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THE AUTHORITATIVE MAGAZINE ABOUT HIGH FIDELITY • OCTOBER 1979 • 47425

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PIONEER MONTH SALE!

A great high fidelity system is very easy on the ears, but not always very easy on the budget.

But now, for this month only, you can buy Pioneer high fidelity components for savings unlikely to be repeated.

For the first time in history you can take advantage of the great Pioneer Month Sale.

Pioneer has reduced many prices to our dealers for this sale to make it possible for them to pass these savings on to you.

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Pioneer Month Sale is only at your participating Pioneer dealer. Look for the Pioneer Month Sale wall poster or banner in your dealer's window. It will direct you to Pioneer Month Sale, that's really the sale of the year.  **PIONEER®**

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Audio

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About the Cover: Putting these Annual Directories together is no fun, but at least we can put a happy face on it, as our cover model, Nancy Lauriello, did, by telling you that we managed to cram 10,000 more specs into this year's Directory. Photo: Photographic Illustrations, Philadelphia.



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From one of the oldest names in sound development comes the latest sound innovation... the Stereohedron Stylus tip... with expanded contact area for truest fidelity. And now it's available from Pickering in three great cartridges. The critically acclaimed XSV/3000, the new XSV/4000 with expanded frequency response range, and the ultimate in lightweight compliance, the Pickering XSV/5000 which captures all the high frequency information contained in today's finest recordings... creating a whole new experience in recorded sound.



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At last a moving coil cartridge you can recommend to your best friend!

**New AT30E
Stereo Phono Cartridge
with Vector-Aligned™
Dual Moving MicroCoils™
and user-replaceable Stylus**



The subtle, yet unique characteristics of moving coil cartridges have had their admirers for years. A top-quality moving coil cartridge exhibits remarkable sonic clarity and transparency. This performance can be attributed to the very low mass, and low inductance of the tiny coils used to sense the stylus motion.

But until now, moving coil cartridge popularity has been limited by three major problems which seemed almost inherent to moving coil designs.

1) It seemed impossible to make a user-replaceable stylus assembly without compromising performance; 2) most moving coil cartridges exhibited relatively low tracking ability due to rather stiff cantilever mounting systems; and 3) output of the cartridge was below the level needed for commonly available amplifier inputs.

Introducing the new Audio-Technica AT30E and the end to all three problems! Our design approach is simple and direct. Rather than locate the coils in the cartridge body, they are integral with the stylus assembly. If the stylus becomes worn or damaged, the entire moving system, coils and all, is simply unplugged and replaced, just like a moving magnet cartridge. Large, gold-plated connectors insure loss-free connections so vital at the low voltages generated by a good moving coil cartridge. The result is easy field replacement with no penalty in terms of performance.

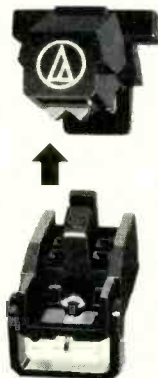
Careful research indicated that good tracking and moving coil design were indeed compatible. By controlling effective mass and utilizing a radial damping system similar to our famed Dual Magnet™ cartridges, we have achieved excellent tracking ability

throughout the audio range. Compliance is individually controlled during manufacture of each assembly to optimize performance. This extra step, impossible with most other designs, coupled with our unique radial damping ring, insures excellent tracking of the high-energy modulation found in many of the top-quality recordings now available.

Each coil is located in the ideal geometric relationship to reproduce "its" side of the record groove. This Vector-Aligned™ design assures excellent stereo separation, minimum moving mass, and the highest possible efficiency. It's a design concept which is exclusive to Audio-Technica, and is a major contributor to the outstanding performance of the AT30E.

We can't take credit for solving the low output problem. The AT30E output is similar to many other fine moving coil cartridges. But an increasing number of amplifiers and receivers are featuring built-in "pre-amplifiers" or "head amplifiers" to accommodate moving coil cartridges directly. Thus the new systems buyer can make a cartridge choice based on sonic characteristics rather than on input compatibility. In addition, Audio-Technica offers the Model AT630 Transformer for matching to conventional amplifier inputs.

The new Audio-Technica AT30E Dual Moving Micro-Coil Stereo Phono Cartridge. With the introduction of this remarkable new design, every important barrier to full enjoyment of the moving coil listening experience has been removed. Progress in sound reproduction from Audio-Technica... a leader in advanced technology.



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Empire's EDR.9 The Phono Cartridge Designed for Today's Audiophile Recordings



Direct-to-Disc and digital recording have added a fantastic new dimension to the listening experience. Greater dynamic range, detail, stereo imaging, lower distortion and increased signal-to-noise ratio are just a few of the phrases used to describe the advantages of these new technologies.

In order to capture all the benefits of these recordings, you should have a phono cartridge specifically designed to reproduce every bit of information with utmost precision and clarity and the least amount of record wear.

The Empire EDR.9 is that cartridge. Although just recently introduced, it is already being hailed as a breakthrough by audiophiles, not only in the U.S., but in such foreign markets as Japan, Germany, England, France, Switzerland and Sweden.

What makes the EDR.9 different?

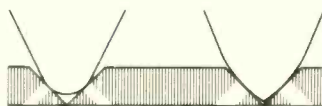
1. _____



Within the cantilever tube, we added a mechanical equalizer. It serves two purposes: (1) to cancel the natural resonance of the cantilever tube, and (2) to

improve the overall transient response of the cartridge. The end result is a stylus assembly that has a mechanically flat frequency response. The frequency response extends from the 20Hz to 35Hz with a deviation of no more than ± 1.75 dB. No other magnetic cartridge has that kind of performance. We call this stylus assembly an "Inertially Damped Tuned Stylus," the refinement of which took over 6 years.

2. _____



Contact area of ordinary Elliptical Diamond.

Large contact area of LAC Diamond.

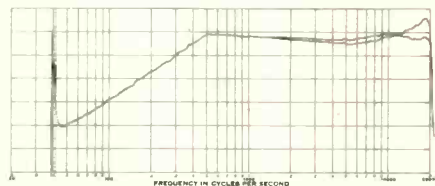
In order to reproduce a groove containing extreme high frequency musical overtones, the stylus tip must have small enough dimensions to fit within the high frequency portion of the groove. Yet, the smaller the stylus tip, the greater the pressure applied to the record surface and the more severe the record wear. In the EDR.9, we have responded to these conflicting requirements by developing a stylus that has the proper dimensions from side-to-side, a much

smaller dimension from front-to-back, and a very large, low pressure degree of contact between stylus and groove top-to-bottom. The net result of this large contact area, which engineers call a "footprint" is that the stylus of the EDR.9 can track musical signals to the limits of audibility and beyond, yet has the lowest record wear of any cartridge presently available. The stylus shape of the EDR.9 is called L.A.C. for "Large Area of Contact."

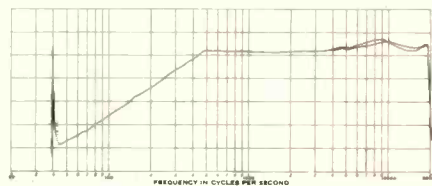
3. _____

Conventional cartridges exhibit radical changes in their frequency response when connected to different preamplifiers. This is because the load conditions—the amounts of capacitance and resistance provided by the preamp—vary tremendously from one preamp to another, and from turntable to turntable. Consequently, most phono cartridges, even expensive ones, have their frequency response determined essentially by chance, depending on the system they are connected to.

But the electrical elements of the EDR.9 have been designed to remain unaffected by any normal variations in load capacitance or resistance. Thus, the EDR.9 maintains its smooth frequency response and accurate transient-reproduction ability in any music system, irrespective of loading conditions.



A conventional cartridge's frequency response changes when connected to different preamps.



EDR.9 is not affected by changes in loading conditions.

4. _____

Then, as a final test of performance, we listen to every EDR.9 to make certain it sounds as good as it tests. At \$200, the EDR.9 is expensive, but then again, so are your records.

For more detailed information and test reports, write to:

Empire Scientific Corp.
Garden City, NY 11530

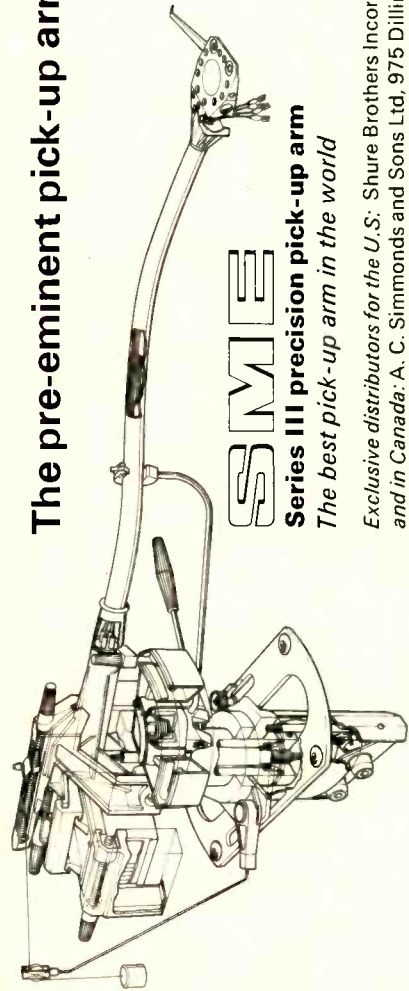
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No other pick-up arm is as versatile, a reason why the Series

III is already playing its part in the development of tomorrow's cartridges.

Choose it for your listening pleasure today with confidence in the future.

*Another accolade for SME: the Series III precision pick-up arm was one of the Design and Engineering Awards at the 1979 U.S. Summer Consumer Electronics Show, the only pick-up arm to be acknowledged in this way.

Write to Dept 1457, SME Limited, Steyning, Sussex, BN4 3GY, England

Tape guide

Herman Burstein

EQ of Dolby

Q. When an add-on Dolby unit is used, should the tape deck's internal equalization be disabled? When a Dolby unit is used, is the equalization the same for different tape speeds? — Chacko Neroth, El Cerrito, Cal.

A. Dolby N/R does not affect equalization, that is, using an external Dolby unit does not require equalization changes in the tape deck. By the same token, different tape deck equalization continues to be required at different tape speeds.

Pink Noise

Q. What is "pink noise"? How is 1/3-octave pink noise used in testing equipment? — Paul C. Lutz, Louisville, Kentucky

A. If one built a noise generator, chances are that the noise would produce signal over the entire audio spectrum. If one devised a filtering system, however, this noise could be produced over a portion of the spectrum only. It is this reduced noise bandwidth which we refer to as "pink noise."

The 1/3-octave pink noise is a special case, where the spectrum is divided into very narrow segments, each of which is 1/3-octave wide.

Such pink noise segments are often used to evaluate the performance of equipment because its waveform is often difficult for equipment to reproduce, especially with transducers, such as loudspeakers. The waveform produced by the speaker or other device is compared to the waveform of the pink noise which feeds into the device under test. The closer the input and output waveforms appear to be alike, the better is the equipment under test.

Listening rooms contain very sharp peaks and dips in their frequency response. They are often narrower than a 1/3-octave portion of the audio spectrum. However, these 1/3-octave segments represent a good compromise between performance and the complexity of the controls required on equalizers designed to correct for these peaks and dips of listening rooms. What happens is that signals are transmitted by means of calibrated transducers, and picked up at some other point in the room to be adjusted

by suitable, calibrated microphones. The signal consists of pink noise. A room equalizer, consisting of 1/3-octave boost and cut modules is used, and the controls are adjusted for best overall frequency response at some given listening point in the room. Note that the equalizer modules are made to match the segments of the pink noise used for calibration.

Noise Reduction Improvement

Q. My tape deck claims a 59-dB signal-to-noise ratio. I am considering the purchase of a Dolby noise reduction unit, and am wondering how much improvement I might expect to get. — Tom Collinson, Mather AFB, Cal.

A. The higher the S/N of a basic tape system, the less important a further improvement in S/N becomes. Dolby units are capable of improving audible S/N about 6 to 10 dB. Such improvement would make a quite noticeable difference in the case of a tape deck with, say, 45 dB S/N. But it would make an unnoticeable difference in the case of a deck with 100 dB S/N (not that there are any such home tape decks as yet, but I use this extreme to illustrate my point). A deck with 100 dB S/N would be dead quiet, and you can't improve significantly on dead quiet.

As for your deck, the S/N of 59 dB is definitely in the category of high fidelity but is still subject to audible improvement. The finest professional decks reach out to S/N of about 80 dB, and digital machines get something like 90 dB. Thus, Dolby may audibly improve the S/N of your tape system, particularly if you play material with a wide dynamic range, and if you play it at high volume. However, if you operate your system at subdued levels, and especially if you play material with little dynamic range (such as "background music" or hard rock), you may wonder why you ever laid out the sum you did for Dolby, particularly for 7 1/2 ips operation. A

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



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Our 7" reel is designed to gather tape. Not dust.

Something as insignificant as a speck of dust can mess up a perfectly good recording.

So at Maxell, we've developed an ingenious device that keeps dust

from collecting on our tape. Our take-up reel.

Instead of gaping holes that let dust in, our specially molded polystyrene design actually forces dust out.

So if your take-up reel is picking up more than it should, pick up ours.

You'll find it comes attached to something even more impressive.

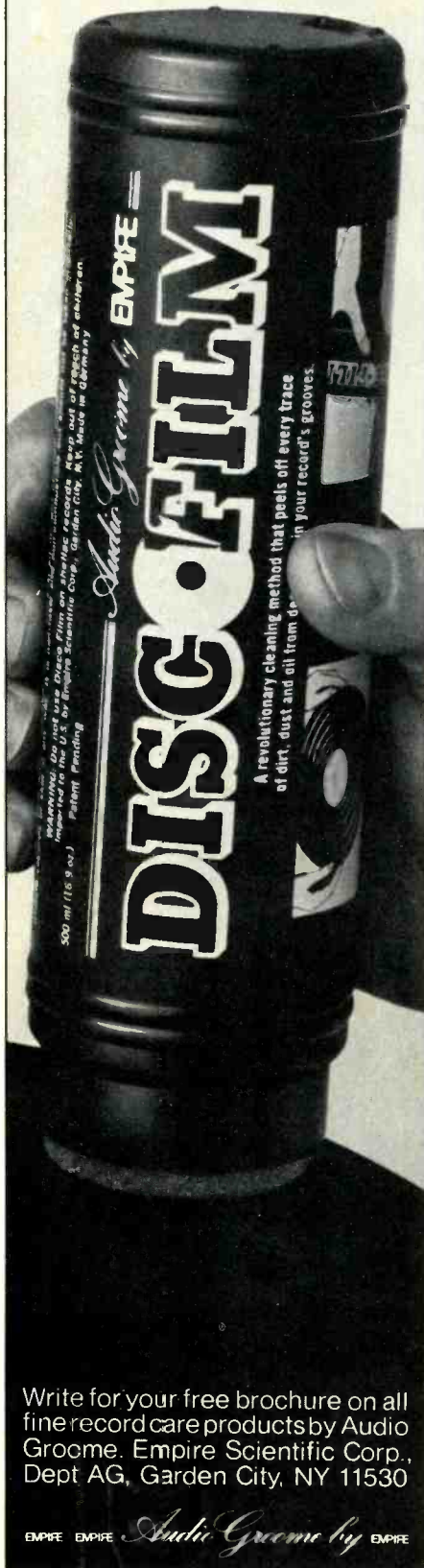
Our tape.

maxell

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Empire's revolutionary cleaning method peels off every trace of dirt, dust and oil from deep down in your record's grooves.



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Edward Tatnall Canby

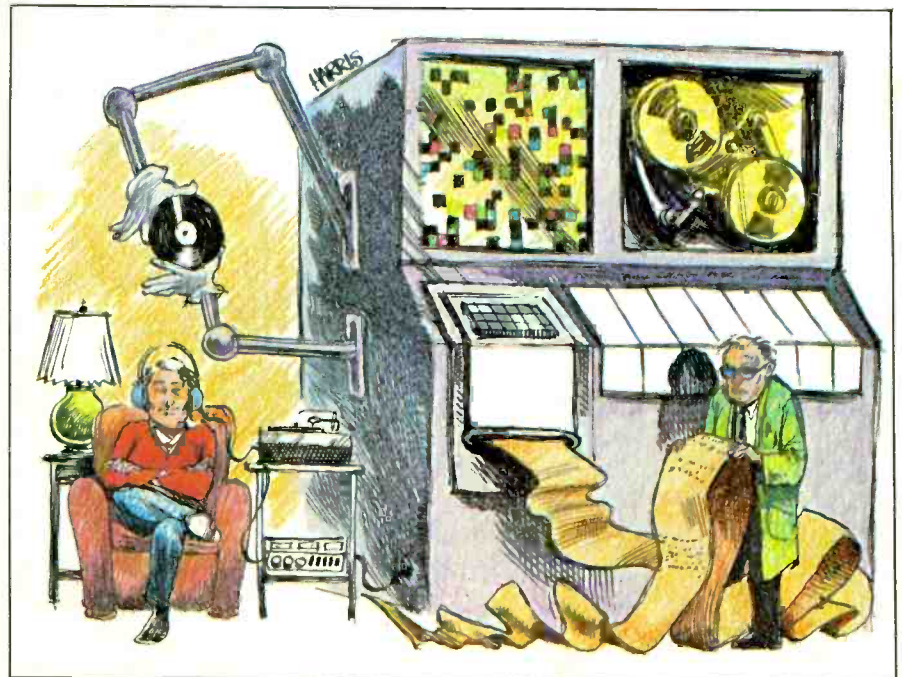
About this time last year I turned my attention to the weighty subject of the home record/tape crunch. I didn't call it by that name, but you'll remember. You've been collecting. And playing via the hunt-and-peck system. And you've got so many records by now that you can't find what you want to play. Something has to be done. That means a home library.

After my preliminary ideas last year, I received a passel of suggestions from you readers, just as many as there were opinions on how to solve the early gas crunch last June. All different! But interesting. Fortunately, we in hi-fi do not have to settle on one system for our discs and tapes — our home is our record/tape castle and we can do what we wish, just so it works out for us. I do have more ideas, but I'll pass on some reader thoughts, from those who ought to know because they have practiced what they preach, each via his own collection.

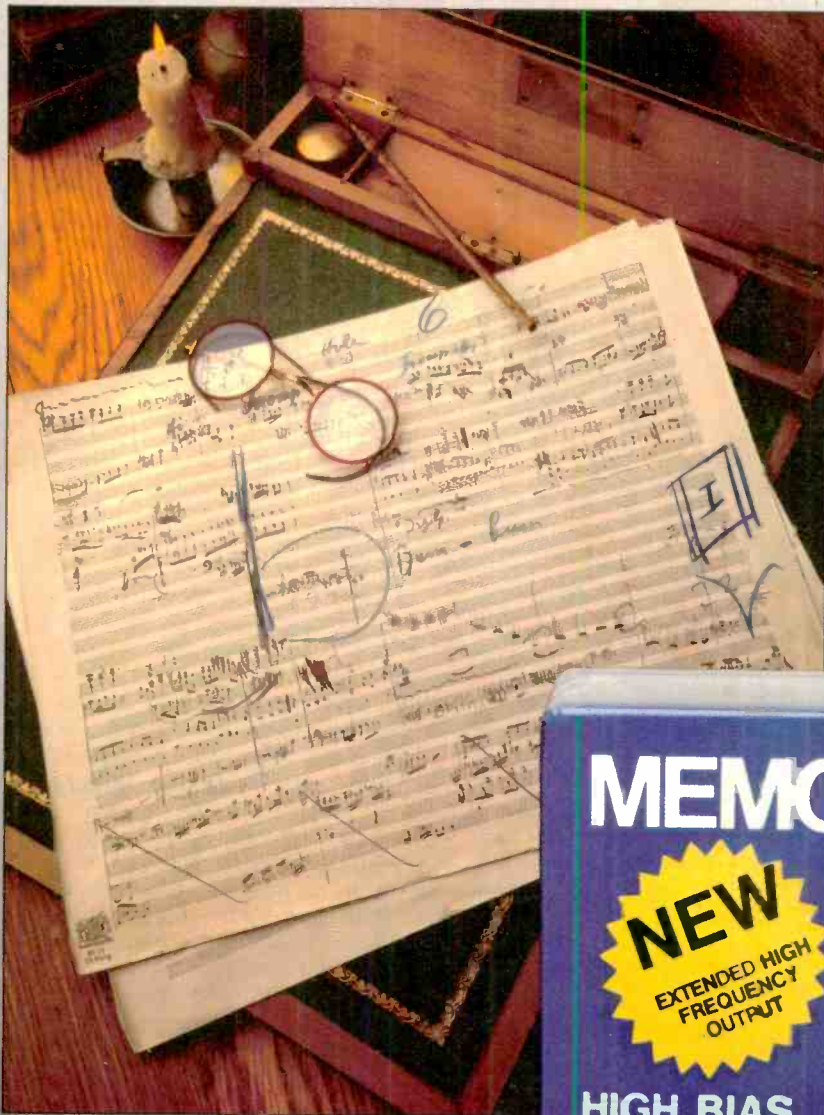
So you, too, still hunt and peck? Chicken, I say. Take this man. Here's a guy who is still not far from the beginning, only a couple of years. But he says that already his private collection has got to the point where he has been "forced to organize it." Good stuff. That's the right approach. He says that now it is "certainly easier to

locate a specific record from the file than to dig for hours to find one I want." Well, decidedly, I agree. But how can he manage to "dig for hours" through a library of just 41 records? The man is 17 years old and should peck and hunt better than *that*. P.S. He forgot to tell me HOW he organized his 41 records. So I will not name him.

A gent named Richard A. Singleton, of 606 West Third St., Ayden, N.C., takes a different tack. One day I received a big, fat, heavy package, insured, which turned out to be a bulky three-ring looseleaf binder all printed up, my name on the front, and a huge number of blank printed index pages inside, plus packages of press-on letters, large size, separate large index sheets — and on and on. It is called Stereodex Masterlogue and, shall I say, it is slightly commercial. When I did not respond quickly (well, after a few months . . .), I got an urgent follow-up letter and then later came a heavy recommendation from a friend of Mr. Singleton. OK, good sales technique. This big book is not for me (with many thousands of records!) but it could be for you, especially if you like neat printing and everything very meticulous. A lot of people do. Suffice it to say that this system puts all your info in looseleaf form on sheets that



WHICH NEW HIGH BIAS TAPE WINS WITH MAHLER'S FOURTH SYMPHONY?



Original manuscript sketch for the first movement of Gustav Mahler's Fourth Symphony. Courtesy of The Newberry Library, Chicago.

Choose eight measures of Mahler's Fourth that are really rich in the high frequencies. The type of passage that high bias tapes are designed for.

Record it on your favorite high bias cassette, using the Chrome/CrO₂ setting. Then again on new MEMOREX HIGH BIAS.

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We're convinced you'll have a new favorite.

New MEMOREX HIGH BIAS is made with an exclusive ferrite crystal oxide formulation. No high bias tape delivers greater high frequency fidelity with less noise, plus truer response across the entire frequency range.

In short, you can't find a high bias cassette that gives you truer reproduction.

MEMOREX

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Is it live, or is it Memorex?



are excellent for a big pop collection, though I would say not so useful for classical. Not enough room, only one typed line per item. Cross references, and so on. If interested, make use of address above.

I knew there was bound to be word from a computer man. Matter of fact, I know two already and you probably know more, who catalogue via their machines. Trouble is, you have to have Access. My Colorado friend, who put me onto the Audio Pulse when it was brand-new (he had just bought one), did his library via his large lab comput-

er 'way back, and he showed me his printouts. Now Richard Ritari of Moorhead, Minnesota, sends me a sample of his. Phew, what a lot of paper! Bulky and very wasteful of space, but good.

The Quicker Record Sorter

The computer idea (given access) is simple enough. No cards, no sheets. You just feed all your items into the computer's capacious memory as they come in. Then you program your machine to "search" (is that the word?) for your stuff in terms of any category

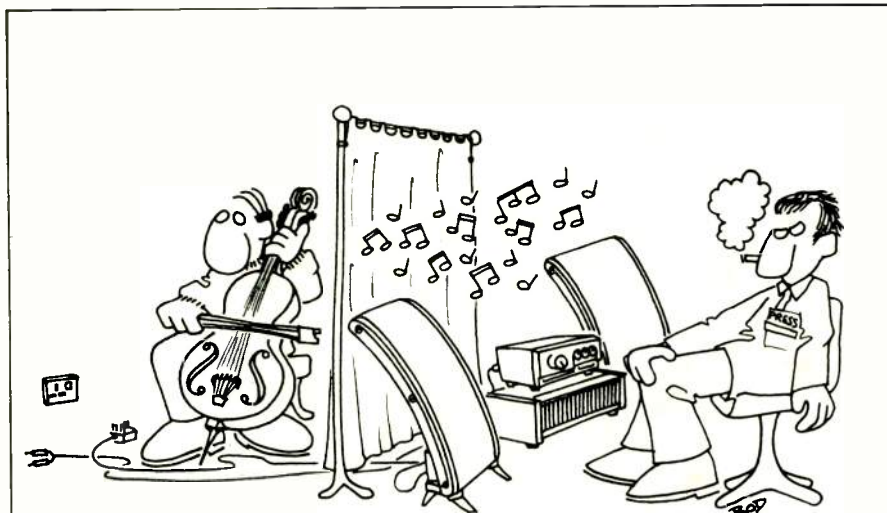
you may dream up—say all the recordings you own that include lefthanded violinists or *oboi di caccie*. (What?—Bzzz—bzzz—bzzz ERROR.) Or handy things like composers, artists, forms, Richard Rodgers musicals, brass quintets, symphonies, any old thing that interests you. Just a matter of computer time and your time. The computer can do. Can you?

To be sure, there are a few impracticalities for most of us. Nevertheless, the basic idea of computer data filing is getting around fast these days, and I'm all for it, at least in principle. Mr. Ritari's Basic Program prints out on a long fat roll of 10-in. paper, ordering his collection as of a stated day. The items he sent me are listed alphabetically by title and artist or group, all pop, and also by number. Starting with 1, there's Aerosmith, and about a yard further down we come to 37, Dueling Banjos. The whole thing must be at least 25 feet long. New items, of course, are inserted in the machine's memory for future printouts, and this would seem to require a re-numbering each time—just why the numbers are used I cannot tell you. Maybe the computer can't help it.

