2)                            | 4.0(16.5)                                            | 44(38)                                                 | 2                 | 0.1/0.3                                    | 75/25                | 75                    | 70/65                     | 19.6x5.8x15.2                 | 22           | 380.00  |
|              | 503       | 35                       | 0.17                                | 0.1                                | 20-20                            | 70                            | 2.5             | 120                | 1.9(10.8)                          | 4.9(18.2)                            | 4.0(16.5)                                            | 44(38)                                                 | 2                 | 0.1/0.3                                    | 75/25                | 70                    | 70/65                     | 19.6x5.8x13.6                 | 17.5         | 300.00  |
|              | 403       | 25                       | 0.2                                 | 0.1                                | 20-20                            | 70                            | 2.5             | 120                | 2.0(11.2)                          | 5.5(20)                              | 4.0(16.5)                                            | 50(39.2)                                               | 2                 | 0.2/0.3                                    | 75/25                | 50                    | 70/65                     | 18.8x5.4x11                   | 15           | 230.00  |
|              | 102mk11   | 10                       | 1                                   | 0.2                                | 20-20                            | 65                            | 2.8             | 100                | 3.0(14.8)                          | 5.5(20)                              | 4.0(17)                                              | 50(39.2)                                               | 4                 | 0.2/0.5                                    | 75/25                | 50                    | 70/65                     | 18.9x4.6x10.8                 | 10           | 170.00  |
|              | SANSUI    | 9090DB                   | 125                                 | 0.1                                | 0.1                              | 20-20                         | 70              | 2.5                | 180                                | 1.7(9.8)                             |                                                      | 3.0(14.7)                                              | 36.0(36.3)        | 1.5                                        | 0.2/0.3              | 75/50/25              | 85                        | 70/65                         | 21x7.2x15.2  | 52.0    |
| 8080DB       |           | 85                       | 0.1                                 | 0.1                                | 20-20                            | 70                            | 2.5             | 180                | 1.7(9.8)                           |                                      | 3.1(14.7)                                            | 36(36.3)                                               | 1.5               | 0.2/0.3                                    | 75/50/25             | 85                    | 70/65                     | 21x7.2x15.2                   | 45.6         | 650.00  |
| 7070         |           | 60                       | 0.3                                 | 0.3                                | 20-20                            | 70                            | 2.5             | 160                | 1.8(10.3)                          |                                      | 3.3(15.6)                                            | (38)                                                   | 1.5               | 0.3/0.4                                    | 75/50/25             | 80                    | 70/65                     | 20x6.6x14.4                   | 36.6         | 520.00  |
| 6060         |           | 40                       | 0.4                                 | 0.4                                | 20-20                            | 70                            | 2.5             | 160                | 1.9(10.8)                          |                                      | 3.5(16)                                              | (38)                                                   | 2.2               | 0.4/0.5                                    | 75/50/25             | 60                    | 65/60                     | 18x5.8x12                     | 25.1         | 420.00  |
| 5050         |           | 30                       | 0.5                                 | 0.5                                | 20-20                            | 70                            | 2.5             | 160                | 2.0(11.2)                          |                                      | 3.5(16)                                              | (38)                                                   | 2.2               | 0.4/0.5                                    | 75/50/25             | 60                    | 65/60                     | 18x5.8x12                     | 23.3         | 320.00  |
| G-3000       |           | 26                       | 0.15                                | 0.15                               | 20-20                            | 75                            | 2.5             | 200                | 1.95(11.0)                         | (19)                                 | (18)                                                 | (39)                                                   | 1.5               | 0.18/0.25                                  | 75/50                |                       | 70/67                     | 17x6.6x14                     | 17.6         | 280.00  |
| G-2000       |           | 16                       | 0.2                                 | 0.2                                | 20-20                            | 75                            | 2.5             | 200                | 1.95(11.0)                         | (19)                                 | (18)                                                 | (39)                                                   | 1.5               | 0.18/0.25                                  | 75/50                |                       | 70/67                     | 17x6.6x14                     | 16.1         | 230.00  |
| 2020         |           | 12                       | 1.0                                 | 1.0                                | 40-20                            | 70                            | 2.5             | 120                | 2.5(13.2)                          |                                      |                                                      |                                                        | 1.5               | 0.6/0.8                                    | 75                   | 60                    | 65/                       | 17x5.8x14                     | 15.2         | 190.00  |
| 1010         |           | 8                        | 1.0                                 | 1.0                                | 40-20                            | 70                            | 2.5             | 120                | 2.5(13.2)                          |                                      |                                                      |                                                        | 1.5               | 0.6/0.8                                    | 75                   | 60                    | 65/                       | 17x5.8x14                     | 14.8         | 170.00  |
| SANYO        |           | JCX2100K                 | 13                                  | 0.5                                |                                  | 20-20                         | 50              | 2.5                |                                    | 2.0(11.2)                            | 2.1(11.2)                                            |                                                        |                   | 1.2                                        | 0.3/0.4              |                       |                           | 68/65                         | 16x5.5x11    |         |
|              | JCX2300K  | 26                       | 0.4                                 |                                    | 20-20                            | 50                            | 2.5             |                    | 1.9(10.8)                          | 1.9(10.8)                            |                                                      |                                                        | 1.0               | 0.3/0.4                                    |                      |                       | 70/67                     | 17x6x13                       |              | 229.95  |
|              | JCX2400K  | 50                       | 0.3                                 |                                    | 20-20                            | 50                            | 2.5             |                    | 1.8(10.3)                          | 1.8(10.3)                            |                                                      |                                                        | 1.0               | 0.3/0.4                                    |                      |                       | 70/67                     | 17x6x15                       |              | 299.95  |
| H. H. SCOTT  | R-307     | 16                       | 0.5                                 | 0.3                                | 40-20                            | 70                            | 2.5             | 55                 | 2.2(12)                            | 18(30.3)                             | 3.5(16.1)                                            | 70(42.1)                                               | 2                 | 0.3/0.5                                    | 25/50/75             | 52                    | 68/65                     | 16x5x11                       | 23           | 199.95  |
|              | R-327     | 25                       | 0.3                                 | 0.3                                | 20-20                            | 75                            | 2.5             | 100                | 2.2(12)                            | 18(30.3)                             | 3.5(16.1)                                            | 40(37.2)                                               | 2                 | 0.3/0.5                                    | 25/50/75             | 52                    | 68/65                     | 18x5.5x15.5                   | 25           | 259.95  |
|              | R-337     | 42                       | 0.3                                 | 0.15                               | 20-20                            | 75                            | 2.5             | 100                | 1.9(10.8)                          | 18(30.3)                             | 3.5(16.1)                                            | 40(37.2)                                               | 1.5               | 0.3/0.5                                    | 25/50/75             | 55                    | 68/65                     | 18x5.5x15.5                   | 26%          | 329.95  |
|              | R-357     | 60                       | 0.2                                 | 0.15                               | 20-20                            | 75                            | 2.5             | 100                | 1.9(10.8)                          | 18(30.3)                             | 3.5(16.1)                                            | 40(37.2)                                               | 1.5               | 0.2/0.3                                    | 25/50/75             | 55                    | 68/65                     | 18x5.5x15.5                   | 27           | 399.95  |
|              | R-376     | 75                       | 0.1                                 | 0.1                                | 20-20                            | 75                            | 2.5             | 100                |                                    |                                      | 3.5(16.1)                                            | 40(37.2)                                               | 1.2               | 0.1/0.2                                    | 25/50/75             |                       | 68/65                     | 19x6x16                       | 31           | 549.95  |
| SETTON       | RS220     | 50                       | 0.08                                | 0.08                               | 10-35                            | 70                            | 2.5             | 300                | 2.0(11.2)                          | 5.1(19)                              | 4.5(18.3)                                            | 50(39)                                                 | 1.25              | 0.09/0.11                                  |                      | 70                    | 70/65                     | 21x6.6x11                     | 37           | 499.95  |
|              | RS440     | 69                       | 0.085                               | 0.085                              | 5-40                             | 70                            | 2.5             | 300                | 1.8(10.3)                          | 4.3(18)                              | 3.6(16)                                              | 45(38)                                                 | 1.25              | 0.09/0.11                                  |                      | 70                    | 72/67                     | 21x6.6x11                     | 41           | 579.95  |
|              | RS660     | 125                      | 0.02                                | 0.02                               | 5-40                             | 70                            | 2.5             | 360                | 1.8(10.3)                          | 4.3(18)                              | 3.6(16)                                              | (38)                                                   | 1.25              | 0.09/0.11                                  | 75/25                | 80                    | 72/67                     | 22x6.6x13                     | 52           | 799.95  |
| SHERWOOD     | S9910     | 100                      | 0.1                                 | 0.1                                |                                  | 2                             | 160             | 1.7(9.84)          |                                    | 2.4(12.83)                           | 25(33.19)                                            |                                                        | 1                 | 0.1/0.2                                    | 25/75                | 80                    | 70/65                     | 21x6x15.5                     | 41           | 700.00  |
|              | S7910     | 60                       | 0.1                                 | 0.1                                |                                  | 2                             | 160             | 1.7(9.94)          |                                    | 2.7(13.86)                           | 30(34.77)                                            |                                                        | 1                 | 0.15/0.3                                   | 25/75                | 75                    | 70/65                     | 21x6x15.5                     | 34           | 500.00  |
|              | S8910 (F) | 60                       | 0.1                                 | 0.1                                |                                  | 2                             | 160             | 1.7(9.84)          |                                    | 2.7(13.86)                           | 30(34.77)                                            |                                                        | 1                 | 0.15/0.3                                   | 25/75                | 75                    | 70/65                     | 21x6x15.5                     | 34           | 475.00  |
|              | S7310A    | 40                       | 0.3                                 | 0.3                                |                                  | 2                             | 90              | 1.8(10.33)         |                                    | 2.7(13.86)                           |                                                      |                                                        | 1.2               | 0.5/0.25                                   | 75                   | 65                    | 70                        | 17x5.5x13                     | 35%          | 400.00  |
|              | S7210A    | 30                       | 0.5                                 | 0.5                                |                                  | 2                             | 110             | 1.9(10.8)          |                                    | 2.8(14.17)                           |                                                      |                                                        | 1.4               | 0.3/0.6                                    | 75                   | 65                    | 70                        | 17x5.5x13                     | 28%          | 300.00  |
|              | S7110B    | 20                       | 0.7                                 | 0.7                                |                                  | 2                             | 90              | 2.0(11.25)         |                                    | 2.9(14.4)                            |                                                      |                                                        | 1.5               | 0.4/0.6                                    | 75                   | 60                    | 70                        | 17x5.5x13                     | 27%          | 250.00  |
|              | S7010A    | 12                       | 0.8                                 | 0.8                                |                                  | 2                             | 80              | 2.5(13.18)         |                                    | 3.3(15.6)                            |                                                      |                                                        | 4                 | 0.3/0.6                                    | 75                   | 50                    | 65                        | 17x5.5x13                     | 27           | 200.00  |

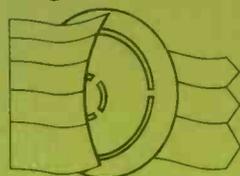
# THE ALTEC TANGERINE. IT GIVES YOU A NATURAL HIGH.



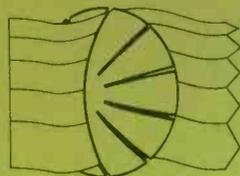
It may not look like much, but this simple, innocent-looking disk brings you closer to the fullest possible sound in the high frequencies. Called the "Tangerine™," it's a brand new patented radial phase plug. And we're the only one who has it.



We build it into our high-frequency compression drivers on our Model 15 and 19 speakers. That's why they sound more natural and as close to live sound as you can get.



Circumferential Phase Plug



Tangerine Radial Phase Plug

Until now, the old circumferential phase plugs put up obstacles to high frequencies. By forcing sound through evenly spaced slots, the plug developed its own undesirable acoustic characteristics. Because the distances between slots were even, certain high frequencies never made it through.

That's why we came up with a better idea. Instead of circumferential slots, we have radials. The prime number of the slots and the tapered distances between them provide a clear path to high frequencies. As a result, you

get super-high efficiency and greatly extended high-frequency response. A much wider band of clear and natural highs, unbroken by any artificial barrier.

After filling in the highs, we created a unique dividing network for our Models 15 and 19. It has a built-in dual-range equalizer so you can achieve variable equalization of mid and high frequencies. The combination of a dual-box design and tuned vent offers precise internal volume and enclosure tuning. The outcome is an unheard-of low frequency response: the best ratio of lower limit vs. sensitivity yet.

It's not surprising that all these improvements in sound technology were made by Altec Lansing. The name that's been the number one choice of professional recording studios and artists for over forty years.

For a full-line catalog and the name of your local Altec Lansing dealer, just write us. Altec Lansing International, 1515 S. Manchester Avenue, Anaheim, California 92803.



ALTEC LANSING. THE NUMBER ONE NAME IN PROFESSIONAL SPEAKERS IS COMING HOME.

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# Receivers

Sony STR 7800 SD



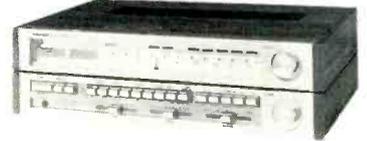
Transaudio 6600

Setton RS 660



Tandberg TR 2075

Toshiba SA-620



Letter Key: (T) with model indicates tube type (K) with model indicates kit  
(Q) with model indicates 4-chan. (W) with model indicates wired kit  
(F) with model indicates FM only

| MANUFACTURER                    | MODEL      | Ave. warts/chan. - 8 ohms |             | THD max. - 1/2 watt to max. |             | THD max. - 1/4 watt to max. |                 | Rated power bandwidth, Hz to kHz | dB S/N, "A" wtd. phono, 10mV | Phono sens., mV | Phono overload, mV | Mono I/F Sensitivity, $\mu$ V (dB) | Stereo I/F Sensitivity, $\mu$ V (dB) | Mono Signal Strength for 50-dB Quieting $\mu$ V (dB) | Stereo Signal Strength for 50-dB Quieting $\mu$ V (dB) | Capture Ratio, dB | %THD, 100% Modulation, 1 kHz, Mono/Stereo | De-emphasis, $\mu$ V | Alt. Chan. Select., dB | Max. S/N, dB, Mono/Stereo | Dimensions, inches, W x H x D              | Weight, lbs.        | Price   |        |
|---------------------------------|------------|---------------------------|-------------|-----------------------------|-------------|-----------------------------|-----------------|----------------------------------|------------------------------|-----------------|--------------------|------------------------------------|--------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------|-------------------------------------------|----------------------|------------------------|---------------------------|--------------------------------------------|---------------------|---------|--------|
|                                 |            | rated power               | rated power | rated power                 | rated power |                             |                 |                                  |                              |                 |                    |                                    |                                      |                                                      |                                                        |                   |                                           |                      |                        |                           |                                            |                     |         |        |
| SONAB                           | R3000      | 30                        | 0.25        | 0.1                         | 20-20       | 75                          | 2               |                                  | 1.5                          | 3.0             |                    |                                    |                                      | 1                                                    |                                                        |                   |                                           |                      |                        |                           | 17x4<br>x14<br>19x4 1/2<br>x10             | 19                  | 465.00  |        |
|                                 | R4000-3    | 40                        | 0.25        | 0.1                         | 15-30       | 75                          | 2               |                                  | 1.5                          | 2.9             |                    |                                    |                                      | 1                                                    |                                                        |                   |                                           |                      |                        |                           |                                            | 23                  | 600.00  |        |
| SONY                            | STR-7800SD | 120                       | 0.07        | 0.07                        | 20-20       | 84                          | 2.5             | 100                              | 1.7(9.8)                     |                 |                    | 3.5(16.1)                          | 45(38.3)                             | 1                                                    | 0.2/0.3                                                | 75/25             | 80                                        | 73/68                |                        |                           | 19x6 1/2<br>x20 1/4<br>19x6 1/2<br>x16 1/4 | 50                  | 700.00  |        |
|                                 | STR-6800SD | 80                        | 0.1         | 0.1                         | 20-20       | 84                          | 2.5             | 100                              | 1.7(9.8)                     |                 |                    | 3.5(16.1)                          | 45(38.3)                             | 1                                                    | 0.2/0.3                                                | 75/25             | 80                                        | 73/68                |                        |                           | 19x6 1/2<br>x16 1/4                        | 36 1/2              | 550.00  |        |
|                                 | STR-5800SD | 55                        | 0.1         | 0.1                         | 20-20       | 84                          | 2.5             | 100                              | 1.7(9.8)                     |                 |                    | 3.5(16.1)                          | 45(38.3)                             | 1                                                    | 0.2/0.3                                                | 75/25             | 80                                        | 73/68                |                        |                           | 19x6 1/2<br>x16 1/4                        | 34                  | 450.00  |        |
|                                 | STR-4800SD | 35                        | 0.1         | 0.1                         | 20-20       | 82                          | 2.5             | 70                               | 1.9<br>(10.8)                |                 |                    | 4.0(17.2)                          | 45(38.3)                             | 1.5                                                  | 0.2/0.4                                                | 75/25             | 80                                        | 73/68                |                        |                           | 19x6 1/2<br>x16 1/4                        | 30 1/2              | 350.00  |        |
|                                 | STR-3800   | 25                        | 0.5         | 0.5                         | 20-20       | 80                          | 2.5             | 100                              | 2.0<br>(11.2)                |                 |                    | 4.0(17.2)                          | 45(38.3)                             | 1.5                                                  | 0.2/0.4                                                | 75                | 60                                        | 70/68                |                        |                           | 19x5 1/2<br>x13                            | 23                  | 250.00  |        |
|                                 | STR-2800   | 20                        | 0.5         | 0.5                         | 20-20       | 80                          | 2.5             | 100                              | 2.0<br>(11.2)                |                 |                    | 4.0(17.2)                          | 45(38.3)                             | 1.5                                                  | 0.2/0.4                                                | 75                | 50                                        | 70/68                |                        |                           | 19x5 1/2<br>x13                            | 21                  | 210.00  |        |
|                                 | STR-1800   | 12                        | 0.8         | 0.8                         | 40-20       | 75                          | 3               | 100                              | 3.5<br>(16.1)                |                 |                    |                                    |                                      | 4                                                    | 0.8/1.0                                                | 75                | 50                                        | 65/-                 |                        |                           | 19x6<br>x11 1/4                            | 16 1/2              | 150.00  |        |
| SUPERSCOPE                      | R-1270     | 35                        | 1.0         |                             | 40-20       |                             | 3               |                                  | 1.9                          |                 |                    |                                    |                                      |                                                      |                                                        | 75                | 40                                        | 65/-                 |                        |                           | 17x5<br>x11 1/2<br>17x5<br>x11 1/2         | 22                  | 279.95  |        |
|                                 | R-1240     | 20                        | 1.0         |                             | 40-20       |                             | 3               |                                  | 2.2                          |                 |                    |                                    |                                      |                                                      |                                                        | 75                |                                           | 60/-                 |                        |                           | 17x5<br>x11 1/2                            | 18.3                | 209.95  |        |
|                                 | R-1220     | 10                        | 1.0         |                             | 40-20       |                             | 3               |                                  | 2.5                          |                 |                    |                                    |                                      |                                                      |                                                        | 75                |                                           | 60/-                 |                        |                           | 17x5<br>x11 1/2                            | 15                  | 159.95  |        |
| TANDBERG                        | TR-2055    | 55                        | 0.15        | 0.15                        | 20-20       | 78                          | 2.2<br>10<br>mV | 250                              | 1.7(9.8)                     |                 |                    | 3.0(14.8)                          | 40(37.3)                             | 0.9                                                  | 0.2/0.3                                                | 25/75             | 80                                        | 78/75                |                        |                           | 20x14<br>x6 1/4                            | 28 1/2              | 749.00  |        |
|                                 | TR-2075    | 75                        | 0.15        | 0.15                        | 20-20       | 78                          | 2.2<br>10<br>mV | 250                              | 1.7(9.8)                     |                 |                    | 3.0(14.8)                          | 40(37.3)                             | 0.9                                                  | 0.2/0.3                                                | 25/75             | 80                                        | 78/75                |                        |                           | 20x14<br>x6                                | 27.2                | 1099.00 |        |
|                                 | TR-2025M   | 25                        | 0.15        | 0.15                        | 20-20       | 78                          | 2.3<br>60       | 60                               | 2.0<br>(11.2)                |                 |                    | 3.5(16.2)                          | 40(37.3)                             | 1.5                                                  | 0.4/0.5                                                | 75                | 75                                        | 72/70                |                        |                           | 22x5 1/2<br>x12 1/2                        | 19                  | 599.00  |        |
|                                 | TR-2025    | 25                        | 0.15        | 0.15                        | 20-20       | 78                          | 2.3<br>60       | 60                               | 2.0<br>(11.2)                |                 |                    | 3.5(16.2)                          | 40(37.3)                             | 1.5                                                  | 0.4/0.5                                                | 75                | 75                                        | 72/70                |                        |                           | 20x5 1/2<br>x12 1/2                        | 19                  | 429.00  |        |
| TOSHIBA                         | SA220C     | 7                         | 0.8         |                             | 40-20       | 70                          | 2.5             | 70                               | 2.3                          |                 |                    |                                    |                                      | 60                                                   | 0.6/0.8                                                | 75                | 60                                        | 65/60                |                        |                           | 17x5<br>x10 1/2<br>19x6 1/2                | 14 1/2              | 179.95  |        |
|                                 | SA320      | 15                        | 0.4         |                             | 20-20       | 70                          | 2.5             | 130                              | 1.9                          |                 |                    |                                    | 60                                   | 0.2/0.4                                              | 75                                                     | 60                | 70/65                                     |                      |                        | 19x6 1/2<br>x17           | 25 1/2                                     | 199.95              |         |        |
|                                 | SA420      | 25                        | 0.4         |                             | 20-20       | 70                          | 2.5             | 130                              | 1.9                          |                 |                    |                                    | 60                                   | 0.2/0.4                                              | 75                                                     | 60                | 70/65                                     |                      |                        | 19x6 1/2<br>x17           | 25 1/2                                     | 249.95              |         |        |
|                                 | SA520      | 40                        | 0.4         |                             | 20-20       | 70                          | 2.5             | 150                              | 1.8                          |                 |                    |                                    | 65                                   | 0.2/0.4                                              | 25/50<br>75                                            | 65                | 70/65                                     |                      |                        | 21x6 1/2<br>x17           | 37 1/2                                     | 349.95              |         |        |
|                                 | SA620      | 50                        | 0.3         |                             | 20-20       | 70                          | 2.5             | 150                              | 1.8                          |                 |                    |                                    | 65                                   | 0.2/0.4                                              | 25/50<br>75                                            | 65                | 70/65                                     |                      |                        | 21x6 1/2<br>x17           | 40 1/2                                     | 399.95              |         |        |
| TRANSAUDID<br>(QUADRA-<br>FLEX) | 6600       | 9.5                       | 0.7         | 0.3                         | 35-20       | 70                          | 1.5             | 90                               | 2.1<br>(11.7)                |                 |                    | 3.5(16.1)                          | 3.8(16.8)                            | 39(17.1)                                             | 2                                                      | 0.5/1.5           | 75                                        | 62                   | 64/60                  |                           |                                            | 17x5 1/2<br>x11 1/2 | 14      | 199.95 |
|                                 | 6200       | 6.5                       | 0.7         | 0.3                         | 35-20       | 70                          | 1.5             | 90                               | 2.4<br>(12.8)                |                 |                    | 3.8(16.8)                          | 40(17.3)                             | 40(17.3)                                             | 2                                                      | 0.5/0.6           | 75                                        | 60                   | 64/60                  |                           |                                            | 17x5 1/2<br>x11 1/2 | 12      | 159.95 |
|                                 | 7200       | 12.5                      | 0.7         | 0.3                         | 35-20       | 70                          | 1.5             | 90                               | 2.1<br>(11.7)                |                 |                    | 3.5(16.1)                          | 3.7(16.6)                            | 39(17.1)                                             |                                                        | 0.4/0.5           | 75                                        | 62                   | 64/60                  |                           |                                            | 17x5 1/2<br>x11 1/2 | 14      | 209.95 |
| YAMAHA                          | CR-2020    | 100                       | 0.05        | 0.05                        | 10-50       | 95                          | 2               | 230                              | 1.8<br>(10.3)                |                 |                    | 3.2(15.3)                          | 40(37.2)                             | 1                                                    | 0.08/<br>0.1                                           |                   | 80                                        | 77/73                |                        |                           | 21x6 1/2<br>x16 1/4                        | 42 1/2              | 700.00  |        |
|                                 | CR-1020    | 70                        | 0.05        | 0.05                        | 10-50       | 95                          | 2               | 230                              | 1.8<br>(10.3)                |                 |                    | 3.2(15.3)                          | 40(37.2)                             | 1                                                    | 0.08/<br>0.1                                           |                   | 80                                        | 77/73                |                        |                           | 21x6 1/2<br>x16 1/4                        | 41 1/2              | 540.00  |        |
|                                 | CR-820     | 50                        | 0.05        | 0.05                        | 10-50       | 92                          | 2               | 220                              | 1.8<br>(10.3)                |                 |                    | 3.2(15.3)                          | 40(37.3)                             | 1                                                    | 0.1/<br>0.15                                           |                   | 75                                        | 77/73                |                        |                           | 20x6 1/2<br>x15 1/2                        | 28 1/2              | 440.00  |        |
|                                 | CR-620     | 35                        | 0.05        | 0.05                        | 10-50       | 92                          | 2               | 220                              | 1.8<br>(10.3)                |                 |                    | 3.2(15.3)                          | 40(37.3)                             | 1                                                    | 0.15/<br>0.25                                          |                   | 70                                        | 77/73                |                        |                           | 20x6 1/2<br>x15 1/2                        | 27 1/2              | 330.00  |        |

# Sansui has just raised the standards for budget-class high fidelity: the new G-3000 stereo receiver.

Strikingly attractive new styling. Advanced engineering. State-of-the-art technology. Beautifully pleasing musical performance. The new Sansui G-3000 has it all. (And at less than \$280.)\* Because Sansui knows how important your high fidelity component music system can be in your life.

The new G-3000 brings a unique new look to receivers. You will be proud to have it in your home. The bright brushed aluminum face is highlighted by a rich gold dial. And the G-3000 is the first receiver available today that is totally symmetrical, with the tuning knob and volume control positioned accordingly.

A pleasure to look at, the G-3000 is also a pleasure to use. It offers an ultra wide frequency-linear dial; separate signal-strength and center-tune meters; an extra-sensitive, large flywheel-assisted tuning knob; stepped-attenuator volume control; two-system speaker selector; and mic-mixing input.

Above all, you'll love to listen to the amazingly clean sound of the G-3000. With total harmonic distortion of less than 0.15% over the entire audible range, you get musical quality and

performance usually available only in much higher priced models.

Signal-to-noise ratio is extraordinarily high, stereo separation extraordinarily wide and distortion extraordinarily low for any receiver in this power class.\*\*

Go to your nearest franchised Sansui dealer. Touch the controls of a G-3000 and listen to its superb tonal quality. You'll know why it represents a tremendous advance in high fidelity developmental engineering.

## Sansui. A whole new world of musical pleasure.

Also available is the G-2000 at under \$230.\*

\* Approximate nationally advertised value. The actual retail price will be set by the individual dealer at his option.

\*\* 26 watts per channel, min. RMS, both channels driven into 8 ohms from 20-20,000 Hz with no more than 0.15% total harmonic distortion.

G-2000: 16 watts per channel with no more than 0.2% total harmonic distortion under the same conditions.

Cabinets simulated walnut grain.



**SANSUI ELECTRONICS CORP.**

Woodside, New York 11377 • Gardena, California 90247

SANSUI ELECTRIC CO., LTD., Tokyo, Japan

SANSUI AUDIO EUROPE S.A., Antwerp, Belgium • In Canada: Electronic Distributors

Enter No. 61 on Reader Service Card

*Sansui*

**While others are reaching  
for this technology,  
Sony brings it within  
your reach.**



It takes a sharpened sense of technology to deliver innovation at sensible prices.

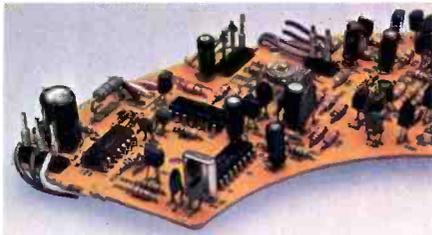
Who else but Sony could manage it? We know turntables backwards and forwards. Even as far back as 1966, we were surprising people with our developments: that one, the application of a slow-speed, servo-controlled motor to turntables.

Today, we present the PS-X7, X6 and X5. Three fully automatic, direct drive turntables that are a direct challenge to the competition.

And the competition will soon find that we've got the features they don't want to face.

**The X-tal Lock.  
X-act speed accuracy.**

Good as it is, a traditional servo system has two flaws. When playing a record for a long time, it heats up and you're continually forced to correct for speed drift.



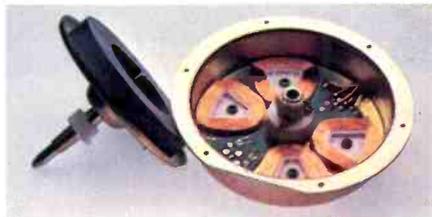
More critically, increased friction between the stylus and record during loud passages can slow down the speed. It will then fall into a range wherein a conventional servo isn't sensitive enough to read. But your ear can.

Sony's X-tal Lock system cannot be accused of any of the above. Its quartz generator serves to regulate the servo. The speed is electronically locked in. Impervious to changes in temperature, load, or voltage.

Quartz can help Bach. Quartz can help rock.

**Our brushless and slot-less is matchless.**

Sony's new motor gives brushes the brush. The ring shaped permanent magnet rotor and fixed coil windings eliminate cogging.



The torque is high—and that's not just talk.

Its rotation is smooth, and start-up, quick.



PS-X5

PS-X6

**Sony's Speed  
Monitoring System.  
Like millions  
of tiny State Troopers.**

The X-tal Lock system is worth x-actly nothing, unless the right information is relayed to it. Our system uses a precise magnetic pulse signal, recorded on the outer rim of the platter. An 8-pole magnetic pick-up head receives it. Then transmits it to the servo electronics.



Most systems base their information on only one pole. By using 8—and averaging them—we get above average accuracy.

**Want functional  
controls?  
The case is closed!**

Sony believes a dust cover should live down to its name—it should stay closed, protecting record and turntable from dirt. You have immediate access to the controls without lifting the cover. (On the X7 and X6, the controls are touch sensitive.)

There's a lot more built into these machines; a lot more reasons to look into them.

A safety clutch mechanism protects the tone arm against damage, should you grab it while in motion.

And on the X7 and X6, an optical sensing system is included. It automatically returns the arm at record's end. (In the X7, a carbon fiber tone arm.)



What's more, these turntables are worth more dead, than alive. Because their cabinets are made from an acoustically dead material. That way, acoustic feedback caused by the speakers can't come back and make the cabinet vibrate.

Vibration is also cut by our thick rubber mat, and heavy aluminum platter. Viscous filled rubber feet give vibration the boot as well; the same viscous material fills the rubber mat on the PS-X7.

All this, so while you're vibrating to the record, your turntable isn't.

Much has been engineered into these turntables that we haven't mentioned, including lightweight tone arms with a cast aluminum alloy headshell.

So tightly built are they that we didn't even have room for one more thing: bigger prices.

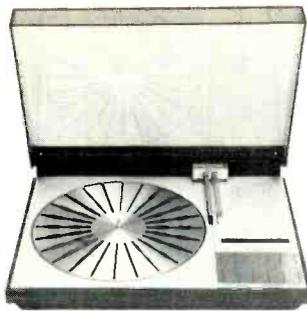
Cartridges are not included

**SONY**<sup>®</sup>

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Enter No. 66 on Reader Service Card

# Single-Play Turntables & Tonearms



Bang & Olufsen 4002



Audioanalyst  
DV 505



Garrard DD75

| MANUFACTURER               | MODEL        | Speeds - see code | Wow & Flutter, % | 33 1/3, DIN 45507 | Motor Type       | Speed adjust, +/- % | Drive System | Speed accuracy, +/- % | Dimensions, inches       | Built-in strobe light? | SPEEDS                 |                            |                     |                       |                      |                            |                        |                            |                          |                |                                                                       |        |  |  | NOTES |
|----------------------------|--------------|-------------------|------------------|-------------------|------------------|---------------------|--------------|-----------------------|--------------------------|------------------------|------------------------|----------------------------|---------------------|-----------------------|----------------------|----------------------------|------------------------|----------------------------|--------------------------|----------------|-----------------------------------------------------------------------|--------|--|--|-------|
|                            |              |                   |                  |                   |                  |                     |              |                       |                          |                        | A - 33, 45, 78         | B - 33, 45                 | C - 33 only         | D - 16, 33, 45, 78    | E - 16, 33, 45       | F - Cont. variable         |                        |                            |                          |                |                                                                       |        |  |  |       |
|                            |              |                   |                  |                   |                  |                     |              |                       |                          |                        | Model: if separate arm | Overall arm length, inches | Pivot style, inches | Vertical bearing type | Lateral bearing type | Max. track error, deg./in. | Anti-skate adjustment? | Tracking force range, gms. | Solid w. base and cover? | Damped casing? | Price \$                                                              |        |  |  |       |
| AUDIODYNAMICS CORP.        |              |                   |                  |                   |                  |                     |              |                       |                          | LMF-1                  | 12.33                  | 9.33                       | ball                | ball                  |                      | yes                        | 0-1.5                  |                            | yes                      | 205.00         |                                                                       |        |  |  |       |
|                            |              |                   |                  |                   |                  |                     |              |                       |                          | LMF-2                  | 12.33                  | 9.33                       | ball                | ball                  |                      | yes                        | 0-1.5                  |                            | yes                      | 215.00         |                                                                       |        |  |  |       |
| AUDIO-TECHNICA             |              |                   |                  |                   |                  |                     |              |                       |                          | AT-1009                | 13                     | 9.45                       | pivot               | ball                  | 1.5                  | yes                        | 0-2.5                  |                            | yes                      | 160.00         | Pneumatic cueing L-2 cue opt. \$17.00.                                |        |  |  |       |
|                            |              |                   |                  |                   |                  |                     |              |                       |                          | AT-1005II              | 12.72                  | 9.45                       | pivot               | ball                  | 1.5                  | yes                        | 0-3                    |                            | opt                      | 80.00          |                                                                       |        |  |  |       |
|                            |              |                   |                  |                   |                  |                     |              |                       |                          | ATP-12T                | 13.15                  | 10                         | pivot               | ball                  | 1 1/2                | no                         | 0-3                    |                            | no                       | 120.00         |                                                                       |        |  |  |       |
|                            |              |                   |                  |                   |                  |                     |              |                       |                          | ATP-16T                | 14.17                  | 11.10                      | pivot               | ball                  | 1.5                  | no                         | 0-3                    |                            | no                       | 120.00         |                                                                       |        |  |  |       |
| BANG & OLUFSEN             | Beogram 2400 | B                 | 0.035            | 62                | Tach dc          | 3                   | belt         |                       | 17 1/2 x 13 x 3%         | no                     | 11                     | 9                          | needle              | ball                  | 0.32                 | int.                       | 0-2                    | yes                        | yes                      | 325.00         | With MMC 4000 cartridge With MMC-4000 cartridge, tangential tracking. |        |  |  |       |
|                            | Beogram 4002 | B                 | 0.025            | 65                | Tach dc          | 3                   | belt         |                       | 19 1/2 x 14 1/2 x 3%     | no                     | 6 1/2                  | 6 1/2                      | needle              | ball                  |                      |                            | 0-2                    | yes                        | yes                      | 695.00         |                                                                       |        |  |  |       |
| BREUER (SUMIKO)            |              |                   |                  |                   |                  |                     |              |                       |                          | 5A                     | 10%                    | 8%                         | pivot               | pivot                 | 1.25                 | yes                        | 0-4                    |                            | yes                      | 600.00         | Damping opt.                                                          |        |  |  |       |
| CRAIG                      | 5102         | B                 | 0.05             | 40                | 4-pole sync.     | 2                   | belt         |                       | 19 1/2 x 14 x 7 1/2%     | no                     |                        |                            |                     |                       | 6                    | yes                        | 0-4                    | yes                        | yes                      | 169.95         |                                                                       |        |  |  |       |
|                            | 5101         | B                 | 0.05             | 40                | 4-pole sync.     | 2                   | belt         |                       | 18 1/2 x 13 x 5 1/2%     | no                     |                        |                            |                     |                       | 6                    | yes                        | 0-4                    | yes                        | yes                      | 109.95         |                                                                       |        |  |  |       |
| DECCA (ROCELCO INC)        |              |                   |                  |                   |                  |                     |              |                       |                          | London Int.            |                        | 9%                         | uni-pivot           |                       |                      | yes                        | 0-3.5                  |                            | no                       | 139.50         | Damped arm.                                                           |        |  |  |       |
| DENON (AMERICAN AUDIOPORT) | DP-790       | B                 | 0.018            | 75                | a.c. solid rotor | 3                   | direct       |                       | 19 1/2 x 16 1/2 x 7      | no                     |                        | 12%                        | 9%                  | gimbal                | ball                 |                            | yes                    | 0-3                        | yes                      | yes            | 298.00                                                                |        |  |  |       |
|                            | DP-1500      | B                 | 0.018            | 75                | a.c. solid rotor | 3                   | direct       |                       | 20 1/2 x 17 x 8          | yes                    |                        |                            |                     |                       |                      |                            |                        | yes                        |                          |                | 325.00                                                                |        |  |  |       |
|                            | DP-1700      | B                 | 0.018            | 75                | a.c. solid rotor | 3                   | direct       |                       | 17 1/2 x 15 1/2 x 8%     | yes                    |                        | 12%                        | 9%                  | gimbal                | ball                 |                            | yes                    | 0-3                        | yes                      | yes            | 360.00                                                                |        |  |  |       |
|                            | DP-3500      | B                 | 0.015            | 75                | a.c. solid rotor | 3                   | direct       |                       | 21 1/2 x 17 1/2 x 7%     | yes                    |                        |                            |                     |                       |                      |                            |                        |                            | yes                      |                |                                                                       | 525.00 |  |  |       |
|                            | DP-6000      | B                 | 0.015            | 75                | a.c. solid rotor | 3                   | direct       |                       |                          | yes                    |                        |                            |                     |                       |                      |                            |                        |                            | no                       |                |                                                                       | 680.00 |  |  |       |
|                            | DP-6700      | B                 | 0.015            | 75                | a.c. solid rotor | 3                   | direct       |                       | 21 x 17 x 7%             | yes                    | DA-307                 | 13                         | 9%                  | gimbal                | ball                 | 2.5                        | yes                    | 0-3                        | yes                      | yes            |                                                                       | 915.00 |  |  |       |
| DUAL (UNITED AUDIO)        | 721          | B                 | 0.03             | 72                | d.c.             | 10                  | direct       |                       | 16 1/2 x 14 1/2 x 3%     | yes                    |                        |                            | 8%                  | ball                  | ball                 |                            | yes                    | 1/3                        | yes                      | yes            | 400.00                                                                |        |  |  |       |
|                            | 704          | B                 | 0.03             | 70                | d.c.             | 10                  | direct       |                       | 16 1/2 x 14 1/2 x 3 1/2% | yes                    |                        |                            | 8%                  | ball                  | ball                 |                            | yes                    | 1/3                        | yes                      | yes            | 310.00                                                                |        |  |  |       |
|                            | 604          | B                 | 0.03             | 70                | d.c.             | 10                  | direct       |                       | 16 1/2 x 14 1/2 x 3%     | yes                    |                        |                            | 8%                  | ball                  | ball                 |                            | yes                    | 1/3                        | yes                      | yes            | 250.00                                                                |        |  |  |       |
|                            | 510          | B                 | 0.04             | 68                | 8-pole sync.     | 6                   | belt         |                       | 16 1/2 x 14 1/2 x 3%     | yes                    |                        |                            | 8%                  | ball                  | ball                 |                            | yes                    | 1/3                        | yes                      | yes            | 210.00                                                                |        |  |  |       |
|                            | 502          | B                 | 0.04             | 68                | 8-pole sync.     | 6                   | belt         |                       | 16 1/2 x 14 1/2 x 3%     | no                     |                        |                            | 8%                  | ball                  | ball                 |                            | yes                    | 1/3                        | no                       | yes            | 160.00                                                                |        |  |  |       |
| DYNAVECTOR (Audioanalyst)  |              |                   |                  |                   |                  |                     |              |                       |                          | DV505                  | 13                     | 3                          | ball                | ball                  | 0.733                | yes                        | 0-3                    |                            | no                       |                | 575.00                                                                |        |  |  |       |
| EMT (GOTHAM)               | 928stm       | A                 | 0.1              | 65                |                  | 2                   | belt         |                       | 18 x 10 x 3%             | yes                    | 929                    | 12                         | 9                   | pivot                 | ball                 | 0.83                       | yes                    | 0.5-5                      |                          | yes            | 1689.00                                                               |        |  |  |       |
|                            | 930stu       | A                 | 0.075            | 62                | hys. sync.       | 4                   | idler        | 0.15                  | 19 1/2 x 15 1/2 x 7      | yes                    | 929                    | 12                         | 9                   | pivot                 | ball                 | 0.83                       | yes                    | 0.5-5                      |                          | no             | 2914.00                                                               |        |  |  |       |

# Introducing The Bose Model 601.



The new Model 601 loudspeaker from Bose looks, works, and sounds very different from any conventional floor-standing speaker.

Like the world-renowned Bose 901<sup>®</sup> Series III, the Model 601 is a Direct/Reflecting<sup>®</sup> speaker, designed to recreate the impact and presence of a live performance with a quality of realism that no conventional speaker can match.

The Model 601's unique configuration of six drivers—four tweeters and two woofers—spreads a balance of reflected and direct sound to every corner of the room.

From virtually any listening position, the sound is open and spacious, full of the feel and ambience of a live performance, and with none of the harshness so characteristic of conventional high-fidelity speakers.

The Model 601 is also highly efficient (minimizing amplifier power and expense) and exceptionally versatile (allowing superior performance in a wide range of speaker positions).

For a more complete introduction to the Model 601, visit any authorized Bose dealer or write for a full-color brochure to Bose, Dept. AU10, The Mountain, Framingham, Mass. 01701.



**BOSE**  
Better sound through research.



Mitsubishi DP-EC1



EMT 930



Keith Monks M9 BA Mk 3



Optonica RP-3636

| MANUFACTURER              | MODEL             | Speeds - see code |       | Wow & Flutter, % 33 1/3, DIN 45507 | dB rumble, DIN 45539 | Motor type | Speed adjust, ±% | Drive system | Speed accuracy, ±%      | Dimensions, inches | Built-in strobe light? | Model, if separate arm | Overall arm length, inches | Pivot-stylus dist., inches | Vertical bearing type | Lateral bearing type | Max. track error, deg/in. | Anti-skate adjustment? | Tracking force range, gms. | Solid w. base and cover? | Damped cueing? | Price \$                                         | NOTES                |
|---------------------------|-------------------|-------------------|-------|------------------------------------|----------------------|------------|------------------|--------------|-------------------------|--------------------|------------------------|------------------------|----------------------------|----------------------------|-----------------------|----------------------|---------------------------|------------------------|----------------------------|--------------------------|----------------|--------------------------------------------------|----------------------|
|                           |                   | A                 | B     |                                    |                      |            |                  |              |                         |                    |                        |                        |                            |                            |                       |                      |                           |                        |                            |                          |                |                                                  |                      |
| KEITH MDNKS               |                   |                   |       |                                    |                      |            |                  |              |                         |                    |                        | M9BA Mk3               | 11                         | 9                          | uni-pivot             | uni-pivot            |                           | yes                    | 0-2                        |                          | yes            | 149.95                                           |                      |
| KENWOOD                   | KD-550            | B                 | 0.03  | 70                                 | f.g. servo           | 8          | direct           | 0.01         | 19 1/2 x 6 1/2 x 15     | yes                |                        | 12                     | 9 1/2                      | ball                       | ball                  | 1.5                  | yes                       | 0-4                    | yes                        | yes                      |                |                                                  |                      |
|                           | KD-500            | B                 | 0.03  | 70                                 | f.g. servo           | 8          | direct           | 0.01         | 19 1/2 x 6 1/2 x 15     | yes                |                        |                        |                            |                            |                       |                      |                           |                        |                            |                          |                |                                                  |                      |
|                           | KD-3055           | B                 | 0.06  | 65                                 | sync.                |            | belt             | 0.5          | 19 x 5 1/2 x 14 1/2     |                    |                        | 11                     | 8 1/2                      | ball                       | ball                  | 1.5                  | yes                       | 0-4                    | yes                        | yes                      |                |                                                  |                      |
|                           | KD-2055           | B                 | 0.06  | 65                                 | sync.                |            | belt             | 0.5          | 19 x 5 1/2 x 14 1/2     |                    |                        | 11                     | 8 1/2                      | ball                       | ball                  | 1.5                  | yes                       | 0-4                    | yes                        | yes                      |                |                                                  |                      |
|                           | KD-1033           | B                 | 0.06  | 64                                 | sync.                |            | belt             | 0.5          | 18 x 5 1/2 x 13         |                    |                        | 11                     | 8 1/2                      | ball                       | ball                  | 1.5                  | yes                       | 0-3                    | yes                        | yes                      |                |                                                  |                      |
| LENCO (NEDSONIC)          | L133              | B                 | 0.08  | 45                                 | 16 pole sync.        |            | belt             |              | 18 1/2 x 14 1/2 x 5 1/2 | no                 |                        |                        | 9                          | ball                       | ball                  |                      | yes                       | 0-5                    | yes                        | yes                      | 129.95         |                                                  |                      |
|                           | L236              | B                 | 0.08  | 45                                 | 16 pole sync.        |            | belt             |              | 18 1/2 x 14 1/2 x 5 1/2 | no                 |                        |                        | 9                          | ball                       | ball                  |                      | yes                       | 0-5                    | yes                        | yes                      | 179.95         |                                                  |                      |
|                           | L830DD            | B                 | 0.06  | 50                                 | brushless d.c.       | 4          | direct           |              | 18 1/2 x 14 1/2 x 5 1/2 | yes                |                        |                        | 9                          | ball                       | ball                  |                      | yes                       | 0-5                    | yes                        | yes                      | 239.95         |                                                  |                      |
|                           | L833DD            | B                 | 0.06  | 50                                 | brushless d.c.       | 4          | direct           |              | 18 1/2 x 14 1/2 x 5 1/2 | yes                |                        |                        | 9                          | ball                       | ball                  |                      | yes                       | 0-5                    | yes                        | yes                      | 299.95         |                                                  |                      |
| LINN (AUDIOPHILE SYSTEMS) | Linn Sondek LP 12 | C                 | 0.04  | 60*                                | sync.                |            | belt             |              | 17 1/2 x 14 1/2 x 5 1/2 | no                 |                        |                        |                            |                            |                       |                      |                           | yes                    |                            |                          | 450.00         | *rumble unweighted reference 10 cm/Sec. 1000 Hz. |                      |
| LOUDSPEAKER DESIGN        | Audio Craft       |                   |       |                                    |                      |            |                  |              |                         |                    |                        | Ac 300                 | 13.1                       | 9.3                        | uni-pivot             | -                    | 0.08                      | yes                    | 0-3                        |                          | yes            | 225.00                                           |                      |
| LUX                       | PD-121            | B                 | 0.03  | 70                                 | d.c. servo           | 2          | direct           |              | 19 x 6 x 15             | yes                |                        |                        |                            |                            |                       |                      |                           |                        |                            |                          |                | 595.00                                           | less tonearm.        |
| MARANTZ (SUPERSCOPE)      | 6300              | B                 | 0.04* | 60                                 | d.c. servo           | 3          | direct           |              | 17 1/2 x 14 1/2 x 7     | yes                |                        |                        | 9.09                       |                            |                       | 1.25                 | yes                       | 0-4                    | yes                        | yes                      | 269.95         | **w rms.                                         |                      |
|                           | 6320              | B                 | 0.04  | 60                                 | d.c. servo           | 3          | direct           |              | 17 1/2 x 14 1/2 x 7     | yes                |                        |                        |                            |                            |                       |                      |                           |                        | yes                        | no                       | 229.95         |                                                  |                      |
|                           | 6200              | B                 | 0.06  | 60                                 | a.c. servo           | 3          | belt             |              | 17 1/2 x 13 1/2 x 6 1/2 | yes                |                        |                        | 8.38                       |                            |                       |                      | yes                       | 0-4                    | yes                        | yes                      | 199.95         |                                                  |                      |
|                           | 6150              | B                 | 0.045 | 60                                 | d.c. servo           | 3          | direct           |              | 17 1/2 x 14 1/2 x 5 1/2 | yes                |                        |                        | 8.46                       |                            |                       |                      | yes                       | 0-4                    | yes                        | yes                      | 159.95         |                                                  |                      |
|                           | 6100              | B                 | 0.08  | 60                                 | a.c. servo           | no         | belt             |              | 17 1/2 x 13 1/2 x 6 1/2 | no                 |                        |                        | 8.38                       |                            |                       |                      | yes                       | 0-4                    | yes                        | yes                      | 129.95         |                                                  |                      |
| MAYWARE (POLK AUDIO)      |                   |                   |       |                                    |                      |            |                  |              |                         |                    |                        | Formula 4              | 11 1/2                     | 8 1/2                      | uni-pivot             | uni-pivot            | 0.5                       | yes                    | 0-5                        |                          | yes            | 149.95                                           |                      |
| MICRO-SEIKI (TEAC)        | MB-10             | B                 | 0.06  | 50                                 | hys. sync.           |            | belt             |              | 17 1/2 x 14 1/2 x 5 1/2 | no                 |                        |                        | 8%                         |                            |                       | 1.5                  | yes                       | 0-3                    | yes                        | yes                      | 100.00         |                                                  |                      |
|                           | MB-15             | B                 | 0.06  | 50                                 | hys. sync.           |            | belt             |              | 17 1/2 x 14 1/2 x 5 1/2 | no                 |                        |                        | 8%                         |                            |                       | 1.5                  | yes                       | 0-3                    | yes                        | yes                      | 150.00         |                                                  |                      |
|                           | DD-20             | B                 | 0.03  | 60                                 | d.c. servo           | 6          | direct           |              | 18 x 14 1/2 x 6         | yes                |                        |                        | 8%                         |                            |                       | 1.5                  | yes                       | 0-3                    | yes                        | yes                      | 200.00         |                                                  |                      |
|                           | DD-30             | B                 | 0.03  | 60                                 | d.c. servo           | 6          | direct           |              | 18 x 14 1/2 x 6         | yes                |                        |                        | 8%                         |                            |                       | 1.5                  | yes                       | 0-3                    | yes                        | yes                      | 350.00         |                                                  |                      |
|                           | DD-40             | B                 | .028  | 62                                 | d.c. servo           | 6          | direct           |              | 19 1/2 x 15 1/2 x 6     | yes                |                        |                        | 9%                         |                            |                       | 1.5                  | yes                       | 0-3                    | yes                        | yes                      | 450.00         |                                                  |                      |
|                           | DDX-1000          | B                 | .025  | 63                                 | FG d.c. servo        | 6          | direct           |              |                         | yes                |                        |                        | MA-505                     | 12%                        |                       |                      | 1.5                       | yes                    | 0-3                        |                          |                | 150.00                                           | With MA-505 Tone-arm |



# Now the world's finest tonearm starts at less than \$135.

## Complete with drive system.

You don't have to wait till someday to play your records with the world's finest tonearm. A gimbal-mounted Dual tonearm. You can afford one right now.

We have designed into our lowest-priced turntable, the new 1237, the very same tonearm (and drive system) formerly available only on our highest-priced models.

### **Advantages of the four-point gimbal suspension.**

If you're not familiar with the gimbal, it's understandable. Few other tonearms, at any price, have one — despite its widely acknowledged superiority.

A true four-point gimbal centers, balances and pivots the tonearm mass at the precise intersection of the vertical and horizontal axes. The tonearm maintains the perfect balance in all planes essential for optimum tracking.

The Dual gimbal employs identical pairs of tempered and finely-honed needle-point bearings, each set in miniature ball-bearings. During assembly, each gimbal is individually tested and adjusted to assure that bearing friction will be no more than 0.008 gram vertically and 0.016 gram horizontally. (If there were a cartridge that could track at forces as low as 0.25 gram, this tonearm would do full justice to it.)

Further, the straight-line tubular design (for maximum rigidity and lowest mass) and the settings for zero balance, tracking force and anti-skating are, like the gimbal, identical in every Dual tonearm. The tonearm establishes and maintains the correct cartridge-to-groove geometry, and allows the stylus to trace the groove contours freely, precisely and with the lowest practical force. In short, flawless tracking.

### **Advantages of the Vario-belt drive system.**

Another important inheritance is the Vario-belt drive system. This drive system comprises a high-torque synchronous motor, a precision-machined Vario-

pulley, a precision-ground belt and a machine-balanced, die-cast platter. The Vario-pulley simply expands and contracts for reliable fine-speed adjustments. There are no complicated mechanics or electronic circuitry, which add nothing but cost.

### **Versatility and reliability too.**

We've just described the qualities of the new Dual fully automatic line that will make your records sound better and last longer. But there's more. For versatility, you have fully automatic and manual start and stop, plus provision for multiple play. And cue-control damped in both directions. Plus pitch-control, rotating single-play spindle and multi-scale anti-skating.

Everything we've described applies to the 1237, which is, incredibly enough, our lowest-priced model. And where the 1237 ends, the 1241 and 1245 begin. With an even higher degree of performance. And very handsome, contemporary, low-profile bases.

One further point, all Dual turntables are ruggedly built. They need not be babied, by you or anyone else in your family. As any Dual owner can tell you, they are designed to last for years and years and years.

Now we suggest that you visit your favorite audio dealer and see first hand what Dual engineering is all about. You may then wonder why no other manufacturer puts so much care and precision into a turntable. The answer is simply this. For more than seventy-five years, craftsmanship of the very highest order has been a way of life with the Dual people in the Black Forest. As nowhere else in the entire world.

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Dual 1237: less than \$135; base and cover less than \$30 additional.  
Dual 1241: less than \$200, including deluxe base and cover.  
Dual 1245: less than \$230, including deluxe base and cover.  
Other Duals to \$400. Actual resale prices are determined by and at the sole discretion of authorized Dual dealers.



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# Single-Play Turntables & Tonearms

Kenwood KD-550



Polk Formula 4



Philips GA 222

| MANUFACTURER          | MODEL               | SPEEDS - see code | Wow & Flutter, % | dB rumble, DIN 45-509 | Motor type           | Speed adjust, ±% | Drive system | Speed accuracy, ±%      | Dimensions, inches      | Built-in strobe light? | Model, if separate arm | Overall arm length, inches | Pivot stylus dist., inches | Vertical bearing type  | Lateral bearing type   | Max. track error, deg./in. | Anti-skate adjustment? | Tracking force range, gms. | Solid w. base and cover? | Damped casing? | Price \$                | NOTES            | SPEEDS         |                    |            |                |             |                    |
|-----------------------|---------------------|-------------------|------------------|-----------------------|----------------------|------------------|--------------|-------------------------|-------------------------|------------------------|------------------------|----------------------------|----------------------------|------------------------|------------------------|----------------------------|------------------------|----------------------------|--------------------------|----------------|-------------------------|------------------|----------------|--------------------|------------|----------------|-------------|--------------------|
|                       |                     |                   |                  |                       |                      |                  |              |                         |                         |                        |                        |                            |                            |                        |                        |                            |                        |                            |                          |                |                         |                  | A - 33, 45, 78 | D - 16, 33, 45, 78 | B - 33, 45 | E - 16, 33, 45 | C - 33 only | F - Cont. variable |
| J.A. MITCHELL         | Hydraulic Reference | B                 | .04              | -75                   | hys. sync.           | 2                | belt         |                         | 17 1/4 x 17 x 7         | yes                    | fluid arm              | 12                         | 8%                         | uni-pivot<br>uni-pivot | uni-pivot<br>uni-pivot | yes                        | 1/4-3<br>1/4-3         | yes                        | yes                      | yes            | 550.00                  | 450.00 w/ arm.   |                |                    |            |                |             |                    |
| MITSUBISHI            | DP-EC1              | B                 | 0.025            | 80                    | d.c. servo           | 3                | direct       |                         | 18 1/4 x 6 x 14 1/4     | yes                    |                        | 12%                        | 9                          | ball                   | ball                   | 2.9                        | yes                    | yes                        | yes                      | 590.00         |                         |                  |                |                    |            |                |             |                    |
|                       | DP-EC2              | B                 | 0.025            | 80                    | d.c. servo           | 3                | direct       |                         | 18 1/4 x 6 x 14 1/4     | yes                    |                        | 12%                        | 9                          | ball                   | ball                   | 2.9                        | yes                    | yes                        | yes                      | 440.00         |                         |                  |                |                    |            |                |             |                    |
| OASIS (POLK AUDIO)    | Oasis               | B                 |                  | -70                   | hys. sync.           |                  | fluid        |                         | 5 x 18 x 13             | no                     |                        |                            |                            |                        |                        |                            | yes                    |                            |                          | 599.95         |                         |                  |                |                    |            |                |             |                    |
| PHILIPS               | GA437               | B                 | 0.12             | 60                    | sync.                |                  | belt         |                         | 16 1/2 x 14 x 5 1/2     |                        |                        | 11%                        | 8%                         |                        |                        | yes                        | 0-4                    | yes                        | yes                      | 119.95         |                         |                  |                |                    |            |                |             |                    |
|                       | GA222               | B                 | 0.08             | 62                    | d.c. servo           | 3                | belt         |                         | 15 1/2 x 5 1/2 x 12     | yes                    |                        | 11%                        | 8%                         |                        |                        | yes                        | 0-3                    | yes                        | yes                      | 249.95         |                         |                  |                |                    |            |                |             |                    |
|                       | GA312               | B                 | 0.1              | 62                    | d.c. servo           | 3                | belt         |                         | 15 1/2 x 6 1/4 x 13 1/4 | yes                    |                        | 11                         | 8%                         | 0.38                   |                        | yes                        | 0-4                    | yes                        | yes                      | 179.95         |                         |                  |                |                    |            |                |             |                    |
| PIONEER               | PLC-590             | B                 | 0.025            | 75                    | PLL hall             | 6                | direct       | 0.002                   | 19 1/2 x 16 x 7 1/2     | no                     | PA-1000                |                            |                            |                        |                        | yes                        | 0-3                    | yes                        | yes                      | 550.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-570              | B                 | 0.025            | 70                    | PLL hall             | 6                | direct       | 0.003                   | 19 1/2 x 15 1/2 x 8     | yes                    |                        | 9.3                        | pivot                      | pivot                  |                        | yes                        | 0-4                    | yes                        | yes                      | 100.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-550              | B                 | 0.025            | 70                    | PLL hall             | 6                | direct       | 0.003                   | 19 1/2 x 15 1/2 x 7 1/2 | yes                    |                        | 8.7                        | pivot                      | pivot                  |                        | yes                        | 0-4                    | yes                        | yes                      | 400.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-530              | B                 | 0.03             | 70                    | d.c. servo           | 2                | direct       |                         | 19 x 6 x 15 1/2         | yes                    |                        | 8                          | ball                       | ball                   |                        | yes                        | 0-3.5                  | yes                        | yes                      | 250.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-510A             | B                 | 0.03             | 60                    | d.c. servo           | 2                | direct       |                         | 17 1/2 x 6 1/4 x 14 1/4 | yes                    |                        | 8%                         | ball                       | ball                   |                        | yes                        | 0-3.5                  | yes                        | yes                      | 200.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-1170             | B                 | 0.07             | 50                    | 4-pole sync.         |                  | belt         |                         | 17 1/2 x 6 1/4 x 14 1/4 | no                     |                        | 8%                         | ball                       | ball                   |                        | yes                        | 0-3.5                  | yes                        | yes                      | 175.00         |                         |                  |                |                    |            |                |             |                    |
|                       | PL-1150             | B                 | 0.07             | 50                    | 4-pole sync.         |                  | belt         |                         | 17 1/2 x 6 1/4 x 14 1/4 | no                     |                        | 8%                         | ball                       | ball                   |                        | yes                        | 0-3.5                  | yes                        | yes                      | 125.00         |                         |                  |                |                    |            |                |             |                    |
| PL-1120               | B                   | 0.07              | 50               | 4-pole sync.          |                      | belt             |              | 17 1/2 x 6 1/4 x 14 1/4 | no                      |                        | 8%                     | ball                       | ball                       |                        | yes                    | 0-3.5                      | yes                    | yes                        | 100.00                   |                |                         |                  |                |                    |            |                |             |                    |
| QUADRAFLEX            | QL 410              | B                 | 0.12             | 55                    | hys. sync.           |                  | belt         |                         | 17 1/2 x 14 x 6         |                        |                        | 10%                        | 8%                         | needle                 | ball                   | 1.2                        | yes                    | 0-3                        | yes                      | yes            | 129.95                  |                  |                |                    |            |                |             |                    |
| QUANTA (BSR)          | MA-50               | A                 | 0.3              | 50                    | induction            |                  | idler wheel  |                         |                         | no                     |                        |                            |                            | pivot                  | ball                   |                            | fixed                  | 2.5-7                      | yes                      | no             | 39.95                   |                  |                |                    |            |                |             |                    |
|                       | SA-100              | A                 | 0.2              | 55                    | induction            |                  | idler wheel  |                         |                         | no                     |                        |                            |                            | ball                   | ball                   |                            | yes                    | 2-5                        | yes                      | yes            | 59.95                   |                  |                |                    |            |                |             |                    |
|                       | SA-150              | A                 | 0.15             | 60                    | induction up         |                  | idler wheel  |                         |                         | no                     |                        |                            |                            | ball                   | ball                   |                            | yes                    | 2-5                        | yes                      | yes            | 65.95                   |                  |                |                    |            |                |             |                    |
|                       | Quanta 400          | B                 | 0.06             | 62                    | induction hys. sync. |                  | idler wheel  |                         | 17 1/2 x 14 x 6 1/2     | no                     |                        |                            |                            | pivot                  | ball                   |                            | yes                    | 2-5                        | yes                      | yes            | 79.95                   |                  |                |                    |            |                |             |                    |
| Quanta 500            | B                   | 0.08              | 65               | hys. sync.            | 3                    | belt             |              | 17 1/2 x 14 x 6 1/2     | yes                     |                        |                        |                            | ball                       | ball                   |                        | yes                        | 1-4                    | yes                        | yes                      | 99.95          |                         |                  |                |                    |            |                |             |                    |
| REGA RESEARCH (IMPEX) | Planar 2            | B                 |                  |                       | sync.                |                  | belt         |                         | 17 1/2 x 14 x 5         | no                     | Rega                   | 12                         | 9%                         | ball                   | ball                   | 1.5                        | yes                    | 0-3                        | yes                      | yes            | 225.00                  | \$180.00 w/o arm |                |                    |            |                |             |                    |
|                       | Planar 3            | B                 |                  |                       | sync.                |                  | belt         |                         | 17 1/2 x 14 x 5         | no                     | Rega                   | 12                         | 9%                         | ball                   | ball                   | 1.5                        | yes                    | 0-3                        | yes                      | yes            | 315.00                  | \$240.00 w/o arm |                |                    |            |                |             |                    |
| REVDX                 | B790                | B                 | 0.05             | 65                    | async.               | 7                | direct       |                         | 17 1/2 x 15 1/2 x 5 1/2 | no*                    |                        | 1%                         |                            |                        |                        | no                         | yes                    | yes                        |                          |                | *Digital speed read-out |                  |                |                    |            |                |             |                    |

Pioneer PLC-590



Setton TS-11

Shure SME 3009



Sansui SR-838



| MANUFACTURER                   | MODEL   | Speeds - see code | Wow & Flutter, %, 33 1/3, DIN 45507 | dB rumble, DIN 45539 | Motor type              | Speed adjust, ±% | Drive system | Speed accuracy, ±%       | Dimensions, inches | Built-in strobe light? | Model, if separate arm | Overall arm length, inches | Pivot/stylus dist., inches | Vertical bearing type | Lateral bearing type | Max. track. error, deg./in. | Antistatic adjustment? | Tracking force range, gms. | Solid w. base and cover? | Damped casing? | Price \$         | NOTES                |                    |
|--------------------------------|---------|-------------------|-------------------------------------|----------------------|-------------------------|------------------|--------------|--------------------------|--------------------|------------------------|------------------------|----------------------------|----------------------------|-----------------------|----------------------|-----------------------------|------------------------|----------------------------|--------------------------|----------------|------------------|----------------------|--------------------|
|                                |         |                   |                                     |                      |                         |                  |              |                          |                    |                        |                        |                            |                            |                       |                      |                             |                        |                            |                          |                |                  |                      | SPEEDS             |
|                                |         |                   |                                     |                      |                         |                  |              |                          |                    |                        |                        |                            |                            |                       |                      |                             |                        |                            |                          |                |                  | A - 33, 45, 78       | D - 16, 33, 45, 78 |
|                                |         |                   |                                     |                      |                         |                  |              |                          |                    |                        |                        |                            |                            |                       |                      |                             |                        |                            |                          |                |                  | B - 33, 45           | E - 16, 33, 45     |
|                                |         |                   |                                     |                      |                         |                  |              |                          |                    |                        |                        |                            |                            |                       |                      |                             |                        |                            |                          |                |                  | C - 33 only          | F - Cont. variable |
| ROTEL                          | RP-3000 | B                 | 0.05                                | -70                  | a.c. servo              | 5                | direct       | 18.75x14 x7.5            | yes                |                        | 12.2                   | 9.2                        | ball                       | ball                  | 1                    | yes                         | 0.75 - .3              | yes                        | yes                      | yes            | 220.00           |                      |                    |
|                                | RP-5300 | B                 | 0.04                                | -67                  | d.c. servo              | 5                | direct       | 17.5x14.25 x5.75         | yes                |                        | 11.7                   | 8.6                        | ball                       | ball                  | 1                    | yes                         | 0.75 - .3              | yes                        | yes                      | yes            | 160.00           |                      |                    |
|                                | RP-2500 | B                 | 0.05                                | -64                  | d.c. servo              | 5                | belt         | 17.5x13.75 x5.75         | yes                |                        | 11.3                   | 8.6                        | ball                       | ball                  | 1.5                  | yes                         | 1.5 - .3               | yes                        | yes                      | yes            | 180.00           |                      |                    |
|                                | RP-2300 | B                 | 0.08                                | -59                  | hys. sync.              |                  | belt         | 17.5x14.3 x5.75          | no                 |                        | 12                     | 8.9                        | ball                       | ball                  | 1.5                  | yes                         | 1.5 - .3               | yes                        | yes                      | yes            | 130.00           |                      |                    |
|                                | RP-1100 | B                 | 0.2                                 | -59                  | hys. sync.              |                  | belt         | 18.75x14 x8              | no                 |                        | 11.3                   | 8.6                        | ball                       | ball                  | 2                    | yes                         | 1.5 - .3               | yes                        | yes                      | yes            | 130.00           |                      |                    |
| SANSUI                         | SR-929  | B                 | 0.028                               | 74                   | d.c. servo              | 3.5              | direct       | 49 1/4 x 15 x 7 1/2      | yes                |                        | 9 1/2                  | knife                      | uni                        |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 450.00         |                  |                      |                    |
|                                | SR-838  | B                 | 0.025                               | 72                   | d.c. servo              | 2.5              | direct       | 19 1/2 x 15 1/2 x 6 1/2  | yes                |                        | 9                      | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 390.00         |                  |                      |                    |
|                                | SR-737  | B                 | 0.03                                | 70                   | d.c. servo              | 2.5              | direct       | 18 1/2 x 14 x 6 1/2      | yes                |                        | 9                      | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 320.00         |                  |                      |                    |
|                                | SR-535  | B                 | 0.038                               | 67                   | d.c. servo              | 3.5              | direct       | 18 1/2 x 14 x 6 1/2      | yes                |                        | 9                      | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 250.00         |                  |                      |                    |
|                                | SR-333  | B                 | 0.035                               | 70                   | d.c. servo              | 3.5              | direct       | 18 1/2 x 14 x 6 1/2      | yes                |                        | 9                      | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 190.00         |                  |                      |                    |
|                                | SR-232  | B                 | 0.07                                | 58                   | hys. sync.              |                  | belt         | 17 x 14 x 5 1/2          |                    |                        | 8 1/2                  | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 130.00         |                  |                      |                    |
|                                | SR-222  | B                 | 0.07                                | 60                   | hys. sync.              |                  | belt         | 18 x 14 x 5 1/2          |                    |                        | 9                      | pivot                      | ball                       |                       | yes                  | 0-3                         | yes                    | yes                        | yes                      | 100.00         |                  |                      |                    |
| SANYO                          | TP626   | B                 | 0.08                                | 55                   | 4-pole sync. d.c. servo |                  | belt         | 15 x 14 1/2 x 7          |                    |                        | 8%                     |                            |                            |                       | 3                    | yes                         | 1.5                    | yes                        | yes                      | 79.95          |                  |                      |                    |
|                                | TP727   | B                 | 0.05                                | 60                   | d.c. servo              | 3                | belt         | 17 1/2 x 14 x 9 1/4      | yes                |                        | 8%                     |                            |                            |                       | 1.5                  | yes                         | 1.5                    | yes                        | yes                      | 109.95         |                  |                      |                    |
|                                | TP1020  | B                 | 0.05                                | 60                   | 4-pole d.c. servo       | 3                | direct       | 17 1/2 x 15 x 9 1/4      | yes                |                        | 8.6                    |                            |                            |                       | 1.5                  | yes                         | 1.0                    | yes                        | yes                      | 129.95         |                  |                      |                    |
|                                | TP825D  | B                 | 0.04                                | 65                   | 12-pole d.c. servo      | 3.5              | direct       | 18 1/2 x 17 1/2 x 10 1/2 | yes                |                        | 8%                     |                            |                            |                       | 1.5                  | yes                         | 0.5                    | yes                        | yes                      | 179.95         |                  |                      |                    |
| SCHLUMBERGER (Reference Audio) | A1-B    | B                 | 0.1                                 | 60                   | 24-pole sync.           | 3                | belt         | 17 x 16 x 6 1/2          | yes                |                        | 8                      | 6 1/2                      | ball                       | ball                  | 0                    | 0                           | 0-3                    | yes                        | elect.                   | 1800.00        | Radial tone-arm. |                      |                    |
| H.H. SCOTT                     | PS-17   | B                 | 0.04                                |                      | servo                   | 3                | belt         | 0.3                      | no                 |                        | 8 1/2                  |                            |                            |                       | yes                  | 1.5-4                       | yes                    | yes                        | yes                      | 109.95         | Auto return      |                      |                    |
|                                | PS-47   | B                 | 0.04                                |                      | servo                   | 3                | belt         | 0.3                      | yes                |                        | 8 1/2                  |                            |                            |                       | yes                  | 1.5-4                       | yes                    | yes                        | yes                      | 139.95         | Semi-auto.       |                      |                    |
|                                | PS-57   | B                 | 0.04                                |                      | servo                   | 3                | belt         | 0.3                      | yes                |                        | 8 1/2                  |                            |                            |                       | yes                  | 1.5-4                       | yes                    | yes                        | yes                      | 169.95         | Full auto.       |                      |                    |
|                                | PS-67   | B                 | 0.03                                |                      | 72-pole servo           | 3                | direct       | 0.3                      | yes                |                        | 8 1/2                  |                            |                            |                       | yes                  | 1-4                         | yes                    | yes                        | yes                      | 199.95         | Semi auto.       |                      |                    |
|                                | PS-87   | B                 | 0.03                                |                      | 72-pole servo           | 3                | direct       | 0.3                      | yes                |                        | 8 1/2                  |                            |                            |                       | yes                  |                             | yes                    | yes                        | yes                      | 229.95         | Full auto.       |                      |                    |
| SETTON                         | TS-11   | B                 | 0.08                                |                      | sync.                   |                  | belt         | 19.3 x 14.8 x 5.9        | no                 |                        | 8%                     |                            |                            |                       | yes                  | 0.5-3.5                     | yes                    | yes                        | yes                      | 179.95         |                  |                      |                    |
| SHURE                          |         |                   |                                     |                      |                         |                  |              |                          |                    | SME 3009 S/2           | 9                      | 9                          | ball                       | knife                 | 1.5                  | yes                         | 0-1 1/2                |                            | yes                      | yes            | 174.00           | Removeable shell     |                    |
|                                |         |                   |                                     |                      |                         |                  |              |                          |                    | SME 3009 series II     | 9                      | 9                          | ball                       | knife                 | 1.5                  | yes                         | 0-1 1/2                |                            | yes                      | yes            | 162.00           | Non-removeable shell |                    |
| SONAB                          | 67S     | B                 | 0.08                                | 60                   | sync.                   |                  | belt         | 17 x 14 x 6              |                    |                        | 8%                     |                            |                            |                       | yes                  |                             | yes                    | yes                        | yes                      | 198.00         |                  |                      |                    |