Doesn't sound to me as if this particular catalogue has yet explored the big computer's ultimate capabilities. Ritari says he gets printouts "not only of the artist and the title of the recording but also the label. . . and the mode I have it in." Good. But one could do a lot more, given computer time. For a really comprehensive system you could have dozens of orderings, and all with the greatest of ease! On regular cards, each would mean an entire set of file cards ordered into a separate file drawer, a lifetime of hard work as I well know. (I have only two orderings on my cards, which take dozens of boxes and never get completed.) Of course, all this may sound silly but the idea, I repeat, is very sound. It's coming along everywhere, in manufacturing, business, research, and always for the same reason, *high-speed access*. Why not for us, too, since that is exactly what we need?

I suspect that even now the small office or personal computer with adequate memory is amenable to some sort of private catalogue system for home record collections—and with less use of paper! Maybe even on the littlest printout portables? Could be. If you collect and also compute, keep in mind.

Curious how slavish a computer can be. It reads its programmer's mind, not its own. The Ritari printout lists only record labels, no catalogue numbers.



Artistic licence?

We at QUAD go to a very great deal of trouble to ensure that with a QUAD 33 in the Cancel position, the voltage delivered to your loudspeakers is a virtually exact RIAA transfer of the voltage the pickup will produce into a stated passive load. Nothing added – nothing taken away.

A visiting journalist recently suggested that we should not do this. Final adjustment should be done by ear, he said.

What an opportunity!

After all we know that if we add a little warmth with a subtle boost in the lower middle and balance this with an ever so gentle hump in the quack region (2-3kHz), we can make most programmes sound superficially more impressive. Come to that, why not change the 3180uS to 5000uS adding a little more 'heft' that most people will fall for. We could even make a special model for the boom and tizz brigade.

Been to any live concerts recently ?

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TRACKING ERROR: 0.
SKATING FORCE: 0.

No other turntable can match the Phase 8000, because no other turntable has such advanced motors. You can't buy a quieter turntable.

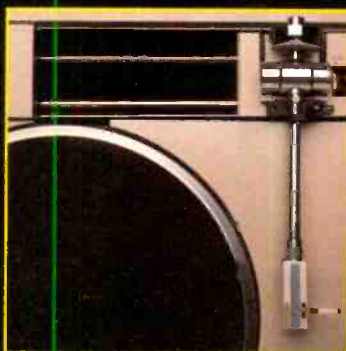
Or one with as low wow & flutter.

Or one that tracks better.

The Phase 8000's tangential tracking tone arm keeps the stylus in perfect 90° tangent with the grooves. It's the same way the master disc was cut, so the motion of your stylus is identical to the cutterhead stylus. There's absolutely no tracking distortion. No crosstalk. No skating force that can actually re-cut your grooves.

NEW LINEAR MOTOR ELIMINATES MECHANICAL LINKAGE

Other manufacturers have tried to move tangential tone arms with worm gears. Belts. Rollers. All with



the same sad result: Mechanical connections pass on the noise and vibration of the motor.

The Phase 8000 solves this problem with an ingenious Linear Motor. The tone arm base is a permanently magnetized armature that glides along guide bars above electro-magnetic coils. The arm moves by direct induction — not mechanical connection. So there's virtually no noise.

Inside the tone arm, an opto-electronic detector cell senses the slightest tracking error, and instantly sends correcting signals

to keep the arm on track.

NEW QUARTZ-PLL DIRECT DRIVE

Our new slotless, coreless Stable Hanging Rotor DC motor virtually eliminates "platter-wobble." Quick start/stop. Speed deviation is lower than 0.002%.

If you want to hear all these technical advantages translated into musical improvements, contact your Phase Linear audio dealer.



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Phase Linear®

COLUMBIA RECORD. All my catalogue instincts (as a reviewer) say that the least the computer could do, with so much waste paper space, would be to say, maybe, COLUMBIA MS 6778 STEREO. Matter of choice, Ritari's own. But that computer has its claws into him, even so. HE TYPES HIS CORRESPONDENCE ALL IN CAPS no lower case, who needs lower case computers can't read it.

Computers Can't Spell?

One minor fault here. People today act as though we didn't have to spell

anymore, like adding and subtracting. Let the machine do it. But we do, even for computers. EXCELLANT, typed Mr. Ritari, concerning my two articles on record library systems. Compliment accepted but not spelling. Next thing, his computer will be printing out data on the BEETLES, or those immanent classical composers HAYDEN and MENDELLSON, to quote some common misspellings. I received a letter from another correspondent who says he catalogues his records by sorting them into piles, putting the lardger piles on the left, and sow on and so

fourth. I'd say his record/tape crunch is going to get crunchier before it gets beter.

My final correspondent is also a computer programmer, Charles D. Edmondson of Bowie, Maryland. But surprisingly, his long and well-expressed letter does not even touch on the idea of a catalogue via computer. He is a trained librarian, and this explains it. He recommends—I knew someone would—not a computer but the Library of Congress catalog (note spelling) for your home use.

As a librarian, he probably should. The librarian mind, without bias either way, has to be recognized as special, whether amateur or pro. A lot of hi-fi people have it. Most don't. Matter of temperament. The Library of Congress, for all who do, is the top governmental authority on library matters and the ultimate repository (not counting the Smithsonian) of practically everything that can be catalogued, however vast the numbers. I suppose our lesser libraries do have a choice, but the L. of C. is by far the biggest voice in this profession, and it is listened to. By everybody with a librarian cast of mind, that is.

The Ultimate Catalog

By me too. But with distress. As a non-librarian, indeed, one who avoids library science whenever possible (and then invents his own systems when absolutely forced to the wall!) I tend to cringe. Sorry, Edmondson! No offense intended. But bigness in libraries, as in other very large agencies, often means you-know-what. The obstinately bad thoroughly mixed with the imperishably excellent.

For every recording ever issued here, at least since 1953, there is an official Library card available, and there are enormous volumes of reduced size replicas, periodically reissued and updated. The Library sets up standards for all this carding and for the data included, even to spelling and names — they go so far as to set down an official title for musical works that vary, like Fifth Symphony and Symphony No. 5. All this is done with almost fanatical thoroughness, the cards are filled up with quantities of sub-references and helpful symbols. And the whole mass of information spreads out incessantly to just about every other library anywhere. Admirable — but is it for you, in your tiny cubicle of a home with your thimbleful of recordings?

Not only records but, of course, books by the millions. And musical scores. Billions of cards in the whole,

Continued on page 28

The New ADS L810-II “radical improvements wouldn't have been possible...”*



(ADS 810s shown with optional stands F800)

“ADS' Series II speakers are subtly improved over the original versions — radical improvements wouldn't have been possible considering the high quality of the originals. The 810 was highly respected for its extreme clarity and for the natural, tight bass response it exhibited. The Series II continues to offer these attributes, will handle more power, and have better high end dispersion. A fine speaker has been made better, and we recommend it highly.”*
*As quoted from the May 1979 Complete Buyer's Guide To Stereo/Hi-Fi Equipment

ADS has indeed spared nothing in the quest for perfection. Less than \$375 apiece, the ADS 810 is accurate enough for the professional recording engineer and affordable enough for the lover of good music at home. Discover the best today. Discover the ADS 810-II.

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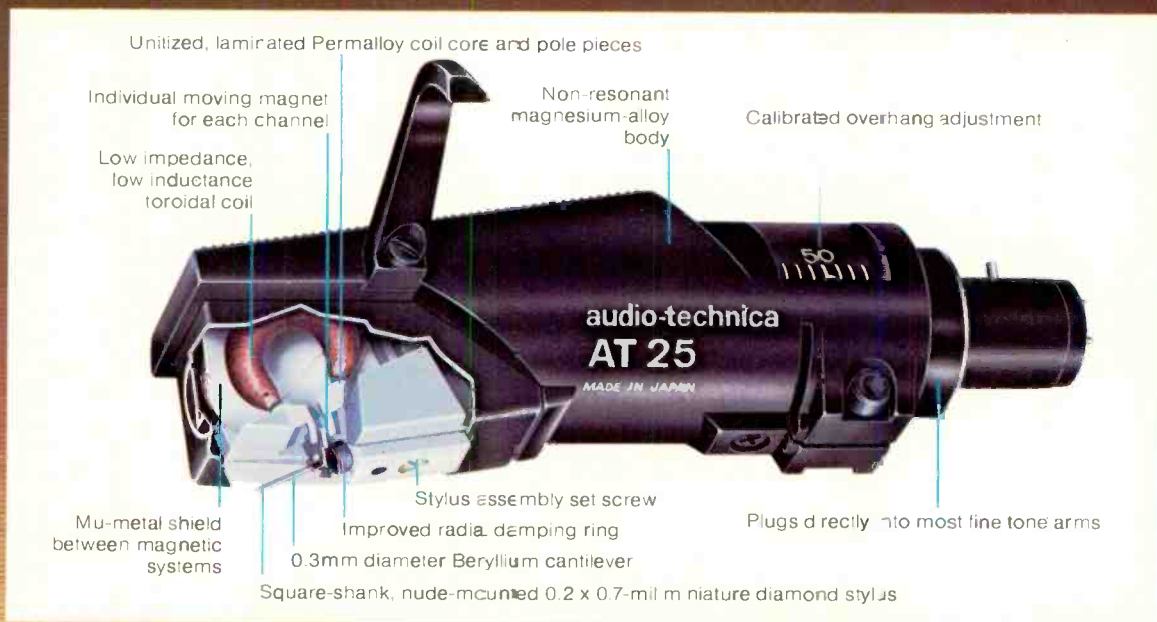


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ADS, Analog & Digital Systems, Inc. One Progress Way Wilmington, VA 018E7 (617) 65E-5100

We've just improved every record you own.



Bold, creative new technology sets new standards for clarity, dynamic range, and stereo separation.

Of course the new AT25 doesn't look like other stereo phono cartridges. It's entirely different. And not just on the outside. We've rethought every detail of design and construction. All in the interest of the smoothest, cleanest sound you've ever heard. The AT25 frequency response is utterly uniform. Definition and stereo separation are remarkable. Dynamic range is awesome. Even the most demanding digital and direct-to-disc records are more spectacular, more musically revealing.

But set our claims aside and listen. The AT25 is unexcelled for transparency and clean, effortless transient response. Individual instruments are heard crisply, without stridency even at extremely high levels. Even surface noise is less apparent.

The cutaway view shows you how we do it. Start with the coils. Just two, hand-wound in a toroidal (doughnut) shape. A unique shape which cuts losses, reduces inductance, and lowers impedance. The coils are wound on laminated one-piece cores which also serve as pole pieces. Again, losses are lower. Eddy current effect is also reduced. Which all adds up to superior transient response. It's like having the electrical performance of the finest moving coil designs, but with the high output of a moving

magnet. The best of both worlds!

Each magnetic system is completely independent. No common circuits. We even add a mu-metal shield between the coils to insure no leakage between channels. Which results in stereo separation which must be heard to be believed.

But there's more. An entirely new stylus assembly with one of the smallest whole diamond styli in series production. Only 0.09mm in cross section and almost invisible. It's nude-mounted and square-shank to insure exact alignment with the groove. And it's set in a Beryllium cantilever that eliminates flexing.

Instead of snapping into place, this stylus assembly is held rigidly to a precisely machined surface with a small set screw. A small detail which insures perfect alignment, no spurious resonances, and simple stylus replacement.

We treat cartridge shell resonances too, with special damping material applied to the top of the unique plug-in shell. The magnesium shell even has a calibrated adjustment for stylus overhang to insure perfect installation.

The many technical differences between the new AT25 and every other stereo cartridge are fascinating . . . and significant. But the real difference is in the resulting sound. It's almost as if you had plugged your stereo system directly

into the studio console. Every subtlety of artistic expression is intact, no matter how complex—or simple—the music, no matter how loud—or soft—the performance. It's as though a subtle barrier had been removed adding clarity and presence to every record you own.

A cartridge of this sophistication and high quality cannot be produced quickly. Initially the AT25 may be in short supply. But your patience will be rewarded with performance which will send you back through your record library to discover nuances you never suspected to hear. And you'll eagerly await the sonic splendors of tomorrow's digital recording techniques.

This outstanding performance is now available two ways: the direct plug-in AT25 and the standard-mount AT24. Either one will make every other component you own sound better, including your records!



Model AT25 Unitized Headshell/Dual Magnet™ Stereo Phono Cartridge \$275

Model AT24 Dual Magnet™ Stereo Phono Cartridge \$250



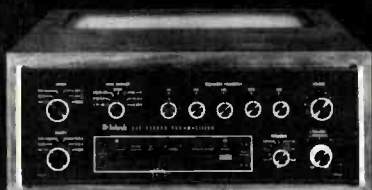
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Behind the scenes

Bert Whyte

The Summer Consumer Electronics Show in Chicago, June 3 to 6, always the banner event of the audio industry, as usual broke its attendance records and also had a record number of exhibitors, but the exhilaration and upbeat mood of other years was noticeably diminished, with the pervading atmosphere one of apprehension.

This was, of course, a direct consequence of the "slow, soft" market and "disappointing" audio sales of the previous six months or so. One must remember that with the exception of the relatively mild downturn in business during the 1974/75 recession, the hi-fi industry had enjoyed unparalleled growth and prosperity for over 20 years. There were many manufacturers and audio retailers alike who were unprepared for and apparently bewildered by this current business slump, and for some, the pressure was just too much, with business failures showing a marked increase. Well, if the audio industry approached the SCES with understandable trepidation, with all sorts of horror stories circulating about product "dumps" and drastic compa-

ny realignments, by the end of the Show things were actually looking up a bit. Nobody was whistling in the dark, but there wasn't the sales blackout that had been anticipated. There were product commitments being made, and dealers were buying ... albeit cautiously and conservatively. Since the Show, the gasoline and fuel situation has worsened considerably, and inflation continues to debilitate the economy. This is already being equated with a further erosion of the hi-fi business. The doomsayers feel that with \$5.00-per-pound steaks and \$1.00-per-gallon gasoline, what is left for audio equipment?

... And Rumors of War

That is where my "enclave" theory comes into play. I think people are going to be forced to stay closer to home, and there are plenty of people who are going to try and make their bastion against the world as self-sufficient as possible. That very likely means acquiring certain amenities they have been putting off purchasing, which should certainly include audio



Sansui is breaking up a very successful relationship. The TU-717 has a new mate: The AU-719.

Sansui has just introduced an exciting new integrated amplifier, the AU-719. It represents the very latest developments in audio and electronics technology. It is so good, in fact, that it has replaced its rave-reviewed, best-selling predecessor as the partner of the TU-717 tuner.

The TU-717's performance has been extravagantly praised by professional critics and knowledgeable consumers alike. With advanced features like switchable IF bandwidth and specs like 81dB signal-to-noise ratio and 0.06% THD, it's only natural.

We expect the tuner's new mate to receive a tremendous reception and set industry amplifier standards for a long time to come. Here's why.

INTRODUCING DD/DC

What particularly distinguishes the new AU-719 amp is Sansui's patent-pending DD/DC (Diamond Differential/DC) circuitry that provides the extremely high drive current needed to reduce THD by adding large amounts of negative feedback without compromising slew rate or adding TIM.

Slew rate refers to an amplifier's ability to respond to rapidly changing musical signals. The slew rate of the AU-719 is an astounding 170V/ μ Sec.

MAGNIFICENT MUSIC

Many modern amplifiers have extremely low total harmonic distortion specs. And that's important. But THD is measured with steady test signals and is not really representative of an amp's ability to deal

with music. Sansui alone, with its DD/DC technology, is able to provide both low THD and lowest TIM simultaneously. Instead of the harsh metallic sound you sometimes get on a conventional amp when the musical signals are complex, with the AU-719 you hear only magnificent music.

THD is less than 0.015% at full rated power of 90w/channel, mln. RMS, both channels into 8 ohms from 10 - 20,000 Hz. Overall frequency response is awesome: DC - 400,000 Hz, +0, -3dB. Hum and noise are a super-silent -100dB on aux and -88dB on phono. The phono equalizer, which adheres to the standard RIAA curve within ± 0.2 dB from 20 - 20,000 Hz, also uses our unique DD/DC circuit for record reproduction that's second-to-none.

CONTROL YOURSELF

The unit is equipped with a full complement of versatile controls and connections to create the system and sound that's right for you, including two phono and two tape inputs, defeatable tone controls with switchable center frequencies, deck-to-deck tape dubbing and a very convenient 20 dB muting switch.

Audition the new AU-719 and matching TU-717 at your authorized Sansui dealer. We think it will be the start of a very successful relationship.

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The first system of the musical score consists of five staves. The top two staves are vocal lines in G major and 2/4 time. The third staff is a vocal line with lyrics "zu 2" and dynamic marking *ff*. The fourth and fifth staves are piano accompaniment with dynamic marking *p*. The score is decorated with colorful illustrations of landscapes, including a green field, a sunset, and a sun.

The second system of the musical score consists of five staves. The top two staves are piano accompaniment with dynamic marking *ff*. The third and fourth staves are vocal lines with dynamic marking *p*. The fifth staff is piano accompaniment with dynamic marking *ff*. The score is decorated with colorful illustrations of landscapes, including a sunset, a tree, and a field.

Sony Tape. Full Color Sound.

Music is full of color. Incredibly beautiful color. Color that you can hear...and (if you close your eyes) color you can almost see. From the soft pastel tones of a Mozart to the blinding brilliant flashes of hard rock to the passionately vibrant blues of the Blues.

In fact, one of the most famous tenors in the world described a passage as "brown...by brown I mean dark...rich and full."

Music does have color. Yet when most people listen to music they don't hear the full rich range of color the instruments are playing. They either hear music in black-and-white, or in a few washed-out colors.

That's a shame. Because they're missing the delicate shading, the elusive tints and tones, the infinite hues and variations of color that make music one of the most expressive, emotional and moving arts of all.

Music has color. All kinds of color. And that is why Sony is introducing audio tape with Full Color Sound.

Sony tape with Full Color Sound can actually record more sound than you can hear.

So that every tint and tone and shade and hue of color that's in the original music will

be on the Sony tape. Every single nuance of color, not just the broad strokes.

Sony tape with Full Color Sound is truly different. Full Color Sound means that Sony tape has a greatly expanded dynamic range — probably more expanded than the tape you're using. This gives an extremely high output over the entire frequency range, plus a very high recording sensitivity.

There's even more to Sony tape with Full Color Sound, however. Sony has invented a new, exclusive SP mechanism for smoother running tape, plus a specially developed tape surface treatment that gives a mirror-smooth surface to greatly reduce distortion, hiss and other noise. Each type of tape also has its own exclusive binder formulation, that gives it extra durability.

Any way you look at it — or rather, listen to it, you'll find that Sony tape with Full Color Sound is nothing short of superb.

If you're not hearing the whole rainbow on your audio tape, try recording on Sony tape with Full Color Sound. Then you'll be hearing all the glorious full color that makes every kind of music, music.



systems. If I'm right, it won't mean the absolute salvation of the hi-fi business, but it certainly will be a significant help.

Under the circumstances, it was no surprise that most manufacturers were putting extra effort into the introduction of new products and more aggressive marketing programs. However, in conversations with many industry people and in the various summations I have read about the Show, there was a general opinion that there were no real technological breakthroughs and relatively few exciting new products to truly stimulate sales. I think this assess-

ment was only partially correct, as there certainly was plenty of interesting new equipment to gladden the hearts of audiophiles. As for the sharp consumers who know about all those digital "goodies" waiting in the wings, it is up to the smart retailer to convince his customers that it is likely to be some time before these glamorous products go "on stage" and begin to supplant analog audio equipment.

Very frankly, covering a show of the size and complexity of the SCES and offering a report on new products that can be considered even moderately comprehensive is a wearisome task

and, in my opinion, patently impossible. An encyclopedic approach can also get pretty boring. Thus, at the risk of enduring the slings and arrows of outraged manufacturers whose shiny, new products aren't mentioned, my reportage will be highly selective. I freely admit I will indulge some of my prejudices, and some may find my choices arbitrary and capricious if not downright irrational and even puzzling. So be it . . .

Cassette News

As you would expect, metal-particle tape and cassette machines capable of recording on this new tape were among the hottest items at the SCES. What had been a mere trickle of metal-tape-capable cassette recorders at the WCES in Las Vegas became a veritable deluge at the SCES. Most of the major manufacturers were showing metal-compatible decks, and more than a few were offering multiple models in various price ranges. Speaking of prices, the metal-capable decks ranged from a remarkably low \$189.95 for the Sanyo RD-5035, which offers Sendust erase and record/play heads as well as Dolby B at that price, to the innovative Lux 5K50 which sells for just under \$2000.00. The low price of the Sanyo deck, as well as those of several other decks only slightly higher, have raised some cynical eyebrows within the industry. These people contend that the low-priced metal-capable decks have been given the ability to record metal tape at the expense of more basic parameters. They also point out that it seems unlikely that the audio consumer who buys one of these units will be willing to pay almost \$10 for a blank metal-particle cassette. They may well have a point. Since this is such an early stage in the development of metal-tape technology, this might be a good time to note that in spite of the fact that just six months ago at the WCES the least expensive metal-capable decks were about \$700, the ongoing miracle of audio industry technology has made it possible to produce a \$189 metal-capable deck. That is quite an accomplishment, and it is best left to the reviewers to determine if these decks have any functional or performance inadequacies.

Sanyo, which incidentally made the "biggest splash" at the SCES by introducing 67 new products, obviously launching a massive program to establish themselves as a major factor in the hi-fi business, showed its muscle by introducing six other metal-capable cassette decks in addition to their \$189 special. They have several three-head models with features including micro-

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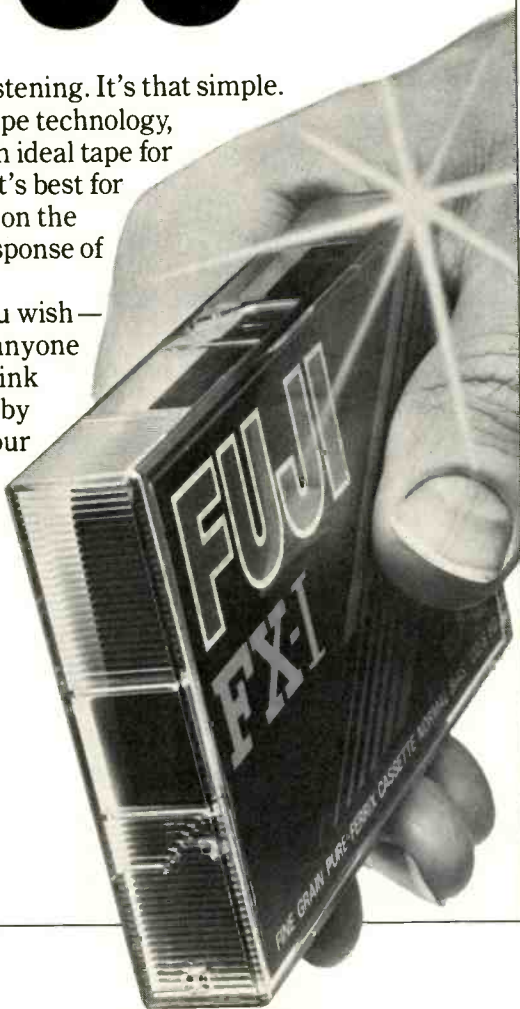
Even with today's tape technology, there's no such thing as an ideal tape for every machine. Only what's best for *you*. Which depends only on the sound *you* like and the response of *your* deck.

Compare specs if you wish—we'll match ours against anyone else's. But we honestly think you'll be more impressed by comparing the *sound* of our FX-I or II to that of any other premium cassette.

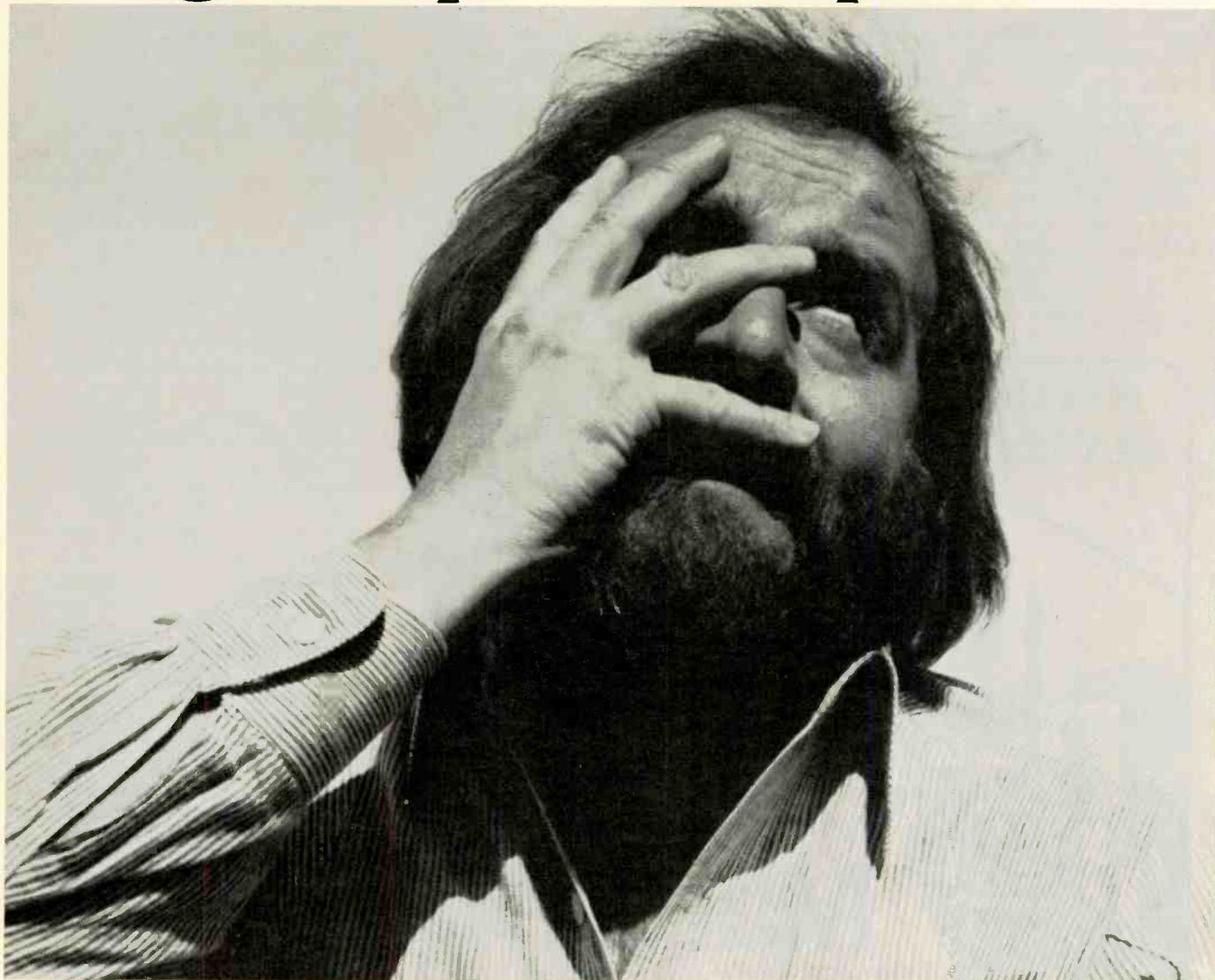
Visit your audio dealer and take the Fuji challenge.

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Bought expensive speakers?



Better not listen to ours!

However, if you're looking for incredible sounding speakers at an affordable price, by all means do! You will find that for less money than you planned on spending you can get much better sounding speakers than you dreamed you could ever afford. Polk Audio loudspeakers have received worldwide praise because people recognize that they offer remarkable value. Critical acclaim such as the following makes it clear why Polk speakers have become famous for offering the best possible sound for the money.

"Polk Audio is a small, Maryland-based company whose speakers enjoy an enviable reputation among audiophiles who would prefer to own such exotica as the Beveridge System 2SW-1 (\$7000 per pair) or Pyramid Metronome (\$5200 per pair) but don't have the golden wallets to match their golden ears!" *The Complete Buyer's Guide to Stereo/Hi-Fi Equipment*

"Audio experts know that the price of a speaker is not always directly proportional to its quality. Nowhere at CES was that fact more dramatically demonstrated than in room 900 of the Pick Congress where the folks from Polk Audio of Baltimore were demonstrating their speaker line..." *High Fidelity Trade News*

"They (Polk 10's) are a high definition speaker system deserving the very best associated electronics. And at their price, they are simply a steal!" *Audio Advisor-Audiogram*

Polk Audio loudspeakers, starting around \$125 each, are available at the world's finest hi-fi stores. Write us for complete information on our products and the location of the Polk Audio dealer nearest you.

Polk Audio Inc. 1205 S. Carey St., Baltimore, Md. 21230 Dept. B9
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processor control, auto reverse, etc. Aiwa also put in a strong bid for higher company visibility by introducing 10 new cassette decks, which include three metal-capable decks. Their interesting new top-of-the-line model is the AD-6900 Mark Two, which in addition to metal capability, has their Flat Response Tuning System for auto adjust of bias, EQ and sensitivity, and a unique wireless function control, handling record, play, rewind, fast forward, stop and pause. JVC, whose KD-A8 was one of the first metal-capable decks on the market (and on which I reported briefly in the July, 1979,

Audio), showed five additional metal-capable decks, all of which use a manual biasing system rather than the automatic BEST system of the KD-A8. Their KA-7 is a two-head deck with the JVC spectral peak indicators at \$499.95, and their KD-A77 is a three-head deck at \$549. In the more exotic configurations . . . with the prices to match . . . were metal-capable models from Eumig (FL-1000, three heads, dual Dolby, micro-processor control, bias test system at just under \$1600), Teac (Model C2, two motors, three heads, unusual choice of Dolby or dbx noise reduction, plug-in bias and EQ cards, \$1000),

and Technics (RS-M95, designated their "Professional" metal deck at \$1300).

B•I•C/Avnet, which shook up the cassette world last year with their two-speed (1½ & 3¾ ips) cassette decks, has now added their Model T-4M metal-capable deck with such amenities as micro-processor control, two-motor solenoid operation, LED bar-graph level indicator. Their T-3 model, with Memorex Hi-Bias, TDK-SA, and Maxell UDXL, traced exceptionally flat curves on my UREI 200 Waveform Response Plotter at both speeds, so I am curious to see how well metal tape performs at both speeds on this new unit. While B•I•C's 3¾ ips speed was dismissed as a "gimmick" in certain quarters, others evidently thought otherwise, since Marantz now has six two-speed decks, with four units also offering metal capability, and Fisher also offers two models with metal-capable, dual-speed features. Nakamichi, always in the forefront of new cassette developments, was showing their very sophisticated 581 and 582 metal-capable decks. Their transport is unique in that it uses three motors, in an unusual configuration . . . one to drive the capstan, another to drive the reel hubs, and the third to drive a special multi-purpose cam. With their special "crystal permalloy" heads (with a 0.9-micron gap in the playback head), frequency response is rated at ±3 dB from 20 Hz to 20 kHz. The most interesting new Nakamichi deck was their Model 680. This is also a two-speed deck, however Nakamichi opted for a second speed in the opposite direction of the B•I•C unit . . . to wit, 15/16 ips . . . half of the normal 1½ ips! In other words, a C-90 cassette will afford a total of three hours recording time! Your first question will be, of course, what is the frequency response? With special heads, including a playback head with a rather astonishing 0.6 micron gap, and special double negative-feedback electronics, the response is rated as ±3 dB from 20 Hz to 15 kHz! The unit has many other goodies such as user-adjustable record head azimuth, fluorescent level indicators, Dolby N/R, 400-Hz test tone, etc. I listened to the unit at the 15/16 ips speed with a metal-tape recording, and the sound was quite wide range, with nice clean, low distortion sound and a respectably quiet S/N ratio. I don't know how much headroom there is at this slow speed and the dynamics of the music were not very demanding, so I'll have to wait and give one of these units a whirl at home to form any concrete opinions in this area. There were scads of other metal-capable decks in a

sweet sixteen

U.S.A.
Martin

You ordinarily see Martin speakers advertised one at a time. But there are 16 superb, sweet-sounding Martin speaker models, manufactured in one or more of our four production facilities in the USA, France, Spain or Norway — ranging in price from \$99 to \$750.

We make only one kind of product . . . fine loudspeakers. They are meticulously crafted one by one for a discerning audience which demands the Sound of Perfection.

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The logic behind the Revox B77.

The logic is the logic which is built-in.

It's an ingenious and highly sophisticated system—much like the human nervous system—which controls the deck's functions.

You can push any button in any order with no chance of damaging your tapes. Our motion sensing system constantly feeds status reports to the logic circuitry which activates your commands in proper sequence.

The logic also permits full-function remote control, and an editing mode that keeps the playback circuitry live, even when the motors are stopped. You can make your splices right on-the-beat, and our built-in splicing block makes it easy.

The design and construction of the Revox B77 further guarantee smooth and accurate operation. To get the

long-life advantage of ferrite without static build-up or heat degradation, we use Revox's exclusive Revodor heads, made of metal to dispel heat and static, and vacuum-coated with permalloy for durability.

The B77 has a unique capstan motor that's monitored by a tacho head to precisely control speed and limit wow and flutter to professional studio standards.

Revox offers many options with the B77 including a full range of speed configurations from 15/16 IPS to 15 IPS, variable speed control, ¼ track record/playback and more.

All this professional quality is neatly engineered to fit in a deck you can carry. After all, if you own a machine this good, it's logical to take it with you.

Experience the B77 and the full line of Revox audio components at your franchised Revox dealer today.



broad price spectrum, and the once lowly cassette continues to amaze with its new heights of fidelity and versatility.

If all the foregoing seems to paint a rosy picture for metal-particle tape technology, alas, there are technological thorns to prick the unwary. As I pointed out earlier, some engineers have a very cynical viewpoint in respect to low-priced, metal-capable cassette decks, and even many higher-priced units, just do not have the performance capabilities to fully exploit the potential of metal-particle tape.

Indeed, more than a few feel that the present shortage of metal tape is a reflection of the difficulty in making this kind of tape. They cite inconsistency of coercivity values and instability of the tape, including "shedding" in some samples. The Tandberg company, which introduced the industry's first metal-particle tape deck last year, sounds a particularly discordant note concerning problems with metal tape. They state that in spite of recent industry standardization, which set metal particle tape coercivity at 1050 oersteds, retentivity at 3000 gauss, with a playback time constant of 70 micro-

seconds, batch-to-batch tape variations have resulted in marked changes in frequency response. This was most evident in the mid-range frequencies, which is very critical because bias adjustment cannot compensate for this. They further claim that if a cassette deck is adjusted for a particular metal tape, subsequent variations in other tape batches may necessitate a considerable readjustment (a bench procedure) of the record equalization. Tandberg states bluntly that their research indicates that no two-head (combined record/playback) cassette deck is acceptable for use with metal-particle tape. They say the bias field required for the tape exceeds the saturation point of any head material they have sampled, including Sendust. They further claim that any two-head machine using metal-particle tape will be in an under-biased condition, increasing distortion and decreasing S/N ratio.

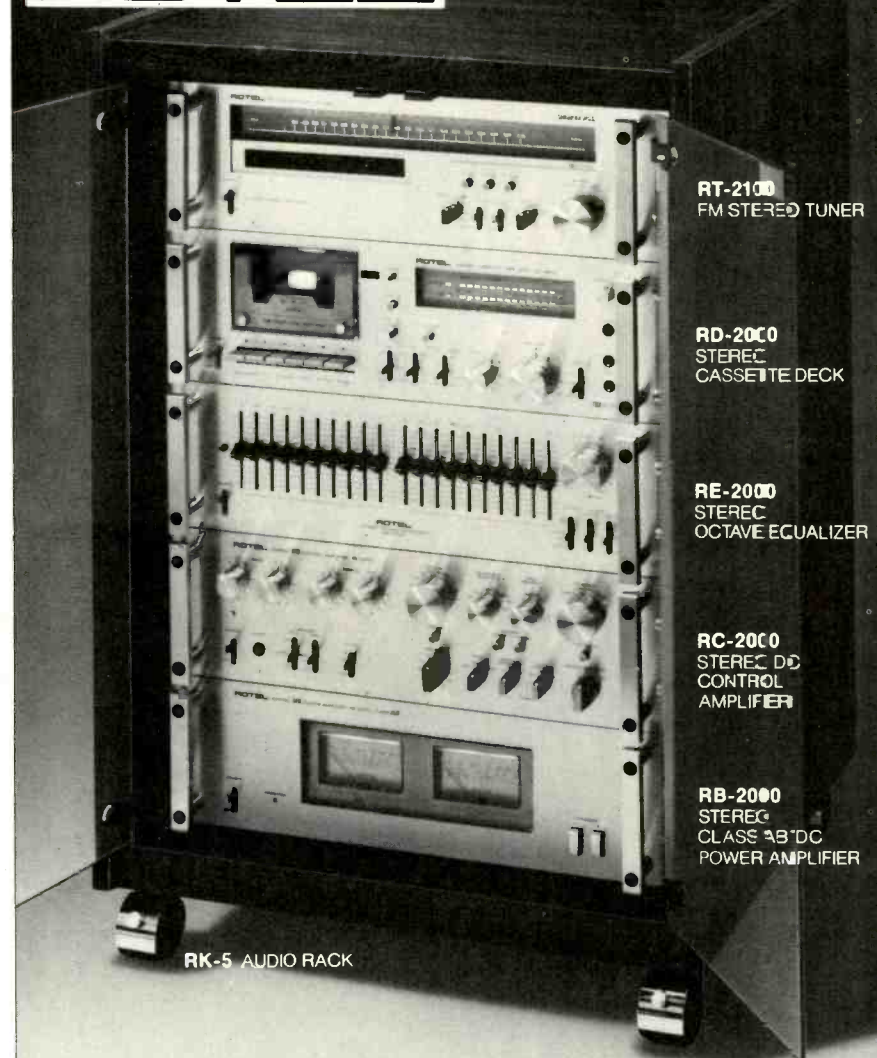
Obviously, Tandberg has made some pretty strong statements, which are certain to raise the hackles of many engineers and manufacturers. Yet there have been similar charges in other quarters, so that one cannot summarily dismiss the Tandberg claims as company propaganda in favor of their new TCD 440A metal-capable cassette deck. To cope with some of the problems of metal-particle tape (and conventional tape, for that matter), especially in the area of high frequency saturation, Tandberg has introduced what they call their "DYNEQ" system. In essence, it is a dynamic equalization system which varies the amount of treble boost in the record equalization. As the signal level rises to the point where full record EQ would cause high frequency saturation, the EQ is automatically reduced, to the point where at 0 dB (250 nWb/m) record level, there is no record treble boost at all. Tandberg claims this circuit drastically reduces IM distortion. As for the problems Tandberg raises with metal-particle tape, we await with interest for the outraged cries of manufacturers who most certainly will rebut this firm's contentions!

By sheer coincidence, a new development from Dolby Laboratories specifically addresses some of the problems posed by Tandberg. At a special conference at the SCES for the audio press corps, Dolby demonstrated their new HX Headroom Extension System. As the name implies, the Dolby HX system is designed to cope with the problems of high-frequency tape saturation, with the consequence of reduced dynamic range. The Dolby HX

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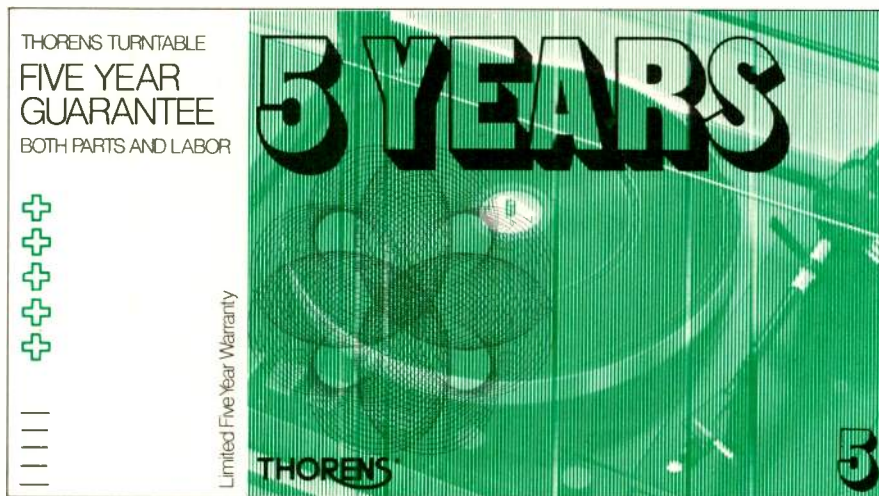
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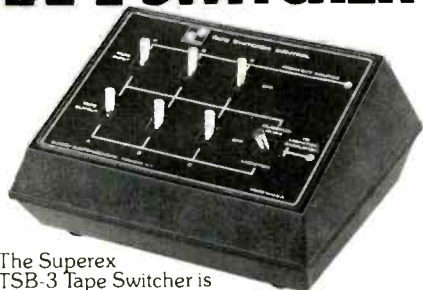
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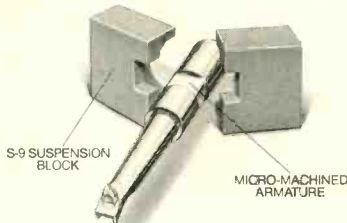
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system, which works in conjunction with Dolby B noise-reduction system, automatically and continuously varies a recorder's bias level and record equalization to optimize them in response to the changing level and high frequency content of the music being recorded. The result is a significant reduction in the effects of tape saturation. The Dolby HX system thus permits recording high frequency information at 10 kHz and above, at a level 10 or more dB higher than is currently possible, while at low and middle frequencies performance is optimized for minimal distortion, modulation noise, and drop-out effects. The variable circuitry operates by means of a control signal based on the level and high frequency content of the music derived from the Dolby B noise-reduction system. The system works with any kind of cassette tape. Now, if we attribute a conservative five dB improvement in high-frequency headroom through the use of metal-particle tape, and then add a further 10-dB improvement by utilization of the Dolby HX system, we wind up with a rather incredible 15-dB increase in dynamic range. Best of all, the headroom improvement is inherent in the recording process, and no special circuitry is required to playback HX tapes other than regular Dolby B noise reduction. At the demonstration, both open-reel master tapes and records were recorded on three-head cassette decks to permit instantaneous source/tape comparisons, with and without the HX system. There was no question whatever of the superiority of high frequency response on the HX encoded tapes. Cymbals and high-level, high-frequency synthesizer effects were audibly cleaner and clearly delineated.

Dolby intends to make the HX Head Extension System available to all Dolby noise-reduction licensees, without further royalty and licensing charges. Dolby estimates that parts for the inclusion of the HX system in regular Dolby noise-reduction circuitry will add about a third more to the overall cost. The HX system is a very important development, because it will make pre-recorded cassettes truly competitive with discs. Yes, friends, with appropriate changes in the bias and EQ circuitry of the duplication equipment, we can have wide-dynamic range HX cassettes! A trip to Dolby Labs in San Francisco is forthcoming, and I'll learn more about the HX system, as well as new developments in Dolby stereo sound for motion pictures.

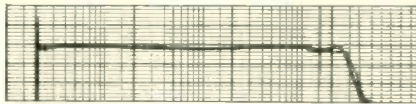
Next month I'll wrap up the SCES report with a look at some new amplifiers, loudspeakers, etc.

We can. Thanks to the revolutionary Omni-Pivot System™ in our new ADC Improved Series cartridges. We can also honestly say ADC has never sounded better. Definition and stereo separation are incredible. Even the most complex musical passages are reproduced in full detail with absolute neutrality.

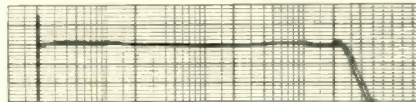


The new Omni-Pivot System™ is a major advance in micro-technology. There are no restrictive armature governors, wires or

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Above is the frequency response of a new ADC ZLM Improved cartridge. The wider and flatter the response, the better it is. Do we have to state the obvious? We didn't think so.



Now look at the same cartridge after 1000 playing hours. See

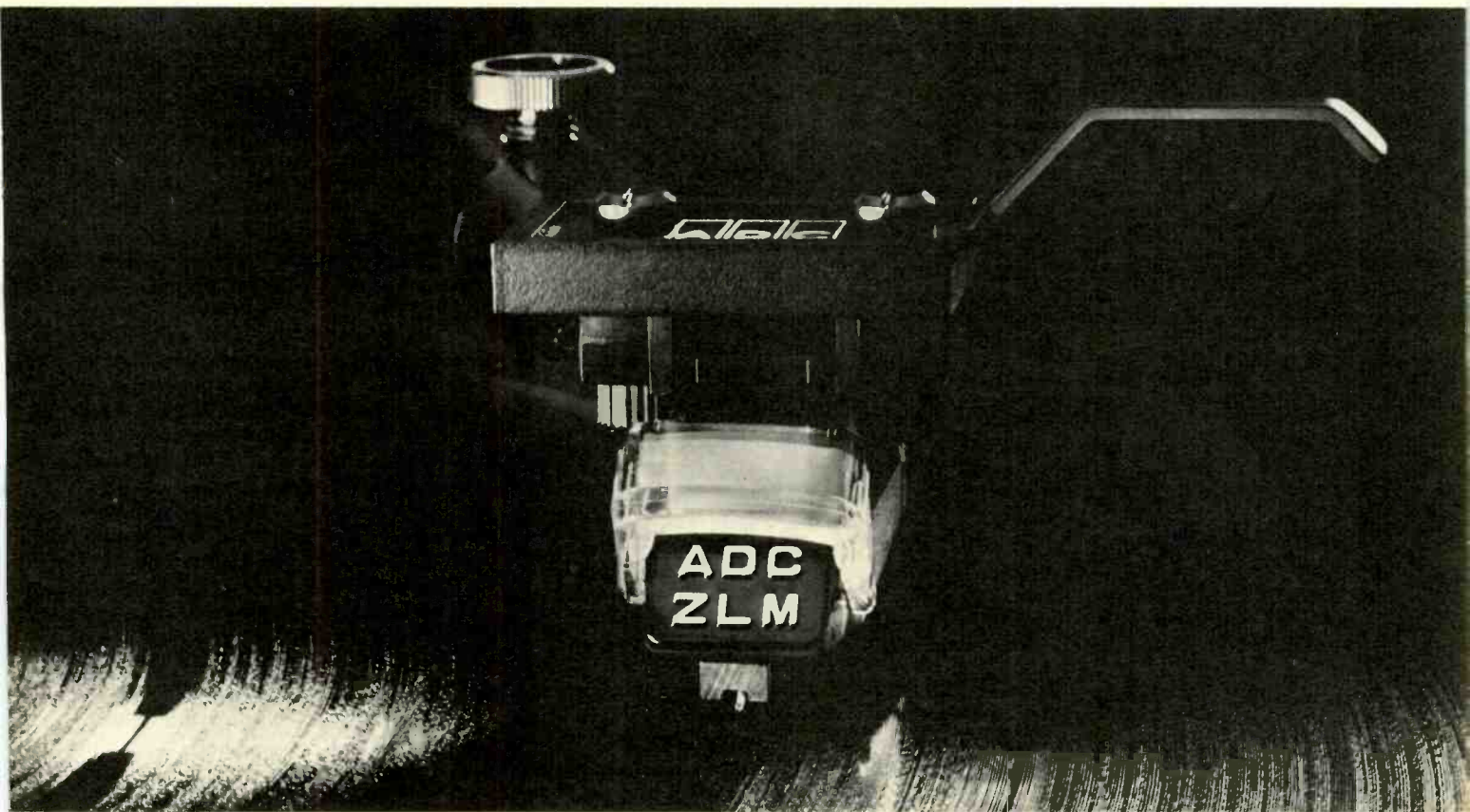
any difference? You won't hear any difference either. The ADC ZLM Improved cartridge showed less than a 1dB change in response after 1000 hours!

Now the good news gets even better. The Omni-Pivot System™ comes in a wide range of new ADC Improved Series cartridges. The ZLM, XLM MKIII and MKII, and QLM-36 MKIII. All featuring new snap-down stylus protectors.

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The commercial hi-fi magazines won't tell you because they can't afford to rock the boat with unpleasant truths that might upset their advertisers. The "undergrounds" are unable to tell you because they are largely untutored in electrical science and undisciplined in their listening criteria. Among the audio publications that carry no advertising by manufacturers, only The Audio Critic has 100% respect for the laws of physics, combined with a superior in-house laboratory facility plus a \$25,000 reference system for listening to new components under test.

The Audio Critic is, among other things, almost single-handedly responsible for today's heightened awareness of correct vs. incorrect lateral and vertical tracking geometry. It seems that even those who resent The Audio Critic for its outspokenness secretly align their cartridges and arms according to The Audio Critic's detailed instructions.

Seven issues have been published as of this writing; the last three are still in print. An eighth one will be out very shortly. You may want to start your subscription with Number 6, which is a cumulative reference work with over 150 reviews and also includes the most up-to-date explanation of the phono alignment procedure.

Send \$30 for 6 consecutive issues by first-class mail (no Canadian dollars, \$6 extra for overseas airmail) to The Audio Critic, Box 392, Bronxville, New York 10708.

The Audio Critic

Audio ETC Continued from page 14

and fortunately the cards for music have been separated out and are published in a special edition, "Music and Phonorecords." All this I am borrowing from Mr. Edmondson's lucid account of the L. of C. operation, though I do seem to have heard about some of it before, as you might suppose. Anyhow, that still makes for music cards in the multi-thousands if not millions. *Every single published item. Fantastic — but . . .*

Small Type Blues

(Loud squawk from me.) MUSIC and Phonorecords? Wouldn't you know, they have put all the musical scores right in there with the recordings, one big mix. That's fine for a music librarian, but for the hi-fi man it is a mess! Score after score, by a thousand unrecorded composers and as many who are recorded, and it is NOT easy at quick glance to untangle the score cards from the "phonorecord" cards. Visually the cards are a clutter and a pain and maybe they have to be, what with so much info on them. Five minutes with the sample page Mr. Edmondson sent me, three tight columns of reduced-size card info, and my eyes began to cross. Such a sprawingly unaesthetic, repetitive mass of mixed-up small type! Sorry, librarians, but ugh. Really. (Speaking from OUR viewpoint, of course.)

Mendelssohn-Bartoldy, Felix, 1809-1847 is printed out no less than 18 times on this one page of cards — which is undoubtedly a necessity since each is separate physically in the actual card form. BUT . . . If I'm to have cards for my minuscule collection of thousands of records, I want the essential locating info and no more! — just MENDELSSOHN would do me fine and forget all the other eye-straining small type. Not even, for instance — Mr. Edmondson evidently missed this — a tiny line far down on two of the cards which says "Program notes by Edward Tatnall Canby on the slipcase." If you can read it. (I suspect that I am thus small-typed on a couple of hundred other Library cards, but do YOU need the interesting info? Go read me on the record itself.)

Just a bit further. The music catalog of the L. of C. is put out in huge cumulations, as they are called, big volumes of pages like the one I have been describing, each with around three dozen cards reduced on it. These cumulations cover five years, each superseding the last, and they go for \$30 a volume and come in more than one volume at that. Mr. Edmondson

has them all on his shelves and is expecting the latest soon. With these you have everything. You can find them in many local libraries, to be delved into. He suggests that what you do is to "create" your own cards from these, guided by the Library's information and system, omitting what you don't need. Yeah. I figure that will take you around seven years, with good luck, and not counting travel time. Go right ahead. But that isn't all. How about *filin'* your cards — and your records?