# Single-Play Turntables & Tonearms

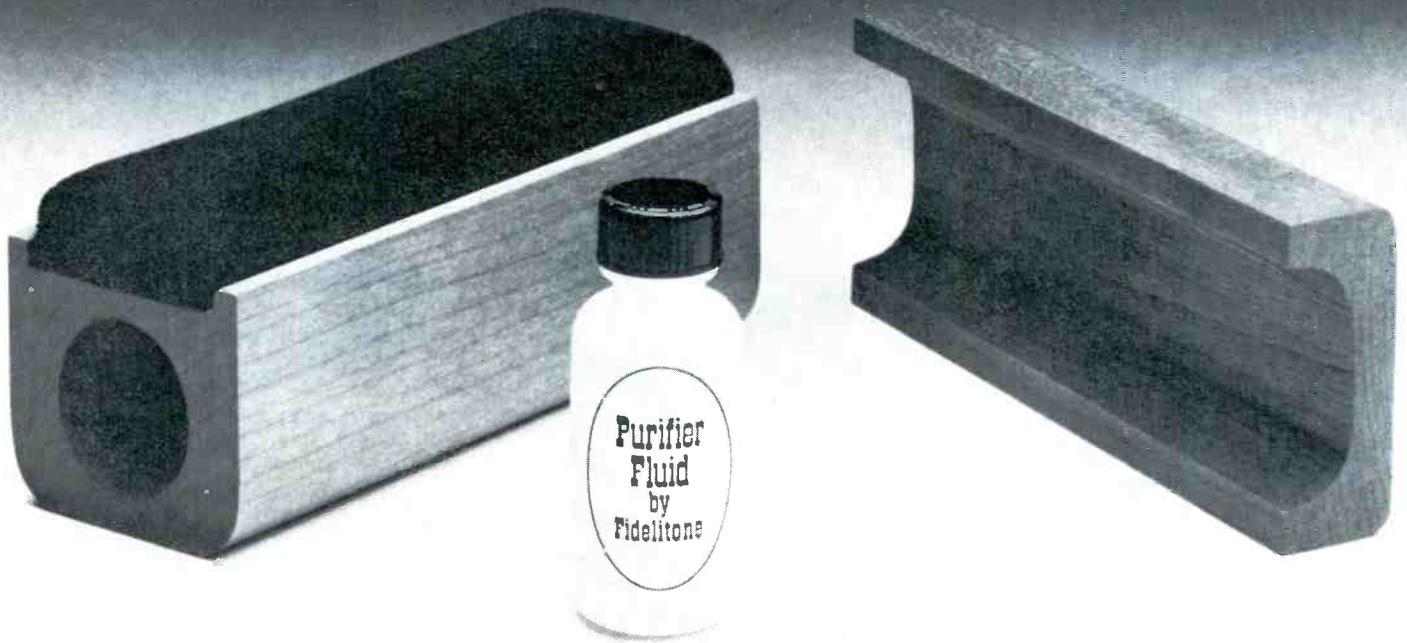


Stax UA-7

Sony PS-8750

| MANUFACTURER              | MODEL    | Speeds - see code | Wow & Flutter, % | 33 1/3, DIN 45 507 | Motor type | Speed adjust, +/- | Drive system | Speed accuracy, +/- | Dimensions, inches | Built-in strobe light? | Model, if separate arm | Overall arm length, inches | Pivot stylus dist., inches | Vertical bearing type | Lateral bearing type | Max. track error deg./in. | Anti-skate adjustment? | Tracking force range gms. | Solid w. base and cover? | Damped cueing? | Price \$  | NOTES                              | SPEEDS         |                    |            |                |
|---------------------------|----------|-------------------|------------------|--------------------|------------|-------------------|--------------|---------------------|--------------------|------------------------|------------------------|----------------------------|----------------------------|-----------------------|----------------------|---------------------------|------------------------|---------------------------|--------------------------|----------------|-----------|------------------------------------|----------------|--------------------|------------|----------------|
|                           |          |                   |                  |                    |            |                   |              |                     |                    |                        |                        |                            |                            |                       |                      |                           |                        |                           |                          |                |           |                                    | A - 33, 45, 78 | D - 16, 33, 45, 78 | B - 33, 45 | E - 16, 33, 45 |
| SONY                      | PS-8750  | B                 | 0.025            | 70                 | a.c. servo | 4                 | direct       | 0.003               | 18x15% x7          | yes                    |                        | 12%                        | 9%                         | needle                | ball                 | yes                       | 0-2.5                  | yes                       | yes                      | yes            | 900.00    | Semi-auto.                         |                |                    |            |                |
|                           | PS-X7    | B                 | 0.025            | 73                 | d.c. servo |                   | direct       | 0.003               | 17x14% x6          | yes                    |                        | 11%                        | 8%                         | pivot                 | ball                 | yes                       | 0-3                    | yes                       | yes                      | yes            |           | Full auto.                         |                |                    |            |                |
|                           | PS-X6    | B                 | 0.025            | 73                 | d.c. servo |                   | direct       | 0.003               | 17x14% x6          | yes                    |                        | 11%                        | 8%                         | pivot                 | ball                 | yes                       | 0-3                    | yes                       | yes                      | yes            |           | Full auto.                         |                |                    |            |                |
|                           | PS-X5    | B                 | 0.025            | 73                 | d.c. servo |                   | direct       | 0.003               | 17x14% x6          | yes                    |                        | 11%                        | 8%                         | pivot                 | ball                 | yes                       | 0-3                    | yes                       | yes                      | yes            |           | Full auto.                         |                |                    |            |                |
|                           | PS-T3    | B                 | 0.03             | 70                 | d.c. servo |                   | direct       |                     | 17x14% x5%         | yes                    |                        | 11%                        | 8%                         | pivot                 | ball                 | yes                       | 0-3                    | yes                       | yes                      | yes            |           | Full auto.                         |                |                    |            |                |
|                           | PS-T2    | B                 | 0.03             | 70                 | d.c. servo |                   | direct       |                     | 17x14% x5%         | yes                    |                        | 11%                        | 8%                         | pivot                 | ball                 | yes                       | 0-3                    | yes                       | yes                      | yes            |           | Semi-auto.                         |                |                    |            |                |
|                           | PS-1100  | B                 | 0.2              |                    |            | ind.              |              | idler               | 17x14% x6%         | no                     |                        | 11%                        | 8%                         | pivot                 | ball                 | fixed                     | 2.5                    | yes                       | yes                      | yes            | 100.00    | Semi-auto.                         |                |                    |            |                |
| STANTON                   | 8004 II  | B                 | 0.07             | 45                 | sync.      | no                | belt         | 0.3                 | 13x14% x7          | no                     |                        | 11                         | 8.6                        | uni-poise             | uni-poise            | 1.7                       | yes                    | 0-4                       | yes                      | yes            | 199.95    |                                    |                |                    |            |                |
|                           | 8004 IIA | B                 | 0.07             | 45                 | sync.      | no                | belt         | 0.3                 | 13x14% x7          | no                     |                        | 11                         | 8.6                        | uni-poise             | uni-poise            | 1.7                       | yes                    | 0-4                       | yes                      | yes            | 179.95    |                                    |                |                    |            |                |
|                           | 8004 IIB | B                 | 0.07             | 45                 | sync.      | no                | belt         | 0.3                 | 13x14% x7          | no                     |                        | 11                         | 8.6                        | uni-poise             | uni-poise            | 1.7                       | yes                    | 0-4                       | yes                      | yes            | 172.50    |                                    |                |                    |            |                |
|                           | 8004-IV  | B                 | 0.07             | 45                 | sync.      | no                | belt         | 0.3                 | 13x14% x7          | no                     |                        | 11                         | 8.6                        | uni-poise             | uni-poise            | 1.7                       | yes                    | 0-4                       | yes                      | yes            | 224.95    |                                    |                |                    |            |                |
| STAX (AMERICAN AUDIOPORT) |          |                   |                  |                    |            |                   |              |                     |                    | UA-7                   | 13                     | 9                          | uni-pivot                  | uni-pivot             | 0.6                  | yes                       | 0-3                    |                           | yes                      |                | 183.00    |                                    |                |                    |            |                |
| THORENS (ELPA)            | TO-126C  | A                 | 0.04             | 70                 | sync.      | +6                | belt         |                     | 20x15% x6%         | yes                    |                        | 12                         | 9.0                        | ball                  | ball                 | 0.18                      | yes                    | 0-3                       | yes                      | yes            | 625.00    |                                    |                |                    |            |                |
|                           | TO-126B  | A                 | 0.04             | 70                 | sync.      | +6                | belt         |                     | 20x15% x6%         | yes                    |                        |                            |                            |                       |                      |                           |                        |                           | yes                      | yes            | 500.00    |                                    |                |                    |            |                |
|                           | TO-145C  | B                 | 0.06             | 65                 | sync.      |                   | belt         |                     | 17x14% x6%         | no                     |                        | 12                         | 9.0                        | ball                  | ball                 | 0.18                      | yes                    | 0-3                       | yes                      | yes            | 325.00    |                                    |                |                    |            |                |
|                           | TO-160C  | B                 | 0.06             | 65                 | sync.      |                   | belt         |                     | 17x14% x6%         | no                     |                        | 12                         | 9.0                        | ball                  | ball                 | 0.18                      | yes                    | 0-3                       | yes                      | yes            | 275.00    |                                    |                |                    |            |                |
|                           | TO-166C  | B                 | 0.06             | 65                 | sync.      |                   | belt         |                     | 17x14% x6%         | no                     |                        | 12                         | 9.0                        | pin/cup               | pin/cup              | 0.18                      | yes                    | 0-3                       | yes                      | yes            | 215.00    |                                    |                |                    |            |                |
| TOSHIBA                   | SR230    | B                 | 0.09             |                    | sync.      | 3                 | belt         |                     | 17x5% x14          | no                     |                        |                            |                            |                       |                      | yes                       |                        | yes                       | yes                      | 114.95         | Semi auto |                                    |                |                    |            |                |
|                           | SR250    | B                 | 0.05             |                    | d.c. servo | 3                 | belt         |                     | 17x6% x14          | yes                    |                        |                            |                            |                       | yes                  |                           | yes                    | yes                       | yes                      | 139.95         | Semi auto |                                    |                |                    |            |                |
|                           | SR255    | B                 | 0.05             |                    | d.c. servo | 3                 | direct       |                     | 18x6% x14          | yes                    | 8%                     |                            |                            | 2                     | yes                  |                           | yes                    | yes                       | yes                      | 199.95         |           |                                    |                |                    |            |                |
|                           | SR-F430  | B                 | 0.03             |                    | a.c. servo | 3                 | direct       |                     | 17x6% x14          | yes                    |                        |                            |                            |                       | yes                  |                           | yes                    | yes                       | yes                      | 229.95         | Full auto |                                    |                |                    |            |                |
| TRANSAUDIO (QUADRAFLEX)   | 1800     | B                 | 0.1              | 46                 | hys. sync. |                   | belt         |                     | 17x15% x7%         |                        |                        | 11%                        | 8%                         | needle                | ball                 | 1.3                       | yes                    | 0-3                       | yes                      | yes            | 129.95    | Semi auto                          |                |                    |            |                |
|                           | 1600     | B                 | 0.1              | 45                 | hys. sync. |                   | belt         |                     | 17x14% x5%         |                        |                        | 11%                        | 8%                         | needle                | ball                 | 1.3                       | yes                    | 0-3                       | yes                      | yes            | 99.95     |                                    |                |                    |            |                |
| TRANSCRIPTOR (WAECH)      | Skeleton | B                 | 0.05             |                    | hys. sync. |                   | belt         |                     | 19x16% x7          | no                     | vesti-gial             | 8%                         | 1%                         | jewel pivots          | jewel pivots         | 2.5                       | yes                    | 0-4                       | yes                      | no             | 450.00    | Arm available separately, \$140.00 |                |                    |            |                |
| VISONIK                   | BD 8200  | B                 | 0.05             | 45                 | d.c. servo | 3.5               | direct       |                     | 18x14% x6          | yes                    |                        |                            |                            |                       | yes                  | 0-2.5                     | yes                    | yes                       | yes                      | 249.00         |           |                                    |                |                    |            |                |
|                           | BD 5200  | B                 | 0.07             | 46                 | d.c.       | 3                 | belt         |                     | 18x13% x5%         | yes                    |                        |                            |                            |                       | yes                  | 0-4                       | yes                    | yes                       | yes                      | 188.00         |           |                                    |                |                    |            |                |
|                           | BD 4200  | B                 | 0.09             | 44                 | sync.      |                   | belt         |                     | 18x13% x5%         |                        |                        |                            |                            |                       | yes                  | 0-4                       | yes                    | yes                       | yes                      | 172.00         |           |                                    |                |                    |            |                |
|                           | BD 3200  | B                 | 0.09             | 42                 | sync.      |                   | belt         |                     | 18x13% x5%         |                        |                        |                            |                            |                       | yes                  | 0-4                       | yes                    | yes                       | yes                      | 157.00         |           |                                    |                |                    |            |                |
|                           | BD 2200  | B                 | 0.1              | 42                 | sync.      |                   | belt         |                     | 18x13% x5%         |                        |                        |                            |                            |                       | yes                  | 0-4                       | yes                    | yes                       | yes                      | 119.00         |           |                                    |                |                    |            |                |
| YAMAHA                    | YP-800   | B                 | 0.03             |                    | d.c. servo | 3                 | direct       | 0.2                 | 18x14% x6%         | yes                    |                        | 11%                        |                            | ball                  | ball                 |                           | yes                    | 0-3                       | yes                      | yes            | 500.00    | YP-801B2 same in black, \$550.00   |                |                    |            |                |
|                           | YP-D6    | B                 | 0.035            |                    | d.c. servo | 3                 | direct       |                     | 18x14% x6%         | yes                    |                        | 8%                         |                            |                       | yes                  | 0-3                       | yes                    | yes                       | yes                      | 200.00         |           |                                    |                |                    |            |                |
|                           | YP-B4    | B                 | 0.07             |                    | hys. sync. |                   | belt         |                     | 17x14% x5%         |                        |                        |                            |                            | yes                   | 0-3                  | yes                       | yes                    | yes                       | 170.00                   |                |           |                                    |                |                    |            |                |
|                           | YP-211   | B                 | 0.08             |                    | hys. sync. |                   | belt         |                     | 17x14% x6%         |                        |                        |                            |                            | yes                   | 0-3                  | yes                       | yes                    | yes                       | 130.00                   |                |           |                                    |                |                    |            |                |

# Introducing The Competition.



Just when you thought you knew what the best record care product was, along comes a little Competition. And Competition is what our new Record Conditioner is all about. The Record Conditioner by Fidelitone is simply a better product. For some very good reasons.

It has a more effective cleaning fluid. The Purifier Fluid. And in record care, the fluid is everything. In fact, The Purifier Fluid is so effective, it leaves no residue, reduces static charge and increases output sensitivity.

Record Conditioner has a unique, unidirectional pile pad, too. And our exclusive cherry wood handle (with a hand rubbed finish) that's guaranteed not to slip or roll. There's even a matching cherry wood holder that you don't have to pay extra for.

But here's the real clincher. The Record Conditioner has a surprisingly lower price than the leading brand. So when you combine value with all our quality, you have quite a bargain indeed.

Ask your hi-fi or music dealer to show you the Competition: The Record Conditioner with Purifier Fluid by Fidelitone. See our other fine record care products, too. Like the Spin 'n Clean Machine. The Rotunda. Or our Fidelicare Kits. Because if you thought you knew what the best record cleaning system was, it's time to think again.



## Record Conditioner with Purifier Fluid by Fidelitone

Fidelitone, Inc., 207 North Woodwork Lane, Palatine, Ill. 60067  
Fidelitone products are available in Canada.

# Multi-Record Turntables



Optonica RP-1414



Dual 1245



Philips GA 406



Garrard GT55



B-I-C 981



BSR Q-550

114

| MANUFACTURER        | MODEL        | Speeds - see code | Wow & Flutter, % 33 1/3, DIN 45-507 | Rumble, dB, DIN 45-530 | Max. track, error, deg./in. | Pivot/stylus distance, in. | Stylus force, avg., method | Track, force, gms. | Damped cueing | Built-in strobe | Max. number records | Change time, 23 1/5, sec. | Clearance above board, in. | Base dimensions, inches, W x D | Overall height, inches | Price for base and cover if sold separately | Weight, lbs. | Price            | NOTES |
|---------------------|--------------|-------------------|-------------------------------------|------------------------|-----------------------------|----------------------------|----------------------------|--------------------|---------------|-----------------|---------------------|---------------------------|----------------------------|--------------------------------|------------------------|---------------------------------------------|--------------|------------------|-------|
| B-I-C               | 920          | B                 | 0.12                                | 60                     | 0.8                         | 7.5                        | Bal.                       | 0.4                | yes           | no              | 6                   | 13                        | 3%                         | 13 3/4 x 15 1/4                | 5 1/2                  | 8                                           | 84.95        |                  |       |
|                     | 940          | B                 | 0.05                                | 65                     | 0.35                        | 8%                         | Bal.                       | 0.4                | yes           | no              | 6                   | 13                        | 5                          | 14 3/4 x 17 1/4                | 6 1/2                  | 11                                          | 119.95       |                  |       |
|                     | 960          | B                 | 0.05                                | 65                     | 0.35                        | 8%                         | Bal.                       | 0.4                | yes           | no              | 6                   | 13                        | 5                          | 4 3/4 x 17 1/4                 | 6 1/2                  | 12                                          | 169.95       |                  |       |
|                     | 981          | B                 | 0.05                                | 65                     | 0.35                        | 8%                         | Bal.                       | 0.4                | yes           | yes             | 6                   | 13                        | 5                          | 4 3/4 x 17 1/4                 | 6 1/2                  | 13                                          | 209.95       |                  |       |
|                     | 1000         | B                 | 0.04                                | 69                     | 0.35                        | 8%                         | Bal.                       | 0.4                | yes           | yes             | 6                   | 15                        | 5                          | 4 3/4 x 17 1/4                 | 6 1/2                  | 16                                          | 289.95       |                  |       |
| CRAIG               | 8403         | A                 |                                     |                        |                             |                            | Spg.                       |                    | yes           | no              | 6                   | 15                        |                            | 15 1/2 x 14 1/4                | 7 1/4                  | 12 1/2                                      | 69.95        |                  |       |
|                     | H120         | A                 |                                     |                        |                             |                            | Spg.                       |                    | yes           | no              | 6                   | 15                        |                            | 14 1/4 x 15 1/2                | 8 1/4                  | 12                                          | 89.95        |                  |       |
| DUAL (UNITED AUDIO) | 1245         | B                 | 0.04                                | 68                     |                             | 8%                         | Spg.                       | 1/4-3              | yes           | yes             | 6                   |                           | 2 1/2                      | 14 1/2 x 12                    |                        | 18                                          | 230.00       |                  |       |
|                     | 1241         | B                 | 0.04                                | 68                     |                             | 8%                         | Spg.                       | 1/4-3              | yes           | no              | 6                   |                           | 2 1/2                      | 14 1/2 x 12                    |                        | 18                                          | 200.00       |                  |       |
|                     | 1237         | B                 | 0.04                                | 67                     |                             | 8%                         | Spg.                       | 1/4-5              | yes           | no              | 6                   |                           | 2 1/2                      | 13 x 10 1/4                    |                        | 22                                          | 135.00       |                  |       |
| GARRARD             | GT55         | B                 | 0.05                                | 66                     | 0                           |                            | Bal.                       | 0.4                | yes           | yes             | 6                   | 10                        | 4%                         | 17 1/2 x 15 1/2                | 7 1/4                  | 17 1/2                                      | 259.95       | Radial tracking. |       |
|                     | GT35         | B                 | 0.06                                | 68                     | 0.37                        | 9%                         | Bal.                       | 0.4                | yes           | yes             | 6                   | 10                        |                            | 18 x 14 1/2                    | 7 1/2                  | 15 1/2                                      | 199.95       |                  |       |
|                     | GT25         | B                 | 0.06                                | 65                     | 0.37                        | 9%                         | Bal.                       | 0.4                | yes           | no              | 6                   | 10                        |                            | 18 x 14 1/2                    | 7 1/2                  | 15 1/2                                      | 159.95       |                  |       |
|                     | GT15         | B                 | 0.12                                | 60                     | 0.5                         | 8                          | Bal.                       | 0.4                | yes           | no              | 6                   | 10                        |                            | 16 1/2 x 14 1/4                | 7 1/2                  | 13                                          | 124.95       |                  |       |
|                     | GT10         | B                 | 0.15                                | 55                     | 0.5                         | 8                          | Spg.                       | 2-6                | yes           | no              | 5                   | 10                        |                            | 16 1/2 x 14 1/4                | 7 1/2                  | 13                                          | 94.95        |                  |       |
| OPTONICA (SHARP)    | RP-3636 MKII | B                 | 0.03                                | 70                     | 1.8                         |                            | Bal.                       | 0.4                | yes           | yes             |                     |                           |                            | 19 1/4 x 16 1/2                | 7 1/2                  | 35 1/2                                      | 299.95       |                  |       |
|                     | RP-1414 MKII | B                 | 0.08                                | 60                     |                             |                            | Bal.                       | 0.4                | yes           | no              |                     |                           |                            | 17 1/4 x 13 1/4                | 6 1/2                  | 13 1/2                                      | 139.95       |                  |       |
| PHILLIPS            | GA406        | B                 | 0.1                                 | 60                     | 0.38                        | 8%                         | Bal.                       | 0.4                | yes           | yes             | 5                   | 12                        |                            | 16 1/2 x 13 1/2                | 5 1/2                  | 14                                          | 199.95       |                  |       |
| QUANTA (BSR)        | 2260AG       | A                 | 0.2                                 | 50                     |                             |                            | Spg.                       | 2-5                | no            | no              | 6                   | 8                         | 4%                         | 14 x 16 1/2                    | 7 1/2                  |                                             | 69.95        |                  |       |
|                     | 6500CX       | A                 | 0.2                                 | 50                     |                             |                            | Spg.                       | 2-5                | no            | no              | 6                   | 8                         | 4%                         | 14 x 16 1/2                    | 7 1/2                  |                                             | 59.95        |                  |       |
|                     | 4800CX       | A                 | 0.3                                 | 50                     |                             |                            | Spg.                       | 2-5                | no            | no              | 6                   | 8                         | 4%                         | 13 1/2 x 15                    | 7 1/2                  |                                             | 49.95        |                  |       |
|                     | 2000AX       | A                 | 0.135                               | 45                     |                             |                            | Spg.                       | 3-7                | no            | no              | 6                   | 8                         | 3%                         | 10 1/2 x 13                    | 6 1/2                  |                                             | 39.95        |                  |       |
|                     | QUANTA 450   | B                 | 0.08                                | 62                     |                             |                            | Bal.                       | 2-5                | yes           | no              | 6                   | 8                         |                            | 13 1/2 x 17 1/2                | 6 1/2                  |                                             | 109.95       |                  |       |
|                     | QUANTA 550   | B                 | 0.06                                | 65                     |                             |                            | Bal.                       | 2-5                | yes           | yes             | 6                   | 8                         |                            | 13 1/2 x 17 1/2                | 6 1/2                  |                                             | 149.95       |                  |       |
| VISONIK             | BD-4200      | B                 | 0.09                                | 44                     |                             |                            | yes                        | 0.4                | yes           | no              |                     |                           |                            | 18 1/4 x 13 1/4                | 5 1/2                  | 17 1/2                                      | 172.00       |                  |       |

# "I thought they'd laugh at me."



"I go around with this group of people. They're into equipment. Turntable snobs I call them. They still believe what they learned years ago... that a manual turntable is the way to go.

So I thought they'd laugh when I started looking at a "bee-eye-cee." (Actually Ramon did snicker when I told him.)

For some reason my friends insist on the pain and inconvenience of changing records themselves every few minutes.

Not me. I'm into the music. And preserving my record collection.

So all I want is a turntable that's perfectly quiet... trouble-free... handles one record like a manual turntable when I want... and more than one when the occasion arises.

My turntable snob friends? Slowly but surely they're coming around.

I wonder why they're still laughing at me?"

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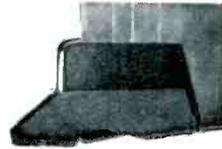
Enter No. 14 on Reader Service Card

# Phono Cartridges

Audioanalyst Dynavector



Bang & Olufsen MMC 6000



ADC ZLM

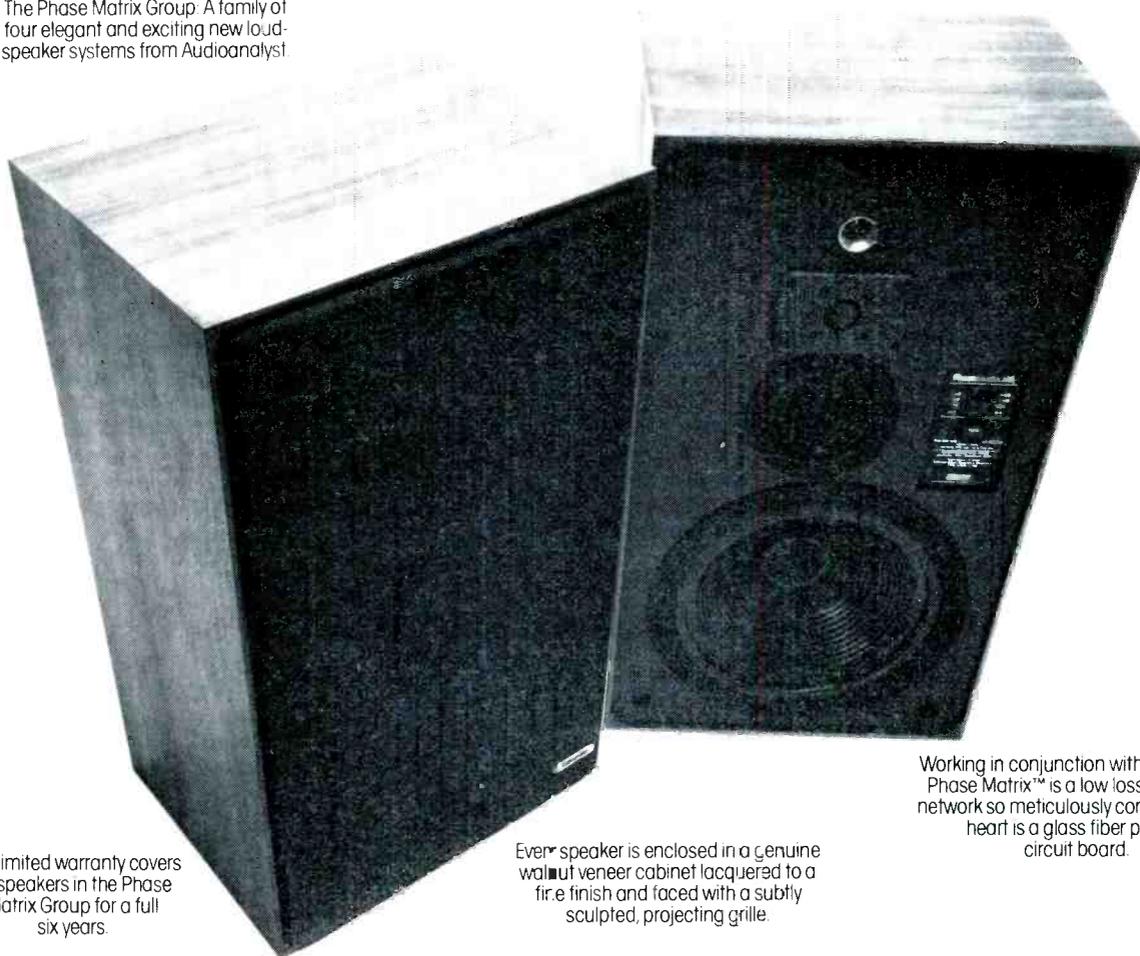


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| MANUFACTURER                     | MODEL               | Frequency response, Hz to kHz ±dB |       |     | Channel separ., 1kHz, dB | Channel separ., 10kHz, dB | mV output, 1 kHz, 5cm/s | Recommended tracking force range, gms. | Recommended load resistance, ohms | Recommended I Loading capacitance (pF) | Stylus type — use code | Stylus radius (radius) mils | Is stylus user or factory replaced? | Weight, gms.            | Price, \$                                 | Replacement stylus price, \$ | NOTES<br>STYLUS TYPE<br>C — Conical<br>S — Spherical<br>E — Elliptical<br>Q — For CD-4 use (Shibata, etc.) |
|----------------------------------|---------------------|-----------------------------------|-------|-----|--------------------------|---------------------------|-------------------------|----------------------------------------|-----------------------------------|----------------------------------------|------------------------|-----------------------------|-------------------------------------|-------------------------|-------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------|
|                                  |                     | 20-20                             | 10-20 | 30  | 25                       | 3.75                      | ¾-1¼                    | 47k                                    | 470                               | E                                      | 0.2x<br>0.7            | user                        | 5.86                                | 135.00                  | 78.00                                     |                              |                                                                                                            |
| AKG                              | P8ES                | 10-28                             | 30    | 25  | 3.75                     | ¾-1¼                      | 47k                     | 470                                    | E                                 | 0.2x<br>0.7                            | user                   | 5.86                        | 135.00                              | 78.00                   | Transversal suspension w. response curve. |                              |                                                                                                            |
|                                  | P8E                 | 10-23                             | 30    | 20  | 4                        | ¾-1¼                      | 47k                     | 470                                    | E                                 | 0.2x<br>0.7                            | user                   | 5.86                        | 100.00                              | 55.00                   | TS system, w. response curve.             |                              |                                                                                                            |
|                                  | P7E                 | 10-21.5                           | 25    | 18  | 4.5                      | 1¼-2¼                     | 47k                     | 470                                    | E                                 | 0.3x<br>0.7                            | user                   | 5.86                        | 70.00                               | 30.00                   | TS system.                                |                              |                                                                                                            |
|                                  | P6E                 | 20-20                             | 25    | 15  | 6.25                     | 1¼-3                      | 47k                     | 470                                    | E                                 | 0.4x<br>0.8                            | user                   | 5.86                        | 50.00                               | 20.00                   | TS system.                                |                              |                                                                                                            |
|                                  | P6R                 | 20-20                             | 25    | 15  | 6.25                     | 2-4                       | 47k                     | 470                                    | S                                 | 0.7                                    | user                   | 5.86                        | 40.00                               | 15.00                   | TS system.                                |                              |                                                                                                            |
| AUDIOANALYST/<br>DYNAVECTOR      | 10A                 | 20-30<br>±2                       | 20    | 20  | 2                        | 2.5<br>±0.2               | 47k                     |                                        | C                                 |                                        | fact.                  | 9.5                         | 129.00                              | 70.95*                  | *Exchange price for new cartridge.        |                              |                                                                                                            |
|                                  | 20A                 | 20-30<br>±2                       | 20    | 20  | 2                        | 1.5<br>±0.3               | 47k                     |                                        | Q                                 |                                        | fact.                  | 9.5                         | 169.00                              | 92.95*                  | *As above                                 |                              |                                                                                                            |
|                                  | 20B                 | 20-30<br>±2                       | 20    | 20  | 2                        | 1.5<br>±0.3               | 47k                     |                                        | Q                                 |                                        | fact.                  | 9.5                         | 219.00                              | 120.45*                 | *As above                                 |                              |                                                                                                            |
| AUDIO<br>DYNAMICS<br>CORP.       | ZLM                 | 10-20<br>±1                       | 30    | 20  | 5.0                      | ¾-1¼                      | 47k                     | 275                                    | *                                 | *                                      | user                   | 5.75                        | 135.00                              | 79.95                   | *Alipctic TM (Nude).                      |                              |                                                                                                            |
|                                  | XLM<br>MK III       | 10-20<br>±1                       | 28    | 18  | 5.0                      | ¾-1¼                      | 47k                     | 275                                    | E                                 | 0.2x<br>0.7                            | user                   | 5.75                        | 110.00                              | 54.95                   |                                           |                              |                                                                                                            |
|                                  | QLM36<br>MK III     | 15-22<br>±2                       | 26    | 15  | 6.0                      | ¾-1¼                      | 47k                     | 275                                    | *                                 | 0.3x<br>0.7                            | user                   | 5.75                        | 79.95                               | 44.95                   | *Diasa (Nude) Ellip.                      |                              |                                                                                                            |
|                                  | QLM34<br>MK III     | 20-20<br>±2                       | 24    | 15  | 7.0                      | 1-3                       | 47k                     | 275                                    | E                                 | 0.3x<br>0.7                            | user                   | 5.75                        | 64.95                               | 39.95                   |                                           |                              |                                                                                                            |
|                                  | QLM32<br>MK III     | 20-18<br>±2                       | 20    |     | 5.0                      | 2-4                       | 47k                     | 275                                    | E                                 | 0.4x<br>0.7                            | user                   | 5.75                        | 49.95                               | 24.95                   |                                           |                              |                                                                                                            |
|                                  | QLM30<br>MK III     | 20-18<br>±3                       | 20    |     | 4.5                      | 3-5                       | 47k                     | 275                                    | S                                 | 0.7                                    | user                   | 5.75                        | 34.95                               | 19.95                   |                                           |                              |                                                                                                            |
|                                  | AUDIO-<br>TECHINCA  | AT15XE                            | 5-30  | 28  | 23                       | 2.7                       | ¾-1¼                    | 47k                                    | 200                               | E                                      | 0.2x<br>0.7            | user                        | 7.5                                 | 100.00                  | 50.00                                     | Nude tip, w. resp. curve.    |                                                                                                            |
|                                  |                     | AT15Sa                            | 5-45  | 30  | 23                       | 2.7                       | ¾-1¼                    | 47k                                    | 200                               | Q                                      | shib.                  | user                        | 8                                   | 125.00                  | 63.00                                     | W. resp. curve, nude tip.    |                                                                                                            |
| AT20SLa                          |                     | 5-50                              | 30    | 25  | 2.7                      | ¾-1¼                      | 47k                     | 200                                    | Q                                 | shib.                                  | user                   | 8                           | 175.00                              | 85.00                   | W. resp. curve, nude tip.                 |                              |                                                                                                            |
| ATP-1                            |                     | 20-20                             | 21    | 16  | 5.3                      | 3-5                       | 47k                     |                                        | S                                 | 0.6                                    | user                   | 6                           | 25.00                               | 15.00                   |                                           |                              |                                                                                                            |
| ATP-2                            |                     | 15-22                             | 23    | 17  | 5.3                      | 3-5                       | 47k                     |                                        | E                                 | 0.4x<br>0.7                            | user                   | 6                           | 30.00                               | 18.00                   |                                           |                              |                                                                                                            |
| ATP-3                            |                     | 15-25                             | 23    | 17  | 5.3                      | 3-5                       | 47k                     |                                        | E                                 | 0.3x<br>0.7                            | user                   | 6                           | 40.00                               | 24.00                   | Nude tip.                                 |                              |                                                                                                            |
| AT10                             |                     | 20-20                             | 20    | 15  | 4.8                      | 2-3                       | 47k                     | 200                                    | S                                 | 0.7                                    | user                   | 6.3                         | 25.00                               | 13.00                   |                                           |                              |                                                                                                            |
| AT11                             |                     | 15-22                             | 21    | 16  | 4.8                      | 1½-2¼                     | 47k                     | 200                                    | S                                 | 0.7                                    | user                   | 6.3                         | 35.00                               | 18.00                   |                                           |                              |                                                                                                            |
| AT11E                            |                     | 15-25                             | 21    | 16  | 4.8                      | 1½-2¼                     | 47k                     | 200                                    | E                                 | 0.4x<br>0.7                            | user                   | 6.3                         | 45.00                               | 25.00                   |                                           |                              |                                                                                                            |
| AT12E                            |                     | 15-26                             | 23    | 17  | 4.2                      | 1-2                       | 47k                     | 200                                    | E                                 | 0.4x<br>0.7                            | user                   | 6.3                         | 55.00                               | 30.00                   |                                           |                              |                                                                                                            |
| AT12XE                           | 15-28               | 24                                | 18    | 4.2 | 1-1¼                     | 47k                       | 200                     | E                                      | 0.3x<br>0.7                       | user                                   | 6.3                    | 60.00                       | 32.00                               | Nude tip.               |                                           |                              |                                                                                                            |
| AT13Ea                           | 10-30               | 25                                | 20    | 4.2 | ¾-1¼                     | 47k                       | 200                     | E                                      | 0.2x<br>0.7                       | user                                   | 6.3                    | 65.00                       | 35.00                               | Square shank, nude tip. |                                           |                              |                                                                                                            |
| AT12Sa                           | 15-45               | 26                                | 20    | 2.7 | ¾-1¼                     | 47k                       | 200                     | Q                                      | shib.                             | user                                   | 6.3                    | 75.00                       | 38.00                               | Nude tip.               |                                           |                              |                                                                                                            |
| AT14Sa                           | 5-45                | 27                                | 20    | 2.7 | ¾-1¼                     | 47k                       | 200                     | Q                                      | shib.                             | user                                   | 6.3                    | 85.00                       | 42.00                               | Nude tip.               |                                           |                              |                                                                                                            |
| BANG & OLUFSEN                   | MMC-3000            | 15-25<br>±3                       | 20    | 15  | 0.6                      | 1.2                       | 47k                     | 200                                    | S                                 | —                                      | non                    | 4                           | 50.00                               | N.A.                    | ETM=0.5mg.                                |                              |                                                                                                            |
|                                  | MMC-4000            | 20-25<br>±1.5                     | 25    | 20  | 0.6                      | 1                         | 47k                     | 200                                    | E                                 | —                                      | non                    | 4                           | 85.00                               | N.A.                    | ETM=0.4mg.                                |                              |                                                                                                            |
|                                  | MMC-6000            | 20-15<br>±1.5                     | 25    | 20  | 0.6                      | 1                         | 47k/<br>100k            | 100                                    | Q                                 | —                                      | non                    | 4                           | 125.00                              | N.A.                    | Pramenik stylus, ETM=0.22mg.              |                              |                                                                                                            |
| DECCA<br>(ROCELCO)               | London<br>MKV1 Gold | 20-20                             | 20    |     | 5.0                      | 1.5                       |                         |                                        | E                                 | 0.6x<br>0.3                            | fact.                  | 4                           | 159.50                              | 80.00                   |                                           |                              |                                                                                                            |
|                                  | London<br>MKV1 Plum | 20-20                             | 20    |     | 7.5                      | 2.0                       |                         |                                        | S                                 | 0.6                                    | fact.                  | 4                           | 139.50                              | 70.00                   |                                           |                              |                                                                                                            |
| OENON<br>(AMERICAN<br>AUDIOPORT) | DL-103              | 20-45                             | 25    |     | 0.3                      | 2.0                       | 40                      |                                        | C                                 | 0.65                                   | fact.                  | 8.5                         | 135.00                              |                         | Moving coil.                              |                              |                                                                                                            |
|                                  | DL-103s             | 20-60                             | 25    |     | 0.3                      | 1.8                       | 40                      |                                        | E                                 |                                        | fact.                  | 7.8                         | 180.00                              |                         | Moving coil.                              |                              |                                                                                                            |

# **PINPOINT IMAGING. SO ACCURATE YOU'LL WONDER WHERE THE OTHER SPEAKERS ARE.**

The Phase Matrix Group. A family of four elegant and exciting new loudspeaker systems from Audioanalyst.



Our limited warranty covers all speakers in the Phase Matrix Group for a full six years.

Every speaker is enclosed in a genuine walnut veneer cabinet lacquered to a fine finish and faced with a subtly sculpted, projecting grille.

Working in conjunction with our unique Phase Matrix™ is a low loss crossover network so meticulously constructed its heart is a glass fiber printed circuit board.

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in this critically important area and disturbing the radiation pattern of the primary waveforms. It virtually eliminates phase cancellation, the confusion in time relationships between various aspects of a musical performance that impedes the imaging characteristics of other speakers.

We call this uncanny precision pinpoint imaging. Experience it for yourself by auditioning a pair of loudspeakers from Audioanalyst's Phase Matrix Group. We give you four different models to choose from. For a descriptive brochure and the name of the Audioanalyst dealer nearest you, please contact us at the address below.

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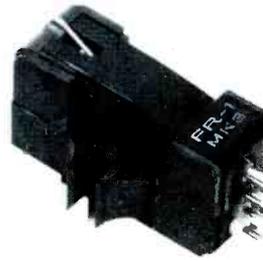
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In Canada contact Superior Electronics, Inc.

# Phono Cartridges



Empire 2000Z

Fidelity Research FR-1 Mk 3



Entre 1

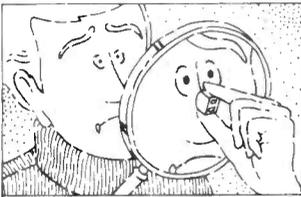
| MANUFACTURER                     | MODEL     | Frequency response, Hz to kHz, ±dB |    | Channel separ., kHz, dB |      | Channel separ., 10kHz, dB |      | mV output, 1 kHz, 5cm/s |          | Recommended tracking force range, gms. |       | Recommended load resistance, ohms |        | Recommended loading capacitance (pF)                 |                                            | Stylus type - use code |  | Stylus radius (radii) mils |  | Is stylus user or factory replaced? |  | Weight, gms. |  | Price, \$ |  | Replacement stylus price, \$ |  | NOTES<br>STYLUS TYPE<br>C - Conical<br>S - Spherical<br>E - Elliptical<br>Q - For CD-4 use (Shibata, etc.) |
|----------------------------------|-----------|------------------------------------|----|-------------------------|------|---------------------------|------|-------------------------|----------|----------------------------------------|-------|-----------------------------------|--------|------------------------------------------------------|--------------------------------------------|------------------------|--|----------------------------|--|-------------------------------------|--|--------------|--|-----------|--|------------------------------|--|------------------------------------------------------------------------------------------------------------|
|                                  |           | ±1                                 | ±2 | 25                      | 0.75 | 2-3                       | 800  | S                       | 0.6      | fact.                                  | 21    | 350.00                            | 110.00 | Moving coil, BU347 transformer, \$29.95, two needed. |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
| EMPIRE                           | 2000Z     | 20-20<br>±1                        | 30 | 30                      | 5.0  | ¼-1%                      | 47k  | 300                     | E        | 0.2x<br>0.7                            | user  | 7                                 | 125.00 | 50.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000T     | 20-20<br>±1½                       | 27 | 27                      | 5.0  | ¼-1%                      | 47k  | 300                     | E        | 0.2x<br>0.7                            | user  | 7                                 | 90.00  | 45.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000E/III | 20-20<br>±2                        | 28 | 28                      | 6.36 | ¼-1%                      | 47k  | 500                     | E        | 0.2x<br>0.7                            | user  | 7                                 | 70.00  | 35.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 4000D/III | 10-50<br>±3                        | 28 | 23                      | 5.0  | ¼-1%                      | 100k | 100                     | Q        | 0.2*                                   | user  | 7                                 | 150.00 | 75.00                                                | *Bi-radial, nude tip.                      |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 4000D/I   | 15-45<br>±3                        | 24 | 20                      | 5.0  | 1-1%                      | 100k | 100                     | Q        | 0.2*                                   | user  | 7                                 | 85.00  | 43.00                                                | *Bi-radial, nude tip.                      |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000E/II  | 20-20<br>±2                        | 25 | 25                      | 6.36 | ¼-1%                      | 47k  | 500                     | E        | 0.2x<br>0.7                            | user  | 7                                 | 55.00  | 28.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000E/I   | 20-20<br>±3                        | 23 | 23                      | 9.89 | 1-2                       | 47k  | 500                     | E        | 0.2x<br>0.7                            | user  | 7                                 | 45.00  | 23.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000E     | 20-20<br>±3                        | 23 | 23                      | 9.89 | 1½-2½                     | 47k  | 500                     | E        | 0.3x<br>0.7                            | user  | 7                                 | 40.00  | 20.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | 2000      | 20-20<br>±3                        | 21 | 21                      | 9.89 | 1½-3                      | 47k  | 500                     | S        | 0.7                                    | user  | 7                                 | 30.00  | 15.00                                                | Nude tip.                                  |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
| ENTRE<br>(AMERICAN<br>AUDIOPORT) | Entre-1   | 10-50                              | 28 |                         | 0.2  | 1.8                       | 3    |                         | E        | 0.3x<br>0.8                            | fact. | 5.8                               | 200.00 |                                                      | Moving coil.                               |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
| FIDELITY<br>RESEARCH             | FR-1MK2   | 20-20<br>±2                        | 25 | 20                      | 0.1  | 1.5-2.1                   |      |                         | E        | 0.2x<br>0.8                            | fact. | 10                                | 130.00 | 65.00                                                | Moving coil, needs X-former, FRT-3, FRT-4. |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FR-1mk3   | 20-20<br>±2                        | 27 | 22                      | 0.14 | 1.5-2.1                   |      |                         | Mod<br>E |                                        | fact. | 10                                | 210.00 | 105.00                                               | Moving coil, needs X-former, FRT-3, FRT-4. |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
| GRACE (SUMIKO)                   | F9-L      | 10-40<br>±1                        | 30 | 25                      | 5.5  | ½-2                       | 47k  | 250                     | E        | 0.2x<br>0.8                            | user  | 6                                 | 120.00 | 57.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F8-L      | 20-20<br>±2                        | 30 | 23                      | 5.0  | ½-2                       | 47k  | 250                     | E        | 0.2x<br>0.8                            | user  | 6.5                               | 80.00  | 37.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F9-F      | 10-60<br>±2                        | 30 | 27                      | 3.5  | ½-2                       | 100k | 80                      | Q*       | shib.                                  | user  | 6                                 | 150.00 | 70.00                                                | *Nude tip.                                 |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F9-U      | 10-50<br>±2                        | 30 | 27                      | 3.5  | ½-2                       | 100k | 80                      | Q*       | shib.                                  | user  | 6                                 | 100.00 | 47.00                                                | *Bonded tip.                               |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F9-O      | 10-35<br>±2                        | 30 | 23                      | 3.5  | ½-2                       | 47k  | 250                     | C        | 0.65                                   | user  | 6                                 | 95.00  | 43.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F8-C      | 15-25<br>±3                        | 30 | 25                      | 5.0  | ½-2.5                     | 47k  | 250                     | E        | 0.2x<br>0.8                            | user  | 6.5                               | 95.00  | 43.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
| GRADO                            | FTR+      | 10-20<br>±1.5                      | 20 | 20                      | 5    | 2                         | 10k  |                         | S        | 0.5                                    | user  | 4.5                               | 9.95   | 7.50                                                 |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FTE+      | 10-20<br>±1.5                      | 20 | 20                      | 5    | 2                         | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 19.95  | 12.50                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FCR+      | 10-20<br>±1.5                      | 20 | 20                      | 5    | 2                         | 10k  |                         | S        | 0.5                                    | user  | 4.5                               | 25.00  | 14.95                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FCE+      | 10-20<br>±1.5                      | 20 | 20                      | 5    | 2                         | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 35.00  | 17.50                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FTE+1     | 10-20<br>±1.5                      | 20 | 20                      | 3    | 1½                        | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 13.00  | 9.75                                                 |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | FCE+1     | 10-20<br>±1.5                      | 20 | 20                      | 3    | 1½                        | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 37.50  | 19.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F3E+      | 10-20<br>±1.5                      | 25 | 25                      | 3    | 1½                        | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 49.50  | 20.00                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F2+       | 10-20<br>±1.5                      | 25 | 25                      | 3    | 1½                        | 10k  |                         | E        | 0.2x<br>0.7                            | user  | 4.5                               | 60.00  | 22.50                                                |                                            |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | F1+       | 10-20<br>±1.5                      | 25 | 25                      | 3    | 1½                        | 10k  |                         | *        |                                        | user  | 4.5                               | 75.00  | 27.50                                                | *Multi-radius.                             |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |
|                                  | G1+       | 10-20<br>±1.5                      | 25 | 25                      | 3    | 1½                        | 10k  |                         | *        |                                        | user  | 4.5                               | 150.00 | 47.50                                                | *As above.                                 |                        |  |                            |  |                                     |  |              |  |           |  |                              |  |                                                                                                            |

# ARE YOU BLAMING YOUR TAPE RECORDER FOR PROBLEMS CAUSED BY YOUR TAPES?

Every day people all over the country go into hi fi dealers with complaints about their tape recorders.

When in reality what they should be complaining about is their tapes.

Because the fact is, a lot of the problems that plague tape recorders can be attributed to bad tape.



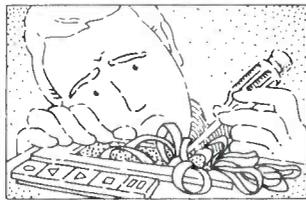
**HEAD WEAR IS CAUSED BY YOUR RECORDER. OR IS IT?**

If you have to clean your tape heads more than usual, for example, it could be your tape doesn't have a special nonabrasive head cleaner.

Maxell has one.

If your recorder jams, it can be any number of things. Maxell does something to prevent all of them.

We make our cassette shells of high impact polystyrene. And then so they won't crack



**JAMMING IS CAUSED BY YOUR RECORDER. OR IS IT?**

even after years of use, we finish them to tolerances as much as 60% higher than industry standards.

Inside, we use free rolling Delrin rollers so the tape doesn't stick.

And finally, we screw instead of weld everything together because screws make

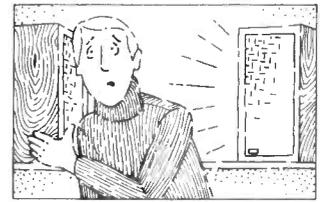
for stronger cassettes.

If your recorder frequently suffers lapses in sound, it could be the tape is of inferior quality. And nobody's bothered testing the tape for dropouts before it leaves the factory.



**DROPOUTS ARE CAUSED BY YOUR RECORDER. OR ARE THEY?**

Maxell tape is made of only the finest polyesters. And then every



**POOR TRACKING IS CAUSED BY YOUR RECORDER. OR IS IT?**

step of the way it's checked for even the slightest inconsistencies.

So if you're having problems with your recorder, try a Maxell cassette, 8-track or reel-to-reel tape.

You might find there's really nothing wrong with your tape recorder, just with your tape.



**MAXELL. THE TAPE THAT'S TOO GOOD FOR MOST EQUIPMENT.**

Maxell Corporation of America, 130 West Commercial Ave. Moonachie, New Jersey 07074.

# Phono Cartridges



Grado F-1+

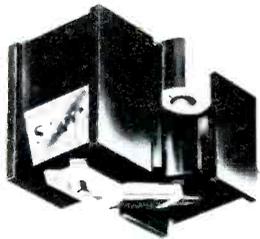


Nakamichi MC-500



120

| MANUFACTURER         | MODEL                            | Frequency response, Hz to kHz ±dB |           | Channel separ., 1kHz, dB | Channel separ., 10kHz, dB | mV output, 1 kHz, 5cm/S | Recommended tracking force range, gms. | Recommended load resistance, ohms | Recommended loading capacitance, pF | Stylus type — see code | Stylus radius (radii) mils | Is stylus user or factory replaced? | Weight, gms. | Price, \$ | Replacement stylus price, \$                                                                                            | NOTES<br>STYLUS TYPE<br>C — Conical<br>S — Spherical<br>E — Elliptical<br>Q — For CD-4 use (Shibata, etc.) |
|----------------------|----------------------------------|-----------------------------------|-----------|--------------------------|---------------------------|-------------------------|----------------------------------------|-----------------------------------|-------------------------------------|------------------------|----------------------------|-------------------------------------|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|                      |                                  | 5-40 ±2*                          | 10-35 ±2½ |                          |                           |                         |                                        |                                   |                                     |                        |                            |                                     |              |           |                                                                                                                         |                                                                                                            |
| GREAT AMERICAN SOUND | Sleeping Beauty Super Elliptical | 5-40 ±2*                          | 34        | 20                       | 0.3                       | 1.6-2.3                 | 50-1k                                  |                                   | E                                   | 0.3x 0.6               | fact.                      | 5.5                                 | 200.00       | 50.00     | *Calibrated.                                                                                                            |                                                                                                            |
|                      | Sleeping Beauty Elliptical       | 10-35 ±2½                         | 27        | 20                       | 0.3                       | 1.6-2.3                 | 50-1k                                  |                                   | E                                   | 0.3x 0.6               | fact.                      | 5.5                                 | 180.00       | 50.00     |                                                                                                                         |                                                                                                            |
|                      | Sleeping Beauty Spherical        | 10-30 ±2½                         | 25        | 20                       | 0.3                       | 1.6-2.3                 | 50-1k                                  |                                   | S                                   | 0.6                    | fact.                      | 5.5                                 | 160.00       | 50.00     |                                                                                                                         |                                                                                                            |
| JVC                  | 4MD-20X                          | 20-50                             | 30        | 20                       | 2.0                       | 1.5-2.0                 | 47-100                                 | 100                               | Q                                   |                        | user                       | 6.7                                 | 69.95        | 40.00     |                                                                                                                         |                                                                                                            |
| LOUDSPEAKER DESIGN   | Audio Craft                      | 10-25                             | 28        | 25                       | 3.0                       | 1.5-1.8                 | 47k                                    |                                   | E                                   | 0.3x 0.8               | user                       | 6                                   | 145.00       | 65.00     |                                                                                                                         |                                                                                                            |
| MICRO-ACOUSTICS      | 2002-e                           | 5-20 ±1½                          | 30        | 15                       | 3.5                       | 0.7-1.4                 | 10k-100k                               | 100-1500                          | E                                   | 0.2x 0.7               | user                       | 4                                   | 119.00       | 42.50     |                                                                                                                         |                                                                                                            |
|                      | 530-mp                           | 5-20 ±1.25                        | 30        | 15                       | 3.5                       | 0.7-1.4                 | 10k-100k                               | 100-1500                          | *                                   |                        | user                       | 4                                   | 200.00       | 100.00    | *Micro Point™                                                                                                           |                                                                                                            |
|                      | 282-e                            | 5-20 ±2                           | 25        | 15                       | 3.5                       | 0.75-1.5                | 10k-100k                               | 100-1500                          | E                                   | 0.2x 0.7               | user                       | 5.2                                 | 89.00        | 40.00     |                                                                                                                         |                                                                                                            |
| NAKAMICHI            | MC-1000                          | 10-65k                            | 27        |                          | 0.2                       | 1.8 ±0.3                | 200                                    |                                   | *                                   | 0.3x 0.8               | **                         | 8.2                                 | 250.00       | 150.00**  | Moving coil, opt. MCB-100 booster; *Shibata for stereo; **non-repl. stylus trade-in available. High output. **as above. |                                                                                                            |
|                      | MC-500                           | 20-35k                            | 25        |                          | 0.9                       | 2.2 ±0.3                | 50k                                    |                                   | E                                   | 0.3x 0.8               | **                         | 8.2                                 | 110.00       | 66.00**   |                                                                                                                         |                                                                                                            |
| PICKERING            | XUV/4500Q                        | 10-50                             | 35        |                          | 4.0                       | 1±½                     | 100k                                   | 100                               | Q*                                  | *                      | user                       | 5.5                                 | 139.95       | 56.00     | *Quadrhedron™ tip.                                                                                                      |                                                                                                            |
|                      | XSV/3000                         | 10-30                             | 35        |                          | 4.6                       | 1±½                     | 47k                                    | 275                               | *                                   | *                      | user                       | 5.5                                 | 99.95        | 39.95     | *Stereohedron™ tip.                                                                                                     |                                                                                                            |
|                      | XV-15/2400-Q                     | 10-50                             | 35        |                          | 3.3                       | 2±½                     | 100k                                   | 100                               | Q*                                  | *                      | user                       | 5.5                                 | 124.95       | 50.00     | *Quadrhedron™ tip.                                                                                                      |                                                                                                            |
|                      | UV-15/2000-Q                     | 20-45                             | 30        |                          | 3.3                       | 2±½                     | 100k                                   | 100                               | Q*                                  | *                      | user                       | 5.5                                 | 69.90        | 35.00     | *Quadrhedron™ tip.                                                                                                      |                                                                                                            |
|                      | XV-15/1200E                      | 10-30                             | 35        |                          | 4.0                       | ¾                       | 47k                                    | 275                               | E                                   | 0.2x 0.7               | user                       | 5.5                                 | 79.45        | 35.00     | *As above.                                                                                                              |                                                                                                            |
|                      | XV-15/750E                       | 10-25                             | 35        |                          | 4.0                       | 1±½                     | 47k                                    | 275                               | E                                   | 0.3x 0.7               | user                       | 5.5                                 | 65.00        | 31.50     |                                                                                                                         |                                                                                                            |
|                      | XV-15/625E                       | 10-25                             | 35        |                          | 4.0                       | 1                       | 47k                                    | 275                               | E                                   | 0.3x 0.7               | user                       | 5.5                                 | 59.95        | 30.00     |                                                                                                                         |                                                                                                            |
|                      | XV-15/400E                       | 10-25                             | 35        |                          | 5.0                       | 1½                      | 47k                                    | 275                               | E                                   | 0.4x 0.7               | user                       | 5.5                                 | 54.95        | 28.50     |                                                                                                                         |                                                                                                            |
|                      | XV-15/350                        | 10-25                             | 35        |                          | 5.5                       | 2±1                     | 47k                                    | 275                               | S                                   | 0.7                    | user                       | 5.5                                 | 49.95        | 26.25     |                                                                                                                         |                                                                                                            |
|                      | XV-15/200E                       | 10-25                             | 35        |                          | 7.3                       | 3±1                     | 47k                                    | 275                               | E                                   | 0.4x 0.7               | user                       | 5.5                                 | 34.95        | 23.95     |                                                                                                                         |                                                                                                            |
|                      | XV-15/150                        | 10-20                             | 35        |                          | 7.3                       | 3±1                     | 47k                                    | 275                               | S                                   | 0.7                    | user                       | 5.5                                 | 39.95        | 23.95     |                                                                                                                         |                                                                                                            |
|                      | XV-15/140E                       | 10-20                             | 35        |                          | 7.3                       | 4±1                     | 47k                                    | 275                               | E                                   | 0.5x 0.7               | user                       | 5.5                                 | 34.95        | 19.22     |                                                                                                                         |                                                                                                            |
|                      | XV-15 100                        | 10-20                             | 35        |                          | 7.3                       | 5±2                     | 47k                                    | 275                               | S                                   | 0.7                    | user                       | 5.5                                 | 29.95        | 16.47     |                                                                                                                         |                                                                                                            |
|                      | V-15 Micro                       | 20-20                             | 30        |                          | 5.0                       | 1½                      | 47k                                    | 275                               | E                                   | 0.4x 0.7               | user                       | 6.5                                 | 49.95        | 26.25     |                                                                                                                         |                                                                                                            |
|                      | V-15 Micro IV AME                | 20-20                             | 30        |                          | 5.5                       | ±½                      | 47k                                    | 275                               | S                                   | 0.7                    | user                       | 6.5                                 | 34.95        | 19.22     |                                                                                                                         |                                                                                                            |
|                      | V-15 Micro IV AM                 | 20-18                             | 28        |                          | 6.0                       | 3±1                     | 47k                                    | 275                               | E                                   | 0.4x 0.7               | user                       | 6.5                                 | 39.95        | 23.95     |                                                                                                                         |                                                                                                            |
| V-15 Micro IV ATE    | 20-18                            | 28                                |           | 7.3                      | 3±1                       | 47k                     | 275                                    | S                                 | 0.7                                 | user                   | 6.5                        | 29.95                               | 16.47        |           |                                                                                                                         |                                                                                                            |
| V-15 Micro IV AT     | 20-17                            | 26                                |           | 7.3                      | 4±1                       | 47k                     | 275                                    | E                                 | 0.5x 0.7                            | user                   | 6.5                        | 29.95                               | 16.47        |           |                                                                                                                         |                                                                                                            |
| V-15 Micro IV ACE    | 20-17                            | 26                                |           | 7.3                      | 5±2                       | 47k                     | 275                                    | S                                 | 0.7                                 | user                   | 6.5                        | 24.95                               | 13.72        |           |                                                                                                                         |                                                                                                            |
| RAM AUDIO            | RAM 9210SG                       | 5-20 ±1                           | 20        | 17                       | 1500                      | 1-2                     | 50k                                    |                                   | Q                                   | 0.08x 0.75             | user                       | 3.8                                 | 299.00       | 29.95     |                                                                                                                         |                                                                                                            |



Satin M-18



Shure M24H

Win SDT-10 Type 11



| MANUFACTURER   | MODEL           | Frequency response, Hz to kHz, ±dB |               | Channel separ., 1kHz, dB |      | Channel separ., 10kHz, dB |         | mV output, 1 kHz, 5cm/s |     | Recommended tracking force range, gms. |             | Recommended load resistance, ohms |        | Recommended Loading capacitance (pF) |        | Stylus type - use code |  | Stylus radius (radius) mils |  | Is stylus user or factory replace? |  | Weight, gms. |  | Price, \$ |  | Replacement stylus price, \$ |                                    | NOTES<br>STYLUS TYPE<br>C - Conical<br>S - Spherical<br>E - Elliptical<br>Q - For CD-4 use (Shibata, etc.)      |                                   |                   |
|----------------|-----------------|------------------------------------|---------------|--------------------------|------|---------------------------|---------|-------------------------|-----|----------------------------------------|-------------|-----------------------------------|--------|--------------------------------------|--------|------------------------|--|-----------------------------|--|------------------------------------|--|--------------|--|-----------|--|------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------|
|                |                 | 10-40<br>±2                        | 30            | 2.5                      | 3.0  | 0.5-1.5                   | 30      | 47k                     | 450 | E                                      | 0.2x<br>0.7 | user                              | 6.3    | 90.00                                | 33.00  |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| SATIN (OSAWA)  | M-18BX          | 10-40<br>±2                        | 30            | 2.5                      | 3.0  | 0.5-1.5                   | 30      | 47k                     | 450 | Q                                      | 0.1x<br>2.5 | user                              | 9.5    | 325.00                               | 190.00 |                        |  |                             |  |                                    |  |              |  |           |  |                              | Moving Coil, beryllium cantilever. |                                                                                                                 |                                   |                   |
|                | M-18X           | 10-35<br>±2                        | 30            | 2.5                      | 3.0  | 0.5-1.5                   | 30      | 47k                     | 450 | Q                                      | 0.1x<br>2.5 | user                              | 9.5    | 240.00                               | 130.00 |                        |  |                             |  |                                    |  |              |  |           |  |                              | Moving Coil.                       |                                                                                                                 |                                   |                   |
|                | M-18E           | 10-30<br>±2                        | 30            | 2.5                      | 3.0  | 0.5-1.5                   | 30      | 47k                     | 450 | E                                      | 0.2x<br>0.8 | user                              | 9.5    | 195.00                               | 110.00 |                        |  |                             |  |                                    |  |              |  |           |  |                              | Moving Coil.                       |                                                                                                                 |                                   |                   |
|                | M-117G          | 20-25<br>±2                        | 25            | 3.0                      | 3.0  | 0.5-1.5                   | 30      | 47k                     | 450 | E                                      | 0.2x<br>0.8 | user                              | 9.0    | 155.00                               | 80.00  |                        |  |                             |  |                                    |  |              |  |           |  |                              | Moving Coil.                       |                                                                                                                 |                                   |                   |
| SHURE          | V-15 Type III   | 10-25k                             | 25            | 15                       | 3.5  | ¼-1¼                      | 47k     | 450                     | E   | 0.2x<br>0.7                            | user        | 6.3                               | 90.00  | 33.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M24H            | 20-50k                             | 22            | 3.0                      | 1-1½ | ¼-1¼                      | 47k     | 100                     | Q   | 0.2x<br>0.7                            | user        | 5.8                               | 84.95  | 33.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    | *Hyperbolic.                                                                                                    |                                   |                   |
|                | M95ED           | 20-20k                             | 25            | 4.7                      | ¼-1¼ | ¼-1¼                      | 47k     | 450                     | E   | 0.2x<br>0.7                            | user        | 6.3                               | 74.95  | 30.85                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M95EJ           | 20-20k                             | 20            | 4.7                      | 1½-3 | ¼-1¼                      | 47k     | 450                     | E   | 0.4x<br>0.7                            | user        | 6.3                               | 59.95  | 25.55                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M91ED           | 20-20k                             | 25            | 5.0                      | ¼-1¼ | ¼-1¼                      | 47k     | 450                     | E   | 0.2x<br>0.7                            | user        | 5.8                               | 64.95  | 27.90                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M75ED Type II   | 20-20k                             | 25            | 5.0                      | ¼-1¼ | ¼-1¼                      | 47k     | 450                     | E   | 0.2x<br>0.7                            | user        | 6.2                               | 64.95  | 27.90                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M93E            | 20-20k                             | 20            | 6.2                      | 1½-3 | ¼-1¼                      | 47k     | 450                     | E   | 0.4x<br>0.7                            | user        | 5.7                               | 49.95  | 21.40                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | M70EJ           | 20-20k                             | 20            | 6.2                      | 1½-3 | ¼-1¼                      | 47k     | 450                     | E   | 0.4x<br>0.7                            | user        | 5.8                               | 44.95  | 15.45                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| M70B           | 20-20k          | 20                                 | 6.2           | 1½-3                     | ¼-1¼ | 47k                       | 450     | S                       | 0.6 | user                                   | 5.8         | 39.95                             | 12.05  |                                      |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| SONIC RESEARCH | Sonus BLUE      | 5-20<br>±1½                        | 30            | 30                       | 4    | ¼-1¼                      | 47k     | 400                     | Q*  | 0.3x<br>0.3                            | user        | 5½                                | 125.00 | 62.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    | *Pathmax, for CD-4, load cap. less than 250 pF.                                                                 |                                   |                   |
|                | Sonus RED       | 5-20<br>±2                         | 30            | 30                       | 4    | ¼-1¼                      | 47k     | 400                     | E   | 0.7x<br>0.3                            | user        | 5½                                | 104.00 | 41.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | Sonus E SILVER  | 5-20<br>±1½                        | 30            | 30                       | 5    | ¼-1¼                      | 47k     | 400                     | E   | 0.7x<br>0.3                            | user        | 5½                                | 60.00  | 27.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | Sonus SILVER P  | 5-20<br>±1½                        | 30            | 30                       | 5    | ¼-1¼                      | 47k     | 400                     | Q   | 0.3x<br>0.3                            | user        | 5½                                | 70.00  | 36.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | Sonus GREEN     | 5-20<br>±2                         | 30            | 30                       | 4    | ¼-1¼                      | 47k     | 400                     | S   | 0.6                                    | user        | 5½                                | 88.00  | 24.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
|                | STANTON         | 600EE                              | 20-20<br>±2.5 | 35                       | 5.0  | 1-2                       | ¼-1¼    | 47k                     | 275 | E                                      | 0.3x<br>0.7 | user                              | 5      | 55.00                                | 27.75  |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 600E           |                 | 20-20<br>±2                        | 35            | 5.0                      | 1½-3 | ¼-1¼                      | 47k     | 275                     | E   | 0.4x<br>0.7                            | user        | 5                                 | 50.00  | 25.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 600A           |                 | 20-20<br>±2                        | 35            | 5.0                      | 2-4  | ¼-1¼                      | 47k     | 275                     | S   | 0.7                                    | user        | 5                                 | 45.00  | 20.25                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 500EE          |                 | 10-20<br>±3                        | 35            | 5.0                      | 1-2  | ¼-1¼                      | 47k     | 275                     | E   | 0.3x<br>0.7                            | user        | 5                                 | 40.00  | 25.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 500E           |                 | 10-20<br>±2                        | 35            | 5.0                      | 2-5  | ¼-1¼                      | 47k     | 275                     | E   | 0.4x<br>0.7                            | user        | 5                                 | 35.00  | 20.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 500A           |                 | 10-20<br>±2                        | 35            | 5.0                      | 2-5  | ¼-1¼                      | 47k     | 275                     | S   | 0.7                                    | user        | 5                                 | 30.00  | 12.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 500AA          |                 | 10-20<br>±2                        | 35            | 5.0                      | 1-2½ | ¼-1¼                      | 47k     | 275                     | S   | 0.5                                    | user        | 5                                 | 35.00  | 18.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 500AL          |                 | 20-17<br>±2.5                      | 28            | 5.0                      | 3-7  | ¼-1¼                      | 47k     | 275                     | S   | 0.7                                    | user        | 5                                 | 30.00  | 12.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 780/4DQ        |                 | 10-50                              | 35            | 3.0                      | 2±½  | ¼-1¼                      | 100k    | 100                     | Q*  |                                        | user        | 5.5                               | 125.00 | 45.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 | *Quadrhedron.                     |                   |
| 780/Q          |                 | 10-45                              | 30            | 3.0                      | 2±½  | ¼-1¼                      | 100k    | 100                     | Q*  |                                        | user        | 5.5                               | 75.00  | 33.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   | *Quadrhedron.     |
| 681EE          |                 | 10-12<br>±½                        | 35            | 3.5                      | ¼-1¼ | ¼-1¼                      | 47k     | 275                     | E   | 0.2x<br>0.7                            | user        | 5.5                               | 82.00  | 41.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 681EE          |                 | 10-10<br>±½                        | 35            | 4.1                      | ¼-1¼ | ¼-1¼                      | 47k     | 275                     | E   | 0.2x<br>0.7                            | user        | 5.5                               | 72.00  | 36.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 681A           |                 | 10-10<br>±½                        | 35            | 5.5                      | 1½-3 | ¼-1¼                      | 47k     | 275                     | S   | 0.7                                    | user        | 5.5                               | 66.00  | 30.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 681SE          |                 | 10-10<br>±½                        | 35            | 5.5                      | 2-4  | ¼-1¼                      | 47k     | 275                     | E   | 0.4x<br>0.7                            | user        | 5.5                               | 66.00  | 30.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 680EL          |                 | 20-18<br>±2                        | 30            | 5.5                      | 2-5  | ¼-1¼                      | 47k     | 275                     | E   | 0.4x<br>0.7                            | user        | 5.5                               | 90.00* | 30.00                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   | *W. spare stylus. |
| 680EE          |                 | 20-20                              | 35            | 4.1                      | ¼-1¼ | ¼-1¼                      | 47k     | 275                     | E   | 0.3x<br>0.7                            | user        | 5.5                               | 59.95  | 31.25                                |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 |                                   |                   |
| 681EEE         | 10-12<br>±½     | 35                                 | 0.7           | 1+½                      | ¼-1¼ | 47k                       | 275     | S*                      |     | user                                   |             | 115.00                            | 57.50  |                                      |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 | *Stereohedron                     |                   |
| 881S           | 10-25           | 35                                 | 0.9           | 1±½                      | ¼-1¼ | 47k                       | 275     | S*                      |     | user                                   | 5.7         | 150.00                            | 75.00  |                                      |        |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 | *Stereohedron, indiv. calibrated. |                   |
| SUPEX (SUMIKO) | SD-900          | 10-50<br>±3                        | 30            | 27                       | 0.2  | 1.2-1.7                   |         |                         |     | E                                      | 0.3x<br>0.8 | fact.                             | 8      | 180.00                               | 90.00  |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 | Moving coil, SDT 180 Xformer opt. |                   |
|                | E+ Super SD-901 | 10-35<br>±1.5                      | 30            | 27                       | 2.0  | 1.2-1.7                   | 47k     |                         |     | E                                      | 0.3x<br>0.8 | fact.                             | 9      | 155.00                               | 77.50  |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    |                                                                                                                 | High output moving coil.          |                   |
| WIN            | SDT-10 Type II  | d.c.-50 kHz                        | 23            | 18                       | 37V  | 2                         | 2k min. | 400 max.                |     |                                        |             | user                              | 3      | 300.00                               | *      |                        |  |                             |  |                                    |  |              |  |           |  |                              |                                    | Semicond. type w. power source, *boron cant. w. amplitude sensor tip \$70, titanium cant. w. biradial tip \$45. |                                   |                   |

# Loudspeakers



**Advent  
Powered**



**AR 18**

**Acoustat-X**



**Allison One**



**Akai SW-177**



| MANUFACTURER               | MODEL             | Enclosure type | Woofer dia., inches |       | Midrange dia., inches |              | Tweeter dia., inches |            | Level controls (M=midrange, T=tweeter, ST=super tweeter) | Aspheric freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches          | Finish                | Grille Material? Color?  | Weight, lbs. | Price, \$                     | NOTES                                   |
|----------------------------|-------------------|----------------|---------------------|-------|-----------------------|--------------|----------------------|------------|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|-----------------------------|-----------------------|--------------------------|--------------|-------------------------------|-----------------------------------------|
|                            |                   |                |                     |       |                       |              |                      |            |                                                          |                                        |                             |                           |                                  |                             |                       |                          |              |                               |                                         |
| ADS                        | 910               | ac. sus.       | (2)<br>10           | 2     | dome                  | 1            | dome                 | M, T       |                                                          | 18-25 ± 5                              | 15                          | 450,<br>4000              | 6/4                              | 19x15 1/2<br>x33 1/2        | wal.                  | cloth<br>blk.            | 100          | 600.00                        | Opt. bi/tri<br>amp., swivel<br>stands.  |
|                            | 810               | ac. sus.       | (2)<br>8            | 2     | dome                  | 1            | dome                 |            |                                                          | 20-22 ± 5                              | 15                          | 550,<br>4000              | 6/4                              | 14 1/4 x 12<br>x 25 1/2     | wal.                  | cloth<br>blk.            | 46.5         | 350.00                        |                                         |
|                            | 710               | ac. sus.       | (2)<br>7            | 2     | dome                  | 1            | dome                 |            |                                                          | 25-22 ± 5                              | 15                          | 550,<br>4000              | 6/4                              | 12 1/4 x 10 1/2<br>x 21 1/2 | wal.                  | cloth<br>blk.            | 35           | 265.00                        |                                         |
|                            | 700               | ac. sus.       | (2)<br>7            |       |                       | 1            | dome                 |            |                                                          | 30-22 ± 5                              | 15                          | 1500                      | 6/4                              | 12 1/4 x 10 1/2<br>x 21 1/2 | wal.                  | cloth<br>blk.            | 32           | 180.00                        |                                         |
|                            | 500               | ac. sus.       | 7                   |       |                       | 1            | dome                 |            |                                                          | 30-22 ± 5                              | 15                          | 1500                      | 6/4                              | 11 1/2 x 9 3/4<br>x 20      | wal.                  | cloth<br>blk.            | 25           | 145.00                        |                                         |
|                            | 400               | ac. sus.       | 7                   |       |                       | 1            | dome                 |            |                                                          | 33-22 ± 5                              | 15                          | 1500                      | 6/4                              | 10 x 8.5<br>x 17 1/2        | wal.                  | cloth<br>blk.            | 18.5         | 105.00                        |                                         |
|                            | 300               | ac. sus.       | 5 1/2               |       |                       | 1            | dome                 |            |                                                          | 40-22 ± 5                              | 10                          | 2500                      | 6/<br>3.6                        | 5.7 x 5.9<br>x 8.65         | alum.                 | metal                    | 7.5          | 140.00                        |                                         |
|                            | 200               | ac. sus.       | 4                   |       |                       | 1            | dome                 |            |                                                          | 55-22 ± 5                              | 10                          | 2500                      | 6/<br>3.6                        | 4 1/4 x 4 1/4<br>x 6.85     | alum.                 | metal                    | 4.6          | 105.00                        |                                         |
|                            | 2001              | ac. sus.       | 4                   |       |                       | 1            | dome                 | T          |                                                          | 50-22 ± 5                              |                             | 2.5k                      | 47k                              | 4 1/4 x 4 1/4<br>x 6.85     | alum.                 | metal                    | 16           | 570.00                        | 160 rms bi-<br>amplified                |
|                            | 2002              | ac. sus.       | 4                   |       |                       | 1            | dome                 | T          |                                                          | 55-22 ± 5                              |                             | 2.5k                      | 43k                              | 4 1/4 x 4 1/4<br>x 6.85     | alum.                 | metal                    | 5            | 450.00                        | 80 rms bi-<br>amplified                 |
| 200C                       | ac. sus.          | 4              |                     |       | 1                     | dome         |                      |            | 55-22 ± 5                                                | 10                                     | 2.5k                        | 350k<br>6/<br>3.6         | 4 1/4 x 4 1/4<br>x 6.85          | alum.                       | metal                 | 5.5                      | 230.00       | pair<br>Car hi-fi<br>speaker. |                                         |
| ACOUSTAT                   | Acoustat-X        | E.S.           |                     |       |                       |              |                      |            |                                                          | 30-20 ± 3                              | 105                         |                           |                                  | 28x48<br>x19                | wal.,<br>oak          | cloth<br>blk.            | 106          | 1995.00                       | W/self-cont.<br>powr. amps.             |
| ACCOUSTICAL<br>ENGINEERING | Mach IV           | corner<br>horn | 15                  | 8     | horn                  | (2)<br>1 1/4 | horn                 | T          |                                                          | 28-18 ± 5                              |                             | 400,<br>2.5k              | 8/4                              | 42x30<br>x41                | oil,<br>wal.          | cloth,<br>brown          | 175          | 1500.00                       |                                         |
|                            | Saratoga          | horn           | 12                  | 8     | horn                  | 1 1/4        | horn                 | T          |                                                          | 36-18 ± 5                              |                             | 500,<br>3k                | 8/4                              | 28x22<br>x30                | wal.                  | cloth,<br>brown          | 150          | 995.00                        |                                         |
|                            | Model 5           | corner<br>horn | 12                  | 8     | horn                  | 1 1/4        | horn                 | T          |                                                          | 36-18 ± 5                              |                             | 500,<br>3k                | 8/4                              | 29x20 1/2<br>x30            | oil,<br>wal.          | cloth,<br>brown          | 125          | 895.00                        |                                         |
|                            | Mini-corer        | corner<br>horn | 8                   | 4     | horn                  | 1            | horn                 | T          |                                                          | 42-18 ± 5                              |                             | 800,<br>5k                | 8/4                              | 18x13<br>x24                | oil,<br>wal.          | cloth,<br>brown          | 85           | 595.00                        |                                         |
| ACOUSTIC<br>RESEARCH       | AR-10r            | ac. sus.       | 12                  | 1 1/2 | dome                  | 1/2          | dome                 | W,<br>M, T |                                                          | 35-25 ± 2                              | 25                          | 525,<br>5k                | 8,4                              | 25x14<br>x10 1/2            | oil<br>wal.           | foam<br>black            | 55           | 450.00                        |                                         |
|                            | AR-11             | ac. sus.       | 12                  | 1 1/2 | dome                  | 1/2          | dome                 |            |                                                          | 35-25 ± 2                              | 25                          | 525,<br>5k                | 4                                | 25x14<br>x10 1/2            | oil<br>wal.           | foam<br>black            | 49 1/2       | 350.00                        | Curves avail-<br>able on re-<br>quest.  |
|                            | AR-12             | ac. sus.       | 10                  | 2 1/4 | cone                  | 1/2          | dome                 | M, T       |                                                          | 43-25 ± 2                              | 25                          | 700,<br>4k                | 8                                | 25x14<br>x10 1/2            | oil<br>wal.           | foam<br>black            | 37 1/2       | 250.00                        | Curves avail-<br>able on re-<br>quest.  |
|                            | AR-14             | ac. sus.       | 10                  |       |                       | 1            | dome                 | T          |                                                          | 43-24 ± 2                              | 15                          | 1.3k                      | 8                                | 25x14<br>x10 1/2            | oil<br>wal.           | foam<br>black            | 35           | 180.00                        | Curves avail-<br>able on re-<br>quest.  |
|                            | AR-15             | ac. sus.       | 8                   |       |                       | 1            | dome                 | T          |                                                          | 48-24 ± 2                              | 15                          | 1.7k                      | 8                                | 21 1/2 x 11 1/4<br>x 7 1/2  | oil<br>wal.           | foam<br>black            | 24           | 130.00                        | Curves avail-<br>able on re-<br>quest.  |
|                            | AR-17             | ac. sus.       | 8                   |       |                       | 1 1/4        | press-<br>ure        | T          |                                                          | 48-21 ± 2                              | 15                          | 2k                        | 8                                | 18 1/2 x 10<br>x 8 1/2      | oil<br>wal.           | foam<br>black            | 17           | 95.00                         | Curves avail-<br>able on re-<br>quest.  |
|                            | AR-18             | ac. sus.       | 8                   |       |                       | 1 1/4        | press-<br>ure        | T          |                                                          | 58-21 ± 2                              | 15                          | 2k                        | 8                                | 16 1/2 x 9 1/2<br>x 6 1/2   | wal.<br>grn.<br>vinyl | foam<br>black            | 13 1/2       | 65.00                         | Curves avail-<br>able on re-<br>quest.  |
| ADVENT                     | New Advent        | ac. sus.       |                     |       |                       | 1            | dome                 | T          |                                                          |                                        | 15                          | 1500                      | 8/                               | 14 1/2 x 11 1/2<br>x 26     | wal.                  | cloth<br>brown           | 47           | 149.00                        | in vinyl-clad<br>wood cab.<br>\$129.    |
|                            | Smaller<br>Advent | ac. sus.       |                     |       |                       | 1            | dome                 |            |                                                          |                                        | 15                          | 1400                      | 4/                               | 11 1/2 x 9 3/4<br>x 20      | wal.<br>vin.          | cloth<br>beige           | 26           | 94.00                         |                                         |
|                            | Advent/2          | ac. sus.       |                     |       |                       | 1 1/2<br>(2) | cone                 |            |                                                          |                                        | 10                          | 1500                      | 8/                               | 11 1/2 x 7 1/2<br>x 19      | wal.<br>vin.          | cloth<br>beige           | 18           | 79.00                         | in white<br>with metal<br>grille, 96.00 |
|                            | Advent/3          | ac. sus.       |                     |       |                       | 1 1/2        | cone                 |            |                                                          |                                        | 8                           | 1500                      | 8/                               | 9 1/2 x 6 1/2<br>x 15 1/2   | wal.<br>vin.<br>white | cloth<br>beige<br>grille | 10.6         | 52.00                         |                                         |
|                            | Model 400         | ac. sus.       |                     |       |                       |              |                      |            |                                                          |                                        | 5                           |                           | 8/                               | 11 x 6 x 6 1/2              | metal                 | metal<br>cloth           | 5.5          | 35.00                         |                                         |
| Powered<br>Advent          | ac. sus.          |                |                     |       | 1                     | dome         | T, W                 |            |                                                          |                                        | 1500                        |                           |                                  | 14 x 11<br>x 28 1/2         | wal.                  | cloth<br>brown           | 67           | 450.00                        | Bi-amplified.                           |

# INVISIBLE SOUND



123

## THE ADS 910

**The ADS 910 Reference System –  
A benchmark in loudspeaker performance.**

For the first time, awesome dynamic capacity, widest bandwidth, high efficiency, and substantial power handling have successfully been combined – in the ADS 910.