Well, the suggestion, in all good faith, is this, and it is what Mr. Edmondson has done with his own collection. You use a "very fine" system called ANSCR, the Alpha-Numerical System for the Classification of Recordings. You buy a guide to it. (Still want to go ahead?) This system has 23 major categories for recorded items (largely classical, I seem to note) and many sub-categories, so you know where to put everything. Each category is identified by a letter of the alphabet.

Whoa. Right here, Edmondson and I part company, I trust with a handshake. Sometimes the librarian mind is baffling. Remember my own categories, a shorthand whereby you can easily read a code that looks like the proper spelling? *Sym* for Symphony, *Son* for Sonata, *vI C* for Violin Concerto? Well, guess what ANSCR does with virtually the same categories. Opera? Opera is represented by the letter B. Orchestra is filed under E. And for all I know, Sonata is Q and Quartet is S. Now how is that for logic?

Go right ahead, but after your seven years' labor you will be a slave to your B-for-Opera and E-for-Orchestra cards. You'll have to memorize the whole new alphabet before you can find a thing. Sensible?

No, I do not like the Library of Congress scheme though the info on its cards can be very useful in moderation for those of us who have record/tape crunch problems. If you really want to get into sophisticated data storage, then DO IT BY COMPUTER, to your own choice! That's the sine-wave of the future.

Mr. Edmondson's letter was a civilized and helpful account, even so, and I trust he will forgive my strong opinions. I quote him, to end, with a very well-put observation — "*The power of a catalog is in its ability to allow one thing to be in several places at the same time.*" Ever so true, and you will note that this is precisely what computer data storage is all about. How about it, Mr. E.? You're a computer man yourself. And also, how about it, you small computer designers? **A**

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Audioclinic

Joseph Giovanelli

Outdoor Antenna Noise Revisited

Mr. Giovanelli made two mistakes in his reply to "Outdoor Antenna Noise," in the June, 1979, "Audioclinic" column. The first one results merely in some misinformation; the other is dangerous.

According to John Young of Belden's engineering department, the shielding effectiveness of coaxial cable is not greater than that of shielded twin-lead. Shielded twin-lead provides superior electrostatic shielding (99 percent) to that of common braid shield, co-ax 90 percent or less. The electrostatic shielding effectiveness of shielded twin-lead is exceeded (by a fraction of a percent) by foil-shield coax with overbraid, but shielded twin-lead also offers immunity to electromagnetic pickup (by virtue of its balanced configuration). Coax has no immunity to electromagnetic signal pickup. See page 109 of M.J. Salvati's book "TV Antenna and Signal Distribution Systems" for full details. Also, see page 58 of the February, 1978, Audio for his brief statement on this matter.

Mr. Giovanelli's recommendation to raise an antenna to clear power lines is potentially very dangerous if the installer does this in close proximity to the power lines. An antenna raised above ("to clear") the power lines would likely contact them if it tipped over. Over 200 people were electrocuted last year by doing just this.—Richard Reeves, Flushing, N.Y.

Comments: Because I have been an amateur radio operator for over 30 years, it would never occur to me to put any antenna close to a power line. But an antenna can be some distance from a power line and still pick up noise, especially in damp weather where there are slight breakdowns in the insulators. A person certainly can be killed during the process of raising the antenna if he does this when close to a power line. He would not even have to wait for the antenna to come down. As long as we are on the subject of antennas, think what could happen if the antenna fell on adjoining property, perhaps seriously damaging a roof or striking a child.

In order for an antenna to stay up, good guying is essential, and I recom-

mend the use of aviation control cable. This will hold most installations of simple TV masts. The section of masting above the rotator may have to be guyed separately by means of what are known as floating guy rings. The bottom of the mast can be anchored to the roof with roof mounts. Chimney straps can sometimes be used, but only where the mast height is not great and where the antenna system does not provide a serious wind load.

Never attach an antenna to an attic vent. I have seen instances where toppling of the antenna tore the vent right out, not to mention the damage created by the falling antenna. You should not use the vents even for guying. Rust-proof screw-eyes put right into the roof beams is the surest means of securing the guy wires.

If the antenna tower is free-standing, it should be mounted solidly to a slab of thick concrete and guyed with elevator cable.

If the tower is high enough, you should not have to use much masting above the rotator. If, for any reason, you do use a lot of masting above the top of the tower again use a floating guy ring and aviation control cable to keep the masting from giving way in a high wind. If the tower is mounted against a building, secure it to the side of the building by appropriate plugs and bolts.

In addition, if you are not exactly certain how to do all of this, find a qualified person.

Stereo Interference with Cable Reception

Q. My year-old tuner is connected to cable TV. I get a high-pitched tone when my tuner is in the stereo mode. The filter helps a little, but the sound is still bad. Reception was fine before I got cable TV. What is wrong? What can I do?—Charles David, Ft. Wayne, Indiana

A. If your FM reception deteriorated immediately upon installing the cable, I would have to think that your stereo interference is caused by the reception of "direct" signals at the same time that you are receiving signals from the "cable." I suggest that your cable company should improve the shielding of

any transformers, adaptors, etc. which may be involved with your particular installation. Unfortunately, there are some tuners which are, themselves, not well shielded. In the presence of only moderately strong signals, they might pick up some signal, even when there is no antenna connected to their input terminals. If your tuner is one of these, then there is probably little that can be done to eliminate the problem, assuming that "direct" pickup is the root of the problem.

If you made some modification to the original installation, such as running an extension line from the cable installation point into another room, perhaps this is giving rise to the problem. Often such extensions are made with 300-ohm twin-lead. It is best to have your cable company make the installation properly. (This assumes that the company does put the FM signals on the line.)

If you wish to check to see if this direct pickup is really what is taking place, disconnect the tuner from the cable and connect it to a regular antenna, which may be an indoor dipole for this application. Determine whether the stereo is still plagued by the high-pitched whistle. If it is, chances are that there is something amiss within the tuner.

Rise Time

Q. What is meant by "rise time"? How does rise time pertain to the sound of an amplifier? — Rawn Stafford, Gainesville, Fla.

A. "Rise time" refers to the amount of time required for a pulse fed into an amplifier or other device to produce full amplitude at its output. Hopefully, this will happen as soon as the pulse enters the amplifier. In fact, however, there is a certain amount of time required for the various circuits to produce their outputs.

The faster the rise time, the better the equipment will reproduce transient sounds such as percussion instruments. A

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

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680 Discrete Head Cassette Deck

21st ANNUAL EQUIPMENT DIRECTORY

■ This year, our Annual Equipment Directory, the 21st, contains some 40,000 specifications on over 2,700 pieces of gear. This contrasts with 30,000 specs on 2,400 items last year and about 550 and 55 pieces the first year. While we have had to rely on the maker's data, since measurement of so many parameters would be beyond our means, we have found that such data is generally very reliable, with most all discrepancies traceable to differing techniques. ■ While we have introduced several new columns throughout the Directory, in an effort to make it more useful, such features as the various letter codes were retained. We recommend that the reader contact the individual maker for more complete explanations of features. ■ An Addenda, with data received too late for inclusion here, will appear in the January issue.

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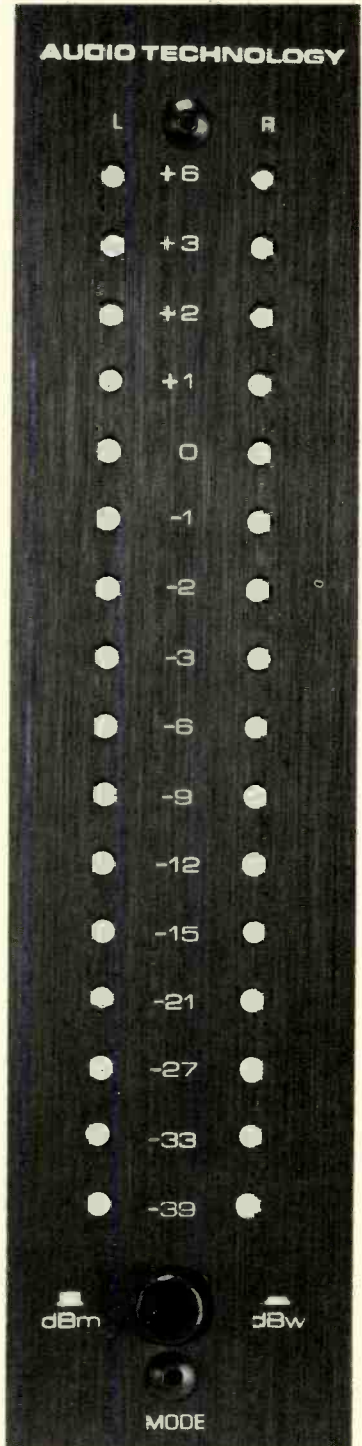
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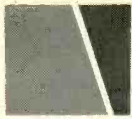
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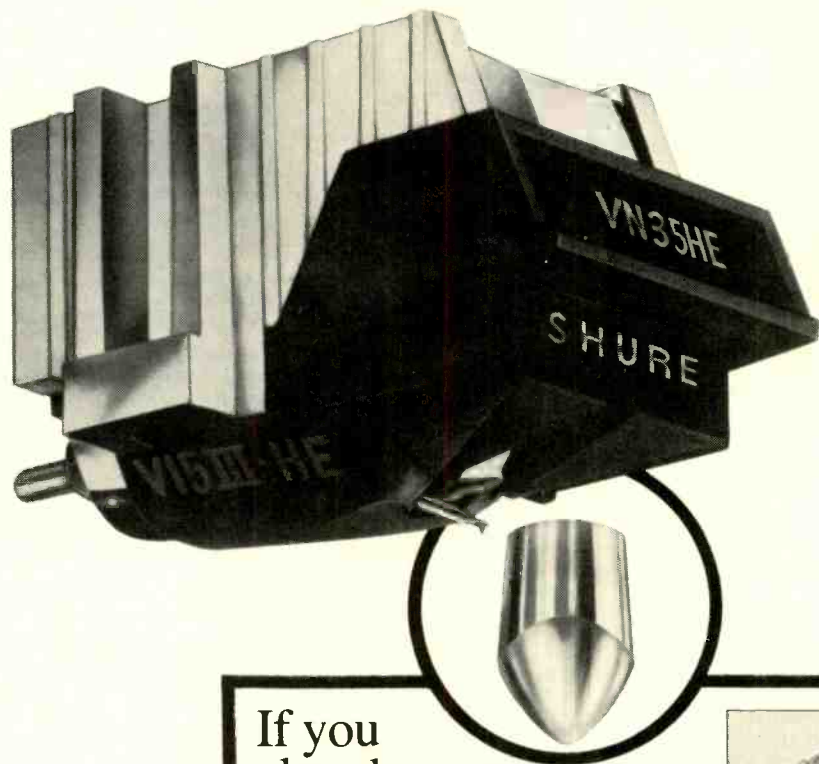
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into the **Super-Track Plus**
family of **V15 Type III Cartridges**



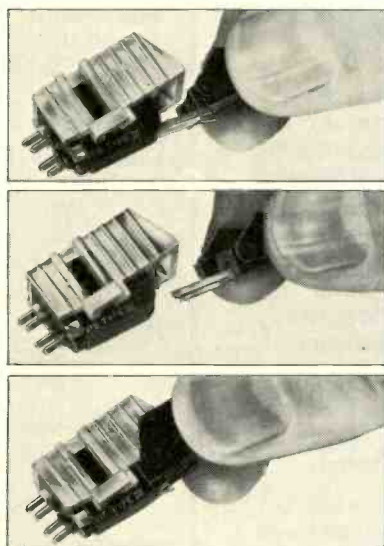
**Hyperelliptical tip for
audibly greater freedom
from distortion**

One of the critically acclaimed developments introduced in Shure's incomparable V15 Type IV phono cartridge is its revolutionary distortion-reducing Hyperelliptical nude diamond tip. It established a new standard of sound purity through a dramatic reduction of both harmonic and intermodulation distortion. Now, the Hyperelliptical tip is also available in the world-famous V15 Type III Super-Track Plus Cartridge, bringing together the sound purity and flat response of the IV at an eminently affordable price. It is truly second only to one other cartridge in the world—the V15 Type IV.

V15 TYPE III-HE
Stereo Dynetic® Phono Cartridge

**If you
already own a
V15 Type III
you can upgrade it!**

If you are one of the thousands of audiophiles who already own a V15 Type III, you too can benefit from the new freedom from distortion afforded by the Hyperelliptical stylus. Simply replace your present stylus with the new VN35HE improvement stylus. It will give your Type III cartridge the same specifications as the new V15 Type III-HE. The cost is extraordinarily low, yet the difference in sound will be immediately apparent. Takes only seconds to install (see illustration), requires no tools whatsoever.



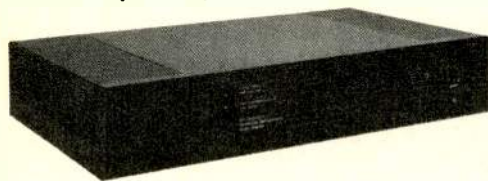
V15 TYPE III-HE IMPROVEMENT STYLUS



Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204, In Canada: A. C. Simmonds & Sons Limited
Outside the U.S. or Canada, write to Shure Brothers Inc., Attn: Dept. J6 for information on your local Shure distributor.
Manufacturers of high fidelity components, microphones, sound systems and related circuitry.

Enter No. 59 on Reader Service Card

Real Power for the Real World: The Apt 1 Amplifier



Apt Corporation believes there's only one good reason to create a new product: a genuine need. The Apt 1 Amplifier is just such a product. With 3 dB of Dynamic Headroom, it can deliver as much as *twice* its 100w average rated power (20 Hz–20 kHz @ 0.03% THD) on musical peaks—just as program material so often requires. And, it can deliver this extra performance into any actual loudspeaker, not just on the test bench. The Apt 1 also incorporates new approaches to power supply, driver stage, and protection circuit design, which all contribute to a uniquely *useful* amplifier.

Problem Solving in a Real System: The Holman Preamp



You don't live in an ideal world—neither does your stereo music system. The Holman Preamp is the result of over 2 man-years of research into how and why components behave in real-world hifi systems. As such, it provides an unprecedented balance of features and performance, which combine toward a common goal: *sonic excellence*.

The Holman Preamp and the Apt 1 Amplifier; individually or together they make music systems work better, and *sound* better.

For information, check the appropriate box(es) below and send with your name and address to:

Apt Corporation
Box 512
Cambridge, Massachusetts 02139

- Apt 1 Amplifier brochure and the name of your local dealer.
- Holman Preamp brochure.
- For an Apt 1 Owner's Manual, please send \$4 (\$5 foreign).

DIRECTORY OF MANUFACTURERS

H. H. Scott
20 Commerce Way
Woburn, Mass. 01801

Sennheiser
10 W. 37th St.
New York, N.Y. 10018

Sequera
143-11 Archer Ave.
Woodside, N.Y. 11435

Series 20
85 Oxford Dr.
Moonachie, N.J. 07074

Servolinear
P.O. Box 4276
Modesto, Cal. 95352

Shahinian Acoustics
4 Selden Ct.
Selden, N.Y. 11784

Sharp Electronics
10 Keystone Pl.
Paramus, N.J. 07652

Sherwood
4300 N. California Ave.
Chicago, Ill. 60618

Shure
222 Hartrey Ave.
Evanston, Ill. 60204

Signet
33 Shiawassee Ave.
Fairlawn, Ohio 44313

Snell Acoustics
10 Prince St.
Newburyport, Mass. 01950

Sonex
See: Sumiko

Sonic Research
P.O. Box 399
Danbury, Conn. 06810

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

Sontec
10120 Marble Ct.
Cockeysville, Md. 21030

Sonus
See: Sonic Research

Sony
9 W. 57th St.
New York, N.Y. 10019

SoundAids
395 Riverside Dr.
New York, N.Y. 10025

Soundcraftsmen
2200 S. Ritchey
Santa Ana, Cal. 92705

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

Speakerlab
735 N. Northlake Way
Seattle, Wash. 98103

Spectro Acoustics
3200 George Washington
Way
Richland, Wash. 99352

Spendor
See: RCS Audio

Stanton
175 Terminal Dr.
Plainview, N.Y. 11803

Stax
See: American Audioport

Sumiko
P.O. Box 5046
Berkeley, Cal. 94705

Sumo
1230 N. Horn Ave.
West Hollywood, Cal. 90069

Superec
151 Ludlow St.
Yonkers, N.Y. 10705

Supex
See: Sumiko

Symdex Speakers
12 Irving St.
Framingham, Mass. 01701

Symmetric Sound Systems
1608 South Douglas Ave.
Loveland, Colo. 80537

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

T
3D Acoustics
101 Lafayette Rd.
Portsmouth, N.H. 03801

TEAC
7733 Telegraph Rd.
Montebello, Cal. 90640

Tandberg
Labriola Ct.
Armonk, N.Y. 10504

Tangent
12 Irving St.
Framingham, Mass. 01701

Tannoy
122 DuPont St.
Plainview, N.Y. 11803

Technics
One Panasonic Way
Secaucus, N.J. 07094

Theta
2062 Weaver Park Dr.
Clearwater, Fla. 33515

Thiel
4158 Georgetown Rd.
Lexington, Ky. 40505

Thorens
See: Elpa Marketing

Threshold
1832 Tribute Rd., Suite E
Sacramento, Cal. 95815

Toshiba
280 Park Ave.
New York, N.Y. 10017

Trusonic
10530 Lawson River Ave.
Fountain Valley, Cal. 92708

U

UHER/Martel
970-A East Orangethorpe
Anaheim, Cal. 92801

UHER/Mineroff
946 Downing Rd.
Valley Stream, N.Y. 11580

Uni-Sync
71 Chapel St.
Newton, Mass. 02195

United Audio
120 S. Columbus Ave.
Mt. Vernon, N.Y. 10553

V

VA Systems
1444 Cliff Rd.
Burnsville, Minn. 55337

VMPS
See: Itone Audio Products

Vandersteen Audio
1018 S. Mooney Blvd.
Visalia, Cal. 93277

Vector Research
20600 Nordhoff St.
Chatsworth, Cal. 91311

Visonik of America
701 Heinz St.
Berkeley, Cal. 94710

W

Dick Wagner
5930 Penfield Ave.
Woodland Hills, Cal. 91367

Watson Laboratories
2711 Renna Rd.
Mississauga, Ont.
Canada L4T 3K1

Jordan Watts
c/o Carl R. Lindell
4339 N. Paulina Ave.
Chicago, Ill. 60613

Wharfedale
See: Rank

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

Win Laboratories
P.O. Box 332
Goleta, Cal. 93017

Y

Yamaha
6600 Orangethorpe Ave.
Buena Park, Cal. 90620

AUDIO • October 1979

HOW TO CHOOSE FROM SOME OF THE CHOICEST MICROPHONES WE'VE EVER MADE.



ECM-33F

ECM-15C

ECM-260F

ECM-990F

ECM-56F

ECM-23F

Among recording professionals, Sony is widely recognized as an expert on microphones. That's because we're continually applying new technology to deliver better sound.

Our latest innovation is the exclusive Back Electret condenser microphone capsule, which delivers response truer than ever thought possible.

You can get this capsule in a variety of Sony mikes. And that's a bit of a problem: it's hard to know which mike is appropriate for your recording needs.

Therefore, let us clear up any confusion:

MICROPHONES THAT ARE AT HOME IN YOUR HOME STUDIO.

If you're involved in the music business and have a home studio, you need a microphone as professional as the rest of your equipment.

For all-purpose recording, we recommend the Sony ECM-56F. It's a uni-directional Back Electret condenser mike with excellent transient response, good for close miking of both instruments and voices.

For recording instruments only, the uni-directional Back Electret condenser ECM-33F

is ideal. It provides flat frequency response over the entire range, and picks up amplified and non-amplified instruments equally well.

Both of the above plug into mixers for multi-channel recording.

LOCATION MIKES, FOR STUDIO SOUND WITHOUT THE STUDIO.

But suppose you want to record on location. At a rock concert, say, or a performance of your church choir or glee club. Sony has mikes that, combined with your tape recorder, practically make up a portable studio.

Take the ECM-990F, an especially versatile and lightweight stereo Back Electret condenser mike. You can vary its directional quality to adapt for everything from solo voice to small groups to full orchestra.

Or choose an ECM-23F. It runs more than 6,500 hours on a single AA battery, and it's uni-directional. Use a pair when you want to create a stereo effect. The ECM-23F also incorporates Sony Back Electret technology.

RECORD FOR RECREATION AND STILL RECREATE NATURAL SOUND.

Maybe you just need a mike to use at

home, to record family sing-alongs. Or someone's performance on guitar or piano, for your own enjoyment.

You can still get a Sony Back Electret mike at a very affordable price. It's the ECM-260F, which plugs into a tape recorder and makes whatever you record—instrumentals, singing or speech—sound true to life.

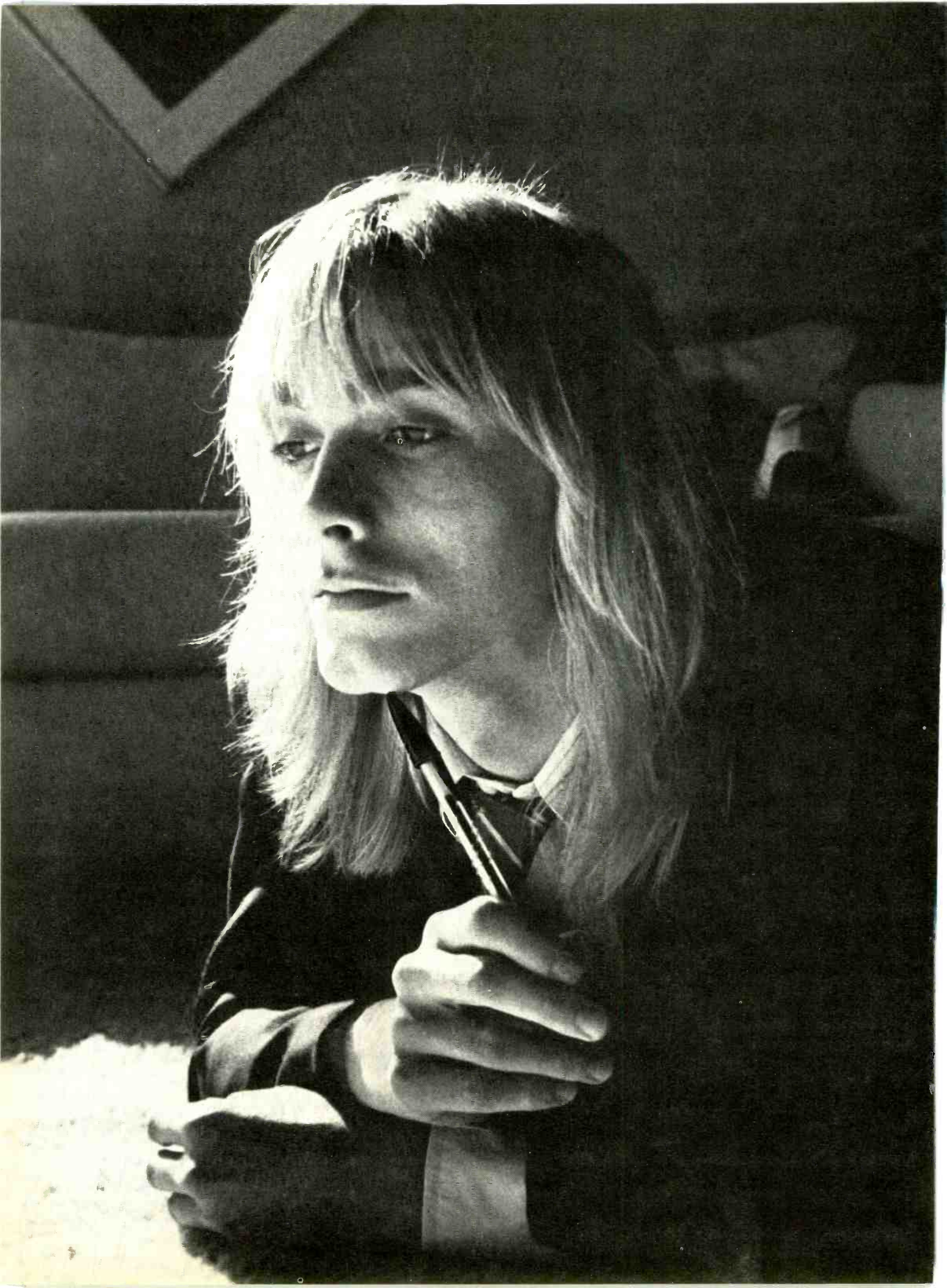
For greatest versatility, use our ECM-150 omni-directional condenser mike. It's Sony's tiniest mike, smaller than a dime in circumference, and you can clip it to the fingerboard of a guitar or use it as a lapel or tie tack mike. (Incidentally, it's great for business conferences or any occasion when you want the mike to be inconspicuous.)

Whatever you need to record, and wherever you need to record it, there's a choice Sony mike to do the job.

And now that you know which mikes to choose, all you need to do is see your Sony dealer.

SONY

We've never put our name on anything that wasn't the best.



Robin Zander listened to us.

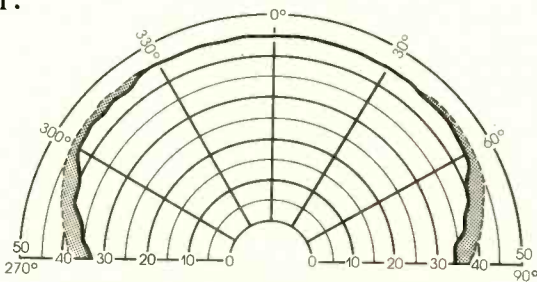
Robin Zander, singer with Cheap Trick, said about the Jensen System B: "The sound covers the entire room wherever you are it is." System B is a vented 4-way, 5-driver system with high efficiency and low distortion. And wide dispersion.

We used advanced engineering technology to solve critical engineering problems that have plagued speaker designers for years.

To improve dispersion over the complete frequency range, we symmetrically positioned all four front-firing drivers along the vertical axis of the baffle surface.

What's more, the System B has two specially designed, but different high frequency drivers.