Equally important, it is a transducer of unprecedented musical merit: incredible realism (regardless of playing level), stunning clarity and openness, pinpoint definition and stable imaging, identify this new standard of sound reproduction.

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ADS 910's shown in the recording studio of Deutsche Grammophon Gesellschaft at Symphony Hall, Boston. ADS speakers range in price from \$100 to \$700 (approx). ADS 910 dimensions 33 $\frac{3}{8}$ " (H) x 19" (W) x 15 $\frac{1}{4}$ " (D)

**ADS, Analog & Digital Systems**  
Industrial Way, Wilmington, MA 01887

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# Loudspeakers

| MANUFACTURER             | MODEL                              | Enclosure type         | Woofer dia., inches |                     | Midrange dia., inches |                       | Tweeter dia., inches |                      | Level controls (M=midrange, T=tweeter, SF=super tweeter) | Anechoic freq. response Hz (±0 kHz ± dB) | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches   | Finish             | Grille Material? Color? | Weight, lbs. | Price, \$                                                       | NOTES |
|--------------------------|------------------------------------|------------------------|---------------------|---------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------------------------------------------|------------------------------------------|-----------------------------|---------------------------|----------------------------------|----------------------|--------------------|-------------------------|--------------|-----------------------------------------------------------------|-------|
|                          |                                    |                        | Woofer dia., inches | Woofer dia., inches | Midrange dia., inches | Midrange dia., inches | Tweeter dia., inches | Tweeter dia., inches |                                                          |                                          |                             |                           |                                  |                      |                    |                         |              |                                                                 |       |
| ACOUSTIQUE 3A            | Andante "Linear"                   | ac. pres. FB.          | 11                  | 2                   | dome                  | 5/8                   | dome                 | B                    | 30-30 ±3                                                 | 5                                        | 400, 5k                     | 15/8                      | 12x8x18                          | wal. blk. suede      | cloth blk.         |                         | 499.00       | Built-in 120W amp.                                              |       |
|                          | Andante "Master Control" Triphonic | ac. pres. FB.          | 10                  | 2                   | dome                  | 4                     | ribbon               | B                    | 25-40 ±3                                                 | 15                                       | 400, 5k                     | 15/8                      | 12x8x18                          | wal. blk.            | cloth blk.         |                         | 799.00       | Built-in 125W amp.                                              |       |
|                          |                                    | ac. pres. FB. & P.L.D. | (4) 10              |                     |                       |                       |                      |                      | 20-120 ±2                                                |                                          | 60-120                      | 400/400                   | 36x36x14                         | wal. maple blk. laq. |                    |                         | 799.00       | Subwoofer w. pink noise gen. xover & mike. Satelites for above. |       |
|                          |                                    |                        |                     | 5                   | cone                  | 4                     | ribbon               |                      | 80-40 ±3                                                 | 10                                       | 5k                          | 8/8                       | 5x4x10                           | wal. blk.            | cloth blk.         |                         | 200.00       |                                                                 |       |
|                          | Alphase                            | P.L.D.                 | 8                   |                     |                       | 5/8                   | dome                 |                      | 55-30 ±3                                                 | 5                                        | 5k                          | 8/6                       | 10x10x20                         | wal. look            | cloth blk.         | 21                      | 149.00       |                                                                 |       |
|                          | Apogee                             | bass ref.              | 10                  |                     |                       | 5/8                   | dome                 |                      | 55-30 ±3                                                 | 5                                        | 4.5k                        | 8/6                       | 12x10x25                         | wal. blk.            | cloth blk.         | 32                      | 199.00       |                                                                 |       |
|                          | Apogee Monitor Allegretto          | P.L.D.                 | 11                  | 1½                  | dome                  | 5/8                   | dome                 |                      | 45-30 ±3                                                 | 15                                       | 700, 6k, 200, 10k           | 8/6                       | 13x13x29                         | wal. blk.            | cloth blk.         | 45                      | 349.00       |                                                                 |       |
|                          | Adagio™                            | inf. ac. load.         | 11                  | 2                   | dome                  | 5/8                   | dome                 | M                    | 55-20 ±3                                                 | 10                                       | 500, 5k                     | 8/8                       | 12x12x31                         | wal. blk.            | cloth blk.         | 35                      | 289.00       |                                                                 |       |
| Arango Monitor           | bass ref.                          | 15                     | 5                   | cone                |                       | horn                  | B M T                | 45-20 ±3             | 10                                                       | 300, 5k                                  | 8/8                         | 18x15x27                  | wal. blk.                        | cloth blk.           | 90                 | 539.00                  |              |                                                                 |       |
| AKAI                     | SW-177                             | closed                 | 15                  | 5½                  |                       | (2) 1½                |                      | M, T                 | 25-20 ±3                                                 | 100                                      | 700 & 5k                    | 8                         | 17.3x12.2x27.3                   | wal. blk.            | cloth brn.         | 46.3                    | 250.00       |                                                                 |       |
|                          | SW-157                             | bass ref.              | 12                  | 5                   |                       | 1½                    |                      | M, T                 | 30-20 ±3                                                 | 60                                       | 1.2 & 5k                    | 8                         | 15.7x11.8x26.9                   | wal. blk.            | cloth brn.         | 36.1                    | 200.00       |                                                                 |       |
|                          | SW-137                             | bass ref.              | 10                  | 5                   |                       | 1½                    |                      | M, T                 | 40-20 ±3                                                 | 40                                       | 1.2 & 5k                    | 8                         | 13.5x11.8x23.3                   | wal. blk.            | cloth brn.         | 25.8                    | 130.00       |                                                                 |       |
|                          | SW-127                             | bass ref.              | 8                   |                     |                       | 1½                    |                      | T                    | 40-20 ±3                                                 | 30                                       | 4k                          | 8                         | 12.2x9.0x20.4                    | wal. blk.            | cloth brn.         | 16.3                    | 90.00        |                                                                 |       |
|                          | S-82                               | ac. sus.               | 8                   |                     | cone                  | 3                     |                      |                      | 60-17 ±5                                                 | 15                                       | 4k                          | 8                         | 11x6½x19                         | wood grain vinyl     | cloth              | 9                       | 75.00 pair   |                                                                 |       |
| ALLISON ACOUSTICS        | One                                | ac. sus.*              | (2) 10              | (2) 3½              | **                    | (2) 1                 | **                   | M, T ***             | -                                                        | 30                                       | 350, 3.75k                  | 8/7                       | 19x10½x19                        | oil wal.             | ABS blk.           | 67                      | 395.00       | *stabilized radiation loading design                            |       |
|                          | Two                                | ac. sus.*              | (2) 8               | (2) 3½              | **                    | (2) 1                 | **                   | M, T ***             | -                                                        | 30                                       | 350, 3.75k                  | 8/7                       | 16x9½x16                         | oil wal.             | ABS blk.           | 57                      | 325.00       | **convex diaphragm                                              |       |
|                          | Three                              | ac. sus.*              | 10                  | 3½                  | **                    | 1                     | **                   | M, T ***             | -                                                        | 30                                       | 350, 3.75k                  | 4/3½                      | 15½x10x40                        | oil wal.             | ABS blk.           | 45                      | 275.00       | ***single 3 pos. switch.                                        |       |
|                          | Four                               | ac. sus.*              | 8                   |                     |                       | (2) 1                 | **                   | W, T ***             | -                                                        | 30                                       | 3.75k, 2k                   | 8/6½                      | 19½x10x11                        | oil wal.             | ABS blk.           | 24                      | 185.00       |                                                                 |       |
| ALTEC                    | One                                | sealed                 | 8                   |                     |                       | 4                     | cone                 |                      | 50-20                                                    | 12                                       | 3k                          | 8                         | 11½x10½x21                       | oil oak              | cloth brn.         | 54                      | 99.00        |                                                                 |       |
|                          | Three                              | vented                 | 10                  |                     |                       | 4                     | cone                 |                      | 50-20                                                    | 10                                       | 1.5k                        | 8                         | 12½x11½x24                       | oil oak              | cloth blk.         | 32                      | 129.00       |                                                                 |       |
|                          | Five                               | vented                 | 12                  |                     |                       | (2) 4                 | cone                 |                      | 45-20                                                    | 12                                       | 1.5k                        | 8                         | 14½x12x25½                       | oil wal.             | cloth blk.         | 38                      | 179.00       |                                                                 |       |
|                          | Seven                              | vented                 | 12                  | 6½                  | cone                  | 4                     | cone                 |                      | 45-20                                                    | 15                                       | 850, 8k                     | 8                         | 16x14½x25                        | oil wal.             | foam var. in color | 49                      | 229.00       |                                                                 |       |
|                          | Nine                               | vented                 | 12                  | 6½                  | cone                  | 5                     | cone                 |                      | 40-20                                                    | 12                                       | 800, 7k                     | 8                         | 17½x15x26½                       | oil oak              | foam var. in color | 64                      | 299.00       |                                                                 |       |
|                          | Stonehenge II                      | vented                 | 12                  | 5½                  | cone                  | 5                     | cone                 |                      | 35-20                                                    | 20                                       | 500, 5k                     | 8                         | 16x14x37½                        | oil oak              | cloth brn.         | 76                      | 359.00       |                                                                 |       |
|                          | Santana II                         | vented                 | 12                  |                     |                       | 5                     | cone                 |                      | 40-20                                                    | 12                                       | 2.5k                        | 8                         | 19x16x25                         | oil wal.             | cloth blk.         | 67                      | 259.00       |                                                                 |       |
|                          | 15                                 | vented                 | 12                  |                     |                       |                       | horn                 |                      | 30-20                                                    | 12                                       | 1.7k                        | 8                         | 22x15½x27                        | oil oak/wal.         | foam brn/blk       | 84                      | 429.00       |                                                                 |       |
|                          | 17                                 | vented                 | 15                  |                     |                       |                       | horn                 |                      | 30-20                                                    | 10                                       | 1.5k                        | 8                         | 26x18x40                         | oil oak              | cloth brn.         | 168                     | 585.00       |                                                                 |       |
| 19                       | vented                             | 15                     |                     |                     |                       | horn                  |                      | 30-20                | 10                                                       | 1.2k                                     | 8                           | 30x21x29                  | oil oak/wal.                     | cloth blk.           | 166                | 659.00                  |              |                                                                 |       |
| ANALOGUE SYSTEMS         | AL-2                               | bass ref.              | 10                  |                     |                       | 3½                    | dome                 | T                    | 32-19                                                    | 5                                        | 3.5k                        | 8                         | 19½x11½x10½                      | oil wal.             | cloth blk.         | 23                      | 99.95        |                                                                 |       |
|                          | AL-3                               | lab. horn              | 10                  | 4½                  | cone                  | 3½                    | dome                 | M, T                 | 25-19                                                    | 7                                        | 1.5 & 4.5k                  | 7.5                       | 24x14½x11½                       | oil wal.             | cloth blk.         | 42                      | 159.95       |                                                                 |       |
|                          | AL-4                               | lab. horn              | 12                  | 5                   | cone                  | 3 & 4½                | dome                 | M, T                 | 20-20                                                    | 7                                        | 1.5, 4, & 6.5k              | 7.5                       | 26½x15½x13                       | oil wal.             | cloth blk.         | 48                      | 279.95       |                                                                 |       |
|                          | AL-5                               | lab. horn              | (2) 10              | 5 & 8               | cone                  | 3½                    | dome                 | M, T                 | 19-21                                                    | 7                                        | 400, 1.5 & 5.5k             | 8                         |                                  | oil wal.             | cloth blk.         | 70                      | 399.95       | Two-piece system, base: 35x14½x12 Top: 12½x14½x13½              |       |
| ARMSTRONG (ROTH/SINDELL) | 620                                | leaky box              | 8                   | 2                   | dome                  | 1                     | dome                 |                      | 25-25 ±3                                                 | 20                                       | 400, 4k                     | 8                         | 24x12x10                         | wal. rose            | foam blk.          | 30                      | 250.00       |                                                                 |       |

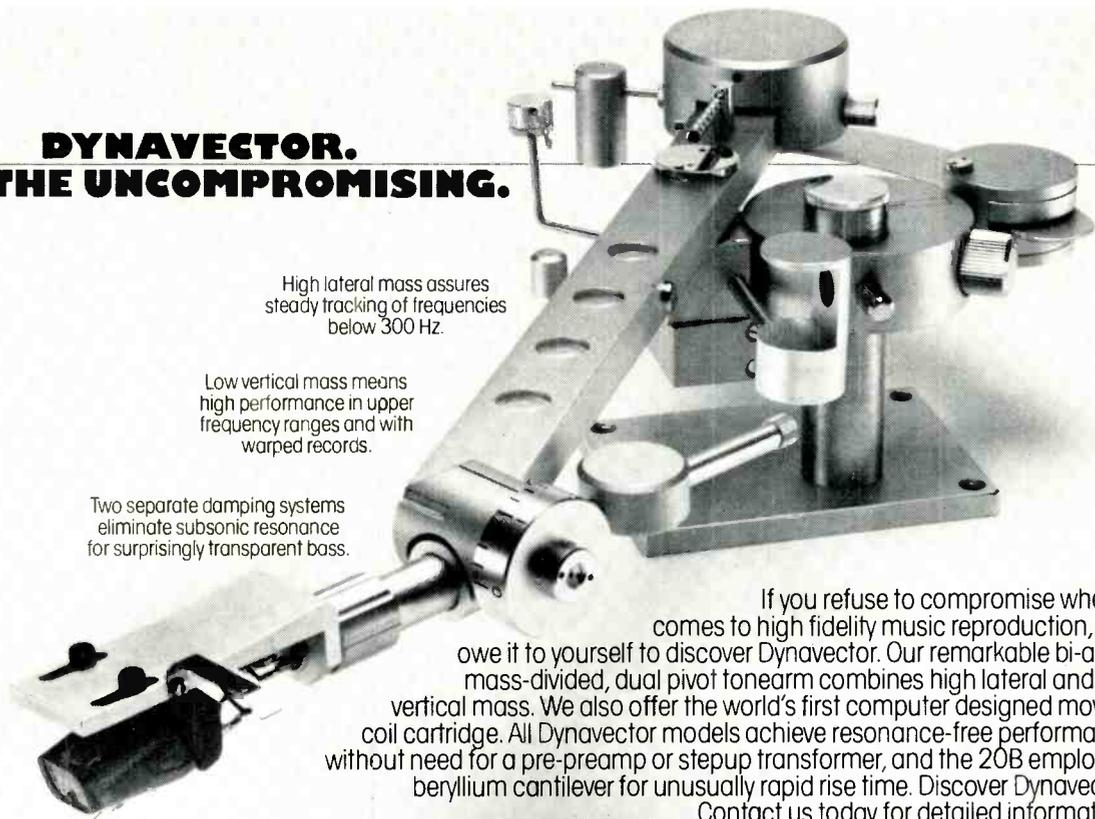
| MANUFACTURER | MODEL           | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, S=Super Tweeter) | Anechoic freq. response Hz. to kHz = dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches   | Finish                          | Grille Material? Color? | Weight, lbs. | Price, \$ | NOTES                                              |
|--------------|-----------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|---------------------------------------------------------|-----------------------------------------|-----------------------------|---------------------------|----------------------------------|----------------------|---------------------------------|-------------------------|--------------|-----------|----------------------------------------------------|
| AUDIOANALYST | Phase Matrix M2 | sealed         | 6%                  |                       |               | 1                    | dome         |                                                         | 55-20 ±3                                | 10                          | 3k                        | 4/3.5                            | 10x9%<br>x16%        | laq. wal.                       | cloth blk.              | 30/ pr.      | 149.00    |                                                    |
|              | Phase Matrix M4 | sealed         | 10                  |                       |               | 1                    | dome         |                                                         | 44-20 ±3                                | 10                          | 2k                        | 8/6.3                            | 12½x10%<br>x21       | laq. wal.                       | cloth blk.              | 33           | 199.00    |                                                    |
|              | Phase Matrix M6 | sealed         | 10                  | 4½                    | cone          | 1                    | dome         | M,T                                                     | 40-20 ±3                                | 15                          | 700<br>2k                 | 8/6.5                            | 13¾x11%<br>x24%      | laq. wal.                       | cloth blk.              | 47           | 249.00    |                                                    |
|              | Phase Matrix M8 | sealed         | 12                  | 4½                    | cone          | 1<br>1½              | dome<br>dome | M,T                                                     | 38-25 ±3                                | 15                          | 600<br>1k,<br>2k          | 8/6.8                            | 15½x11%<br>x27%      | laq. wal.                       | cloth blk.              | 57           | 339.00    |                                                    |
| AUDIOINICS   | T-52            | vented         | (1)<br>10           | 5                     | cone          | 1                    | dome         | M,T                                                     | 32-24 ±2.5                              | 30                          | 280<br>2.5k               | 4                                | 12x16<br>x49         | teak, wal.<br>rose oil.<br>wal. | cloth blk.              | 85           | 365.00    |                                                    |
|              | LT-02           | vented         | (4)<br>10           | 5                     | cone          | 1*                   | dome         | MT<br>T                                                 | 24-24 ±1.25                             | 100                         | 125<br>1k,<br>4k          | 8/5                              | 22 high**<br>10 dia. |                                 |                         | 150          |           | *2 in. Mid-tweeter<br>**2 Localizers & 1 infrabass |
| AUDIO PHASE  | FW 154          | bass ref.      | 15                  | 4x<br>10              | horn          | 3x<br>7              | horn         | M,T                                                     | 20-25                                   | 5                           | 800,<br>2.5&<br>6.5k      | 8                                | 28x18<br>x16         | oil, wal.                       | cloth                   | 60           | 389.50    |                                                    |
|              | FW 124          | bass ref.      | 12                  | 4x<br>10              | horn          | 3x<br>7              | horn         | M,T                                                     | 20-25                                   | 5                           | 800,<br>2.5&<br>6.5k      | 8                                | 26x15½<br>x12        | oil, wal.                       | cloth                   | 45           | 319.50    |                                                    |
|              | SV 123          | bass ref.      | 12                  | 4x<br>10              | horn          | 3%                   | phen<br>ring | M,T                                                     | 30-19                                   | 5                           | 800,<br>1.5k              | 8                                | 23½x15½<br>x12       | vin. wal.                       | foam                    | 40           | 289.50    |                                                    |
|              | LV 123          | bass ref.      | 12                  | 5                     | cone          | 3%                   | phen<br>ring | M,T                                                     | 35-19                                   | 5                           | 800,<br>1.5k              | 8                                | 23½x15½<br>x12       | vin. wal.                       | foam                    | 35           | 169.50    |                                                    |

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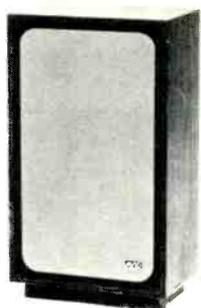
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# Loudspeakers

Avid 103



Audionics T-52



Bertagni D 120



B·I·C 7 Spec II



126

| MANUFACTURER    | MODEL             | Enclosure type                      | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, S=Super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum | Dimensions, inches | Finish                 | Grille Material? Color? | Weight, lbs. | Price, \$   | NOTES                          |
|-----------------|-------------------|-------------------------------------|---------------------|-----------------------|---------------|----------------------|--------------|---------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|------------------------|-------------------------|--------------|-------------|--------------------------------|
| AUDIO RESEARCH  | T-1C              |                                     |                     |                       |               |                      |              |                                                         | 40-18 ±3                               | 100                         | 1325                      | 8                                | 48x1x72            |                        | cloth wh., blk.         | 167          | 1395.00 pr. | *Magneplanar                   |
|                 | T-1D              |                                     |                     |                       |               |                      |              |                                                         | 40-20 ±3                               | 100                         | 1325                      | 4                                | 48x1x72            |                        | cloth wh., blk.         | 167          | 1395.00 pr. | *Magneplanar                   |
| AUDIO-TECH      | HR-1              | bass ref.                           | 12                  |                       | horn          |                      |              |                                                         | 30-18.5 ±4                             | 10                          | 800                       | 8/5                              | 24x17½ x32         | oil. wal.              | foam                    | 105          | 349.95      |                                |
|                 | HR-2              | bass ref.                           | 10                  |                       | horn          |                      |              |                                                         | 40-18.5 ±4                             | 10                          | 1000                      | 8/5                              | 17½x13 x24½        | oil. wal.              | foam                    | 40           | 189.95      |                                |
|                 | AT-6              | bass ref.                           | 10                  |                       |               | horn                 |              |                                                         | 40-20 ±4                               | 10                          | 2500                      | 8                                | 17½x13 x24½        | vinyl wal.             | foam                    | 37           | 86.00       | Kit \$71.00.                   |
|                 | AT-8              | ac. sus.                            | 12                  | 5                     | cone          | 1                    | dome         | M,T                                                     | 35-16 ±4                               | 10                          | 1000                      | 8/6                              | 17½x13 x24½        | vinyl wal.             | foam                    | 45           | 141.00      | Kit \$121.00.                  |
|                 | AT-Monitor        | ac. sus.                            | 12                  |                       | horn          |                      | horn         | M,T                                                     | 35-20 ±4                               | 10                          | 5000                      | 8/6                              | 17½x13 x24½        | vinyl wal.             | foam                    | 50           | 206.00      | Kit \$176.00.                  |
|                 | Kromwell          | bass ref.                           | 15                  |                       | horn          |                      | horn         | M,T                                                     | 35-20 ±4                               | 10                          | 700-5                     | 8/6                              | 24x18 x35          | oil wal.               | foam                    | 125          | 370.00      | Kit \$330.00.                  |
|                 | Sub-Woofer        | slot load                           | 15                  |                       |               |                      |              |                                                         | 22-100 ±4                              | 50                          | 100                       | 8/4                              | 24x24 x24          | oil wal.               |                         | 100          | 300.00      | designed for use with the HR-1 |
| AURATONE        | 5C Monitor        | ac. sus.                            | 5                   |                       |               |                      |              |                                                         | 50-15                                  | 3                           | 8                         | 6½x5½ x6½                        | wal. vinyl         | blk. foam              | 10 pr.                  | 49.95 pr.    | 5" round.   |                                |
|                 | 5S Full-Range     | ac. sus.                            | 5                   |                       |               |                      |              |                                                         | 50-15                                  | 3                           | 8                         | 6½x4¼ x10½                       | wal. vinyl         | blk. foam              | 11 pr.                  | 54.95 pr.    | 5" round.   |                                |
|                 | 5W Sound          | ac. sus.                            | 5                   |                       |               |                      |              |                                                         | 50-15                                  | 3                           | 8                         | 7½x5½ x7½                        | wal. vinyl         | blk. foam              | 10 pr.                  | 59.95 pr.    | 5" round.   |                                |
| AVID            | 103               | air sus.                            | 10                  | 4½                    | cone          | 1                    | dome         | M,T                                                     | 44-18 ±3                               | 20                          | 500, 3.5k                 | 8/6                              | 15x9¾ x25          | wal. vinyl             | brn. dbl. knt.          | 38           | 185.00      |                                |
|                 | 102               | air sus.                            | 10                  |                       |               | 1                    | dome         | T                                                       | 44-18 ±3                               | 15                          | 2.2k                      | 8/6                              | 15x9¾ x25          | wal. vinyl             | brn. dbl. knt.          | 36           | 145.00      |                                |
|                 | 101               | vented 4th order Chebychev air sus. | 8                   |                       |               | 1½                   | cone         |                                                         | 30-18 ±3                               | 15                          | 2.5k                      | 8/8                              | 13x13 x29          | wal. vinyl             | brn. dbl. knt.          | 40           | 165.00      | 2 side-firing aux. tweeters    |
|                 | 100               | air sus.                            | 8                   |                       |               | 1½                   | cone         | T                                                       | 48-18 ±3                               | 15                          | 2.5k                      | 8/7                              | 12½x8½ x21         | wal. vinyl             | brn. dbl. knt.          | 22           | 100.00      |                                |
|                 | 80                | air sus.                            | 8                   |                       |               | 1½                   | cone         |                                                         | 55-17 ±3.5                             | 8                           | 3k                        | 8/7                              | 12x8½ x19½         | wal. vinyl             | brn. dbl. knt.          | 17           | 80.00       |                                |
|                 | 105               | air sus.                            | 12                  | 3                     | cone          | 1                    | dome         | M,T                                                     | 30-18 ±2.5                             | 25                          | 500, 4k                   | 8/7                              | 20x15 x26¼         | oil wal.               | brown cloth             | 75           | 350.00      | 2 side-firing aux. tweeters.   |
| B·I·C VENTURI   | Formula 1         |                                     | 8                   | 1                     | horn          |                      | dome         |                                                         | 45-17.5                                | 10                          | 1.8k                      | 8/6                              | 11x10 x16½         | vin. wal.              | foam brn.               | 20           | 79.95       |                                |
|                 | Formula 2         |                                     | 8                   | 1                     | horn          | 1½                   | dome         |                                                         | 40-20                                  | 10                          | 1.8k                      | 6/                               | 12x11 ½ x20        | wal. vin.              | foam brn.               | 29           | 125.00      |                                |
|                 | Formula 3         |                                     | 10                  | 1                     | horn          |                      | dome         |                                                         | 35-18                                  | 10                          | 1.8k                      | 8                                | 14x12½ x21         | vin. wal.              | foam brn.               | 38           | 139.95      |                                |
|                 | Formula 4         |                                     | 10                  | 1                     | horn          | 1½                   | dome         |                                                         | 30-20                                  | 10                          | 1.8k                      | 6/                               | 13½x13½ x25        | vin. wal.              | foam brn.               | 44           | 169.95      |                                |
|                 | Formula 5         |                                     | 10                  | 1                     | T. slot       | 1½                   | pz.          |                                                         | 20-30                                  | 10                          | 1.5k                      | 6/                               | 14½x12½ x26        | wal. wal.              | brn. cloth              | 49           | 249.00      |                                |
|                 | Spec II           |                                     | 12                  | 5& 1                  | T. slot       | 1½                   | elec pz      |                                                         | 25-30                                  | 10                          | 10k, 750, 1.5k            | 6/4                              | 16x15 x28          | wal.                   | brn. cloth              | 65           | 329.00      |                                |
|                 | Formula 6 Spec II |                                     | 12                  | 8& 1                  | T. slot       | 1½                   | pz           |                                                         | 30-30                                  | 10                          | 10k, 750, 1.5k, 10k       | 6/4                              | 16x13¼ x41         | wal.                   | cloth brn.              | 81           | 485.00      |                                |
| BML ELECTRONICS | Tracer 102        | trans. line                         | 8                   | 8                     | ABR           | 3½                   | horn         |                                                         | 38-23 ±5                               | 15                          |                           | 6/4                              | 9x14x26            | oil. wal.              | cloth, brn.             | 38           | 259.95      |                                |
|                 | Tracer 103        | trans. line                         | (2) 8               | 5                     | cone          | 3½                   | horn         |                                                         | 38-23 ±3                               | 20                          |                           | 6/4                              | 12x13½ x24         | oil. wal.              | cloth, blk.             | 45           | 399.95      |                                |
|                 | Tracer 104        | trans. line                         | 8, 10, (2)8         | 5                     | cone          | 3½                   | horn         |                                                         | 28-23 ±3                               | 20                          |                           | 6/4                              | 13x15½ x39         | oil. wal.              | blk.                    | 62           | 499.95      |                                |
|                 | Tracer 1001       | trans. line                         | 8                   | 8                     | ABR           | 3½                   | horn         |                                                         | 35-23 +3, -5                           | 20                          |                           | 6/4                              | 20x5x33            | oil. wal. laq. w/ oil. | cloth blk.              | 50           | 299.95      |                                |
|                 | Tracer 2001       | trans. line                         | 8                   | (2) 8                 | ABR           | 3½                   | horn         |                                                         | 28-23 ±3                               | 40                          |                           | 6/4                              | 24x7x64            | oil. wal.              |                         | 140          | 519.95      |                                |
|                 | Tracer SK         | trans. line                         | 8                   | 6                     | ABR           | 3½                   | horn         |                                                         | 50-23 ±5                               | 5                           |                           | 6/4                              | 11½x7 x21½         | oil. wal. vin. wal.    | cloth brn., blk.        | 25           | 119.95      |                                |

| MANUFACTURER   | MODEL | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, ST=Sub, L=woofer) | Anchoir freq. response Hz. to kHz. ±dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum | Dimensions, inches | Finish     | Grille Material? Color? | Weight, lbs. | Price, \$   | NOTES         |
|----------------|-------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|------------|-------------------------|--------------|-------------|---------------|
| BANG & OLUFSEN | M 100 | vented         | 12                  | 2½                    | dome          | 1½                   | dome dome    |                                                          |                                        | 550, 2.5k, 8k               | 4                         | 15½x12 x29%                      | rose-wood          | cloth blk. | 60.5                    | 980.00 pr.   |             |               |
|                | M70   | ac. sus.       | 10                  | 2                     | dome          | 1                    | dome         |                                                          |                                        | 500, 4.5k                   | 4                         | 14x10% x25%                      | rose-wood          | cloth blk. | 55.1                    | 790.00 pr.   |             |               |
|                | S 75  | ac. sus.       | 10                  | 2                     | dome          | 1                    | dome         |                                                          |                                        | 700, 4k                     | 4                         | 12½x10 x23%                      | rose-wood          | cloth blk. | 24.2                    | 485.00 pr.   |             |               |
|                | P 45  | ac. sus.       | (2) 5               |                       |               | 1                    | dome         |                                                          |                                        | 2k                          | 4                         | 13½x5½ x25%                      | rose-wood          | cloth blk. | 17.6                    | 350.00 pr.   |             |               |
|                | S 45  | ac. sus.       | 8                   |                       |               | 1                    | dome         |                                                          |                                        | 2k                          | 4                         | 10½x8 x18%                       | rose-wood          | cloth blk. | 15.4                    | 280.00 pr.   |             |               |
|                | P 30  | ac. sus.       | 6½                  |                       |               | 1                    | dome         |                                                          |                                        | 3k                          | 4                         | 11½x3½ x21%                      | rose-wood          | cloth blk. | 11.0                    | 250.00 pr.   |             |               |
|                | S 35  | ac. sus.       | 8                   |                       |               | 1                    | dome         |                                                          |                                        | 3k                          | 4                         | 10½x7 x19%                       | rose-wood          | cloth blk. | 13.2                    | 258.00 pr.   |             |               |
| BERTAGNI       | D120  | geostatic      | *                   |                       |               |                      |              | M, T                                                     | 35-20 ±3                               | 50                          | 800, 10k                  | 4/ 4.1                           | 20x3% x52%         | alum.      | foam blk.               | 55           | 599.00      | *1700 sq. in. |
|                | D75   | geostatic      | *                   |                       |               |                      |              | M, T                                                     | 36-20 ±3                               | 35                          | 800, 10k                  | 4/4.1                            | 12½x3% x32%        | alum.      | foam blk.               | 35           | 449.00      | *1060 sq. in. |
|                | D60   | geostatic      | *                   |                       |               |                      |              | M, T                                                     | 38-20 ±3                               | 20                          | 800, 10k                  | 8/4.1                            | 20x3% x28%         | alum.      | foam blk.               | 25           | 299.00      | *850 sq. in.  |
|                | U60   | geostatic      | *                   |                       |               |                      |              |                                                          | 38-18 ±3                               | 20                          | 800                       | 8/4.1                            | 17½x3% x25%        | alum.      | foam blk.               | 20           | 199.00      | *850 sq. in.  |
| BETA SOUND     | 045   | slot           | 12                  | 11                    | horn          |                      | horn         | M, T                                                     | 35-18 ±5                               | 20                          | 575, 5k                   | 8/4                              | 17½x14% x25%       | oil wal.   | blk. foam blk.          | 70           | 730.00 pr.  |               |
|                | 050   | slot           | 12                  | 12                    | horn          |                      | horn         | M, T                                                     | 30-18 ±5                               | 20                          | 550, 5k                   | 8/4                              | 17½x17% x41%       | oil wal.   | blk. foam blk.          | 97           | 900.00 pr.  |               |
|                | 100   | slot           | 15                  | 17                    | horn          |                      | horn         | M, T                                                     | 30-18 ±5                               | 40                          | 400, 5k                   | 8/3.9                            | 25½x21% x41%       | oil wal.   | blk. foam blk.          | 157          | 1200.00 pr. |               |

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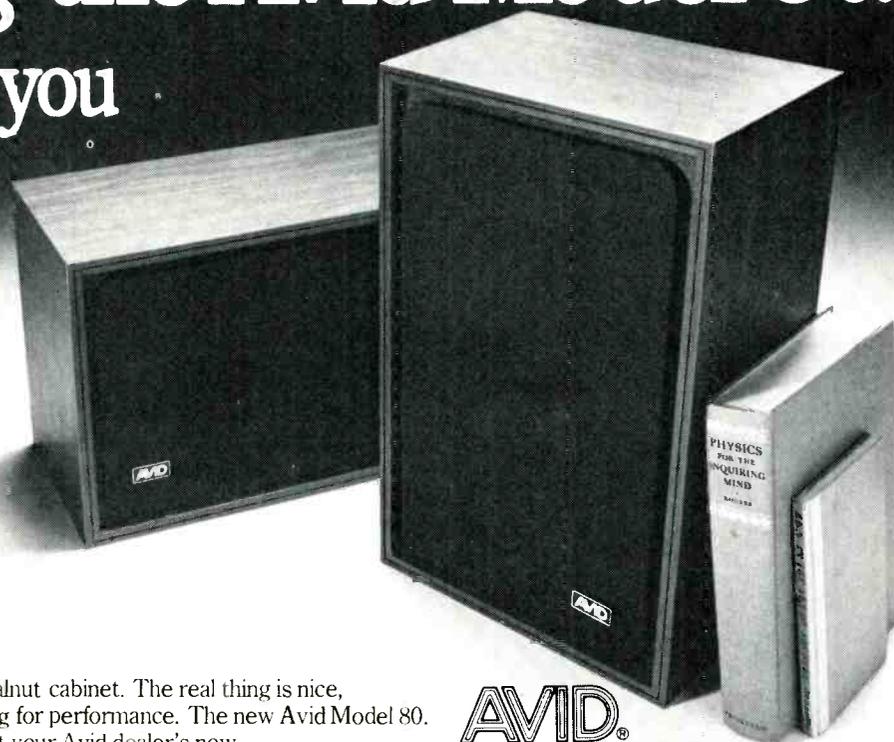
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# Loudspeakers

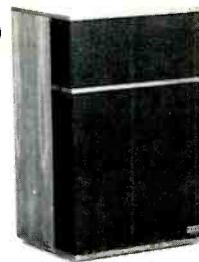


**BML 103**



**Bang & Olufsen M70**

**Beta SST 100**



**Beveridge Three**

128

| MANUFACTURER                        | MODEL             | Enclosure type          | Woofer dia., inches |          |           | Midrange dia., inches |      | Tweeter dia., inches |     | Level controls (M=midrange, T=tweeter, ST=Super tweeter) | Alnico/hoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz        | Impedance, ohms; Nominal/minimum | Dimensions, inches           | Finish | Grille Material? Color? | Weight, lbs.                       | Price, \$                                                                      | NOTES |
|-------------------------------------|-------------------|-------------------------|---------------------|----------|-----------|-----------------------|------|----------------------|-----|----------------------------------------------------------|-------------------------------------------|-----------------------------|----------------------------------|----------------------------------|------------------------------|--------|-------------------------|------------------------------------|--------------------------------------------------------------------------------|-------|
|                                     |                   |                         |                     |          |           |                       |      |                      |     |                                                          |                                           |                             |                                  |                                  |                              |        |                         |                                    |                                                                                |       |
| BEVERIDGE                           | Two               | lens es                 |                     |          |           |                       |      |                      | no  | 40-15 ±2                                                 |                                           |                             |                                  |                                  |                              |        |                         |                                    |                                                                                |       |
|                                     | TwoSW             | lens es                 |                     |          |           |                       |      |                      | yes | 30-15 ±2                                                 |                                           | 70                          | 24x15<br>x78<br>24x15<br>x78     | oil<br>wal.<br>oil<br>wal.       | foam<br>blk.<br>foam<br>blk. |        | 95                      | 4000.00<br>pr.*<br>5200.00<br>pr.* | *w/amplifiers<br>*w/amplifiers & 2<br>sub-woofers<br>included<br>*w/amplifiers |       |
|                                     | Three             | lens es                 |                     |          |           |                       |      |                      | no  | 27-15                                                    |                                           | none                        | 36x24<br>x108                    | studio<br>grey                   | foam<br>blk.                 |        | 170                     | 10000.00<br>pr.*                   |                                                                                |       |
| BOLIVAR                             | 64                | ducted<br>port          | 10                  | 5        | cone      | 2                     | cone | M,T                  |     |                                                          | 10                                        | 800,<br>3k                  | 14x12½<br>x26%<br>12½x10%<br>x23 | var.                             | var.                         |        | 44                      | 150.00                             |                                                                                |       |
|                                     | 18                | ducted<br>port          | 8                   | 5        | cone      | 2                     | cone | M,T                  |     |                                                          | 10                                        | 1000,<br>3k                 | 12½x10%<br>x23                   | var.                             | var.                         |        | 34                      | 114.00                             |                                                                                |       |
|                                     | 125               | ducted<br>port          | 8                   |          | cone      | 2                     | cone |                      |     |                                                          | 10                                        | 2k                          | 12½x10%<br>x23                   | var.                             | var.                         |        | 31                      | 90.00                              |                                                                                |       |
| BOSE                                | 901-III*          | ac. matrix              |                     |          | (9)<br>4½ |                       |      |                      |     |                                                          | 10                                        |                             | 12½x13<br>x21                    | wal.                             | cloth<br>brn.                |        | 35                      | 765.00<br>pr.                      | W/equalizer.<br>*Direct/<br>reflecting                                         |       |
|                                     | 601*              | ported                  | (2)<br>8            |          | (4)<br>3  |                       |      |                      |     |                                                          | 15                                        | 2k                          | 25½x15<br>x13                    | wal.                             | cloth<br>brn.                |        | 36                      | 558.00<br>pr.                      |                                                                                |       |
|                                     | 501*              | ac. sus.                | 10                  |          | (2)<br>3½ |                       |      |                      |     |                                                          | 15                                        | 1.5k                        | 14x14%<br>x24                    | vinyl<br>wal.                    | cloth<br>brn.                |        | 42                      | 360.00<br>pr.                      |                                                                                |       |
|                                     | 301*              | ported                  | 8                   |          | 3<br>3    |                       |      |                      |     |                                                          | 10                                        | 1.2&<br>3k                  | 14½x9%<br>x10½                   | vinyl<br>wal.                    | foam<br>blk/<br>maroon       |        | 18                      | 218.00<br>pr.                      |                                                                                |       |
| BOZAK                               | 8-3108/<br>B-410  | inf. baf.               | (4)<br>12           | (2)<br>6 | cone      | (8)<br>1%             | cone |                      |     | 28-20                                                    | 60                                        | 400,<br>2.5k                | 36x19<br>x52                     | wal.                             | cloth<br>brn. or<br>wh.      |        | 225                     | 1150.00<br>1250.00                 |                                                                                |       |
|                                     | B-4000/<br>B-4005 | inf. baf.               | (2)<br>12           | 6        | cone      | (8)<br>1%             | cone |                      |     | 35-20                                                    | 50                                        | 400,<br>2.5k                | 26x16<br>x44                     | wal.                             | cloth<br>brn.,<br>wh.        |        | 165                     | 669.50                             | 8-4055 lobby<br>\$795.                                                         |       |
|                                     | B-407A            | inf. baf.               | (4)<br>8            |          |           | (8)<br>1%             | cone | T                    |     | 30-20                                                    | 75                                        | 2.5k                        | 18x16<br>x41                     | wal.                             | cloth<br>brn.                |        | 100                     | 549.50                             |                                                                                |       |
|                                     | B-501             | inf. baf.               | 12                  | 6        | cone      | (3)<br>1%             | cone | T                    |     | 40-20                                                    | 20                                        | 400,<br>2.5k                | 27x16<br>x30                     | wal.                             | cloth<br>brn.                |        | 90                      | 379.50                             |                                                                                |       |
|                                     | B-1401            | inf. baf.               | 12                  | 6        | cone      | (2)<br>1%             | cone | T                    |     | 40-20                                                    | 15                                        | 800,<br>2.5k                | 18x13<br>x25                     | wal.                             | cloth<br>brn.                |        | 65                      | 289.50                             |                                                                                |       |
|                                     | B-1301            | inf. baf.               | 12                  | 4        | cone      | 1%<br>1%              | cone | T                    |     | 40-20                                                    | 15                                        | 1200,<br>3.6k               | 14x11<br>x23                     | wal.                             | cloth<br>brn.                |        | 40                      | 179.50                             |                                                                                |       |
|                                     | B-1201            | inf. baf.               | 8                   |          |           | 1%<br>1%              | cone |                      |     | 45-20                                                    | 12                                        | 2.5k                        | 20x10<br>x12                     | wal.                             | cloth<br>brn.                |        | 30                      | 109.50                             |                                                                                |       |
|                                     | B-1002            | inf. baf.               | 8                   |          |           | 1%                    | cone |                      |     | 50-20                                                    | 12                                        | 2.5k                        | 18x12<br>x21                     | beige<br>or wh.                  | gold<br>wire<br>mesh         |        | 25                      | 127.50                             | Outdoor<br>weather-<br>proof                                                   |       |
| BURHOE<br>ACOUSTICS                 | Crimson           | tuned<br>port           | 4                   |          |           | 1.5                   | dome |                      |     | 60-16 ±3                                                 | 15                                        | 3k                          | 12½x8%<br>x7%                    | vinyl                            | foam<br>brn.                 |        | 10                      | 60.00                              |                                                                                |       |
|                                     | Green             | tuned<br>port           | 8                   |          |           | 1.5                   | dome | M                    |     | 45-16 ±3                                                 | 10                                        | 1.5k                        | 18½x11½<br>x10                   | vinyl                            | foam<br>brn.                 |        | 25                      | 120.00                             |                                                                                |       |
|                                     | White             | tuned<br>port           | 8                   |          |           | 1.1                   | dome | T                    |     | 40-16 ±3                                                 | 25                                        | 1.5k                        | 22x13%<br>x10                    | oil<br>wal.                      | foam<br>brn.                 |        | 35                      | 140.00                             |                                                                                |       |
|                                     | Lt. Blue          | tuned<br>port           | 10                  |          |           | 1.5                   | dome | M                    |     | 35-16 ±3                                                 | 20                                        | 1.5k                        | 24½x14%<br>x10%                  | vinyl                            | foam<br>brn.                 |        | 45                      | 160.00                             |                                                                                |       |
|                                     | Blue              | tuned<br>port           | 10                  |          |           | 1.1<br>1.5            | dome | M,T                  |     | 35-18 ±2                                                 | 25                                        | 1k<br>2k                    | 24½x14%<br>x10%                  | oil<br>wal.                      | foam<br>brn.                 |        | 50                      | 250.00                             |                                                                                |       |
|                                     | Silver            | tuned<br>port           | 10                  |          |           | 1.1<br>1.5            | dome | T                    |     | 30-18 ±2                                                 | 50                                        | 1.2&<br>5k                  | 33½x23<br>x12½                   | wal./<br>chr.                    | cloth<br>blk/brn             |        | 80                      | 500.00                             |                                                                                |       |
| CSI                                 | MDM-4             | ported                  | (2)<br>6%           |          |           | 2%                    |      |                      |     | 60-17 ±3                                                 | 30                                        | 1.5k                        | 19x13<br>x9%                     | rose                             | cloth<br>brn.                |        | 25                      |                                    |                                                                                |       |
|                                     | CSM-4             | *time-<br>align<br>(TM) | (2)<br>6%           |          |           | 1%                    |      |                      |     | 48-18 ±3                                                 | 30                                        | 1.2k                        | 22x15<br>x11%                    | rose                             | cloth<br>brn.                |        | 32                      |                                    | *Ported                                                                        |       |
|                                     | CSM-2             | *time-<br>align<br>(TM) | (2)<br>6%           | 2%       |           | 1                     |      |                      |     | 32-20 ±3                                                 | 30                                        | 1.5k,<br>10k                | 24x16<br>x12%                    | rose                             | cloth<br>brn.                |        | 50                      |                                    | *10" passive<br>rad.                                                           |       |
| CAMBRIDGE/<br>CYBERVOX<br>(HAMMOND) | TL 200            | trans.<br>line          | 10                  | 4        | cone      | (2)<br>1              | dome |                      |     | 25-30                                                    | 15                                        | 400,<br>3k,<br>10k          | 13x17%<br>x41%                   | teak                             | cloth<br>blk.                |        | 88                      | 500.00                             |                                                                                |       |
|                                     | TL 100            | trans.<br>line          | 10                  | 4        | cone      | 1                     | dome |                      |     |                                                          |                                           | 400,<br>4k                  | 13x12%<br>x31%                   | teak                             | cloth<br>blk.                |        | 60                      | 400.00                             |                                                                                |       |

# B-I-C VENTURI. The art of being way ahead without being way out.

The speaker landscape is dotted with esoteric designs that produce marginal improvements at very high cost.

We refer here to the multi-directional-dimensionally-imaging-time-phase-correcting approach to being different without being really advanced.

At B-I-C, we believe that the finer art is being way ahead *without* being way out.

Our patented application of the venturi principle to speaker design ushered in the high-efficiency era, with many 'leaders' following our lead.

And our introduction of the System Monitor technology redefined the loudspeaker's role, giving it the ability to make the rest of a component system perform better.

Each represented a fundamental advancement in speaker design, *not* reserved for the affluent few.

This year, the addition of new Formula 3 and Formula 6 models underscores that approach. Now there are seven B-I-C VENTURI Formulas, from a 2-way bookshelf to 4-way, monitor-equipped tower.

We offer them as the best examples of the art.



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Our new Formula 6 Spec II fills a size and design (and price) slot between the 5 and 7

The patented B-I-C VENTURI coupled path. Its multiplier effect produces bass energy 140 times greater (and substantially purer) than the same signal measured directly at the woofer cone.

The brains of the system; the monitor control panel with Amplifier Clipping Indicator, Speaker Overload section and Dynamic Tonal Balance Compensation (automatic and manual).

The BICONE<sup>®</sup> T-Slot Transducer that expands sound dispersal in treble and upper midrange to 180 degrees. Lower midrange and bass cones mount coaxially, achieving a large (yet compact) 4-way system.



**B-I-C VENTURI SPEAKER SYSTEMS**  
TOMORROW'S TECHNOLOGY TODAY

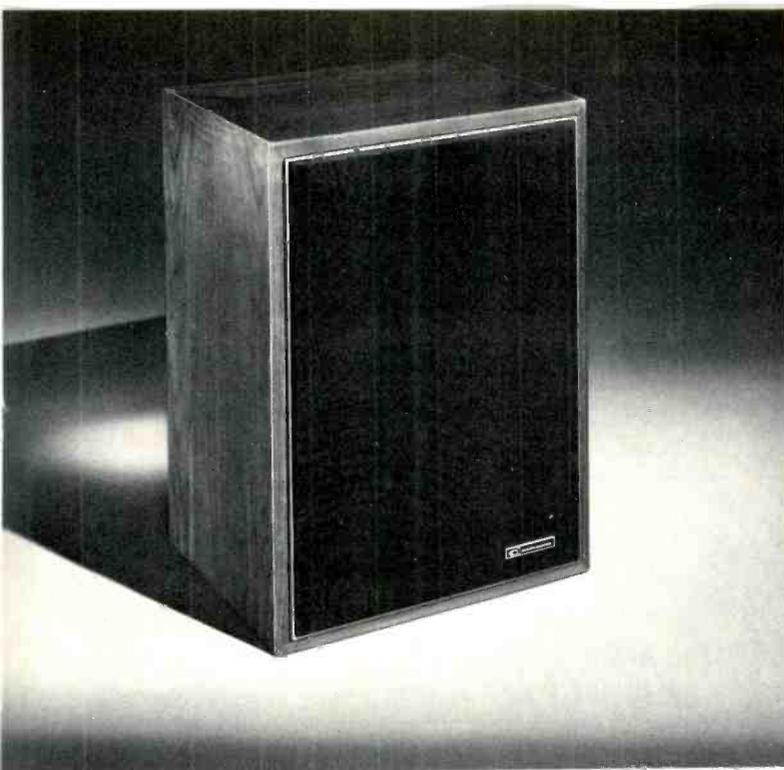
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# Loudspeakers

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| MANUFACTURER | MODEL     | Enclosure type | Woofer dia., inches |        |      | Midrange dia., inches |          | Tweeter dia., inches |            | Level controls (M=midrange; T=tweeter; ST=Super Tweeter) | Anechoic freq. response Hz. to kHz. ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish | Grille Material? Color? | Weight, lbs.                                            | Price, \$ | NOTES |
|--------------|-----------|----------------|---------------------|--------|------|-----------------------|----------|----------------------|------------|----------------------------------------------------------|------------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|--------|-------------------------|---------------------------------------------------------|-----------|-------|
|              |           |                | 12                  | 5½     | cone | 2x5                   | pz.      | M,T                  | 20-30 ±5   |                                                          |                                          |                             |                           |                                  |                    |        |                         |                                                         |           |       |
| CANNON       | 123T      | pas. rad.      | 12                  | 5½     | cone | 2x5                   | pz.      | M,T                  | 20-30 ±5   | 18                                                       | 400, 3k                                  | 8/6                         | 14x14x39                  | wal. vinyl                       | cloth brn.         | 65     | 399.95                  |                                                         |           |       |
|              | 1230      | pas. rad.      | 12                  | 5½     | cone | 2x5                   | pz.      | M,T                  | 25-30 ±5   | 15                                                       | 400, 3k                                  | 8/6                         | 14x14x25                  | wal. vinyl                       | cloth brn.         | 50     | 299.95                  |                                                         |           |       |
|              | 1030      | pas. rad.      | 10                  | 5½     | cone | 2x5                   | pz.      | M,T                  | 25-25 ±5   | 12                                                       | 400, 3k                                  | 8/6                         | 14x14x25                  | wal. vinyl                       | cloth brn.         | 45     | 199.95                  |                                                         |           |       |
|              | 1020      | pas. rad.      | 10                  | -      | -    | 2x5                   | pz.      | T                    | 30-20 ±5   | 10                                                       | 3k                                       | 8/6                         | 12¼x13½x22                | wal. vinyl                       | cloth brn.         | 35     | 179.95                  |                                                         |           |       |
| CELESTION    | Ditton 66 | pass. rad.     | 12                  | 2      | dome | 1                     | dome     |                      | 50-25 ±4   | 10                                                       | 500, 5k                                  | 8/4                         | 40x15x11½                 | wal. teak                        | cloth blk.         | 66     | 499.50                  |                                                         |           |       |
|              | Ditton 25 | pas. rad.      | 12                  | (2) 1¼ | dome | 1                     | dome     |                      | 60-25 ±4   | 10                                                       | 2& 9k                                    | 8/4                         | 32x14x11                  | wal. teak                        | cloth blk.         | 41.8   | 349.50                  |                                                         |           |       |
|              | Ditton 44 | ac. sus.       | 12                  | 6      | cone | 1                     | dome     |                      | 60-25 ±4   | 10                                                       | 500, 5k                                  | 8/4                         | 30x14x10                  | wal. teak                        | blk. bak.          | 44.9   | 289.50                  |                                                         |           |       |
|              | Ditton 33 | ac. sus.       | 10                  | 5      | cone | 1                     | dome     |                      | 60-25 ±5   | 10                                                       | 500, 2.5k                                | 8/4                         | 24x14x10½                 | wal. teak                        | cloth blk.         | 33.7   | 239.50                  |                                                         |           |       |
|              | Ditton 15 | pass. rad.     | 8                   |        |      | 1¼                    | dome     |                      | 75-14 ±5   | 10                                                       | 2.5k                                     | 8/4                         | 21x9½x9¼                  | wal. teak                        | cloth blk.         | 16.7   | 159.50                  |                                                         |           |       |
|              | UL6       | pass. rad.     | 6                   |        |      | 1                     | dome     |                      | 80-28 ±3.5 | 20                                                       | 2.5k                                     | 8/4                         | 11½x16x8¾                 | wal. teak                        | cloth blk.         | 17¼    | 179.50                  |                                                         |           |       |
| CERWIN-VEGA  | S-1       | bass ref.      | 12                  | 6      | cone | 1                     | dhorm    | M,T                  | 28-20 ±4   | 5                                                        | 300, 4k                                  | 8/4                         | 14½x14x25                 | wal. rose                        | cloth brn.         |        | 700.00                  |                                                         |           |       |
|              | S-2       | bass ref.      | 15                  | 6      | cone | 1                     | horn     | M,T                  | 28-17 ±3   | 5                                                        | 200, 4k                                  | 8/4                         | 18½x17x29½                | wal.                             | cloth brn.         |        | pr. 600.00              |                                                         |           |       |
|              | 212       | bass ref.      | 12                  |        |      | 1                     | horn     | T                    | 35-17 ±4   | 5                                                        | 2k                                       | 8/4                         | 15½x15x26                 | oil. wal.                        | cloth brn.         |        | 250.00                  |                                                         |           |       |
|              | 312       | bass ref.      | 12                  | 6      | cone | 1                     | horn     | M,T                  | 35-17 ±4   | 5                                                        | 300, 3.5k                                | 8/4                         | 15½x15x26                 | oil. wal.                        | cloth brn.         |        | 300.00                  |                                                         |           |       |
|              | 317       | bass ref.      | 15                  | 6      | cone | 1                     | dhorm    | M,T                  | 38-20 ±4   | 5                                                        | 300, 3.5k                                | 8/4                         | 18½x17x29½                | oil. wal.                        | cloth brn.         |        | 400.00                  |                                                         |           |       |
|              | 12TR      | bass ref.      | 12                  | 6      | cone | 1                     | dhorm    | M,T                  | 30-20 ±3   | 5                                                        | 250, 4k                                  | 8/4                         | 13½x13½x40                | oil. wal.                        | cloth blk.         | 75     | 350.00                  |                                                         |           |       |
|              | 15T       | bass ref.      | 15                  | 8      | cone | 1                     | dhorm    | M,T                  | 25-20 ±4   | 5                                                        | 250, 4k                                  | 8/4                         | 16½x16½x40                | oil. wal.                        | cloth blk.         | 95     | 600.00                  |                                                         |           |       |
|              | R-123     | bass ref.      | 12                  | 6      | cone | 1                     | dhorm    | M,T                  | 38-20 ±4   | 5                                                        | 500, 5k                                  | 8/4                         | 14½x11½x25                | oil. wal.                        | cloth var.         |        | 279.95                  |                                                         |           |       |
|              | R-12      | bass ref.      | 12                  |        |      | 1                     | dhorm    | T                    | 38-20 ±4   | 5                                                        | 2k                                       | 8/4                         | 14½x11½x25                | oil. wal.                        | cloth var.         |        | 199.95                  |                                                         |           |       |
|              | R-10      | bass ref.      | 10                  |        |      | 1                     | dhorm    | T                    | 38-20 ±3   | 5                                                        | 1.8k                                     | 8/4                         | 13x11½x24                 | oil. wal.                        | cloth var.         |        | 159.95                  |                                                         |           |       |
|              | W-12      | bass ref.      | 12                  |        |      | 1                     | dhorm    | T                    | 42-20 ±4   | 5                                                        | 2.5k                                     | 8/6                         |                           | oil. wal.                        | foam blk.          |        | 149.95                  |                                                         |           |       |
|              | W-10      | bass ref.      | 10                  |        |      | 1                     | dhorm    | T                    | 35-20 ±4   | 5                                                        | 2.5k                                     | 8/6                         |                           | oil. wal.                        | foam blk.          |        | 119.95                  |                                                         |           |       |
|              | H-15      | bass ref.      | 15                  |        |      | 1                     | (2) horn | T                    | 32-16 ±5   | 5                                                        | 2.5k                                     | 8/5                         |                           | duro-tex                         | foam beige         |        | 199.95                  |                                                         |           |       |
|              | H-12      | bass ref.      | 12                  |        |      | 1                     | dhorm    | T                    | 42-20 ±4   | 5                                                        | 2.5k                                     | 8/6                         |                           | duro-tex                         | foam beige         |        | 119.95                  |                                                         |           |       |
| H-10         | bass ref. | 10             |                     |        | 1    | dhorm                 | T        | 45-20 ±4             | 5          | 2.5k                                                     | 8/6                                      |                             | duro-tex                  | foam beige                       |                    | 99.95  |                         |                                                         |           |       |
| CIZEK        | Model I   | ac. sus.       | 10                  |        |      | 1                     | dome     | T                    | 35-18 ±1½  | 15                                                       | 1.5k                                     | 7.25/4.25                   | 25x15½x9½                 | wal.                             | foam blk.          | 46     | 396.00                  |                                                         |           |       |
|              | Model II  | ac. sus.       | 8                   |        |      | 1                     | dome     | T                    | 38-17 ±2   | 15                                                       | 1.5k                                     | 7.25/4.25                   | 21x13x9                   | oak vinyl                        | foam brn.          | 37     | pr. 268.00              |                                                         |           |       |
| CONCEPT      | CE-0      | pas. rad.      | 12                  |        | *    | *                     | W,M T    |                      | 27-23 ±2   | 30                                                       | 1.2k                                     | 6                           | 18x15½x45                 | oil. wal.                        | cloth brn.         | 105    | 595.00                  | *Hail air motion trans. midrange & tweeter; 25 sq. in.  |           |       |
|              | CE-1      | pas. rad.      | 10                  |        | *    | *                     | M,T      |                      | 30-23 ±3   | 20                                                       | 1.4k                                     | 6                           | 15½x15x40                 | oil. wal.                        | cloth brn.         | 91     | 445.00                  | *Hail air motion trans. midrange & tweeter; 20¼ sq. in. |           |       |
|              | CE-2      | pas. rad.      | 10                  |        | *    | *                     | T        |                      | 35-23 ±3   | 20                                                       | 1.4k                                     | 6                           | 14½x14½x38                | oil. wal.                        | cloth brn.         | 83½    | 345.00                  | *As above                                               |           |       |
|              | CE-3      | pas. rad.      | 10                  |        | *    | *                     | T        |                      | 40-23 ±3   | 20                                                       | 1.4k                                     | 6                           | 14x14x25                  | oil. wal.                        | cloth brn.         | 52     | 295.00                  | *As above                                               |           |       |
| CRAIG        | 5701      |                | 10                  |        |      | 2                     | cone     |                      | 40-25      | 25                                                       | 3.5k                                     | 8                           | 16½x13½x24                | vin.                             | foam brn.          | 36½    | 99.95                   |                                                         |           |       |
|              | 5702      |                | 12                  | 4¼     | cone | 2                     | cone     | M,T                  | 25-20 ±5   | 30                                                       | 1& 8k                                    | 8                           | 19½x14½x27                | vin.                             | foam brn.          | 46     | pr. 139.95              |                                                         |           |       |
|              | 5704      |                | (2) 8               |        |      | 3                     | cone     |                      | 50-16      | 50                                                       | 1.2k                                     | 8                           | 13x11½x22                 | vin.                             | cloth brn.         | 25     | pr. 79.95               |                                                         |           |       |
|              | H700      |                | 8                   | 6%     |      |                       |          |                      | 110-13     | 5                                                        |                                          | 8                           | 10½x4¼x15                 | vin.                             | cloth brn.         | 9      | pr. 29.95               |                                                         |           |       |
|              | H720      |                | 8                   |        |      |                       |          |                      | 85-13      | 8                                                        |                                          | 8                           | 12x6½x22                  | vin.                             | cloth brn.         | 12     | pr. 49.95               |                                                         |           |       |
|              | 9431      |                | 8                   |        |      | 3                     | dome     |                      | 75-15      | 8                                                        |                                          | 8                           | 12x8x22                   | vin.                             | foam brn.          | 14¼    | pr. 59.95               |                                                         |           |       |



## The Dahlquist System For Bass Reinforcement

Many of today's state of the art loudspeakers owe their fine performance to the care the speaker designer took in matching and blending the transient characteristics of the drivers in the system as a whole. Often, he was forced to make some difficult decisions. For example, in determining the physical requirements for his woofer, he may have chosen between: 1) achieving very low bass response, at the sacrifice of upper bass definition, or; 2) sacrificing the extreme low response by using a lighter, faster-moving cone in order to achieve smooth continuity between bass and midrange frequencies. The last is, of course, the better choice—the smoothest possible transitions throughout the specified frequency range. This is a quality that critical listeners appreciate.

However delighted we may be with the overall performance of our favorite speakers—be they Dahlquist DQ-10's, Quads, Magnepans, ADS, etc.—we sometimes miss the very low bass detail we know must be in our recordings. The practical solution is a supplementary bass reproducer designed only for that purpose. In this way we can enjoy the benefits of both design approaches. The Dahlquist DQ-1W Low-Bass Module was engineered specifically for optimum performance at the lower recorded frequencies. Its operation is based on a critically damped air-suspension system since, correctly executed, this technique offers superior performance in transient behavior and distortion.

An external crossover is required for its operation. The DQ-MX1 passive crossover is the most economical method to use, and provides excellent results. For the no-holds-barred system, the DQ-LP1 electronic filter permits bi-amplified operation of bass modules either in stereo or mixed L + R modes. Visit your Dahlquist dealer, or write for literature about these fine products. They will add substantially to the quality of your sound.

# DAHLQUIST

27 Hanse Ave., Freeport, N.Y. 11520

Enter No. 22 on Reader Service Card

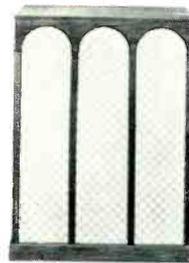
# Loudspeakers



**Bolivar 125**



**Bose 601**



**Bozak B-410**



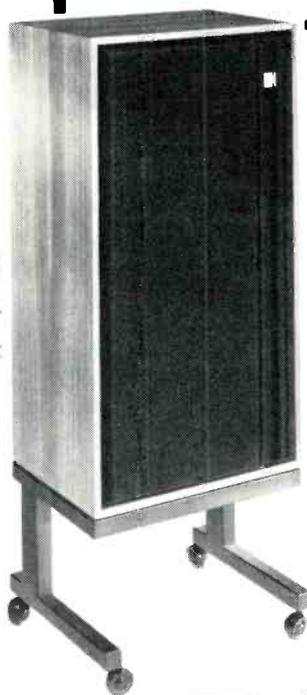
**Cannon 1230 T**

| MANUFACTURER     | MODEL           | Enclosure type              | Woofer dia., inches |      | Midrange dia., inches |        | Midrange type     |         | Tweeter dia., inches |      | Tweeter type       |            | Level controls (M=midrange, T=tweeter, S=Super tweeter) |               | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power |                                                               | Crossover frequencies, Hz                                                  | Impedance, ohms, Nominal/minimum |  | Dimensions, inches |  | Finish | Grille Material? Colour? | Weight, lbs. | Price, \$ | NOTES |
|------------------|-----------------|-----------------------------|---------------------|------|-----------------------|--------|-------------------|---------|----------------------|------|--------------------|------------|---------------------------------------------------------|---------------|----------------------------------------|-----------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------|--|--------------------|--|--------|--------------------------|--------------|-----------|-------|
|                  |                 |                             |                     |      |                       |        |                   |         |                      |      |                    |            |                                                         |               |                                        |                             |                                                               |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| CRISMAN          | International   | ac. sus.                    | 12                  | 2    | dome                  | 1      | dome              | M, T    | 20-20 ±3             | 35   | 800, 4.5k          | 8          | trapezoid                                               | oil wal.      | cloth brn.                             | 55                          | 429.00                                                        | Coherent phased array                                                      |                                  |  |                    |  |        |                          |              |           |       |
|                  | Diplomat        | bass ref.                   | 12                  | 5    | cone                  | 1      | dome              | M, T    | 20-20 ±3             | 20   | 750, 4.5k          | 8          | trapezoid                                               | oil wal.      | cloth brn.                             | 45                          | 329.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Alliance        | ac. sus.                    | 10                  | 5    | cone                  | 1      | dome              | M, T    | 35-20 ±3             | 20   | 750, 4.5k          | 8          | trapezoid                                               | oil wal.      | cloth brn.                             | 40                          | 229.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Dark Star 21M   | bass ref.                   | 8                   | 5    | cone                  | 3      | pz.               | none    | 40-20 ±5             | 15   | 750, 3.5k          | 8          | 11½x9 x19                                               | blk. laquer   | foam blk.                              | 17                          | 109.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Dark Star 48    | bass ref.                   | 12                  | 5    | cone                  | 3      | pz.               | none    | 30-20 ±3             | 20   | 750, 3.5k          | 8          | 25½x11½ x14                                             | blk. laquer   | foam blk.                              | 40                          | 169.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Dark Star 79    | bass ref.                   | 15                  | 5    | cone                  | 3      | pz.               | none    | 20-20 ±3             | 25   | 750, 3.5k          | 8          | 17½x13½ x29                                             | blk. laquer   | foam blk.                              | 50                          | 229.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Dark Star 21    | bass ref.                   | 8                   | —    | —                     | 3      | pz.               | none    | 40-20 ±5             | 10   | 750, 3.5k          | 8          | 11½x9 x19                                               | blk. laquer   | foam blk.                              | 17                          | 89.00                                                         |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| DAHLQUIST        | DQ-10           | phased array                | 10*                 | 2    | dome*                 | 3/4    | dome*             | T       | 37-27 ±3             | 60   | 400, 1k, 6k, 12.5k | 8/5.5      | 30.5x9 x31.5                                            | wal.          | blk. or wh.                            | 55                          | 395.00                                                        | 5 way with pz super-tweeter & 5 in. mid-woofer. With solid corner loading. |                                  |  |                    |  |        |                          |              |           |       |
|                  | DQ-1W Subwoofer | ac. sus.                    | 13                  |      |                       |        |                   |         | 20-100               | 60   |                    | 8          | 18.5x15 x26                                             | oil wal.      | black                                  | 70                          | 275.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| DAYTON WRIGHT    | DS1             | ac. sus.                    | 10 (2) 7            | 4    | cone                  | (2) 1  | dome              | W, M, T | 25-25 ±4             | 20   | 150, 400, 5k, 16k  | 4/3        | 21x11½ x46                                              | wal.          | cloth blk.                             | 76                          | 1120.00 pr.                                                   |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | XG-8 Mk3        | E.S.                        |                     |      |                       | 1½     | pz.               |         | 32-25 ±4             | 40   |                    | 8/4        | 39x41½ x9½                                              | oak wal.      | cloth                                  | 95                          | 2995.00 pr.                                                   |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| DECCA (ROCELCO)  | London Ribbon   | horn tweeter                |                     |      |                       |        |                   |         | 1000-25              | 1000 | 8                  | 12½x9 x7½  | blk.                                                    |               | 9                                      | 139.50                      | 1000 Hz cross-over \$25.00 ea. 2500 Hz cross-over \$21.00 ea. |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | DK30 Ribbon     | horn tweeter w/lens         |                     |      |                       |        |                   |         | 2500-25              | 2500 | 8                  | 9¼x4¼ x7½  | gold w/blu. lens                                        |               | 6                                      | 119.50 with lens.           |                                                               |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| DESIGN ACOUSTICS | D-1             | vented                      | 8                   |      |                       | 1½     | cone              |         | 50-15 ±3.5           | 15   | 1.5k               | 6          | 11x8 x20                                                | alum. or wal. | cloth blk.                             | 19                          | 109.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | D-2             | vented                      | 10                  |      |                       | 1      | dome              | T       | 40-18 ±3.5           | 20   | 1.5k               | 8          | 12½x12½ x34                                             | oil wal.      | cloth blk.                             | 35                          | 179.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | D-4             | ac. sus.                    | 10                  | 5    | cone                  | (3) 2½ | cone              | W T     | 40-15 ±3.0           | 25   | 800, 2k            | 8          | 9½x17½ x38                                              | oil wal.      | cloth brn.                             | 60                          | 239.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | D-6             | vented                      | 10                  | 5    | cone                  | (5) 2½ | cone              | W T     | 30-15 ±2.0           | 20   | 800, 2k            | 8          | 16½x13¾ x24½                                            | oil wal.      | cloth blk/brn                          | 50                          | 318.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | D-8             | pas. rad.                   | (2) 10              | 5    | cone                  |        | dome 3 cone piezo | W M T   | 30-17 ±2.0           | 15   | 600, 1.5k          | 8          | 16½x12¾ x44                                             | oil wal.      | cloth blk.                             | 70                          | 485.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| DYNACO           | A-25            | aperiodic vented            | 10                  | —    | —                     | 1½     | dome              | M, T    | 45-15 +5             | 20   | 1.5k               | 8          | 11½x20 x10                                              | oil wal.      | cloth brn.                             | 24                          | 99.00                                                         |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | LMS- 2          | phase inversion ducted port | 8                   | —    | —                     | 1      | dome              | T       | 38-20 ±3             | 5    | 2.9k               | 8          | 12x9½ x20½                                              | oil wal.      | foam brn.                              | 25                          | 129.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | 3               | ducted port                 | 10                  | —    | —                     | 1      | dome              | T       | 35-20 ±3             | 7    | 2k                 | 8          | 13x11½ x22½                                             | oil wal.      | foam brn.                              | 36                          | 169.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | 5               | ducted port                 | 10                  | 5    | cone                  | 1      | dome              | M, T    | 30-20 ±3             | 9    | 900, 4.5k          | 8          | 15x12 x25                                               | oil wal.      | foam brn.                              | 48                          | 219.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | 6               | ducted port                 | 12                  | 5    | cone                  | (2) 1  | dome              | M, T    | 20-20 ±3             | 9    | 900, 4.5k          | 8          | 16x15 x27                                               | oil wal.      | foam brn.                              | 58                          | 299.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | 7               | ducted port                 | 15                  | 5    | cone                  | (2) 1  | dome              | M, T    | 20-20 ±3             | 10   | 900, 4.5k          | 8          | 27½x18 x29                                              | oil wal.      | foam brn.                              | 100                         | 499.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Phase III MD-60 | phase coherent              | 10                  | 4%   | cone                  | 1      | dome              | M, T    | 32-33                |      | 1k 5k              | 8          | 13¼x9¼ x36                                              | oil wal.      | cloth brn.                             |                             | 299.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
|                  | Phase III MD-80 | phase coherent              | 13                  | 4%   | cone                  | 1      | dome              | M, T    | 30-22                |      | 800, 4k            | 8          | 15x11½ x42½                                             | oil wal.      | knit brn.                              | 62                          | 399.00                                                        |                                                                            |                                  |  |                    |  |        |                          |              |           |       |
| D-20XL           | ducted port     | 8                           |                     | cone | 2                     | cone   |                   |         | 12                   | 2k   | 8                  | 18x10½ x8½ | oil wal.                                                | cloth blk.    | 17                                     | 74.00                       |                                                               |                                                                            |                                  |  |                    |  |        |                          |              |           |       |

| MANUFACTURER     | MODEL | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type   | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, S=Sub, W=woofer) | Anchorage freq. response Hz to kHz, ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches       | Finish                | Grille Material? Color? | Weight, lbs. | Price, \$  | NOTES                                                          |
|------------------|-------|----------------|---------------------|-----------------------|-----------------|----------------------|--------------|---------------------------------------------------------|------------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------------|-----------------------|-------------------------|--------------|------------|----------------------------------------------------------------|
| EPI              | 70    | ac. sus.       | 6                   |                       | 1               | air spring           |              |                                                         | 60-20 ±3                                 | 10                          | 1.8k                      | 8/4                              | 10½x7½<br>x16<br>11x9x21 | oil. wal.             | black foam blk.         | 17.5         | 140.00 pr. | Optional vinyl S200.                                           |
|                  | 100   | ac. sus.       | 8                   |                       | 1               | air spring           |              |                                                         | 48-20 ±3                                 | 12                          | 1.8k                      | 8/4                              | 12x8½<br>x20½            | oil. wal.             | cloth black foam blk.   | 25           | 218.00 pr. |                                                                |
|                  | 101   | ac. sus.       | 8                   |                       | 1               | air spring           | T            |                                                         | 96-20 ±3                                 | 12                          | 1.8k                      | 8/4                              | 12x8½<br>x20½            | oil. wal.             | cloth black foam blk.   | 27           | 240.00 pr. |                                                                |
|                  | 120   | ac. sus.       | 10                  |                       | 1               | air spring           | T            |                                                         | 38-20 ±3                                 | 25                          | 1.8k                      | 8/4                              | 15x12½<br>x25            | oil. wal.             | foam blk. foam blk.     | 47           | 280.00 pr. |                                                                |
|                  | 200   | pas. rad.      | 8                   |                       | 1               | air spring           | T            |                                                         | 34-20 ±3                                 | 15                          | 1.8k                      | 4                                | 17x11<br>x30½            | oil. wal.             | foam blk. foam blk.     | 58           | 450.00 pr. |                                                                |
|                  | 250   | ac. sus.       | 12<br>(2)           |                       | 1               | air spring           | T            |                                                         | 38-20 ±3                                 | 38                          | 1.8k                      | 8/4                              | 15x15<br>x25             | oil. wal.             | cloth black cloth.      | 55           | 500.00 pr. |                                                                |
|                  | 350   | ac. sus.       | 8<br>(3)<br>8       |                       | (2)<br>(3)<br>1 | air spring           | T            |                                                         | 36-20 ±3                                 | 38                          | 1.8k                      | 8/4                              | 15½x13½<br>x36½          | oil. wal.             | cloth black cloth.      | 83           | 800.00 pr. |                                                                |
| EPS (QUADRAFLEX) | 80    | ac. sus.       | 8                   |                       | 3               | cone                 |              |                                                         | 50-15                                    | 3.5                         | 1.56k                     | 8                                | 11½x6½<br>x18            | wal. vinyl wal. vinyl | cloth blk. cloth blk.   | 11           | 39.95      |                                                                |
|                  | 110   | ac. sus.       | 10                  |                       | 3               | cone                 |              |                                                         | 40-16                                    | 3                           | 1.5k                      | 8                                | 13x8<br>x12½             | wal. vinyl wal. vinyl | cloth blk. cloth blk.   | 18           | 69.95      |                                                                |
| ESS              | LS-4  | pas. rad.      | 10                  |                       | 10.4 sq.        | *                    | M/T          |                                                         | 40-24 ±3                                 | 20                          | 2.4k                      | 6                                | 12½x12½<br>x35           | oak                   | cloth, dk.brn.          | 48           | 319.00     | Passive radiator 10 inch dia. *Heil AMT mid-tweeter. As above. |
|                  | LS-5  | pas. rad.      | 10                  |                       | 10.4 sq.        | *                    | M/T          |                                                         | 40-24 ±3                                 | 20                          | 2.4k                      | 6                                | 14x14<br>x24¼            | oak                   | cloth, dk.brn.          | 36           | 219.00     | As above.                                                      |
|                  | LS-8  | pas. rad.      | 8                   |                       | 10.4 sq.        | *                    | M/T          |                                                         | 50-24 ±3                                 | 20                          | 2.4k                      | 6                                | 12½x10½<br>x22           | oak                   | cloth, dk.brn.          | 30           | 168.00     | As above.                                                      |
|                  | PS-4  | pas. rad.      | 10                  |                       | 10.4 sq.        | *                    |              |                                                         | 40-24 ±3                                 | 20                          | 2.4k                      | 6                                | 12½x12½<br>x35           | wal. vinyl wal. vinyl | cloth, dk.brn.          | 48           | 289.00     | As above.                                                      |
|                  | PS-5  | pas. rad.      | 10                  |                       | 10.4 sq.        | *                    |              |                                                         | 40-24 ±3                                 | 20                          | 2.4k                      | 6                                | 14x14<br>x24¼            | wal. vinyl wal. vinyl | cloth, dk.brn.          | 36           | 205.00     | As above.                                                      |
|                  | PS-8  | pas. rad.      | 8                   |                       | 10.4 sq.        | *                    |              |                                                         | 50-24 ±3                                 | 20                          | 2.4k                      | 6                                | 12½x10½<br>x22           | wal. vinyl wal. vinyl | cloth, dk.brn.          | 30           | 149.00     | As above.                                                      |

# One step nearer the reference

## Model 104 aB.



Computer-based analysis has led KEF engineers to a significant advance in speaker performance – the acoustic Butterworth (aB) filter network. Now, replacing conventional filter circuitry in the renowned Model 104, it transforms performance with reduced coloration, increased stereo depth and imaging. A difference you can hear. An advance radical enough to justify making the new network available for replacement in existing Model 104's – see your dealer about this. Power rating is higher too – 100 watts program – with fuse protection for the tweeter. So KEF engineers have seemingly done the impossible – taken the superb 3 speaker system that reviewers already praised for its clean, uncolored 'reference' sound – **and improved it.** Model 104aB – one step nearer the reference – live sound.

 KEF Electronics Limited Maidstone Kent England



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Enter No. 31 on Reader Service Card

# Loudspeakers



Celestion Ditton 66

Cerwin Vega H-12

Cizek II

Concept CE-1

| MANUFACTURER            | MODEL                | Enclosure type | Woofer dia., inches |       | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, ST=Super Tweeter) | Acoustic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies Hz | Impedance ohms, Nominal/minimum | Dimensions, inches       | Finish                  | Grille Material? Color? | Weight, lbs. | Price \$    | NOTES                                                               |                                   |
|-------------------------|----------------------|----------------|---------------------|-------|---------------|----------------------|--------------|----------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------|---------------------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|---------------------------------------------------------------------|-----------------------------------|
|                         |                      |                |                     |       |               |                      |              |                                                          |                                        |                             |                          |                                 |                          |                         |                         |              |             |                                                                     |                                   |
| ESS<br>(Continued)      | Monitor              | pas. rad.*     | 12                  |       |               | 2 1/2 sq.            | *            | M/T                                                      | 30-24 ...                              | 30                          | 1k                       | 6                               | 15 1/2 x 15 1/2 x 39 1/2 | oiled wal.              | cloth, dk. brn.         | 103 1/2      | 566.00      | Passive radiator 12 inch bextrene. *Heil AMT mid-tweeter. As above. |                                   |
|                         | 1-B                  | pas. rad.      | 12                  |       |               | 2 1/2 sq.            | *            | M,T                                                      | 35-24 ±3                               | 30                          | 1k                       | 6                               | 16 1/4 x 16 1/4 x 35 1/4 | oiled wal.              | cloth, dk. brn.         | 85           | 450.00      | As above.                                                           |                                   |
|                         | 1-B Bookshelf        | pas. rad.      | 12                  |       |               | 2 1/2 sq.            | *            | M/T                                                      | 40-24 ±3                               | 25                          | 1k                       | 6                               | 14 x 14 x 24             | oiled wal.              | cloth, dk. brn.         | 65           | 398.00      | As above.                                                           |                                   |
|                         | 10-B                 | pas. rad.      | 12                  |       |               | 2 1/2 sq.            | *            | M/T                                                      | 40-24 ±3                               | 20                          | 1k                       | 6                               | 14 x 14 x 24             | oiled wal.              | cloth, dk. brn.         | 55           | 316.00      | As above.                                                           |                                   |
| ELECTRO-ACOUSTICAL LABS | "Tiny Box"           | bass ref.      | (2) 8               | 4     | cone          | 1                    | dome         |                                                          | 50-20 ±2                               | 25                          | 400, 4k                  | 8/5                             | 11 x 10 x 21             | wal.                    | cloth blk.              | 35           | 700.00 pr.  |                                                                     |                                   |
|                         | New Yorker model one | bass ref.      | (2) 12              | 8 4   | cone cone     | 1                    | dome         |                                                          | 38-20 ±2                               | 25                          | 200, 18 & 4k             | 8/5                             | 18 x 12 x 41 1/2         | wal.                    | cloth blk.              | 85           | 1900.00 pr. |                                                                     |                                   |
|                         | New Yorker model two | bass ref.      | (2) 12              | 8 3   | cone dome     | 3                    | iso-planar   | M,T                                                      | 35-20 ±2                               | 25                          | 175, 18 & 6k             | 8/5                             | 18 x 12 x 41 1/2         |                         |                         | 100          | 2500.00 pr. |                                                                     |                                   |
| ELECTRO-VOICE           | Interface 1          | vented         | 8                   | —     | —             | 2 1/2                | cone         | T                                                        | 54-18 ±4                               | 3.6                         | 76, 1.5k                 | 8/5                             | 11 1/2 x 10 1/2 x 21 1/2 | wal. vinyl              | brn. cloth              | 23           | 100.00      |                                                                     |                                   |
|                         | Interface 2          | vented         | * 8                 | —     | —             | 2 1/2                | cone         | T                                                        | 47-18 ±4                               | 3.6                         | 66, 1.5k                 | 8/5                             | 13 1/2 x 11 1/2 x 24 1/2 | wal. vinyl              | brn. cloth              | 28           | 140.00      | 10" low-frequency radiator                                          |                                   |
|                         | Interface 3          | vented         | * 8                 | —     | —             | 2 1/2                | cone         | T                                                        | 40-18 ±4                               | 3.6                         | 57, 1.5k                 | 8/5                             | 14 1/2 x 12 1/2 x 26 1/2 | wal. vinyl              | brn. cloth              | 33           | 170.00      | 12" low-frequency radiator                                          |                                   |
|                         | Interface: D         | vented         | 12                  | 6 1/2 | —             | cone                 | horn         | T,W                                                      | 28-18 ±3                               | 1.5                         | 40, 350, 3k              | 8/5                             | 21 1/2 x 15 1/2 x 32     | wal.                    | cloth, brn.             | 114          | 1500.00 pr. | Includes equalizer                                                  |                                   |
|                         | Interface: C         | vented         | 10                  | —     | —             | horn                 | —            | T                                                        | 30-18 ±3                               | 2.8                         | 42, 2k                   | 6/4                             | 21 1/2 x 11 1/2 x 30     | wal.                    | cloth, brn.             | 60           | 900.00      | Includes equalizer                                                  |                                   |
|                         | Interface: B         | vented         | —                   | 8     | —             | cone                 | (2) 2 1/2    | cone                                                     | T                                      | 30-18 ±3                    | 3.6                      | 42, 1.5, 8k                     | 8/5                      | 16 x 10 1/2 x 29 1/2    | wal.                    | cloth, brn.  | 42          | 675.00                                                              | 12" low freq. radiator; equalizer |
|                         | Interface: A         | vented         | —                   | 8     | —             | cone                 | (2) 2 1/2    | cone                                                     | T                                      | 35-18 ±3                    | 3.6                      | 49, 1.5, 8k                     | 8/5                      | 14 1/2 x 23 1/2 x 8 1/2 | wal.                    | cloth, brn.  | 30          | 500.00                                                              | 12" low freq. radiator; equalizer |
| EPICURE                 | Five                 | ac. sus.       | 6                   | —     | —             | 1                    | air spring   |                                                          | 50-20 ±3                               | 12                          | 1.8k                     | 8/4                             | 11 x 8 x 22              |                         | brn.                    | 18           | 160.00 pr.  |                                                                     |                                   |
|                         | Ten                  | ac. sus.       | 8                   | —     | —             | 1                    | air spring   | T                                                        | 43-20 ±3                               | 12                          | 1.8k                     | 8/4                             | 12 x 9 1/2 x 22          | oil, wal.               | brn.                    | 33           | 258.00 pr.  | Optional vinyl 238.00.                                              |                                   |
|                         | Eleven               | vent           | 6                   | —     | —             | 1                    | air spring   | T                                                        | 36-20 ±3                               | 15                          | 1.8k                     | 8/4                             | 13 1/2 x 9 1/2 x 22      | oil, wal.               | brn.                    | 36           | 298.00 pr.  |                                                                     |                                   |
|                         | Twenty Plus          | ac. sus.       | (2) 8               | —     | —             | (2) 1                | air spring   | T                                                        | 38-20 ±3                               | 20                          | 1.8k                     | 8/4                             | 18 1/2 x 12 1/2 x 29     | oil, wal.               | brn.                    | 64           | 550.00 pr.  |                                                                     |                                   |
|                         | 400 Plus             | ac. sus.       | (4) 6               | —     | —             | (4) 1                | air spring   | T                                                        | 32-20 ±3                               | 30                          | 1.8k                     | 8/4                             | 14 x 14 x 38             | oil, wal.               | blk.                    | 90           | 800.00 pr.  |                                                                     |                                   |
|                         | 1000                 | ac. sus.       | (4) 8               | —     | —             | (4) 1                | air spring   | T                                                        | 23-20 ±3                               | 60                          | 1.8k                     | 8/4                             | 18 x 19 x 76             | oil, wal.               | blk.                    | 180          | 2000.00 pr. |                                                                     |                                   |
| FISHER                  | XP330                | ac. sus.       | 12                  | 5     | —             | 3                    | —            |                                                          | 60-18                                  | 17                          | 1.5 & 5k                 | 8                               | 14 1/2 x 11 1/2 x 23 1/2 | wal.                    | cloth brn.              | 27           | 159.95      |                                                                     |                                   |
|                         | XP325                | ac. sus.       | 10                  | 5     | —             | 3                    | —            |                                                          | 65-18                                  | 12                          | 1.5 & 5k                 | 8                               | 13 1/2 x 8 1/2 x 13      | wal.                    | cloth brn.              | 18.5         | 129.95      |                                                                     |                                   |
|                         | XP320                | ac. sus.       | 8                   | —     | —             | 2                    | —            |                                                          | 70-15                                  | 8.5                         | 5k                       | 8                               | 11 1/2 x 7 1/2 x 22      | wal.                    | cloth brn.              | 12           | 79.95       |                                                                     |                                   |
|                         | ST660                | pas. rad.      | 10                  | 6 1/2 | —             | 1                    | dome         |                                                          | 39-22                                  | 40                          | 0.7 & 7k                 | 8                               | 18 1/2 x 13 1/2 x 29 1/2 | wal.                    | cloth brn.              | 45           | 249.95      |                                                                     |                                   |
|                         | ST640                | pas. rad.      | (2) 10              | 6 1/2 | —             | 3                    | dome         |                                                          | 42-20                                  | 30                          | 0.7 & 7k                 | 8                               | 16 1/2 x 12 1/2 x 26 1/2 | wal.                    | cloth brn.              | 37           | 199.95      |                                                                     |                                   |
|                         | XP95A                | ac. sus.       | 15                  | (5) 2 | —             | 3                    | dome         | M,T                                                      | 40-20                                  | 25                          | 1.5 & 5k                 | 8                               | 17 1/2 x 13 1/2 x 28     | wal.                    | cloth brn.              | 44           | 249.95      |                                                                     |                                   |
|                         | XP85A                | ac. sus.       | 12                  | (5) 2 | —             | 3                    | dome         | M,T                                                      | 45-20                                  | 20                          | 1.5 & 5k                 | 8                               | 15 x 12 x 25 1/2         | wal.                    | cloth brn.              | 36           | 199.95      |                                                                     |                                   |
|                         | XP75A                | ac. sus.       | 12                  | 5     | —             | 3                    | —            |                                                          | 50-20                                  | 17                          | 1.5 & 5k                 | 8                               | 15 x 12 x 25 1/2         | wal.                    | cloth brn.              | 35           | 179.95      |                                                                     |                                   |
|                         | XP68A                | ac. sus.       | 10                  | 5     | —             | 3                    | —            |                                                          | 55-20                                  | 12                          | 1.5 & 5k                 | 8                               | 12 1/2 x 10 x 22 1/2     | wal.                    | cloth brn.              | 25.5         | 149.95      |                                                                     |                                   |
|                         | XP62A                | ac. sus.       | 10                  | —     | —             | 3                    | —            |                                                          | 60-20                                  | 10                          | 5k                       | 8                               | 12 1/2 x 10 x 22 1/2     | wal.                    | cloth brn.              | 24.5         | 119.95      |                                                                     |                                   |
|                         | XP57A                | ac. sus.       | 8                   | —     | —             | 2                    | —            |                                                          | 65-18                                  | 6.5                         | 5k                       | 8                               | 12 1/2 x 9 x 21          | wal.                    | cloth brn.              | 19.5         | 95.00       |                                                                     |                                   |

# Ohm's Law: 6

**If you want speakers that fit on a bookshelf, you don't have to settle for compromised performance.**

The new Ohm L is the first unequalized bookshelf-size speaker that makes no compromises whatsoever in bass response, efficiency, or output potential.

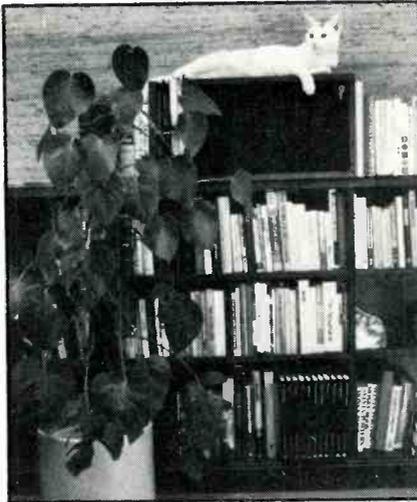
Although the new Ohm L is small (and attractive) enough to fit on a bookshelf without looking out of place, it delivers *full-size* bass response (down only 4dB at 42 Hz.) The Ohm L is approximately twice as efficient as an equivalent acoustic-suspension speaker. And it can play four times as loudly.

## How we did it.

Like the more expensive Ohm D2, C2, and H loudspeakers, the new Ohm L was designed using a computer, and the latest "filter synthesis" techniques.

The Ohm L features *one* extremely powerful, long throw, 8-inch woofer (made to exacting tolerances in our own plant). This woofer is optimized to perform in a ported, bookshelf-size enclosure.

High frequencies are



reproduced by two superb cone tweeters, one serving as a low tweeter, the other as a high tweeter. A 3-position level control on the back panel varies the output of both tweeters.

**"...sounded in every way like a full-size system."**

Stereo Review\* recently verified our unprecedented performance claims for the new Ohm L:

"The Ohm L, though diminutive beside many of the floor-standing or oversize "bookshelf" speakers we have seen, sounded in every way like a full-size system. Blindfolded, one would never guess its compact dimensions."

The sound of the Ohm L, concludes Stereo Review... "is easily good enough to meet the sort of critical standards usually applied to much larger and considerably more expensive systems."

You can hear for yourself how we have defied the traditional laws of bookshelf-speaker design at an Ohm dealer near you.

A 24-page brochure featuring the Ohm L, and the entire Ohm line, is available by writing to us at Ohm Acoustics Corp. 241 Taaffe Place Brookline, N.Y. 11205

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# Loudspeakers

| MANUFACTURER       | MODEL          | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange; T=tweeter; S=Super Tweeter) | Aerohorn freq. response Hz. to kHz. ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms. Nominal/minimum | Dimensions, inches | Finish       | Grille Material? Color? | Weight, lbs. | Price, \$   | NOTES                          |
|--------------------|----------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|---------------------------------------------------------|------------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|--------------|-------------------------|--------------|-------------|--------------------------------|
|                    |                |                |                     |                       |               |                      |              |                                                         |                                          |                             |                           |                                  |                    |              |                         |              |             |                                |
| FRAZIER            | Super Midget   | tuned slot     | 4                   |                       |               |                      |              |                                                         | 50-12 ± 5                                | 1                           |                           | 8                                | 6¼x9¼ x15½         | oil wal.     | brn.                    | 13           | 60.00       |                                |
|                    | Monte Carlo    | tuned slot     | 8                   |                       | 3¼            | pz.                  |              |                                                         | 50-22 ± 5                                | 1                           | 4k                        | 8                                | 10¼x12 x19         | oil wal.     | brn.                    | 31           | 125.00      |                                |
|                    | Mark IV        | tuned slot     | 10                  |                       | 3x7           | horn                 | T            |                                                         | 40-18 ± 5                                | 1                           | 2k                        | 8                                | 24x14 x12          | oil wal.     | foam                    | 44           | 180.00      |                                |
|                    | Concerto       | tuned slot     | 10                  | 3x7                   | horn          | 3¼                   | pz.          | T                                                       | 35-22 ± 5                                | 1                           | 2k, 4k                    | 8                                | 16x16 x19          | oil wal.     | foam                    | 56           | 265.00      |                                |
|                    | Mark V         | tuned slot     | 12                  | (2) 4                 | cone          | 3¼                   | pz.          | M,T                                                     | 35-22 ± 5                                | 1                           | 500, 4k                   | 8                                | 14x12 x25½         | oil wal.     | foam                    | 56           | 300.00      |                                |
|                    | Seven          | tuned slot     | 12                  | (2) 4                 | cone          | 3¼                   | pz.          | M,T                                                     | 30-22 ± 5                                | 1                           | 400, 4k                   | 8                                | 16x19 x29          | oil wal.     | foam                    | 98           | 400.00      |                                |
|                    | Thing          | tuned slot     | 12                  | 10                    | horn          | 3¼                   | pz.          | M,T                                                     | 25-22 ± 5                                | 1                           | 800, 4k                   | 4                                | 24x18 x50          | oak wal.     | knit                    | 165          | 1000.00     |                                |
|                    | Eleven         | tuned port     | 12                  | 15, 12                | cone          | (2) 3¼               | pz.          | M,T                                                     | 20-22                                    | 1                           | 400, 4k                   | 4                                | 30x18 x15          | oil wal.     | foam                    | 250          | 1300.00     |                                |
| GC ELECTRONICS     | 94-400         | ac. sus.       | 12                  | 4½                    | cone          | 1¼                   | ring         |                                                         | 35-22                                    | 10                          | 1& 6k                     | 8                                | 15x10 x24          | wal. vinyl   | foam blk.               | 29           | 94.72       |                                |
|                    | 94-300         | ac. sus.       | 10                  |                       |               | 3                    | cone         |                                                         | 35-22                                    | 10                          | 3k                        | 8                                | 12x10 x20          | wal. vinyl   | foam blk.               | 20           | 73.66       |                                |
|                    | 94-200         | ac. sus.       | 8                   |                       |               | 1¼                   | ring         |                                                         | 35-22                                    | 5                           | 3k                        | 8                                | 11¼x7½             | wal. vinyl   | foam blk.               | 14           | 52.60       |                                |
|                    | 94-100         | ac. sus.       | 6                   |                       |               | 3                    | cone         |                                                         | 50-20                                    | 5                           | 3k                        | 8                                | 10x6 x17           | wal. vinyl   | foam blk.               | 11½          | 42.07       |                                |
| GLI                | Monolith II    | pas. rad.      | 15                  | 14                    | horn          | (2) 3                | horn         |                                                         | 32-20 ± 4                                | 10                          | 900, 7k                   | 8/6                              | 36x12½ x21         | wal.         | perf. alum.             | 86           | 875.00 pr.  |                                |
|                    | Model I        | vented         | (2) 15              | 14                    | horn          | (3) 3                | horn         |                                                         | 32-20 ± 4                                | 10                          | 875, 7k                   | 8/6                              | 36x22 x21          | blk.         | perf. alum.             | 97           | 1095.00 pr. |                                |
|                    | Model II       | vented         | (2) 15              | (8) 5                 | cone          | (4) 3                | horn         |                                                         | 32-20 ± 3                                | 10                          | 300, 7k                   | 8/6                              | 36x22 x21          | blk.         | perf. alum.             | 128          | 1295.00 pr. |                                |
|                    | Model III      | horn           | (2) 15              | 20x15                 | horn          | (7) 3                | horn         |                                                         | 32-20 ± 4                                | 10                          | 875, 7k                   | 8/6                              | 49x36 x30          | blk.         | perf. alum.             | 160          | 1795.00 pr. |                                |
| GOLLEHON           | 350 SRL        | reflex horn    | 15                  | 3                     |               |                      |              | M,T                                                     | 50-15                                    | 25                          | 800                       | 8                                | 30x24 x18          | fiber glass  | foam                    | 90           | 400.00      |                                |
|                    | 450 ML         | reflex horn    | 15                  | 3                     |               |                      |              | M,T                                                     | 35-15                                    | 25                          | 800                       | 8                                | 41x27 x21          | fiber glass  | foam                    | 140          | 660.00      |                                |
| GRAFYX             | SP-10          | tuned port     | 10                  |                       | 1             | dome                 |              |                                                         | 35-20 ± 3                                | 10                          | 2k                        | 8/7.5                            | 15x13½ x26½        | vinyl wal.   | cloth brn.              | 50           | 149.00      |                                |
|                    | SP-8           | tuned port     | 8                   |                       | 1             | dome                 |              |                                                         | 37-20 ± 3                                | 10                          | 2k                        | 8/7.5                            | 14x10 x25          | vinyl wal.   | cloth brn.              | 39           | 119.00      |                                |
|                    | SP-7           | ac. sus.       | 8                   |                       | 1             | dome                 |              |                                                         | 42-20 ± 3                                | 10                          | 2k                        | 8/7.5                            | 13x8½ x23          | vinyl wal.   | cloth brn.              | 30           | 99.00       |                                |
|                    | SP-6           | tuned port     | 6                   |                       | 2             | cone                 |              |                                                         | 47-18 ± 3                                | 10                          | 2k                        | 8/7.5                            | 10x7½ x16          | vinyl wal.   | cloth brn.              | 17           | 59.00       |                                |
| GREEN DRAGON SOUND | 215 FH         | folded horn    | (2) 15              |                       |               |                      |              |                                                         | 55-800 ± 3                               |                             | 5.2/4.2                   | 8                                | 35x30 x60          | blk.         | knit                    | 335          | 1500.00     | PA bass section                |
|                    | 139 SW         | trans line     | 15                  | 13x9                  |               |                      |              |                                                         | 23-400 ± 3                               |                             | 8/8                       | 8                                | 13¼x24¼ x75½       | formica blk. | knit screen             | 225          | 1300.00 pr. | Subwoofer                      |
|                    | 415 DR         | ducted port    | (4) 15              |                       |               |                      |              |                                                         | 55-600 ± 3                               |                             | 8/7                       | 8                                | 37½x16 x49½        | blk.         | screen                  | 215          | 1690.00     | PA bass section                |
|                    | 115 DR         | ducted port    | 15                  |                       |               |                      |              |                                                         | 55-800 ± 3                               |                             | 8/7                       | 8                                | 19½x16 x28½        | blk.         | screen                  | 60           | 450.00      | Modular PA bass section        |
| HANDIC             | HL30           |                | 8                   |                       | 1             |                      |              |                                                         | 50-20                                    | 30                          | 5k                        | 8/3                              | 10x19 x8           | blk.         | cloth, blk.             |              | 199.00 pr.  |                                |
|                    | HL50           |                | 9                   |                       | 3½            |                      |              |                                                         | 30-22                                    | 60                          | 3k                        | 8/3                              | 12x21½ x10         | blk.         | cloth, blk.             |              | 239.00 pr.  |                                |
| HARTLEY            | Zodiac Jr.     | inf. baf.      | 8                   |                       | 2             | cone                 |              |                                                         | 50-18                                    | 5                           | 2.5k                      | 8                                | 19x11½ x7½         | oil wal.     | cloth brn.              | 25           |             | Matched pairs                  |
|                    | Zodiac 1A      | inf. baf.      | 10                  |                       | 1             | dome                 |              |                                                         | 40-25                                    | 5                           | 2k                        | 8                                | 21¼x14¼ x8½        | oil wal.     | cloth brn.              | 35           |             | Matched pairs                  |
|                    | Zodiac '77     | inf. baf.      | 10                  |                       | 1             | dome                 |              |                                                         | 35-25                                    | 5                           | 2k                        | 8                                | 30x15 x11¼         | oil wal.     | cloth brn.              | 50           |             | Matched pairs                  |
|                    | Zodiac 300     | inf. baf.      | (2) 10              |                       | 1             | dome                 |              |                                                         | 30-25                                    | 5                           | 2k                        | 4                                | 25x23½ x11¼        | oil wal.     | cloth brn.              | 65           |             | Matched pairs                  |
|                    | Holton Tower   | inf. baf.      | (2) 10              |                       | 1             | dome                 |              |                                                         | 20-25                                    | 15                          | 3k                        | 4                                | 48½x20 x14         | oil wal.     | cloth brn.              | 105          |             | Matched pairs, mag. suspension |
|                    | Concert-master | inf. baf.      | 18                  | 10                    | cone          | 7/1                  | cone/dome    |                                                         | 16-25                                    | 25                          | 250, 3& 7k                | 5/8                              | 41½x29 x18         | oil wal.     | cloth brn.              | 150          |             | Matched pairs, mag. suspension |
|                    | Reference      | inf. baf.      | 24                  | 10                    | cone          | 7/1                  | cone/dome    |                                                         | 16-25                                    | 25                          | 250, 3& 7k                | 5/8                              | 50¼x36 x24         | oil wal.     | cloth brn.              | 300          |             | Matched pairs, mag. suspension |

"at their price, they are simply a steal"

The **AUDIO ADVISOR**

# AUDIOGRAM

VOLUME I, NUMBER 7

1976

*This is the full text of the review of the Polk 10's which appeared in the AUDIOGRAM, a discerning and independent audiophile journal which is entirely supported by its readers and accepts no manufacturers' advertisements. Subscriptions are available for \$15.00 per year.*

## POLK MODEL 10 LOUDSPEAKER

POLK AUDIO  
4900 Wetheredsville Rd.  
Baltimore, MD 21207  
\$199.95 - suggest retail

When we heard the Polk speakers at Summer CES we knew we had to test them. We were so impressed that we could not believe the prices. But first let us say that there are a few factors that might make us prejudiced in their favor. The Polk people use the Sendor as a reference. They like the sound of ARC tubes. They are the East coast distributors of the Formula 4 tone arm. We, at AUDIOGRAM, share so many likes with the folks at Polk that it is hard for us not to like their speakers. And the company is a local one that has made good - the pride of Baltimore and Washington.

Nonetheless, the sound coming forth from the Model 10 "monitors" is something really special. It is a sound that is open, well defined and very low in coloration. One does not generally expect such low coloration in a modestly priced box speaker, and certainly not anything like the definition exhibited by these speakers. How does Polk do it? We think it is mostly execution. They hear very well and they care.

The Model 10 uses a 1-inch soft dome tweeter, two 6 1/2-inch plasticized midrange drivers and one 10-inch sub-bass radiator (which is really a passive radiator). Polk calls the crossover between the bass and midrange drivers "fluid-coupling". It occurs at 60 Hz and provides fourth order Butterworth loading for the energizing cones.

We auditioned the speaker on the optional stand which Polk sells. The stand, or one like it, is highly recommended. It tilts the front of the speaker slightly back from the listener, providing better phasing between drivers and reducing undesirable floor-coupled resonant effects. We would say that the sound of most bookshelf speakers currently placed on the floor would certainly be improved by such a stand.

Inasmuch as Polk had indicated that they use the Sendor as a reference and inasmuch as we had one on hand, we compared the Model 10 to this speaker. In fact, we have compared many speakers to the Sendor and most of them have sounded extremely colored by comparison. (The only speaker systems that have been able to make the Sendor sound colored have been a well-tuned Fulton J and the Rogers LS3/5A's.) Although the Sendor did manage to make the Model 10 sound a trifle nasal, we were amazed at the similarity of sound - and that's good!

But the Sendors cost upwards from \$700 a pair (if one can find them), will not handle much power and cannot reproduce the bass of the Polks. It really isn't fair to compare the Model 10 to a reference monitor. It should be compared with other modestly priced speakers. However, such a comparison is no fairer than the Sendor comparison. Other \$200 speakers simply do not come close to the standards set by the Model 10. In fact the Polks compare very favorably with the Magnepan and Dahlquist DQ 10's. Bass response of the Model 10 surpasses that of the DQ 10. Definition is almost on the par with the Magnepan (stereo imaging is better). Driver blending is excellent, the midrange is open and exceptionally clear, and there is much less hint of boxiness than that which is found in most box speakers.

If we had to fault the Model 10's, we would say that they are slightly bright and just a little fat in the low end. However, they are extremely neutral throughout most of their range. Only in comparison with some of the world's best speaker systems do they sound the least bit colored. They are a high definition speaker system deserving the very best associated electronics. And at their price, they are simply a steal.

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## THE POLK AUDIO MONITOR SERIES



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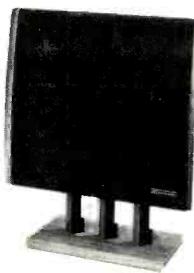
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# Loudspeakers



Dahlquist DQ-10



Electro Voice Interface I



Epicure 20+



Frazer Concerto

| MANUFACTURER        | MODEL                    | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange, T=tweeter, ST=Super Tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum | Dimensions, inches | Finish              | Grille Material? Color? | Weight, lbs.     | Price, \$  | NOTES         |  |
|---------------------|--------------------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|---------------------|-------------------------|------------------|------------|---------------|--|
| HAYNES              | 750B                     | ac. sus.       | 10                  |                       |               | 1½                   | dome         |                                                          | 50-15 ±3                               | 25                          | 1.25k                     | 4/4                              | 14x9½ x23          | wal.                | opt.                    | 45               | 199.50     |               |  |
| HEATH               | AS-1348                  | bass ref.      | 15                  | (2) 4½                |               | (3) 1                | dome         | M,T                                                      | 22-22                                  | 8                           | 500, 3k                   | 8                                | 24x15 x38          | wal. & oak wal.     | cloth brn. foam         | 100              | 269.95     |               |  |
|                     | AS-1373                  | bass ref.      | 10                  | 4½                    |               | 1                    | dome         | M,T                                                      | 30-22                                  | 11                          | 500, 3k                   | 8                                | 14½x12 x26         | wal. & slate        | foam brn. foam blk.     | 60               | 149.95     |               |  |
|                     | AS-1344                  | bass ref.      | (2) 6½              |                       |               | (2) 1                | dome         | T                                                        | 35-22                                  | 6                           |                           | 4                                | 11x11 x40          | wal. & slate        | foam brn. foam blk.     | 53               | 129.95     |               |  |
| HEGEMAN             | H-1A                     | inf. baf.      | 8                   |                       |               | 2                    | cone         | T                                                        | 30-20 ±2.5                             | 25                          | 5k                        | 8                                | 26x11 x8½          | vin. wal.           | foam blk. foam blk.     | 25               | 195.00     | Wal. \$225.00 |  |
|                     | H-2                      | inf. baf.      | 10                  |                       |               | 2                    | cone         | T                                                        | 25-25 ±2.5                             | 30                          | 3.5k                      | 8                                | 34x14 x12          | vin. wal.           | foam blk.               | 42               | 378.00     |               |  |
|                     | HSW                      | inf. baf.      | 12                  |                       |               |                      |              |                                                          | 8-200                                  |                             | 50, 100                   | 8                                | 38½x16 x14½        | vin. wal.           |                         | 75               | 600.00     | Subwoofer     |  |
|                     | HB-80                    | cl. box baf.   | 8                   |                       |               | 2                    | cone         |                                                          | 70-40 ±2.5                             | 20                          | 4.5k                      | 8                                | 17½x11½ x8         | vin. wal.           | blk./brn. blk./brn.     | 18               | 96.00      |               |  |
|                     | HB-100                   | cl. box baf.   | 10                  |                       |               | 2                    | cone         |                                                          | 50-40 ±2.5                             | 25                          | 3k                        | 8                                | 23x13 x10½         | vin. wal.           | blk./brn. blk./brn.     | 28               | 125.00     |               |  |
| HB-120              | cl. box baf.             | 12             |                     |                       | 2             | cone                 |              | 40-40 ±2.5                                               | 20                                     | 2.5k                        | 8                         | 25x14½ x11½                      | vin. wal.          | blk./brn. blk./brn. | 35                      | 165.00           |            |               |  |
| HITACHI             | HS 323 R                 | air susp.      | 10                  |                       |               | 1                    | dome         | T                                                        | 35-20 ±4                               | 10                          | 3k                        | 8                                | 12½x21½ x11½       | wood/vinyl          | cloth brn. cloth blk.   | 24               | 139.95 pr. |               |  |
|                     | HS 335 R                 | air susp.      | 10                  | 5                     |               | 1                    | dome         | T                                                        | 45-18 ±4                               | 10                          | 700 3k                    | 6                                | 12½x21½ x12½       | wood/vinyl          | cloth brn. cloth blk.   | 28.6             | 169.95 pr. |               |  |
|                     | HS 330                   | air susp.      | 10                  | 2½                    |               | 1½                   | cone         | M,T                                                      | 40-18 ±4                               | 10                          | 900 4k                    | 6                                | 12½x22½ x12½       | wood/vinyl          | cloth brn. cloth blk.   | 32               | 229.95 pr. |               |  |
| IMF ELECTRONICS INC | R.S.P.M.                 | trans line     | 11¼ x8¼             | 6                     |               | cone                 | 1¾           | pressure dome                                            | M,T                                    |                             | 50                        | 350 3k                           | 8/4                | 19½x16 x39%         | wal.                    | cloth blk.       | 119        | 1195.00       |  |
|                     | Monitor TLS 80 II        | trans line     | 11¼ x8¼             | 6                     |               | cone                 | 1¾           | pressure dome                                            | M,T                                    |                             | 40                        | 350 3k                           | 8/4                | 18x16 x38%          | wal.                    | cloth blk.       | 97         | 850.00        |  |
|                     | Studio TLS 50 II         | trans line     | 8                   | 4                     |               | cone                 | 1            | dome                                                     | M,T                                    |                             | 30                        | 375 3k                           | 8/6                | 15x14 x36           | wal.                    | cloth blk.       | 59½        | 525.00        |  |
|                     | Studio ALS 40 II         | active line    | (2) 8               | 4                     |               | cone                 | 1            | dome                                                     | M&T                                    |                             | 25                        | 150 375 3k                       | 8/6                | 13½x13½ x26         | wal.                    | cloth blk.       | 40         | 400.00        |  |
|                     | Super Compact Compact II | reflex         | 8                   | 4                     |               | cone                 | 1            | dome                                                     | -                                      |                             | 20                        | 375 3k                           | 8/5                | 11½x11 x18          | wal.                    | cloth blk. cloth | 20         | 225.00        |  |
|                     |                          | reflex         | 6½                  | -                     | -             | ¾                    | dome         | -                                                        |                                        | 15                          | 4k                        | 8/5                              | 9½x9x15            | wal.                | cloth                   | 13               | 150.00     |               |  |
| INFINITY SYSTEMS    | QA                       |                | 25 cm               |                       |               |                      | emit         | T                                                        | 42-32 ±3                               | 15                          | 2.5k                      | 4                                | 14x12 x24          | birch vinyl         | cloth brn. cloth blk.   | 40               | 139.00     |               |  |
|                     | QB                       |                | 10                  | 4                     |               | cone                 | emit         | M,T                                                      | 42-32 ±3                               | 15                          | 600, 4k                   | 4                                | 14½x12 x25         | birch vinyl         | cloth brn. cloth blk.   | 43               | 180.00     |               |  |
|                     | Quantum Jr.              |                | 12                  | 1½                    |               | dome                 | emit         | M,T                                                      | 40-32 ±3                               | 25                          | 600 84k                   | 4                                | 14½x12 x25         | oil wal.            | cloth blk. cloth blk.   | 50               | 260.00     |               |  |
|                     | Quantum 5                |                | 12                  | 1½                    |               | dome                 | emit         | M,T                                                      | 38-32 ±3                               | 30                          | 600 84k                   | 4                                | 15x12 x26½         | oil wal.            | cloth blk. cloth blk.   | 75               | 320.00     |               |  |
|                     | Quantum 4                |                | 12                  | 1½                    |               | dome                 | emit         | M,T                                                      | 35-32 ±3                               | 30                          | 600 84k                   | 4                                | 15x12 x36          | oil wal.            | cloth blk. cloth blk.   | 90               | 385.00     |               |  |
|                     | Quantum 3                |                | 12                  | 4 1½                  |               | cone dome            | (2) emit     | M,T                                                      | 28-32 ±3                               | 55                          | 200, 600 84k              | 4                                | 18x13 x40          | oil wal.            | cloth blk. cloth        | 110              | 485.00     |               |  |
|                     | Quantum 2                |                | 12                  | 4 (2) 1½              |               | cone dome            | (3) emit     | M,T                                                      | 24-32 ±3                               | 45                          | 200, 600, 84k             | 4                                | 18x13 x49          | oil wal.            | blk. cloth              | 138              | 700.00     |               |  |
|                     | Quantum Line Source      |                | 12                  | 4½ (6) 1½             |               | cone dome            | (8) emit     | M,T                                                      | 18-32 ±2                               | 100                         | 200, 600 84k              | 4                                | 15x18 x66          | wal. rose           | blk. cloth              | 150              | 1200.00    |               |  |
|                     | Column II                |                | (2) 10              | 4½                    |               | dome cone            | (2) pz.      | M,T                                                      | 35-20 ±3.5                             | 15                          | 750, 5k                   | 8                                | 14x12½ x39%        | wal. rose           | blk. cloth blk.         | 85               | 329.00     |               |  |
|                     | 3000                     | bass ref.      | (2) 12              | 4½                    |               | cone                 | 2½           | cone                                                     | M,T                                    | 35-20 ±4.5                  | 10                        | 500, 5k                          | 8                  | 14½x12 x24%         | wal. rose               | blk. cloth blk.  | 45         | 210.00        |  |
| INNOTECH            | D-24                     | trans. line    | (2) 5               | 1½                    |               | dome                 | ¾            | dome                                                     | 20-25                                  | 35                          | 3.5k                      | 8/5                              | 10½x15½ x36%       | oil wal.            | cloth blk.              | 55               | 375.00     |               |  |

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# Loudspeakers



Hitachi HS-335R



Infinity QLS I



IMF TLS-80 II

Innotech  
D-24



140

| MANUFACTURER               | MODEL                | Enclosure type         | Woofer dia., inches |   | Midrange dia., inches |       | Tweeter dia., inches |     | Level controls (M=midrange; T=tweeter; ST=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches   | Finish                   | Grille Material? Color? | Weight, lbs. | Price, \$                                                                                                   | NOTES |
|----------------------------|----------------------|------------------------|---------------------|---|-----------------------|-------|----------------------|-----|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|----------------------|--------------------------|-------------------------|--------------|-------------------------------------------------------------------------------------------------------------|-------|
|                            |                      |                        | 5                   | 1 | 1 1/4                 | dome  | 55-18.5 ±3           | 15  |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
| INNOVATIVE                 | Mini                 | sealed box ducted port | 5                   |   |                       |       |                      |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
|                            | 100                  | ducted port            | 10                  |   | 1 1/4                 | dome  |                      |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
|                            | 200                  | ducted port            | 10                  | 5 | cone                  | 1     | dome                 |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
|                            | Disco monitor        | ducted port            | 10                  |   |                       | (3)   | pz horn              |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
|                            | Stage monitor        | ducted port            | 10                  |   |                       | (4)   | pz. horn             |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
|                            | Audiometric standard | ducted port            | 10                  |   |                       | 3 1/2 | horn                 |     |                                                          |                                        |                             |                           |                                  |                      |                          |                         |              |                                                                                                             |       |
| JBL                        | L212                 | ac. sus.               | 8                   | 5 | cone                  | 1     | dome                 | M,T |                                                          | 10+                                    | 70, 800, 3k                 | 8                         | 38kx17 x13                       | oil. wal.            | blk.                     | 225                     | 1740.00 set  | w/ 12 in. self-powered common bass loudspeaker in a third enclosure (Ultra-bass) Dim: 19 1/2x18 1/2x18 1/2. |       |
|                            | L300                 | bass ref.              | 15                  | 1 | com. drvtr cone       |       | ring rad.            | M,T |                                                          | 10+                                    | 800, 8.5k                   | 8                         | 31kx23 x22%                      | oil. wal.            | blu,blk                  | 145                     | 960.00       |                                                                                                             |       |
|                            | L65                  | bass ref.              | 12                  | 5 | cone                  |       | ring rad.            | M,T |                                                          | 10+                                    | 1000, 6.5k                  | 8                         | 24kx17 1/2 x13%                  | oil. wal.            | blu,brn                  | 67                      | 462.00       |                                                                                                             |       |
|                            | L166                 | bass ref.              | 12                  | 5 | cone                  | 1     | dome                 | M,T |                                                          | 10+                                    | 1000, 6k                    | 8                         | 14kx23% x13                      | oil. wal.            | blk, orange              | 55                      | 399.00       |                                                                                                             |       |
|                            | L110                 | bass ref.              | 10                  | 5 | cone                  | 1     | dome                 | M,T |                                                          | 10+                                    | 800, 4k                     | 8                         | 23kx14% x11%                     | oil. wal.            | blk                      | 50                      | 348.00       |                                                                                                             |       |
|                            | L100                 | bass ref.              | 12                  | 5 | cone                  | 1.4   |                      | M,T |                                                          | 10+                                    | 1500, 6k                    | 8                         | 14kx23% x13%                     | oil. wal.            | blu,brn                  | 55                      | 333.00       |                                                                                                             |       |
|                            | L40                  | bass ref.              | 10                  |   |                       | 1     | dome                 | T   |                                                          | 10+                                    | 1.8k                        | 8                         | 23x15                            | oil. wal.            | orange, brn,             | 44                      | 207.00       |                                                                                                             |       |
|                            | L36                  | bass ref.              | 10                  | 5 | cone                  | 1.4   |                      | M,T |                                                          | 10+                                    | 1.5, 8.6k                   | 8                         | 13kx24 x13%                      | oil. wal.            | rust,tan orange, brn,blu | 45                      | 225.00       |                                                                                                             |       |
|                            | L200B                | bass ref.              | 15                  |   |                       |       | ring rad.            | T   |                                                          | 10+                                    | 800                         | 8                         | 32kx24 x21%                      | oil. wal.            | grey,blk blu, brgdy      | 131                     | 753.00       |                                                                                                             |       |
| JR (H AND H INTERNATIONAL) | Jr 149               | ac. sus.               | 5 1/4               |   |                       | 3/4   | dome                 |     |                                                          | 30                                     | 3k                          | 8/5                       | 9" dia 14 1/2 h.                 | var.                 | foam brn.                | 12                      | 475.00 pr.   |                                                                                                             |       |
| JVC                        | SK-1000              | bass ref.              | 12                  | 5 | cone                  | 1     | dome                 | M,T | 30-20                                                    |                                        | 1k, 10k                     | 8                         | 15kx12% x25%                     | wal. vinyl met. sil. | cloth brn. cloth blk.    | 53.4                    | 249.95       |                                                                                                             |       |
|                            | SK-1000S             | bass ref.              | 12                  | 5 | cone                  | 1     | dome                 | M,T | 30-20                                                    |                                        | 1k, 10k                     | 8                         | 15kx12% x25%                     | wal. vinyl met. sil. | cloth brn. cloth blk.    | 53.4                    | 249.95       |                                                                                                             |       |
| JANIS AUDIO                | W-1                  | slot loaded            | 15                  |   |                       |       |                      | *   | 30-100 ±1                                                | 60                                     | *                           | 8/8                       | 22x22 x17%                       | var.                 | wood/ brn.               | 90                      | 650.00       | *requires external electronic crossover. Subwoofer only. *As above.                                         |       |
|                            | W-2                  | slot loaded            | 15                  |   |                       |       |                      | *   | 33-100 ±2                                                | 60                                     | *                           | 8/8                       | 22x22 x17%                       | var.                 | wood/ brn.               | 82                      | 450.00       |                                                                                                             |       |
| JANSZEN                    | Z-50                 | trans line pas. rad.   | 8x12                | * | e.s.                  | *     | e.s.                 | M,T | 25-20 ±3                                                 | 20                                     | 800, 4k                     | 4/4                       | 18 1/2x17 1/2 x55                | oil. wal.            | blk.                     | 125                     | 675.00       | *64 sq. in.                                                                                                 |       |
|                            | Z-40                 | pas. rad.              | 10                  | * | e.s.                  | *     | e.s.                 | M,T | 33-20 ±3                                                 | 20                                     | 800, 4k                     | 4/4                       | 13 1/2x13 1/2 x49%               | oil. wal. base wal.  | blk.                     | 64                      | 450.00       | *64 sq. in.                                                                                                 |       |
|                            | Z-30                 | ac. sus.               | 10                  |   |                       | *     | e.s.                 | B,T | 45-20 ±3                                                 | 15                                     | 800                         | 4/4                       | 13 1/2x13 1/2 x37                | oil. wal. base       | blk.                     | 49                      | 295.00       | *64 sq. in.                                                                                                 |       |
|                            | Z-20                 | ac. sus.               | 12                  |   |                       | *     | e.s.                 | T   | 30-20 ±3                                                 | 20                                     | 800                         | 4/4                       | 14 1/2x11 1/2 x27%               | oil. wal.            | blk.                     | 48                      | 300.00       | *32 sq. in.                                                                                                 |       |
|                            | Z-20X                | ac. sus.               | 12                  |   |                       | *     | e.s.                 | T   | 33-20 ±3                                                 | 20                                     | 1.8k                        | 4/4                       | 14 1/2x11 1/2 x27%               | oil. wal.            | blk.                     | 44                      | 275.00       | *32 sq. in.                                                                                                 |       |
|                            | Z-10                 | ac. sus.               | 10                  |   |                       | *     | e.s.                 | T   | 35-20 ±3                                                 | 20                                     | 800                         | 4/4                       | 13kx11 x24                       | vin. wal.            | blk.                     | 41                      | 250.00       | *32 sq. in.                                                                                                 |       |
|                            | Z-10X                | ac. sus.               | 10                  |   |                       | *     | e.s.                 | T   | 35-20 ±3                                                 | 20                                     | 1.8k                        | 4/4                       | 13kx11 x24                       | vin. wal.            | blk.                     | 41                      | 225.00       | *32 sq. in.                                                                                                 |       |

| MANUFACTURER          | MODEL                  | Enclosure type | Woofer dia., inches |                       |               | Midrange dia., inches |              |     | Tweeter dia., inches |    |          | Level controls (HF-midrange, Tweeter, ST-Super Tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power |               | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish  | Grille Material? Color?          | Weight, lbs. | Price, \$ | NOTES |
|-----------------------|------------------------|----------------|---------------------|-----------------------|---------------|-----------------------|--------------|-----|----------------------|----|----------|---------------------------------------------------------|----------------------------------------|-----------------------------|---------------|---------------------------|----------------------------------|--------------------|---------|----------------------------------|--------------|-----------|-------|
|                       |                        |                | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter type          | Tweeter type | HF  | Midrange             | HF | Midrange |                                                         |                                        | HF                          | Midrange      |                           |                                  |                    |         |                                  |              |           |       |
| JENNINGS              | I B                    |                | 10                  |                       |               | 1                     | dome         | T   |                      |    |          | 15                                                      | 1.75k                                  | 6                           | 23½x14x11½    | oil wal.                  | cloth                            | 37                 | 210.00  |                                  |              |           |       |
|                       | 4                      |                | 10                  | 5                     | cone          | 1                     | dome         | M,T |                      |    |          | 15                                                      | 300, 3k                                | 6                           | 26x14x11½     | oil wal.                  | cloth rust or choc.              | 40                 | 300.00  |                                  |              |           |       |
|                       | 5                      |                | 12                  | 5                     | cone          | 1                     | dome         | M,T |                      |    |          | 15                                                      | 300, 1k, 3k                            | 6                           | 31.5x18x18.75 | oil wal.                  | cloth cocoa                      | 60                 | 440.00  |                                  |              |           |       |
|                       | R                      | ac. sus.       | 8                   | 1.5                   | dome          | 1                     | dome         |     |                      |    |          | 15                                                      | 1.75k                                  | 6                           | 14x18x10      | oil wal.                  | cloth choc.                      | 30                 | 135.00  |                                  |              |           |       |
|                       | Elan                   | ac. sus.       | (2) 10              | ½                     | dome          | 1                     | dome         | M,T |                      |    |          | 35                                                      | 500, 1k, 5k                            | 6                           | 41x12½x12½    | oil wal.                  | cloth choc.                      | 65                 | 380.00  |                                  |              |           |       |
|                       | Pedestal               | ac. sus.       | (2) 8               |                       |               | 1                     | dome         |     |                      |    |          | 10                                                      | 1.75k                                  | 6                           | 33x11½x11½    | oil wal. & oak            | blk. cloth                       | 47                 | 250.00  |                                  |              |           |       |
|                       | Tower                  | ac. sus.       | 10                  |                       |               | 1                     | dome         | T   |                      |    |          | 15                                                      | 1.75k                                  | 6                           | 28½x11½x11½   | oil wal.                  | cloth choc.                      | 35                 | 200.00  |                                  |              |           |       |
|                       | Tour de Force Vector I | ac. sus.       | (2) 10              | 5 1½                  | cone          | 1                     | dome         | M,T |                      |    |          | 15                                                      | 300, 1k, 5k                            | 6                           | 45½x14x12     | oil wal.                  | cloth choc.                      | 80                 | 460.00  |                                  |              |           |       |
|                       |                        | pas. rad.      | 8                   |                       |               | 1                     | dome         | T   |                      |    |          | 155                                                     | 1.75k                                  | 6                           | 23x14x10      | oil wal.                  | cloth cocoa or camel             | 35                 | 180.00  |                                  |              |           |       |
|                       | I A                    | pas. rad.      | 8                   | 1½                    | dome          | 1                     | dome         | M,T |                      |    |          | 15                                                      | 1k, 5k                                 | 6                           | 23x14x10      | oil wal.                  | cloth blu. or cocoa              | 38                 | 230.00  |                                  |              |           |       |
|                       | II                     | pas. rad.      | 10                  | 1½                    | dome          | 1                     | dome         | M,T |                      |    |          | 15                                                      | 1k, 5k                                 | 6                           | 23½x14x11½    | oil wal.                  | cloth rust choc.                 | 40                 | 260.00  |                                  |              |           |       |
| JENSEN                | LS-2                   |                | 8                   |                       |               | 2                     |              |     | 35-20                |    |          | 10                                                      |                                        |                             | 18½x11x10     |                           |                                  | 18                 | 79.95   |                                  |              |           |       |
|                       | LS-3                   |                | 10                  |                       |               | 2                     |              | T   | 35-20                |    |          | 10                                                      |                                        |                             | 23x13x10      |                           |                                  | 28                 | 119.95  |                                  |              |           |       |
|                       | LS-4                   |                | 10                  | 3½                    |               | 2                     |              | T   | 27-22                |    |          | 10                                                      |                                        |                             | 24½x13½x12    |                           |                                  | 40                 | 169.95  |                                  |              |           |       |
|                       | LS-5                   |                | 12                  | (2) 3½                |               | 1½                    | dome         | M,T | 25-25                |    |          | 10                                                      |                                        |                             | 26x15½x13     |                           |                                  | 50                 | 219.95  |                                  |              |           |       |
|                       | LS-6                   |                | 15                  | (2) 3½                |               | 1½                    | dome         | M,T | 20-25                |    |          | 10                                                      |                                        |                             | 30½x16½x16    |                           |                                  | 70                 | 289.95  |                                  |              |           |       |
| KEF ELECTRONICS       | 105                    |                | 12                  | 5                     | cone          | 1½                    | dome         | M,T |                      |    |          |                                                         |                                        |                             | 38x16.3x17.9  | wal. teak                 | blk.                             | 83                 | 800.00  |                                  |              |           |       |
|                       | 104AB                  |                | (2) 13x9            |                       |               | ¾                     | dome         | M   | 50-20 ±2             |    |          | 15                                                      | 45, 3k                                 | 8/                          | 24.8x13x10.2  | wal. teak                 | foam blk.                        | 36                 | 350.00  |                                  |              |           |       |
|                       | 103                    |                | 8                   |                       |               | 1½                    | dome         |     | 50-20 ±2             |    |          | 25                                                      | 3k                                     | 8/                          | 19.7x13x8.9   | wal. teak                 | foam blk.                        | 32                 | 275.00  | Rotating baffle                  |              |           |       |
|                       | Corelli                |                | 8                   |                       |               | ¾                     | dome         |     | 50-30 ±3             |    |          | 25                                                      | 3.5k                                   | 8/                          | 18.5x11x8.6   | wal. teak                 | cloth mokka                      | 20                 | 370.00  |                                  |              |           |       |
|                       | Calinda                |                | (2) 13x9            |                       |               | ¾                     | dome         |     | 40-30 ±3             |    |          | 15                                                      | 45, 3.5k                               | 8/                          | 27.5x11x13.8  | wal. teak                 | cloth mokka                      | 42                 | 295.00  |                                  |              |           |       |
|                       | Cantata                |                | 13x9                | 5                     | cone          | 1½                    | dome         | M,T | 35-20 ±3             |    |          | 15                                                      | 250, 3k                                | 8/                          | 32x13.4x15.4  | wal. teak                 | cloth mokka                      | 70                 | 495.00  |                                  |              |           |       |
| KLH                   | SCX-3A                 | *              | 12                  | (2) 1½                | dome          | ½                     | dome         | M,T | 39-30 ±3             |    |          | 40                                                      | 900, 7k                                | 8                           | 15x13½x38     | oil wal.                  | cloth brn.                       | 90                 | 500.00  | *Controlled acoustic compliance. |              |           |       |
|                       | SCX-A                  | *              | 12                  | 4½                    | cone          | 1                     | dome         | M,T | 43-22 ±3             |    |          | 30                                                      | 900, 5k                                | 8                           | 14x12x34      | oil wal.                  | cloth brn.                       | 75                 | 335.00  |                                  |              |           |       |
|                       | CL-4                   | *              | 10                  | 4½                    | cone          | 1                     | dome         | M,T | 37-20 ±5             |    |          | 25                                                      | 500, 5k                                | 8                           | 14½x13x27     | oil wal.                  | cloth brn.                       | 59                 | 225.00  |                                  |              |           |       |
|                       | CL-3                   | *              | 10                  | 2½                    | cone          | 2                     | cone         | T   | 40-18 ±5             |    |          | 20                                                      | 1.5& 10k                               | 8                           | 14x12x26      | oil wal.                  | cloth brn.                       | 53                 | 160.00  |                                  |              |           |       |
|                       | CB-10                  | *              | 10                  |                       |               | 2½                    | cone         | T   | 43-18 ±5             |    |          | 10                                                      | 1.7k                                   | 8                           | 14½x7½x19½    | oil wal. oak              | foam                             | 35                 | 130.00  |                                  |              |           |       |
|                       | CB-8                   | *              | 8                   |                       |               | 2½                    | cone         | T   | 47-18 ±5             |    |          | 8                                                       | 1.7k                                   | 8                           | 11x7½x19½     | oak                       | foam                             | 27                 | 110.00  |                                  |              |           |       |
|                       | CB-6                   | *              | 6                   |                       |               | 2½                    | cone         |     | 51-15 ±5             |    |          | 6                                                       | 2.2k                                   | 8                           | 10½x6½x15     | oak vinyl                 | foam brn.                        | 20                 | 140.00  |                                  |              |           |       |
|                       | CT-38 the pistol       | *              | (2) 8½              |                       |               | (2) 2½                |              |     |                      |    |          | 10                                                      |                                        | 4                           | 11x11x41      | oak                       | cloth blk.                       | 60                 | 250.00  |                                  |              |           |       |
|                       | M 355 Baron            | *              | 11                  | 1½                    | dome          | 1                     | dome         | M,T |                      |    |          | 20                                                      |                                        | 8                           | 14x12½x35½    | oil wal.                  | cloth blk.                       | 80                 | 395.00  |                                  |              |           |       |
|                       | M345 Little Baron      | *              | 11                  |                       |               | 1                     | dome         | T   |                      |    |          | 20                                                      |                                        | 8                           | 13x11½x29     | oil wal.                  | cloth blk.                       | 50                 | 295.00  |                                  |              |           |       |
| M 335 Baroness        | *                      | 10             |                     |                       | 1             | dome                  |              |     |                      |    | 15       |                                                         | 8                                      | 12x11x23                    | oil wal.      | cloth blk.                | 32                               | 249.00             |         |                                  |              |           |       |
| M 325 Little Baroness | *                      | 8              |                     |                       | 1             | dome                  |              |     |                      |    | 10       |                                                         | 8                                      | 10x10x18                    | oil wal.      | cloth blk.                | 23                               | 199.00             |         |                                  |              |           |       |
| M 319 Baroness        | *                      | 12             | 5½                  |                       | (2) 2½        | hemi                  | M,T          |     |                      |    | 10       |                                                         | 8                                      | 14½x11½x24                  | oil wal.      | cloth blk.                | 40                               | 299.95             |         |                                  |              |           |       |
| KENWOOD               | Model 7                | ac. sus.       | 14                  | 4                     | dome          | 1½                    | dome         | M,T | 20-35                |    |          | 100                                                     | 400, 4k & 8k                           | 8/6                         | 18½x15x37     | oil wal.                  | brn.                             | 121                | 1250.00 |                                  |              |           |       |
|                       | LS-408                 | ported         | 12                  | 4½                    | cone          | 1½                    | cone         | M,T | 48-20                |    |          | 50                                                      | 1.5& 4k                                | 8/6                         | 15x12½x25     | oil wal.                  | blk.                             | 39½                | 250.00  |                                  |              |           |       |
|                       | LS-407                 | ported         | 10                  | 4½                    | cone          | 1½                    | cone         | M,T | 48-20                |    |          | 50                                                      | 1.5& 4k                                | 8/6                         | 15x12½x25     | vin. wal.                 | blk.                             | 39                 | 180.00  |                                  |              |           |       |
|                       | LS-405                 | ported         | 10                  |                       |               | 1½                    | cone         |     | 58-20                |    |          | 25                                                      | 2.5k                                   | 8/6                         | 12½x11x23     | vin. wal.                 | blk.                             | 30                 | 130.00  |                                  |              |           |       |
|                       | LS-403                 | ported         | 8                   |                       |               | 1½                    | cone         |     | 65-20                |    |          | 25                                                      | 2.5k                                   | 8/6                         | 11½x9x17      | vin. wal.                 | blk.                             | 20½                | 85.00   |                                  |              |           |       |

# Loudspeakers



JBL L-212



JR 149



JVC SK-1000



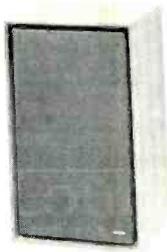
Janis W-1

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| MANUFACTURER            | MODEL           | Enclosure type         | Woofer dia., inches |           | Midrange dia., inches |            | Tweeter dia., inches |            | Level controls (M=midrange, T=tweeter, ST=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz    | Impedance, ohms, Nominal/minimum | Dimensions, inches |                     | Finish                      | Grille Material? Color? | Weight, lbs.           | Price, \$ | NOTES                                                                                          |
|-------------------------|-----------------|------------------------|---------------------|-----------|-----------------------|------------|----------------------|------------|----------------------------------------------------------|----------------------------------------|-----------------------------|------------------------------|----------------------------------|--------------------|---------------------|-----------------------------|-------------------------|------------------------|-----------|------------------------------------------------------------------------------------------------|
|                         |                 |                        | (8)                 | (8)       | (1)                   | (1)        | (8)                  | (8)        |                                                          |                                        |                             |                              |                                  | (8)                | (8)                 |                             |                         |                        |           |                                                                                                |
| KING RESEARCH           | Frankmann       | inf. baf.              | (8)<br>12           | (8)<br>8  | cone                  | (1)        | horn                 | T          |                                                          | 20-18 ±4                               | 10                          | 200, 4k                      | 8                                |                    | oil wal, oak brch.  | cloth, brn.                 |                         | 1295.00 system         |           | 3 piece system: 1 common bass, 2 satellite enclosures with adjustable stands                   |
|                         | Mini-Frank      | ac. sus.               | (4)<br>12           | (4)<br>8  | cone                  | (1)        | horn                 | T          |                                                          | 30-18 ±4                               | 20                          | 200, 4k                      | 4                                |                    | oil wal, oak brch.  | cloth, brn.                 |                         | 895.00 system          |           |                                                                                                |
| KLEIN & HUMMEL (GOTHAM) | OY              | ac. sus.               | 10                  | 4         | cone                  |            | horn                 | W,T        |                                                          | 40-16 ±2                               |                             | 500, 8k                      |                                  | 12x9 x19           | wal.                | metal silver                | 44                      | 775.00                 |           | W/2 30-w amps & covers W/240W triamps & covers.                                                |
|                         | O-92            | ac. sus.               | (2)<br>10           | 5         | cone                  | 1          |                      | W,M, T     |                                                          | 50-16 ±1.5                             |                             | 500, 3k                      |                                  | 17.3x11.8 x31.5    | grey                | metal                       | 66                      | 2690.00                |           |                                                                                                |
| KLIPSCH                 | Heresy          | total enclosure vented | 12                  |           | horn                  |            | horn                 |            |                                                          | 50-18 ±5                               | 15                          | 700, 6k                      | 8/8                              | 15½x13¼ x21½       | var.                | cloth var.                  | 55                      | 261.00-                |           |                                                                                                |
|                         | Cornwall        |                        | 15                  |           | horn                  |            | horn                 |            |                                                          | 35-18 ±5                               | 6                           | 600, 6k                      | 8/5                              | 25½x15½ x36        | var.                | cloth var.                  | 108                     | 400.00-                |           |                                                                                                |
|                         | LaScala         | horn                   | 15                  |           | horn                  |            | horn                 |            |                                                          | 40-18 ±5                               | 2                           | 400, 6k                      | 8/5                              | 24x24¼ x35         | var.                | cloth var.                  | 120                     | 570.00-                |           |                                                                                                |
|                         | Belle           | horn                   | 15                  |           | horn                  |            | horn                 |            |                                                          | 40-18 ±5                               | 2                           | 400, 6k                      | 8/5                              | 30¼x18 x36         | var.                | cloth var.                  | 150                     | 616.00-                |           |                                                                                                |
|                         | Klipschorn      | horn                   | 15                  |           | horn                  |            | horn                 |            |                                                          | 30-18 ±5                               | 2                           | 400, 6k                      | 8/5                              | 31¼x28½ x52        | var.                | cloth var.                  | 180-200                 | 880.00-1261.00-1515.00 |           |                                                                                                |
| KOSS                    | Model One       | open                   | e.s.                |           | e.s.                  |            |                      |            |                                                          |                                        | 75                          | 250 1.6k 6.5k 250, 2.5k 2.5k | 4/4                              | 32x10 x49          | oil. wal.           | cloth brn.                  | 150                     | 1050.00                |           |                                                                                                |
|                         | Model Two       | open                   | e.s.                |           | e.s.                  | 1          | dome                 | T          |                                                          |                                        | 75                          | 250, 2.5k 2.5k               | 4/4                              | 24x11.5 x41        | oil wal. oil. pecan | cloth brn. double knit brn. | 95                      | 650.00                 |           |                                                                                                |
|                         | CM/1010         | pas. rad.              | 10, 8               |           |                       | 1          | dome                 | T          |                                                          |                                        | 15                          | 250, 2.5k 2.5k               |                                  | 15½x11 x28         | oil. pecan          | double knit brn.            | 43.5                    | 195.00                 |           |                                                                                                |
|                         | CM/1020         | twin port              | 10                  | 4½        | cone                  | 1          | dome                 | T,M        |                                                          |                                        | 15                          | 450, 3k                      |                                  | 15½x13 x33         | oil. pecan          | double knit brn.            | 60                      | 295.00                 |           |                                                                                                |
|                         | CM/1030         | twin port              | 10                  | (2)<br>4½ | cone                  | 1          | dome                 | treble T,M |                                                          |                                        | 15                          | 400, 2.5k 6k                 |                                  | 16½x14½ x39        | oil. pecan          | double knit brn.            | 74                      | 395.00                 |           |                                                                                                |
| KUSTOM ACOUSTICS        | Labyrinth       | tl/tal*                | 12                  | 5         | cone                  | (2)<br>2,1 | dome                 | M, mT, ST  |                                                          | 19-22 ±2½                              | 15                          | 750, 3½k, 9k                 | 11/5                             | 16x16 x51          | oil. wal.           | knit blk.                   | 155                     | 689.00                 |           | All systems avail. in rosewood, teak, ebony, zebra etc. *Trans. line; tapered acoustical line. |
|                         | Regency         | semi-tl/tal*           | 12                  | 5         | cone                  | 1          | dome                 | M,T        |                                                          | 30-22 ±3                               | 15                          | 550, 3½k 950, 5k             | 14/5                             | 16x13 x26          | oil. wal. oil. wal. | knit blk. knit blk.         | 76                      | 313.00                 |           | *As above.                                                                                     |
|                         | Signet          | tl/tal*                | 12                  | 2         | dome                  | 1          | dome                 | M,T        |                                                          | 34-22 ±3                               | 10                          | 950, 5k                      | 12/3                             | 16x13 x26          | oil. wal.           | knit blk.                   | 70                      | 199.00                 |           | *Tapered acoustical line                                                                       |
|                         | Tower (MkIV)    | semi-tl/tal*           | 12                  | 5         | cone                  | 1          | dome                 | M,T        |                                                          | 29-22 ±3                               | 15                          | 750, 3½k, 9k                 | 14/5                             | 16x13 x40          | oil. wal.           | knit blk.                   | 125                     | 499.00                 |           | *Trans. line; tapered acoustical line.                                                         |
|                         | Titan Labyrinth | tl/tal*                | (2)<br>12           | (2)<br>5  | cone                  | (2)<br>2,1 | dome                 | (4)<br>M,T |                                                          | 24-22 ±2½                              | 10                          | 550, 3½k, 9k                 | 9/<br>3.2                        | 30x18 x54          | oil. wal.           | knit blk.                   | 325                     | 1495.00                |           | *As above                                                                                      |
|                         | AE1-Titan       | tl/tal*                | (4)<br>12           | (2)<br>5  | cone                  | (4)<br>2,1 | dome                 | (4)<br>M,T |                                                          | 28-22 ±3                               | 15                          | 550, 3½k, 9k                 | 8/2                              | 30x18 x54          | oil. wal.           | knit blk.                   | 340                     | 1295.00                |           | *As above                                                                                      |
|                         | TAS-Challenger  | tl/tal*                | (2)<br>12           | (2)<br>5  | cone                  | (2)<br>2,1 | dome                 | (2)<br>M,T |                                                          | 28-22 ±3                               | 10                          | 550, 3½k, 9k                 | 9/2                              | 23x16 x41          | oil. wal.           | knit blk.                   | 185                     | 735.00                 |           | *As above                                                                                      |
| LTC CORP.               | 50              | ac. sus.               | 10                  |           |                       | (2)<br>1   | dome                 | T          |                                                          | 36-18 ±3                               | 25                          | 2.6k                         | 8/6                              | 14½x12 x30         | oil wal. oil wal.   | cloth blk. cloth blk.       | 47                      | 240.00                 |           |                                                                                                |
|                         | 100             | ac. sus.               | 10                  |           |                       | (4)<br>1   | dome                 | T          |                                                          | 36-22 ±3                               | 25                          | 2.6k                         | 8/6                              | 13½x11 x40         | oil wal. oil wal.   | cloth blk. cloth blk.       | 61                      | 340.00                 |           |                                                                                                |

| MANUFACTURER                   | MODEL        | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M, M+midrange, T, Tweeter, ST, Super Tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish     | Grille Material? Color? | Weight, lbs. | Price, \$   | NOTES                                          |
|--------------------------------|--------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|---------------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|------------|-------------------------|--------------|-------------|------------------------------------------------|
|                                |              |                |                     |                       |               |                      |              |                                                               |                                        |                             |                           |                                  |                    |            |                         |              |             |                                                |
| LTC CORP.<br>(Continued)       | TX-5         | ac. sus.       | 10                  |                       |               | (4) 1                | dome         | T                                                             | 36-22 ±3                               | 25                          | 2.6k                      | 8/6                              | 28x12½ x30         | oil wal.   | cloth blk.              | 70           | 550.00      |                                                |
|                                | TX-10        | ac. sus.       | (2) 10              |                       |               | (8) 1                | dome         | T                                                             | 36-22 ±3                               | 25                          | 2.6k                      | 4                                | 28x12½ x60         | form.      | cloth blk.              | 130          | 1095.00     |                                                |
| LEAK (ERCONA)                  | 3080         | ac. sus.       | 10                  | 6%                    | cone          | ¾                    | dome         | T                                                             | 38-22 ±3                               |                             | 450, 3.5k                 | 8                                | 13½x17 x33         | wal.       | cloth, blk.             | 72.6         | 470.00      | Time delay compensated                         |
|                                | 3050         | ac. sus.       | (2) 6%              |                       |               | ¾                    | dome         | T                                                             | 48-22 ±3                               |                             | 4k                        | 8                                | 12x14 x25          | wal.       | cloth, blk.             | 41.8         | 300.00      | Time delay compensated                         |
|                                | 3030         | ac. sus.       | (2) 5               |                       |               | ¾                    | dome         | T                                                             | 60-22 ±3                               |                             | 4k                        | 8                                | 10x11 x20½         | wal.       | cloth, blk.             | 24.2         | 200.00      | Time delay compensated                         |
|                                | 3020         | bass. ref.     | 5                   |                       |               | ¾                    | dome         | T                                                             | 62-22 ±3                               |                             | 3k                        | 8                                | 8x10½ x17          | wal.       | cloth, blk.             | 16.5         | 150.00      | Time delay compensated                         |
|                                | 2075         | trans. line    | 15                  | 6% 4                  | cone cone     | 1                    | dome         | T                                                             | 35-26 ±3                               |                             | 450, 2k, 5k               | 6                                | 20x15 x47          | wal.       | foam blk.               | 112          | 790.00      | Time delay compensated                         |
|                                | 2020         | ac. sus.       | 7                   |                       |               | 2                    | cone         | T                                                             | 45-20 ±3                               |                             | 3.5k                      | 8/4                              | 15½x9% x9%         | oil, wal.  | cloth brn.              | 15           | 135.00      |                                                |
|                                | 2030         | reflex         | 8                   | 4                     |               | 1                    | dome         | T                                                             | 40-20 ±2                               |                             | 100, 3.5k                 | 8/4                              | 19½x11 x10%        | oil, wal.  | cloth brn.              | 24.5         | 195.00      |                                                |
|                                | 2060         | ac. sus.       | 12                  | 4                     |               | 1                    | dome         | T                                                             | 35-20 ±2                               |                             | 600, 3.5k                 | 8/4                              | 25½x15 x13         | oil wal.   | cloth brn.              | 51           | 325.00      |                                                |
| LENTEK<br>(AMERICAN AUDIOPORT) | Lentek       | trans. line    | 8½ x 5%             | 3%                    | cone          | 1                    | dome         | T                                                             | 50-20 ±5                               | 25                          | 400, 2.5k, 10k            | 8                                | 16x15½ x42         | teak       | cloth blk.              | 85           | 1150.00 pr. |                                                |
| LINN (AUDIOPHILE SYSTEMS)      | DMS Isobaric | isobaric       | 12x 9               | (2) 5                 | cone          | (2) 1                | dome         | T                                                             |                                        |                             | 375, 3k                   | 4/4                              | 15x15 x30          | oil wal.   | foam blk.               | 105          | 1920.00 pr. | Model PMS, tri-amped version, \$2300 per pair. |
| LOUDSPEAKER DESIGN             | Ezekiel FRL  | inf. baf.      | (2) 12              | 6                     | cone          | 2                    | dome         | T, M                                                          | 24-17 ±2                               | 40                          | 350, 4k                   | 8/7                              | 15x10 x44          | wal.       | blk. brn.               | 50           | 800.00      |                                                |
|                                | Ezekiel WRL  | inf. baf.      | (2) 10              |                       |               | 2                    | dome         | T                                                             | 40-17 ±3                               | 20                          | 1750                      | 8/6                              | 15x13 x25          | vinyl wal. | blk. brn.               | 37           | 278.00      |                                                |
| MAGITRAN                       | DS60         | sound panel    | (2) 9x 12           | (2) 8                 | poly-planar   | 1½                   | dome         | T                                                             | 40-20 ±5                               | 5                           |                           | 8/4                              | 23x29½ x2          | wal.       | cloth, var.             | 13           | 99.95       |                                                |
| MAGNEPAN                       | MG-I         | open           | *                   |                       |               | **                   |              |                                                               | 50-16 ±4                               | 30                          | 2400                      | 5                                | 22x1¼ x59%         | oak        | cloth blk., wht.        | 30           | 495.00 pr.  | *354 sq. in. **67 sq. in.                      |
|                                | MG-II        | open           | *                   |                       |               | **                   |              |                                                               | 50-16 ±4                               | 30                          | 2400                      | 6                                | 22x1¼ x59%         | oak        | cloth blk. or wht.      | 35           | 695.00 pr.  | *449 sq. in. **85 sq. in.                      |
|                                | MG-III       | open           | *                   |                       |               | **                   |              |                                                               | 45-16 ±4                               | 30                          | 1600                      | 8                                | 24½x1¼ x72         | oak        | cloth blk., wht.        | 40           | 895.00 pr.  | *520 sq. in. **85 sq. in.                      |
| MARANTZ                        | HD 880       | Vari-Q         | 12                  | 5                     | cone          | 1½*                  | dome         | M, T S.T.                                                     | 30-22 ±3                               | 10                          | 750, 2.3k, 5k             | 8/                               | 16x12 x40%         | oiled wal. | cloth brn.              |              | 319.95      | *1 in. Dome super-tweeter. *As above.          |
|                                | HD 770       | Vari-Q         | 12                  | 5                     | cone          | 1½*                  | dome         | M, T S.T.                                                     | 33-22 ±3                               | 10                          | 750, 2.3k, 5k             | 8/                               | 15x11½ x26%        | oiled wal. | cloth brn.              |              | 259.95      |                                                |
|                                | HD 660       | Vari-Q         | 10                  | 5                     | cone          | 1½                   | dome         | M, T                                                          | 35-20 ±3                               | 10                          | 750, 2.5k                 | 8/                               | 14½x11½ x24%       | oiled wal. | cloth brn.              |              | 199.95      |                                                |
|                                | HD 550       | Vari-Q         | 8                   | 5                     | cone          | 1½                   | dome         | M, T                                                          | 40-20 ±3                               | 10                          | 800, 3k                   | 8/                               | 12½x9½ x22%        | wal.       | cloth brn.              |              | 139.95      |                                                |
|                                | HD 440       | ac. sus.       | 8                   | 3½                    | cone          | 3½                   | cone         | no                                                            | 45-18 ±3                               | 10                          | 2k, 8k                    | 8/                               | 11½x8½ x19%        | vinyl wal. | cloth brn.              |              | 89.95       |                                                |
|                                | 940          | Vari-Q         | 12                  | 5                     | cone          | 1.5*                 | dome         | M, T S.T.                                                     | 30-22 ±3                               | 10                          | 750, 2.3k, 5k             | 8/                               | 15x12 x45%         | oiled wal. | cloth brn.              |              | 399.95      | *1 in. dome super-tweeter. *As above.          |
|                                | 930          | Vari-Q         | 12                  | 5                     | cone          | 1.5*                 | dome         | M, T S.T.                                                     | 33-22 ±3                               | 10                          | 750, 2.3k, 5k             | 8/                               | 15x12 x28%         | oiled wal. | cloth brn.              |              | 339.95      |                                                |
|                                | 920          | Vari-Q         | 12                  | 5                     | cone          | 1½                   | dome         | M, T                                                          | 33-20 ±3                               | 10                          | 750, 2.5k                 | 8/                               | 15x12 x38%         | oil, wal.  | cloth brn.              |              | 339.95      |                                                |
|                                | 900          | Vari-Q         | 10                  | 5                     | cone          | 1½                   | dome         | M, T                                                          | 35-20 ±3                               | 10                          | 750, 2.5k                 | 8/                               | 15x12 x28%         | oil, wal.  | cloth brn.              |              | 279.95      |                                                |
|                                | 7 MK II      | ac. sus.       | 12                  | 5                     | cone          | 1½                   | cone         | M, T                                                          | 35-20 ±3                               | 10                          | 800, 2.5k                 | 8/                               | 14½x11½ x25%       | wal.       | cloth brn.              |              | 159.95      |                                                |
|                                | 6 MK II      | bass ref.      | 10                  |                       |               | 1½                   | cone         | T                                                             | 35-20 ±3                               | 10                          | 2.5k                      | 8/                               | 14½x11½ x25%       | vinyl wal. | cloth brn.              |              | 119.95      |                                                |
|                                | 5 MK II      | ac. sus.       | 8                   |                       |               | 1½                   | cone         | T                                                             | 40-18 ±3                               | 10                          | 2.5k                      | 8/                               | 12x9½ x23          | vinyl wal. | cloth brn.              |              | 99.95       |                                                |
| 4 MK II                        | ac. sus.     | 8              |                     |                       | 1½            | cone                 | T            | 60-15 ±5                                                      | 10                                     | 3.5k                        | 8/                        | 11½x8½ x19%                      | vinyl wal.         | cloth brn. |                         | 69.95        |             |                                                |
| MARJEN                         | RFS-I        | ac. sus.       | 8                   |                       |               | 2                    | cone         |                                                               | 44-20 ±3                               | 12                          | 2k                        | 8                                | 21x12x9            | pine vinyl | foam blk.               | 32           | 99.00       |                                                |
|                                | I            | ac. sus.       | 8                   |                       |               | (2) 2                | cone         |                                                               | 44-20 ±3                               | 12                          | 2k                        | 8                                | 22x10% x10%        | oil        | cloth blk./nat          | 34           | 139.00      |                                                |
|                                | II           | ac. sus.       | 8                   |                       |               | (4) 2                | cone         |                                                               | 44-20 ±3                               | 12                          | 2k                        | 8                                | 19x11 x10%         | oil        | cloth blk./nat          | 34           | 169.00      |                                                |
|                                | III          | ac. sus.       | (2) 8               |                       |               | (4) 2                | cone         |                                                               | 40-20 ±3                               | 15                          | 2k                        | 8                                | 36x12 x12          | oil pine   | cloth blk./nat          | 53           | 249.00      |                                                |