One on the front and one on the rear.



System B Half-space polar response at 5000 Hz. It shows improved dispersion (shaded area) as a result of rear firing driver.

With the System B positioned 12" from a wall, the reflected sound from the rear driver provides an increased sense of depth as well as uniform dispersion throughout the entire listening area.

The result is music that sounds virtually the same whether you're directly in front of the speaker or off to the side.

Robin, a professional musician, sums it up.

"The sound covers the whole area."

This is illustrated in the polar response diagram.

Of course, the system includes a new Impedance Compensated Crossover Network as well as a precision low frequency radiator and upper and lower midrange drivers.

We can't describe everything in this amazing speaker system in detail.

That's why you should go to your audio dealer for a demonstration.

After all, what's most important is how the speaker sounds to you.

You're the ultimate test.

But one more comment from Robin.

"I listen to music everyday. So when I hear a speaker that sounds good, I get excited about it. This is good and I'm excited."

Listen to our speaker in person.

Robin Zander did.

Listen with the professionals.



Listen to JENSEN speakers.

JENSEN SOUND LABORATORIES
Division of Pemcor, Inc., Schiller Park, IL 60176.

AMPLIFIERS



Letter Key: K = kit; W = wired;
T = tube; P = phone stage only;
M = mono.

MANUFACTURER	Model	Unit type — Basic=B; Kit=K; Integrated=I; Tube=T; Mono=M	Cont. Ave. Watts per Chan. into 8 Ohms	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	Rated SMPTE IM, Percent	S/N, "A" wtd., Phono	Phono Sensitivity, mV	Maximum Phono Input, mV	Rated Slew Rate, V/μS	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit invert phase?	Weight, lbs.	Price, \$	Notes
AB SYSTEMS	105	B	50	20-20	0.15	0.15				45	0.75	AB	1.5	No	18	349.00		
	205	B	100	20-20	0.25	0.25				40	0.75	AB	1.5	No	22	560.00		
	410	B	200	20-20	0.25	0.25				40	0.75	AB	1.5	No	32	860.00		
	710	†	350, 100	20-20	0.15					40	0.75	AB	1.5	Varies	30	770.00		
	720	†	150, 75	20-20	0.15					40	0.75	AB	1.5	Varies	32	1,039.00	†dual bi-amp with selectable crossover.	
	730	†	350, 100, 50	20-20	0.15					40	0.75	AB	1.5	Varies	32	1,039.00	†tri-amp with selectable crossover.	
ADC	B-200	B	100	5-20	0.2	0.2	0.2			150	1	A	0	Yes	60	995.00		
ACE AUDIO	8000 Chunky 35x2/ Super	B,M	70	20-20	0.1	0.1		90		4	1.5	AB		No	7.5	189.00		
		B	35	20-20	0.1	0.1		90		4	1.0	AB		No	13	239.00		
ADCOM	GFA-1	B	200	20-20	0.05	0.1	0.1			80		AB			21	400.00		
AIWA	AA-8300U	I	45	20-20	0.1	0.1		80	2.5	130				No	20.9	300.00	2-way tape dubbing, low & high filters.	
	AA-8700U	I	75	20-20	0.02	0.02		83	2.5	280				Yes	36.4	550.00		
	SA-P22U	B	30	20-20	0.04						0.15			No	8.4	210.00	Mini, LED indicators.	
AKAI	AM-2850	I	95	20-20	0.08			75	3		0.15				34.5	475.00		
	AM-2650	I	65	20-20	0.08			75	3		0.15				23.5	299.95		
	AM-2450	I	45	20-20	0.1			75	3		0.15				21.8	225.00		
	AM-2250	I	25	20-20	0.2			75	3		0.15				13.6	149.95		
APT	1	B	100†	20-20 ±0.2	0.03	0.01	0.03			60	0.9	AB	3	No	23	640.00	†Equal performance from 2-10 ohms at any phase angle.	
AUDIO RESEARCH	D-52B	B	50	1-20	0.1	0.1	0.1			8	1.35	AB		No	39	1,195.00		
	D-100B	B	100	1-20	0.1	0.1	0.1			8	1.5	AB		No	43	1,495.00		
	D-110B	B	110	1-20	0.1	0.1	0.1				1.5	AB		No	92	2,750.00		
	D-350B	B	350	20-20	0.25	0.25	0.25				1.35	AB		No	105	3,500.00		
	D-79	B/T	75	20-20	1	0.5	0.5				0.75	AB		No	85	3,250.00		



Phase Linear
300 Series Two



SAE X25A



Sanyo
P55



Sharp
SM-1122



Threshold
Stasis 1



H. H. Scott 480A



Spectro Acoustics 500SR



Soundcraftsmen EA5003



Yamaha M-2



Apt 1

Letter Key: K = kit; W = wired;
T = tube; P = phone stage only;
M = mono.

MANUFACTURER	Model	Unit Type	Basic B, Kit/K, Integrated-T, Tube/T, Mono=M	Cont. A.V. Watts per Chan. into 8 ohms	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	Rated SMPTE IM, percent	S/N, "A" wtd., re 5 mV, dB	Phono	Phono Sensitivity, mV	Maximum Phono Input, mV	Rated Slew Rate, V/μs	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit Invert phase?	Weight, lbs.	Price, \$	Notes
AUDIO SCIENTIFIC	1500	B	85	8-150	0.005	0.005						1	A	0.8		42		750.00		
	1560	B	50	8-150	0.005	0.005						1	A	0.5		36		550.00		
AUDIONICS	BA150	T	150	30-20								1.7	B			65		2,950.00	Hybrid tube-transistor.	
	CC-2		70	20-20	0.16	0.1						1	AB	No		20		489.00		
	P23		100	20-20	0.03	0.03						1	AB	No		35		499.00	400 watts mono.	
	P23 Pro		100	20-20	0.03	0.03						1	AB	No		35		599.00		
AUDIOWORKS	AWX-1	B/K	65	0.1-100								150	1.1	B	Yes	35		395.00	No negative feedback.	
	AWX-1 Mono	B/K/M	260	0.1-100								300	1.1	B	Yes	35		435.00	As above.	
BGW	110	B	50	20-20	0.07	0.02	0.02					0.75	AB,B	No		18½		439.00		
	210	B	100	20-20	0.07	0.02	0.02					1.5	AB,B	No		30		659.00		
	410	B	200	20-20	0.07	0.02	0.02					2	AB,B	No		35		879.00		
BAUMAN	HEX-400	I	125	10-250	0.1	0.1						1	AB	3	Varies	25		1,050.00		
CM LABS	CM920	B	250	20-20	0.1	0.1	0.1					40		AB	No	48		899.00	LED output indicators.	
	CM914A	B	125	20-20	0.1	0.1	0.1					40		AB	No	39		499.00		
CARVER	M400	B	200	1-250M	0.05	0.05	0.05					80		3		12		349.00		
	C500	B	250	1-250M	0.05	0.05	0.05					80		AB	3	40		689.00		
CERWIN-VEGA	Metron	B	125	7-100	0.02	0.02	0.02					70	0.125	AB	0.8	No	31		600.00	
	M-200	B	225	7-100	0.03	0.03	0.03					80	0.095	AB	0.8	No	45		900.00	
	A-400	B	350	7-100	0.04	0.04	0.04					80	0.075	AB	0.8	No	70		1,400.00	
	A-600	B	350	7-100	0.02	0.02	0.02					70	0.107	AB	0.8	No	79		1,600.00	
	Metron A-4000	B	350	7-100	0.02	0.02	0.02					70	0.107	AB	0.8	No	79		1,600.00	
CONRAD-JOHNSON DESIGN	Conrad-Johnson Premier One	B/T	75	30-15	1	1	1							AB	No	48		985.00		
		B/T	200	30-15	1	1	1							AB	No	90		3,500.00		

AMPLIFIERS

Letter Key: K = kit; W = wired;
T = tube; P = phone stage only;
M = mono.

MANUFACTURER	Model	Unit type — Basic: R; Kit: K; Integrated: I; Tube: T; Mono: M	Cont. Ave. Watts per Chan.	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	S/N, "A" wtd. Phono	Phono Sensitivity, mv	Maximum Phono Input, mv	Rated Phono Input, mv	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit Invert phase?	Weight, lbs.	Price, \$	Notes
CROWN	D-75	B	35	20-20	0.05	0.05			0.812	AB, B			10	399.00	Input-output comparator (IOC).		
	D-150	B	60	1-20	0.05	0.05			1.19	AB, B			25	599.00	IOC.		
	DC-300A	B	155	1-20	0.05	0.05			1.71	AB, B			48	949.00	IOC.		
	M-600	B	600	1-20	0.05	0.05			3.46	AB, B			92	2,195.00			
	SA-2	B	220	1-20	0.05	0.05			2.1	AB, B			55	1,595.00			
DB SYSTEMS	DB-6	B	40	20-40	0.003	0.002			15	1	AB	No	18	595.00	Peak LEDs.		
	DB-6M	B	140	20-40	0.008	0.004			30	1	AB	No	18	650.00	Peak LEDs.		
	DB-8	B	0.5	20-40	0.01	0.01			10	1	A	No	7	175.00	Headphone amp.		
DENNESEN	Antares DM4	B	100	5-250	0.005	0.005					AB	No	40	350.00			
	DM73	B/T/M	50	20-20	0.01	0.02					A, AB		50	700.00			
		B/T	35	20-20	0.01	0.02					A, AB		50	1,000.00			
DENON	PMA 630	I	80	3-70	0.01	0.005	112	2.5	200				37½	465.00			
	POA 1003	B	85	3-70	0.03	0.02				3	AB	No	39½	870.00			
DUNLAP CLARKE	1000	B	250	20-20	0.25				25	1.75	AB	Yes	75	1,500.00	800 W into 2 ohms.		
	500	B	150	20-20	0.25				25	1.2	AB	Yes	45	980.00	480 W into 2 ohms.		
	250	B	125	20-20	0.25				25	1	AB	Yes	25	675.00	260 W into 2 ohms.		
EDCOR	AP-10		4	15-22 ±1									2½	210.00	For headphones only.		
EUMIG	M-1000	B	100	0-150 ±1	0.005				172	1	AB			795.00	LED indicators.		
GREAT AMERICAN SOUND	Godzilla	B	90	20-20 ±0.1	0.05	0.05			600	1.1	A	0.8	No	100	3,500.00	Also operates Class AB.	
	Ampzilla IIA	B	200	20-20 ±0.1	0.05	0.05			50	1.6	AB	1	No	59	1,099.00	350 W/ch into 4 ohms.	
	Son of Ampzilla	B	80	20-20 ±0.1	0.08	0.08			40	1	AB	1	No	35	579.00	150 W/ch. into 4 ohms.	
	Grandson	B	40	20-20 ±0.1	0.08	0.08			20	0.7	AB	1	No	23	449.00	75 W/ch. into 4 ohms; without meters, 399.00.	
GREAT WHITE WHALE	625	B	200	1-150	0.05	0.05	0.05		60		AB	No	55	1,150.00			
	615	B	125	1-150	0.05	0.05	0.05		60		AB	No	45	750.00			
HAFNER	DH-200	B	100	20-20	0.2				35	1.5	AB	2	No	28	299.95	Kit, 199.95.	
HARMAN/KARDON	Citation 16a	B	150	5-45	0.05	0.05			30	1.25	AB	2	No	55	699.00	With LED indicators.	
	Citation 16s	B	150	5-45	0.05	0.05			30	1.25	AB	2	No	55	599.00		
	Citation 19	B	100	5-65	0.08				40	1.25	AB	2	No	39	499.00	With LED indicators.	
	hk503	I	40	10-100	0.04	0.06	88	2.2	120	60	1.75	AB	2	No	55	279.00	
	hk505	I	60	10-100	0.03	0.06	88	2.2	225	65	1.75	AB	2	No	55	399.00	
HEATH	AA-1640	B/K	200	20-20	0.1	0.1			1.5				58	449.95			
	AA-1600	B/K	125	20-20	0.05	0.05	0.05		1.5				38	359.95			
	AA-1219	I/K	15	20-20	0.5	0.5		60	2	75	0.19		14	119.95			
HITACHI	HA-3500	I	30	20-20	0.05		80	2.5	200		0.15	AB	No	13.1	199.95	Meters, Subsonic filter.	
	HA-4500	I	40	20-20	0.05		81	2.5	250		0.15	AB	No	16	249.95	Subsonic filter, LEDs.	
	HA-5700	I	50	20-20	0.03		88	2.5	200		0.15	AB	No	23.75	429.95	MOS FET, MC phono, tape copy, subsonic filter.	
	HA-7700	I	65	20-20	0.02						0.15	AB	No	35	500.00	LEDs, MOS FET, MC phono.	
	HMA-7500	B	75	20-20	0.02		92	2.5	300		1	AB	No	34.8	500.00	Meters, MOS FET, D.C. circuitry.	
	HMA-8300	B	200	20-20	0.1						1	G	3	53	800.00	Meters, input level controls, subsonic filter.	
	HMA-6500	B	50	20-20	0.02						1	AB	No	20.7	350.00	Meters, MDS FET, D.C. circuitry.	
INFINITY SYSTEMS	Hybrid Class A	B	150	20-20	0.2				60				95	4,000.00			
JSH	245	B	40	20-20	0.05	0.05	0.05			1	AB	10	Varies	15	595.00	Remote power supply.	
JVC	A-S3	I	20	20-20	0.08	0.08		2.5	120		0.15	AB		11.2	149.95		
	A-S5	I	30	20-20	0.06	0.06		2.5	150		0.15	AB		12.1	179.95		
	A-S7	I	50	20-20	0.05	0.05		2.5	200		0.15	AB		15.8			
	JA-S22	I	40	20-20	0.02	0.01		2.5	200		0.16	AB		18.7	239.95		
	JA-S44	I	45	20-20	0.02	0.01		2.5	200		0.16	AB		22	339.95		
	JA-S55	I	60	20-20	0.02	0.01		2.5	230		0.2	AB		22	339.95		
	JA-S77	I	65	20-20	0.02	0.01		2.5	280		0.2	AB		25.3	429.95		
	A-X5	I	70	20-20	0.005	0.004	82	2.5	250	60	0.02	†		25.3	449.95	†Super A.	
	A-X9	I	100	20-20	0.005	0.002	82	2.5	350	110	0.2	†		36.5	899.95		
	A-M1	I	50	20-20	0.03		75	2.5	200		0.15	AB		9.2	599.95		
	M-3030	B	100	20-20	0.05						1	AB		42.2	729.95		
	M-7070	B	120	20-20	0.003						1	AB		34	159.95		
	M-7050	B	150	20-20	0.003	0.003				300	1	†		63.1	1,499.95		
	KENWOOD	L-09M	B/M	300	20-20	0.02	0.007			170		AB		47	700.00	D.C. amp.	
L-07M		B/M	150	20-20	0.008	0.003			170		AB		28	600.00	High-speed D.C. amp.		
L-05M		B/M	100	20-20	0.005	0.001					AB		19.2	425.00	As above.		
600		I	130	20-20	0.08	0.08	76	2.5	220		0.15	AB		46.9	550.00		

Two Good.



Mitsubishi Car Audio.

Two Good from Mitsubishi Car Audio. In-dash units that reflect the technical capability of a company well-defined in the audio industry. Mitsubishi couples disciplined design with practical function.

The RX-7 in-dash cassette is an auto-reverse/auto-eject AM/FM MPX unit featuring one-touch pushbutton tuning with access to six preset stations. FM Noise-Killer Circuitry and a solid 8 watts RMS per channel make the RX-7 a smart choice.

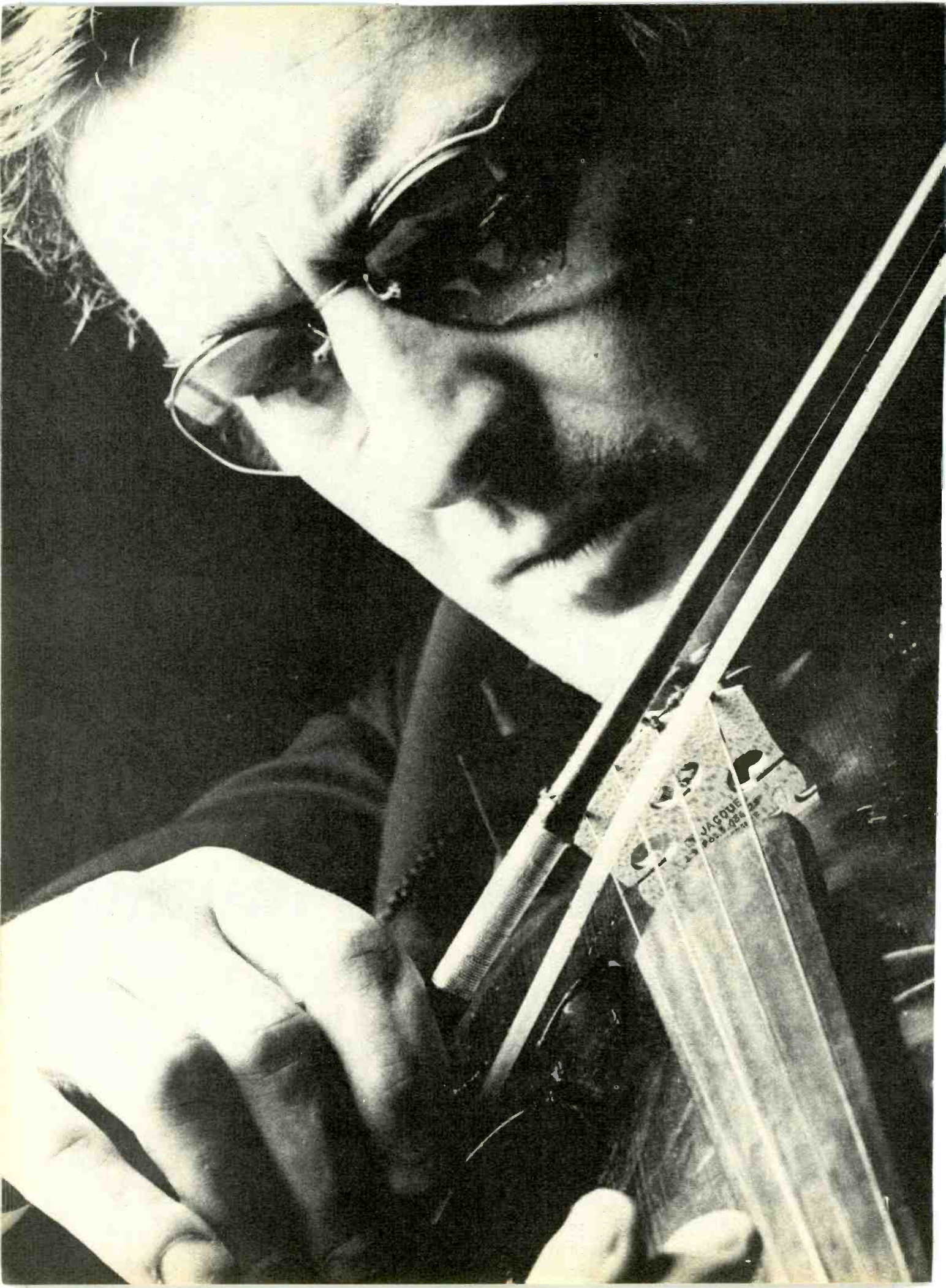
Or if it's 8-track... the RS-67 in-dash unit sports a one-touch program selector, program indicators and locking fast-forward for ease of operation. Pushbutton presets accommodate up to 5-AM and 5-FM stations. In addition to the standard left-

to-right balance control, Mitsubishi provides a built-in front-to-rear fader for complete control of a 4-speaker system. Match all that to a powerful 8 watts RMS per channel and a bass boost switch. You've got 8-track at its finest.

Two from Mitsubishi Car Audio. Two Good.

See a Mitsubishi Car Audio dealer today. He won't have to sell you. The RX-7 and the RS-67 speak for themselves.

 **MITSUBISHI®**
CAR AUDIO
SOUND US OUT



First Chair

That's the Jensen Separates car stereo speaker system.
That's the thrill of being there.

First Chair. What better way to describe the Jensen Separates?

The finest, most accomplished car speaker system to date. With a revolutionary design that makes your car seat the best seat in the house.

It's a total departure from conventional car speaker design. Because acoustically, the interior of your car is nothing like your living room.

The Separates include two 6" x 9" woofers to be mounted in your car's rear deck. In this manner they utilize the large volume of the trunk to provide solid, deep bass response.

Two 2" phenolic ring tweeters mount high in the front doors to give you precise, transparent high frequencies. Two 3½" mid-ranges beneath the tweeters let you enjoy all of the subtle-yet-important middle frequencies.

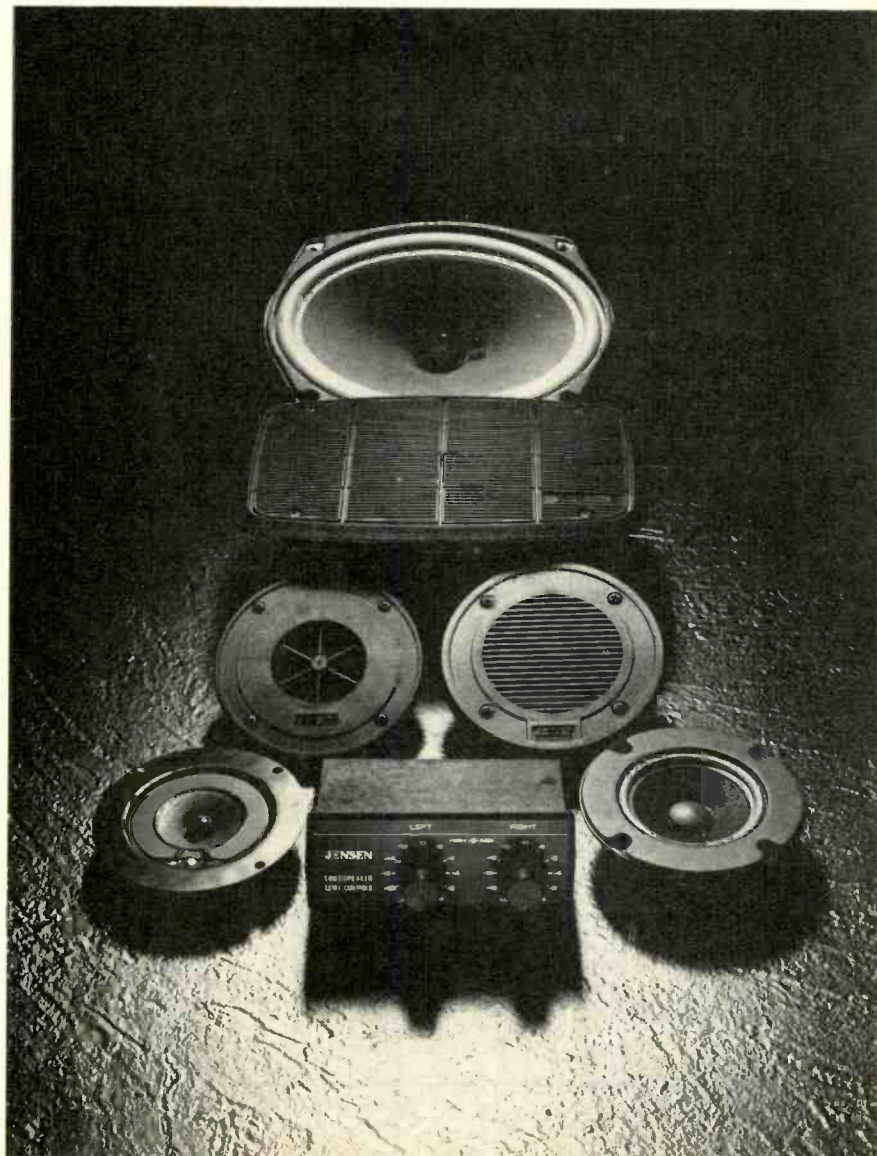
The Jensen Separates even come with an under-dash control/crossover unit with individual controls for each tweeter and each mid-range. This speaker system is also ideally suited for the advanced function of bi-amplification.

The Jensen Separates. The undisputed master of car stereo sound reproduction.

Artful, ever-faithful music. That's the thrill of being there. That's the Jensen Separates.

JENSEN
The thrill of being there.

For more information, write Jensen Sound Laboratories, Division of Penco, Inc., 4136 N. United Parkway, Schiller Park, Illinois 60176.