# Loudspeakers



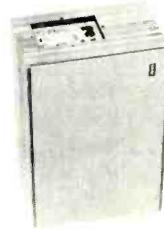
Jensen LS-5



KEF 105



KLH Research 10



K&H OY



Klipsch Klipschorn



Kustom Titan

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| MANUFACTURER                | MODEL             | Enclosure type | Woofer dia., inches |           | Midrange dia., inches |                   | Midrange type       |           | Tweeter dia., inches |      | Tweeter type |                 | Level control (H/M/L; midrange; T= tweeter; ST= Super Tweeter) |                         | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power |               | Crossover frequencies, Hz | Impedance, ohms; Nominal/Minimum | Dimensions, inches | Finish | Grille Material? Color? | Weight, lbs.     | Price, \$                  | NOTES |
|-----------------------------|-------------------|----------------|---------------------|-----------|-----------------------|-------------------|---------------------|-----------|----------------------|------|--------------|-----------------|----------------------------------------------------------------|-------------------------|----------------------------------------|-----------------------------|---------------|---------------------------|----------------------------------|--------------------|--------|-------------------------|------------------|----------------------------|-------|
|                             |                   |                |                     |           |                       |                   |                     |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         |                  |                            |       |
| MARTIN<br>(Eastman Sound)   | Gamma 208S        | ac. sus.       | 8                   |           |                       | 1½                | ring                | T         | 50-18 ±5*            | 20   | 1k           | 8               | 10½x10¼<br>x18½                                                | wal.                    | cloth<br>brn.                          | 26                          | 89.00         |                           |                                  |                    |        |                         |                  | *Write for<br>test method. |       |
|                             | Gamma 308S        | ac. sus.       | 8                   | 5         | cone                  | 1½                | ring                | M,T       | 45-18 ±5*            | 25   | 1k,<br>4k    | 8               | 12½x7½<br>x21½                                                 | wal.                    | cloth<br>brn.                          | 26                          | 115.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma 310S        | ac. sus.       | 10                  | 5         | convx                 | 1                 | horn                | M,T       | 38-18 ±5*            | 30   | 750,<br>3k   | 8               | 12½x10¼<br>x21½                                                | wal.                    | cloth<br>brn.                          | 35                          | 159.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma S.S.S.      | ac. sus.       | (2)<br>8            | 5         | cone                  | 1                 | horn                | M,T       | 36-18 ±5*            | 35   | 1k,<br>5k    | 4               | 15x12¼<br>x25½                                                 | wal.                    | cloth<br>brn.                          | 48                          | 219.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma 412         | ac. sus.       | 12                  | 5         | convx                 | (2)<br>1          | horn                | M,T       | 32-20 ±4*            | 40   | 500,<br>3k   | 8               | 15x12¼<br>x25½                                                 | wal.                    | cloth<br>brn.                          | 51                          | 249.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma 1200M       | ac. sus.       | 12                  | 5         | convx                 | 1½                | dome                | M,T       | 30-20 ±3*            | 40   | 350,<br>4k   | 8               | 15x12¼<br>x29                                                  | wal.                    | cloth<br>brn.                          | 58                          | 319.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma 1500S       | ac. sus.       | 15                  | 5         | convx                 | (4)<br>1          | horn                | M,T       | 30-20 ±4*            | 40   | 350,<br>4k   | 8               | 18x14<br>x28½                                                  | wal.                    | cloth<br>brn.                          | 63                          | 369.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma Magnificat  | ac. sus.       | (2)<br>12           | 5         | convx                 | (2)<br>1½         | dome                | M,T       | 26-22 ±5*            | 50   | 500,<br>4k   | 4               | 18x14<br>x37½                                                  | wal.                    | knit<br>brn.                           | 90                          | 399.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma Sound Tower | ac. sus.       | (4)<br>8            | 5         | convx                 | (4)<br>1          | horn                | M,T       | 38-18 ±5*            | 50   | 1½,<br>5k    | 8               | 16½x9¼<br>x52                                                  | wal.                    | knit<br>brn.                           | 90                          | 419.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | Gamma 315S        | ac. sus.       | 15                  | 5         | cone                  | 1                 | horn                | M,T       | 30-20 ±4*            | 40   | 750,<br>4k   | 8               | 16x11¼<br>x25½                                                 | wal.                    | knit<br>brn.                           | 48                          | 279.00        |                           |                                  |                    |        |                         |                  |                            |       |
| Gamma 210S                  | ac. sus.          | 10             |                     |           | 1½                    | ring              | T                   | 40-18 ±4* | 30                   | 1k   | 8            | 12½x10¼<br>x21½ | wal.                                                           | knit<br>brn.            | 35                                     | 129.00                      |               |                           |                                  |                    |        |                         |                  |                            |       |
| Gamma 204S                  | ac. sus.          | 5              |                     |           | 1½                    | ring              | T                   | 67-18 ±4* | 20                   | 1.5k | 8            | 5½x4¼<br>x10¼   | wal.                                                           | knit<br>brn.            | 8                                      | 79.00                       |               |                           |                                  |                    |        |                         |                  |                            |       |
| MATRECS (GC<br>ELECTRONICS) | MA-254            | ac. sus.       | 15                  | (2)<br>4½ | cone                  | 1½<br>3½          | ring,<br>pz<br>horn |           | 25-24                | 20   | 1½<br>6k     | 8               | 28x13<br>x28                                                   | wal.<br>simul.<br>slate | foam<br>blk.                           | 65                          | 254.95        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-224            | ac. sus.       | 12                  | 4½        | cone                  | (2)<br>3¼         | pz<br>horn          |           | 30-24                | 10   | 1½<br>6k     | 8               | 19½x13<br>x28                                                  | wal.<br>simul.<br>slate | foam<br>blk.                           | 50                          | 211.95        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-203            | ac. sus.       | 10                  | 4½        | cone                  | 2¾                | cone                |           | 30-22                | 5    | 1½<br>6k     | 8               | 15x11<br>x26                                                   | wal.<br>simul.<br>slate | foam<br>blk.                           | 32                          | 165.95        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-123            | ac. sus.       | 12                  | 4½        | cone                  | 1¾                | ring                |           | 35-22                | 8    | 1½<br>6k     | 8               | 15x10<br>x24                                                   | wal.<br>vinyl           | cloth<br>brn.                          | 29                          | 89.95         |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-102            | ac. sus.       | 10                  |           |                       | 3                 | cone                |           | 35-22                | 5    | 3k           | 8               | 12x10<br>x20                                                   | wal.<br>vinyl           | cloth<br>brn.                          | 20                          | 69.95         |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-82             | ac. sus.       | 8                   |           |                       | 3                 | cone                |           | 35-22                | 2    | 3k           | 8               | 11¼x7½<br>x18½                                                 | wal.<br>vinyl           | cloth<br>brn.                          | 28                          | 89.90<br>pr.  |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MA-62             | ac. sus.       | 6                   |           |                       | 3                 | cone                |           | 40-20                | 1    | 3k           | 8               | 10x6<br>x17                                                    | wal.<br>vinyl           | cloth<br>brn.                          | 11½                         | 73.90<br>pr.  |                           |                                  |                    |        |                         |                  |                            |       |
| MCINTOSH                    | ML 1C             |                | 12                  | 8         |                       | 1½                | dome                |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 399.00           |                            |       |
|                             | ML 10C            |                | 10                  |           |                       | 1½                | dome                |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 319.00           |                            |       |
|                             | ML 2C             |                | 12                  | 8         |                       | (2)<br>1½         | dome                |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 799.00           |                            |       |
|                             | ML 2M             |                | 12                  | 8         |                       | (2)<br>1½         | dome                |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 799.00           |                            |       |
|                             | XR 7              |                | 9½                  | 6         |                       | (2)<br>1½         | dome                |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 999.00           |                            |       |
|                             | XR 5<br>XR 3      |                | 9½<br>7¾            | 6<br>3¼   |                       | 1½<br>1½          | dome<br>dome        |           |                      |      |              |                 |                                                                |                         |                                        |                             |               |                           |                                  |                    |        |                         | 499.00<br>425.00 |                            |       |
| MICRO-ACOUSTICS             | FRM-1A            | ac. sus.       | 10                  |           |                       | (4)<br>1¼<br>(1)1 | cone<br>dome        | T         | 32-18 ±4             | 18   | 1.7k         | 8               | 25½x15½<br>x12¼                                                | wal.<br>vinyl           | knit,<br>var.                          | 40                          | 200.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | FRM-2A            | ac. sus.       | 10                  |           |                       | (3)<br>1¼         | cone                | T,D       | 40-16 ±4             | 10   | 1.75k        | 8               | 25½x15½<br>x12¼                                                | wal.<br>vinyl           | br.<br>foam                            | 34                          | 159.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | FRM-3             | twin duct      | 8                   |           |                       | 1¼                | cone                |           | 45-15 ±4             | 7    | 2.5k         | 8               | 22x12¼<br>x9¾                                                  | wal.<br>vinyl           | br.<br>foam                            | 26                          | 124.00        |                           |                                  |                    |        |                         |                  |                            |       |
|                             | MS-1              | radial array   |                     |           |                       | (4)<br>1¼         |                     |           | 3.5-18 ±3            | 15   | 3.5k<br>7k   | 16              | 9¼x5¼<br>x3¾                                                   | oil<br>wal.             | beige<br>cloth                         | 2½                          | 121.00<br>pr. |                           |                                  |                    |        |                         |                  | Add-on<br>tweeter          |       |

| MANUFACTURER                | MODEL                 | Enclosure type        | Woofer dia., inches |    | Midrange dia., inches |       | Midrange type |         | Tweeter dia., inches |    | Tweeter type |     | Level controls (M=midrange, T=tweeter, ST=Super Tweeter) |                 | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum                                        | Dimensions, inches | Finish      | Grille Material? Color? | Weight, lbs | Price, \$                                                                                                                                                   | NOTES |
|-----------------------------|-----------------------|-----------------------|---------------------|----|-----------------------|-------|---------------|---------|----------------------|----|--------------|-----|----------------------------------------------------------|-----------------|----------------------------------------|-----------------------------|---------------------------|-------------------------------------------------------------------------|--------------------|-------------|-------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|                             |                       |                       |                     |    |                       |       |               |         |                      |    |              |     |                                                          |                 |                                        |                             |                           |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
| MILLER & KREISEL SOUND      | BEII-A Lab-1          | ac. sus.              | 12                  |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 13-300 ±3                              | 50                          |                           | 25x25x23                                                                | wal.               | cloth, blk. | 105                     | 365.00      | Subwoofer, w/ resp. curve. 119dB SPL @ 40Hz @ 140 W., 1mtr.<br><br>125dB SPL @ 40Hz @ 280W., 1mtr. W. x-over *adj. 50, 75, 100, 125, 150Hz. As above, *same |       |
|                             | DBE-1A                | ac. sus.              | (2) 12              |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 22-300 ±3                              | 50                          |                           | 30x18½ x26                                                              | wal.               | cloth, blk. | 110                     | 425.00      |                                                                                                                                                             |       |
|                             | BD-1A                 | ac. sus.              | 12                  |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 25-300 ±3                              | 50                          |                           | 18x12x27                                                                | wal.               | cloth, blk. | 60                      | 230.00      |                                                                                                                                                             |       |
|                             | B-II                  | ac. sus.              | 12                  |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 35-300 ±3                              | 50                          |                           | 14½x11½ x25½                                                            | wal.               | cloth, blk. | 40                      | 110.00      |                                                                                                                                                             |       |
|                             | Studio I              | ac. sus.              | (4) 12              |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 33-300 ±3                              | 50                          |                           | 24x18½ x30                                                              | wal.               | cloth, blk. | 130                     | 565.00      |                                                                                                                                                             |       |
|                             | Goliath I             | ac. sus.              | 12                  |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 25-100 ±3                              | 50                          | *                         | 18x12x27                                                                | wal.               | cloth, blk. | 68                      | 315.00      |                                                                                                                                                             |       |
|                             | Goliath II            | ac. sus.              | 12                  |    |                       |       |               |         |                      |    |              |     |                                                          |                 | 35-100 ±3                              | 35                          | *                         | 14x11½ x25½                                                             | wal.               | cloth, blk. | 48                      | 175.00      |                                                                                                                                                             |       |
| MITSUBISHI                  | DS-303                | ac. sus.              | 12                  | 2½ | dome                  | 1     | dome          | M, T ST | 30-35                | 30 | 600, 5k, 10k | 6/5 | 14½x13 x24½                                              | oil wal.        | cloth silver                           | 75                          | 580.00                    | Supertweeter 5/8" dome<br><br><br><br><br><br><br>supertweeter 1¼" cone |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-50CS               | bass ref.             | 12                  | 5  | cone                  | 1     | dome          | M, T    | 25-20                | 20 | 600, 5k      | 6/6 | 16½x15½ x35                                              | rose wood       | cloth brn.                             | 77                          | 440.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-40CS               | bass ref.             | 12                  |    |                       | 2     | cone          | T       | 30-20                | 20 | 1.5k         | 8/  | 15½x16 x33                                               | rose wood       | cloth brn.                             | 70½                         | 360.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-36BR               | hermt. sealed         | 12                  | 5  | cone                  | 1     | dome          | MT      | 30-20                | 20 | 600, 5k      | 8/8 | 15½x11½ x26½                                             | oil wal.        | cloth blue                             | 51                          | 300.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-35B                | hermt. sealed         | 12                  | 4  | cone                  | 1     | dome          | MT      | 35-20                | 20 | 800, 5k      | 6/  | 14½x12½ x25½                                             | oil wal.        | cloth blk.                             | 46½                         | 270.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-28B                | hermt. sealed         | 10                  | 4  | cone                  | 1½    | dome          | MT      | 40-20                | 20 | 800, 5k      | 8/6 | 13½x10½ x23½                                             | oil wal.        | cloth blue                             | 33                          | 200.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-25B                | hermt. sealed         | 10                  |    |                       | 2     | cone          | T       | 45-20                | 20 | 1.5k         | 6/  | 12½x11½ x22½                                             | wal. vinyl      | cloth blk.                             | 30                          | 150.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DS-251 MK II          | hermt. sealed         | 10                  |    |                       | 2     | cone          | T       | 40-25                | 20 | 2k, 10k      | 8/6 | 12½x12½ x25½                                             | oil wal.        | cloth silver                           | 26½                         | 170.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
| MORDAUNT SHORT (HAMMOND)    | Carnival              | inf. baf.             | 6                   |    |                       | 2½    | dome          |         | 45-20 ±3             | 10 | 3.5k         | 8/4 | 9½x5½ x15½                                               | teak            | cloth blk.                             | 11½                         |                           |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | Festival              | inf. baf.             | 6                   |    |                       | ¾     | dome          |         | 35-25 ±3             | 10 | 3.5k         | 8/4 | 11x7½ x18                                                | teak            | cloth blk.                             | 14                          |                           |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | Pageant               | loaded reflex         | 6                   |    |                       | 1     | dome          | M, T    | 25-25 ±3             | 15 | 3.5k         | 8/4 | 13x9x21                                                  | teak            | cloth blk.                             | 21                          |                           |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
| NAKAMICHI                   | Slimline Monitor ref. | bass ref.             | 8                   |    |                       | 1½    | cone          |         | 50-16 ±5             | 20 | 2k           | 16  | 16½x13½ x37                                              | oil wal.        | cloth brn.                             | 62                          | 400.00                    | Mechanical crossover                                                    |                    |             |                         |             |                                                                                                                                                             |       |
| NORMAN LABORATORIES         | Eight                 | ac. sus.              | 10                  |    |                       | 1     | dome          | none    | 45-20 ±4             | 15 | 1.5k         | 8/8 | 12x10x23                                                 | oil wal.        | cloth, blk.                            | 28                          | 125.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | Seven                 | ac. sus.              | 12                  |    |                       | (2) 1 | dome          | T       | 40-20 ±3             | 20 | 1.5k         | 8/8 | 15½x13 x23½                                              | oil wal.        | cloth, blk.                            | 40                          | 200.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | Ten                   | ac. sus.              | (2) 10              |    |                       | (2) 1 | dome          | T       | 40-20 ±3             | 20 | 1.5k         | 4/4 | 15x13 x37½                                               | oil wal.        | cloth, blk.                            | 60                          | 279.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | Nine                  | ac. sus. or pas. rad. | (3) 10              |    |                       | (3) 1 | dome          | T, B    | 35-20 ±3             | 20 | 1.5k         | 4/4 | 15½x15 x45½                                              | oil wal.        | cloth, blk.                            | 75                          | 429.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
| OEM AUDIO (PARENTHIAN INO.) | DB5                   | air sus.              | 8                   |    |                       |       |               |         | 60-14                | 10 |              | 8   | 10x9x10                                                  | wal. vin.       | cloth blk.                             | 10                          | 35.00                     |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DB10                  | air sus.              | 8                   |    |                       | 3     | ring          | —       | 45-18                | 1  | 3k           | 8   | 11x9x16                                                  | wal. vin./ wal. | cloth blk.                             | 17                          | 59.00                     |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DB20                  | air sus.              | 8                   |    |                       | 3     | ring          | T       | 45-18                | 2  | 2.2k         | 8   | 12x10½ x23                                               | wal. vin.       | cloth blk.                             | 20                          | 79.00                     |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DB30                  | air sus.              | 10                  | 5% | cone                  | 3     | ring          | M, T    | 32-18.5              | 5  | 1.4k, 4.5k   | 8   | 12½x13½ x24                                              | wal. vin.       | cloth blk.                             | 28                          | 111.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DB40                  | air sus.              | 12                  | 5% | cone                  | 3     | ring          | M, T    | 30-18.5              | 5  | 1.4k, 4.5k   | 8   | 12½x14½ x23½                                             | wal. vin.       | cloth blk.                             | 32                          | 120.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DBM25                 | tuned port            | 10                  |    |                       | 3     | pz.           | T       | 28-25                | 10 | 4k           | 8   | 12½x13½ x24                                              | wal. oil.       | cloth blk.                             | 44                          | 169.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DBM50                 | tuned port            | 12                  | 5% | cone                  | 3     | pz.           | M, T    | 25-25                | 15 | 800, 6.5k    | 8   | 12½x14½ x23½                                             | oil wal.        | cloth blk.                             | 47                          | 229.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DBM75                 | tuned port            | 10                  | 5% | cone                  | 1 (3) | dome cone     | M, T    | 28-20                | 15 | 800, 6.5k    | 8   | 13x14½ x25½                                              | oil wal.        | cloth blk.                             | 70                          | 269.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | DBM100                | tuned port            | (2) 10              | 5% | cone                  | 3 (3) | dome pz       | M, T    | 20-25                | 25 | 700, 6k, 11k | 4   | 13x14½ x44                                               | oil wal.        | blk. cloth                             | 84                          | 399.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
| OHM                         | F                     | sealed                | 12                  |    |                       |       |               |         | 35-19 ±4             | 75 |              | 4/3 | 44x17½ x17½ 13x13 top                                    | oil wal.        | cloth blk.                             | 75                          | 600.00                    | Walsh Driver                                                            |                    |             |                         |             |                                                                                                                                                             |       |
|                             | H                     | pas. rad.             | 8                   | 2  | cone                  | 1     | dome          | T       | 32-20 ±4             | 10 | 1.7k, 5k     | 8/4 | 26½x15 x10½                                              | oil wal.        | cloth blk.                             | 53                          | 325.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |
|                             | C2                    | vented                | 10                  | 2  | cone                  | 1     | dome          | T       | 37-20 ±4             | 10 | 1.7k, 5k     | 8/6 | 25x14 x9½                                                | oil wal.        | cloth blk.                             | 40                          | 250.00                    |                                                                         |                    |             |                         |             |                                                                                                                                                             |       |

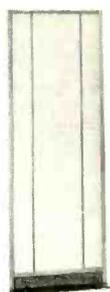
# Loudspeakers

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| MANUFACTURER        | MODEL          | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level control (M=midrange, T=tweeter, ST=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum | Dimensions, inches                     | Finish     | Grille Material? Color? | Weight, lbs. | Price, \$  | NOTES                              |
|---------------------|----------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|---------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|----------------------------------------|------------|-------------------------|--------------|------------|------------------------------------|
| DHM (Continued)     | L              | vented         | 8                   | 2                     | cone          | 2                    | cone         | T                                                       | 42-20 ±4                               | 10                          | 1.7k, 10k                 | 8/4                              | 20x12 x9%                              | oil wal.   | cloth blk.              | 30           | 150.00     |                                    |
|                     | D2             | vented         | 10                  | 2                     | cone          |                      |              | T                                                       | 37-19 ±4                               | 10                          | 1.7k                      | 8/6                              | 25x14 x9%                              | oil wal.   | cloth brn.              | 37           | 200.00     |                                    |
|                     | E              | sealed         | 8                   | 2                     | cone          |                      |              | T                                                       | 65-19 ±4                               | 10                          | 1.7k                      | 8/6                              | 21½x11½ x7%                            | oil wal.   | cloth brn.              | 20           | 100.00     |                                    |
| DNKYD               | M-505          | ac. sus.       | 12                  |                       |               | 2%                   | cone         | T                                                       | 50-20 ±5                               | 15                          | 2k                        | 8/6                              | 13½x13 x22                             | vinyl rose | black                   | 30.1         |            |                                    |
|                     | M-240          | ac. sus.       | 15                  | 4                     | cone          | 1                    | dome         | M,T                                                     | 45-20 ±5                               | 20                          | 700, 4.5k                 | 8/6                              | 16½x13 x27                             | oil rose   | blk.                    | 45           |            |                                    |
| OPTONICA (SHARP)    | CP-5151        |                | 12                  | 2                     | dome          |                      | rib-bon      | M,T                                                     | 30-50                                  | 20                          | 500, 6k                   | 8/                               | 15½x13½ x29%                           | rose       | cloth brn.              | 61½          | 399.95     |                                    |
|                     | CP-2121        | pas. rad.      | 10                  |                       |               | 3                    | cone         |                                                         | 40-20                                  | 10                          | 1.2k                      | 8/                               | 14½x12½ x28%                           | rose wood  | cloth brn.              | 33½          | 169.95     |                                    |
| PSB SPEAKERS        | Beta II        | bass. ref.     | 8                   |                       |               | 1                    | dome         |                                                         | 25-20                                  | 45                          | 1.5k                      | 4/5                              | 23x12 x10%                             | oil wal.   | cloth blk.              | 35           | 880.00 pr. |                                    |
|                     | Passif II      | pas. rad.      | 8                   |                       |               | 1                    | dome         |                                                         | 35-20                                  | 20                          | 2k                        | 8/6                              | 29½x13½ x12½                           | oil wal.   | cloth brn.              | 35           | 490.00 pr. |                                    |
|                     | Passif I       | pas. rad.      | 10                  |                       |               | 1                    | dome         |                                                         | 38-20                                  | 12                          | 2k                        | 8/6                              |                                        | oil wal.   | cloth brn.              | 30           | 350.00 pr. |                                    |
|                     | Avante' II     | bass. ref.     | 8                   |                       |               | 1                    | dome         |                                                         | 40-20                                  | 15                          | 1.5k                      | 8/6                              | 19½x11 x10                             | oil wal.   | cloth brn.              | 25           | 295.00 pr. |                                    |
|                     | Avante' II     | bass. ref.     | 8                   |                       |               | 1                    | dome         |                                                         | 40-20                                  | 15                          | 1.5k                      | 8/6                              | 19½x11 x10                             | oil wal.   | cloth brn.              | 25           | 250.00 pr. |                                    |
|                     | Avantini II    | bass. ref.     | 7                   |                       |               | 1                    | dome         |                                                         | 45-20                                  | 8                           | 1.5k                      | 8/6                              | 14½x8½ x8                              | oil wal.   | cloth brn.              | 15           | 170.00 pr. |                                    |
| PERFECTIONIST AUDIO | Sub Woofer One | trans line     | 8x13                |                       |               |                      |              |                                                         | 8-240 ±0.9                             | 30                          |                           | 8/6                              | 26x24 x72                              | var.       | blk.                    | 350          | 1400.00    | Dual channel credenza ±3dB 6-800Hz |
| PHASE LINEAR        | Phase III      | port           | (2) 12              | (4) 4                 | cone dome     | 4                    | cone dome    | L,M T                                                   | 24-22 ±3                               | 50                          |                           | 6/4                              | bass-22x22x18½ mid-24x5 x63 22x22 x18½ | oil wal.   | cloth, beige            | 223          | 1299.95    |                                    |
|                     | Phase I*       | port           | (2) 12              |                       |               |                      |              |                                                         | 24-100                                 | 50                          | 100                       | 6/4                              |                                        | oil wal.   |                         | 100          | 379.95     | *Sub-woofer                        |
| PHILIPS             | AH475          | ac. sus.       | 8                   |                       |               | 1                    | dome         |                                                         | 40-20                                  | 10                          | 3.5k                      | 8                                | 23½x13½ x11                            | oil wal.   | remov. blk.             | 38           | 109.95     |                                    |
|                     | AH476          | ac. sus.       | 10                  | 2                     | dome          | 1                    | dome         | M                                                       | 35-20                                  | 20                          | 1.5k, 5.5k                | 8                                | 26x13½ x11                             | oil wal.   | remov. blk.             | 42           | 199.95     |                                    |
|                     | AH477          | ac. sus.       | 12                  | 2                     | dome          | 1                    | dome         | M,T                                                     | 32-20                                  | 20                          | 1.5k, 5.5k                | 8                                | 28x15½ x14½                            | oil wal.   | remov. blk.             | 54           | 299.95     |                                    |
| PIONEER             | HPM-150        | bass. ref.     | 15½                 | 4                     | cone          | 1½                   | cone         | M,T                                                     | 25-25                                  | 10                          | 750, 2.6k & 8.5k          | 6.3                              | 17½x17½ x39                            | oil wal.   | blk.                    | 75           | 500.00     |                                    |
|                     | HPM-200        | ac. sus.       | (2) 10              | 2½                    | HPM           |                      | HMP          | M,T                                                     | 25-25                                  | 20                          | 100, 700, 28 & 5k         | 6/5.5                            | 29x19 x32                              | oil wal.   | cloth brn.              |              | 500.00     |                                    |
|                     | HPM-100        | bass. ref.     | 12                  | 4                     | cone          | 1½                   | cone         | M,T                                                     | 30-25                                  | 10                          | 1.2k, 4k, 12k             | 8                                | 15½x15½ x26%                           | oil wal.   | cloth blk.              | 59           | 300.00     |                                    |
|                     | HPM-60         | bass. ref.     | 10                  | 4                     | cone          | 1½                   | cone         |                                                         | 35-25                                  | 10                          | 1.2k, 4k                  | 8                                | 13½x12½ x24                            | oil wal.   | cloth blk.              | 38½          | 225.00     |                                    |
|                     | HPM-40         | bass. ref.     | 10                  |                       |               |                      | cone ST      |                                                         | 35-25                                  | 10                          | 1.2k, 4k, 10k             | 8                                | 12½x12½ x22%                           | oil wal.   | cloth brn.              | 28%          | 150.00     |                                    |
|                     | CX-63DX        | inf. baf.      | 15                  | (2) 5                 | cone          | 1                    | horn ST      | M,T                                                     | 20-22                                  |                             | 700, 3.3k & 12k           |                                  | 19x13 x28%                             | oil wal.   | lattice brn.            | 63           | 300.00     |                                    |
|                     | CS-99A         | inf. baf.      | 15                  | (2) 5                 | cone          | 1                    | horn ST      |                                                         | 25-22                                  |                             | 800, 2k, 5k & 10k         | 8                                | 16½x11½ x24%                           | oil wal.   | lattice brn.            | 51%          | 250.00     |                                    |
|                     | CS-700G        | inf. baf.      | 12½                 | 4%                    | cone          | 1                    | horn         |                                                         | 35-20                                  |                             | 500, 4.5k                 | 8                                | 15x12½ x26                             | oil wal.   | cloth brn.              | 37           | 200.00     |                                    |
|                     | CS-500G        | inf. baf.      | 10                  | 5                     | cone          | 3                    | cone         |                                                         | 35-20                                  |                             | 700, 8k                   | 8                                | 12½x12½ x22%                           | oil wal.   | lattice brn.            | 32%          | 150.00     |                                    |
|                     | CS-66G         | inf. baf.      | 10                  | 6%                    | cone          | 3                    | cone         |                                                         | 35-20                                  |                             | 1k & 7k                   | 8                                | 12½x11½ x21%                           | oil wal.   | cloth brn.              | 19           | 125.00     |                                    |
|                     | Project 100A   | bass. ref.     | 10                  | 1½                    | dome          | 2                    | cone         |                                                         | 40-20                                  |                             | 700, 6k                   | 8                                | 13x10½ x23                             | oil wal.   | foam brn.               | 30           | 125.00     |                                    |
| Project 60A         | bass. ref.     | 8              |                     |                       | 1½            | cone                 |              | 50-20                                                   | 10                                     | 3k                          | 8                         | 10½x9½ x18½                      | oil wal.                               | foam brn.  | 13                      | 80.00        |            |                                    |

| MANUFACTURER            | MODEL         | Enclosure type  | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches      | Tweeter type | Level controls (M=midrange, T=tweeter, S=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance ohms, Nominal/minimum | Dimensions, inches       | Finish               | Grille Material? Color? | Weight, lbs. | Price, \$                     | NOTES                  |
|-------------------------|---------------|-----------------|---------------------|-----------------------|---------------|---------------------------|--------------|---------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|----------------------|-------------------------|--------------|-------------------------------|------------------------|
|                         |               |                 |                     |                       |               |                           |              |                                                         |                                        |                             |                           |                                 |                          |                      |                         |              |                               |                        |
| POLK AUDIO              | 10            | pas. rad.       | (2)<br>6 1/2        |                       |               | 1                         | dome         |                                                         | 32-20.5 ± 2                            | 10                          | 60, 3k                    | 6/6                             | 11 1/2 x 16 x 28         | wal. vinyl           | cloth blk.              | 55           | 199.95                        |                        |
|                         | 7             | pas. rad.       | 6 1/2               |                       |               | 1                         | dome         |                                                         | 40-20.5 ± 2                            | 10                          | 60, 3k                    | 8/9                             | 9 1/2 x 14 x 24          | wal. vinyl           | cloth blk.              | 36           | 129.95                        |                        |
|                         | 5             | pas. rad.       | 6 1/2               |                       |               | 1                         | dome         |                                                         | 45-20.5 ± 2                            | 10                          | 70, 3k                    | 8/9                             | 9 x 10 1/2 x 21 1/2      | wal. vinyl           | cloth blk.              | 28           | 99.95                         |                        |
|                         | Mini          | pas. rad.       | 4 1/2               |                       |               | 1                         | dome         |                                                         | 60-20.5 ± 2                            | 6                           | 100, 3k                   | 4/5                             | 4 1/2 x 6 1/2 x 15       | wal. vinyl           | cloth blk. foam         | 10           | 79.95                         |                        |
| POWER RESEARCH PRODUCTS | System III D  | ventless duct   | 12 (4)<br>6         | (8)<br>3              | cone          | 1 1/2                     | pz.          | T                                                       | 24-22 ± 4                              | 40                          | 60, 300, 8k               | 8/7                             | 15 1/2 x 15 1/2 x 45     | wal. white rose      | cloth blk.              | 110          | 840.00                        | Bi-polar               |
|                         | System IV     | ventless duct   | 10, 6               | 3                     | cone          | 1 1/2                     | pz.          |                                                         | 26-22 ± 4                              | 40                          | 75, 400, 8k               | 8/7                             | 19 x 11 1/2 x 39         | wal. white           | cloth blk.              | 65           | 435.00                        | Bi-polar               |
|                         | Rovner 5      | ventless duct   | 10                  | 6                     | cone          | 1                         | dome         |                                                         | 30-18 ± 4                              | 40                          | 95, 1.8k                  | 8/7                             | 14 x 11 1/2 x 33         | wal.                 | cloth blk.              | 42           | 289.00                        | Bi-polar               |
| PYRAMID LOUDSPEAKER     | Sub-woofer 2W | ac. sus.        | 14                  |                       |               |                           |              |                                                         | 29-70Hz                                | 200                         | 70Hz                      | 8/7                             | 25 x 28 x 16 1/2         | wal. oak, blk., rose | blk. cream              | 112          | 1200.00 pr.                   |                        |
|                         | 2             | ac. sus.        | 8                   | 4                     | cone          | 2                         | cone         | M, T                                                    | 40-19                                  | 200                         | 500, 200, 8k              | 8/7                             | 18 x 12 1/2 x 8          | wal. oak, blk. rose  | blk. cream              | 35           | 800.00 pr.                    |                        |
| QUADRAFLEX              | ST21          | ac. sus.        | 15                  | 6                     | cone          | 1                         | dome         | M, T                                                    | 28-22.5 ± 4                            | 10                          | 250, 3k                   | 8                               | 18 1/2 x 12 1/2 x 40 1/4 | oil wal.             | cloth blue, brn.        | 83           | 299.95                        | Trans line mid loading |
|                         | ST19          | ac. sus.        | 12                  | 6 1/2                 | cone          | 1                         | dome         | M, T                                                    | 32-22.5 ± 4                            | 10                          | 500, 3k                   | 8                               | 15 1/2 x 12 1/2 x 26 1/4 | oil wal.             | cloth blue, brn.        | 54           | 229.95                        | Trans line mid loading |
|                         | ST17          | ac. sus.        | 10                  | 6 1/2                 | cone          | 2 1/2                     | cone         | M, T                                                    | 38-20 ± 4                              | 10                          | 600, 3k                   | 8                               | 14 1/2 x 11 1/2 x 24 1/4 | oil wal.             | cloth blue, brn.        | 48           | 169.95                        | Trans line mid loading |
|                         | ST15          | ac. sus.        | 10                  |                       |               | 2 1/2                     | cone         |                                                         | 45-20 ± 4                              | 10                          | 1.5k                      | 8                               | 13 1/2 x 11 x 23 1/4     | wal. vinyl           | cloth blue, brn.        | 38           | 119.95                        |                        |
|                         | ST11          | ac. sus.        | 8                   |                       |               | 2 1/2                     | cone         |                                                         | 55-20 ± 4                              | 10                          | 1.5k                      | 8                               | 12 1/2 x 10 x 21 1/4     | wal. vinyl           | cloth blue, brn.        | 33           | 84.95                         |                        |
| RTR                     | EXP8-V        | ac. sus.        | 8                   |                       |               | 3 1/2                     | cone         | T                                                       | 48-18.5 ± 3.5                          | 15                          | 2k                        | 8                               | 11 1/2 x 8 1/2 x 19 1/2  | vin.                 | cloth blk.              | 25           | 89.95                         |                        |
|                         | EXP12-V       | ac. sus.        | 12                  |                       |               | 3 1/2                     | cone         | T                                                       | 40-18.5 ± 3.5                          | 20                          | 2k                        | 8                               | 14 1/2 x 11 1/2 x 25 1/2 | vin.                 | cloth blk.              | 44           | 149.95                        |                        |
|                         | EXP12M        | ac. sus.        | 12                  | 4 1/2                 | cone          | 3 1/2                     | cone         | M, T                                                    | 40-18.5 ± 3                            | 20                          | 1.5 & 6.6k                | 8                               | 14 1/2 x 11 1/2 x 25 1/2 | oil wal.             | cloth brn.              | 47           | 214.95                        |                        |
|                         | HPR12 MAG     | pas. rad.       | 12                  | 4 1/2                 | (2) cone      | 2 1/2                     | cone         | M, T                                                    | 38-22 ± 4                              | 15                          | 1.5 & 7.5k                | 8                               | 14 1/2 x 13 x 36         | oil wal.             | cloth brn.              | 72           | 334.95                        |                        |
|                         | 1000          | ac. sus.        | 12                  | 1 1/2                 | dome          | 1.7x 4.8                  |              | M, T                                                    | 40-22.5 ± 2.5                          | 25                          | 1.25 & 10k                | 6                               | 15 x 14 x 26 1/2         | oil wal.             | cloth blk.              |              | 279.95                        |                        |
|                         | 3000          | ac. sus.        | (2) 10              | 1 1/2                 | dome          | 1.7x 4.8                  |              | M, T                                                    | 36-22.5 ± 2.5                          | 25                          | 1.25 & 10k                | 4                               | 14 1/2 x 12 1/2 x 42     | oil wal.             | cloth blk.              |              | 319.95                        |                        |
|                         | 6000          | ac. sus.        | (2) 12              | (2) 1 1/2             | dome          | 1.7x 4.8 (6) 3x6 (15) 3x6 |              | M, T                                                    | 31-22.5 ± 2.5                          | 25                          | 950, 10k                  | 4                               | 16 1/2 x 16 1/2 x 48     | oil wal.             | cloth blk.              |              | 449.95                        |                        |
|                         | ESR-6         | E.S.            |                     |                       |               | (6) 3x6                   | E.S.         | T                                                       | 1.5-20 ± 2.5                           | 15                          | 1.5k                      | 8                               | 14 1/2 x 12 x 14 1/2     | oil wal.             | cloth blk.              | 23           | 219.95                        | Add-on tweeter         |
|                         | ESR-15        | E.S.            |                     |                       |               | (15) 3x6                  | E.S.         | T                                                       | 1.25-20 ± 2.5                          | 15                          | 1.25k                     | 8                               | 16 1/2 x 16 1/2 x 19 1/2 | oil wal.             | cloth blk.              | 48           | 329.95                        | Add-on tweeter         |
| DR-1                    |               |                 | 12 (2) 10           | e.s.                  | e.s.          |                           | T            | 30-30 ± 2                                               | 75                                     | 325                         | 8                         | 16 1/2 x 16 1/2 x 49            | oil wal.                 | cloth blk.           | 165                     | 1290.00      | W. amp & x-over for ES array. |                        |
| RECTILINEAR             | Mini2         | ac. sus.        | 8                   |                       |               | 3 1/2                     | cone         |                                                         | 60-19 ± 4                              | 15                          | 1800                      | 8                               | 17 1/2 x 10 1/2 x 9      | vinyl                | cloth blk.              | 22           | 178.00 pr.                    |                        |
|                         | 7a            | port            | 12 & 5              | (2) 1 1/2             | dome          | (2) 1                     | dome         |                                                         | 32-20 ± 2                              | 30                          | 200, 1.8k, 10k            | 6                               | 35 x 18 x 12             | oil wal.             | cloth blk.              | 80           | 449.00                        |                        |
|                         | 5a            | ac. sus.        | 12 & 5              | 1 1/2                 | dome          | 1                         | dome         |                                                         | 32-20 ± 2                              | 30                          | 200, 1.8k, 10k            | 6                               | 25 x 15 x 14 1/2         | oil wal.             | cloth blk.              | 72           | 349.00                        |                        |
|                         | 4             | ac. sus.        | 10                  | 2                     | dome          | 1                         | dome         |                                                         | 35-19 ± 3                              | 20                          | 2k, 10k, 400, 5k, 11k     | 6                               | 23 1/2 x 13 x 12         | oil wal.             | cloth blk.              | 48           | 219.00                        |                        |
|                         | IIIb          | port            | 12                  | 5                     | cone          | (2) 2 (2) 2 1/2           | cone         |                                                         | 35-18 ± 2                              | 20                          |                           | 8                               | 35 x 18 x 12             | oil wal.             | cloth blk.              | 75           | 329.00                        |                        |
| REVOX                   | BX230         | phase corrected | (2) 5               |                       |               | 1                         | dome         |                                                         | 40-20                                  | 10                          | 3.5k                      | 4                               | 9 1/2 x 8 x 16           | oil wal.             | cloth brn.              | 16 1/2       |                               |                        |
|                         | BX350         | phase corrected | (4) 5               |                       |               | 1                         | dome         |                                                         | 30-20                                  | 10                          | 3.2k                      | 4                               | 13 1/2 x 11 1/2 x 20 1/2 | oil wal.             | cloth brn.              | 30 1/2       |                               |                        |
|                         | BX4100        | phase corrected | (8) 5               | 7                     | cone          | 1/2                       | dome         |                                                         | 25-25                                  | 20                          | 450, 4.8k                 | 4                               | 17 1/2 x 15 1/2 x 30 1/2 | oil wal.             | cloth brn.              | 66           |                               |                        |

# Loudspeakers



Magnepan  
MG-III



Marjen RFS-1



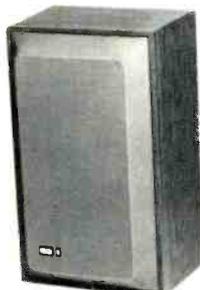
Martin Gamma 310



Onkyo 240



Marantz 7 Mk II



Micro Acoustics  
FRM-1A



Mitsubishi  
DS-50CS

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| MANUFACTURER                          | MODEL                                   | Enclosure type   | Woofer dia., inches |          | Midrange dia., inches |           | Tweeter dia., inches |                         | Level control (M=midrange, T=tweeter, ST=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power |             | Crossover frequencies, Hz | Impedance ohms, Nominal/minimum | Dimensions, inches | Finish               | Grille Material? Color? | Weight, lbs. | Price, \$                                    | NOTES                  |
|---------------------------------------|-----------------------------------------|------------------|---------------------|----------|-----------------------|-----------|----------------------|-------------------------|---------------------------------------------------------|----------------------------------------|-----------------------------|-------------|---------------------------|---------------------------------|--------------------|----------------------|-------------------------|--------------|----------------------------------------------|------------------------|
|                                       |                                         |                  | Woofer              | Midrange | Midrange              | Tweeter   | Recommended          | Crossover               |                                                         |                                        |                             |             |                           |                                 |                    |                      |                         |              |                                              |                        |
| ROGERS<br>(REFERENCE<br>MONITOR INT.) | LS3/5A                                  | inf. baf.        | 4.5                 |          | %                     | dome      |                      |                         | 70-20 ±3                                                | 15                                     | 3k                          | 15/10       | 7½x6½<br>x12              | wal.<br>teak                    | cloth              |                      | 26                      | 450.00       |                                              |                        |
|                                       | BBC MON                                 | inf. baf.        | 7%                  |          |                       | dome      |                      |                         | 50-20 ±3                                                | 20                                     | 3k                          | 8/7         | 20x11<br>x10%             | wal.<br>teak                    | blk.               |                      | 31                      | 550.00       |                                              |                        |
|                                       | Compact<br>Monitor<br>Export<br>Monitor | tuned<br>port    | 7%                  | %        | dome                  | %         | dome                 |                         |                                                         | 40-25 ±5                               | 20                          | 3k          | 16/4                      | 12x12<br>x25                    | wal.<br>teak       | blk.<br>cloth        |                         | 40           | 730.00                                       |                        |
| ROGERSOUND                            | 6600                                    | bass ref.        | (2)<br>12           | (2)<br>5 | cone                  | (2)<br>2½ | ring                 | M,T                     | 25-20                                                   | 10                                     | 800,<br>5k                  | 4           | 18x11<br>x46              | wal.                            | cloth              |                      | 90                      | 400.00       |                                              |                        |
|                                       | Max                                     | bass ref.        | 12                  | 5        | cone                  | 1         | dome                 | M,T                     | 30-20                                                   | 12                                     | 800,<br>4k                  | 8           | 18x12<br>x32              | wal.                            | cloth              |                      | 60                      | 299.95       |                                              |                        |
|                                       | 3300                                    | bass ref.        | 12                  | 5        | cone                  | 2½        | ring                 | M,T                     | 40-20                                                   | 10                                     | 800,<br>5k                  | 8           | 14½x12<br>x25             | wal.                            | cloth              |                      | 49                      | 249.95       |                                              |                        |
|                                       | Ranger                                  | bass ref.        | 10                  | 5        | cone                  | 2½        | ring                 | M,T                     | 42-20                                                   | 15                                     | 800,<br>5k                  | 8           | 14½x12<br>x25             | wal.                            | cloth              |                      | 39                      | 199.95       | Black<br>\$209.95<br>Black<br>\$149.95.      |                        |
|                                       | Alpha I                                 | bass ref.        | 8                   |          |                       | 2½        | ring                 | T                       | 45-20                                                   | 10                                     | 1.6k                        | 8           | 11½x11½<br>x46½           | wal.                            | cloth              |                      | 60                      | 129.95       |                                              |                        |
|                                       | Monaco                                  | bass ref.        | 8                   |          |                       | 2½        | ring                 | T                       | 50-20                                                   | 10                                     | 1.6k                        | 8           | 12¾x10½<br>x22            | wal.                            | cloth              |                      | 34                      | 109.95       |                                              |                        |
|                                       | Mixdown<br>Monitor                      | ac. sus.         | 6x9                 |          |                       | 2         | cone                 |                         | 65-20                                                   | 2                                      | 3.5k                        | 4/8         | 10x7¼<br>x11              | wal.                            | cloth              |                      | 25                      | 99.95        |                                              |                        |
| SAS                                   | Spectrum III<br>Monitor                 | bass ref.        | 15                  | 5        | cone                  | 1%        | cone                 | T                       |                                                         | 6                                      | 575,<br>5k<br>16k           | 8/4         | 18x14¼<br>x26¼            | blk.<br>vinyl                   | cloth              |                      | 76                      | 399.00       | 3 in. pz.<br>super-<br>tweeter.<br>As above. |                        |
|                                       | Spectrum III                            | bass ref.        | 15                  | 5        | cone                  | 1%        | cone                 | T                       |                                                         | 6                                      | 575,<br>5k<br>16k           | 8/4         | 18x14¼<br>x26¼            | wal.<br>veneer                  | cloth              |                      | 76                      | 385.00       |                                              |                        |
|                                       | Spectrum II                             | bass ref.        | 12                  | 5        | cone                  | 1%        | cone                 | T                       |                                                         | 6                                      | 575,<br>5k<br>16k           | 8/4         | 15x12¼<br>x25¼            | wal.<br>veneer                  | cloth              |                      | 41                      | 300.00       | As above.                                    |                        |
|                                       | Spectrum I                              | bass ref.        | 10                  | 5        | cone                  | 1%        | cone                 |                         |                                                         | 6                                      | 1.8k<br>5k<br>4k            | 8/4         | 14x11¼<br>x24             | wal.<br>vinyl                   | cloth              |                      | 33                      | 175.00       |                                              |                        |
|                                       | Mini Spectrum                           | bass ref.        | 8                   |          |                       | 1%        | cone                 |                         |                                                         | 6                                      | 4k                          | 8/4         | 13x10½<br>x21             | wal.<br>vinyl                   | cloth              |                      | 22                      | 119.00       |                                              |                        |
|                                       | Micro<br>Spectrum<br>Dynamo             | bass ref.        | 6½                  |          |                       | 1%        | cone                 |                         |                                                         | 5                                      | 4k                          | 8/4         | 12x8x18                   | wal.<br>vinyl                   | cloth              |                      | 31                      | 89.00        |                                              |                        |
|                                       |                                         | ac. sus.         | 5                   |          |                       | 1         | dome                 |                         |                                                         | 8                                      | 3.2k                        | 4           | 6x5x9                     | blk.<br>vin.                    | cloth<br>blk.      |                      | 9                       | 99.00        |                                              |                        |
| S.T.A.R.                              | MST-III                                 |                  |                     |          |                       |           |                      | (3)<br>MST<br>pz<br>MST | T                                                       | 4k-30k ±2                              | 3                           | 4k          | 20                        | 13x6x6                          | oil.<br>wal.       | cloth<br>blk.        |                         | 5            | 225.00                                       | Add-on<br>tweeter.     |
|                                       | Beta                                    | vented<br>reflex | 8                   |          |                       |           |                      | MST                     |                                                         | 55-22 ±5                               | 3                           | 4k          | 8                         | 10x9%                           | vinyl              | cloth                |                         | 18           | 149.00                                       |                        |
|                                       | Gamma                                   | ac. sus.         | 10                  | 4½       | cone                  |           |                      | MST                     |                                                         | 37-21 ±3                               | 10                          | 2k,<br>10k  | 8                         | 12½x14¼<br>x24                  | vinyl              | blk.<br>foam<br>blk. |                         | 43           | 149.00                                       |                        |
|                                       | Delta                                   | ac. sus.         | 10                  | 4½       | cone                  |           |                      | MST                     | T                                                       | 37-31 ±3                               | 10                          | 1.5k,<br>5k | 8                         | 14x11½                          | oil                | cloth                |                         | 65           | 200.00                                       |                        |
|                                       | P-10                                    | vented<br>reflex | 10                  | 4½       | cone                  |           |                      | MST                     | T                                                       | 40-20 ±3                               | 10                          | 1.5k,<br>5k | 8                         | 16x14<br>x26                    | wal.               | blk.<br>cloth        |                         | 65           | 249.00                                       |                        |
|                                       | P-12                                    | inf. baf.        | 12                  | 4½       | cone                  |           |                      | (2)<br>MST              | T,M                                                     | 30-21 ±4                               | 20                          | 300,<br>5k  | 8                         | 15½x16<br>x31%                  | wal.               | blk.<br>cloth        |                         | 80           | 349.00                                       |                        |
|                                       | Sigma                                   | vented<br>reflex | 12                  | 4½       | cone                  |           |                      | (2)<br>MST              | T,M                                                     | 40-21 ±3                               | 15                          | 900,<br>5k  | 8                         | 15½x16<br>x31%                  | oil                | cloth                |                         | 85           | 399.00                                       | Trans line<br>midrange |
|                                       | Omega                                   | inf. baf.        | (2)<br>12           | 8        | cone                  |           |                      | (2)<br>MST              | T,M,<br>W                                               | 23-21 ±3                               | 20                          | 150,<br>3k  | 8                         | 31x15%<br>x31%                  | oil<br>wal.        | blk.<br>cloth        |                         | 150          | 649.00                                       | Bi or tri<br>ampable.  |

| MANUFACTURER        | MODEL        | Enclosure type          | Woofer dia., inches |       | Midrange dia., inches |      | Tweeter type |         | Level controls (M=midrange, F=tweeter, ST=Super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms, Nominal/minimum | Dimensions, inches      | Finish      | Grille Material? Color? | Weight, lbs.  | Price, \$                                                                    | NOTES |
|---------------------|--------------|-------------------------|---------------------|-------|-----------------------|------|--------------|---------|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|-------------------------|-------------|-------------------------|---------------|------------------------------------------------------------------------------|-------|
|                     |              |                         | 1                   | 2     | 1                     | 2    | 1            | 2       |                                                          |                                        |                             |                           |                                  |                         |             |                         |               |                                                                              |       |
| SANSUI              | SP-L900      | bass ref.               | 15x2                |       |                       | 4%   | horn         | T       | 30-20                                                    |                                        | 1k                          | 8                         | 23x23x51%                        | oil wal.                | cloth blue  | 218                     | 1000.00       |                                                                              |       |
|                     | SP-L800      | bass ref.               | 12x2                |       |                       | 2%   | horn         | T       | 30-20                                                    |                                        | 1.5k                        | 8                         | 18x15x38                         | oil wal.                | cloth blue  | 94.4                    | 800.00        |                                                                              |       |
|                     | SP-L700      | bass ref.               | 10x2                |       |                       | 2%   | horn         | T       | 30-25                                                    |                                        | 2k                          | 8                         | 17x15x35%                        | oil wal.                | cloth blue  | 81.5                    | 600.00        |                                                                              |       |
|                     | SP-X9000     | bass ref.               | 16                  | 8     | cone                  | (2)* | horn         | T       | 25-23                                                    |                                        | 1k, 6k, 10k                 | 8                         | 17x11x26%                        | oil wal.                | cloth blue  | 46.7                    | 350.00        | *6"x2" w/ horn Super Tweeters.                                               |       |
|                     | SP-X8000     | bass ref.               | 16                  | 5x2   | cone                  | *    | horn         | T       | 25-23                                                    |                                        | 1k, 6k, 10k                 | 8                         | 17x11x26%                        | oil wal.                | cloth blue  | 44.8                    | 300.00        | *6"x2" w/ horn Super Tweeters                                                |       |
|                     | SP-7500X     | bass ref.               | 16                  | 8     | cone                  | *    | horn         | T       | 25-22                                                    |                                        | 1k, 6k, 10k                 | 8                         | 17x11x26%                        | oil wal.                | cloth blue  | 47.8                    | 290.00        | *6"x2" w/ Super Tweeters                                                     |       |
|                     | SP-5500X     | bass ref.               | 15                  | 5x2   | cone                  | *    | horn         | T       | 25-20                                                    |                                        | 1k, 6k, 10k                 | 8                         | 17x11x26%                        | oil wal.                | cloth blue  | 43.7                    | 250.00        | *6"x2" w/ Super Tweeter                                                      |       |
|                     | SP-2500X     | bass ref.               | 12                  | (2)5  | cone                  | (2)2 | horn         | T       | 30-20                                                    |                                        | 1.2k, 5k                    | 8                         | 15x11x25                         | oil wal.                | cloth blue  | 40.6                    | 200.00        |                                                                              |       |
|                     | SP-1500X     | bass ref.               | 10                  | 5     | cone                  | 1    | horn         | T       | 30-20                                                    |                                        | 2k, 7k                      | 8                         | 13x11x22%                        | oil wal.                | cloth blue  | 26.2                    | 180.00        |                                                                              |       |
| SARAS               | 30           | ac. sus.                | 12                  | 5     | cone                  | 1    | dome         |         | 30-18 ±3                                                 | 25                                     | 500, 5k                     | 8                         | 25x15x12%                        | oil wal.                | cloth       |                         | 300.00        |                                                                              |       |
|                     | 20           | ac. sus.                | 12                  | -     |                       | 1    | dome         |         | 30-18 ±3                                                 | 25                                     | 1.8k                        | 8                         | 25x15x12%                        | oil wal.                | cloth brn.  | 55                      | 220.00        |                                                                              |       |
|                     | 10           | ac. sus.                | 10                  | -     |                       | 1    | dome         |         | 30-18 ±4                                                 | 25                                     | 1.8k                        | 8                         | 24x13x12%                        | oil wal.                | cloth, brn. |                         | 180.00        |                                                                              |       |
| H.H. SCOTT          | S-176        | bass ref.               | 8                   |       | cone                  | 1%   | dome         |         | 60-18 ±4                                                 | 5                                      | 3.5k                        |                           | 18x10x8%                         | wal. vinyl              | cloth brn.  | 17                      | 79.95         |                                                                              |       |
|                     | S-177        | air susp.               | 8                   | 5     | cone                  | 1%   | dome         |         | 45-18 ±4                                                 | 7                                      | 1.2k, 83.5k                 | 6/8                       | 19x11x9%                         | wal. vinyl              | cloth brn.  | 21                      | 109.95        |                                                                              |       |
|                     | S-186        | air susp.               | 10                  | 4%    | cone                  | 1    | dome         | W, M, T | 40-20 ±4                                                 | 10                                     | 800, 4k                     | 6/8                       | 23x12x10%                        | wal. vinyl              | cloth brn.  | 26                      | 139.95        |                                                                              |       |
|                     | S-196        | air susp.               | 12                  | 4%    | cone                  | 1    | dome         | W, M, T | 40-20 ±4                                                 | 15                                     | 800, 4k                     | 6/8                       | 24x14x11                         | wal. vinyl              | cloth brn.  | 40                      | 179.95        |                                                                              |       |
|                     | S-197        | air susp.               | 15                  | 4%    | cone                  | 1    | dome         | W, M, T | 35-20 ±4                                                 | 15                                     | 800, 4k                     | 6/8                       | 24x14x11                         | wal. vinyl              | cloth brn.  | 42                      | 199.95        |                                                                              |       |
|                     | Pro-70       | air susp.               | 12                  | 4%    | cone                  | (2)1 | dome         | M, T    | 35-20 ±4                                                 | 15                                     | 800, 4k                     | 6/8                       | 27x16x12%                        | wal. ven. wood          | brn. mesh   | 50                      | 299.95        |                                                                              |       |
|                     | Pro-100      | air susp.               | 15                  | (2)4% | cone                  | (2)1 | dome         | M, T    | 35-20 ±4                                                 | 20                                     | 700, 3.5k                   | 4                         | 29x19x14%                        | wal. ven. wood          | brn. mesh   | 65                      | 399.95        |                                                                              |       |
| SERVOLINEAR         | SL VII       | vented                  | *                   | **    | cone                  | (5)  | pz           | M, T    |                                                          | *** 200/400                            |                             | 8/7                       | 23x23x52%                        | rose.                   | blk.        | 225                     | 2000.00 pr.   | *10.12&15 in. **4½&8 in. ***Bi-amped.                                        |       |
|                     | SL VI        | vented                  | *                   | **    | cone                  | (3)1 | pz           | M, T    |                                                          | *** 150/300                            |                             | 8/7                       | 19x19x46%                        | rose.                   | blk.        | 125                     | 1600.00 pr.   | *(2)10 & (1)12 in. **4½&8 in. ***As above.                                   |       |
|                     | SL V         | vented                  | *                   | **    | cone                  | (3)1 | pz           | M, T    |                                                          | *** 100/250                            |                             | 8/7                       | 18x18x43                         | rose.                   | blk.        | 108                     | 1200.00 pr.   | *(2)10&(1)8 in. **4½&8 in. ***As above.                                      |       |
|                     | SL IV        | vented                  | 10&8                | 1½4%  | cone                  | (3)1 | pz           | M, T    |                                                          | 75                                     |                             | 8/7                       | 17x17x34                         | rose.                   | blk.        | 88                      | 800.00 pr.    |                                                                              |       |
|                     | SL III       | vented                  | 10                  | 1½4%  | cone                  | 1    | pz           | M, T    |                                                          | 50                                     |                             | 8/7                       | 16x16x31%                        | rose.                   | blk.        | 78                      | 600.00 pr.    |                                                                              |       |
|                     | SL II        | vented                  | 8&8                 | 1½4%  | cone                  | 1    | pz           | M, T    |                                                          | 25                                     |                             | 8/7                       | 14x14x26%                        | rose.                   | blk.        | 55                      | 400.00 pr.    |                                                                              |       |
| SHAHINIAN ACOUSTICS | Obelisk      | trans. line + pas. rad. | 8                   | 1     | dome                  | (2)½ | dome         |         | 35-20 ±2                                                 | 35                                     | 2k                          | 6/3                       | 14x12x26%                        | birch, wal, teak, rose. | brn. blk.   | 48                      | 275.00 350.00 |                                                                              |       |
| SHOWCO              | Pyramid 1000 | folded horn             | 18                  | (4)5  | cone                  | *    |              |         | 35-20                                                    | 50                                     | 800, 1.5k, 5k               | **                        | 29x25x29%                        | wal. vinyl              | foam brn.   | 150                     | 839.00        | *5.3-in. mid-tweeters & 4.3-in. PZ supertweeters. **var. impd. 8/7 or 16/12. |       |
|                     | Pyramid 900  | folded horn             | 15                  | (4)5  | cone                  | 3%   | pz.          | M, T    | 40-20                                                    | 50                                     | 800, 5k                     | 8/7                       | 29x25x29%                        | wal. vinyl              | foam brn.   | 140                     | 695.00        |                                                                              |       |