AMPLIFIERS

MANUFACTURER	Model		Unit type - Base=B, Kit=K, Integrated=I, Tube=T, Mono=M	Cont. Ave. Watts per Chan.	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	S/N, "A" wtd., dB vs 5mV, dB	Phono Sensitivity, mV	Maximum Phono Input, mV	Rated Slew Rate, V/μS	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit invert phase?	Weight, lbs.	Price, \$	Notes
KENWOOD (Continued)	KA-907	I	150	20-20	0.01	0.0045	0.0045	96	2.5	230	230	0.15	AB			56.9	1,000.00	High-speed D.C. amp. As above. As above. As above.
	KA-801	I	110	20-20	0.015	0.003	0.003	96	2.5	230	150	0.2	AB			38.6	699.00	
	KA-701	I	80	20-20	0.02	0.003	0.003	95	2.5	220	120	0.2	AB			29.8	499.00	
	KA-601	I	60	20-20	0.02	0.04	0.04	93	2.5	220	110	0.2	AB			26.4	399.00	
	KA-405	I	55	20-20	0.05	0.009	0.009	83	2.5	210	70	0.15	AB			16.8	299.00	
	KA-305 KA-3700	I I	40 20	20-20 20-20	0.08 0.08	0.08 0.04	0.08 0.04	83 72	2.5 2.5	160 250	150 250	0.15 0.15	AB AB			15 13	199.00 159.00	
LUX	B12	M	150	20-20	0.006	0.006		110		900			AB		No	25.3	695.00	
	M12	B	80	20-20	0.006	0.006		110		600			AB		No	31.9	795.00	
	L11	I	100	20-20	0.02	0.02		92	2.5				AB		No	40.7	945.00	
	L5 L3	I I	60 35	20-20 20-20	0.03 0.04	0.03 0.04		92 84	2.5 2.5				AB AB		No No	20.9 17.6	595.00 395.00	
McINTOSH	MC502	B	50	20-20	0.02	0.02	0.02					0.75/ 2.5	AB		No	27	699.00	
	MC2120	B	120	20-20	0.1	0.1	0.1					0.75/ 2.5	AB		No	57	899.00	
	MC2125	B	120	20-20	0.1	0.1	0.1					0.75/ 2.5	AB		No	64	1,099.00	
	MC2200	B	200	20-20	0.1	0.1	0.1					0.75/ 2.5	AB		No	73	1,099.00	
	MC2205	B	200	20-20	0.1	0.1	0.1					0.75/ 2.5	AB		No	84	1,499.00	
	MC2300 MA6200	B I	300 75	20-20 20-20	0.15 0.05	0.15 0.05	0.15 0.05	85	2	100		0.5 0.25	AB AB		No No	128 30	1,799.00 1,199.00	
MARANTZ	PM300	I	30	20-20	0.04		0.04	87	2.8	130		0.15	AB		No	13%	225.00	
	PM500	I	50	20-20	0.025		0.025	90	2.8	220		0.15	AB		No	18%	330.00	
	PM700	I	70	20-20	0.025		0.025	98	2.8	220		0.15	AB		No	20%	420.00	
METEOR LIGHT & SOUND	Power-master 75	B	75	20-20	0.09							1.2	AB		No	20	449.00	Meters, tone & level controls. With 3-channel lighting controller; Vamp 1R, 30 W, 449.00
	Power-master 90	B	85	20-20	0.07							1.2	AB		No	22	499.00	
	Champ Vamp 1S	B B	85 50	20-20 20-20	0.07 0.08							1.2 1.2	AB AB		No No	20 23	370.00 499.00	
MITSUBISHI	DA-A7DC	B	75	20-20	0.01	0.008	0.01			50			AB		No	26%	330.00	D.C. design. As above. As above. Mini, LED power indicators.
	DA-A10DC	B	100	20-20	0.01	0.008	0.01			30			AB		No	35%	470.00	
	DA-A15DC	B	150	20-20	0.01	0.008	0.01			30			AB		No	39	700.00	
	M-A01	B	70	20-20	0.01	0.008	0.01			50			AB		No	22	500.00	
NAD	3020	I	20	20-20	0.02	0.02	0.02	75	2.5	270	15	0.15	AB		2.9	11.6	175.00	
	3030	I	30	20-20	0.09	0.09	0.09	74	2.5	190	15	0.15	AB		2.2	20	230.00	
	3045	I	45	20-20	0.05	0.05	0.05	76	2.5	200	20	0.15	AB		2.2	26	315.00	
	3060	I	60	20-20	0.03	0.03	0.03	76	2.5	200	30	0.15	AB		2.2	33	410.00	
	3080	I	90	20-20	0.03	0.03	0.03	76	2.5	200	40	0.15	AB		2.5	35	485.00	
NAIM	NAP 110	B	40	20-20	0.02	0.02								5.8		10	650.00	Will not slew limit 5Hz to 40 kHz. As above. As above.
	NAP 160	B	50	20-20	0.02	0.02								7		21	1,200.00	
	NAP 250	B	70	20-20	0.02	0.02								7.7		26	2,200.00	
NIKKO	Alpha II	B	110	20-20	0.03	0.03	0.03					1	AB			30	479.95	
	Alpha III	B	80	20-20	0.008	0.01	0.01			40		1	AE			35	539.95	
	Alpha IV	B	300	20-20	0.01	0.01	0.01			65		1	AE			60	1,399.95	
	NA-590	I	35	20-20	0.05	0.05	0.05	89	2.2	140		0.15	AE			14½	209.95	
	NA-690	I	45	20-20	0.04	0.04	0.04	92	2.3	210		0.15	AE			22	249.95	
	NA-790 NA-890	I I	53 70	20-20 20-20	0.04 0.04	0.04 0.04	0.04 0.04	89 92	2.3 2.3	200 220		0.15 0.15	AE AE				279.95 349.95	
ONKYO	M-505	B	105	20-20	0.05		0.01			72			B	1.8	No	37.4	579.95	D.C.
	A-7090	I	110	20-20	0.018		0.018	78	2.5/ 0.25	250	70	0.15	B	1.9	No	39.6	699.95	
	A-7070	I	70	20-20	0.02		0.02	79	2.5	200		0.15	B	2.4	Yes	22.7	429.95	
	A-7040	I	50	20-20	0.026		0.026	78	2.5	170		0.15	B	2.6	Yes	20.7	299.95	
OPTONICA	SM7305	I	70	20-20	0.01	0.01		90	2.9	300	80	0.15	AB			26.4	460.00	Output LEDs. Meters.
	SM4305	I	40	20-20	0.02	0.02		85	2.9	250	35	0.15	AB			20.9	300.00	
	SM3201	I	40	20-20	0.19	0.1		82	2.5	240		0.15	AB			21	260.00	
	SX-9305	B	100	20-20	0.01												850.00	
PS AUDIO	Model One	B	80	3-160	0.1	0.1		100		75	0.85	AB		No		25	379.95	
PHASE LINEAR	D-500 Series Two	B	505	20-20	0.09		0.009	110					AB		No	70	1,499.95	
	700 Series Two	B	360	20-20	0.09		0.009	110					AB		No	45	949.95	
	400 Series Two	B	210	20-20	0.09		0.009	110					AB		No	35	649.95	
	300 Series Two	B	120	20-20	0.09		0.005	110					AB		Yes	20	449.95	
PIONEER	Spec-2	B	250	20-20	0.1		0.1				2		AB		No	54	995.00	
	Spec-4	B	150	20-20	0.01		0.01				1		AB		No	54	795.00	
	SA-9800	I	100	10-20	0.005		0.005	96	2.5	250		1		No	40%	750.00		
	SA-8800	I	80	10-20	0.005		0.005	96	2.5	250		1		No	34½	550.00		
	SA-7800	I	65	10-20	0.009		0.009	93	2.5	200		0.15		No	28	450.00		
	SA-6800 SA-5800	I I	45 25	20-20 20-20	0.03 0.03		0.02 0.03	84 82	2.5 2.5	180 140		0.15 0.15	AB AB		No No	18½ 16	300.00 200.00	
PRECISION FIDELITY	M7	T	25	20-20 ±1													599.00	
	M200	T	200	20-20 ±1													2,500.00	

Perfection for the Professional

Drawing upon their unequalled 30 year leadership in magnetic recording technology, Tandberg's TD 20A open reel tape recorder extends their traditionally superior level of performance to even further limits—to even beyond the present capabilities of today's magnetic recording tape! This is due to Tandberg's exclusive ACTILINEAR Recording System, which not only provides up to 20 dB headroom margin over existing tape, but is specifically designed to be used with the new high coercivity tapes that will appear in the market in the near future—including the soon-to-be-available metal particle tapes. No other quality open reel tape recorder can make this obsolescent-proof claim today.

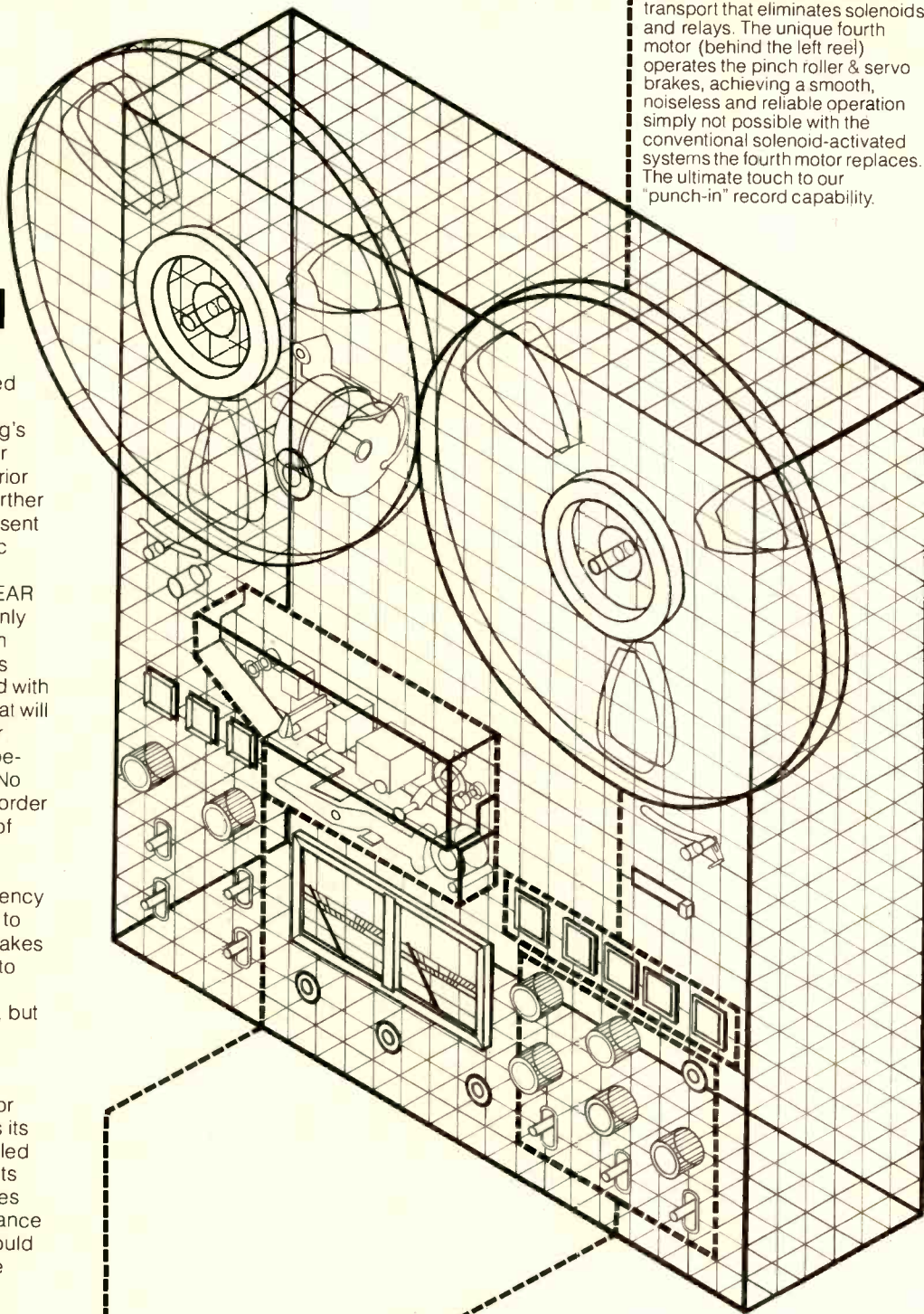
The ACTILINEAR Recording System's extremely linear frequency response ("ruler flat" according to some test reviewers) not only makes the TD 20A essentially immune to slew-rate limiting and transient intermodulation distortion (TIM), but also means better transient response and lower distortion overall.

Adding to the TD 20A's superior level of quality & performance is its unique PROM computer-controlled four-motor transport, as well as its many standard operating features that permit a degree of performance and control flexibility that you would expect only from Tandberg—the world leader in tape recorders.

Visit your authorized Tandberg dealer for a demonstration of the TD 20A. Check our *guaranteed minimum specifications* and rate them against any other manufacturer. Combined with the unsurpassed ease of operation & control, the TD 20A is probably more tape deck than you actually need. Isn't it the way things should be?

For your nearest dealer write:
Tandberg of America, Inc.
Labriola Court
Armonk, N.Y. 10504

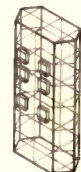
TANDBERG



Tandberg's exclusive PROM computer-controlled four-motor transport that eliminates solenoids and relays. The unique fourth motor (behind the left reel) operates the pinch roller & servo brakes, achieving a smooth, noiseless and reliable operation simply not possible with the conventional solenoid-activated systems the fourth motor replaces. The ultimate touch to our "punch-in" record capability.

Tandberg's unique ACTILINEAR Recording System, offering up to 20 dB headroom margin over existing tape. And easily adjustable for use with the new high coercivity tapes to come, so your TD 20A is obsolescent-proof!

Still more features: Four line input mixer + Master gain control with pre-set, Self adjusting input amplifier, Front-panel bias adjustment, Mic sensitivity switch, Channel Sync & Sound-on-Sound, "Free" mode & Edit/Cue facilities, Infrared-controlled motion sensing device, Professional scrape-flutter filter, Separate power supplies for operational functions & audio functions, and Peak-reading equalized meters that have been graphically redesigned for easier reading.



Optional PCM infrared wireless remote control for an ease of operation that doesn't tie you down to the length of a cable. Plus automatic start & stop via a timer switch (optional).

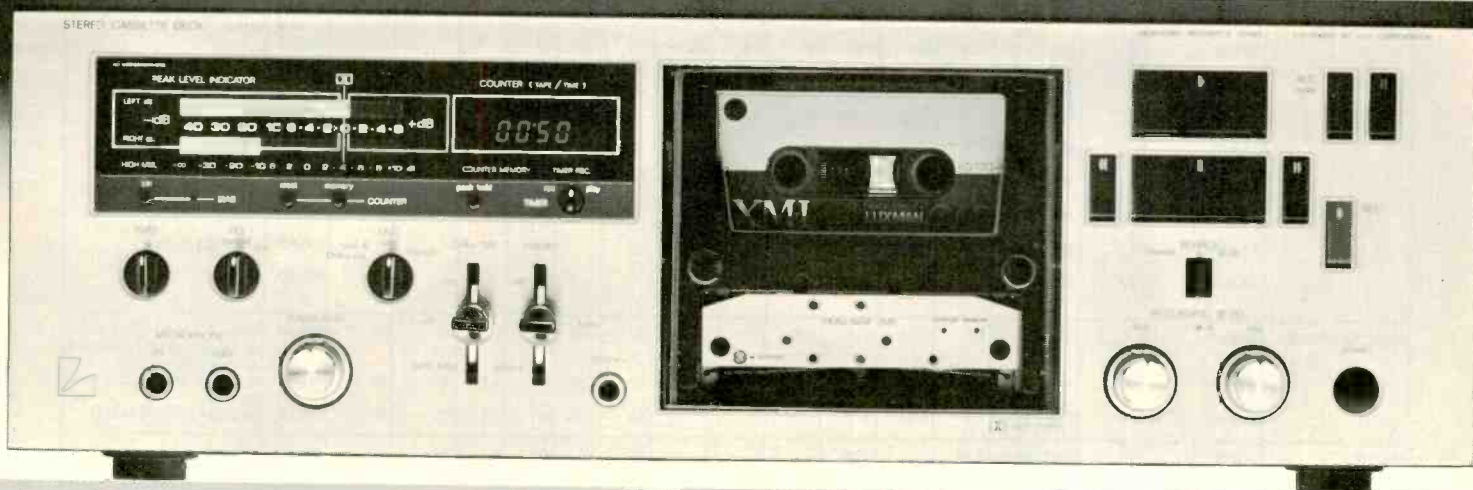
Enter No. 66 on Reader Service Card

AMPLIFIERS

Letter Key: K = kit; W = wired;
T = tube; P = phone stage only;
M = mono.

MANUFACTURER	Model	Unit Type - Basic; B, Kit; K; Integrated; I; Tube; T; Mono; M	Cont. Ave. Watts per Chan.	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	Rated SMPTE IM, percent	S/N - A' w/d. Phono re: 5 mV, dB	Phono Sensitivity, mV	Maximum Phono Input, mV	Rated Slew Rate, V/μs	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit invert phase?	Weight, lbs.	Price, \$	Notes
PROFESSIONAL SYSTEMS ENG.	Studio IIB	B	80	20-20	0.02					100	1.2	AB	1	No	30	630.00	Switchable bridging.	
Q.M.I.	GC-200 GC-300 GC-500	B B B	100 125 200	20-20 20-20 20-20	0.05 0.05 0.05	0.05 0.05 0.05				40 40 40		AB AB AB	1.5 1.5 1.5	No No No	45 47	595.00 895.00 1,095.00		
QSC	A 21 A 22 A 31 A 32 A 41 A 42	B B B B B B	80 80 125 125 200 200	20-25 ±1 20-25 ±1 20-25 ±1 20-25 ±1 20-25 ±1	0.1 0.1 0.1 0.1 0.1 0.1	0.05 0.05 0.05 0.05 0.05 0.05				12 12 15 15 18 18		AB AB AB AB AB AB	1.5 1.5 1.5 1.5 1.5 1.5	Yes Yes Yes Yes Yes Yes	24½ 24½ 27 27 33½ 33½	574.00 698.00 674.00 798.00 824.00 948.00		
QUAD	303 405	B B	45 100	20-20 20-18	0.03 0.01	0.1 0.01	0.1 0.01						B	Yes Yes	18 20	375.00 585.00		
RADIO SHACK	SA-10 SA-102																29.95 79.95	
REVOX	A 740 B 750	B I	100 60	20-20 20-20							0.2	AB AB		Yes	44 24½	1,499.00 999.00		
ROGERS	A.75	I	45	30-30	0.08	0.08	0.08	70	Var.	Var.		AB			15½	530.00	Darlington D.C. output.	
ROTEL	RB-5000 RB-2000 RB-1000 RA-2040 RA-2030 RA-2020	B B B I I I	500 120 65 120 80 60	0-110 5-100 5-100 5-100 2-200 2-160	0.009 0.01 0.03 0.01 0.01 0.02	0.009 0.01 0.03 0.015 0.015 0.02		120 110 90 95 95 92		40 40 75 40 300 200		A/AB A/AB B A/AB A/AB B			117 40 16 49 40 29	2,700.00 610.00 320.00 880.00 680.00 485.00	Pure D.C. As above. LED power meters, pure D.C. As above. As above.	
SAE	X25A X15A X10A Two C3A Two A7 Two A14 2600 2400L 2300 2200 3100 2922 3022 3031 P50 P150 P300	B B B I I I B B B B B I I I I B B B	250 150 100 50 70 140 400 200 150 100 50 100 100 50 3031 70 180 325	20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-20 20-25 20-25	0.02 0.02 0.02 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.02 0.02 0.02	0.02 0.02 0.02 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.02 0.02 0.02		79 74 84	2.5 0.14 0.12	150 200 200	25 25	AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB	1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.55 1.55 2.12	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes No No No	55 42 32 20 23 32 65 47 35 28 19 42 42 32 22 33 56	1,500.00 1,100.00 800.00 325.00 400.00 650.00 1,350.00 850.00 700.00 500.00 300.00 850.00 700.00 550.00 500.00 800.00 1,300.00	Full comp. design. As above. As above, w. LED indicators. As above. Full comp. design. Parametric & tape EQ. Tape EQ. Tape EQ. 200 W into 2 ohms, 350 W mono. 550 W into 2 ohms, 1000 W mono. 600 W into 2 ohms.
SANSUI	AU-XI AU-919 AU-819 AU-719 AU-519 AU-717 AU-417 AU-317 AU-217-II AU-117II BA-F1	I I I I I I I I I I B	160 110 90 90 70 85 65 50 40 25 110	5-20 5-20 10-20 10-20 10-20 10-20 20-20 20-20 20-20 20-20 5-20	0.007 0.008 0.008 0.015 0.008 0.015 0.02 0.03 0.06 0.17 0.008	0.007 0.008 0.008 0.015 0.008 0.015 0.02 0.03 0.06 0.17 0.008		131 90 90 88 88 80 80 77 76 76	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	330 350 350 230 300 350 300 200 200 180	260 200 200 170 160 60 50 40 40 180	0.2 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	B B B B B B B B B B B			61 47½ 46½ 35½ 35½ 39½ 18½ 21½ 18½ 14½ 45	1,450.00 800.00 700.00 575.00 500.00 550.00 395.00 350.00 230.00 190.00 665.00	
SANYO	Plus A35 DCA611 DCA411 DCA311 Plus P55	I I I I B	50 60 45 30 100	20-20 20-20 20-20 20-20 7-100	0.02 0.08 0.08 0.08 0.009	0.02 0.08 0.08 0.08 0.009		110 70 70 70 110	2.5 2.5 2.5 2.5	250 250 250 250	90					299.95 269.95 199.95 179.95 349.95		
H.H. SCOTT	480A 460A 440A 420A	I I I I	85 70 55 40	20-20 20-20 20-20 20-20	0.03 0.04 0.05 0.08	0.03 0.04 0.05 0.08		84 84 79 74	2.5 2.5 2.5 2.5	250 /500 250 /500	0.15 0.15 0.15 0.15	AB AB AB AB	2 2 2 2		29 27 23½ 19	499.95 429.95 349.95 249.95	Variable cartridge loading & 2 independent phono preamps. Active filters, meters, 2 independent phono preamps. Power meters. Power meters.	
SERIES 20	M-22 M-25 A-27	B B I	30 120 120	10-30 5-30 5-30	0.01 0.01 0.015	0.01 0.006 0.006		96/84	2.5	300/30	0.15	A AB AB			48½ 51½ 55½	790.00 1,200.00 1,250.00	3 watts Class A.	
SHARP	SM-1122 SM-1144	I I	15 22	20-20 20-20	0.8 0.4	0.8 0.1		3 3								12.1 14.3	269.95 349.95	
SHERWOOD	S-402CP S-702CP	I I	35 60	20-20 20-20	0.2 0.2	0.2 0.2	0.2 0.2	92 92	2.5 2.5	200 200	50 80	0.16 0.16	AB AB	2.6 1.8	Yes Varies	21 30	250.00 350.00	

LUX 5K50



LUX 5K50 STEREO CASSETTE DECK

REDEFINING THE ART OF CASSETTE PERFORMANCE

For over half a century, the name Lux has meant advanced technology and sophisticated designs—qualities sought by dedicated music lovers around the world. And now, Lux's audiophile/engineers have focused their attention on the cassette format.

Some of the special features of the new 5K50: Real-time process DC amplifiers for both record and playback; a unique modular tape-transport system featuring three motors and separate three-head configuration; Lux's dual Plasma record level meter, and most significant, Lux's recently developed BRBS Variable Bias Control System.

Real-time processing DC circuits bring Lux quality amplification to the cassette format for extended bandwidth, low distortion and exceptional signal-to-noise ratios.

The highly sophisticated tape transport extracts the best possible performance from any cassette... and there's further improvement when Lux cassettes are used. Each of the three heads is precisely designed for its special task, as are the three motors that provide the separate drives for the dual capstans and reel hubs. The capstan drive motor is a quartz-referenced phase-locked loop direct-drive unit, while coreless motors for the reels provide total stability with the precise torque and tension required for an effective dual-capstan transport system.

When a Lux cassette tape is loaded, an electronic digital counter provides the exact minute and second of tape use. The

electronic counter functions normally for standard cassettes. A plasma fluorescent display indicates peak levels from -40 to +6 dB per channel with a special +10 dB scale for metal-particle tapes.

To eliminate the distortion inherent in conventional tape-bias circuitry, Lux developed the Bridge Recording Bias System. These special circuits enable the user to adjust the recorder for best possible response with any tape, while eliminating those components and circuits which in conventional decks cause transient distortion and phase shift.

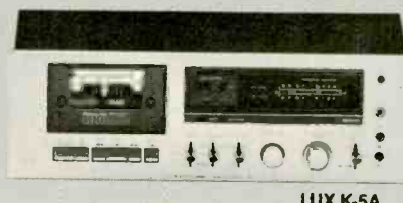
And there is so much more. Electronic IC logic control with feather-touch pushbuttons replaces mechanical operation and its attendant noise and wear problems. Human engineered control clusters; record-head azimuth adjustment with built-in indicators for optimum setting for any tape; signal-to-noise ratios up to 69 dB and frequency response from 30 to 20,000 Hz, depending of course, on the tape used.

The expense of the Lux 5K50 cassette deck is fully justified, not only by what Lux puts into it, but the performance the user can get out of it. Also look into the other Lux cassette decks, Models K-12, K-10 and K-5A, ranging in price from \$495 to \$2,000... each an embodiment of Lux quality.

To experience the Lux lineup of high-performance cassette decks, see your local Lux dealer or write to Mr. Robert Bowman, Vice President of Sales at Lux Audio of America Ltd.



LUX K-10



LUX K-5A



LUX K-12



LUX AUDIO OF AMERICA, LTD.

160 Dupont Street, Plainview, NY 11803

In Canada: Lux Audio of Canada, Ltd., Ontario

AMPLIFIERS

Letter Key: K = kit; W = wired;
T = tube; P = phone stage only;
M = mono.