# Loudspeakers



**Pioneer  
HPM-150**



**Polk 7**



**Power Research  
Rovner V**



**Quadraflex ST 21**



**Rogersound RSL 6600**



**S.T.A.R. Delta**



**Shure SR 112**

150

| MANUFACTURER         | MODEL          | Enclosure type       | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M=midrange; T=tweeter; ST=Super Tweeter) | Ambient freq. response Hz. to kHz. ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish                  | Grille Material? Color?           | Weight, lbs. | Price, \$   | NOTES                        |
|----------------------|----------------|----------------------|---------------------|-----------------------|---------------|----------------------|--------------|----------------------------------------------------------|-----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|-------------------------|-----------------------------------|--------------|-------------|------------------------------|
| SHURE                | SR112          | ported bass ref      | (2) 8               |                       |               |                      | horn         | T                                                        | 45-16 ±5                                | 10                          | 2.6k                      | 8/6                              | 23x15 x15%         | vin.                    | metal blk. metal blk.             | 38           | 340.00      | Outdoor unit.                |
|                      | SR116          | ported bass ref      | (2) 8               |                       |               |                      | horn         | T                                                        | 45-16 ±5                                | 10                          | 2.6k                      | 8/6                              | 23x15 x15%         | vin.                    | metal blk. metal blk.             | 39           | 384.00      | Outdoor unit.                |
| SINDEREAL AKUSTIC    | Model Dne      | resistive reflex     | (2) 10              | ¾                     | dome          | 3                    | horn         | M,T                                                      |                                         | 40                          | 600, 10k                  | 4/3                              | 31½x25½ x13        | oil. oak                | cloth blk.                        | 125          | 499.00      | Solid oak, stereo prs.       |
| SNELL ACOUSTICS      | Type A         | ac. sus.             | 10                  | 4                     | cone          | 1                    | dome         | T                                                        | 36-18 ±2                                | 40                          | 300, 2.5k                 | 4                                | 23½x13 x46½        | oil. wal.               | cloth blk.                        | 97           | 1370.00 pr. |                              |
| SONAB                | OD11           | bass ref             | 8                   |                       |               | 1½                   |              |                                                          | 52-15 ±4                                |                             |                           | 8                                | 10x10x10           | blk. lacq. var.         | blk. metal blk. metal blk.        | 13           | 180.00      | All units multi-directional. |
|                      | OA12           | bass ref.            | 8                   |                       | (2) 1½        |                      |              |                                                          | 42-15 ±3                                |                             |                           | 8                                | 8x13x8             | var.                    | blk. metal blk. metal blk.        | 15           | 240.00      |                              |
|                      | OA14           | bass ref             | 8                   |                       | (4) 1½        |                      |              |                                                          | 29-15 ±3                                |                             |                           | 8                                | 9x17x22            | wal. var. var.          | metal blk. metal blk. metal blk.  | 25           | 330.00      |                              |
|                      | OA116          | bass ref             | 8                   | 8                     | (6) 1½        |                      |              |                                                          | 28-15 ±3                                |                             | 400, 1.8k                 | 8                                | 10½x18 x26         | var.                    | metal blk. metal blk. metal blk.  | 47           | 520.00      |                              |
|                      | OA2212         | bass ref             | (2) 8               | (2) 8                 | (12) 1½       |                      |              | M,T W                                                    | 30-15 ±3                                |                             | 450, 2k                   | 8                                | 12x21 x30          | var.                    | blk. metal blk. metal             | 72           | 840.00      |                              |
| SONEX (SUMIKO)       | Two            | time-align (TM)      | (2) 6*              | 2%                    |               | 1                    |              |                                                          | 32-20 ±3                                | 50                          | 1.5k, 12k                 | 8/6                              | 35½x16 x12½        | wal.                    | cloth, brn.                       | 60           |             | *10-in. pass. rad.           |
| SONIC ENERGY SYSTEMS | Paradox TA-10  | tuned port pas. rad. | 10                  |                       |               | 1½                   | dome         | T                                                        | 70-17 ±3                                | 10                          | 1.5k                      | 8/6                              | 13x12 x24          | oil. wal. oil. wal.     | cloth blk. cloth blk. cloth blk.  | 47           |             | Time Aligned (TM)            |
|                      | Paradox TA-10F |                      | (2) 10              |                       |               | 1½                   | dome         | T                                                        | 40-17 ±3                                | 10                          | 60, 1.5                   | 8/6                              | 15x12 x38          | oil. wal. oil. wal.     | cloth blk. cloth blk. cloth blk.  | 70           |             | Time Aligned (TM)            |
|                      | Paradox TA-12  | tuned port           | 12                  | 5                     | cone          | 1                    | dome         | M,T                                                      | 38-18 ±3                                | 10                          | 500, 5.5k                 | 8/7                              | 18x16 x34          | oil. wal.               | cloth blk.                        | 75           |             | Time Aligned (TM)            |
| SONIC SYSTEMS        | One-A          | slot loaded          | 15                  |                       |               | (4)                  | *            | T                                                        | 32-18 ±3                                | 100                         | 800                       | 8                                | 28½x22 x45         | oil. wal. oil. wal. oak | cloth blk. cloth, blk.            | 175          | 3000.00 pr. | *Compression driver.         |
|                      | Two            | slot loaded          | 15                  |                       |               | (2)                  | *            | T                                                        | 42-18 ±3                                | 70                          | 800                       | 8                                | 25½x19 x37         | oil. wal. oil. wal. oak | cloth blk. cloth, blk.            | 140          | 2200.00 pr. |                              |
| SONY                 | SSU-4000       | pass. rad.           | 10                  | 3%                    | cone          | 1                    | dome         | M,T                                                      | 30-20                                   | 20                          | 500, 5.5k                 | 8/5                              | 13½x14 x47         | oil. wal. oil. wal.     | cloth, brn. cloth brn. cloth brn. | 70%          | 400.00      |                              |
|                      | SSU-3000       | bass. ref.           | 10                  | 3%                    | cone          | 1                    | dome         | M,T                                                      | 35-20                                   | 20                          | 600, 5.5k                 | 8/5                              | 13½x14 x34         | oil. wal. oil. wal.     | cloth brn. cloth brn. cloth brn.  | 59%          | 300.00      |                              |
|                      | SSU-2000       | ac. sus.             | 10                  |                       |               | 2¼                   | cone         | T                                                        | 35-20                                   | 20                          | 2.5k                      | 8/6                              | 13½x14 x25%        | oil. wal. wal. wal.     | cloth brn. cloth brn. cloth brn.  | 38           | 150.00      |                              |
|                      | SSU-1250       | pass. rad.           | 8                   |                       |               | 2¼                   | cone         |                                                          | 45-20                                   | 10                          | 4k                        | 8                                | 13½x11½ x25%       | teak, vinyl             | cloth brn. cloth brn. cloth brn.  | 24%          | 100.00      |                              |
|                      | SSU-1050       | ac. sus.             | 8                   |                       |               | 3                    | cone         |                                                          | 50-20                                   | 10                          | 1k                        | 8/6                              | 13½x9 x17%         | teak vinyl              | cloth brn. cloth brn. cloth brn.  | 18           | 130.00 pr.  |                              |

| MANUFACTURER              | MODEL              | Enclosure type | Woofer dia., inches |              | Midrange dia., inches | Midrange type | Tweeter dia., inches |             | Tweeter type | Level controls (M=midrange, T=tweeter, ST=super tweeter) | Anechoic freq. response Hz to kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish            | Grille Material? Color? | Weight, lbs. | Price, \$                 | NOTES                                                       |
|---------------------------|--------------------|----------------|---------------------|--------------|-----------------------|---------------|----------------------|-------------|--------------|----------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|-------------------|-------------------------|--------------|---------------------------|-------------------------------------------------------------|
|                           |                    |                | 12                  | 5            |                       |               | 1                    | 1           |              |                                                          |                                        |                             |                           |                                  |                    |                   |                         |              |                           |                                                             |
| SOUNDCRAFTSMEN            | Lancer SC-7A       | ac. sus.       | 12                  | 5            | cone                  | 1             | dome                 | M, T        | 20-20 ±5     |                                                          | 10                                     | 500, 4.5k                   | 8                         | 15x11 1/2 x25 1/2                | oil. wal.          | cloth blk.        |                         | 59           | 269.50                    |                                                             |
|                           | Lancer SC-9T       | ac. sus.       | 10                  | 5            | cone                  | 1             | dome                 | M, T        | 20-20        |                                                          | 10                                     | 500, 4.5k                   | 8                         | 12x12 x38                        | oil. wal.          | cloth blk.        |                         | 63           | 229.50                    |                                                             |
|                           | Lancer SC-4        | ac. sus.       | 12                  | 5            | cone                  | 2             | cone                 | M, T        | 20-20        |                                                          | 10                                     | 750, 6k                     | 8                         | 15x12 1/2 x23 1/2                | oil. wal.          | foam blk.         |                         | 53           | 169.50                    |                                                             |
|                           | Lancer SC-10A      | ac. sus.       | 10                  |              |                       | 2 1/2         | cone                 | T           | 20-20        |                                                          | 10                                     | 2.5k                        | 8                         | 12 1/2 x10 x20                   | oil. wal.          | foam brn.         |                         | 33           | 119.50                    |                                                             |
|                           | Lancer 9535-2      | reflex         | 12                  |              |                       | 2 1/2         | cone                 |             | 30-20        |                                                          | 5                                      | 3k                          | 8                         | 14 1/2 x11 1/2 x25               | oil. wal.          | cloth brn/wh      |                         | 33           | 99.50                     |                                                             |
| Lancer 9534X              | reflex             | 8              |                     |              | 3                     | cone          |                      | 40-18       |              | 5                                                        | 3k                                     | 8                           | 11 1/2 x11 1/2 x23 1/2    | oil. wal.                        | cloth brn/wh       |                   | 27                      | 69.50        |                           |                                                             |
| SPEAKERLAB                | Seven              | ac. sus.       | 10, 12              | 14x 3 1/2    | horn                  | 4 1/2 x 1 1/4 | horn                 | M, T        |              |                                                          | 15                                     | 700, 5k                     | 4/-                       | 18x15 1/2 x29                    | oil. wal.          | cloth, brn.       |                         | 85           | 389.00                    | Kit, \$279.00                                               |
|                           | K                  | horn           | 15                  | 17x 6        | horn                  | 4 1/2 x 1 1/4 | horn                 | M, T        |              |                                                          | 10                                     | 400, 5k                     | 4/-                       | 32 1/2 x28 x50 1/2               | oil. wal.          | cloth, brn.       |                         | 170          | 632.00                    | Plywood pre-assembled bass-unit kit, without wal. \$431.00. |
|                           | Six                | ac. sus.       | 12                  | 14x 3 1/2    | horn                  | 4 1/2 x 1 1/4 | horn                 | M, T        |              |                                                          | 15                                     | 700, 5k                     | 8/-                       | 16 1/2 x12 x28                   | oil. wal.          | cloth, brn.       |                         | 70           | 289.00                    | Kit, \$215.00.                                              |
|                           | Four               | ac. sus.       | 12                  | 6            | cone                  | 4 1/2 x 1 1/4 | horn                 | M, T        |              |                                                          | 15                                     | 400, 5k                     | 8/-                       | 16 1/2 x12 x28                   | oil. wal.          | cloth, brn.       |                         | 65           | 249.00                    | Kit, \$180.00.                                              |
|                           | Three              | ac. sus.       | 12                  | 6            | cone                  | 1             | dome                 | M, T        |              |                                                          | 15                                     | 400, 5k                     | 8/-                       | 16 1/2 x12 x28                   | oil. wal.          | cloth, brn.       |                         | 65           | 219.00                    | Kit, \$149.00.                                              |
|                           | Two                | ac. sus.       | 10                  |              |                       | 1 1/2         | dome                 | T           |              |                                                          | 10                                     | 1k                          | 4/-                       | 15 1/2 x12 x23 1/2               | oil. wal.          | cloth, brn.       |                         | 49           | 139.00                    | Kit, \$89.00.                                               |
| One                       | ac. sus.           | 8              |                     |              | 1                     | dome          | T                    |             |              | 5                                                        | 2.5k                                   | 8/-                         | 11 1/2 x9 1/2 x18 1/2     | oil. wal.                        | cloth, brn.        |                   | 30                      | 94.00        | Kit, \$64.00.             |                                                             |
| SPECTRA SONICS            | 3000               | bass ref       | 15                  | 6            | horn                  | 4x 8          | horn                 |             |              |                                                          | 150                                    | 800, 4k                     | 8                         |                                  | formica blk.       |                   |                         | 869.00       | Designed for tri-amp.     |                                                             |
|                           | 3085               | bass ref       | (2) 15              | (2) 10x 30   | horn (2)              | 4x 8          | horn                 | M, L, T     |              |                                                          | *                                      | 800, 4k                     |                           | 85 1/2 x36 x24                   | blk.               | blk.              | 350                     | 6400.00      | *Built-in tri-amp system. |                                                             |
| SPENDOR (RCS)             | BCI                | reflex         | 8                   | 1 1/4        | dome                  | 3/4           | dome                 |             | 50-15 ±3     |                                                          | 20                                     | 3& 13k                      | 8                         | 25x11 1/2 x12                    | wal.               | vynair blk, brn   |                         | 31           | 285.00                    | Rosewood-\$305.00                                           |
|                           | BCII               | reflex         | 8                   | 1 1/4        | dome                  | 3/4           | dome                 |             | 50-15 ±3     |                                                          | 20                                     | 3& 13k                      | 8/6                       | 25x11 1/2 x12                    | wal.               | vynair blk, brn   |                         | 34           | 320.00                    | Rosewood \$340.00                                           |
|                           | BCIII              | reflex         | 12                  | 8            | cone                  | 1 1/4         | dome                 |             | 50-15 ±3     |                                                          | 50                                     | 700, 3& 13k                 | 8/5                       | 31 1/2 x15 1/2 x15 1/2           | wal.               | vynair blk, brn   |                         | 75           | 720.00                    | 4-unit system super tweeter 3/4 in. dia. Rosewood \$750.00  |
|                           | SAI                | inf. baf.      | 6                   |              |                       | 1             | dome                 |             | 65-18 ±3     |                                                          | 20                                     | 3k                          | 8                         | 12x9x8 1/2                       | wal.               | vynair blk, brn   |                         | 16           | 185.00                    | Rosewood \$195.00                                           |
| STARK DESIGNS             | ST-2A              | ac. sus.       | (2) 12              | (2) 1 1/2    | dome                  | (2) 1         | dome                 | (2) M (2) T | 32-22 ±3     |                                                          | 40                                     | 1k, 4k                      | 4                         | 14x14 x50                        | oil. wal.          | cloth, brn.       |                         | 110          | 640.00                    |                                                             |
|                           | ST-1A              | ac. sus.       | (2) 12              | (2) 1 1/2    | dome                  | (2) 1         | dome                 | (2) M (2) T | 32-22 ±3     |                                                          | 30                                     | 1k, 4k                      | 4                         | 12x12 x46                        | oil. wal.          | cloth, brn.       |                         | 80           | 520.00                    |                                                             |
|                           | SM-2               | ac. sus.       | 10                  | 1 1/2        | dome                  | 1             | dome                 | M, T        | 32-22 ±3     |                                                          | 25                                     | 1k, 6k                      | 8                         | 14x13 1/2 x42                    | oil. wal.          | cloth, brn.       |                         | 85           | 400.00                    |                                                             |
|                           | SM-1               | ac. sus.       | 10                  | 1 1/2        | dome                  | 1             | dome                 | M, T        | 40-22 ±3     |                                                          | 20                                     | 1k, 6k                      | 8                         | 12x11 1/2 x40                    | oil. wal.          | cloth, brn.       |                         | 65           | 320.00                    |                                                             |
|                           | SR-2               | ac. sus.       | 12                  | 2            | dome                  | 1             | dome                 | M, T        | 32-20 ±3     |                                                          | 25                                     | 1k, 4k                      | 8                         | 15x13 x24                        | oil. wal.          | cloth, brn.       |                         | 57           | 360.00                    |                                                             |
|                           | SR-1               | ac. sus.       | 10                  | 2            | dome                  | 1             | dome                 | M, T        | 40-20 ±3     |                                                          | 20                                     | 1k, 4k                      | 8                         | 15x11 x24                        | oil. wal.          | cloth, brn.       |                         | 47           | 280.00                    |                                                             |
|                           | SE-2               | ac. sus.       | 10                  |              |                       | 1             | dome                 | T           | 40-20 ±4     |                                                          | 20                                     | 2k                          | 8                         | 13x11 x24                        | oil. wal.          | cloth, brn.       |                         | 42           | 200.00                    |                                                             |
|                           | SE-1               | ac. sus.       | 8                   |              |                       | 1             | dome                 | T           | 50-20 ±4     |                                                          | 15                                     | 2k                          | 8                         | 10x11 x21                        | oil. wal.          | cloth, brn.       |                         | 35           | 160.00                    |                                                             |
| STAX (AMERICAN AUDIOPORT) | ELS-4a             | e.s.           |                     |              |                       |               |                      |             |              |                                                          | 50                                     |                             |                           | 30x3x60                          | teak               | cloth             |                         | 70           | 1700.00                   |                                                             |
|                           | ELS-6a             | e.s.           |                     |              |                       |               |                      |             |              |                                                          | 75                                     |                             |                           | 30x3x72                          | teak               | beige cloth beige |                         | 80           | 3700.00                   |                                                             |
| SUPERSCOPE                | S-312A             | air sus.       | 12                  | 4 1/2        |                       | 3             |                      |             | 30-20 ±3     |                                                          | 50                                     | 2& 6k                       | 8                         | 26x15 x10 1/4                    | oil. wal.          | foam brn.         |                         | 30           | 99.95                     |                                                             |
|                           | S-310A             |                | 10                  | 4 1/2        |                       | 3             |                      |             | 50-18 ±3     |                                                          | 35                                     | 2& 6k                       | 8                         | 24 1/2 x13 x10 1/4               | oil. wal.          | foam brn.         |                         | 19           | 69.95                     |                                                             |
|                           | S-308A             |                | 8                   |              |                       | 3             |                      |             | 60-18 ±3     |                                                          | 30                                     | 5k                          | 8                         | 23x12 1/2 x8 1/4                 | oil. wal.          | foam brn.         |                         | 16           | 79.95 pr.                 |                                                             |
|                           | S-208A             |                | 8                   |              |                       | 3             |                      |             | 60-16 ±3     |                                                          | 30                                     |                             | 8                         | 21x12 x7                         | oil. wal.          | foam brn.         |                         | 13           | 69.95 pr.                 |                                                             |
| SYMDEX                    | Reference Standard | ac. sus.       | 12, 10              | 6 1/2, 1 1/4 | cone dome             |               | E.S.                 | W, M, T     | 21-20 ±2     |                                                          | 50                                     | 50, 275, 3& 10k             | 8                         | 23 1/2 x21 x54                   | wal.               | foam              |                         | 1495.00      |                           |                                                             |
|                           | Home Reference     | ac. sus.       | 10                  | 6 1/2        | cone                  | 1             | dome                 | M, T        | 29-19.5 ±2   |                                                          | 25                                     | 275, 3k                     | 8                         | 16x12 x48                        | wal.               | foam              |                         | 595.00       | Bi ampable                |                                                             |
|                           | Compact            | ac. sus.       | 6 1/2               |              |                       | 1             | dome                 | T           | 45-19.5 ±2.5 |                                                          | 20                                     | 3k                          | 8                         | 10x7 x21 1/2                     | wal.               | foam              |                         | 295.00       |                           |                                                             |

# Loudspeakers



Snell Type A



Sonex Two



Sonic Systems Two



Sony SSU-4000

| MANUFACTURER            | MODEL          | Enclosure type   | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Legal controls (M=midrange, T=tweeter, ST=Super Tweeter) | Anechoic freq. response Hz. to 1kHz ± dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches | Finish     | Grille Material? Color? | Weight, lbs. | Price, \$ | NOTES                              |
|-------------------------|----------------|------------------|---------------------|-----------------------|---------------|----------------------|--------------|----------------------------------------------------------|------------------------------------------|-----------------------------|---------------------------|----------------------------------|--------------------|------------|-------------------------|--------------|-----------|------------------------------------|
|                         |                |                  |                     |                       |               |                      |              |                                                          |                                          |                             |                           |                                  |                    |            |                         |              |           |                                    |
| SYNERGISTICS            | S-12A          | ac. sus.         | 8                   |                       | 2½            | cone                 |              |                                                          | 38-20                                    | 6                           | 3.2k                      | 8                                | 9½x8½<br>x17½      | wal. vinyl | cloth blk.              | 17           | 100.00    |                                    |
|                         | S-22A          | ac. sus.         | 8                   |                       | 2½            | cone                 | T            |                                                          | 33-20                                    | 6                           | 3.2k                      | 8                                | 12x9½<br>x23       | wal. vinyl | cloth blk.              | 29           | 130.00    |                                    |
|                         | S-32A          | ac. sus.         | 10                  |                       | 2½            | cone                 | T            |                                                          | 28-20                                    | 10                          | 2.5k                      | 8                                | 14½x11½<br>x25½    | wal. vinyl | cloth blk.              | 38           | 165.00    |                                    |
|                         | S-42A          | ac. sus.         | 10                  | 4½                    | cone          | 2½                   | cone         | M,T                                                      | 28-20                                    | 10                          | 1.5, 7.5k                 | 8                                | 14½x11½<br>x25½    | wal. vinyl | cloth blk.              | 40           | 225.00    |                                    |
|                         | S-51A          | ac. sus.         | 12                  | 4½                    | cone          | 2½                   | cone         | M,T                                                      | 30-26                                    | 8                           | 7.5, 12.5k                | 8                                | 14½x11½<br>x25½    | wal. vinyl | cloth blk.              | 41           | 300.00    | 4-way w/pz. ST.                    |
|                         | S-52A Tower    | ac. sus.         | (2) 8               |                       |               | (4) 2½               | cone         | T                                                        | 30-20                                    | 8                           | 3.2k                      | 4                                | 14½x12½<br>x32     | oil. wal.  | cloth blk.              | 55           | 300.00    |                                    |
|                         | S-62A Tower    | ac. sus.         | 12                  | 4½                    | cone          | (3) 2½               | cone         | M,T                                                      | 26-26                                    | 8                           | 1, 7.5k, 12.5k            | 8                                | 18x11<br>x36       | oil. wal.  | cloth blk.              | 67           | 400.00    | 4-way w/ pz. super tweeter, 4 way. |
| S-72A                   | ac. sus.       | (2) 10           | (2) 4½              | cone                  | (3) 2½        | cone                 | M,T          | 26-26                                                    | 6                                        | 1, 7.5k, 12.5k              | 4                         | 27x11<br>x42                     | oil. wal.          | cloth blk. | 103                     | 600.00       |           |                                    |
| TAMON (SWAN TRADING)    | TS-4000        | inf. baf.        | 10                  | 5                     | cone          | 3                    | dome         |                                                          | 38-22                                    | 2k, 6k                      | 8                         | 22½x12½<br>x8                    |                    | cloth brn. | 27½                     |              |           |                                    |
|                         | TS-3000        | inf. baf.        | 8                   |                       |               | 3                    | dome         |                                                          | 42-22                                    | 6k                          | 8                         | 18½x11½<br>x8                    |                    | cloth brn. | 19.4                    |              |           |                                    |
|                         | TS-1000        | inf. baf.        | 6½                  |                       |               | 2                    | dome         |                                                          | 55-18                                    | 7k                          | 8                         | 13½x8½<br>x6                     |                    | cloth brn. | 7.7                     |              |           |                                    |
|                         | CRO-5          | inf. baf.        | 12                  | 5                     | cone          | 3                    | cone         |                                                          | 32-22                                    | 1.5k, 6k                    | 8                         | 24½x14½<br>x11½                  |                    | cloth blk. | 39                      |              |           |                                    |
|                         | CRO-4          | inf. baf.        | 10                  | 5                     | cone          | 3                    | cone         |                                                          | 38-22                                    | 2k, 6k                      | 8                         | 22½x12½<br>x11½                  |                    | cloth blk. | 27½                     |              |           |                                    |
|                         | CRO-3          | inf. baf.        | 8                   |                       |               | 3                    | cone         |                                                          | 45-22                                    | 6k                          | 8                         | 19x10½<br>x8                     |                    | cloth blk. | 15.8                    |              |           |                                    |
|                         | TS-5000        | inf. baf.        | 12                  | 5                     | cone          | 3                    | dome         |                                                          | 35-22                                    | 1.5k, 6k                    | 8                         | 25½x15<br>x11½                   |                    | cloth brn. | 38                      |              |           |                                    |
|                         | TS-7000        | inf. baf.        | 15                  | (2) 5                 | cone          | (2) 3                | horn cone    |                                                          | 30-22                                    | 600, 6k, 15k                | 8                         | 31½x17<br>x12                    |                    | cloth brn. | 55                      |              |           |                                    |
| LB-101                  |                | 4                |                     |                       | 2             | dome                 |              | 80-22                                                    |                                          |                             | 8/4                       | 7½x4½<br>x4                      | alum.              | alum.      | 3.7                     |              |           |                                    |
| TANDBERG                | Fasett Speaker |                  | 5                   |                       | 2½            | dome                 |              |                                                          |                                          |                             | 8/4                       | 11x9½<br>x8                      | blk. white oran.   | metal      | 7.6                     | 200.00 pr.   |           |                                    |
| TRANSAUDIO (QUADRAFLEX) | 1012B          | ac. sus.         | 12                  | 5                     | cone          | 2½                   | cone         |                                                          | 38-18 ±4                                 | 5                           | 600, 2k                   | 8                                | 16½x10½<br>x27     | wal. vinyl | foam blk.               | 42           | 149.95    |                                    |
|                         | 1011B          | ac. sus.         | 12                  |                       |               | 2½                   | cone         |                                                          | 40-18 ±4                                 | 5                           | 1.8k                      | 8                                | 15½x10½<br>x26     | wal. vinyl | foam blk.               | 36           | 99.95     |                                    |
|                         | 1010B          | ac. sus.         | 10                  |                       |               | 3                    | cone         |                                                          | 45-17 ±4                                 | 5                           | 1.8k                      | 8                                | 13½x9½<br>x24      | wal. vinyl | foam blk.               | 33½          | 69.95     |                                    |
|                         | 1008A          | ac. sus.         | 8                   |                       |               | 3                    | cone         |                                                          | 60-16 ±5                                 | 5                           | 2k                        | 8                                | 11½x8½<br>x18      | wal. vinyl | foam blk.               | 25           | 44.95     |                                    |
| ULTRALINEAR             | ST 525         | Time-Phase       | 10                  | 2                     | dome          | 1                    | dome         | M,T                                                      | 30-22                                    | 20                          | 700, 4.3k                 | 8                                | 14x12½<br>x27      | wal.       | cloth                   | 87           | 329.95    |                                    |
|                         | ST 550         | Time-Phase       | 12                  | 2                     | dome          | 1                    | dome         | M,T                                                      | 27-22                                    | 20                          | 700, 4.3k                 | 8                                | 17½x17<br>x34      | wal.       | cloth                   | 87           | 419.95    |                                    |
|                         | 260            | Phase tuned port | 15                  | 6                     |               | (2) 1                | dome         | M                                                        | 25-22                                    | 15                          | 800, 2.6k, 6k             | 8                                | 18x16½<br>x31      | wal.       | cloth                   | 68           | 299.95    |                                    |
|                         | 225            | air sus.         | 12                  | 6                     |               | 1                    | dome         | M                                                        | 28-22                                    | 10                          | 500, 5k                   | 8                                | 14½x12<br>x24      | wal.       | cloth                   | 45           | 189.95    |                                    |
|                         | 200 B          | air sus.         | 12                  | 5                     |               | 2½                   |              | M                                                        | 28-21                                    | 10                          | 1.5k, 4k                  | 8                                | 14½x12<br>x24      | wal.       | cloth                   | 42           | 159.95    |                                    |
|                         | 100 C          | bass ref.        | 12                  | 4½                    |               | 2½                   |              |                                                          | 31-18                                    | 5                           | 1.5k, 4k                  | 8                                | 14½x12<br>x24      | wal.       | cloth                   | 37           | 129.95    |                                    |
|                         | 77             | air sus.         | 10                  | 5                     |               | 2½                   |              | M                                                        | 32-18                                    | 8                           | 1.8k, 4k                  | 8                                | 11½x9½<br>x23      | wal.       | cloth                   | 24           | 119.95    |                                    |
|                         | 66             | air sus.         | 8                   | 4½                    |               | 2½                   |              |                                                          | 38-18                                    | 5                           | 2k, 4.5k                  | 8                                | 14½x9½<br>x23      | wal.       | cloth                   | 23           | 69.95     |                                    |
|                         | 25             | bass ref.        | 8                   |                       |               | 3                    | cone         |                                                          | 50-17                                    | 2                           | 4.5k                      | 8                                | 11½x9½<br>x18      | wal.       | foam/ cloth             | 17½          | 49.95     |                                    |



Stark ST-1A



Synergetics S-72A



Transaudio 1012B



Videoton D-402A



Visonik David 30

| MANUFACTURER     | MODEL       | Enclosure type | Woofer dia., inches | Midrange dia., inches | Midrange type | Tweeter dia., inches | Tweeter type | Level controls (M, midrange; T, tweeter; ST, Super Tweeter) | Anechoic freq. response Hz to kHz - dB | Recommended min. amp. power | Crossover frequencies, Hz | Impedance, ohms; Nominal/minimum | Dimensions, inches   | Finish     | Grille Material? Color? | Weight, lbs. | Price, \$  | NOTES                           |
|------------------|-------------|----------------|---------------------|-----------------------|---------------|----------------------|--------------|-------------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|----------------------------------|----------------------|------------|-------------------------|--------------|------------|---------------------------------|
|                  |             |                |                     |                       |               |                      |              |                                                             |                                        |                             |                           |                                  |                      |            |                         |              |            |                                 |
| VMPS (ITONE)     | 101b        | ac. sus.       | 8                   |                       |               | 1 1/2                | dome         |                                                             | 55-18                                  | 10                          | 3k                        | 8/7                              | 16x11x9              | wal. vinyl | cloth blk.              | 18           | 72.00      |                                 |
|                  | 404b        | pres. vent     | 8                   |                       |               | 1                    | dome         | T                                                           | 50-20                                  | 15                          | 5k                        | 8                                | 23x12x10             | wal. vinyl | cloth blk.              | 20           | 109.00     |                                 |
|                  | 606b        | pres. vent     | 10                  |                       |               | 1                    | dome         | T                                                           | 45-20                                  | 10                          | 4k                        | 8/7                              | 23x12x12 1/2         | oil wal.   | cloth blk.              | 35           | 159.00     |                                 |
|                  | 707         | pres. vent     | 10                  | 4 1/2                 | cone          | 1                    | dome         | M,T                                                         | 40-20                                  | 10                          | 1.2 & 5k                  | 8/6                              | 25x14x11 1/2         | oil wal.   | cloth blk.              | 42           | 219.00     |                                 |
|                  | 808b        | pres. vent     | 12                  | 5                     | cone          | 1                    | dome         | M,T                                                         | 35-20                                  | 10                          | 1& 5k                     | 8/6                              | 25x14x11 1/2         | oil wal.   | cloth blk.              | 47           | 279.00     |                                 |
|                  | Mini-Tower  | pres. vent     | (2) 10              | 2                     | dome          | 1                    | dome         | M,T                                                         | 30-20                                  | 25                          | 400, 900, & 5k            | 8                                | 35x13x14             | oil wal.   | cloth blk.              | 65           | 349.00     |                                 |
|                  | Tower       | pres. vent     | (2) 12              | 2                     | dome          | (3) 1                | dome         | M,T                                                         | 25-22                                  | 20                          | 350, 800, & 5k            | 8/5                              | 42x15x16             | oil wal.   | cloth blk.              | 85           | 499.00     | Biamp w/o ext. xover            |
|                  | Super Tower | pres. vent     | 15, 12              | (2) 2                 | dome          | (4) 1                | dome         | M,T                                                         | 17-22                                  | 25                          | 200, 800, & 5k            | 8                                | 50x18x18             | oil wal.   | cloth blk.              | 130          | 899.00     | Biamp w/o ext. xover            |
| VIDEOTON (KELSO) | D93         | air sus.       | (2) 3.5             |                       |               | 2 1/2                | cone         |                                                             | 60-20 ±3                               | 5                           | 7k                        | 8/6                              | 4 1/2x8 1/2x11       | oil wal.   | cloth brn.              | 7            | 49.95 pr.  |                                 |
|                  | 132         | air sus.       | 5 1/2               |                       |               | 3                    | cone         |                                                             | 50-18 ±3                               | 5                           | 3.5k                      | 8/6                              | 8x7x11               | oil wal.   | cloth brn & wh.         | 9            | 59.95 pr.  |                                 |
|                  | 202         | air sus.       | 8                   |                       |               | 3 1/2                | cone         |                                                             | 45-15 ±3                               | 5                           | 3.5k                      | 8/6                              | 10x8 1/2x15 1/2      | oil wal.   | cloth brn & wh.         | 16 1/2       | 79.95 pr.  |                                 |
|                  | 255         | air sus.       | 10                  |                       |               | 1                    | dome         |                                                             | 40-20 ±3                               | 25                          | 4.5k                      | 8/6                              | 11 1/2x11 1/2x24 1/2 | oil wal.   | cloth brn.              | 33           | 129.95 pr. |                                 |
|                  | 257         | air sus.       | 10                  | 5                     | cone          | 1                    | dome         | M                                                           | 40-20 ±3                               | 25                          | 1.4k                      | 8/6                              | 11 1/2x11 1/2x24     | oil wal.   | cloth brn.              | 34           | 149.95 pr. |                                 |
|                  | D258        | air sus.       | 10                  | 5 1/2                 | cone dome     | 1                    | dome         | M,T                                                         | 30-20                                  | 60                          | 600, 2.7k                 | 8/6                              | 15 1/2x11x27 1/2     | oil wal.   | cloth brn.              | 45           | 229.95 pr. |                                 |
|                  | D-402A      |                | (2) 8               |                       |               | (2) 1 (2) 4          | dome cone    |                                                             | 35-20                                  |                             | 3.5k                      | 8/6                              | 15 1/2x11x27 1/2     | oil wal.   | cloth brn.              | 53           | 199.95 pr. |                                 |
| VISONIK          | D-302       |                | 3 1/2               |                       |               | 2                    | cone         |                                                             | 55-22                                  | 8                           | 1.8k                      | 8/4                              | 14 1/4x4 1/4x6 1/2   | blk.       | blk.                    | 4.7          | 95.50      | D-302 MO w/car bracket \$115.50 |
|                  | D-50        |                | 3 1/2               |                       |               | 1/2                  | dome         |                                                             | 48-25                                  | 12                          | 1.8k                      | 8/4                              | 14 1/4x4 1/4x6 1/2   | blk.       | blk.                    | 5.1          | 109.50     | D-50 MO w/car bracket 125.00    |
|                  | D-60        |                | 5 1/2               |                       |               | 1                    | dome         |                                                             | 35-25                                  | 18                          | 1.6k                      | 8/4                              | 5 1/2x5 1/2x9 1/2    | blk.       | blk.                    | 8 1/2        | 149.00     |                                 |
|                  | D-80        |                | 6 1/2               | 1 1/2                 | cone          | 1/2                  | dome         |                                                             | 28-25                                  | 25                          | 700, 4.6k                 | 8/4                              | 8x8x13               | blk.       | blk.                    | 18 1/2       | 219.00     |                                 |
|                  | D-100       |                | 7 1/2               | 1 1/2                 | cone          | 1/2                  | dome         |                                                             | 26-25                                  | 25                          | 700, 5k                   | 8/4                              | 9x9x14 1/2           | blk.       | blk.                    | 26 1/2       | 259.00     |                                 |
|                  | SUB-1       |                | 12                  |                       |               |                      |              | W                                                           | 28-220 ±2                              | 40                          | 160                       | 6                                |                      | grey wal.  | foam grey               |              | 400.00     | Sub-woofer for David 302        |
| WHARFEDALE       | E-70        | bass ref.      | 10                  | (2) 4                 | cone          | 1                    | dome         | M,T                                                         | 50-18 ±3                               |                             | 800, 7k                   | 8/7                              | 13 1/2x14x32         | wal.       | open-screen, blk.       | 70           | 420.00     |                                 |
|                  | E-50        | bass ref.      | 10                  | 4                     | cone          | 1                    | dome         | M,T                                                         | 55-18 ±3                               |                             | 800, 7k                   | 8/7                              | 13 1/2x13 1/2x26     | wal.       | open-screen, blk.       | 42           | 335.00     |                                 |
|                  | Airedale    | bass ref.      | 10                  | 6 1/4                 | cone          | 1                    | dome         |                                                             | 27-26 ±3                               |                             | 800, 1.8k, 4.2k           | 6/5                              | 18 1/2x16 1/2x34 1/2 | wal.       | cloth brn.              | 88           | 500.00     |                                 |
|                  | Dovedale    | bass ref.      | (2) 6 1/2           | 4                     | cone          | 1                    | dome         |                                                             | 35-26 ±3                               |                             | 800, 5k                   | 6/5                              | 15 1/2x12 1/2x25     | wal.       | cloth, brn.             | 55           | 310.00     |                                 |
|                  | Teesdale    | bass ref.      | 8                   | 4                     | cone          | 1                    | dome         |                                                             | 40-26 ±3                               |                             | 800, 5k                   | 6/5                              | 13x11x23             | wal.       | cloth, brn.             |              | 250.00     |                                 |
| YAMAHA           | NS-1000     | ac. sus.       | 12                  | 8 1/2                 | dome          | 1 1/2                | *dome        | M,T                                                         |                                        |                             | 500, 6k                   | 8                                | 28x15 1/2x14 1/2     | ebony      | cloth                   | 85 1/2       | 675.00     | *Beryllium.                     |
|                  | NS-1000M    | ac. sus.       | 12                  | 3 1/2                 | dome          | 1 1/2                | *dome        | M,T                                                         |                                        |                             | 500, 6k                   | 8                                | 26 1/2x14 1/2x12 1/2 | blk.       | cloth                   | 68 1/2       | 495.00     | *Beryllium.                     |
|                  | NS-500      | ac. sus.       | 10                  |                       |               | 1 1/2                | *dome        | M,T                                                         |                                        |                             | 1.8k                      | 8                                | 24 1/2x13 1/2x13 1/2 | blk.       | cloth                   | 42 1/2       | 250.00     | *Beryllium.                     |
|                  | NS-690H     | ac. sus.       | 12                  |                       | dome          | 1 1/2                | dome         | M,T                                                         |                                        |                             | 800, 6k                   | 8                                | 24 1/2x11 1/2x11 1/2 |            | cloth                   | 48           | 280.00     |                                 |
|                  | NS-670      | ac. sus.       | 10                  |                       | dome          | 1 1/2                | dome         | M,T                                                         |                                        |                             | 800, 6k                   | 8                                | 22 1/2x12 1/2x10 1/2 |            | cloth                   | 42           | 200.00     |                                 |
|                  | NS-5        | ac. sus.       | 10                  |                       |               | 1                    | dome         |                                                             |                                        | 10                          | 1.5k                      | 8                                | 11 1/2x11x20 1/2     |            | cloth                   | 25           | 100.00     |                                 |

# Cassette & Cartridge Tape Decks



Advent 201A



Heath AD-1530



Akai GXC-730D



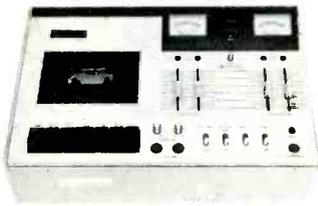
Bigston BSD-400



Aiwa AD-6550

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| MANUFACTURER        | MODEL    | "X" if cassette; "C" if cartridge | Frequency response, Hz-KHz:±dB with best tape | Number of heads | % wow & flutter, W rms | S/N, dB, without Dolby | S/N, dB, with Dolby | Number of bias & EQ settings | Mike mixing? If yes, no. inputs | Locking/pause control | Does unit record | Memory rewind | Peak level indicator(s) | Dimensions, inches, W x D x H | Net weight, lbs. | Price                                                | NOTES                                                     |
|---------------------|----------|-----------------------------------|-----------------------------------------------|-----------------|------------------------|------------------------|---------------------|------------------------------|---------------------------------|-----------------------|------------------|---------------|-------------------------|-------------------------------|------------------|------------------------------------------------------|-----------------------------------------------------------|
| ADVENT              | 201A     | X                                 | 28-15 ±2                                      | 2               | 15*                    | 60                     | 2                   |                              | yes                             | yes                   | no               | yes           | 14x9 1/2 x5             | 18                            | 399.95           | Headphone amp., auto off, *Din.                      |                                                           |
| AIWA/MERITON        | AD-6550  | X                                 | 20-17 ±3                                      | 2               | 0.05                   | 59                     | 65                  | 3                            |                                 | yes                   | yes              | yes           | 16 1/2 x5 1/2 x13       | 16 1/2                        | 450.00           | Bias fine adjust, auto off.                          |                                                           |
|                     | AD-6500  | X                                 | 30-17 ±3                                      | 2               | 0.07                   | 56                     | 62                  | 3                            |                                 | yes                   | yes              | yes           | 17 1/2 x6 1/2 x12       | 18.7                          | 370.00           |                                                      |                                                           |
|                     | AD-6300  | X                                 | 30-16 ±3                                      | 2               | 0.09                   | 54                     | 60                  | 3                            |                                 | yes                   |                  | yes           | 16 1/2 x6 1/2 x11 1/2   | 14.8                          | 250.00           |                                                      |                                                           |
|                     | AD-1250  | X                                 | 30-16 ±3                                      | 2               | 0.09                   | 54                     | 60                  | 3                            |                                 | yes                   |                  | yes           | 15 1/2 x5 1/2 x11       | 10.2                          | 230.00           |                                                      |                                                           |
|                     | AD-1800  | X                                 | 30-18 ±3                                      | 2               | 0.05                   | 59                     | 65                  | 3                            | 2                               | yes                   | yes              | yes           | 16 1/2 x6 1/2 x11 1/2   | 16.5                          | 450.00           |                                                      |                                                           |
|                     | AD-1600  | X                                 | 30-17 ±3                                      | 2               | 0.07                   | 56                     | 62                  | 3                            | 2                               | yes                   | yes              | yes           | 16 1/2 x6 1/2 x11 1/2   | 13.7                          | 360.00           |                                                      |                                                           |
| AKAI                | GXC-570D | X                                 | 30-19 ±3                                      | 3               | 0.06                   | 52                     | 62                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x8.9 x10.0          | 30                            | 900.00           | Reverse Recording                                    |                                                           |
|                     | GXC-760D | X                                 | 30-19 ±3                                      | 3               | 0.06                   | 51                     | 61                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x12.0 x5.6          | 25                            | 675.00           |                                                      |                                                           |
|                     | GXC-740D | X                                 | 30-18 ±3                                      | 3               | 0.07                   | 50                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x12.0 x5.6          | 20                            | 575.00           |                                                      |                                                           |
|                     | GXC-730D | X                                 | 30-17 ±3                                      | 3               | 0.08                   | 50                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x11.9 x6.9          | 26.5                          | 550.00           |                                                      |                                                           |
|                     | GXC-725D | X                                 | 35-17 ±3                                      | 3               | 0.06                   | 50                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x11.2 x6.5          | 16                            | 425.00           |                                                      |                                                           |
|                     | GXC-709D | X                                 | 35-16 ±3                                      | 2               | 0.06                   | 50                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x11.2 x6.5          | 15                            | 350.00           |                                                      |                                                           |
|                     | CS-707D  | X                                 | 35-16 ±3                                      | 2               | 0.08                   | 50                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 17.3x12.0 x6.4          | 15.4                          | 275.00           |                                                      |                                                           |
|                     | CS-702D  | X                                 | 40-14 ±3                                      | 2               | 0.08                   | 50                     | 60                  | 2                            | yes                             | yes                   | no               | yes           | 15x11.3 x6.2            | 15                            | 200.00           |                                                      |                                                           |
|                     | CR-80DSS | ⊖                                 | 30-16 ±3                                      |                 | 0.25                   | 47                     | —                   | 4                            | no                              | yes                   | no               | no            | 19.4x11.2 x5.5          | 24                            | 350.00           |                                                      |                                                           |
| CR-83D              | ⊖        | 60-14 ±3                          |                                               | 0.15            | 48                     | —                      | 2                   | yes                          | yes                             | no                    | no               | 16.5x9.6 x4.3 | 12                      | 220.00                        |                  |                                                      |                                                           |
| BIGSTON             | BSD400   | X                                 | 30-13 ±3                                      | 2               | 0.05                   | 52                     | 58                  | 3                            | 2                               | yes                   | yes              | yes           | 17x11 1/4 x5 1/2        | 16 1/2                        | 249.95           | Separate bias and EQ (Std, CrD <sub>2</sub> & FeCr). |                                                           |
|                     | BSD300   | X                                 | 40-12 ±3                                      | 2               | 0.08                   | 48                     | 56                  | 2                            | 2                               | yes                   | yes              | no            | 14 1/2 x10 1/2 x5 1/2   | 11 1/2                        | 169.95           |                                                      |                                                           |
| CONCEPT             | ELC      | X                                 | 30-16 ±3                                      | 2               | 0.05                   | 52                     | 62                  | 3                            | 4                               | yes                   | yes              | yes           | 19 1/4 x11 1/2 x5 1/2   | 25                            | 495.00           | Computer Logic Controls Auto Repeat, 2 motors        |                                                           |
| CRAIG               | 5201     | X                                 | 30-16 ±2                                      | 2               | 0.1                    | 50                     | 60                  | 3                            | 2                               | no                    | yes              | yes           | no                      | 17x11 1/4 x6 1/2              | 12 1/2           | 249.95                                               |                                                           |
|                     | H221     | X                                 | 40-15                                         | 2               | 0.15                   | 40                     | 50                  | 2                            | 2                               | no                    | yes              | no            | no                      | 15 1/2 x10 1/2 x5 1/2         | 8 1/2            | 169.95                                               |                                                           |
|                     | H260     | ⊖                                 | 30-10                                         | 2               | 0.25                   | 50                     | —                   | 0                            | 2                               | no                    | yes              | no            | no                      | 13 1/2 x8 1/2 x4 1/2          | 7 1/2            | 119.95                                               |                                                           |
|                     | 3307     | ⊖                                 | 30-10                                         | 2               | 0.25                   | 40                     | —                   | 0                            | 2                               | no                    | yes              | no            | no                      | 12 1/2 x8 1/2 x4 1/2          | 9                | 99.95                                                |                                                           |
|                     | H240     | ⊖                                 | 50-10                                         | 1               | 0.25                   | 45                     | —                   | 0                            | —                               | no                    | no               | no            | no                      | 8 1/2 x8 1/2 x4 1/2           | 3 1/2            | 49.95                                                |                                                           |
| DUAL (UNITED AUDIO) | 939      | X                                 | 20-16.5 ±3                                    | 2               | 0.05                   | 65                     | 65                  | 3                            | 2                               | yes                   | yes              | yes           | yes                     | 17 1/2 x11 1/4 x5 1/2         | 15 1/2           | 550.00                                               | Dolby FM, auto reverse, continuous play.                  |
|                     | 919      | X                                 | 20-16.5 ±1.5                                  | 2               | 0.05                   | 65                     | 65                  | 3                            | 2                               | yes                   | yes              | yes           | no                      | 16 1/2 x10 1/2 x5             | 14 1/2           | 450.00                                               | Dolby FM; headphone, line, mike, & output level controls. |

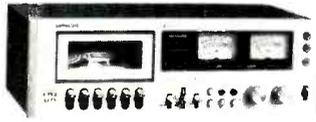


Harman/Kardon 2000

Kenwood KX-920



JVC KD-95



Hitachi D-800

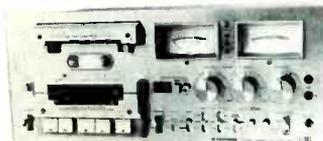


Optonica RT-3535 Mk2

| MANUFACTURER     | MODEL     | 'X' - if cassette 'g' - if cartridge | Frequency response, Hz - kHz, ±dB with best eq |          | Number of heads | % wow & flutter, W rms | S/N, dB, without Dolby | S/N, dB, with Dolby | Number of bias & ED settings | Mike mixing? If yes, no. inputs | Locking pause control | Does unit record | Memory rewind           | Part level indicator(s)      | Dimensions, inches, W x D x H | Net weight, lbs. | Price                           | NOTES                                                  |
|------------------|-----------|--------------------------------------|------------------------------------------------|----------|-----------------|------------------------|------------------------|---------------------|------------------------------|---------------------------------|-----------------------|------------------|-------------------------|------------------------------|-------------------------------|------------------|---------------------------------|--------------------------------------------------------|
|                  |           |                                      |                                                |          |                 |                        |                        |                     |                              |                                 |                       |                  |                         |                              |                               |                  |                                 |                                                        |
| FISHER           | CR5120    | X                                    | 30-18                                          | 3        | 0.04            | 64                     | 3                      | 2                   | yes                          | yes                             |                       | yes              | 16"x17 1/4" x12 1/2"    | 22.5                         | 399.95                        |                  |                                 |                                                        |
|                  | CR5115    | X                                    | 30-17                                          | 3        | 0.07            | 60                     | 3                      | 2                   | yes                          | yes                             |                       | yes              | 6 1/2"x16 1/2" x11 1/2" | 13                           | 299.95                        |                  |                                 |                                                        |
|                  | CR5110    | X                                    | 40-14                                          | 3        | 0.09            | 56                     | 3                      | 2                   | yes                          | yes                             |                       |                  | 4 3/4"x13 3/4" x11 1/2" | 12                           | 249.95                        |                  |                                 |                                                        |
|                  | CD4020    | X                                    | 40-11                                          | 2        | 0.09            | 50                     |                        | 2                   | yes                          | yes                             |                       |                  | 4 3/4"x13 3/4" x11 1/2" | 12                           | 169.95                        |                  |                                 |                                                        |
|                  | CD4010    | X                                    | 40-11                                          | 2        | 0.09            | 50                     |                        | 2                   | yes                          | yes                             |                       |                  | 4 3/4"x13 3/4" x11 1/2" | 12                           | 149.95                        |                  |                                 |                                                        |
| HANDIC           | 999       | X                                    | 30-15                                          |          | 0.1             | 58                     | 65                     | 2                   | yes                          | yes                             | yes                   | yes              | 18"x4 3/4" x9 1/2"      |                              | 219.00                        |                  |                                 |                                                        |
| HARMAN KARDON    | HK2000    | X                                    | 20-16 ±3                                       | 2        | 0.07            | 62                     | 2                      | 2                   | yes                          | yes                             | yes                   | yes              | 15"x10 1/2" x5 1/2"     | 16                           | 399.95                        |                  | Subsonic and Multiplex filters. |                                                        |
| HEATH            | AD-1530   | X                                    | 40-12 3                                        |          | 0.25            | 48                     | 58                     |                     |                              | yes                             | no                    | yes              | 14"x9 1/2" x5 1/2"      | 20                           | 279.95                        |                  | \$6.95 for dustcover            |                                                        |
| HITACHI          | D-220     | X                                    | 30-14000 ±3                                    | 2        | 0.09            | 53                     | 58                     | 2                   |                              | yes                             | yes                   | no               | no                      | 15"x10 1/2" x5 1/2"          | 9.06                          | 159.95           |                                 |                                                        |
|                  | D-410     | X                                    | 30-13 ±3                                       | 2        | 0.08            | 52                     | 60                     | 2                   |                              | yes                             | yes                   | no               | no                      | 16 1/4"x5 1/2" x10 1/2"      | 10.4                          | 199.95           |                                 |                                                        |
|                  | D-720     | X                                    | 30-15000 ±3                                    | 2        | 0.07            | 53                     | 58                     | 3                   |                              | yes                             | yes                   | yes              | yes                     | 17 1/2"x10 1/2" x5 1/2"      | 15.5                          | 259.95           |                                 |                                                        |
|                  | D-3500    | X                                    | 20-15 ±3                                       | 3        | 0.05            | 55                     | 63                     | 2                   | 1                            | yes                             | yes                   | yes              | yes                     | 16"x5 1/2" x11 1/2" x11 1/2" | 15.5                          | 349.95           |                                 |                                                        |
|                  | D-800     | X                                    | 20-20 ±5                                       | 3        | 0.05            | 55                     | 63                     | 3                   |                              | yes                             | yes                   | no               | yes                     | 17 1/2"x5 1/2" x11 1/2"      | 14.3                          | 399.95           |                                 |                                                        |
| JVC              | KD-95     | X                                    | 30-16 ±3                                       | 2        | 0.05            | 56                     | 66                     | 3                   | 2                            | yes                             | yes                   | no               | yes (5)                 | 16 1/4"x12 1/2" x8 1/2"      | 24.2                          | 499.95           |                                 | Super ANRS, 2 motors, memory stop & play. Memory stop. |
|                  | KD-75     | X                                    | 30-16 ±3                                       | 2        | 0.06            | 56                     | 66                     | 3                   | 2                            | yes                             | yes                   | no               | yes (5)                 | 16"x13 3/4" x6 1/2"          | 17.2                          | 379.95           |                                 |                                                        |
|                  | KD-35     | X                                    | 30-15 ±3                                       | 2        | 0.09            | 56                     | 66                     | 2                   |                              | yes                             | yes                   | no               | yes (5)                 | 15"x13 3/4" x6 1/2"          | 15.8                          | 259.95           |                                 |                                                        |
|                  | KD-15     | X                                    | 40-15 ±3                                       | 2        | 0.1             | 56                     | 66                     | 2                   |                              | yes                             | yes                   | no               | yes (5)                 | 15"x10 1/2" x6 1/2"          | 9.9                           | 199.95           |                                 |                                                        |
|                  | KD-S200II | X                                    | 40-16 ±3                                       | 2        | 0.09            | 56                     | 66                     | 2                   |                              | yes                             | yes                   | no               | yes (5)                 | 19"x12 1/2" x6 1/2"          | 17.8                          | 299.95           |                                 | Super ANRS.                                            |
|                  | CD-1770   | X                                    | 30-16 ±3                                       | 2        | 0.05            | 56                     | 66                     | 3                   | 2                            | yes                             | yes                   | no               | yes (5)                 | 16"x11 1/2" x5 1/2"          | 12.1                          | 299.95           |                                 | Super ANRS.                                            |
|                  | LD-777    | elcaset                              |                                                | 20-25 ±3 | 3               | 0.04                   | 60                     | 70                  | 3                            | 2                               | yes                   | yes              | no                      | yes (6)                      | 16"x11 1/2" x9 1/2"           | 28.6             | 799.95                          |                                                        |
| KENWOOD          | KX-920    | X                                    | 40-14 ±3                                       | 3        | 0.08            | 54                     | 62                     | 3                   | yes                          | yes                             | yes                   | yes              | yes                     | 16 1/4"x10 1/2" x5 1/2"      | 12.1                          | 325.00           |                                 |                                                        |
|                  | KX-720    | X                                    | 40-14 ±3                                       | 3        | 0.08            | 54                     | 62                     | 3                   |                              | yes                             | yes                   | yes              | yes                     | 16"x10 1/2" x5 1/2"          | 12.1                          | 275.00           |                                 |                                                        |
|                  | KX-620    | X                                    | 40-12 ±3                                       | 3        | 0.09            | 53                     | 61                     | 3                   |                              | yes                             | yes                   |                  |                         | 17"x12 1/2" x5 1/2"          | 15                            | 220.00           |                                 |                                                        |
| LENCO (NEOSONIC) | C2003     | X                                    | 30-18 ±3                                       | 3        | 0.07            | 56                     | 65                     | 3                   | 2                            | no                              | yes                   | yes              | no                      | 18"x11 1/2" x3 1/2"          | 14                            | 699.50           |                                 |                                                        |

# Cassette & Cartridge Tape Decks

Pioneer CT-F1000



Sansui SC-5100

| MANUFACTURER         | MODEL        | "X" if cassette; "B" if cartridge | Frequency response, Hz-1-Hz-±dB with best tape | Number of heads | % wow & flutter, W rms | S/N, dB, without Dolby | S/N, dB, with Dolby | Number of bias & EQ settings | Mixing? If yes, no. inputs | Locking pause control | Does unit record | Memory rewind | Peak level indicator(s) | Dimensions, inches, W x D x H | Net weight, lbs. | Price   | NOTES                                                                                             |
|----------------------|--------------|-----------------------------------|------------------------------------------------|-----------------|------------------------|------------------------|---------------------|------------------------------|----------------------------|-----------------------|------------------|---------------|-------------------------|-------------------------------|------------------|---------|---------------------------------------------------------------------------------------------------|
| MARANTZ (SUPERSCOPE) | 5030         | X                                 | 35-16 ±3                                       | 3               | 0.08                   | 52                     | 60                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 17½x11½ x5½                   |                  | 399.95  |                                                                                                   |
|                      | 5420         | X                                 | 30-17 ±3                                       | 2               | 0.07                   | 52                     | 60                  | 3                            | 4                          | yes                   | yes              | yes           | yes                     | 17½x12½ x6½                   |                  | 399.95  |                                                                                                   |
|                      | 5025         | X                                 | 35-16 ±3                                       | 2               | 0.08                   | 52                     | 60                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 17½x11½ x5½                   |                  | 319.95  |                                                                                                   |
|                      | 5010         | X                                 | 35-15 ±3                                       | 2               | 0.1                    | 50                     | 58                  | 3                            | no                         | yes                   | yes              | no            | no                      | 17½x11½ x5                    |                  | 249.95  |                                                                                                   |
| NAKAMICHI            | 1000 II      | X                                 | 35-20 ±3                                       | 3               | 0.05                   | 58                     | 65                  | 2                            | 3                          | *                     | yes              | yes           | yes                     | 21x8x12                       | 38.0             | 1450.00 | *IC logic con'ts., dual capstan, rec. hd. azimuth align beacon.                                   |
|                      | 700 II       | X                                 | 35-20 ±3                                       | 3               | 0.05                   | 58                     | 65                  | 2                            | 3                          | *                     | yes              | yes           | yes                     | 20½x5½ x11                    | 28.0             | 970.00  | *As above less auto rewind, DNL.                                                                  |
|                      | 600          | X                                 | 40-18 ±3                                       | 2               | 0.08                   | 58                     | 65                  | 2                            | no                         | yes                   | yes              | yes           | yes                     | 16x9x6                        | 14.3             | 530.00  | \$550 in matte black, IM suppressor circuit.                                                      |
|                      | 550          | X                                 | 40-17 ±3                                       | 2               | 0.08                   | 58                     | 65                  | 2                            | 3                          | yes                   | yes              | no            | yes                     | 12½x14 x3½                    | 11.25            | 540.00  | Battery or a.c. power.                                                                            |
|                      | 500          | X                                 | 40-17 ±3                                       | 2               | 0.08                   | 56                     | 63                  | 3                            | 3                          | yes                   | yes              | yes           | yes                     | 15x10x4½                      | 15.5             | 420.00  |                                                                                                   |
|                      | 350          | X                                 | 40-15 ±3                                       | 2               | 0.08                   | 51                     | 58                  | 2                            | 3                          | yes                   | yes              | no            | yes                     | 7½x9½ x3½                     | 6.6              | 380.00  | Car bracket & a.c. power pack inc.; opt. case w. rech. batt. \$100.                               |
|                      | 250          | X                                 | 40-17 ±3                                       | 1               | 0.08                   | 55                     | 62                  | 2                            | no                         | no                    | no               | no            | no                      | 7½x9½ x3½                     | 6.4              | 275.00  | Preamp out w. tone & bal. con'ts.; mates w. ADS bi-amp spkrs. Inc. car bracket & a.c. power pack. |
| OPTONICA (SHARP)     | RT-3535 MKII | X                                 | 30-17 ±3                                       | 3               | 0.04                   | 58                     | 64                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 18½x14.0 x5½                  | 22%              | 429.95  |                                                                                                   |
|                      | RT-2050 MKII | X                                 | 30-15 ±3                                       | 3               | 0.058                  | 58                     | 64                  | 3                            | 2                          | yes                   | yes              |               | yes                     | 18½x14.0 x5½                  | 22%              | 299.95  |                                                                                                   |
|                      | RT-1515      | X                                 | 30-15 ±3                                       | 1               | 0.085                  | 52                     | 62                  | 3                            | 2                          | yes                   | yes              |               | yes                     | 16½x9½ x6½                    | 12.0             | 229.95  | In black, RT-1515B, \$229.95.                                                                     |
| PIONEER              | CT-F1000     | X                                 | 30-17 ±3                                       | 3               | 0.06                   | 54                     | 64                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 16½x14½ x7½                   | 26%              | 600.00  |                                                                                                   |
|                      | CT-F6262     | X                                 | 40-15 ±3                                       | 2               | 0.08                   | 52                     | 62                  | 2                            | no                         | yes                   | yes              | no            | no                      | 16½x12½ x7                    | 18%              | 270.00  | Auto CrO <sub>2</sub> sensing                                                                     |
|                      | CT-F4242     | X                                 | 40-15 ±3                                       | 2               | 0.08                   | 52                     | 62                  | 3                            | no                         | yes                   | yes              | no            | no                      | 15x12½ x6                     | 16               | 225.00  |                                                                                                   |
|                      | CT-F9191     | X                                 | 30-14 ±3                                       |                 | 0.07                   | 52                     | 62                  |                              | 2                          | yes                   | yes              | yes           | yes                     | 18x12½ x8                     | 29               | 450.00  |                                                                                                   |
|                      | CT-F8282     | X                                 | 30-15 ±3                                       |                 | 0.07                   | 53                     | 63                  |                              | 2                          | yes                   | yes              | yes           | yes                     | 17½x13½ x7½                   | 28%              | 400.00  |                                                                                                   |
|                      | CT-F7272     | X                                 | 40-15 ±3                                       |                 | 0.02                   | 52                     | 62                  |                              | 2                          | yes                   | yes              | yes           | yes                     | 15½x13½ x7                    | 21               | 320.00  |                                                                                                   |
|                      | CT-F2121     | X                                 | 40-12 ±3                                       |                 | 0.12                   | 48                     | 58                  |                              | 2                          | yes                   | yes              | no            | no                      | 13½x11½ x5½                   | 10%              | 200.00  |                                                                                                   |
| QUADRAFLEX           | 288          | B                                 | 40-12 ±2.5                                     | 2               | 0.17                   | 50                     |                     |                              |                            | yes                   | yes              | -             | yes                     | 16½x11½ x5½                   | 13%              | 199.95  |                                                                                                   |
|                      | PCD 388      | X                                 | 30-14 ±3                                       | 2               | 0.12                   | 50                     | 56                  | 3                            |                            | yes                   | yes              | -             | yes                     | 16½x11½ x5½                   | 18               | 249.95  | Auto off.                                                                                         |
|                      | PCD 488      | X                                 | 30-15 ±3                                       | 2               | 0.09                   | 52                     | 58                  | 3                            | 4                          | yes                   | yes              | yes           | yes                     | 18x11½ x5½                    | 20               | 349.95  |                                                                                                   |
|                      | PCD 588      | X                                 | 30-15 ±2                                       | 2               | 0.07                   | 54                     | 60                  | 3                            | 4                          | yes                   | yes              | yes           | yes                     | 17x12 x5½                     | 25               | 399.95  |                                                                                                   |
| ROTEL                | RD-30F       | X                                 | 20-15 ±3                                       | 2               | 0.07                   | 52                     | 60                  | 6                            | 2                          | yes                   | yes              | no            | yes                     | 19x11½ x6½                    | 30               | 360.00  |                                                                                                   |
|                      | RD-10F       | X                                 | 30-14 ±3                                       | 2               | 0.08                   | 53                     | 60                  | 4                            | 2                          | yes                   | yes              | no            | no                      | 17½x10½ x5½                   | 19%              | 230.00  |                                                                                                   |
|                      | RD-20        | X                                 | 22-16 ±3                                       | 2               | 0.07                   | 53                     | 60                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 18½x9½ x3                     | 13%              | 370.00  |                                                                                                   |
|                      | RD-12F       | X                                 | 30-16 ±3                                       | 2               | 0.09                   | 53                     | 60                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 20½x10 x4½                    | 17%              | 340.00  |                                                                                                   |
| SANSUI               | SC-5100      | X                                 | 30-14 ±3                                       | 2               | 0.05                   | 57                     | 67                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 19½x12½ x8½                   | 24.7             | 600.00  | Solenoid logic control; 2 motors.                                                                 |
|                      | SC-3100      | X                                 | 30-14 ±3                                       | 2               | 0.06                   | 57                     | 67                  | 3                            | 2                          | yes                   | yes              | yes           | yes                     | 18x12½ x8                     | 18.3             | 430.00  |                                                                                                   |
|                      | SC-2100      | X                                 | 30-14 ±3                                       | 2               | 0.08                   | 57                     | 67                  | 3                            |                            | yes                   | yes              | no            | no                      | 18x12½ x8                     | 18.3             | 340.00  |                                                                                                   |
|                      | SC-1100      | X                                 | 35-13 ±3                                       | 2               | 0.08                   | 54                     | 64                  | 3                            |                            | yes                   | yes              | no            | no                      | 17½x12½ x6½                   | 14.1             | 230.00  |                                                                                                   |
|                      | SC-1110      | X                                 | 35-13 ±3                                       | 2               | 0.08                   | 54                     | 64                  | 3                            |                            | yes                   | yes              | no            | no                      | 19x12½ x6½                    | 15.0             | 220.00  |                                                                                                   |

# HIGH BIAS.

**These cassette deck  
manufacturers are highly biased for SA:**

AIWA · AKAI · DOKORDER · JVC  
KENWOOD · MERITON · NAKAMICHI  
OPTONICA · PIONEER · SANSUI  
SHARP · TANDBERG · TEAC  
TOSHIBA · UHER · YAMAHA

**And are joined by these  
in recommending SA for use in their decks:**

BANG & OLUFSEN · DUAL · FISHER  
HARMAN/KARDON · LAFAYETTE  
ROYAL SOUND · SANKYO  
AND MANY OTHERS.



There's been a quiet revolution going on in the cassette world. □ Leading makers of quality cassette decks have adopted TDK SA as their reference standard tape for high (CrO<sub>2</sub>) bias and equalization settings. Why TDK SA? Because TDK SA's advanced tape formulation and super precision cassette mechanism let them (and you) take full advantage of today's advanced cassette deck technology. □ In addition, a growing number of other companies are recommending SA for use with their machines. □ So for the ultimate in cassette sound and performance, load your deck with SA and switch to the "High" or "CrO<sub>2</sub>" bias/EQ settings. You'll consistently get less noise, highest saturation and output levels, lowest distortion and the widest dynamic range to let you get the best performance from any quality machine. □ But you needn't believe all this just because we say so. All you have to do is check our references.

 **TDK**<sup>®</sup>

The machine for your machine.

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# Cassette & Cartridge Tape Decks

Sanyo RD8400



Tandberg TCD 330

| MANUFACTURER               | MODEL            | "X": if cassette, "B": if cartridge | Frequency response, Hz-kHz-dB with best tape | Number of heads | % wow & flutter, W rms | S/N, dB, without Dolby | S/N, dB, with Dolby | Number of bias & EQ settings | Mike mixing? If yes, no. inputs | Locking pause control | Deck unit record | Memory rewind | Peak level indicator(s) | Dimensions, inches, W x D x H | Net weight, lbs. | Price                     | NOTES                                                                                   |
|----------------------------|------------------|-------------------------------------|----------------------------------------------|-----------------|------------------------|------------------------|---------------------|------------------------------|---------------------------------|-----------------------|------------------|---------------|-------------------------|-------------------------------|------------------|---------------------------|-----------------------------------------------------------------------------------------|
| SANYO                      | RD5055           | X                                   | 50-14                                        | 2               | 0.15                   | 57                     | 58                  | 2                            | 2                               | no                    | yes              | yes           | 16x6x11                 | 149.95                        | 179.95           | 149.95                    | Freq. res. w/B-track 30-12 kHz.                                                         |
|                            | RD5300           | X                                   | 30-16                                        | 2               | 0.10                   | 63                     | 63                  | 2                            | 2                               | no                    | yes              | yes           | 16x6x10                 | 179.95                        |                  |                           |                                                                                         |
|                            | RD8400           | X/B                                 | 60-12                                        | 2               | 0.25                   | 48                     | 48                  | 2                            | 2                               | yes                   | yes              | yes           | 16x6x9                  | 179.95                        |                  |                           |                                                                                         |
| H. H. SCOTT                | CD-67            | X                                   | 20-15<br>±3                                  | 2               | 0.07                   | 54                     | 60                  | 3                            | 2                               | yes                   | yes              | no            | no                      | 229.95                        |                  |                           |                                                                                         |
|                            | CD-87            | X                                   | 30-17                                        | 2               | 0.065                  | 56                     | 66                  | 3                            | 2                               | yes                   | yes              | yes           | yes                     | 349.95                        |                  |                           |                                                                                         |
| SONAB                      | C-500            | X                                   | 30-16<br>±3dB                                | 2               | 0.13                   | 53                     | 60                  | 2                            | yes                             | yes                   | yes              | yes           | 15x10x4                 | 10                            | 399.00           |                           |                                                                                         |
| SUPERSCOPE                 | TD-48            | B                                   | 30-10                                        |                 | 0.2                    | 48                     |                     |                              | no                              |                       | no               | no            | 7x10x5                  | 6%                            | 104.95           | Auto 2-4 chan. switching. |                                                                                         |
|                            | TD-28            | B                                   | 30-10                                        |                 | 0.2                    | 48                     |                     |                              | no                              |                       | no               | no            | 7x10x5                  | 6%                            | 74.95            |                           |                                                                                         |
|                            | CD-303           | X                                   | 40-14<br>±3.5                                |                 | 0.15                   | 48                     |                     |                              | 2                               | yes                   | yes              | no            |                         |                               | 114.95           |                           |                                                                                         |
|                            | CD-304           | X                                   | 40-14<br>±3.5                                |                 | 0.15                   | 48                     | 54                  |                              | 2                               | yes                   | yes              | no            |                         |                               | 159.95           |                           |                                                                                         |
|                            | CD-310           | X                                   | 40-13.5<br>±3                                |                 | 0.1                    | 48                     | 58                  |                              | 2                               | yes                   | yes              | no            | 14x5<br>x11             | 11                            | 179.95           |                           |                                                                                         |
| TANDBERG                   | TCD-310<br>MK II | X                                   | 30-16<br>±3                                  | 2               | 0.12                   | 53                     | 63                  | 4                            | yes                             | yes                   | no               | 2             | 17x9%                   | 14%                           | 530.00           |                           |                                                                                         |
|                            | TCD-330          | X                                   | 35-18<br>±3                                  | 3               | 0.12                   | 55                     | 65                  | 3                            | 4                               | no                    | yes              | yes           | 2                       | 18x9%                         | 13               | 999.00                    |                                                                                         |
| TEAC                       | A-100            | X                                   | 30-14<br>±3                                  | 2               | 0.10                   | 50                     | 60                  | 2                            | no                              | yes                   | yes              | no            | no                      | 16x11%                        | 15%              | 225.00                    | Solenoids, micro switch logic concls., 2 motors.<br>As above.<br>DBX & Dolby, 3 motors. |
|                            | A-103            | X                                   | 30-15<br>±3                                  | 2               | 0.10                   | 50                     | 60                  | 2                            | no                              | yes                   | yes              | no            | no                      | 16x11%                        | 15               | 225.00                    |                                                                                         |
|                            | A-105            | X                                   | 30-15                                        | 2               | 0.10                   | 53                     | 63                  | 2                            | no                              | yes                   | yes              | no            | no                      | 16x11%                        | 15               | 250.00                    |                                                                                         |
|                            | A-150            | X                                   | 30-15                                        | 2               | 0.09                   | 50                     | 60                  | 2                            | 2                               | yes                   | yes              | yes           | yes                     | 16x12                         | 15               | 250.00                    |                                                                                         |
|                            | A-170S           | X                                   | 30-14<br>±3                                  | 2               | 0.09                   | 55                     | 65                  | 2                            | no                              | yes                   | yes              | no            | no                      | 17x10                         | 10               | 225.00                    |                                                                                         |
|                            | A-303            | X                                   | 30-16<br>±3                                  | 2               | 0.06                   | 57                     | 67                  | 3                            | no                              | yes                   | yes              | yes           | yes                     | 16x11%                        | 18               | 400.00                    |                                                                                         |
|                            | A-640            | X                                   | 30-16<br>±3                                  | 2               | 0.06                   | 57                     | 67                  | 3                            | 2                               | yes                   | yes              | yes           | yes                     | 17x12%                        | 24               | 600.00                    |                                                                                         |
|                            | A-650            | X                                   | 30-16<br>±3                                  | 2               | 0.06                   | 57                     | 67                  | 3                            | 2                               | yes                   | yes              | yes           | yes                     | 17x13                         | 28%              | 650.00                    |                                                                                         |
| 860                        | K                | 20-18<br>±3                         | 3                                            | 0.04            | 60                     | 70                     | 3                   | 4                            | yes                             | yes                   | yes              | yes           | 17x9%                   | 39%                           | 1600.00          |                           |                                                                                         |
| TOSHIBA                    | PC3060           | X                                   | 40-15                                        | 2               | 0.09                   | 57                     | 67                  | 3                            | no                              | yes                   | yes              | no            | no                      | 16x12                         | 10%              | 199.95                    | FM Dolby.                                                                               |
|                            | PC4030           | X                                   | 40-15                                        | 2               | 0.09                   | 57                     | 67                  | 3                            | no                              | yes                   | yes              | no            | no                      | 16x11%                        | 10               | 229.95                    |                                                                                         |
|                            | PC4360           | X                                   | 30-16                                        | 2               | 0.07                   | 57                     | 67                  | 3                            | no                              | yes                   | yes              | no            | 2                       | 17x12x6                       | 12               | 249.95                    | FM Dolby.                                                                               |
|                            | PC5060           | X                                   | 40-15                                        | 2               | 0.08                   | 58                     | 68                  | 3                            | no                              | yes                   | yes              | no            | no                      | 17x13                         | 15%              | 319.95                    |                                                                                         |
|                            | PC6030           | X                                   | 20-17.5                                      | 2               | 0.07                   | 60                     | 70                  | 3                            | yes                             | yes                   | yes              | yes           | 2                       | 16x9x10                       | 22               | 749.95                    | IC logic controls.                                                                      |
| TRANSAUDIO<br>(QUADRAFLEX) | 4500             | X                                   | 40-12<br>±2                                  | 2               | 0.15                   | 49                     | 54                  | 2                            | -                               | yes                   | yes              | -             | yes                     | 16x10x3                       | 14%              | 199.95                    | Auto repeat & stop.<br>Auto stop.                                                       |
|                            | 3800             | B                                   | 40-10<br>±2                                  | 2               | 0.2                    | 48                     | -                   | -                            | -                               | yes                   | yes              | -             | -                       | 13x9%                         | 13%              | 149.95                    |                                                                                         |
|                            | 3500             | X                                   | 40-12<br>±3                                  | 2               | 0.18                   | 48                     | 53                  | 2                            | -                               | yes                   | yes              | -             | -                       | 13x9                          | 11%              | 149.95                    |                                                                                         |
|                            | 5500             | X                                   | 40-13<br>±2                                  | 2               | 0.12                   | 50                     | 56                  | 3                            | -                               | yes                   | yes              | -             | yes                     | 15x10%                        | 15               | 219.95                    |                                                                                         |
| YAMAHA                     | TC 800GL         | X                                   | 30-15                                        | 2               | 0.06                   | 50                     | 58                  | 2                            | 2                               | yes                   | yes              | yes           | yes                     | 12x12%                        | 11%              | 390.00                    | Auto CrO <sub>2</sub> , variable pitch.                                                 |
|                            | TC 800D          | X                                   | 30-15                                        | 2               | 0.06                   | 50                     | 58                  | 2                            |                                 | yes                   | yes              | yes           | yes                     | 12x12%                        | 10%              | 310.00                    | As above.                                                                               |
|                            | TC 511S          | X                                   | 30-15                                        | 2               | 0.07                   | 50                     | 58                  | 3                            |                                 | yes                   | yes              | yes           | yes                     | 17x13                         | 17%              | 260.00                    |                                                                                         |

# WHY MOST CRITICS USE MAXELL TAPE TO EVALUATE TAPE RECORDERS.

Any critic who wants to do a completely fair and impartial test of a tape recorder is very fussy about the tape he uses.

Because a flawed tape can lead to some very misleading results.

A tape that can't cover the full audio spectrum can keep a recorder from ever reaching its full potential.

A tape that's noisy makes it hard to measure how quiet the recorder is.

A tape that doesn't have a wide enough bias latitude can make you question the bias settings.

And a tape that doesn't sound consistently the same, from end to end, from tape to tape, can make you question the stability of the electronics.

If a cassette or 8-track jams, it can suggest some nasty, but erroneous comments about the drive mechanism.

And if a cassette or 8-track introduces wow and flutter, it's apt to produce some test results that anyone can argue with.

Fortunately, we test Maxell cassette, 8-track and reel-to-reel tape to make sure it doesn't have the



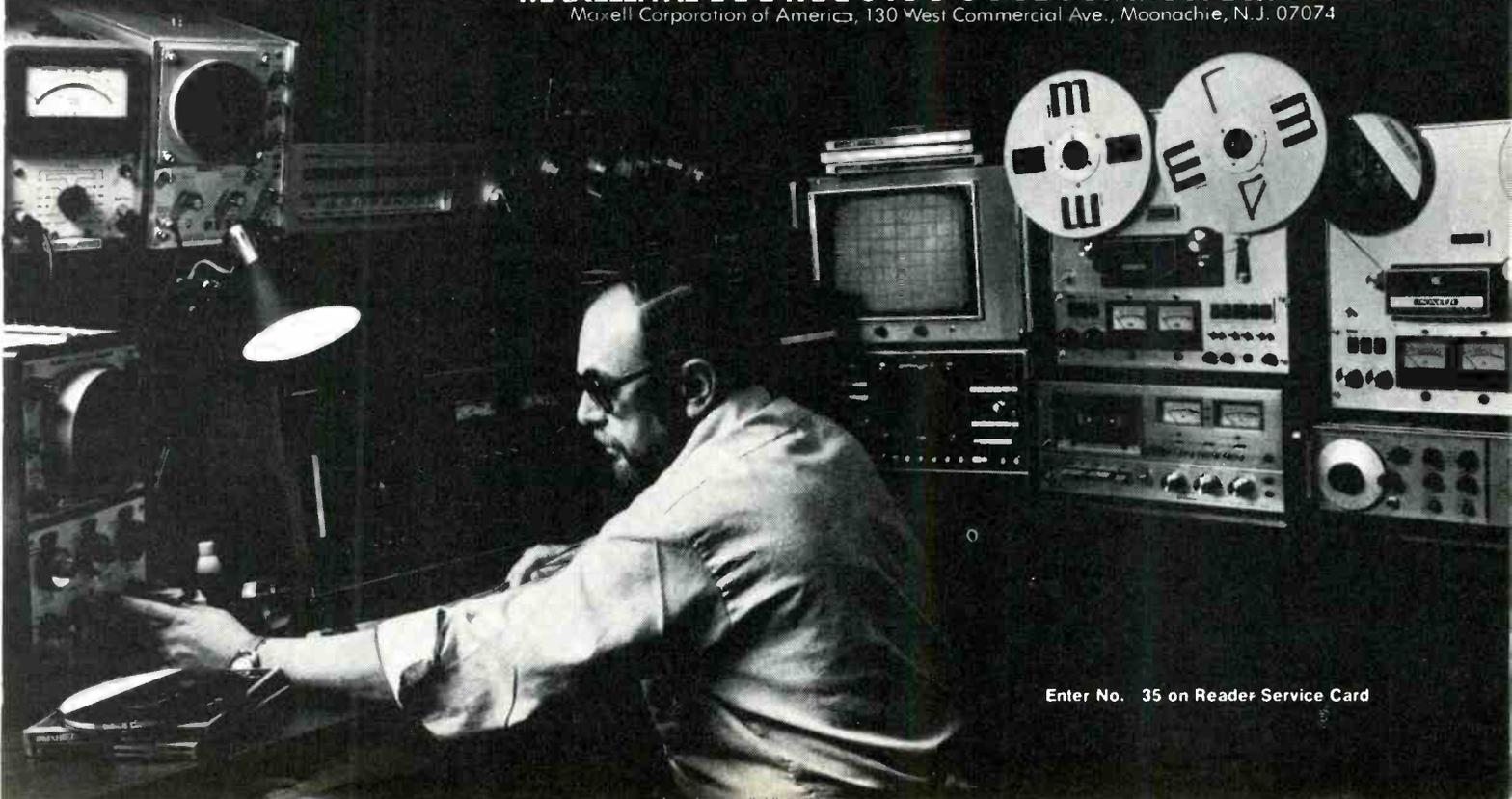
problems that plague other tapes.

So it's not surprising that most critics end up with our tape in their tape recorders.

It's one way to guarantee the equipment will get a fair hearing.

**MAXELL. THE TAPE THAT'S TOO GOOD FOR MOST EQUIPMENT.**

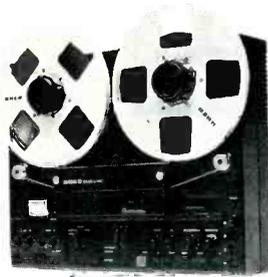
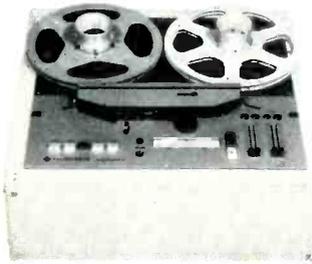
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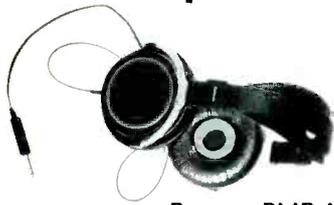
| MANUFACTURER        | MODEL      | SPEEDS (see letter code)  |        |                 |         |                  |                  |                    |               | Drive motor type | Drive to capstan | Freq. resp. Hz-Hz, $\pm$ dB with best tape at highest machine speed | Wow & flutter, DIN 45-501, % | S/N, dB | Output level at 0 VU, mV | Dolby included | Mike mixing      | Mike input Z, ohms    | Record level indicator(s), type and quan. | Dimensions, inch. W x H x D | Weight, lbs.                                                              | Price | NOTES |
|---------------------|------------|---------------------------|--------|-----------------|---------|------------------|------------------|--------------------|---------------|------------------|------------------|---------------------------------------------------------------------|------------------------------|---------|--------------------------|----------------|------------------|-----------------------|-------------------------------------------|-----------------------------|---------------------------------------------------------------------------|-------|-------|
|                     |            | B                         | 7      | 4               | 4       | 2                | 3                | servo              | direct        |                  |                  |                                                                     |                              |         |                          |                |                  |                       |                                           |                             |                                                                           |       |       |
|                     |            | Maximum reel size, inches |        | Number of heads |         | Number of tracks |                  | Number of channels |               | Number of motors |                  |                                                                     |                              |         |                          |                |                  |                       |                                           |                             |                                                                           |       |       |
| PIONEER             | RT-707     | B                         | 7      | 4               | 4       | 2                | 3                | servo (2) 6-pole   | direct        | 30-24 $\pm$ 3    | 0.05             | 58                                                                  | 450                          | no      | yes                      | 27k            | 2mtrs.           | 19x9 x14%             | 43.6                                      | 575.00                      | Auto reverse                                                              |       |       |
|                     | RT-701     | B                         | 7      | 3               | 4       | 2                | 3                | servo (2) 6-pole   | direct        | 30-24 $\pm$ 3    | 0.05             | 58                                                                  | 450                          | no      | yes                      | 27k            | 2mtrs.           | 19x9 x14%             | 43                                        | 525.00                      |                                                                           |       |       |
|                     | RT-2044    | F                         | 10 1/2 | 3               | 4       | 4                | 3                | 4/8 pole           | belt          | 30-28 $\pm$ 3    | 0.04             | 55                                                                  | 450-930                      |         | yes                      | 27k            | 4mtrs.           | 18 1/2 x 27 1/2 x 10% | 74                                        | 1600.00                     |                                                                           |       |       |
|                     | RT-2022    | F                         | 10 1/2 | 3               | 2       | 2                | 3                | 4/8 pole           | belt          | 30-28 $\pm$ 3    | 0.04             | 57                                                                  | 450-930                      |         | yes                      | 27k            | 2mtrs.           | 18 1/2 x 21 1/2 x 10% | 62%                                       | 1250.00                     |                                                                           |       |       |
|                     | RT-1050    | F                         | 10 1/2 | 3               | 2       | 2                | 3                | 4/8 pole           | belt          | 30-22 $\pm$ 3    | 0.04             | 57                                                                  | 316                          |         | yes                      | 20k            | 2mtrs.           | 18 1/2 x 17 x 9%      | 49%                                       | 700.00                      |                                                                           |       |       |
|                     | RT-1020L   | B                         | 10 1/2 | 3               | 4       | 2/4              | 3                | 4/8 pole           | belt          | 40-20 $\pm$ 3    | 0.08             | 55                                                                  | 316                          |         | yes                      | 20k            | 2mtrs.           | 17 1/2 x 17 x 9       | 57%                                       | 650.00                      |                                                                           |       |       |
| RT-1011             | B          | 10 1/2                    | 3      | 4               | 2       | 3                | 4/8 pole         | belt               | 40-20 $\pm$ 3 | 0.08             | 55               | 316                                                                 |                              | yes     | 20k                      | 2mtrs.         | 17 x 11 x 9      | 41                    | 600.00                                    |                             |                                                                           |       |       |
| REVDX (STUDER)      | B77        | B                         | 10 1/2 | 3               | 2, 4, 4 | 2                | 3                | asyn.              |               | 30-20 +2/-3      | 0.08             | 66                                                                  |                              | no*     | yes                      | 50-600         | 2mtrs. 2LEDs     | 17 1/2 x 18 x 8%      | 37%                                       | 995.00                      | *Dolby optional.                                                          |       |       |
|                     | A77        | B                         | 10 1/2 | 3               | 2, 4, 4 | 2                | 3                | asyn.              |               | 30-20 +2/-3      | 0.08             | 66                                                                  |                              | no*     | yes                      | 50-600         | 2mtrs.           | 16 1/2 x 14 x 7%      | 34                                        | 895.00                      | *Dolby optional.                                                          |       |       |
|                     | A700       | E                         | 10 1/2 | 3               | 2, 4, 4 | 2                | 3                | asyn.              |               | 30-22 +2/-3      | 0.06             | 65                                                                  |                              | no      | yes                      | 50-600         | 2mtrs.           | 19 x 18 x 7           | 53                                        | 2049.00                     |                                                                           |       |       |
| TANDBERG            | 10XD       | E                         | 10 1/2 | 4               | 4       | 2                | 3                | hall servo ind     | belt          | 30-25 $\pm$ 2    | 0.04             | 72                                                                  | 1500                         | yes     | yes                      | 50-600         | 2mtrs.*          | 17 1/2 x 17 x 7%      | 36                                        | 1399.00                     | *Peak reading.                                                            |       |       |
|                     | 3500X      | A                         | 7      | 4               | 4       | 2                | 1                |                    | idler         | 30-22 $\pm$ 2    | 0.07             | 64                                                                  | 1500                         | no      | no                       | 50-600         | 2mtrs.*          | 15 1/2 x 16 x 7%      | 20                                        | 599.00                      | *Peak reading.                                                            |       |       |
| TEAC                | A2300SX    | B                         | 7      | 3               | 4       | 2                | 3                | hys. sync.         | belt          | 40-24 $\pm$ 3    | 0.08             | 65                                                                  | 300                          | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 15 x 8%      | 39%                                       | 650.00                      |                                                                           |       |       |
|                     | A2300SD    | B                         | 7      | 3               | 4       | 2                | 3                | hys. sync.         | belt          | 40-24 $\pm$ 3    | 0.08             | 65                                                                  | 300                          | yes     | yes                      | 10k            | 2mtrs.           | 17 1/2 x 15 x 8%      | 39%                                       | 750.00                      | Dolby adds 10dB to S/N                                                    |       |       |
|                     | A3300SX    | B                         | 10 1/2 | 3               | 4       | 2                | 3                | hys. sync.         | belt          | 40-24 $\pm$ 3    | 0.06             | 65                                                                  | 300                          | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 17 x 8%      | 44                                        | 800.00                      |                                                                           |       |       |
|                     | A3300SX 2T | F                         | 10 1/2 | 3               | 2       | 2                | 3                | hys. sync.         | belt          | 30-26 $\pm$ 3    | 0.04             | 67                                                                  | 300                          | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 17 x 8%      | 44                                        | 900.00                      |                                                                           |       |       |
|                     | A4300SX    | B                         | 7      | 4               | 4       | 2                | 3                | hys. sync.         | belt          | 40-24 $\pm$ 3    | 0.06             | 65                                                                  | 300                          | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 19 x 8%      | 51                                        | 800.00                      | Reverse playback                                                          |       |       |
|                     | A6100      | F                         | 10 1/2 | 4               | 2       | 2                | 3                | hys. sync.         | belt          | 30-26 $\pm$ 3    | 0.04             | 67                                                                  | 775 or 300                   | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 20 x 8%      | 48%                                       | 1200.00                     | 1/2-track play head                                                       |       |       |
|                     | A6300      | B                         | 10 1/2 | 4               | 4       | 2                | 3                | hys. sync.         | belt          | 40-24 $\pm$ 3    | 0.06             | 65                                                                  | 300                          | no      | yes                      | 10k            | 2mtrs.           | 17 1/2 x 20 x 8%      | 48%                                       | 1200.00                     | Reverse Playback                                                          |       |       |
|                     | A3340S     | F                         | 10 1/2 | 3               | 4       | 4                | 3                | hys. sync.         | belt          | 35-22 $\pm$ 3    | 0.04             | 65                                                                  | 300                          | no      | yes                      | 10k            | 4mtrs.           | 17 1/2 x 20 x 8%      | 50                                        | 1350.00                     | Symil Sync.                                                               |       |       |
| A2340SX             | B          | 7                         | 3      | 4               | 4       | 3                | hys. sync.       | belt               | 40-18 $\pm$ 3 | 0.08             | 62               | 300                                                                 | no                           | yes     | 10k                      | 4mtrs.         | 17 1/2 x 18 x 8% | 46                    | 1000.00                                   | Symil Sync.                 |                                                                           |       |       |
| A7300               | B          | 10 1/2                    | 3      | 4               | 2       | 3                | sync. d.c. servo | direct             | 40-24 $\pm$ 3 | 0.05             | 65               | 775                                                                 | no                           | yes     | 200                      | 2mtrs.         | 17 1/2 x 21 x 9% | 62                    | 1400.00                                   |                             |                                                                           |       |       |
| TELEFUNKEN (GOTHAM) | M-12       | B,F                       | 10 1/2 | 3               | 2       | 2                | 3                | hys. sync.         | belt          | 20-25 $\pm$ 1    | 0.05             | 65                                                                  | 775                          | no      | yes                      | 200            | 2mtrs.           | 19 x 17 x 8%          | 55                                        | 4435.00                     | *True VU meters, built-in mixer & timer. Available in mono or less mixer. |       |       |
| TOSHIBA             | PT862D     | A                         | 7      | 3               | 4       | 4                | 1                | cond. motor        | belt          | 20-25            | 0.09             | 56                                                                  |                              |         |                          | 10k            | 2                | 15 1/2 x 7 1/2 x 14   | 26%                                       | 309.95                      | Auto off.                                                                 |       |       |
| UHER                | 4400IC     | C                         | 5      | 2               | 4       | 2                | 1                | servo              | idler         | 35-20 $\pm$ 2    | 0.15             | 62                                                                  | IV                           | no      | no                       | low            | peak 2           | 11 x 3 1/2 x 9        | 8%                                        | 695.00                      |                                                                           |       |       |
|                     | 5000       | H/C                       | 5 1/2  | 2               | 2       | 1                | 1                | hys. sync.         | idler         | 40-16 $\pm$ 3    | 0.2              | 60                                                                  | 900                          | no      | no                       | low            | peak 1           | 13 x 6 x 13           | 19                                        | 598.00                      |                                                                           |       |       |
|                     | 4000IC     | C                         | 5      | 2               | 2       | 1                | 1                | servo              | idler         | 35-20 $\pm$ 2    | 0.15             | 64                                                                  | IV                           | no      | no                       | low            | peak 1           | 11 x 3 1/2 x 9        | 8                                         | 575.00                      |                                                                           |       |       |

SPEEDS BY LETTER CODE:

|        | A | B | C | D | E | F | G | H |
|--------|---|---|---|---|---|---|---|---|
| 15     |   |   |   |   | x | x | x | x |
| 7 1/2  | x | x | x | x | x | x | x | x |
| 3 3/4  | x | x | x | x | x | x | x | x |
| 1 7/8  | x | x | x | x | x | x | x | x |
| 1 1/16 |   |   |   |   | x |   |   |   |

# Headphones

Bang & Olufsen U-70



Burwen PMB 4



Pioneer SE-700



Infinity ES1



JVC HM-200E

| MANUFACTURER            | MODEL     | Operating principle | Freq. response, Hz, kHz, ±7 dB | Impedance, ohms | Sensitivity, dB SPL for 1 mW input | Maximum input, mV | % THD @ 95 dB SPL | Cord length, ft. | Weight, oz. | Price  | NOTES                                                    |
|-------------------------|-----------|---------------------|--------------------------------|-----------------|------------------------------------|-------------------|-------------------|------------------|-------------|--------|----------------------------------------------------------|
| AKG                     | K-40      | Dyn.                | 50-13                          | 200             | 94                                 | 6300              | 1                 | 9.8              | 5           | 19.50  | Supra aural.                                             |
|                         | K-140     | Dyn.                | 20-20                          | 600             | 95½                                | 11000             | 1                 | 9.8              | 6.2         | 45.00  | Supra aural.                                             |
|                         | K-240     | Dyn.                | 16-20                          | 600             | 98                                 | 11000             | 1                 | 9.8              | 10½         | 75.00  | Circum aural.                                            |
| AKAI                    | ASE-22    | Dyn.                | 20-20                          | 8               | 110                                | 500               | 1                 | 6                | 16.5        | 31.95  |                                                          |
| AUDIO-TECHNICA          | AT706     | Elect.              | 20-22k ±2                      | 4-16            | 94                                 |                   | 0.1               | 6½               | 10          | 129.95 |                                                          |
|                         | AT705     | Elect.              | 40-20k ±3                      | 4-16            | 89                                 |                   | 0.5               | 6½               | 10          | 89.95  |                                                          |
|                         | AT703     | Dyn.                | 20-20k                         | 4-16            | 94                                 |                   |                   | 6                | 9           | 69.95  |                                                          |
|                         | AT702     | Dyn.                | 25-20k                         | 4-16            | 97                                 |                   |                   | 6                | 9           | 49.95  |                                                          |
|                         | AT701     | Dyn.                | 30-20k                         | 4-16            | 97                                 |                   |                   | 6                | 9           | 39.95  |                                                          |
| BANG & OLUFSEN          | U-70      | Ortho-dyn.          | 16-20                          | 140             |                                    | 2000              | 1                 | 10               | 10.6        | 85.00  | Semi-open design.                                        |
| BEYER DYNAMIC (HAMMOND) | DT 302    |                     | 20-20                          | 600             | 95                                 | 12V               | 1                 | 10               | 2.3         | 27.95  |                                                          |
|                         | DT 220    | Dyn.                | 20-20                          | 400             | 102                                | 6.4V              | 1                 | 10               | 8.75        | 59.95  |                                                          |
|                         | DT 440    | Dyn.                | 20-20                          | 600             | 100                                | 5V                | 1                 | 10               | 8.75        | 59.95  |                                                          |
|                         | DT 480    | Dyn.                | 20-20                          | 200             | 100                                | 8.6V              | 1                 | 10               | 17.47       | 100.00 |                                                          |
|                         | DT 48     | Dyn.                | 16-20                          | 200             | 112                                | 4.4V              | 1                 | 10               | 14.12       | 145.00 |                                                          |
| BURWEN                  | PMB 8     | Ortho-dyn.          | 15-26                          | 150             | 130*                               | 2.0               | 0.3               | 10               | 12          | 109.95 | *mW @ 100 dB SPL. **Input in watts. ***THD @ 100 dB SPL. |
|                         | PMB 6     | Ortho-dyn.          | 16-23                          | 140             | 7*                                 | 2.0               | 0.3               | 10               | 9           | 89.95  | *As above. **As above. ***As above.                      |
|                         | PMB 4     | Dyn.                | 20-20                          | 400             | 4*                                 | 0.1               | 0.3               | 10               | 7.5         | 75.00  | *As above. **As above. ***As above.                      |
|                         | PMB 40    | Dyn.                | 20-20                          | 400             | 0.2*                               | 0.1               | 0.3               | 10               | 7.5         | 65.00  | *As above. **As above. ***As above.                      |
|                         | PMB 20    | Dyn.                | 20-20                          | 400             | 2*                                 | 0.1               | 0.3               | 10               | 3.9         | 49.95  | *As above. **As above. ***As above.                      |
| CRAIG                   | 9417      | Dyn.                |                                |                 |                                    |                   |                   |                  |             | 12.95  |                                                          |
| GC ELECTRONICS          | 30-5207   |                     | 30-20                          | 8               | 16                                 |                   |                   | 10               |             | 37.88  |                                                          |
|                         | 30-5203   |                     | 20-25                          | 8               | 8                                  |                   |                   | 10               |             | 31.56  |                                                          |
|                         | 30-5201   |                     | 20-25                          | 8               | 8                                  |                   |                   | 10               |             | 28.40  |                                                          |
|                         | 30-5205   |                     | 20-20                          | 8               | 8                                  |                   |                   | 6                |             | 25.24  |                                                          |
| GLI                     | HS-3      | Dyn.                | 40-15 ±6                       | 200             | 96                                 | 1300              | 1                 | 6                | 9           | 58.00  |                                                          |
| INFINITY SYSTEMS        | ESI       | Elect.              | 20-25 ±2                       | 4-16            | 98                                 | *                 |                   | 98 in.           | 9           | 275.00 | *50W @ 100 Hz.                                           |
| JVC                     | HM-200E   | Dyn.                | 20-20                          | 8               | 94                                 | 500               |                   | 6.6              | 24          | 79.50  | W. binaural mikes, see mike section.                     |
| JENSEN                  | 210       |                     | 20-18                          | 600             |                                    | 50                |                   | 14               | 9           |        |                                                          |
|                         | 220       |                     | 18-20                          | 600             |                                    | 50                |                   | 14               | 18          |        |                                                          |
|                         | 230       |                     | 15-22                          | 600             |                                    | 50                |                   | 14               | 19          |        |                                                          |
| KOSS                    | ESP/9B    | ES.                 | 10-19 ±5                       | 46              | 100*                               |                   | 0.3               | 10               | 19.3        | 200.00 | *6.15V rms, sine wave, at 1 kHz; 6.4V-rms, pink noise.   |
|                         | Tech./VFR | Dyn.                | 10-22                          | 245             | 100*                               |                   | 0.3               | 10               | 16.8        | 75.00  | *0.6V-rms sine wave, at 1 kHz; 0.275V-rms, pink noise.   |
|                         | Phase/2   | Dyn.                | 10-22                          | 299             | 100*                               |                   | 1                 | 10               | 22          | 75.00  | *7.75V-rms, sine wave, at 1 kHz; 2.3V-rms, pink noise.   |
|                         | K0/727B   | Dyn.                | 10-18                          | 100             | 100*                               |                   | 1                 | 10               | 16.5        | 34.95  | *0.08V-rms, sine wave, at 1 kHz; .16V-rms, pink noise.   |
|                         | PRO/4AA   | Dyn.                | 10-22                          | 230             | 100*                               |                   | 4                 | 10               | 20.5        | 65.00  | *0.95V-rms, sine wave, at 1 kHz; .3V-rms, pink noise.    |
|                         | K/6LC     | Dyn.                | 10-16                          | 94              | 100*                               |                   | 1                 | 10               | 17.9        | 29.95  | *0.06V-rms, sine wave, at 1 kHz; .16V-rms, pink noise.   |
|                         | K/6       | Dyn.                | 10-16                          | 100             | 100*                               |                   | 1                 | 10               | 15.7        | 19.95  | *0.075V-rms, sine wave, at 1 kHz; .091V-rms, pink noise. |
|                         | K/7       | Dyn.                | 20-16                          | 100             | 100*                               |                   | 1                 | 8                | 10.3        | 15.95  | *0.039V-rms, sine wave, at 1 kHz; .091V-rms, pink noise. |
|                         | K/145     | Dyn.                | 20-20                          | 87              | 100*                               |                   | 5                 | 10               | 13.6        | 45.00  | *0.25V-rms, sine wave, at 1 kHz; .11V-rms, pink noise.   |
|                         | K/135     | Dyn.                | 10-18                          | 98              | 100*                               |                   | 1                 | 10               | 13.4        | 35.00  | *0.09V-rms, sine wave, at 1 kHz; .11V-rms, pink noise.   |
|                         | K/125     | Dyn.                | 10-16                          | 100             | 100*                               |                   | 1                 | 8                | 12.8        | 25.00  | *0.14V-rms, sine wave, at 1 kHz; .13V-rms, pink noise.   |
|                         | HV/1LC    | High Veloc.         | 15-30                          | 132.5           | 100*                               |                   | 0.5               | 10               | 10.8        | 54.95  | *1.1V-rms, sine wave, at 1 kHz; .7V-rms, pink noise.     |
|                         | HV/1A     | High Veloc.         | 15-30                          | 157             | 100*                               |                   | 0.5               | 10               | 10.1        | 49.95  | *0.9V-rms, sine wave, at 1 kHz; .54V-rms, pink noise.    |

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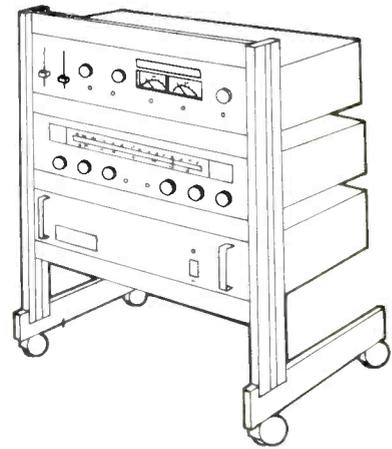
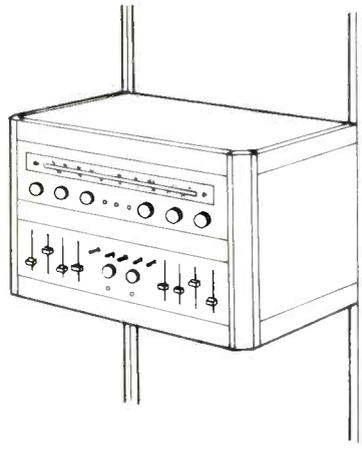
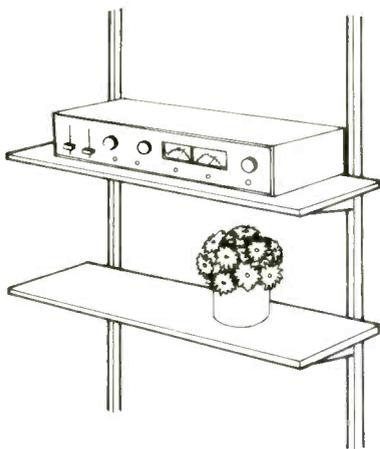
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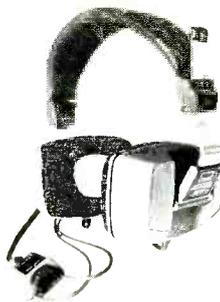
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# Headphones



Superex PEP-81



Sansui QH-44 4



Sennheiser HD 414



Stax SRD-7

164

| MANUFACTURER            | MODEL                                  | Operating principle | Freq. response, Hz-kHz, ± 2 db | Impedance, ohms     | Sensitivity, dB SPL, for 1 mW input | Maximum input, mV | % THD at 85 dB SPL | Cord length, ft.     | Weight, oz.              | Price  | NOTES                                                                                                                                                                                               |
|-------------------------|----------------------------------------|---------------------|--------------------------------|---------------------|-------------------------------------|-------------------|--------------------|----------------------|--------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KDSS<br>(Continued)     | HV/1                                   | High Veloc. Quadra. | 20-20                          | 168                 | 100*                                | 0.5               | 10                 | 10.1                 | 39.95                    |        | *0.8V-rms, sine wave, at 1 kHz; .54V-rms, pink noise.                                                                                                                                               |
|                         | Phase/2+2                              |                     | Front 20-20<br>Back 15-15      | Ft. 310<br>Back 263 | 100*                                | 0.4               | 12.5               | 17.3                 | 155.00                   |        | *FRONT: 5.4V-rms, sine wave, at 1 kHz; 2.7V-rms, pink noise, BACK: 9.5V-rms, sine wave at 1 kHz; 4.8V-rms, pink noise.                                                                              |
|                         | K/6LCO                                 | Quadra.             | 10-22                          | 94                  | 100*                                | 0.5               | 10                 | 21.6                 | 59.95                    |        | *0.65V-rms, sine wave at 1 kHz, front or back; .26V-rms, pink noise front or back.                                                                                                                  |
|                         | Dynamic/10<br>ESP/10<br>PRD/4 Triple A | Dyn.<br>ES.<br>Dyn. | 10-22<br>10-22<br>10-22        | 230<br>180<br>220   | 100*<br>100*<br>100*                | 0.3<br>0.5<br>0.5 | 10<br>10<br>10     | 15.6<br>15.9<br>15.5 | 85.00<br>300.00<br>70.00 |        | *0.6V-rms, sine wave at 1 kHz; .64V-rms, pink noise.<br>*1.9V-rms at 1 kHz into E/10 energizer; 2.0 V-rms pink noise into E/10 energizer.<br>*0.70V-rms sine wave at 1 kHz; 0.24 V-rms, pink noise. |
| NAKAMICHI               | HP-100                                 | Dyn.                | 20-20K                         | 8                   | 90*                                 | 500*              | 0.8**              | 8                    | 14.3                     | 50.00  | *mW, **@ 100 Hz, 110 dB SPL.                                                                                                                                                                        |
| PEARL<br>(ERCONA CORP.) | D-42 Deluxe                            | Dyn.                | 30-20                          | 200                 | 0.3                                 |                   |                    | 8                    | 9½                       | 40.00  |                                                                                                                                                                                                     |
|                         | RDF-224                                | Dyn.                | 20-18                          | 8                   | 1.0                                 |                   |                    | 8                    | 12                       | 30.00  |                                                                                                                                                                                                     |
| PICKERING               | DA-7                                   | Dyn.                | 20-22 ±4                       | 100                 | 50                                  | 300               | *                  | 10                   | 5%                       | 70.00  | *Less than ½ per cent @ 110 dB.                                                                                                                                                                     |
|                         | PH-4955                                | Dyn.                | 40-11 ±3                       | 8                   | 100                                 | 500               | *                  | 10                   | 28                       | 65.00  | *Less than 1 per cent @ 115 dB.                                                                                                                                                                     |
|                         | DA-3                                   | Dyn.                | 20-20 ±4                       | 8                   | 100                                 | 1200              | *                  | 10                   | 7.5                      | 39.95  | *Less than ½ per cent @ 100 dB.                                                                                                                                                                     |
| PIONEER                 | SE-4                                   | Dyn.                | 20-20                          | 250                 | 96*                                 | 7k                |                    | 9.4                  | 7.6                      | 50.00  | *dB/mW @ 1 kHz                                                                                                                                                                                      |
|                         | SE-700                                 | Dyn.                | 20-20                          | 4-16                | 100*                                | 3k                |                    | 10                   | 11                       | 80.00  |                                                                                                                                                                                                     |
|                         | SE-500                                 | Dyn.                | 20-20                          | 4-16                | 100*                                | 3k                |                    | 10                   | 11                       | 50.00  |                                                                                                                                                                                                     |
|                         | Monitor 10                             | Dyn.                | 20-20                          | 8                   | 100*                                | 700               |                    | 16½                  | 23                       | 70.00  |                                                                                                                                                                                                     |
|                         | SE-505                                 | Dyn.                | 20-20                          | 8                   | 108*                                | 500               |                    | 16½                  | 24                       | 60.00  |                                                                                                                                                                                                     |
|                         | SE-405                                 | Dyn.                | 20-20                          | 8                   | 113*                                | 500               |                    | 16½                  | 17                       | 45.00  |                                                                                                                                                                                                     |
|                         | SE-305                                 | Dyn.                | 20-20                          | 8                   | 108*                                | 500               |                    | 16½                  | 15                       | 35.00  |                                                                                                                                                                                                     |
| SE-205                  | Dyn.                                   | 20-20               | 4-16                           | 8                   | 108*                                | 500               |                    | 8½                   | 16                       | 25.00  |                                                                                                                                                                                                     |
| QUADRAFLEX              | Q-12                                   | Dyn.                | 50-14 ±4                       | 50                  | 90                                  | 850               | 2.5                | 10                   | 8                        | 17.95  |                                                                                                                                                                                                     |
|                         | Q-25                                   | Dyn.                | 20-18.5 ±3.5                   | 34.5                | 96                                  | 1250              | 2.0                | 10                   | 10                       | 29.95  |                                                                                                                                                                                                     |
|                         | Q-35                                   | Dyn.                | 20-20 ±3.5                     | 122                 | 93                                  | 1500              | 1.5                | 10                   | 13                       | 44.95  | Vol. Contrs.                                                                                                                                                                                        |
|                         | Q-45                                   | Dyn.                | 20-20 ±2                       | 80                  | 95                                  | 1800              | 1.0                | 10                   | 10                       | 49.95  |                                                                                                                                                                                                     |
| ROTEL                   | RH-930                                 | ES.                 | 20-20 ±5                       | 8.3                 | 104                                 | 500               | 0.5                | 15                   | 8.5                      | 80.00  | 3-way sensitivity swit. on plug.                                                                                                                                                                    |
| SANSUI                  | QH-44                                  | Dyn.                | 20-20                          | 4-25                | 98                                  | 100               |                    | 8.2                  | 15.2                     | 70.00  | 2/4 Channel, with Back Level & 2/4 Selector.                                                                                                                                                        |
|                         | SS-80                                  | Dyn.                | 20-20                          | 200                 | 108                                 | 500               |                    | 12.2                 | 20.5                     | 60.00  | Volume Control & tone control.                                                                                                                                                                      |
|                         | SS-60                                  | Dyn.                | 20-20                          | 4-25                | 108                                 | 500               |                    | 6.6                  | 16.6                     | 45.00  | Volume control.                                                                                                                                                                                     |
|                         | SS-40                                  | Dyn.                | 20-20                          | 8                   | 108                                 | 500               |                    | 6.6                  | 16                       | 35.00  |                                                                                                                                                                                                     |
|                         | SS-30                                  | Dyn.                | 20-20                          | 8                   | 108                                 | 500               |                    | 6.6                  | 16                       | 25.00  |                                                                                                                                                                                                     |
| SENNHEISER              | HD44                                   | Dyn.                | 40-15                          | 640                 | 94                                  | 8k                | 1.5                | 10                   | 1.2                      | 31.95  | under chin type, built in tone controls.                                                                                                                                                            |
|                         | HD400                                  | Dyn.                | 20-18                          | 600                 | 88                                  | 15k               | 1.3                | 10                   | 3                        | 32.95  |                                                                                                                                                                                                     |
|                         | HD414                                  | Dyn.                | 16-20                          | 2k                  | 102                                 | 18k               | 1                  | 10                   | 4.8                      | 52.95  | "Open-Aire."                                                                                                                                                                                        |
|                         | HD424                                  | Dyn.                | 16-20                          | 2k                  | 102                                 | 18k               | 0.9                | 10                   | 6.7                      | 84.95  |                                                                                                                                                                                                     |
|                         | HD4004                                 | Dyn.                | 100-6                          | 17                  | 82                                  | 5k                | 1.5                | 25                   | 0.6                      | 21.00  | monaural, for TV listening.                                                                                                                                                                         |
|                         | HD224                                  | Dyn.                | 16-20                          | 200                 | 94                                  | 7k                | 0.9                | 10                   | 9                        | 99.80  | Wireless, built-in receiver for infrared light.                                                                                                                                                     |
| HD1434                  | Dyn.                                   | 16-20               |                                |                     |                                     | 1                 |                    | 13.5                 | 209.00                   |        |                                                                                                                                                                                                     |
| SONY                    | ECR-500                                | ES.                 | 20-20                          | 30*                 | 91**                                | 12V               | 0.03               | 7.5                  | 12                       | 150.00 | *For 8-ohm speaker output, **For 1V input.                                                                                                                                                          |
| STANTON                 | Stereo XXI                             | Dyn.                | 20-22 ±4                       | 100                 | 50                                  | 300               | 0.5*               | 10                   | 6                        | 70.00  | *At 110 dB SPL.                                                                                                                                                                                     |
|                         | Dyna-phase 65C                         | Dyn.                | 20-20 ±5                       | 8                   | 60                                  | 1250              | 0.5*               | 10                   | 19                       | 69.95  | *At 100 dB SPL.                                                                                                                                                                                     |
|                         | Dyna-phase 60                          | Dyn.                | 40-11 ±3                       | 8                   | 60                                  | 500               | 1.0*               | 10                   | 28                       | 64.95  | *At 115 dB SPL.                                                                                                                                                                                     |
|                         | Dyna-phase 40                          | Dyn.                | 60-10 ±3                       | 8                   | 60                                  | 500               | 1.0*               | 10                   | 21                       | 44.99  | *At 115 dB SPL.                                                                                                                                                                                     |
|                         | Dyna-phase 28                          | Dyn.                | 30-19 ±4                       | 8                   | 60                                  | 300               | 1.0*               | 10                   | 11                       | 27.95  | *At 100 dB SPL.                                                                                                                                                                                     |

| MANUFACTURER                 | MODEL              | Operating principle | Freq. response, Hz-kHz,<br>± 1 dB | Impedance, ohms   | Sensitivity, dB SPL for<br>1 mW input | Maximum input, mV | % THD at 95 dB SPL | Cord length, ft. | Weight, oz. | Price          | NOTES                       |
|------------------------------|--------------------|---------------------|-----------------------------------|-------------------|---------------------------------------|-------------------|--------------------|------------------|-------------|----------------|-----------------------------|
| STAX (AMERICAN<br>AUDIOPORT) | SR-44              | ES.                 | 25-20<br>±1.5                     | 35                |                                       | 50W               | 0.3                | 8                | 8           | 85.00          |                             |
|                              | SRX/<br>SRD7       | ES.                 | 20-25<br>±1.5                     | 35                |                                       | 100W              | 0.1                | 8                | 14          | 230.00         |                             |
|                              | SR5/<br>SRD6       | ES.                 | 30-25<br>±2                       | 35                |                                       | 50W               | 0.3                | 8                | 14          | 130.00         |                             |
| SUPEREX                      | PEP-81             | ES.                 | 15-19<br>±1.8                     | 4-16              |                                       |                   | 0.2                | 15               | 10          | 150.00         |                             |
|                              | PEP-79E            | ES.                 | 15-18<br>±2                       | 4-16              |                                       |                   | 0.2                | 15               | 10          | 90.00          |                             |
|                              | SM-700             | Dyn.                | 10-20<br>±3                       | 35                |                                       |                   | 0.2                | 15               | 10          | 65.00          | *110 dB SPL for 10 mW.      |
|                              | CLASSIC<br>CL-1    | Dyn.                | 10-20<br>±4                       | 35                | 110db                                 |                   | 0.3                | 15               | 10.6        | 55.00          | *110 dB SPL for 10 mW.      |
|                              | Pro-BVI<br>Monitor | 2-way               | 15-22<br>±5                       | 4-16              |                                       |                   | 0.4                | 10               | 18          | 65.00          |                             |
|                              | TRL-99             | Dyn.                | 15-20<br>±4                       | 35                | *                                     |                   | 0.4                | 15               | 10          | 50.00          | *100 dB SPL for 6 mW.       |
|                              | TRL-3<br>TRL-77    | Dyn.<br>Dyn.        | 40-20<br>45-20                    | 80<br>80          | *                                     |                   | 0.5<br>1           | 15<br>7          | 10<br>11½   | 40.00<br>30.00 | *100 dB SPL for 6 mW.       |
| SUPERSCOPE                   | HP-10              | Dyn.                | 30-15                             | 8                 | 100                                   |                   |                    | 6                |             | 12.95          |                             |
| TOSHIBA                      | HR-710             | ES.                 | 20-20                             | 8*<br>300<br>1000 | 104                                   |                   | 0.5                | 11½              | 6           | 44.95          | *Impedances are changeable. |
|                              | HR-810             | ES.                 | 20-30                             | 8*<br>300<br>1000 | 115                                   |                   | 0.5                | 11½              | 8½          | 74.95          | *As above.                  |
|                              | HR-910             | ES.                 | 20-35                             | 8*<br>1000        | 115                                   |                   | 0.5                | 11               | 8½          | 129.95         | *As above.                  |
| YAMAHA                       | HP-1               | Dyn.                | 20-20                             | 150               | 44                                    | 1000              |                    | 8                | 8.8         | 65.00          |                             |
|                              | HP-2               | Dyn.                | 20-20                             | 150               | 41                                    | 1000              |                    | 8                | 6.7         | 45.00          |                             |

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Recorder Care Division



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# Microphones

AKG D-1000



Beyer M 260



Shure 565SD



Sennheiser MD-421



Primo EMU-4520



Neuman KM-84



Superscope EC-5

| MODEL           | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Freq. resp., Hz-kHz, ±2 dB | EIA sensitivity, dBm | Mike connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz. | Mounting method | Price, \$       | NOTES  |                                        |
|-----------------|---------------------|---------------------|---------------|-----------------|-----------------|----------------------------|----------------------|-----------------|-------------------|-----------------|-----------------|-------------|-----------------|-----------------|--------|----------------------------------------|
| AKG             | D-2000E             | super-cardioid      | dyn.          | zinc alloy      | nickel          | 200                        | 35-17                | -144.5          | XLR               | opt.            | opt.            | 6½x 2 1/16  | 11              | 5/8x27          | 110.00 | Eq. & on/off swit                      |
|                 | D-1000E             | cardioid            | dyn.          | brass           | nickel          | 200                        | 40-17                | -144.5          | XLR               | opt.            | opt.            | 6x1½        | 9.5             | 5/8x27          | 75.00  | BMS swit for eq.                       |
|                 | D-200E              | cardioid            | dyn.          | alum.           | matte           | 200                        | 25-16                | -149            | XLR               | opt.            | opt.            | 7½x 8       | 8               | 5/8x27          | 90.00  | Two-way design                         |
|                 | D-190ES             | cardioid            | dyn.          | brass           | nickel          | 200                        | 30-15                | -144.5          | XLR               | opt.            | opt.            | 1½ 6½x      | 6               | 5/8x27          | 70.00  | W/ on/off swit.                        |
|                 | D-190E              | cardioid            | dyn.          | brass           | nickel          | 200                        | 30-15                | -144.5          | XLR               | opt.            | opt.            | 1½ 6½x      | 6               | 5/8x27          | 65.00  | Built-in pop filt.                     |
|                 | D-170E              | cardioid            | dyn.          | zinc alloy      | nickel          | 200                        | 50-15                | -146            | XLR               | opt.            | opt.            | 1½ 6½x      | 12              | 5/8x27          | 95.00  | Built-in pop filt.                     |
|                 | D-160E1             | omni                | dyn.          | brass           | nickel          | 250                        | 40-20                | -150.5          | XLR               | opt.            | opt.            | 2½ 7½x      | 7.5             | 5/8x27          | 64.00  | W. foam windscreen                     |
|                 | D-140E              | cardioid            | dyn.          | brass           | nickel          | 200                        | 30-15                | -144.5          | XLR               | opt.            | opt.            | 1½ 6x1½     | 6.2             | 5/8x27          | 150.00 | Roll-off filter, built-in pop filter.  |
|                 | D-120ES             | cardioid            | dyn.          | alum.           | anod.           | 200                        | 100-17               | -146.5          | XLR               | opt.            | opt.            | 2½ 6½x      | 6.2             | 5/8x27          | 60.00  | W/ on/off swit.                        |
|                 | D-120E              | cardioid            | dyn.          | alum.           | anod.           | 200                        | 100-17               | -146.5          | XLR               | opt.            | opt.            | 2½ 6½x      | 6.2             | 5/8x27          | 55.00  | Built-in pop filt.                     |
| AKAI            | ACM-100             | uni.                | dyn.          |                 | nickel          | 2k                         | 30-17                | -68             |                   | 10              | phono           | ¾x6         | 5½              |                 | 39.95  |                                        |
| AUDIO-TECHNICA  | AT801               | omni.               | elect. cond.  | alum.           | matte champagne | 600                        | 40-18 ±3             | -143, -48       | Swcft. A3F        | 16½             | not furn.       | 7½x 1½      | 5.6             | 5½x27           | 50.00  | W. mating stand clamp.                 |
|                 | AT802               | omni.               | dyn.          | alum.           | matte champagne | 600                        | 50-16 ±3             | -150, -54.5     | Swcft. A3F        | 16½             | not furn.       | 7x1½        | 5               | 5½x27           | 50.00  | W. mating stand clamp.                 |
|                 | AT811               | cardioid            | elect. cond.  | alum.           | matte champagne | 600                        | 50-20 ±3             | -149, -54       | Swcft. A3F        | 16½             | not furn.       | 8½x 1½      | 6               | 5½x27           | 75.00  | W. mating stand clamp.                 |
|                 | AT812               | cardioid            | dyn.          | alum.           | matte champagne | 600                        | 50-15 ±3             | -155, -60       | Swcft. A3F        | 16½             | not furn.       | 7½x 1½      | 7.6             | 5½x27           | 75.00  | W. mating stand clamp.                 |
|                 | AT813               | cardioid            | elect.        | alum.           | matte champagne | 600                        | 20-20 ±3             | -153, -58       | Swcft. A3F        | 16½             | not furn.       | 8x2         | 6.5             | 5½x27           | 80.00  | W. mating stand clamp.                 |
| BEYER (HAMMOND) | M500                | hyper cardioid      | ribbon        | alum.           | matte black     | 200                        | 40-18                | -153            | Swcft. M3M        | 16.5            | not furn.       | 7.5x 2.2    | 8.5             |                 | 159.95 |                                        |
|                 | M260                | hyper cardioid      | ribbon        | brass           | black chrome    | 200                        | 50-18                | -153            | Swcft. M3M        | 16.5            | not furn.       | 7.1x 1.7    | 8.5             |                 | 127.50 |                                        |
|                 | M160                | hyper cardioid      | double ribbon | brass           | matte           | 200                        | 40-18                | -152            | Swcft. M3M        | 16.5            | not furn.       | 6.4x 1.5    | 6.53            |                 | 230.00 |                                        |
|                 | M88                 | hyper cardioid      | dyn.          | brass           | matte black     | 200                        | 30-20                | -144            | Swcft. M3M        | 16.5            | not furn.       | 7.1x 1.9    | 10.75           |                 | 222.50 |                                        |
|                 | M101                | hyper cardioid      | omni          | brass           | matte black     | 200                        | 40-20                | -150            | Swcft. M3M        | 16.5            | not furn.       | 4.7x .89    | 5.65            |                 | 127.50 |                                        |
|                 | M201                | hyper cardioid      | dyn.          | brass           | matte black     | 200                        | 40-18                | -149            | Swcft. M3M        | 16.5            | not furn.       | 6.3x .95    | 7.76            |                 | 165.00 |                                        |
|                 | M69                 | hyper cardioid      | dyn.          | steel           | matte black     | 200                        | 50-16                | -144            | Swcft. M3M        | 16.5            | not furn.       | 7.15x 1.9   | 8.82            |                 | 102.50 |                                        |
| GC ELECTRONICS  | 30-2316             | cardioid            | cond.         | alum.           | brushed gold    | 600                        | 50-13                | -69*            |                   | 20              |                 |             |                 | desk stand      | 78.90  | *At 1 kHz.                             |
|                 | 30-2314             | cardioid            | dyn.          | alum.           | chrome          | dual                       | 50-13                | -58             |                   | 20              | phone           |             |                 | desk stand      | 39.50  | Built-in volume control.               |
|                 | 30-2310             | cardioid            | dyn.          | alum.           | chrome          | high                       | 80-13                | -58             |                   | 10              | phone           |             |                 | desk stand      | 39.50  |                                        |
|                 | 30-2312             | omni                | dyn.          | alum.           | chrome          | dual                       | 55-13                | -62             |                   | 15              | phone           |             |                 | desk stand      | 32.90  | Removeable wind-screen.                |
|                 | 30-2318             | cardioid            | cond.         | alum.           | brushed gold    | 1k                         | 40-16 ±3             | -65             |                   | 13              | mini            |             |                 | tie tack holder | 31.55  | Mercury battery.                       |
|                 | 30-2308             | omni                | dyn.          | plastic         | black           | 500                        | 70-10                | -76             |                   | 4               | phone           |             |                 | desk stand      | 24.15  | Matched stereo pair.                   |
|                 | 30-2306             | cardioid            | dyn.          | alum.           | brushed satin   | 600                        | 50-10                | -82             |                   | 6               | phone           |             |                 | desk stand      | 21.00  | Removeable wind-screen.                |
| JVC             | M-210               | uni-dir.            | elect.        | alum.           | chrome          | 600                        | 40-18                | -71             | phone             | 10              | RCA             | 8½x 3½      | 13              | 5/8x27          | 53.00  | Stereo mika.                           |
|                 | M-510               | super-dir.          | elect.        | alum.           | chrome          | 600                        | 40-20                | -68             | phone             | 15              | cannon          | 16x 7/8     | 9               | 5/8x27          | 175.00 | Opt. uni-dir. capsule.                 |
|                 | HM-200E             | bi-aural            | elect.        |                 |                 | 600                        | 40-18                |                 | attached          | 6.6             | phone           |             |                 |                 | 79.95  | W. head phones, see headphone section. |

| MODEL                   | Directional pattern | Operating principle  | Case material | External finish | Impedance, ohms | Freq. resp., Hz-kHz ± dB | EIA sensitivity, dB/m | Mike connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz.    | Mounting method | Price, \$ | NOTES                                           |                                                             |
|-------------------------|---------------------|----------------------|---------------|-----------------|-----------------|--------------------------|-----------------------|-----------------|-------------------|-----------------|-----------------|----------------|-----------------|-----------|-------------------------------------------------|-------------------------------------------------------------|
| <b>NAKAMICHI</b>        | CM-1000             | cardioid*            | cond.         | metal           | black           | 600                      | 20-20<br>±2.5         | 3-pin<br>XLR    | 15                | XLR-3           |                 |                | 5/8x27          | 290.00    | W. power supply.<br>*CP-102 omni capsule \$100. |                                                             |
|                         | CM-700              | cardioid/omni        | elect.        | metal           | black           | 600                      | 20-20<br>±3           | 3-pin<br>XLR    | 15                | phone           |                 |                | 5/8x27          | 150.00    | W. card. & omni capsules.                       |                                                             |
|                         | CM-300              | cardioid/omni        | elect.        | metal           | black           | 200                      | 30-18<br>±3.5         | 3-pin<br>XLR    | 15                | phone           |                 |                | 5/8x27          | 110.00    | Tri-mike set for \$300.                         |                                                             |
|                         | CM-100              | cardioid             | elect.        | metal           | black           | 200                      | 30-18<br>±3.5         | 3-pin<br>XLR    | 15                | phone           |                 |                | 5/8x27          | 70.00     | Interchg cap. opt.                              |                                                             |
|                         | CM-50               | omni                 | elect.        | metal           | black           | 250                      | 20-18<br>±3.5         |                 | 6                 | phone           | 1 1/2x 1/2      |                | clip            | 110.00    | W. tie clip.                                    |                                                             |
|                         | DM-1000             | cardioid             | moving coil   | metal           | black           | 250                      | 30-18<br>±2.5         | 3-pin<br>XLR    | 15                | phone           |                 |                | 5/8x27          | 200.00    | Triple pop/blast filter.                        |                                                             |
|                         | DM-500              | cardioid             | moving coil   | metal           | black           | 250                      | 50-15<br>±5           | 3-pin<br>XLR    | 15                | phone           |                 |                |                 | 70.00     | Integral pop/blast filter.                      |                                                             |
| <b>NEUMANN (GOTHAM)</b> | KM-84               | cardioid             | cond.         | metal           | satin chrome    | 200                      | 40-20                 | -137            | XLR 3             | not sup         | not sup         | 4 1/2x1        | 3               | 5/8-27    | 260.00                                          |                                                             |
|                         | U-87                | omni card fig. 8     | cond.         | metal           | satin chrome    | 150/250                  | 40-16                 | -137            | XLR 3             | 25              | XLR 3           | 8x2 1/2        | 20              | 5/8-27    | 782.00                                          |                                                             |
|                         | U-47 fet            | cardioid             | cond.         | metal           | chrome satin    | 250/200                  | 40-16                 | -137            | XLR 3             | 25              | XLR 3           | 6 1/4x 2 1/2   | 24 1/2          | 5/8-27    | 700.00                                          |                                                             |
|                         | KM-86               | omni card fig. 8     | cond.         | metal           | chrome satin    | 200                      | 40-20                 | -140            | XLR 3             | 25              | XLR 3           | 7 1/4x 1 1/2   | 7 1/2           | 5/8-27    | 735.00                                          |                                                             |
|                         | SM-69 fet           | omni card fig. 8     | cond.         | metal           | chrome satin    | 200                      | 40-16                 | -140            | tuchel            | 33              | XLR 3           | 10x2           | 16              | 5/8-27    | 1885.00                                         |                                                             |
|                         | QM-69               | omni card fig. 8     | cond.         | metal           | chrome satin    | 200                      | 40-16                 | -140            | tuchel            | 33              | XLR 3           | 11 1/2x 1 1/2  | 16              | 5/8-27    | 2207.00                                         | *Quadraphonic, 4-pattern mike.                              |
|                         | KM-88               | omni card fig. 8     | cond.         | metal           | chrome satin    | 200                      | 40-16                 | -138            | XLR3              | 25              | XLR3            | 6 x 1 d.       | 3 1/2           | 5/8-27    | 260.00                                          |                                                             |
|                         | KM-83               | omni                 | cond.         | metal           | chrome satin    | 200                      | 40-20                 | -137            | XLR 3             | not sup         | not sup         | 4 1/2x1        | 3               | 5/8-27    | 260.00                                          |                                                             |
|                         | KM-85               | cardioid             | cond.         | metal           | chrome satin    | 200                      | 40-20                 | -137            | XLR 3             | not sup         | not sup         | 4 1/2x1        | 3               | 5/8-27    | 260.00                                          |                                                             |
|                         | KMS-84              | cardioid             | cond.         | metal           | chrome satin    | 200                      | 40-16                 | -137            | XLR 3             | 25              | XLR 3           | 8 1/4x 1 1/2   | 10 1/2          | 5/8-27    | 682.00                                          |                                                             |
|                         | KMA                 | omni                 | cond.         | metal           | chrome gray     | 200                      | 40-16                 | -137            | attach.           |                 | tuchel          | 1 1/2x 1 1/2   | 2               | clip      | 295.00                                          |                                                             |
|                         | KML                 | cardioid             | cond.         | metal           | gray            | 200                      | 40-16                 | -137            | attach.           |                 | tuchel          | 2x 1 1/2       | 2               | clip      | 324.50                                          |                                                             |
|                         | KU-80               | cardioid             | cond.         | metal           | black           | 200                      | 40-16                 | -137            | tuchel            |                 | XLR 3           | 2x 1 1/2       | 160             |           | 2200.00                                         | *Rubber "human" head w/ mikes @ears for binaural recording. |
| <b>PEARL (ERCONA)</b>   | DC-20               | omni                 | cond.         | alum.           | chrome          | 200                      | 30-20<br>±3           | Swift locking   | 33                | preh.           | 3x 1/2          | 1 1/2          | 5/8x27          | 170.00    | All symsi powered.                              |                                                             |
|                         | DC-21               | cardioid             | cond.         | alum.           | chrome          | 200                      | 30-20<br>±3           | Swift locking   | 33                | preh.           | 3x 1/2          | 1 1/2          | 5/8x27          | 180.00    |                                                 |                                                             |
|                         | DC-63               | 44 patterns cardioid | cond.         | alum.           | chrome          | 200                      | 30-20<br>±3           | XLR             | 20                | cannon          | 6.2x 1.2        | 11.6           | 5/8x27          | 575.00    |                                                 |                                                             |
|                         | DC-73               | cardioid             | cond.         | alum.           | chrome          | 200                      | 30-20<br>±3           | XLR             | 20                | cannon          | 7.8x 1          | 8              | 5/8x27          | 235.00    |                                                 |                                                             |
|                         | VM 41/4130          | cardioid             | cond.         | alum.           | chrome          | 200                      | 30-20<br>±3           | XLR             | 20                | cannon          | 10x 1/2         | 5              | 5/8x27          | 795.00    | Interference cond.                              |                                                             |
| <b>PIONEER</b>          | CM-1                | omni                 | elect.        | alum.           | chrome          | 600                      | 20-20                 | -74             |                   | 18              | phone           | 8 1/2x 1 1/2   | 10 1/2          |           | 100.00                                          | Switchable omni/uni. Stereo                                 |
|                         | CM-2S               | omni                 | elect.        | alum.           | black           | 1k                       | 20-20                 | -68             |                   | 21              | (2) phone       | 6              | 11 1/2          |           | 60.00                                           |                                                             |
| <b>PRIMO</b>            | CMU-503             | cardioid             | cond.         | brass           | nickel plate    | 600                      | 20-20<br>±3           | -66             | canon             | 20              | cannon          | 5 1/2x1        | 5               | 5/8-27    | 325.00                                          |                                                             |
|                         | UD-303              | cardioid             | dyn.          | brass           | nickel plate    | 250                      | 40-20<br>±4           | -76             | Swift A3F         | 20              | not furn.       | 8 1/2x 1 1/2   | 10 1/2          | 5/8-27    | 185.00                                          |                                                             |
|                         | EMU 4520            | cardioid             | elect.        | brass           | nickel plate    | 200                      | 50-18<br>±3           | -71             | Swift A3F         | 20              | not furn.       | 8x1            | 6               | 5/8-27    | 80.00                                           |                                                             |
|                         | P-77                | cardioid             | dyn.          | brass           | nickel plate    | 250                      | 100-13<br>±5          | -80             | Swift A3F         | 20              | not furn.       | 6 1/2x 1 1/2   | 7               | 5/8-27    | 70.00                                           |                                                             |
| <b>RDETEL</b>           | RMC-1               | one pt. stereo       | elect.        | alum.           | brushed alum.   | 600                      | 50-15<br>±5           | -70             | attached          | 10              | RCA             | 7x 2.75        | 6.5             |           | 60.00                                           |                                                             |
| <b>SENNHEISER</b>       | MD441               | super cardioid       | dyn.          | metal           | chrome plastic  | 200                      | 30-20                 | -146            | XLR               | 15              |                 | 10.6x 1.4x 1.3 | 16              | 5/8x27    | 275.00                                          | Adj. freq. resp.                                            |
|                         | MD421               | cardioid             | dyn.          | plas.           | chrome plastic  | 200                      | 30-17                 | -146            | XLR               | 15              |                 | 7x1.8x 1.7     | 14              | 5/8       | 193.00                                          | Adj. freq. resp.                                            |
|                         | MD416               | cardioid             | dyn.          | metal           | satin nickel    | 200                      | 50-16                 | -151            | XLR               | 15              |                 | 7x2            | 11              | 5/8       | 180.50                                          |                                                             |
|                         | MD413               | cardioid             | dyn.          | metal           | satin nickel    | 200                      | 50-15                 | -151            | XLR               | 15              |                 | 5x.87          | 10              | 5/8       | 140.00                                          |                                                             |

# Microphones

| MODEL                     | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Freq. resp., Hz-kHz ±2 dB | EIA sensitivity, dBm | Mike connection | Cable length, ft. | Cable plug type | Dimensions, in.      | Weight, oz. | Mounting method | Price, \$    | NOTES                             |                                               |
|---------------------------|---------------------|---------------------|---------------|-----------------|-----------------|---------------------------|----------------------|-----------------|-------------------|-----------------|----------------------|-------------|-----------------|--------------|-----------------------------------|-----------------------------------------------|
| SENNHEISER<br>(Continued) | MD211               | omni                | dyn.          | metal           | satin chrome    | 200                       | 30-20                | -151            | XLR               | 15              |                      | 5x.87       | 4.5             | 5/8          | 214.50                            |                                               |
|                           | MD402U              | super cardioid      | dyn.          | metal           | chrome          | 200                       | 80-12.5              | -151            | XLR               | 15              |                      | 5.7x.83     | 6.5             | clamp        | 70.00                             |                                               |
|                           | MD412               | super cardioid      | dyn.          | plas.           | plastic         | 800                       | 50-12.5              | -151            |                   | 5               | phone                | 5.5x1.5     | 2.1             | clamp        | 72.50                             |                                               |
|                           | MKH815              | beam                | cond.         | metal           | satin nickel    | 10                        | 50-20                | -115            | XLR               |                 |                      | 1.5x22x3/4  | 14              | clamp        | 629.00                            | Also 48-V phantom.                            |
|                           | MKH415              | club                | cond.         | metal           | satin chrome    | 10                        | 40-20                | -121            | XLR               |                 |                      | 10x3/4      | 6               | clamp        | 529.00                            | Also 48-V phantom.                            |
|                           | MKH435              | cardioid            | cond.         | metal           | satin chrome    | 10                        | 40-20                | -121            | XLR               |                 |                      | 7.5x3/4     | 5               | clamp        | 398.00                            | Also 48-V phantom.                            |
|                           | MKE202              | omni                | elect. cond.  | metal           | satin nickel    | 200                       | 50-15                | -143            | XLR               |                 |                      | 7.6x0.9     | 5.6             | 5/8x27       | 134.00                            |                                               |
|                           | MKE402              | cardioid            | elect. cond.  | metal           | satin nickel    | 200                       | 50-15                | -143            | XLR               |                 |                      | 7.6x0.9     | 5.6             | 5/8x27       | 157.00                            |                                               |
|                           | MKE802              | club                | elect. cond.  | metal           | satin nickel    | 200                       | 50-15                | -139            | XLR               |                 |                      | 12x0.9      | 6.8             | 5/8x27       | 187.00                            |                                               |
|                           | MKE10               | omni                | elect. cond.  | metal           | flat black      | 4.7k                      | 40-20                | -144            | special           | 3               |                      | 0.35x0.71   | 0.9             | clip         | 99.00                             | tie clip microphone.                          |
| MKE2002                   | *                   | elect. cond.        | metal         | flat gray       | 1.5k            | 40-20                     | -141                 | special         | 10                |                 |                      |             |                 | 330.00       | *Double mike for binaural stereo. |                                               |
| SHURE                     | 516-EQ              | cardioid            | dyn.          | alum.           | chrome          | 150                       | 50-15                | -153            | Swcft. A3F        | 15              | phone plug not furn. | 6 1/4x1 1/2 | 9 1/2           | 5/8x27       | 84.00                             |                                               |
|                           | 54SSD               | cardioid            | dyn.          | alum.           | chrome          | 150 & 33k                 | 50-15                | *               | Swcft. A3F        | 15              | not furn.            | 6 1/4x1 1/2 | 9               | 5/8x27       | 80.40                             | *Adj. -144/-151; on/off swit.                 |
|                           | 56SSD               | cardioid            | dyn.          | alum.           | chrome          | 150 & 33k                 | 50-15                | *               | Swcft. A3F        | 15              | not furn.            | 6 1/4x2     | 10 1/2          | 5/8x27       | 89.40                             | *Adj. -148 1/2/-150 1/2; on/off swit.         |
|                           | 589S                | cardioid            | dyn.          | alum.           | beige           | 150 & 33k                 | 90-13                | *               | Swcft. A3F        | 15              | not furn.            | 7x1 1/2     | 12              | 5/8x27       | 61.20                             | *Adj. -155/-156; on/off swit.                 |
|                           | SM57                | cardioid            | dyn.          | alum.           | grey enamel     | 150                       | 40-15                | -148            | Swcft. A3F        | 20              | not furn.            | 6 1/4x1 1/2 | 10              | 5/8x27       | 99.00                             |                                               |
|                           | SM58                | cardioid            | dyn.          | alum.           | grey enamel     | 150                       | 50-15                | -148            | Swcft. A3F        | 20              | not furn.            | 6 1/4x2     | 15              | 5/8x27       | 126.60                            |                                               |
| SDNY                      | C-47                | cardioid/omni       | cond.         | alum.           | satin/chr.      | 50                        | 30-18 ±2.5           | 138             | fixed             | 57              | XLR-3                | 8x1 1/2     | 17              | 5/8x27       | 1000.00                           | Comes with power supply.                      |
|                           | C-38B               | cardioid/omni       | cond.         | alum.           | satin/chr.      | 250                       | 30-16 ±2.5           | 141             | fixed             | 20              | XLR-3                | 3x3         | 23              | 5/8x27       | 450.00                            | Phantom & battery power supply.               |
|                           | C-37P               | cardioid/omni       | cond.         | alum.           | satin/chr.      | 250                       | 30-16 ±2.5           | 142             | fixed             | 20              | XLR-3                | 7 1/2x2     | 18              | 5/8x27       | 400.00                            | Phantom power supply.                         |
|                           | ECM-56F             | cardioid            | elect.        | alum.           | chr. satin/chr. | 250                       | 20-20                | 145             | fixed             | 20              | XLR-3                | 8 1/2x2     | 17              | 5/8x27       | 220.00                            | Back electret phantom and battery power supp. |
|                           | ECM-65F             | cardioid            | elect.        | alum.           | satin/nickel    | 250                       | 70-20                | 145             | XLR-3             | 20              | XLR-3                | 7x1 1/2     | 7.5             | 5/8x27       | 210.00                            | Back electret phantom and battery power supp. |
|                           | ECM-64P             | omni                | elect.        | alum.           | satin nickel    | 250                       | 40-20                | 145             | XLR-3             | 20              | XLR-3                | 7x1 1/2     | 7.5             | 5/8x27       | 210.00                            | Phantom & battery power.                      |
|                           | ECM-50PS            | omni                | elect.        | alum.           | satin nickel    | 250                       | 40-14                | 147             | fixed             | 10              | XLR-3                | 1x1/2       | 0.3             | -            | 200.00                            | Phantom & battery power.                      |
|                           | ECM-30              | omni                | elect.        | alum.           | satin nickel    | 250                       | 50-14                | 147             | fixed             | 10              | XLR-3                | 3/4x1/2     | 0.18            | -            | 100.00                            |                                               |
|                           | ECM-33F             | cardioid            | elect.        | alum.           | satin nickel    | 250                       | 20-20                | 145             | XLR3              | 20              | XLR-3                | 7x1 1/2     | 6.5             | 5/8x27       | 150.00                            | Back electret phantom & battery power.        |
|                           | ECM-23F             | cardioid            | elect.        | alum.           | satin nickel    | 250                       | 20-20                | 147             | XLR-3             | 20              | phone                | 7 1/2x1 1/2 | 6.7             | 5/8x27       | 100.00                            | Also bal. out.                                |
|                           | ECM-270A            | cardioid            | elect.        | alum.           | satin nickel    | 200                       | 40-16                | 148             | Sony type         | 16              | phone                | 6 1/2x1     | 4.4             | 5/8x27       | 70.00                             |                                               |
|                           | ECM-170A            | omni                | elect.        | alum.           | satin nickel    | 200                       | 20-16                | 147             | Sony type         | 16              | phone                | 6 1/2x1     | 5.6             | 5/8x27       | 60.00                             |                                               |
|                           | ECM-250A            | cardioid            | elect.        | alum.           | satin nickel    | 200                       | 50-14                | 148             | Sony type         | 16              | phone                | 7x1 1/2     | 5.1             | 5/8x27       | 50.00                             |                                               |
|                           | ECM-220A            | cardioid            | elect.        | alum.           | satin nickel    | 200-10k                   | 50-12                | 149             | fixed             | 16              | phone                | 7 1/2x1 1/2 | 9.7             | 5/8x27       | 35.00                             |                                               |
|                           | ECM-150             | omni                | elect.        | alum.           | satin nickel    | 250                       | 40-13                | 147             | fixed             | 6.5             | phone/mini           | 3/4x1/2     | 2.8             | -            | 55.00                             |                                               |
| ECM-99A                   | stereo              | elect.              | alum.         | satin nickel    | 250             | 50-12                     | 148                  | fixed           | 10                | phone           | 7 1/2x2 1/2          | 10          | 5/8x27          | 45.00        |                                   |                                               |
| F-115                     | omni                | dyn.                | alum.         | alum.           | 600             | 40-12                     | 152                  | fixed           | 20                | XLR-3           | 7x1 1/2              | 9.5         | 5/8x27          | 150.00       |                                   |                                               |
| F-540                     | cardioid            | dyn.                | alum.         | alum.           | 300             | 80-13                     | 156                  | fixed           | 16                | phone           | 7x1 1/2              | 13          | 5/8x27          | 30.00        |                                   |                                               |
| F-510                     | cardioid            | dyn.                | alum.         | alum.           | 320             | 80-12                     | 156                  | fixed           | 10                | mini            | 7 1/2x1 1/2          | 9.5         | -               | 22.00        |                                   |                                               |
| SUPERSCOPE                | EC-1                | cardioid            | elect. cond.  | metal           | black/silver    | 2k                        | 60-13 ±3             | -156            | mini              | 10              |                      | 6x4         | 3.5             | stand        | 11.95                             | Wind screen.                                  |
|                           | EC-3                | cardioid            | elect. cond.  | metal           | blk./sil.       | 1.5k                      | 50-15 ±3             | -156            | mini              | 10              |                      | 8x7         | 8.8             | stand        | 18.95                             | Wind screen.                                  |
|                           | EC-3S               | cardioid            | elect. cond.  | metal           | blk./sil.       | 1.5k                      | 50-15 ±3             | -156            | mini              | 6               |                      | 8x7         | 8.8             | stand        | 19.95                             | Stop/start switch.                            |
|                           | EC-5                | cardioid            | elect. cond.  | metal           | blk./sil.       | 2.2k                      | 40-15 ±3             | -149            | mini              | 10              |                      | 8x6         | 4               | stand        | 29.95                             | Wind screen.                                  |
|                           | EC-9P               | cardioid            | elect. cond.  | metal           | blk./sil.       | 250                       | 30-17 ±3             | -151            | cannon            | 10              |                      | 1x7         | 13.8            | stand        | 84.95                             | On/off swit., low cut filter, 10dB pad.       |
|                           | EC-12B              | omni                | elect. cond.  | metal           | silver          | 250                       | 100-15 ±3            | -143            | mini              | 10              |                      | 5x1         | 2.3             | stand & clip | 34.95                             | Tie clasp, telescoping.                       |
|                           | EC-15P              | omni                | elect. cond.  | metal           | blk./sil.       | 250                       | 70-16 ±3             | -144            | cannon            | 15              |                      | 3x5         | 1               | clip         | 59.95                             | Min. tie clasp.                               |
|                           | EC-33S              | 1-pt. stereo        | elect. cond.  | metal           | blk./sil.       | 1k                        | 50-15 ±3             | -146            | mini              | 10              |                      |             | 6               | stand        | 44.95                             | Stereo or mono; 1-pt. stereo.                 |
| EC-7                      | cardioid            | elect. cond.        | metal         | blk./sil.       | 250             | 40-16 ±3                  | -146                 | phone           | 10                |                 |                      | 10          | stand           | 39.95        | On/off swit., low cut filter.     |                                               |

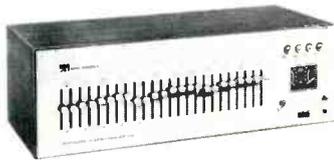
# Equalizers



JVC SEA-10



db Systems DB-5



ADC 500



Heath AD-1305

Crown EQ 2



Dynaco SE-10



Ace AE 2002



| MANUFACTURER         | MODEL                                    | No. of Channels  | No. of Bands         | Bandwidth, octaves  | Boost/cut range, ±dB     | Rated output, rms V | % THD at rated output             | dB S/N at rated output      | Dimensions, in.                              | Weight             | Price                                   | NOTES                                                                                                                           |
|----------------------|------------------------------------------|------------------|----------------------|---------------------|--------------------------|---------------------|-----------------------------------|-----------------------------|----------------------------------------------|--------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ACE AUDIO            | AE2002                                   | 2                | 5                    | 2                   | ±12                      | 2                   | 0.05                              | 80                          | 3½x12¼x7                                     | 3                  | 143.50w<br>94.75k                       |                                                                                                                                 |
| ALL-TEST             | GF-9                                     | 1                | 9                    | 1                   | 12                       | 7                   | 0.05                              | 90                          | 7x6x3                                        | 3                  | 125.00                                  |                                                                                                                                 |
| ALTEC                | 729A                                     | 2                | 48                   | 1/3                 |                          | 4.5                 | 0.5                               |                             | 18½x8x5½                                     | 13                 | 1100.00                                 |                                                                                                                                 |
| AUDIO DYNAMICS CORP. | ADC 500<br>ADC 300<br>SS 1               | 2<br>2<br>2      | 12<br>12<br>5        | ¾<br>¾<br>3 to 4    | 12<br>12<br>12           | 9<br>9<br>10        | 0.035<br>0.050<br>at 2v.<br>0.020 | 85<br>80<br>at<br>1v.<br>80 | 6x18x7¼<br>5¼x17¼x7<br>5¼x10x7               | 10<br>10<br>7.44   | 299.95<br>229.95<br>99.95               |                                                                                                                                 |
| CERWIN-VEGA          | GE-2                                     | 2                | 13                   | 1/2 1               | 12                       | 2                   | 0.02                              |                             | 19x5½x7¼                                     | 12                 | 550.00                                  | Full octave control above, half octave control below middle C.                                                                  |
| CROWN                | EQ-11                                    | 2                | 11                   | 1/2                 | 15                       | 2.5                 | 0.01                              | 90                          | 19x7x14½                                     | 16                 | 995.00                                  | Movable center freq., adjustable ±1/2 Oct.                                                                                      |
| DB SYSTEMS           | DB-5                                     | 2                | 6                    |                     | 15                       | 3                   | 0.0008                            | 91                          | 8½x3¼x7                                      | 2.6                | 375.00                                  | Power Supply \$78.                                                                                                              |
| DELTA GRAPH          | EQ-10M<br>EQ-10SP<br>EQ-10QP<br>EQ-10B2P | 1<br>2<br>4<br>8 | 10<br>10<br>10<br>10 | 1<br>1<br>1<br>1    | ±15<br>±15<br>±15<br>±15 | 2<br>2<br>2<br>2    | 0.05<br>0.05<br>0.05<br>0.05      | 96<br>96<br>96<br>96        | 9½x5¼x2½<br>9½x5¼x2½<br>9½x5¼x2½<br>9½x5¼x2½ | 3<br>6<br>11<br>23 | 65.00K<br>150.00K<br>275.00K<br>540.00K | All units are modular, stackable, have bal. & unbal. In/Outs, gyrator inductors, and pairs fit racks w/RA-2 kit. Wal. cab. opt. |
| DYNACO               | SE-10                                    | 2                | 10                   | 1.3                 | 12                       | 2                   | 0.04<br>< 0.1<br>typ.             | 85                          | 13½x12x4¼                                    | 10                 | 249.95K<br>349.95W                      |                                                                                                                                 |
| HEATH                | AD-1305                                  | 2                | 10                   |                     |                          | 1.5                 | 0.05                              | 90                          | 4½x17½x8                                     | 11                 | 119.95                                  |                                                                                                                                 |
| JVC                  | SEA-10<br>SEA-20<br>SEA-7070             | 2<br>2<br>2      | 5<br>7<br>10         | 1 2/3<br>1 1/4<br>1 | 12<br>12<br>12/6         | 1<br>3<br>2         | 0.1<br>0.06<br>0.005              | 70<br>70<br>115             | 7½x10x5¼<br>15½x10½x4<br>16½x13½x6½          | 5.7<br>7.5<br>18.9 | 129.95<br>149.95<br>699.95              |                                                                                                                                 |
| JENNINGS             | Control Equalizer One                    | 2                | 11                   | 1                   | 12                       | 5                   | 0.02                              | 90                          | 19x5¼x7                                      | 12                 | 400.00                                  |                                                                                                                                 |

# Equalizers



Soundcraftsmen SG-2205



Pioneer SG-9500



Showco S-2500



MXR 114



SAE 1800



Shure SR-107

170

| MANUFACTURER                                     | MODEL             | No. of Channels |                | No. of Bands | Bandwidth, octaves | Boost/cut range, ±dB | Rated output, rms V | % THD at rated output | dB SNR at rated output | Dimensions, in.       | Weight            | Price                                       | NOTES   |         |        |        |                                             |          |        |            |
|--------------------------------------------------|-------------------|-----------------|----------------|--------------|--------------------|----------------------|---------------------|-----------------------|------------------------|-----------------------|-------------------|---------------------------------------------|---------|---------|--------|--------|---------------------------------------------|----------|--------|------------|
| KLARK-TEKNIK                                     | DN 22             | 2               | 11             | 1/3          | 12                 | 12                   | 0.01                | 90                    | 19x8¼x5¼               | 18                    | 749.00            |                                             |         |         |        |        |                                             |          |        |            |
|                                                  | DN 27             | 1               | 27             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 12      | 0.01   | 90     | 18                                          | 695.00   |        |            |
|                                                  | DN 11             | 1               | 11             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 12      | 0.01   | 90     | 10                                          | 350.00   |        |            |
| LUX                                              | 5G12              | 2               | 12             | 1            | 10/2               | 1                    | 0.03                | 115                   | 17¼x16x4               | 16.5                  | 645.00            |                                             |         |         |        |        |                                             |          |        |            |
| MXR                                              | 114               | 2               | 10             | 1            | 12                 | 0.775                | 0.05                | 95                    | 9¼x2x7                 | 4.5                   | 199.95            |                                             |         |         |        |        |                                             |          |        |            |
| McINTOSH                                         | MQ 101            | 2               | 3              |              |                    |                      |                     |                       | 16x3x13                |                       | 250.00            |                                             |         |         |        |        |                                             |          |        |            |
| PIONEER                                          | SG-9500           | 2               | 10             | 1            | 10                 | 6                    | 0.05                | 90                    | 16½x13½x6              | 15.25                 | 300.00            |                                             |         |         |        |        |                                             |          |        |            |
| RADIO<br>AUGIOPHILE<br>NOTIONS<br>(Roth/Sindell) | Parapalegic<br>45 | 3               | 1 per<br>freq. | 1/1000       | ∞                  | 0.006                | meas-<br>urable     | 1                     | same as<br>77 Chevy    | see<br>Bazoom<br>2000 | "Is no<br>object" | C#, Eb                                      |         |         |        |        |                                             |          |        |            |
| SAE                                              | 2800              | 2               | 4              | 0.3-3.6      | 16                 | 2.5                  | 0.02                | 100                   | 19x8¼x3½               | 14                    | 550.00            |                                             |         |         |        |        |                                             |          |        |            |
|                                                  | 1800              | 2               | 2              |              |                    |                      |                     |                       |                        |                       |                   |                                             | 0.3-3.6 | 16      | 2.5    | 0.02   | 100                                         | 19x5¼x3½ | 10     | 300.00     |
|                                                  | 5000              |                 |                |              |                    |                      |                     |                       |                        |                       |                   |                                             |         |         | 2.5    | 0.10   | 90                                          | 10x3x8   | 6      | 200.00     |
|                                                  | 4000              |                 |                |              |                    |                      |                     |                       |                        |                       |                   |                                             |         |         | 2.5    | 0.02   | 100                                         | 19x3½x3½ | 8      | 200.00     |
| SHURE                                            | M610              | 1               | 8              | 1            | -12*               | 5                    | 0.5                 | -71                   | 2½x12x7                | 4                     | 149.40            |                                             |         |         |        |        |                                             |          |        |            |
|                                                  | SR107             | 1               | 10             |              |                    |                      |                     |                       |                        |                       |                   |                                             | -15     | 6.2     | 1.0    | -99    | 1¼x19x8¼                                    | 7.75     | 250.00 | *-cut only |
| SOUND-<br>CRAFTSMEN                              | RP2212            | 2               | 20             | 1            | 12                 | 1                    | 0.05                | 90                    | 19x6x11                | 21                    | 369.50            |                                             |         |         |        |        |                                             |          |        |            |
|                                                  | SG2205            | 2               | 20             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 1       | 0.05   | 90     | 19x5¼x10                                    | 16       | 370.00 |            |
|                                                  | RP2204            | 2               | 20             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 1       | 0.05   | 90     | 19x6x11                                     | 21       | 329.50 |            |
|                                                  | 20 12A            | 2               | 20             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 1       | 0.05   | 90     | 19x6x11                                     | 21       | 299.50 |            |
|                                                  | TG2209            | 2               | 20             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 12      | 8       | 0.05   | 110    | 19x5¼x10                                    | 18       | 550.00 |            |
| SPECTRA<br>SONICS                                | 500               | 1               | 2              | 1            | -12                |                      |                     |                       | 1½x3¼x3                | 14 oz.                | 220.00            | *Choice of 2 of 10 center freq. at a time.  |         |         |        |        |                                             |          |        |            |
|                                                  | 501               | 1               | 3              |              |                    |                      |                     |                       |                        |                       |                   |                                             | -8      | 1½x3¼x3 | 11 oz. | 84.00  |                                             |          |        |            |
|                                                  | 502               | 1               | 3              |              |                    |                      |                     |                       |                        |                       |                   |                                             | -12     | 1½x7¼x3 | 1½ oz. | 296.00 | *Choice of 3 of 15 center freqs. at a time. |          |        |            |
| SPECTRO<br>ACOUSTICS                             | 210               | 2               | 10             | 1            | 15                 | 2                    | 0.1                 | 90                    | 17x6x7                 | 12                    | 295.00            | Gyrator synthesized inductors.<br>As above. |         |         |        |        |                                             |          |        |            |
|                                                  | 210R              | 2               | 10             |              |                    |                      |                     |                       |                        |                       |                   |                                             | 15      | 2       | 0.1    | 90     | 19x7x7                                      | 12       | 295.00 |            |
| WHITE<br>INSTRUMENTS                             | 4100              | 2               | 10             | 1            | 10                 | 6                    | 0.08                | 110                   | 18½x6¼x3½              | 7.5                   | 599.95            |                                             |         |         |        |        |                                             |          |        |            |

# ADDENDUM Car Radio/Tape Players

| MANUFACTURER | Model      | Price  | Stereo (S), Mono (M), or 4-channel (4)? | FM Sensitivity (uV) (10-30 dB weighting) | Average Watts Channel, 50-10 kHz | % Distortion @ 1 rated watts | Local/Distance Switch? | Pushbutton? If Yes, Number AM, Number FM | Bass Control? | Treble Control? | Cassette? | B-Tape? | Auto Reverse? | Fast Forward? | Tape Rewind? | Includes Speakers? | In Dash (I) or Under Dash (U)? | Control Switch Spacing, inches? | H x W x D? |
|--------------|------------|--------|-----------------------------------------|------------------------------------------|----------------------------------|------------------------------|------------------------|------------------------------------------|---------------|-----------------|-----------|---------|---------------|---------------|--------------|--------------------|--------------------------------|---------------------------------|------------|
| TENNA CORP.  | 41301      | 119.95 | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | yes                    | 5 AM/FM                                  | no            | no              | no        | no      | no            | no            | no           | I                  | Adj                            | 2x7 1/4 x 5 1/4                 |            |
|              | RR-2017MPX | 199.50 | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     | 5 AM/FM                                  | no            | no              | no        | yes     | no            | no            | no           | I                  | Adj                            | 3x7x6                           |            |
|              | RR-2018CMX | 209.50 | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     | 5 AM/FM                                  | no            | no              | yes       | no      | yes           | yes           | no           | I                  | U                              | 2 1/2 x 7 x 5 1/2               |            |
|              | RR-93MXP   | 99.95  | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     |                                          | no            | no              | no        | yes     | no            | yes           | no           | U                  | U                              | 2 1/2 x 6 1/2 x 7 1/2           |            |
|              | RR-88 T/C  | 79.95  | S                                       | 0.5                                      | 4                                | 10.0                         | no                     |                                          | no            | no              | yes       | no      | no            | no            | no           | U                  | U                              | 2 1/2 x 5 1/2 x 7 1/2           |            |
|              | RR-53 T    | 53.95  | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     |                                          | no            | no              | yes       | no      | no            | no            | no           | U                  | U                              | 2x6 1/2 x 7                     |            |
|              | RR-2004C   | 49.95  | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     |                                          | no            | no              | yes       | no      | no            | yes           | no           | U                  | Adj                            | 2x7x6 1/4                       |            |
|              | RR-2013CMX | 139.95 | S                                       | 0.5                                      | 3 1/2                            | 10.0                         | no                     |                                          | no            | no              | no        | no      | no            | no            | no           | I                  | Adj                            | 2x7x6 1/4                       |            |
| RR-2014MPX   | 129.95     | S      | 0.5                                     | 3 1/2                                    | 10.0                             | no                           |                        | no                                       | no            | no              | yes       | no      | no            | no            | I            | Adj                | 2x7x6 1/4                      |                                 |            |

# Car Speakers

| MANUFACTURER       | Model           | Price \$ (if sold individually) | Price \$ (if sold in pairs) | Recommended Power, Watts | Driver Size, inches? | Magnet Size, D, I? | Impedance, Ohms? | Frequency Response, Hz to 7 kHz, ± 3 dB | Coaxial (C) or Three-way (T)? | Flush Mount (F) or Surface Mount (S)? | Overall Dimensions | Notes |
|--------------------|-----------------|---------------------------------|-----------------------------|--------------------------|----------------------|--------------------|------------------|-----------------------------------------|-------------------------------|---------------------------------------|--------------------|-------|
| L.T.L. ELECTRONICS | CP-63           | 119.50                          | 10                          | 6,3                      | 8                    | 8                  | 40-20            |                                         |                               |                                       |                    |       |
|                    | CP-693          | 119.50                          | 10                          | 6x9, 3                   | 8                    | 8                  | 30-20            |                                         |                               |                                       |                    |       |
|                    | TP-653          | 149.50                          | 10                          | 6,5,3                    | 8                    | 8                  | 40-20            |                                         |                               |                                       |                    |       |
|                    | TP-6953         | 149.50                          | 10                          | 6x9, 5,3                 | 8                    | 8                  | 30-20            |                                         |                               |                                       |                    |       |
| QUAM-NICHOLS       | 30C2528         | 7.85                            | 3                           | 3                        | 2.35                 | 8                  | 200-12           |                                         | F                             |                                       |                    |       |
|                    | 3C328U          | 8.95                            | 4                           | 3 1/2                    | 3                    | 8                  | 180-9            |                                         | F                             |                                       |                    |       |
|                    | 5C328           | 8.80                            | 4                           | 5                        | 3                    | 8                  | 90-13            |                                         | F                             |                                       |                    |       |
|                    | 52C1028         | 13.20                           | 10                          | 5 1/2                    | 10                   | 8                  | 125-9            |                                         | F                             |                                       |                    |       |
|                    | 52C10FEX        | 15.30                           | 15                          | 5 1/2                    | 10                   | 8                  | 75-15            |                                         | F                             |                                       |                    |       |
|                    | 52C10FEXZ4      | 15.30                           | 15                          | 5 1/2                    | 10                   | 4                  | 75-15            |                                         | F                             |                                       |                    |       |
|                    | 69C10FEX        | 17.55                           | 15                          | 6x9                      | 10                   | 8                  | 45-17            |                                         | F                             |                                       |                    |       |
|                    | 69C10FEXZ4      | 17.55                           | 15                          | 6x9                      | 10                   | 4                  | 45-17            |                                         | F                             |                                       |                    |       |
|                    | 69C10FECO       | 29.60                           | 15                          | 6x9                      | 10                   | 8                  | 45-20            | C                                       | F                             |                                       |                    |       |
| 69C30FEX           | 35.75           | 40                              | 6x9                         | 28                       | 4/8                  | 35-15              |                  | F                                       |                               |                                       |                    |       |
| SUMMIT             | Delta Horn QC-5 |                                 |                             | 6x9                      | 20                   |                    |                  |                                         | S                             |                                       |                    |       |
|                    | Delta Horn QC-6 |                                 |                             | 6&1                      | 28                   |                    |                  |                                         | S                             |                                       |                    |       |
|                    | Delta Horn QC-7 |                                 |                             | 6x9 & 1 1/4              |                      |                    |                  |                                         | S                             |                                       |                    |       |
| TENNA CORP.        | BS465L          | 58.50                           | 16                          | 4x6                      | 5.36                 | 488                |                  |                                         | F/S                           |                                       |                    |       |
|                    | BS353W          | 25.12                           | 6                           | 3x5                      | 3                    | 488                |                  |                                         | S                             |                                       |                    |       |
|                    | BS612DW         | 75.95                           | 24                          | 5 1/2                    | 12                   | 488                |                  |                                         | S                             |                                       |                    |       |
|                    | BS55HD          | 37.42                           | 14                          | 5                        | 5.36                 | 488                |                  |                                         | S                             |                                       |                    |       |
|                    | BS54PF          | 33.05                           | 12                          | 5                        | 4                    | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | BS52P           | 16.93                           | 4                           | 5                        | 2                    | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | BS63C           | 25.00                           | 6                           | 5                        | 3                    | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | CPS69RD         |                                 | 60                          | 6x9                      | 10                   | Univ               |                  | C                                       | F                             |                                       |                    |       |
|                    | CD610MW         | 62.29                           | 5 1/2                       | 10.7                     | 488                  |                    |                  | C                                       | S                             |                                       |                    |       |
|                    | CD610MG         | 58.13                           | 5 1/2                       | 10.7                     | 488                  |                    |                  | C                                       | S                             |                                       |                    |       |
|                    | CD615CW         | 71.88                           | 5 1/2                       | 14.7                     | 488                  |                    |                  | C                                       | S                             |                                       |                    |       |
|                    | CD620PG         | 71.88                           | 5 1/2                       | 20.7                     | 488                  |                    |                  | C                                       | S                             |                                       |                    |       |
|                    | CD6930RD        | 97.93                           | 6x9                         | 29.5                     | 488                  |                    |                  | C                                       | F                             |                                       |                    |       |
|                    | TR6920RD        |                                 | 6x9                         | 20                       | 488                  |                    |                  | T                                       | F                             |                                       |                    |       |
|                    | MS350P          | 28.87                           | 2                           | 3                        | 5.36                 | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | MS34WG          | 26.45                           | 2                           | 3                        | 4.45                 | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | MS34CB          | 26.45                           | 2                           | 3                        | 4.45                 | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | MS33W           | 24.15                           | 2                           | 3                        | 3                    | 488                |                  |                                         | S                             |                                       |                    |       |
|                    | BS6918RD        | 83.18                           | 50                          | 6x9                      | 18                   | 488                |                  |                                         | F                             |                                       |                    |       |
|                    | PS69RD          | 69.95                           | 60                          | 6x9                      | 10                   | Univ               |                  |                                         | F                             |                                       |                    |       |

## Directory of Manufacturers

**L.T.L. Electronics**  
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Kent, WA 98031

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Vader, WA 98593

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234 E. Marquette Rd.  
Chicago, IL 60637

**Tenna Corp.**  
19201 Cranwood Pkwy.  
Warrensville Hghts., OH 44128

We inadvertently published the old address for Car Tapes/Jet Sounds in our July Car Stereo Directory. The proper address is 1000 E. Del Amo Blvd., Carson, CA 90746.