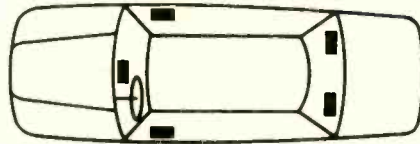
MANUFACTURER	Model	Unit Type — Basic: B; Kit: K; Integrated: I; Tube: T; Mono: M	Cont. Ave. Watts per Chan. into 8 ohms	Freq. Resp. at rated power, Hz to kHz	Rated THD, percent	Rated IHF IM, percent	Rated SMPTE IM, Percent	S/N, "A" wtd., Phone re: 5 mV, dB	Phono Sensitivity, mV	Maximum Phono Input, mV	Rated Slew Rate, V/μS	High Level Sensitivity, V	Class of Output Operation	Dynamic Headroom, dB	Does Unit invert phase?	Weight, lbs.	Price, \$	Notes
SONY	TA-F70	I	90	0-100 ±1	0.007	0.007	0.007	94	2.5	300	150 mV	AB				19%	725.00	
	TA-F60	I	75	3-70 ±1	0.01	0.01	0.01	94	2.5	250	150 mV	AB				14%	450.00	
	TA-F40	I	50	5-70 ±1	0.01	0.01	0.01	94	2.5	250	150 mV	AB				9%	350.00	
	TA-F30	I	30	5-60 ±1	0.05	0.02	0.02	86	2.5	220	140 mV	AB				12%	260.00	
	TA-P7F	I	50	5-60 ±2	0.01	0.01	0.01	94	2.5	120	150 mV	AB				8%	500.00	Mini.
	TA-F6B	I	100	0-100 ±1	0.03	0.03	0.03	91	2.5	250	150 mV	AB				26½%	610.00	
	TA-N88B	B	160	5-40 ±0.75	0.5	0.1	0.1						D			24%	1,050.00	V-FET.
	TA-N86B	B	80	0-200 ±1	0.007	0.004	0.004						AB			17%	600.00	200 watts mono.
TA-N7B	B	100	0-100 ±1	0.01	0.01	0.01						AB			46%	920.00	V-FET.	
SOUNDCRAFTSMEN	PA5001		250	20-20	0.1	0.05	0.05	105			50	1.28	H	2.1	No	53	649.00	Class H Vari-portion circuitry, auto-crowbar protection, overload LED indicator.
	MA5002		250	20-20	0.1	0.05	0.05	105			50	1.28	H	2.1	No	55	799.00	As above plus meters, level controls.
	EA5003		250	20-20	0.1	0.05	0.05	105			50	1.28	H	2.1	No	55	949.00	As above plus 10-band EQ.
SPECTRO ACOUSTICS	200SR	B	110	20-20	0.08		0.08				20	1	AB	3	No	27	500.00	LED indicators.
	200R	B	110	20-20	0.08		0.08				20	1	AB	3	No	26	400.00	As above.
	500SR	B	250	20-20	0.15		0.15				25	1.5	AB	1.4	No	38	750.00	
	500R	B	250	20-20	0.15		0.15				25	1.5	AB	1.4	No	38	650.00	
SUMO	The Power The Gold	B	400	20-20	0.05	0.05	0.05				80	1.35	AB		No	110	1,850.00	Balanced inputs, full wave bridge.
		B	125	20-20	0.05	0.05	0.05				80	0.75	A		No	110	1,850.00	Full wave bridge, pure Class A to zero ohms.
	The Half Power The Nine	B	200	20-20	0.05	0.05	0.05				60	0.95	AB		No	50	950.00	As above.
		B	70	20-20	0.05	0.05	0.05				60	0.56	A		No	50	950.00	As above.
TANGENT	Lupus Servus	B	100									AB				23	550.00	
TEAC	BX-300	I	35	20-20	0.006	0.006	0.006	148	2.5		0.15				No	17%	300.00	
	BX-500	I	55	20-20	0.005	0.005	0.005	150	2.5		0.15			No	18%	400.00		
	MA-7	B	150	10-20	0.003	0.003	0.003							No		830.00		
TECHNICS	SE-C01	B	40	20-20	0.03		0.03				1	AB				7.7	360.00	Mini, strappable.
	SE-9060	B	70	20-20	0.02		0.02				J	AB				25.4	460.00	Mono, 180 watts.
	SU-8099	I	115	20-20	0.007		0.007	102†	2.5	250	0.2	AB				44	1,000.00	†re: 10mV. Flou. indicators.
	SU-8088	I	80	20-20	0.01		0.01	102†	2.5	250	0.2	AB				33	600.00	Flou. indicators.
	SU-8077	I	60	20-20	0.02		0.02	100†	2.5	150	0.2	AB				26.5	450.00	Flou. indicators.
	SU-8055	I	47	20-20	0.02		0.02	97†	2.5	150	0.15	AB				16.8	300.00	Flou. indicators.
	SU-8044	I	38	20-20	0.02		0.02	92†	2.5	150	0.15	AB				14.6	260.00	Flou. indicators.
	SU-8011	I	25	20-20	0.08		0.08	80†	2.5	100	0.15	AB				11	175.00	LED indicators.
THETA	P	B/T/M	75	2-10M	0.15	0.2	0.2	80			650		A		Yes	90	1,800.00	No output transformers.
THRESHOLD	CAS-2	B	100	20-20	0.02	0.02	0.02				50		AB	1	No	31	895.00	LEDs cascode operation.
	400A	B	100	20-20	0.02	0.02	0.02				50		A	1	No	52	1,395.00	Cascode operation, Peak/Average LEDs.
	4000 Stasis 1	B/B/M	200/150	20-20/20-20	0.02/0.02	0.02/0.02	0.02/0.02						A/A	1/1	No/No	83/100	2,160.00/3,000.00	As above. Constant voltage — constant current operation.
TOSHIBA	SC-335			5-80												13.4	179.95	
	M15		40	20-20	0.02											12.8	339.95	
	SC-665		65	20-20	0.02			117								18.7	349.95	
UNI-SYNC	50	B	50	20-20	0.03	0.05	0.05				1						379.00	Dual power supply.
	100	B	100	20-20	0.03	0.05	0.05				1.5						599.00	As above.
	200	B	200	20-20	0.03	0.05	0.05										899.00	As above.
	350	B	350	20-20	0.03	0.05	0.05										1,549.00	As above.
VA SYSTEMS	Two	B	200													45	1,200.00	Will drive 2ohm loads, D.C. relay protection, no VI limiting.
	Three	B	125													35	900.00	As above, bridgeable.
YAMAHA	M-4	B	120	20-20	0.005			97	2.5	230						41	650.00	
	M-2	B	240	20-20	0.005											50	1,200.00	
	A-1	I	70	20-20	0.05			96	2.0	310			0.20			35	630.00	
	CA-2010	I	120	20-20	0.03			96	2.0	310						44	800.00	
	CA-1010	I	90	20-20	0.03			96	2.0	310						42	670.00	
	CA-810	I	70	20-20	0.05			95	2.5	230						26½%	430.00	
	CA-610I	I	45	20-20	0.05			97	2.5	150						20	300.00	
	CA-410I	I	35	20-20	0.1			95.4	3.0	135						0.15	250.00	

How to select a sound system for your car, boat or plane.

Audiovox candidly reveals what you should look for, listen to and beware of.

By Robert Harris, Technical Director

You are confronted by everything from \$50 AM radios to \$1,000 high fidelity systems. Where should you shop? How much do you really need to spend? Read on as Audiovox throws some light on the subject.



Audiovox aims to provide American motorists with a level of sound reproduction previously attained only in the home - through a range of more than 139 systems and components.

Where to buy.

Manufacturers with a limited range of products need to sell *all* of their products to *all* types of stores.

Audiovox, on the other hand, markets 3 totally *different* product groups. The regular group - providing superior sound reproduction at a reasonable price and available through conventional retailers, chain stores, and catalogs; the S.P.S. (Special Performance Series) featuring original equipment styling and features - available only from new car dealers; and the Hi-Comp group - a complete line of "state of the art" components, available through car stereo specialists.

How much good sound should cost these days.

You can pick up a basic AM radio for about \$50. The average cassette or cartridge player with built-in AM/FM radio and two good speakers will cost about \$150. And if you want to shoot the works, Audiovox builds an electronically-tuned receiver/cassette player with auto-reverse, the HC65 speaker system, a 60-watts-per-channel amplifier, plus Dolby®, CrO₂ switch, parametric equalizer, etc. for around \$950. (Installation charges excluded.)

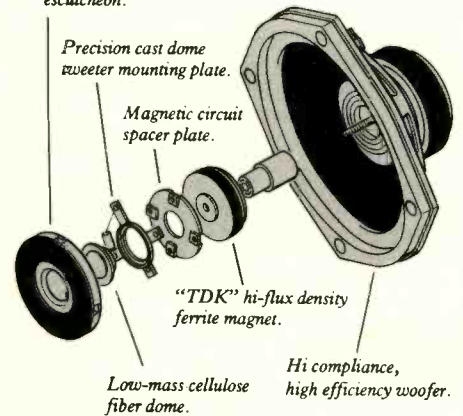
Speakers - Facts you should know.

As with home hi-fi, speakers are the most important component of a mobile sound system.

The key issue is *compatibility*. With power out-puts of 60 watts per channel

and up, an inappropriate set of speakers will blow out. If you play your Audiovox receiver/amplifier through power-matched Audiovox speakers, the performance of the system will be optimized to the fullest.

Acoustically transparent escutcheon.



The Audio Dome™ 6" x 9" speaker system.

More than 15 years of specialized experience.

Audiovox sound systems have a remarkable pedigree. The single-minded pursuit of superior sound in automobiles has never been diluted by diversification. The state of the Audiovox art is superior mobile sound systems.

For further information, write to R. Harris, Dept. AU, Audiovox, 150 Marcus Blvd., Hauppauge, New York 11787.



The Hi-Comp HCM0010: Electronically-tuned AM/FM/MPX radio, auto reverse cassette, Dolby®, plus 10 other hi-fidelity features.

Dolby® is a registered trademark of Dolby Laboratories, Inc.
© Copyright Audiovox Corporation 1979

Micro-processor controlled electronic synthesizer ensures drift-free locked-in tuning

Precision calibrated Dolby® Noise Reduction circuits for accurate playback response

Motor Driven Fader control

Low distortion audio pre-amp circuits: typically less than 0.3% THD

Solid state electronically governed tape speed control

High visibility LED display of radio frequency or quartz regulated time

Phase-Lock Loop FM quadrature detector for maximum stereo separation

Dual-gate MOS/FET FM Front end for superb sensitivity and low noise reception

Patented design panel controls 39 individual functions

Precision drive auto-reverse cassette mechanism

Hard Permalloy Tape Head for reduced wear and extended frequency response

Switchable 120/70 μ sec. tape equalization for CrO₂ and Metal Tape compatibility

Computer-grade micro-touch tuner function switches

Audiovox autosound systems are designed and developed by the audio research laboratories of Shintom Co., Ltd., Yokohama, Japan.

FINE TUNING. BY CROWN.

At the outset, we have to confess that building the Crown FM1 stereo tuner was quite a challenge to us. Crown audio products have earned a reputation for reliability and sonic excellence under the most demanding conditions. A tuner would have to be very good indeed to be identified as a Crown product.

Crown's first tuner.

There was also the fact that this was our first tuner. We do know a great deal about how to create good sound reproduction in the audio band, but that didn't automatically translate into solving RF problems. We were realistic about that. And we were fortunate. For we got to know as friends and co-workers some very talented designers of RF equipment who served as consultants on Crown's "Project Tuner."

A few people even suggested we should buy a Japanese chassis and put a Crown front panel on it. These people told us it would sell, just because it had the Crown name on it. "Well," we said to ourselves, "maybe so, but would those buyers ever trust another Crown product?" So we scrapped that idea before it even got off the ground.

Made in America.

We did ask some other manufacturers if they could build a tuner to our specifications. (We had a good grasp of the features we wanted in our first tuner—and also a fair idea of the price at which it should sell.) They not only told us they couldn't do it—they told us it couldn't be done.

Well, we'd heard that story before. We were told in 1947 you couldn't build a rugged, reliable tape recorder that would work anywhere in the world. We were told in 1965 that high-power all-transistor amplifiers would be available when men walked on Mars. And having conquered both of those impossibilities—the first with Crown ¼" tape recorders, the second

with the original Crown DC-300—we decided that a made-in-America tuner, worthy of the Crown name, was possible.

We are all very proud of the result, the FM1 stereo, programmable, digitally-controlled FM tuner.

Touch tuning.

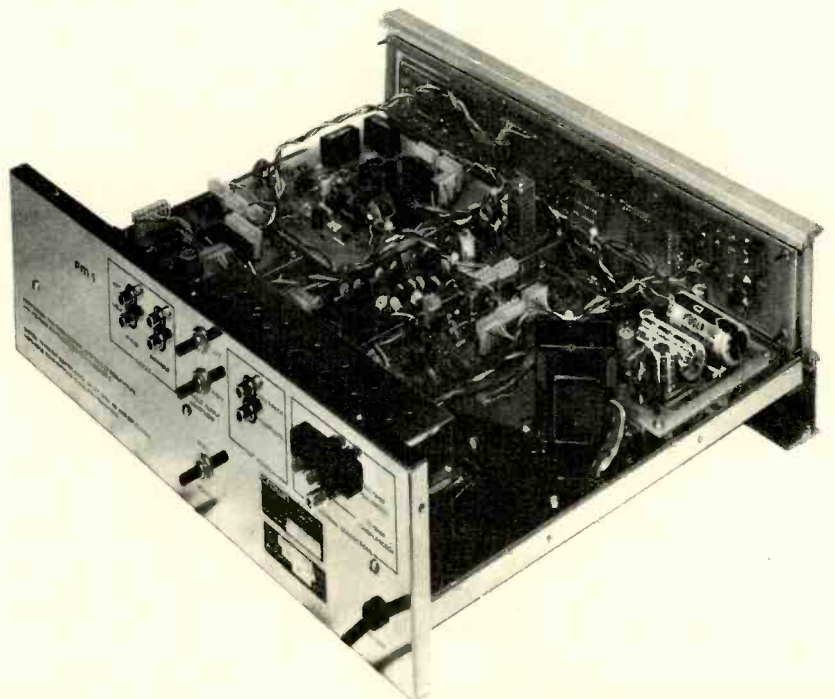
The most noticeable feature of the FM1 is the absence of a tuning wheel and dial. The FM1 is a true digitally synthesized tuner, and provides accurate, no-drift tuning.

A quartz crystal provides the basic reference frequency which controls the FM1 tuning section. This is the same system used by broadcasters to control their transmitter frequencies. When a particular frequency has been selected, (visible on a four-digit LED display), the FM1 locks itself to that frequency by comparing the desired frequency to the quartz

crystal thousands of times per second. Drift simply cannot happen; tuning is automatic, precise and immediate. The only tuning variable you need to control is antenna position, and an LED multipath meter is included to assist you in determining the optimum position. Another LED meter provides useful information about the relative strength of station signals.

An unforgettable tuner.

Your FM1 tuner can memorize—infallibly—your five favorite stations for instant and fumble-free recall. A special EAROM integrated circuit is dedicated to remembering your instructions. Tune to the desired frequency with the touch/tap controls, tap *Program* and the channel (1 to 5) where the frequency is to be stored. Even if you now unplug the FM1 and move it to another location,





it will remember your station, (*without batteries!*) and get it for you instantly.

An analog LED dial displays the approximate dial location of your selected frequency. This simulated dial may help make the transition to the world of digital audio a little easier for you.

Automatic tuning.

The FM1 includes several tuning modes which have been automated, thanks to a special control chip with an unusual ability to manage a wide range of functions. Because of it you'll enjoy the use of the *Search*, *Stereo Search* and *Scan* functions. The two search controls will tune to the next station whose signal is above the mute threshold of a signal.

The *Scan* function is most unusual, and only possible with a digital tuner such as the FM1. When you tap *Scan*, the FM1 seeks the next higher station frequency of acceptable strength, pauses for seven seconds, moves to the next station, pauses again—and so on, forever—unless you tell it to stop. Great for finding a broadcaster whose mood at the moment exactly matches yours, or for finding out just what listening mood you're in.

Good sound.

It is, perhaps, not coincidental that almost all of our engineering staff are long-time audio enthusiasts. They know good sound—and they also know what it takes to build good audio components. FM1 prototypes were thus subjected to severe listening tests by these listening experts. (And if you don't believe that our company experts are allowed to express their opinions and that those opinions have an impact, you ought to discuss Crown with someone who's been there.)

These listeners insist the FM1 is better. They were very much impressed with the quality of broadcast

sound coming out of the FM1. True, the FM1 will not allow you to evade any problems that the *broadcaster* might create for you, but a good broadcast signal at your antenna will be a good audio signal out of the FM1.

As you would expect, all of the details of importance for retaining the fidelity of the sound were carefully evaluated in the design of the FM1 circuitry. The latest in PLL (phase locked loop) stereo demodulators with pilot cancelling is used to decode the stereo signal. To increase the stereo separation to a maximum, additional crossblending amplifiers were added to allow the R into L channel crosstalk to be minimized without interaction with the L into R channel adjustments. This results in better stereo separation than can be provided by the PLL demodulator alone.

Is this the tuner for everyone?

Frankly, no. In the first place, we aren't planning to build that many FM1 tuners. Crown continues to be one of the deliberately small companies in the audio field. We're not sure we could produce Crown-quality components on a mass production

basis. Your satisfaction with our product is much too important for us to radically expand a production line that's geared to careful craftsmanship and high technology.

Secondly, the FM1 tuner is a high-quality single-purpose audio component which may not match your current needs.

But for those whose lifestyle demands the very finest in sound reproduction, even if that means passing up some other of the fine things in life, we believe the FM1 tuner will be one of the more satisfying purchases in your life.

Listen carefully.

If you would like more information about the FM1 before making up your mind to purchase it, please send five dollars with the coupon below to obtain an advance copy of the Crown FM1 manual. Your five dollars will be refunded by Crown upon return of this manual, whether you purchase the FM1 or not. Find out all you can about the FM1. Listen. To friends. To dealers. And to your own ears. Then tune in. The FM1 can be a richly rewarding sonic experience for you.

.....

To: **Crown International**
 1718 W. Mishawaka Road
 Elkhart, IN 46514

Here's my five dollars. Please rush my FM1 Tuner manual.
 Please send a free color brochure instead.

Name _____
 Home Address _____
 City _____
 State _____ Zip _____
 Phone _____

.....



CROWN

1718 W. Mishawaka Road, Elkhart, Indiana 46514

Innovation. High technology. American. That's Crown.

PREAMPLIFIERS



Acoustat



Audio Research MCP-22



Apt Holman



Eidolon Research Mentat



AGI 511A



Conrad Johnson



G. A. S. Thalia



Audionics BT2-II



Bauman Pro-400

Dunlap Clarke 10



MANUFACTURER	Model	Type of Unit - KKK wired w/ Tubes? Photo Single Output Phono-M	Frequency Response, Hz to kHz, ± 7 dB	Maximum Output, V	% THD	% IM Distortion	Rated SMPTE IM, 2 Percent Phono Sensitivity, 2 mV For 0.5 V output at 1 kHz mV	Phono Overload Phono 5 V/M, 1/2" wtd., i.e. 5 mV input, 2 dB 7 V	High Level Sensitivity	Tone Controls ?	Phono Input Impedance, 2 pf	Phono Input Capacitance, 2 pf	Moving Coil Input ?	Does unit invert phase?	Weight, Lbs.	Price	Notes	
AB SYSTEMS	911		5-100 ±1/4	4	0.01	0.01	Adj. 250	82	0.25	Yes		47k	Opt.		14	650.00		
	912		5-100 ±1/4	4	0.01	0.01	Adj. 250	84	0.25	No		47k	Opt.		7	525.00		
ADC	B-100	T	5-200 ±0.1	15	0.09	0.09	0.5	375	70	0.05	No	50-430	25-100	Yes	No	22½	1,195.00	
AGI	511A		20-20 ±0.1	9.5	0.005	0.005	1.3	160	82	0.23	No	Var.	47k	No	No	13	495.00	Opt. high gain phono.
ACE AUDIO	3000	K	1-75 +0, -1	8	0.02	0.02	2.0	90	89	0.1	No	50	47k	No	No	4	156.00	250.00 wired; Model 3100 with separate power supply, 325.00.
ACOUSTAT	Acoustat									No	Adj.	47k	Yes	No		1,000.00		
ADVENT	300		20-20 ±1	2.5	0.1	0.1	1	100	77	100	Yes	40	47k	No	No	11	289.00	
AIWA	SA-C22V		20-20 ±0.5		0.1		2.5	200	80	0.15	Yes		47k	Yes		3.7	140.00	Mini.
ALL-TEST DEVICES	ATD-25	P	20-25 ±0.5	8	0.005	0.008		130	80		No	130	47k	No	No	4	185.00	
APT	Holman		20-20 ±0.5	7	0.01	0.01	1.25	180	74	0.32	Yes	Var.	47k/10k	Opt.	No	12	502.00	
AUDIO RESEARCH	SP-4A		5-100 ±1	10	0.005	0.005	0.5	300	70	0.1	Yes	50-200	50k	Opt.	No	20	1,195.00	
	SP-5		5-100 ±1	10	0.005	0.005	0.5	300	70	0.1	No	50-200	50k	Opt.	No	16	895.00	
	SP-6A	T	0.1-250 ±3	50	0.03	0.01	0.5	700	60	0.1	No		50k	No	No	22	1,195.00	
	MCP-22	T	0.1-250 ±3	50	0.02	0.01		400	90		No		Var.	Yes	No	22	1,195.00	MC preamp.
AUDIO TECHNOLOGY	440	P	20-20 ±0.2	14	0.005	0.005	2.0	150	85		No	Var.	47k/100k	Opt. †	No	2	250.00	Subsonic filter, passive RIAA; † M.C. card, 85.00.
AUDIONICS	BT2 Series II		20-20 ±1	7	0.01	0.01	0.75	190	77	0.1	No	47		No	No	12	449.00	
AUDIOWORKS	AWX-2	K		100			0.65	1.3V	80		No	40	47k	Yes	Yes		295.00	No negative feedback.
BGW	103		20-20 ±0.25	10	0.01	0.01	0.5	100	87	0.05	Yes	200/275/400	47k	No	No	13½	439.00	
	203		20-20 ±0.25	10	0.01	0.01	1.26/0.315	100	83	0.16/0.04	Yes	150	47k	No	No	18½	719.00	
BAUMAN	PRO-400		20-400 +0, -3	10	0.005	0.005	0.2 MC	150	82	0.05	Yes	Var.	Var.	Yes	Varies	7	1,050.00	



Heath AP-1800



NAIM NAC 42



Precision Fidelity C4



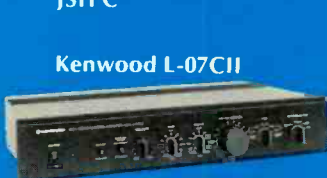
Threshold SL-10



JSH C



SAE 2100



Kenwood L-07CII



Precedent Bering TF-10



Sansui CA-F1



Spectro Acoustics 217R

MANUFACTURER	Model	Type of Unit: T=Tube, IC=IC, K=K Photo Stage Only, M=Modular	Frequency Response, Hz to kHz, ± dB	Maximum Output, V	% THD	% IM Distortion	Rated SMPTE IM, % Percent	Phono Sensitivity 7 mV for 0.5 V output at 1 Hz	Phono S/N, "A" w/d. r.e. 5 mV input, 2 dB	High Level Sensitivity 2 V	Tone Controls ?	Phono Input Capacitance, pF	Phono Input Impedance, ohms	Moving Coil Input ?	Does unit invert phase?	Weight, Lbs.	Price	Notes	
BEVERIDGE	RM-1	T	0.15-600 ±0.05	10	0.02	0.02	0.5	500	80	0.05	No	Var.	Var.	No	Varies	60	2,150.00	With separate power supply.	
CM LABS	CM301		20-80 ±1/2	10	0.05	0.05	0.06	130	85	0.2	No	50	47k	No	No	6	279.00		
CARVER	C-4000		5-200 ±0.25	2.5	0.02		0.85	150	74	0.05	Yes	0,180, 390	47k	No	No	11	867.00	With sonic hologram generator.	
CERWIN-VEGA	Metron PR-1		5-200 ±3	11	0.005	0.005	0.005	0.5	220	65	0.055	Yes	30	47k	No	No	15	500.00	
CONRAD-JOHNSON DESIGN	conrad-johnson	T	2-100 +0.25, -3	25	0.05	0.05	0.35	500	70	0.10	No	50	47k	No	No	14	585.00		
CROWN	IC-150A		3-100 ±0.6	12	0.05	0.002	Var.	Var.	85	0.227	Yes		47k			10	469.00		
	DL-2		1-100 ±0.5	17	.0008	0.0-003	Var.	Var.	89	0.227	Yes		Var.			20	2,295.00	Three-pieces, computer controllable.	
	SL-1		10-20 ±0.1	10	0.002	0.0-0055	Var.	Var.	89	0.227	No		Var.	Opt.			599.00	Separate phono module.	
DB SYSTEMS	DB-1A		20-20 ±0.05	9	.0008	0.001	0.001	1.8	150	83	0.12	No	100	47k	No	Varies	2.6	399.95	
	DB-4A		10-100 ±0.1	1	.0008	0.001	0.001	Var.	98			2k	9k	Yes	No	1.1	150.00	Pre-preamp.	
	DBR-15		20-20 ±0.05	10	.0008	0.001	0.001	1.8	150	83	0.12	Yes	100	47k	No	No	5.2	761.90	
DENNESEN	Sirius		5-250k ±0.1	7	0.005	0.005	0.005		1V		No			Yes		10	350.00		
DUNLAP CLARKE	10		50-20 ±0.25	15	0.005		0.0025	1	220	83	0.05	No	15	49.9k	Yes	Varies	15	675.00	18 dB/octave low filter.
EIDOLON RESEARCH	Julia	T	0.7-200 ±1.5	15	0.05	0.05		3	380	76	0.2	No	30	47.5k	No	Yes	15	2,000.00	
	Mentat	T	0.7-200 ±1.5	15	0.05	0.05		3	380	76	0.2	No	30	47.5k	No	Yes	12½	1,200.00	External power supply.
	Salesia	T	1.5-100 ±1.5	15	0.05	0.05		6	300	70	0.2	No	100	47.5k	No	Yes	12	600.00	
EUMIG	C-1000		0-150 ±1	5	0.005			2.5	200	80	0.15	Yes		47k	Yes			580.00	
GREAT AMERICAN SOUND	Thaendra II		20-20 ±0.1	12	0.01	0.01	0.01	0.07/ 3.2	3.5/ 220	83/ 86	0.2	Yes	100	600/47k	Yes	No	33	1,099.00	3 tape, MC input.
	Thoebe		20-20 ±0.1	12	0.01	0.01	0.01	3/3	220/ 220	86/ 86	0.2	Yes	100	47k	Opt.	No	28	649.00	2 tape, 2 phono.
	Thalia II		20-20 ±0.1	12	0.01	0.005	0.005	3/3	220/ 220	86/ 86	0.2	Yes	100	47k	No	No	11	399.00	1 tape, 2 phono.
	Goliath II	P	20-20 ±0.1	10	0.01	0.01			220	83	No	No	600	Yes	No	5	150.00	Self-powered model, 250.00.	