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# The column



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**Nether Lands:** Dan Fogelberg  
**Full Moon/Epic PE 34185**, stereo,  
\$6.98.

Dan Fogelberg's music resounds with the creamy California harmonies and often similar Eagle-ized arrangements (as well as sharing managers with the Eagles in Irv Azoff). However, Fogelberg also has something of a light operatic bent which surfaces in the ultra-lush arrangements he also sometimes applies to his songs. Sometimes they even border on Broadway. The title piece, for instance, reminds me of nothing so much as the second half of the *My Boy Bill* soliloquy from the show "Carousel," after Billy wonders, "But what if he is a she?" The soaring orchestra is spine-tingling and Fogelberg's introspective words, which could appear either pretentious or precious, are just plain powerful.

Fogelberg's records sound densely layered, no surprise since Dan is one of the leading overdub artists around.

On nearly every track he plays a plethora of instruments and usually dubs all the harmonies himself. He does it effectively, too, avoiding the obvious trap of sterility. To span Broadway and rock 'n' roll is a neat trick, oft tried and rarely pulled off this well.

Ringing melodies and bright, full sound are a winning formula that Dan Fogelberg has down cold. To his credit he remains emotive musically. His co-workers deserve credit, especially the principals, co-producer Norbert Putnam and engineer John Stronach.

**Nether Lands** is hard not to like. It may not quite match Dan's album **Souvenirs** for immediacy, but it is a more than worthy companion. *M.T.*

Sound: A                      Performance: A-

**Osamu:** Osamu Kitajima  
**Island ILPS 9426**, stereo, \$6.98.

**Osamu** is one of the most exciting records in years. It combines the

traditional Japanese sounds of the koto, biwa, shakuhachi, and other exotic sounds with the thrust of an L.A. modern-fusion band.

**Osamu** is actually composer Osamu Kitajima's second American release. The first **Benzaiten** was released last year on Island's budget label, Antilles (AN-7016), and I recommended it highly. It was one of last year's best and strangest albums.

And **Osamu** is much, much better, a quantum leap. It is better recorded with unusually present bass and the peculiarities of the Japanese instruments and assorted odd percussion sounds captured full-bodied and true. Osamu's music, too, is far more "accessible" in the sense that Weather Report's **Heavy Weather** album is accessible—tuneful as all get out with an insistent, throbbing bass and rhythm backbone.

In the course of the album, Kitajima incorporates environmental sounds to represent the four ele-

ments of earth, air, fire, and water, as illustrated by the thunderstorm sounds that launch *Hear the Rain, See it Fall*.

Of special note is the cameo appearance of Minnie Riperton on *Yesterday and Karma* wherein she sounds absolutely theramin-like, pure-toned and positively unhuman.

At a time when our pop music is finally reaching around the world for inspiration, **Osamu** is one of the truly essential albums of 1977. It is brilliant on all levels, musically both in conception and execution, and technically as amazingly recorded sound. *M.T.*

Sound: A+      Performance: A+

**My Own Way to Rock:** Burton Cummings

**Portrait PR 34698**, stereo, \$6.98.

Burton Cummings' second album of his own should easily keep the boy in hit singles until he issues his third. The long-time voice of The Guess Who again has the very successful Richard Perry as producer, and the album reflects Perry's style very strongly. As with Cummings' first and Leo Sayer's **Endless Flight**, Perry has done his job of getting high quality sound and strong purely pop performances.

There is no doubting Cummings' pipes, they are tailor-made for hit singles. *Got to Find Another Way*, written as a reunion with his ex-mate of The Guess Who days Randy Bachman, is a natural. *Never Had a Lady Before* and *Charlemagne* are two more. The album includes three covers: Bob Seger's *Come On By* in classic rock 'n' roll style, a Righteous Brothers oldie called *Try to Find Another Man*, and *Framed* which is performed true to the original Coasters' version.

In length the album is about one song skippy. The second side contains only four songs and totals barely 15 minutes.

**My Own Way to Rock** is good pop stuff, nothing really substantial, but good fun. *M.T.*

Sound: A      Performance: B

**Black Mountain Velvet:** Jaime Brockett

**Adelphi AD 1028**, stereo, \$6.98.

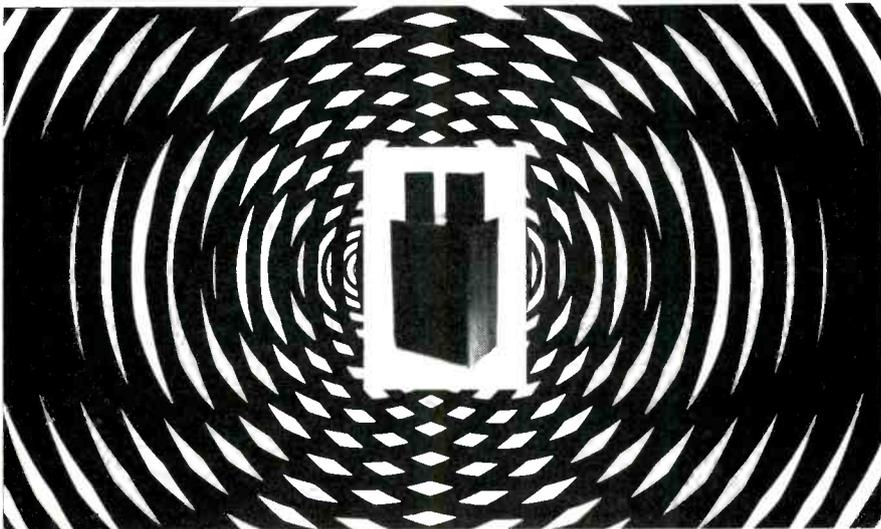
It's been over five years since Jaime Brockett's pair of abortive Capitol albums. They were just badly recorded, no fault to the artist.

**Black Mountain Velvet** is the album Jaime's always had in him. It's also the kind of album the big companies are

not interested in, sorry to say. This time instead of rushing, enough time to get it right was taken. The production is sparkling, showcasing Brockett in many good lights. Wherever support musicians are deployed, they are of stellar quality and playing in peak form. Washington, D.C.'s great bluegrass band the Seldom Scene back two songs. On the second of these Ramblin' Jack Elliott joins in for his rousin' *Just Stopped in To Get a Cup of Coffee*, the album's grand finale. Earlier on Jack and Jaime duet on the mournful *South Coast*. Dulcimer whiz

Kevin Roth, himself an artist with several Folkways albums, plays on another two cuts, one of them an absorbing suite for two dulcimers. Jaime gets several solo shots, too. His version of Brian Bowers' *Lost My Stash*, accompanied on autoharp, rings true; the song is both funny and right. Jaime's album has been more than worth the wait. He has matured impressively. These days he sounds like someone I'll be listening to for a long time. *Michael Tearson*

Sound: B+      Performance: A-



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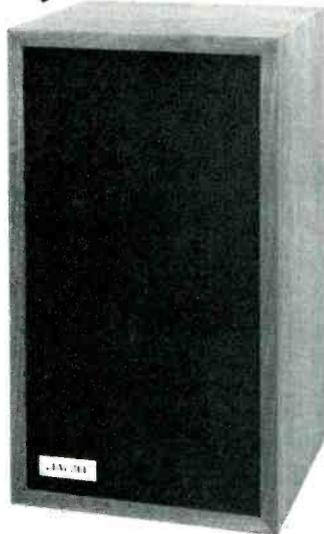
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Again: Greg Kihn  
**Beserkley BZ-0052**, stereo, \$6.90.

Considering he's on a so-called New Wave record label, Greg Kihn is pretty commercial; he writes strong tunes, sings well, covers hits of the past, and gets a well-produced sound on record. One could imagine him selling records far easier to Peter Frampton listeners rather than your average safety-pin-through-the-ear Sex Pistols fan. With his second album, produced in sterling stereo by Matthew King Kaufman & Glen Kolotkin, he lives up to whatever promises mid-Sixties pop has in America's present musical scene.

He's got some limitations—the cover songs are all fairly bland and Kihn isn't the most consistent writer in the world—but when he comes through, like in the stunning *Hurt So Bad*, he's irresistible. The band plays well, particularly guitarist Dave Carpender whose riffs extravagantly beef up each track. There's at least two strong contenders for a single here, and I hope they exercise their option to make hits of them, for they're as deserving as Abba or even Hall & Oates of chart action.

J.T.

Sound: A

Performance: B

174

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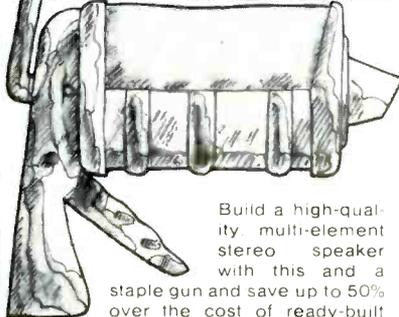
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**Chords of Fame:** Phil Ochs  
**A&M SP 4599**, two discs, stereo, \$6.98.

Suffice to say that this album was done with considerable love, assembled by Och's brother Michael, and extensively documented by Ed Sanders' excellent liner notes.

There is a disc of the best Elektra records with the addition of *Here's to the State of Richard Nixon* and the electric version of *I Ain't Marchin' Anymore*. The second disc covers the later A&M material very well, including the non-hit *Outside of a Small Small Circle of Friends*. There are two tracks from the Canadian release **Gunfight at Carnegie Hall**, along with *The Crucifixion* which was not included in the original. For his under-rated and now out-of-print **Greatest Hits** album comes *Chords of Fame*, the revealing *Jim Dean of Indiana*, and the prophetic *No More Songs*.

The proceeds will go exclusively to Phil's survivors. The album is a fitting and poignant tribute.

M.T.

Presentation: A+

**Double Time:** Leon Redbone  
**Warner Brothers BS 2971**, stereo, \$6.98.

Leon Redbone's first album **On the Track** was one of 1976's surprise hits.

AUDIO • October 1977

**Double Time**, the follow-up, is simply wonderful. With a full year to think about sound and material, Leon and producer Joel Dorn have crystalized the peculiar Redbone recorded persona much more fully. Where **On the Track** was often reminiscent of the Chuck Jones Looney Tunes cartoon the cover was based on, **Double Time** more nearly resembles the earlier Betty Boop cartoons of Max Fleischer, who regularly used the likes of Cab Calloway for the cartoon soundtrack music.

Most animated on **Double Time** is the one-man *tour-de-force* version of *The Shiek of Araby*, on which Leon plays ferocious guitar and sings like one of the blustering Goons of the early Popeye cartoons. Other standards, refurbished in new/old clothes, include *Melancholy Baby* (a natural), *Diddy Wa Diddie*, *Shine on, Harvest Moon*, and *Jelly Roll Baker*.

Among the surprise guests this time out are Yusef Lateef with some beautiful soprano sax on Jimmie Rodgers' *Mississippi River Blues* and the Dixie Hummingbirds for the finale *If We Never Meet Again This Side of Heaven*. The great New York sax player Al Cohn contributes three characteristically good horn arrangements and William Fischer three string arrangements.

With someone as special as a Leon Redbone and his one-man time warp, the record's production job can make or break the effect. Joel Dorn did well the first time and much better this time, using sound effects most effectively and cleverly. Since Redbone himself already sounds like a scratchy old 78, Dorn has tried to recreate that sound. The sound thus is deceptively good, making **Double Time** wonderfully iconoclastic. With Leon Redbone, can you ask for an iota less? *M.T.*

Sound: A — Performance: A

**Even In The Quietest Moments:** Supertramp

**A&M SP 4634**, stereo, \$6.98.

And you thought Supertramp was a progressive rock group! This album is more heavily crafted for the singles charts than the latest Barry Manilow, James Taylor, and Bay City Rollers combined. They produce themselves (with the aid of ace mix-master Geoff Emerick) in a way that's absolutely irresistible for its sonic value alone. The songs themselves are catchy, but the way they pump the hooks in this one you know where they're aiming at, and it's a successful effort in this respect. You could put this record up

against a George Harrison or a Cat Stevens disc, and this would probably sound very similar in terms of overall production and type of songs.

I have two small complaints, the first being that the album gets a little slow at times. The second, and probably more rhetorical of the two, is why do they maintain the guise of a group, this duo who write all the songs, sing, and do a large degree of the instrumentation? Well, who's to say what arrangements work the best in these situations, but I doubt whether a singer/songwriter act peddling these records would be so appealing

to the FM Waves, but it doesn't much matter—this is a fine record. *J.T.*

Sound: A — Performance: A —

**Piper**

**A&M SP 4615**, stereo, \$6.98.

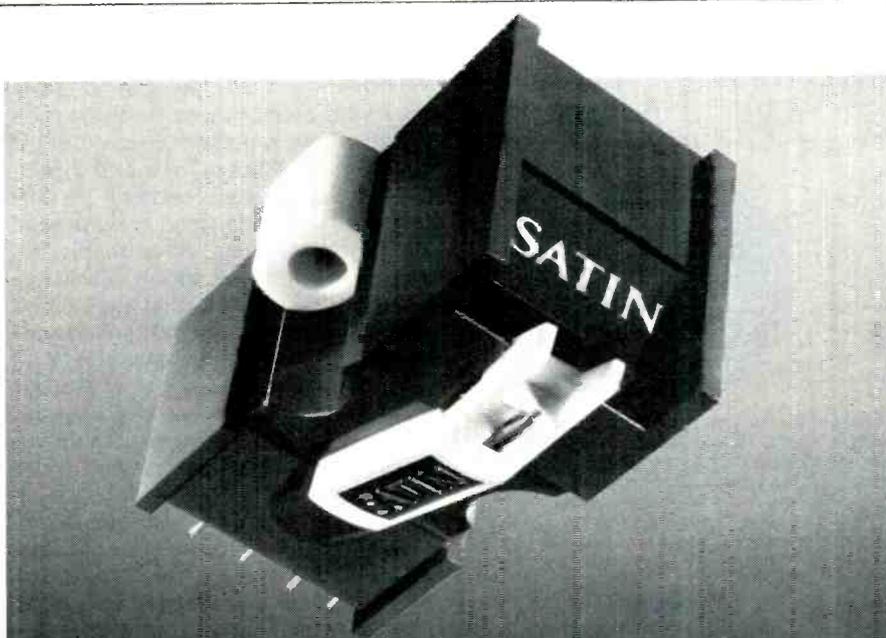
**Lone Star**

**Columbia PC 34475**, stereo, \$6.98.

**Cheap Trick**

**Epic PE 34400**, stereo, \$6.98.

After a paucity of what is termed heavy metal rock, the surge is on. Three bands amply amped and each with its proper share of decibels, these are the sons of the six-



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**High Fidelity, September '77**

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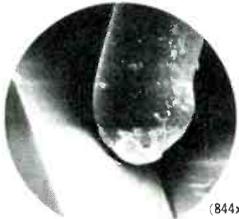
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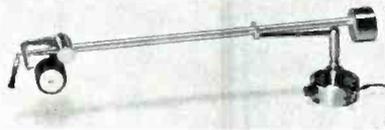
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ties/seventies sounds with the technological advantage of the 1977 studio and the contemporary producer. These are the new artists of the seventies; no musician on any of these albums has ever been in the limelight before, but chances are that all three of these groups will be in the public eye for a good period of time, inheriting the audiences that Kiss, Aerosmith, and the like have already garnered. That's progress for you, I suppose.

Actually, in all fairness, there is a progression here. For unlike the aforementioned groups, these can actually play, sing, and they write with a high degree of ability, and their attractions are less of a studio creation. Whether each will be able to attain the commercial successes set by their predecessors is yet to be seen, but my guess is that Cheap Trick and Piper's Billy Squier will most certainly be able to command good sized audiences of their own. Lone Star will probably mature to a distinctive sound within the next two records, so that they won't have to be a second-rate group very long, since all the raw material is here.

Let's take these one by one, though. Piper is the band fronted by Boston's Billy Squier, a mannered singer, a more than able guitar player, and a fine songwriter who is obviously fond of The Rolling Stones and Queen. His *Out of Control* and the very Big Star-influenced *Who's Your Boyfriend* (portions of which being lifted almost directly from *September Gurls*) are outstanding, and the remainder of the album fluctuates greatly depending upon the strength of Billy's performance. Unfortunately the rest of Piper are as much a band as a metronome is a drummer; they adequately keep time and back Squier, but never do they propel either Squier or the songs themselves to anything past a perfunctory level. The rhythm section is at best average, and the two additional guitarists add nothing musically so much as a sonic density. I fear that Billy's career with Piper will be much like Fran Tarkenton's with the N.Y. Giants, and he will only be able to scramble for the big ones when he gets a front line that can help dish out the plays—Piper's debut album is a good one, but considering Squier's abilities, it should have been as strong as they come, which it isn't.

Cheap Trick is more of a group, than the front-man-with-band approach, and the unified effort shows its advantages. The group's sound, while not incredibly original, does possess a great deal of appeal, spunk,

and personality. They've got their Beatles debts to pay, and they sound more like a bunch of limeys than Chicagoans, but they're exciting and not too cute. They can play, they look good, and they do have a singular identity which will no doubt go over well with the masses. There isn't a bad song on the album, not even a bad moment really—which is very surprising for a record produced by Jack Douglas who has unleashed such wonderful creations upon the world as the tedious Arrowsmith and Patti Smith's misproduced *Radio Ethiopia*. I'm genuinely impressed with Douglas' ability to bring out the best of Cheap Trick, rather than bury them in a cacophony of guitars, and I doubt that the group will have any trouble leaping to the top.

On the other hand, if Lone Star achieves more than a moderate degree of success I will be a bit worried. This is what used to be called a formula band—take a dash of Led Zepelin and Queen, two pints of Bad Company's vocals, a liberal degree of Yes' keyboards and backing vocals, mix them all together with producer Roy Thomas Baker (of Queen & Be Bop Deluxe note) as the concertmaster, and you get Lone Star. If there was a synthesis here, it could all be made worthwhile, but instead it lacks an identity of its own—it resembles all the above bands at any given time but rarely is a distinctive Lone Star sound to be found here. It's fairly conventional stuff, with all the licks and sounds you've already heard, not unpleasant but nothing to grab you. The only real creativity is to be found in the production, which is superb and in its subtlety steals the spotlight away from the band. There may be original talent here, but it lies disguised by the conservatism of the record.

Three records, all debut LPs by groups which will probably be fairly visible in the next few years. Take your pick—Piper for the new great artist complete with his flaws, Lone Star if you want to hear something you've heard before, or Cheap Trick if you want a moderately outrageous hard rock outfit that's relentless if nothing else. J.T.

### Piper:

Sound: B Performance: B

### Lone Star:

Sound: A Performance: C+

### Cheap Trick:

Sound: B+ Performance: A-

# Folk bag

Tom Bingham



**Snowfall:** Banjo Dan and the Mid-Nite Plowboys

**Fretless 109**, stereo, \$6.98.

**No Curb Service Anymore:** Pine Island

**Green Mountain GMS 1052**, stereo, \$5.50.

Vermont is hardly a state famous for bluegrass, even if the Green Mountains are an extension of the Appalachians. These two albums, however, introduce a pair of promising "newgrass" bands from the North Country, both of whom approach the music from a fresh perspective.

Banjo Dan and the Mid-Nite Plowboys have developed their own recognizable sound based, it would appear, on the Country Gentlemen. Dan Lindner's banjo has a unique timbre, with a soft-focused, non-metallic ring. His style is seemingly based on Eddie Adcock with some Bill Keith thrown in for good measure. Dan's mandolinist brother, Oat Willy, displays an uncharacteristically gentle touch, admirable dexterity at top speed (*Sweetie's Gone To Boston* and *Snowstorm*, though he becomes confused on *Barnaby's Tune*), and no lack of inventive melodic ideas (hear *Danny on the Dirt Road* and *Willy's Lament* for examples).

All 14 songs were written by members of the band, many of them in a contemporary-folk vein (particularly Dan's *Song for a Friend* and Big Al Davis' *Wood Heat* and *Rumford*,

*South Dakota, Is No More*), while others adhere closer to bluegrass formulae (*She's Mine, All Mine* and *Doreen, My Bluegrass Queen* among them). Quite frankly, the songs and instrumental work are far superior to the lead singing, which lacks both personality and color. The harmony vocals, though, are carefully worked out and well-sung in *Willy's Lament* and *To the Guitar Player*. On the whole, **Snowfall** is an auspicious debut, held back only by the characterless lead singing.

The recording is respectable, though hardly outstanding. Davis' rhythm guitar lines are obscured at times, but the lead instruments and vocals are effectively balanced. Available from Philo Records, Inc., The Barn, North Ferrisburg, VT 05473.

Pine Island is a vastly more eclectic band, gadding about between old-time fiddle tunes (the familiar *Katy Hill* and the far less familiar *President Garfield's Hornpipe*), country swing (Bob Wills' *Stay All Night*, Hank Williams' *Mind Your Own Business*), mainstream country (*Lovesick Blues* and *When My Blue Moon Turns to Gold Again*, Wiley Walker and Gene Sullivan's sole claim to musical immortality), and straight bluegrass (Lester Flatt's *I'll Stay Around*, Jimmy Martin's *Walkin' Shoes*). Somehow they've also found time to pen some creditable originals, the best being bass player James McGinnis' jazz-folk

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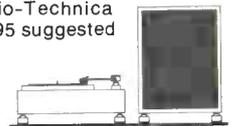
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*Gin and Moxie* (reminiscent of the Kingston Trio's *Scotch and Soda*) and Gordon Stone's chromatic banjo specialties, *Django's Banjo* and *Pine Island Breakdown*.

Fiddler David Gusakov (hear his Stephane Grapelli-isms on *Gin and Moxie* and his swing licks on *Mind Your Own Business*) has the makings of a top-notch improviser, but he falls back on clichés a little too often. Dobroist Dan Mahoney has some good ideas in a style combining Pete Kirby and the innovations of Mike Auldridge, but he lacks the clean technique needed to really pull them off. Stone is the most impressive picker, with many original concepts (especially hear *Django's Banjo* and his break on *When My Blue Moon*), but a tendency toward carelessness in spots.

The singers have better voices and more *pinache* than Banjo Dan and Co., but they suffer from a severe case of first-album jitters (note Susan Longaker's nervous rendering of *Blue Night*, for one). While I have little doubt that Pine Island can be dynamite live, they fail to coalesce on this album. Still, it's an enjoyable record, with lots of variety and several impressive moments.

The recording captures the fiddle and dobro quite closely, but the mixing separates the front line from the rhythm section too much for my taste. Ticks and scratches also mar the quieter moments.

Available from Green Mountain Records, Garvey Hill, Northfield, VT 05663.

#### Banjo Dan

Sound: B — Performance: B

#### Pine Island

Sound: B — Performance: C+

#### From a Northern Family: Dudley Hill Voyager VRLP-317-S, stereo, \$6.98.

In the 15 years since Doc Watson began translating traditional fiddle tunes into flat-picked guitar show-cases, bluegrass and old-time guitar-ists have been battling it out to determine who's the fastest, flashiest, and most vehement of all. Consequently, flat-picking has degenerated from a folk artform into a craft in which manual dexterity and showy virtuosity count for more than personality and feeling.

Now along comes Dudley Hill who promises to change all that by adding subtlety, along with a dash of elegance to a much-abused technique. His tone is light, at times delicate, his

attack is crystalline and understated, and his approach is flexible, allowing him to achieve a versatility even beyond that of Norman Blake. Many of the tunes on **From a Northern Family** will be familiar to followers of North-western U.S. and Canadian traditional music, but the arrangements heard here are both novel and intriguing.

The 16 tracks fall into six general categories. The opening *Leather Britches* might be called a typical flat-picking solo. Four tracks—*Spotted Pony* and *Cotton Patch Rag* stand out—are in the light-footed Texas style associated with guest artists Benny and Jerry Thomasson. Benny's bowed fiddle and Jerry's bouncy guitar rhythm are perfect mates for Hill's pliant lead.

*Buffalo Gals* and *Weber's Drift*, with Ellen and Jeff Thorn of the Old Hat Band, a mock serious stringband, are in the old-timey style with equal emphasis on Hill's guitar and Ellen's claw-hammer banjo.

*Off She Goes to Jig* and *St. Anne's Reel* are played Canadian style with distinctively ornamented Western Canadian fiddling by Frank Ferrel, tasty harmonica by Mark Graham, and a tough, strong piano accompaniment by Ellen Thorn.

*Fisher's Hornpipe* and *Whiskey Before Breakfast* find Hill in the company of a Northwestern string band, Tall Timber, built around the twin fiddling of Vivian Williams and Barbara Lamb. The last cut on each side might be dubbed Northwestern Swing style with Barbara Lamb on fiddle and Scott Smith on piano. Their *Panhandle Rag* sounds a bit unsure, but Hill's guitar is certainly hot enough.

**From a Northern Family** should prove an eye-opener for guitarists, and a jaunty little gem for other listeners as well.

Hill's lead guitar is closely recorded and crystal clear, and the other rhythm instruments come off well also, with the exception of the twin fiddling numbers which sounds a bit distant. However, there is a bit of surface noise on the disc, and there is unwarranted distortion to both the fiddle and bass on *Bitter Creek*.

The record is available from Voyager Recordings, 424 35th Ave., Seattle, WA 98122.

Sound: B — Performance: A —

### The White Brothers (The New Kentucky Colonels)

Rounder 0073, stereo, \$6.98.

Any release of previously unheard work by the late Clarence White is a

godsend. This release was recorded only a few months before his tragic death in 1973. There had been a tour of Sweden with brothers Roland and Eric White and long-time compatriot Alan Munde. In this set, the Colonels are at the very peak of their talents, playing some of the best, liveliest bluegrass heard in a long time. Hot instrumentals include standards like *Rawhide*, *Sally Goodin*, and *Soldier Joy*. The music always strikes close to the heart. The tour must have been a gas. Clarence is especially exuberant playing his first big dose of bluegrass, his

very favorite music in the whole world, and for the first time since he had been a member of the Byrds.

There are occasional annoying buzzes which apparently were a part of the masters, but for the most part the sound is surprisingly good. It captures the nuances of the acoustic instruments, especially the bass, very well indeed. **The White Brothers** is one damn fine bluegrass record.

Michael Tearson

Sound: B

Performance: A

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Volume 1, Number 2 March/April 1977

# The Audio Critic

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- We further explain our philosophy.
- We conclude our preamplifier survey (as much as it will ever be concluded), with special attention to the moving-coil scene and to previously untested units. Final recommendations are made.
- We bravely confront the almost invincible ignorance surrounding loudspeaker bass response and review some of the newer subwoofers.
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## Come By The Hills: Bill Clifton County 751, stereo, \$5.98.

Bill Clifton was an influential figure in the late 50s and early 60s, one of the first bluegrass artists to use a polished, urbanized perspective. A resident of England in recent years, Clifton makes a triumphant return on **Come By The Hills**, his first new American album in well over a decade.

Clifton is backed by an all-star band, making this session a picker's delight. Kenny Baker is the premier bluegrass fiddler, with a half-dozen County albums to his credit, as well as an excellent reputation earned through many years as featured sideman with Bill Monroe. John Duffy and Tom Gray play mandolin and bass, respectively, with the Seldom Scene, while mandolinist Red Rector and banjoist Walter Hensley are featured recording artists in their own right. Mike Seeger is a surprise addition on autoharp and guitar; though he's probably the most widely-known of the old-timey revivalists, he's rarely heard doing bluegrass.

Clifton's sturdy, controlled baritone has softened slightly into a thoughtful contemporary-folk voice, particularly suited to balladic material, such as the title tune, with its sensitive fiddle obligato and jingling mandolin fills, and *Going Down The Valley*, with its silky vocal trio on the chorus. Yet he sings equally well on the older-style, 1940s-flavored tunes, from the repertoires of such standard bluegrass sources as the Bailes Brothers, the Delmor Brothers, and Roy Acuff, as well as an old Ernest Tubb song, *Blue Eyed Elaine*.

Seeger's use of the autoharp, an instrument hardly ever used in bluegrass, adds a unique fullstrum texture to *Little Poplar Log House On the Hill*, and a first-rate lead voice on the album's two instrumentals, *Mark's Tune* and *Going To Scotland*. Baker's smooth, effortless fiddling is superb on *Mark's Tune* while his jazzy solo riding out the end of *Fast Express* is required listening for aspiring bluegrass fiddlers. Hensley, whose high-pitched accompanying lines are always noteworthy, shines on *I Love You Best* and *There's a Little Pine Log Cabin* (which old-time gospel fans should especially enjoy). Tom Gray does a marvelous job of pulling the ensemble together on *Little Poplar Log House* and *Fast Express* spotlights some of the finest bluegrass bass in recent memory.

This is one of the first County albums I've heard in true stereo, and for a small-label recording, it's impressive. The mandolin, guitars, and

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autoharp have a nice, crisp upfront sound, while the ensemble sound is balanced so that everyone except Baker is heard to maximum effect. The singing is sometimes too trebly for my taste (and occasionally echoed), while Baker is a bit distant when not soloing.

Available from County Records, P.O. Box 191, Floyd, VA 24091.

Tom Bingham

Sound: B— Performance: A

**Battle of the Field:** Albion Country Band

**Antilles AN 7027**, stereo, \$4.98.

**Selections:** Dave Swarbrick & Martin Carthy

**Antilles AN 7041**, stereo, \$4.98.

**Airs and Graces:** June Tabor

**Antilles AN 7043**, stereo, \$4.98.

**The Well Below the Valley:** Planxty

**Antilles AN 7042**, stereo, \$4.98.

These four albums represent the British folk contingent of the third Antilles release package, and every album is a superlative one.

The Albion Country Band existed briefly in 1972 and 73, and their sound was electric folk in the best Fairport/Steeleye tradition, amplification with class. The material in **Battle of the Field** is all traditional with the exception of two Richard Thompson songs, *Albion Sunrise* and *The New St. George*. The rest of the album includes balladry and dance music. As one of the most traditionally oriented electric bands, the Albions would surely have flourished had the band survived. The delayed release of **Battle** is, thus, even more than welcome.

**Selections** is a collection of traditional jigs, reels, and ballads. The instrumentals are dazzling, while the ballads tend towards the grisly with such as *The Bloody Gardener*, *Lucy Wan*, and the horrific *Long Lankin*, which Steeleye Span later recorded in a somewhat different form. **Selections** is a challenging and rewarding effort.

June Tabor has recently emerged as one of England's finest female folk singers. **Airs and Graces**, her first solo album, is a dramatic collection. June's version of the oft-recorded vampire ballad *Reynardine* is one of the scariest. Eric Bogle's song *The Band Played Waltzing Matilda* is a chilling and sorrowful portrait of the permanently wounded soldiers returning home to Australia from World War One and the ironic hoopla that ensued. *Bonny Mae*, *Young Waters*, and *Waly Waly* are a trio of Child ballads while the rest, with the exception of

John Tams' song *Pull Down Lads* about a carnival leaving town, are all from traditional sources. The backings are minimal, and sensitively played by Nic Jones and Jon Gillespie. June Tabor is a singer of uncompromising honesty and power.

Planxty was an Irish band with great charm and wit, and **The Well Below the Valley** is the second of the three albums they released before disbanding, and their best. It is a collection of Irish dance tunes, jigs, reels, and hornpipes. While there are some somber themes, the overall tone is

joyous and bright, certainly the happiest album of the group. The two entirely different versions of the song *As I Roved Out* is a fascinating bit of folklore. The album is highly recommended.

Michael Tearson

Sound: A Performance: A to A+

**Alvin Crow and the Pleasant Valley Boys**

**Long Neck NR 6751**, stereo, \$6.98.

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revival is the tendency of new wave swingers to incorporate later country developments (usually Texas honky-tonk) into their overall approach. In most cases, this consists of an artist performing Western Swing and honky-tonk songs side-by-side.

What emerging Texas-idol-to-be Alvin Crow is developing, however, more closely resembles a genuine fusion of Western Swing with honky-tonk. In addition, unlike the original Western Swing bands, who were directly affected by the jazz and blues around them, the black-music influ-

ences in Crow's music sound as if they came second-hand, having been absorbed via the early Western Swing bands (Bob Wills in particular) and Texas music in general. The result can be heard on *Chains On Me* and *I Just Dropped By To See the Show*, which are, in effect, honky-tonk songs supported by a honky-tonk rhythm section with a honky-tonk dance beat, but which employ the fiddle and steel-guitar conventions more closely associated with Western Swing.

To be sure, Crow also does out-and-out swing tunes like *Dynamite*

*Diana*, with its quasi-big-band riff, facile jazz guitar and fiddle obbligati, and crisp John Holly drumming; and *That's A Touch I Like*, with a hot fiddle solo by the late Jesse Ashlock (featured soloist with Bob Wills during the "Golden Era") which shows that Ashlock still retained his bluesy-jazz touch during his last months. Yet even these cuts are not without an unmistakable aura of honky-tonk. The album's funkier cut, though, is a rockin' alley blues called *Nyquil Blues*, with clever Herb Steiner lyrics, Jordanares-flavored backing vocals, biting harp, and a Carl Perkins-style vocal that could easily have been a product of Sun Records in the mid-50s.

Crow has a pleasant baritone voice, with an odd manner of phrasing, as if he were rolling the words around in his mouth before singing them. His fiddling is silk-smooth, dripping with sweet-toned feeling in a Jesse Ashlock-inspired vein, but with shades of Cajun fiddling on *Fiddler's Lady* and *Rearview Mirror*. Alvin's brother, lead guitarist Rick Crow, plays in a taut, swift-picking manner that's as much rockabilly as Western Swing, while Herb Steiner is a superlative steel player who combines curt single notes and double-stopped glissando lines (hear *Dynamite Diana* and *Foolish Faith*). The other principal soloist, harp blower Roger Crabtree, is somewhat reminiscent of Mickey Raphael as his style is neither purely country nor purely blues, but has elements of each. Crabtree, however, is much gutsier, his harp serving as a saxophone-substitute on *I Just Dropped By to See the Show* and *That's A Touch I Like*.

The rhythm section never falters, with bassist Smoothie Roller keeping a solid dancehall beat moving at all times. Rhythm guitarist Bobby Earl Smith is the least audible Pleasant Valley Boy, but his springing bounce is crucial to the Bob Wills-Johnny Gimble "swing hoedown," *All Night Long*, with fluent jazz breaks by the soloists.

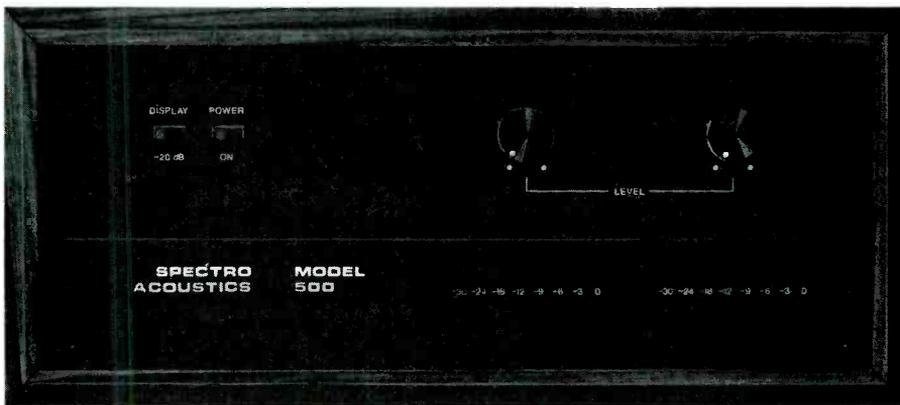
Crow's vocals are slightly echoed (purposely exaggerated on *Nyquil Blues*). The instruments have been recorded and mixed very well, though Crow's fiddle might have been better spotlighted had it been mixed separately from his singing.

Alvin Crow will be a major-label star before long, but for now you'll have to order this album from Long Neck Records, 6004 Bull Creek Road, Austin, TX 78757.

Sound: B+

Performance: A

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# Classical reviews



**Glenn Gould Plays Bach/The English Suites complete. Columbia M2 34578, two discs, stereo, \$13.98.**

Glenn Gould continues as the arch-example of the pure recording artist—who will not play at all in live public concerts, nor has these numerous years. He has proved his aesthetic point marvelously well. His entire mature output, as a genuine pianistic genius, is to be found on records only and he stands or falls in the musical world (not counting those who do not listen to records!) by his recorded output. That output is impressive, if still occasionally on the eccentric side. Far less than in his concerts, back years ago! He is, in fact, much more satisfactory on discs, just as the medium is more satisfactory to him.

Here we have Bach on the piano, which increasingly is a thing not to be done according to current musical fashions. And yet, still, a few fine artists, Gould included, do record Bach piano and transcend fashion with the beauty of their music. It is an admirable thing to do! And it inspires those countless lesser pianists who struggle with their Bach on that instrument because it is there, because their piano teachers play it—and because the alternatives, harpsichords, clavichords, are costly, impractical, and difficult to learn.

What struck me as extraordinary in this recording (and its close compan-

ions, the French Suites, M 32347 and M 32853) is the sense of contemplation and intimacy which Gould gets into the music—exactly the sense in which the supreme personal instrument of Bach's day, the clavichord, produces its own Bach, so faintly that it is inaudible across a room but full of subtleties of a sort impossible on the louder, brasher, more public harpsichord. This *is* clavichord playing, transferred imaginatively to the piano. And, I suspect, somewhat literally too—there are curious twangy staccato notes in Gould's playing that directly suggest the sound of the clavichord. I recently made a direct radio comparison, by "phonomontage" between Gould and a clavichord recording of the same music (Thurston Dart), to quite revealing effect. One begins to suspect, after awhile, that Glenn Gould is not nearly as eccentric, and a great deal more authentic, in his Bach than most listeners think. Very profound and interesting interpretations.

Only one caveat. Don't think that Columbia has yet been able to solve the problem of the Gould humming! He still sings along, very audibly, and no ingenuity of mike placement has screened the singing from the piano. (Well, whoever does Gould's actual recording, and wherever. I wouldn't know.) Not a bother once you get used to it.

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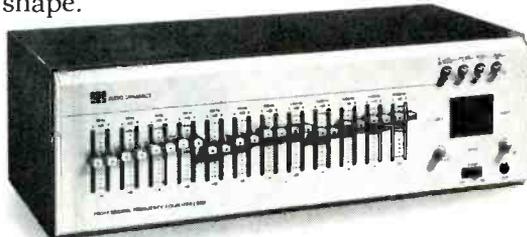
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**Jeanne-Marie Darré Plays Chopin—The Four Scherzi; Nocturne in D Flat. Vanguard Cardinal VCS 10122, stereo, \$3.98.**

Chopin may have been Polish and much is made of his Polish nationalism, but the fact is that he left his homeland as a teenager and spent most of his years in France; therefore in many profound ways he is basically a French composer. What better, then, than a performance in the French tradition, right from the source, by France's outstanding woman pianist of the older generation? She has made a splendidly communicative and unusual recording.

It is *different*, her Chopin, almost unsettlingly different if you are reasonably familiar with the music. After all, the "norm" for Chopin playing today derives about equally from two very non-French sources, the German-Hungarian school of Central Europe and the Russian-Polish—a new Poland of recent times. Take, say, Artur Schnabel as a typical example of this last; it is his deftly thundering kind of Chopin which has dominated our listening. A thousand, a million young pianists still pick up this dual tradition, melded into "the" Chopin we know.

No, you can't say with finality, *that* passage is pure French, this one isn't. But the over-all sound is curiously unlike the expected (as we expect it) and the more interesting for it. The somewhat craggy and powerful Darré personality has to do with it, a masculine force but a very feminine emotional drive. At first you may think she is erratic and uneven—no, no! Marvelous control, the better to allow for Romantic freedom.

**Beethoven: The Five Sonatas for Cello and Piano.** Daniel Shafran, Anton Ginzburg.

**Odyssey/Melodiya Y2 34645**, two discs, stereo, \$7.96.

In spite of their names, these are two Russian-born and Russian-trained musicians in the top echelon. As seems to be normal policy these days, Columbia puts them on the low-price Odyssey label merely because they are not known here as international-type celebrities. Probably don't cost as much. So much the better for our wallets!

Curious cello playing—excellent in every respect except for one oddity, a very tight and fast cello vibrato of a sort seldom heard in Western Europe and America. If you don't mind this, you'll find some excellent Beethoven here, especially in the lively and pow-

erful Ginsburg piano (no vibrato). In fact these Sonatas were mainly of the type featuring the keyboard part, with the cello in a moderately subordinate position.

The recorded sound is the best Russian product, but the cello is rather close, in "ye olde style," with the piano somewhat in the background, which throws the musical balance out—but it's not hard to live with, even so.

**Chabrier: Complete Orchestral Works.** Orch. of Radio Luxembourg, de Froment.

**Vox Turnabout QTV-S 34671,** stereo/QS, \$3.98

Another in Vox's useful and entertaining "complete" collections, always interesting despite some inevitably negative aspects in the less familiar music. Chabrier is one of those "one-work" composers—the ultrafamiliar and lovely *Espana*, one of the earliest in the long series of piano and orchestral evocations of the Spanish mood. *Espana* is here, though not first. Also such unknown works (outside France, that is), as the Overture to the opera "Gwendoline", supposedly Wagnerian in tone—maybe so but who cares now?—and an elaborate *Fête Polonoise* from "Le Roi Malgre Lui", also *Joyeuse Marche*, *Danse Slave* (no—not the Danse Slave), a Habanera, and a Suite Pastorale.

Not very impressive as we listen now, because the style is for our ears dated—musical effects that perhaps were new and electrifying in the late 19th century France now seem merely commonplace. Chabrier is not big enough to rise above that stigma—or so my non-French ear says. However, in France, which is a very special corner of the world, Chabrier is one of the recent musical Gods, inspiring all sorts of subsequently devoted followers, from Debussy to Milhaud and Satie. We must keep in mind that after 1871 and the defeat by Prussia, France was in a very bad way, Germany was in the ascendant, politically and artistically, and the French had all they could do, and still have, to keep up their sagging morale. One way was to exalt the local celebrities, while somehow omitting the names of those from outside, especially Germany. Richard Freed faithfully reflects this understandable French attitude in his program notes.

The Luxembourg players, normally excellent under de Froment, seem under rehearsed here (new music to them too?) and not too coherent. Dead acoustics do not help them either.

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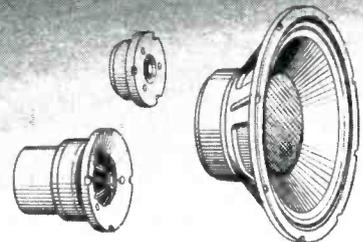


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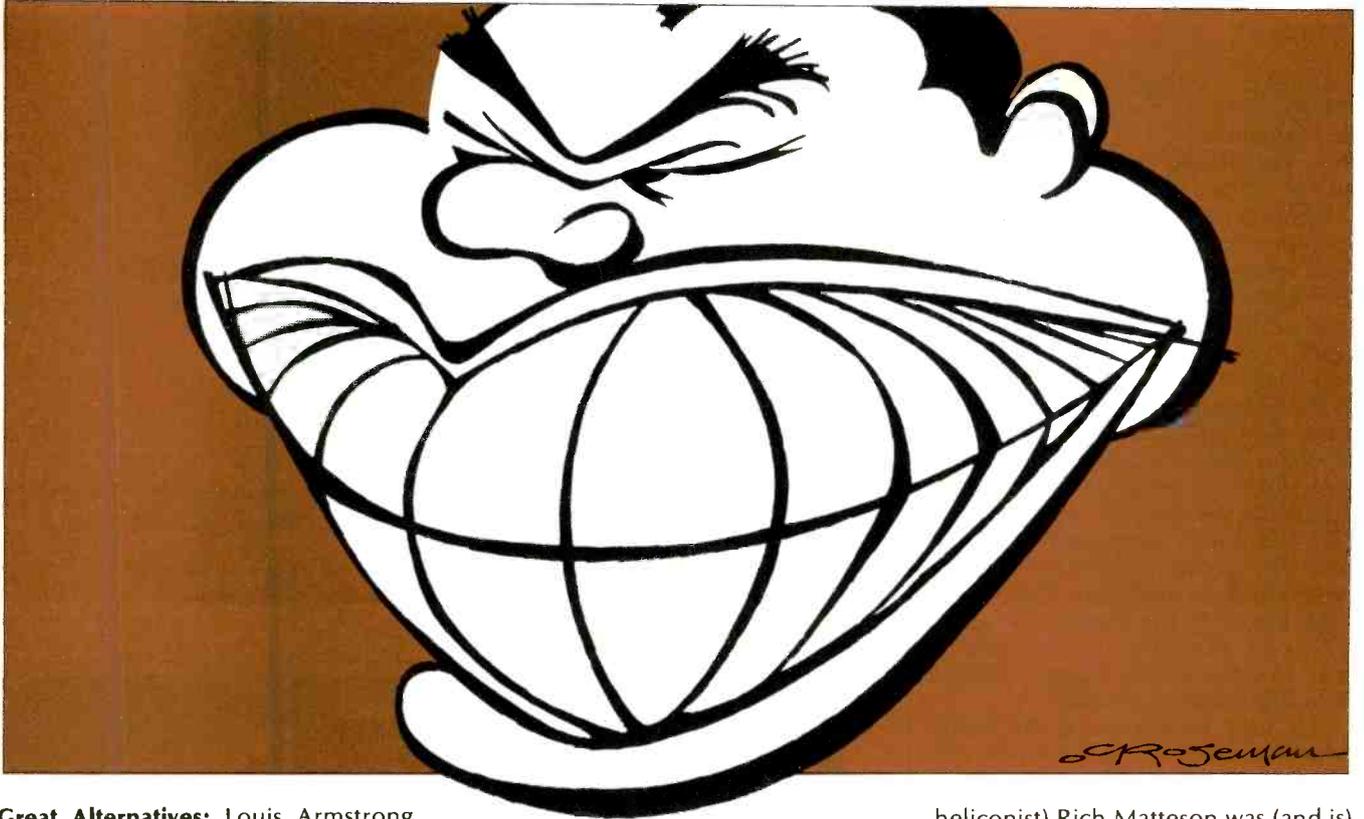


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# Jazz & blues



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**Great Alternatives:** Louis Armstrong and the Dukes of Dixieland. **Chiaroscuro CR 2003**; stereo; \$6.98.

The discovery of alternate "takes" of performances by great soloists is one of the joys of jazz record collecting. Producer Hank O'Neal found enough such material in the files of Audiofidelity by the greatest of all jazz improvisers to put together an entire album of alternate versions of the tunes recorded in 1960, in an unlikely but happy musical encounter.

Despite their commercial success, the Dukes were never a great traditional jazz band (though they eventually became a pretty good mainstream group). But they were able to offer Louis Armstrong something that his rather tired All Stars of the time could not muster up, spontaneous enthusiasm. Combined with their unabashed veneration for the master, and a repertoire that steered clear of his own workaday material, this provided an inspirational setting. Fortunately, Louis was in great physical form as well.

Thus, the original album was,

despite the shortcomings of the rhythm section, an excellent sample of late Armstrong. This compilation, in some cases put together from two or more unissued "takes" of individual selections, is even better, because the music is more spontaneous.

It could go without saying that Louis dominates. He is full of fire and high good humor (the vocal on *Avalon* is almost ecstatic), and his brilliant sound is marvelously captured. There are also moments of contrasting seriousness, as on the solemn *Closer Walk With Thee*. And on *Limehouse Blues* Louis proves that at a time when too many who should have known better were patronizing him, he was still far ahead of the pack.

The late Frank Assunto was a very nice trumpet player, and he plays as loving a second to Louis as the master once did to King Oliver. In Jerry Fuller, the Dukes had a polished and musicianly clarinetist in the Goodman mold, and tubaist (or, to be precise,

heliconist) Rich Matteson was (and is) a virtuoso performer.

The record will be even more enjoyable to those who own the earlier versions of these pieces, but it stands securely on its own merits as a slice of prime late Armstrong. A companion release, **Louis Armstrong: Snake Rag (Chiaroscuro 2002)**, culled by the same method from the **Armstrong Plays King Oliver 1959** Audiofidelity session with the All Stars, is not as satisfying, though it has notable moments, among them the previously unissued *New Orleans Stomp*. Man for man, the All Stars were probably superior to the Dukes, but in sum they were a plodding group, and even Louis couldn't lift them, and himself, to the heights of **Great Alternatives**.

Dan Morgenstern

Sound: A

Performance: A

**Louis Armstrong and Earl Hines, 1928 Smithsonian Collection R-002**, mono, \$7.98.

It was an incredible year, 1928, for Louis Armstrong who was well into his

Chicago period when these 32 recordings, presented in this essential two-record set, were made. Armstrong had already started to work his way out of the polyphonic New Orleans ensemble style on his original Hot 5 and Hot 7 recordings, and now the rough, earthy musicians who had been in the first Armstrong groups—clarinetist Johnny Dodds, drummer Baby Dodds, trombonist Kid Ory, pianist Lid Hardin, and banjoist Johnny St. Cyr—were giving way to more sophisticated accompanists like drummer Zutty Singleton, alto saxist-arranger Don Redman, and, of course, Earl "Fatha" Hines. The playing and accompaniment of these musicians gave Armstrong more scope, more room to develop into one of the great virtuoso performers in American music.

The changes become immediately apparent on Armstrong's intensely dramatic, wide-open work on numbers like *West End Blues* and *Basin St. Blues*. The astonishing, soaring trumpet cadenza in *West End Blues*, for example, anticipates some of Louis' early 30s grandeloquence when he would blow chorus after chorus on a melody like *Stardust* with a seemingly inexhaustible supply of new variations. His Savoy Ballroom Five recording of *Tight Like That* (side 4, track 8) is another bravura piece, spotlighting a young and fiery Armstrong, sure of his power and authority, knocking off 30 or 40 high Cs in one heated chorus. In addition to the *West End Blues*, *Basin St. Blues*, and *Tight Like That*, there are many other 1928 Armstrong recordings included here—*Fireworks*, *Skip the Gutter*, *Don't Jive Me*, *Squeeze Me*, *Muggles*, *Heah Me Talkin To You*, *A Monday Date*, *Knee Drops*, *No Papa No*, and *Weather Bird*, that are jazz performances no serious collector can be without.

As Armstrong's star was rising in Chicago, so was Earl Hines. They began to play together in Carroll Dickerson's 11-piece Sunset Cafe Orchestra in 1927, and with the same band at the Savoy Ballroom in 1928, and recorded together in 1928 with the big Dickerson group and with various small combos. Two Dickerson sides are included. Long sought by collectors, they were only issued originally in Argentina on the Odeon label. The two tracks, *Symphonic Touches* and *Savoyagers Stomp*, are interesting examples of early big band jazz, strongly influenced by the Paul Whiteman/Gene Goldkette type of scoring. Armstrong, having worked with Fletcher Hender-



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son, was already familiar with the thicker big band textures and liked to work against them. The Dickerson accompaniment seems to inspire him. According to J.R. Taylor's fine liner text: "Armstrong's solos raise the emotional pitch with a breathless series of high Cs, yet his solo locks into the intricate arrangement as if written there."

Three remarkable examples of the developing style of jazz orchestration can be found in this collection on alto saxist Don Redman's sweet-swing arrangements of *Hear Me Talking To*

*You, No One Else But You* and *Save It Pretty Mama*. These, together with Alex Hill's *Beau Koo Jack*, all point the way to the Swing Era of the 30s when jazz ideas were scored for large ensembles while Armstrong-like hot soloists soared above.

Earl Hines cut his first records with Armstrong in Chicago in June of 1928; the initial sessions are heard on four sides included here—they were made accompanying a dreadful singer named Lillian Delk Christian—Ms. Christian is pretty hard to take, but Smithsonian Jazz director Martin Wil-

liams obviously wanted to present a complete documentation of the very fruitful and highly influential Armstrong-Hines. After the Christian dates, Hines, Louis, along with such musicians as drummer Zutty Singleton, clarinetist Fred Robinson, trombonist Jimmy Strong, and guitarist Many Care, began to produce recordings that electrified jazz musicians and collectors in Chicago, and, eventually, all over the world.

Hines' role, as revealed on these recordings, was far from subservient to Armstrong. While Louis' power and range made his the dominant solo voice, Hines consistently pushed himself into the solo front line. Only once, on *West End Blues*, does he drop back into deferential rhythmic support. Hines was, (and is today at 72), a virile, aggressive player who could fully match Armstrong with ideas and technique. On *Beau Koo Jack*, Hines takes an extended break demonstrating such new ideas as splashy octave melody phrases, streaking single-line notes (a hallmark of bop pianists of the late 40s and 50s) and pulsing, breath-taking rhythm runs. Hines appears in all his glory on the stunning Hines/Armstrong duet, *Weatherbird*. The two seem to have a fine time sparring and testing each other.

The many Armstrong-Hines sides included in this important collection not only document Armstrong's dramatic growth into the most powerful and most influential (until Parker and Coltrane) jazz soloist of all time, but present Hines' role in freeing the jazz piano from its secondary, accompanying role. Hines' splashy, dazzling pianistics are present on all his collaborations with Armstrong and on his 1928 solo recordings—also included here—*Caution Blues*, *Monday Date*, *57 Varieties*, and *I Ain't Got Nobody*. The Smithsonian's **Louis Armstrong—Earl Hines, 1928** is a timeless jazz package, fresh and powerful today, with a creativity that flows out of every note played by these masters. The sounds are beautifully recaptured with startling clarity by a brilliant remastering job done on the original Okeh's and Columbias. *John Lissner*

Sound: A Performance: A+

**Sidney Bechet and Mezz Mezzrow**  
**Classic Jazz 28**, mono, \$7.98.

The recordings on this two-record set were made between 1945 and 1947 when Bechet and clarinetist/author Mezzrow were in close collaboration. Indeed, these were to be Bechet's last years in the United States, for soon af-

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terwards he emigrated to France where he became a national celebrity and achieved the prosperity denied him in his own country.

Considering he was one of the major figures to come out of New Orleans jazz, his earnings remained at a relatively modest level during all his years in the States. In 1946, to augment his income, he opened a school of music in Brooklyn, where he was living when these sides were made. (Not that Bechet was ever in want, far from it; he owned his house in Brooklyn, took in boarders, and had a live-in girlfriend.)

Bechet's robust health and high spirits are undoubtedly reflected in this splendid collection of reissues by Classic Jazz. Bechet's ebullient and powerful personality comes bursting through on every track. His sound on soprano sax is intense and starkly beautiful, and the blues idiom is at the very core of his playing. Mezzrow, on clarinet, defers to him throughout, giving excellent support. Indeed, as Nat Hentoff points out in his interesting liner notes, Mezzrow takes the place of the conventional New Orleans front line, and gives Bechet the collective, contrapuntal feeling that a trumpet and trombone would ordinarily supply. Mezzrow's role of deference and support is just right on these recordings. So powerful is Bechet's playing, that it tends to ride over everything else. Only a tremendously authoritative hornman such as Louis Armstrong or Wild Bill Davison could stand up to him.

As the *New Yorker's* learned jazz critic Whitney Balliett pointed out: "Bechet purposely tried to sound like a lead trumpet player in ensembles, and most of the time he succeeded, knocking aside whatever hapless trumpeter might be on hand."

Most of the selections in this fine Classic Jazz set are either original or traditional blues. Numbers such as *I'm Speaking My Mind, I Want Some, The Blues and Freud, Breathless Blues, Chicago Function, and Perdido St. Stomp* are excellent examples of the amazing vitality of Bechet's playing (a quality that never left him) and the take-charge type of lead he specialized in.

An added attraction are six sides by boogie-woogie/blues pianist Sammy Price, a long time associate of Bechet's. Price, who along with bassist Pops Foster and drummer Kaiser Marshall, form the rhythm section on all of the Bechet/Mezzrow collaborations. Price also has three solo sides, *Lullaby in Blues, Cow Cow Blues, and Finally*

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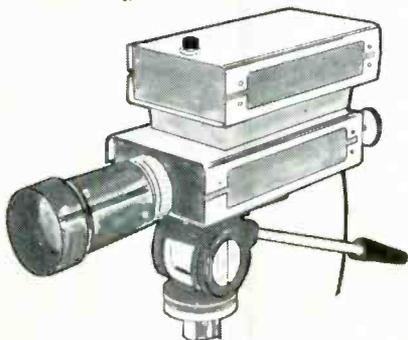
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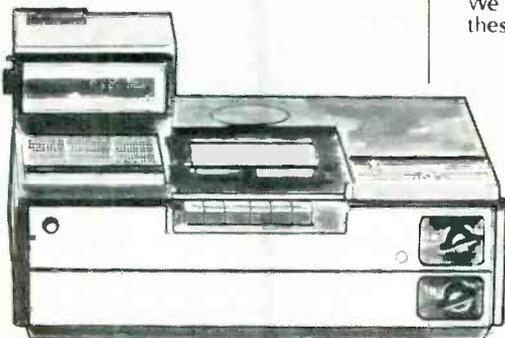
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**Allan Markoff Theatervision, Inc.**

Gotcha. On *Broken Blues* and *New Jailhouse Blues*, he's joined by Pleasant Joe, an amiable New Orleans blues singer, and finally Price teams up with the great drummer Sid Catlett on a stomping blues called *Boogin' with Big Sid*.

All of these fine tracks originate from 78-rpm masters or discs made in 1945 and 1947 for Mezzrow's King Jazz label. The transfer job is first rate, with the natural monaural sound sharply and vividly etched. *John Lissner*

Sound: B+

Performance: A

## Dance Master: Baby Laurence Classic Jazz CI 30, stereo, \$6.98.

The vanishing art of jazz tap dancing reached its absolute zenith in the work of Baby Laurence, who died at the age of 53 in May, 1974.

Though Baby had to be seen to be fully appreciated, he made so much music with his feet that this astonishing posthumous release of recordings made at two sessions (in 1959-60) captures his magic for posterity.

In essence, Baby was a musician as much as he was a dancer, as his unforgettable collaborations with Charles Mingus proved. His conception was similar to that of a great jazz drummer, but only a handful of percussionists have come close to his gracefulness and imagination. Even the fabled Bill Robinson seems limited, almost a bit clumsy, in comparison, for Baby took his rhythmic (and melodic) cues from the discoveries of Charlie Parker and his disciples. That Art Tatum invited Baby to work with him speaks for itself.

The 11 selections on the album make up a spectacular cross-section of Baby's work, and he achieves a surprising variety of sounds. Sustained listening is not advisable, however; until you get the full sense of what Baby is all about, it is best to sample individual tracks. These range from his recreation (and extension of) Robinson's famous "step dance" to the tune of *Whispering (Groovin' High, actually)* and the buck-and-wing *Mall March* to the subtle sophistication of *Lullaby of the Leaves* and the staggering virtuosity of his tribute to Parker, *Ornithology*. The ultimate tour de force is *Concerto for Taps*, two minutes of unaccompanied wizardry.

Elsewhere, two quartets provide a sympathetic but sometimes superfluous instrumental backing. The swing-oriented group on side one was recorded with a tubby echo-effect. Tenor saxophonist Paul

Quinichette and the late drummer Osie Johnson are most in tune with Baby. Side two is better, both sonically and musically. The late Bobby Jaspar's gentle flute and tenor work complements the dancer well, and the rhythm section, with a young Roland Hanna at the piano, is more relaxed.

But this is Baby's album—he is the whole show, and what a show it is! It is a final ironic touch that the record was not issued while it might still have done his checkered career some good, but we must be thankful that it was issued at all. This is a glorious documentation of an inimitable artist in his prime, much more than a footnote to jazz. *Dan Morgenstern*

Sound: B- Performance: A+

**Scott Joplin: Interpretations:** Mike Wofford

**Musicians:** Wofford, piano; Chuck Domanico, bass; Shelly Manne, drums.

**Songs:** *We Will Trust You As Our Leader, I Want To See My Child, A Real Slow Drag, Superstition, Prelude to Act III, We Will Rest Awhile, Frolic of The Bears, We're Goin Around.*

**Flying Dutchman BDL1-1372, stereo, \$6.98.**

If you're fed up with the ragtime version of *The Sting*, one of the more recent musical casualties of commercial exploitation *ad nauseum*, rejoice in Mike Wofford's **Scott Joplin: Interpretations**. Not only is *The Sting* absent, but all those tunes that are included serve to show Wofford's strengths as a contemporary, mainstream, boppin' keyboard artist.

Of the eight cuts, four are solo piano and four are with the trio. Wofford has plenty of room to stretch out, making musical comments on his influences—Bud Powell, et al.—as well as defining his own musical stature.

Wofford is accompanied by drummer Manne and bassist Domanico, who as a rhythm section, have sparked many recent Flying Dutchman releases including a swinging Sonny Stitt date **Dumpy Mama** and various Oliver Nelson big band dates including **Skull Sessions**.

*Frolic of the Bears* is my favorite cut with Wofford cooking up tempo, while *Superstition*, a silky ballad, is also most enjoyable.

Again, these are Joplin Interpretations '76! That is a contemporary approach to compositions of a great American composer of the early 20th Century, by a superb pianist of the late 20th Century. *Eric Henry*



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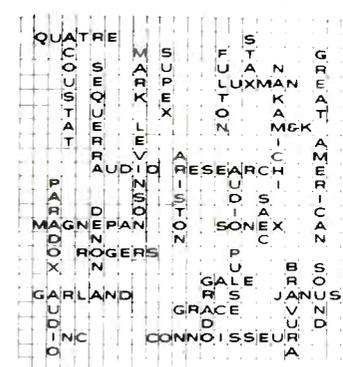
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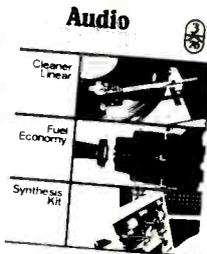
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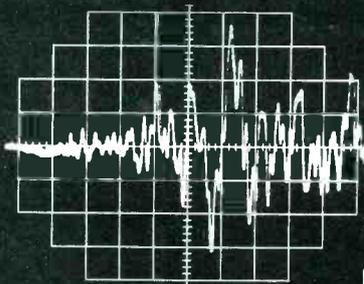
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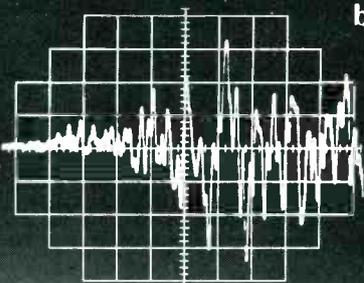
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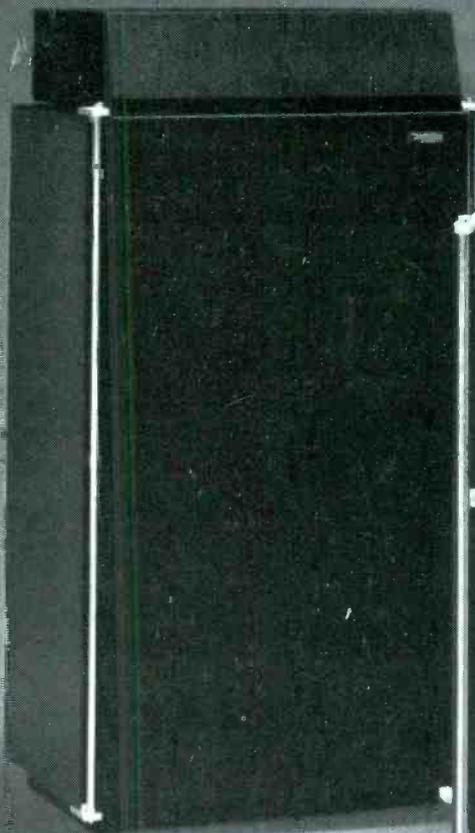
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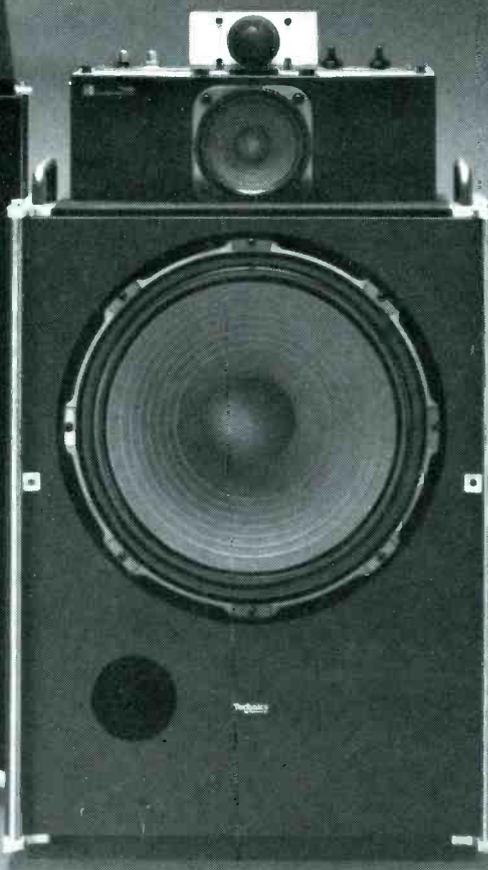
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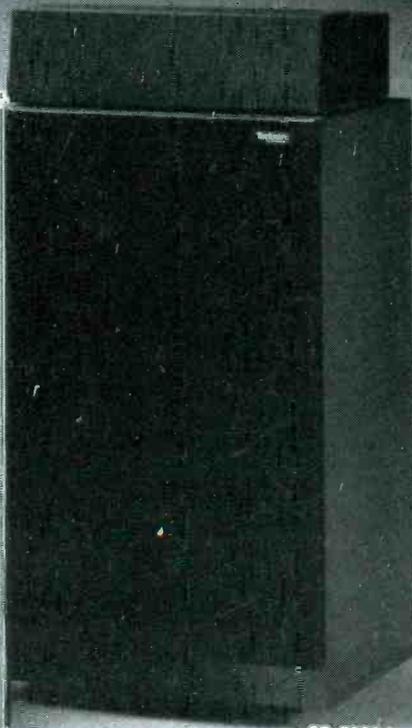
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