PREAMPLIFIERS

MANUFACTURER	Model	Type Unit - K: Kit; W: wtd. re. Photo Stage; O: Photo-Optical	Frequency Response, Hz to kHz, ± 1 dB	Maximum Output, V	% THD	% IM Distortion	Rated SMPTE IM, % Percent For 0.5 V Output at 1 kHz	Phono Sensitivity, mV/mV	Phono Overload, 5 mV Input, 2 dB	Phono S/N, "A" wtd. re. 1 V	High Level Sensitivity	Tone Controls?	Phono Input Capacitance, pF	Phono Input Impedance, Ohms	Moving Coil Input?	Does unit invert phase?	Weight, Lbs.	Price	Notes
GREAT WHITE WHALE	846		1-1M	0.001	0.001	0.001	0.1	500	84	0.1	No		47k	No	No	20	395.00		
	308		1-1M	0.001	0.001	0.001	0.1	200	80	0.01	No		Var.	Yes	No	5	90.00		
HAFLER	DH-101		20-20 ±0.25	7	0.001		1.0	180	80	0.2	Yes	250	47k	Opt.	No	8	299.95	Kit 199.95.	
HARMAN/KARDON	Citation 17		3-270 ±3	14	0.001	0.0025	0.7		74	0.2	5		20k	No	No	20	499.00	With 5-band EQ.	
	Citation 17s		3-270 ±3		0.001	0.0025	0.7		74	0.2	No		20k	No	No	16	349.00		
HEATH	AP-1615	K	20-20	1.5	0.05	0.05	2.2	100	65	0.18	No	65	47k	No		9	139.95		
	AP-1800	K	+0, -0.2	1.5	0.02	0.02	1/2/4/100	20/200	75	0.2	Yes	Var.	100/47k	Yes		20	379.95		
HITACHI	HCA-6500		20-20 ±1	4	0.1			150	89	0.15	Yes	110	50k	No	No	7.7	200.00	D.C. circuitry.	
	HCA-7500		5-100 ±1	7	0.01			350	95	0.1	Yes	Var.	Var.	No	No	17.5	350.00		
JSH	T	P	20-20 ±0.2	10	0.01	0.01	0.01	Var.	Var.	80		No	Var.	47k	Yes	No	7	435.00	
	A		15-150 ±3	25	0.01	0.01	0.01				0.6	Yes			No	7%	545.00		
	C		15-150 ±3	25	0.01	0.01	0.01	Var.	Var.	80	0.6	No	Var.	Var.	Yes	No	13	795.00	
JVC	P-3030		10-40 ±0.5	20	0.005		2	300		0.14	Yes		Var.	Yes			12.8	439.95	
	JP-S7		15-100 ±0.5	5	0.02		2	300		0.2	Yes		Var.	No			19.1	749.95	
	EQ-7070		10-100 ±0.5	15	0.002		1.8	300		0.16	No	Var.	Var.	Yes			16.5	949.95	
KENWOOD	L-07CII		20-20 ±0.2	10	0.003	0.003	0.003	2.5	450	90	0.2	Yes	100	50k/600	Yes		17.2	900.00	
LUX	C12		1-200 ±0.5	18	0.005	0.002		2.3	300	96		EQ			No		14.3	645.00	Pure D.C.
MCINTOSH	C27		20-20 ±0.25	10	0.05	0.05	0.05	0.4	100	79	0.25	2	100	47k	No	No	20	749.00	
	C29		20-20 ±0.5	10	0.02	0.02	0.02	0.4	100	84	0.25	2	87	47k	No	No	19	949.00	
	C32		20-20 ±0.25	10	0.05	0.05	0.05	0.4	100	84	0.25	5	65	47k	No	No	27	1,499.00	
	MA8200		20-20 ±0.5	10	0.05	0.05	0.05	0.4	100	79	0.25	5	100	47k	No	No	30	1,199.00	
MARCOF	PPA-1		20-20 ±0.05	2.5	0.005	0.005	0.005	0.2†	100	85		No	50	36	Yes	No	3	119.95	† Pre-preamp.
	PPA-1H		20-20k ±0.05	2.5	0.005	0.005	0.005	0.1†	25	85		No	50	10	Yes	No	3	119.95	† As above.
	MAP-4		10-100 ±1	10	0.01	0.01	0.01	2	200	80	0.3	No	80	47k	No	No	15	374.95	
MITSUBISHI	DA-P10		10-70 ±0.5	9	0.02	0.02	0.02	2.2	270	79	0.15	Yes	200	50k	No	No	13	330.00	
	DA-P20		10-100 ±0.5	18	0.002	0.002	0.002	2.3	290	90	0.15	Yes	100	50k	Yes	No	11 3/4	430.00	
	M-P01		10-100 ±0.5	18	0.002	0.002	0.002	2.3	290	90	0.15	Yes	100	50k	Yes	No		370.00	Mini.
NAIM	NAC 42		20-20 ±0.5		0.02	0.02		2	200	65	0.075	No			Opt.		6	440.00	
	NAC 32		20-20 ±0.5		0.02	0.02		0.1/2	10/200	65	0.075	No			Yes		6	1000.00	
	NAC 12S		20-20 ±0.5		0.02	0.02		0.1	10	65	0.075	No			Yes		5	700.00	
NIKKO	Beta II		10-100 ±1	1	0.006	0.006	0.006	2.5	250	87	0.15	Yes	100	Var.	No	Yes	10	239.95	
	Beta III		10-50 ±0.5	1	0.004	0.004	0.004	2.0	350	87	0.11	Yes	100	Var.	No	Yes	13	419.95	
ONKYO	P-303		3.5-200 +0, -1.5	15	0.006		0.01	0.83	330	80	0.15	No	120	30k/50k/100k	Yes	No	16 1/2	409.95	
OPTONICA	SO-9205							300	90			Yes						350.00	
ORTOFON	MCA76	P	20-50									No			Yes			285.00	Pre-preamp.
	MCA10	P	3.5-400									No			Yes			205.00	As above.
	STM72	P	10-50									No			Yes			75.00	As above.
	T-30	P	4-120									No			Yes			500.00	Transformer.
PS AUDIO	PS III	P	3-100 ±0.1	16	0.05	0.05	0.05	0.005	160	85			Var.	Var.	Yes	No	5	184.95	
	PS Ila	P	7-100 ±0.5	16	0.05	0.05	0.05	0.005	160	80			150	47k	No	No	4	99.95	
	PS LCC		3-100 ±0.2	16	0.05	0.05	0.05	0.05			1	No			No	No	5	199.95	High level only.



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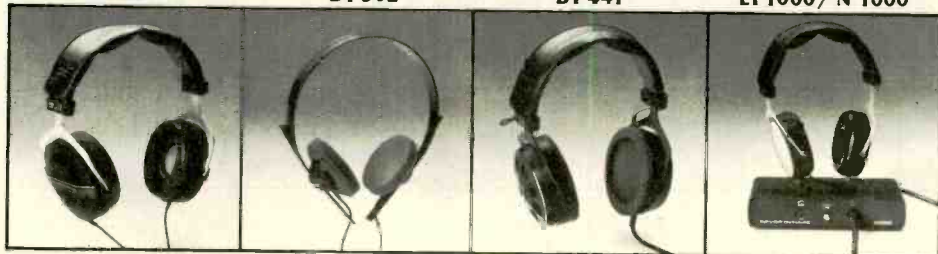
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DT 220

DT 302

DT 441

ET 1000 / N 1000



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PREAMPLIFIERS

MANUFACTURER	Model	Type of Unit Phono Stage	Gain	Frequency Response, Hz to kHz, ± dB	Maximum Output, V	% THD	% IM Distortion	Rated SMPTE IM, %	Phono Sensitivity, mV For 0.5 V output at 1 kHz	Phono Overload mV	Phono S/N, dB 5 mV input, 1 dB 1 V	High Level Sensitivity	Tone Controls?	Phono Input Capacitance, pF	Phono Input Impedance, ohms	Moving Coil Input?	Does unit invert phase?	Weight, Lbs.	Price	Notes
PHASE LINEAR	4000-II		20-20 ±0.4	10	0.04			2	100	80	200	Yes	100	47k	No		18	699.95		
	3000-II		20-20 ±0.1	10	0.009			2	120	90	200	Yes	150/ 224/ 420 50	47k	Yes		10	579.95		
	2000-II		20-20 ±0.5	10	0.05			2	1000	80	200	Yes		47k	No		11	299.95		
PIONEER	Spec-1		10-70 ±0.5	7	0.03			1.25	500	76	0.15	Yes	100	50k	No	No	24%	650.00		
PRECEDENT	Berning TF-10	†	10-100 ±1	8	0.5	0.5		0.5	130	68	0.45	No	45	47k	No	No	7	1,395.00	†Tube and transistor.	
PRECISION FIDELITY	C4	T	20-20 ±0.5	140	0.01	0.005		1.3		73	0.25	No	50	50	No		18	1,095.00		
	C7	T	3-50	90	0.01	0.005		0.5		73		No	50	47	No		8	499.00	Pre-preamp. No feedback, passive EQ.	
	JV1 Swept Beam	T																79.00		
	T																	1,999.00		
PREMIER	FF-1		20-20 ±0.1	0.1	0.003	0.003	0.003	†		87				100	†				† Pre-preamp.	
PROFESSIONAL SYSTEMS ENG.	Studio IA		20-20 ±0.25	15	0.006			8	200	80	0.050	Yes	40	47k	Opt.	Varies	17	630.00		
Q.M.I.	GC-20		20-20 ±0.1	10	0.01	0.01	0.01	1	150	84	1	No	51	47k	No	No	23	995.00	Class A, FET.	
	GC-2	P	1-100 ±0.1	1	0.01	0.01	0.01	25	50	90		No	1000	Var.		No	1	225.00		
QRK	Alpha II				0.1			4		66		No	470	47k	No	Varies	2	130.00	Alpha I, mono.	
QUAD	33		30-20 ±0.5	1.5	0.02			2	120	72	0.1	Yes	0	68k	No	No	6	395.00		
	44		30-20 ±0.1	5	0.02			1	300	76	0.1	Yes	50,250	47k	Opt.	No	9	685.00		
RG DYNAMICS	RG D-3		20-20 ±0.05	7	0.02	0.02	0.008	1.0	200	70	0.1	Yes	Adj.	47k	No	Varies	14	595.00	Opt. rackmount or wal. ends.	
ROTEL	RC-5000		DC-250 ±1	7	0.008	0.009		2	500	80		Yes	Var.	Var.	Yes		35	1,600.00		
	RC-2000		4-160 ±1	7	0.008	0.009		2	400	80		Yes	Var.	Var.	Yes		23	530.00		
	RC-1000		5-50 ±0.3	6	0.03	0.03		2.5	250	75		Yes	Var.	Var.	Yes		11	320.00		
SAE	2100		20-20 ±0.25	10	0.005	0.005		Var.	Var.	90	0.14	Yes					20	950.00	Parametric + tape EQ/filter.	
	2100L		20-20 ±0.25	10	0.005	0.005		Var.	Var.	90	0.14	Yes					20	800.00	Tape EQ/filter.	
	2900		20-20 ±0.25	9	0.01	0.01		2.5	150	84	0.14	Yes					15	500.00	As 2100.	
	3000		20-20 ±0.25	9	0.02	0.02		2.5	150	81	0.14	Yes					10	300.00	As 2100L.	
SANSUI	CA-F1		5-600 ±3	10	0.005	0.005	1.25	350	96	0.15	Yes		47k	Yes		13.4	495.00			
SANYO	Plus C55		20-20 ±0.2		0.003		2.5	250	90		Yes		47k	Yes	Varies		249.95			
SERIES 20	C-21		10-100 ±0.2	20	0.006			2.5	300	86	0.15	No					13%	390.00	Variable cartridge loading.	
SONY	TA-E88B		0-500 ±1	15	0.002	0.002	0.002	2.5	250	94	0.15	No	Var.	Var.	Yes		19%	1,300.00		
	TA-E86B		5-500 ±1	13	0.003	0.003	0.003	2.5	250	93	0.15	No		Var.	Yes		18%	600.00		
	TA-E7B		1-150 ±1	15	0.003			2.5	250	91	0.15	Yes		Var.	Yes		26%	820.00		
SOUND-CRAFTSMEN	SP4002		5-100 ±0.25	10	0.01	0.005	0.005	Adj.	300	97	0.09	EQ	Adj.	47k/ 100 47k	Yes	No	27	699.00	Adj. phono gain & loading, 10-band EQ.	
	PE2217R		5-100 ±0.25	6	0.01	0.01	0.01	0.63	105	84	0.08	EQ	100		No	No	23	549.00		
SOURCE ENG.	PNS		25-70 ±½	8.5	0.05	0.05		0.7/ 1.8	50/130	74			10	75k/47k	No	No	6	395.00	Built-in noise suppression.	
	Specialist		20-70 ±½	8.5	0.1	0.1		1.62	75	74			10	75k	No	No	6	495.00	Stereo expander, mono noise suppressor.	
	UEA	P	20-20 ±½	8.5	0.05	0.05		5.5	75	74		Treb.	10	75k	No	No	1	86.00	Stereo RIAA, mono 78, no power supply.	
SPECTRO ACOUSTICS	217R		5-100 ±1	10	0.03		0.0075	5	300	80	0.3	No	Var.	Var.	No	No	7	285.00		
STAX	CAZ		20-20 ±0.3	10	0.005	0.015		1	200			No		50k	No	No	5½	550.00		

MANUFACTURER	Model	Type of Unit - K1/K2, Wire-W, Tubed T, Photo Stage Only, P, Monoch	Frequency Response, Hz to kHz, \pm dB	Maximum Output, V	% THD	% IM Distortion	Rated SMPTE IM, % Percent	Phono Sensitivity μ mV For 0.5 V output at 1 Hz	Phono S/N, "A" wtd.-re. 5 mV input \pm dB	High Level Sensitivity μ V	Tone Controls?	Phono Input Capacitance, μ pF	Phono Input Impedance, Ω ohms	Moving Coil Input?	Does unit invert phase?	Weight, Lbs.	Price	Notes	
TEAC	PA-7		0.5-100 \pm 1	18	0.03	0.03	0.003	270	160	0.2	Yes	Var.	Var.	Yes	No		750.00		
TANGENT	Lupus Princeps										No		47k	Yes		15	450.00		
TECHNICS	SU-C01		3-100 \pm 1	3	0.005			2.5	200	70	0.15	Yes		47k	Yes		6.6	260.00	Mini, subsonic filter, tone defeat.
	SU-9070		0-100 \pm 1	20	0.003			2.5	380	88	0.15	Yes		47k	Yes		15.7	460.00	Subsonic filter.
THETA	A	T	2.5-5M \pm 0, -3	25	0.2	0.2	0.2	1.5	600	73	0.15	No	30	47.5k	No	Yes	14	975.00	No feedback, passive RIAA.
	H	T	1.0-10M \pm 1	10	0.1	0.1	0.1	1 V	90			No	30	5/10/30	Yes	Yes	12	500.00	Head amp.
THRESHOLD	SL-10		0-500 \pm 0, -3	8	0.01	0.015	0.01	10	350	85	0.05	No	100/200/400	Var.	Yes	No	24	943.00	Cascode/Class A operation, separate power supply.
	NS-10		1.5-500 \pm 0, -3	7	0.01		0.01	10	300	85	0.05	No	200	47k	No	No	13	1,045.00	
TOSHIBA	SY-335		30-15 \pm 0.5					2.5	150								6.6	119.95	
	C15		10-100 \pm 2						330								6	299.95	
	SY-665		7-40					0.12	250								7.5	199.95	
VA SYSTEMS	Six										No	10/380	Var.	No		10	540.00		
	Seven										No	10/380	Var.	Yes		10	840.00		
YAMAHA	C-6		10-100 \pm 0.3	2	0.003	0.015		2.5	240		0.150	Yes					13	450.00	
	C-4		5-100 \pm 0.5	2	.0035	0.005		2.5	285		0.150	Yes					19	550.00	
	C-2a		10-100 \pm 0.2	2	0.003	0.003		2.5	350		0.150	Yes					17	950.00	



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TUNERS



Draco
Micro CPU



Denon
TU-630



Crown
FM-1



Heath
AJ-1600

Hitachi FT-8000



JVC T-M1



Harman/Kardon
Citation 18



McIntosh MR-78



Marantz ST-400



Mitsubishi DA-F20

Letter Code "F" indicates FM only; "K" indicates kit price		Model	Type of Unit. See Letter Key	Mono IHF Sensitivity, µV / dBf	Stereo IHF Sensitivity, µV / dBf	Capture Ratio, dB	Alt. Chan. Select., Wide/Narrow	Mono Signal Strength for 50 dB Quieting, µV / dBf	Stereo Signal Strength for 50 dB Quieting, µV / dBf	Separation, dB, 1 kHz	Separation, dB, 10 kHz, 100% modulation	THD mono/stereo, 1 kHz, 6 kHz, 100% modulation	S/N, max., dB, Mono/stereo	Switchable De-emphasis	Net Weight, lbs.	Price, \$	
AIWA	F	AT-9700U			1	80/50	1.6/15.3	16/35.3	50		0.03/0.05		80/78	No	21.2	520.00	
		AT-9300			1.5	72	4.5/18	44/38	42		0.2/0.3		73/68	No	9.24	210.00	
		ST-R22U			1.5	70	4.5/18.2	43/37.9	45		0.1/0.25		73/70	No	4.4	200.00	
AKAI		AT-2650		1.6	1.2	80			45		0.1/0.15		75		16.5	299.95	
		AT-2450		1.7	1.2	80			45		0.1/0.2		75		16.1	225.00	
		AT-2250		1.9	1.3	65			42		0.1/0.2		70		10.3	149.95	
CROWN	F	FM-1		/10.8	2	75	/10.8	/36	45	35	0.1/0.09		70/65	Yes	15½	995.00	
DENON	F	TU 630		3.3/15.6	30/34.7	1/1.5		3.3/15.6	3.0/34.7	55	45	0.03/0.06	0.07/0.15	82/79	Yes	17.6	340.00
DRACO LABS	F	Micro CPU		1.6/9.31		0.5	85/18	2.1/11.67	22/32.08	55	40	0.07/0.07	0.1/0.15	82/75	Yes	34	995.00
EUMIG	F	T-1000		1.6/9.3		0.8	100		35/36.1	50	45	0.08/0.1		175	No		795.00
HARMAN/KARDON	F	Citation 18		2/11.2	3.1	1	70	3.2/15.1		50	40	0.3		75	Yes	23	499.00
		hk500		2/11.2	3.1	1.3	70	3.2	37	45	38	0.1		75	Yes	17	279.00
HEATH	K	AJ-1600		1.8	3.5	1.2	40/80	2.5/13.2	35/36.1	45	35	0.1/0.1	0.15/0.2	83/75	Yes	20.7	379.95
HITACHI		FT-4000		1.8/10.3		1.2	75	4/17.2	39.8/37.2	46		0.1/0.25	0.3/0.45	75/68	No	7.7	179.95
		FT-440B		1.7/9.8	5/19.2	1.0	80	3.5/16.1	39/37	50		0.1/0.25	0.25/0.35	78	No	15.4	300.00
		FT-5000		1.9/10.8		1.0	75	/16.2	38.2	45		0.1/0.2	0.25/0.3	65/62	No	9.68	329.95
		Digital FT-8000 Digital	F	1/11.2		1.0	80	3.3/15.7	40/37.2	50		0.12/0.15		72/68	No	13.4	459.95
JVC	F	T-V3		1.2/12.8		1.5	55	4/17.2	22.5/ 38.3	40	30	0.25/0.45		70/65		7.5	139.95
		T-V5		0.9/10.3		1	65	/14.8	22.5/ 38.3	45	35	0.15/0.3		82/70		8.1	179.95
		JT-V22		2/11.2		1.5	70	4/17.2	45/38.3	40	30	0.2/0.35		73/65		10.1	189.95
		JT-V77		0.9/10.3		1	75	3.8/16.8	38/36.8	50	40	0.08/0.1		78/72		14.3	319.95
		T-40P		1.6		1.5	65	3/21.7	25/39.2	45	38	0.15/0.3		70/65		7	369.95
		T-X5		0.9/10.3		1	65	1.8/16.3	8.7/30	50	40	0.08/0.1		81/78		11	299.95
		T-M1		0.9/10.3		1	75	2/17.3		50	40	0.08/0.12		75/72		8.2	499.95
T-3030		1/11.2		1	80	1.9/16.8	19/38.8	50	45	0.08/0.1		75/72	Yes	14.3	649.95		



NAD 4080

Onkyo T-909



Spectro Acoustics 220R

Pioneer TX-9800



ReVox B-760



Sansui TU-X1



SAE 8000

Sequerra Model 1



Toshiba ST-665



TEAC TX-300

Letter Code "F" Indicates FM only; "K" Indicates kit price		Model	Type of Unit. See Letter Key	Mono IIF Sensitivity, µV / dB	Stereo IIF Sensitivity, µV / dB	Capture Ratio, dB	Alt. Chan. Select., dB Wide/Narrow	Mono Signal Strength for 50 db Quieting, µV / dB	Stereo Signal Strength for 50 db Quieting, µV / dB	Separation, dB, 1 kHz	Separation, dB, 10 kHz	THD, mono/stereo, 1 kHz, 6 kHz, 100% modulation	S/N, max. dB, Mono/stereo	Switchable De-emphasis	Net Weight, lbs.	Price, \$	
KENWOOD		L-07TII		1.7/9.8	0.7	100/30	3/14.7	40/37.2	52	45	0.035/ 0.065	0.05/0.06	84/80	Yes	17.2	625.00	
		KT-917		1.9/10.8	0.8	60/35	3.4/15.8	40/37.2	60	50	0.03/ 0.04	0.05/0.07	90/84	Yes	15	1,000.00	
		KT-815		1.8/10.3	1	60/45	3.4/15.8	40/37.2	55	45	0.04/ 0.05	0.065/0.1	84/80	Yes	16	440.00	
		KT-615		1.8/10.3	1	54/45	3.4/15.8	40/37.2	55	40	0.05/ 0.06	0.065/0.1	81/78		15.8	270.00	
		KT-413		1.9/10.8	1	60	4/17.2	40/37.2	50	40	0.1/ 0.15	0.12/0.17	77/72		9.26	250.00	
		KT-313		1.9/10.8	1	60	4/17.2	45/38.3	45	35	0.1/ 0.15	0.2/0.18	77/72		9.5	179.00	
		KT-5500		1.9/10.8	1	60	4/17.2	45/38.3	45	35	0.15/ 0.2	0.2/0.25	72/68		13.6	175.00	
LUX		T2		1.9/10.8	1.5	75			48	38	0.19/0.3	0.15/0.3	75		12.8	375.00	
		T4		1.8/10.3	2	40/80			48	40	0.08/0.15	0.15/0.3	75		14.3	495.00	
		T12		1.8/10.7	2	30/90			50	45	0.05/0.06	0.07/0.1	80		15.4	695.00	
		5T10		1.8/10.3	2	30/90			50	45	0.05/0.06	0.07/0.1	80/72		28	795.00	
		5T50		1.7/9.8	1.1	72					0.08/0.1	0.15/0.2	70		19	1,595.00	
McINTOSH		MR74		2.5/13	1.5	58/88	2.2/12	30/34.7	35	20	0.2/0.3	0.3/0.3	65/65	No	25	849.00	
		MR78	F	2.5/13	2.5	55/90	2.2/12	30/34.7	45	30	0.05/0.02	0.2/0.2	75/75	No	27	1,099.00	
MARANTZ		ST300		1.8/10.3	1.0	62	2.8/14.2	40/37.3	45		0.15/0.25	0.2/0.4	75/68	Yes	9 3/4	225.00	
		ST400		1.8/10.3	1.0	65	2.5/13.2	38/36.8	45		0.15/0.25	0.2/0.35	78/70	Yes	11	280.00	
		ST500		1.7/9.8	1.0	65	2.5/13.2	35/36.1	45		0.15/0.2	0.2/0.3	80/72	Yes	7	339.95	
MITSUBISHI		DA-F10		2.5/13.2	7.8/23	0.8	45/75	5.5/20	55/40	45	40	0.06/0.1		75/70	No	16 1/2	300.00
		DA-F20	F	2/11.2	7.5/22.7	0.8	45/75	5/19	50/39.2	50	40	0.05/0.08		80/75	No	14 1/2	430.00
		MF-01	F	2/11.2	7.5/22.7	1.0	70	5/19.2	50/39.2	50	40	0.08/0.1		80/77	No	7 3/4	340.00
NAD		4020	F	1.8/10.3	1.5	62	3.5/16	45/38	42	32	0.2/0.3	0.3/0.4	75/70	Yes	9.3	175.00	
		4030		1.9/10.8	1.5	62	3.5/16	45/38	40	30	0.2/0.3	0.3/0.4	72/68	Yes	15	220.22	
		4080		1.8/10.3	1.0	70	3.0/14.8	35/36	40	30	0.2/0.3	0.3/0.4	74/70	Yes	19	285.00	
NIKKO		Gamma I	F	1.8/10.3	1	35/85	/14	/34	55	40	0.04/0.06		78/75	Yes	12	399.95	
		Gamma V	F	1.8/10.3	1	30/80	/13.2	/34.8	55	48	0.04/0.07		81/75	Yes	13	699.95	
		NT-790		2.0/11.2	1.5	/55	/20	/35	40	30	0.2/0.5		72/60	No	14	179.95	
		NT-890		1.9/10.8	1	/65	/14.2	/30	50	35	0.1/0.2		72/68	No	14	219.95	

TUNERS

Letter Code	Model	Type of Unit, See Letter Key	Mono I/F Sensitivity, μ V / dB		Stereo I/F Sensitivity, μ V / dB		Capture Ratio, dB		Alt. Chn. Select., dB Wide Narrow		Mono Signal Strength for 50 dB Quieting, μ V / dB		Stereo Signal Strength for 50 dB Quieting, μ V / dB		Separation, dB, 1 kHz		Separation, dB, 10 kHz		THD, mono/stereo, 1 kHz, 100% modulation		THD, mono/stereo, 8 kHz, 100% modulation		S/N, max., dB, Mono/Stereo		Switchable De-emphasis		Net Weight, lbs.	Price, \$
			F	K	F	K	F	K	F	K	F	K	F	K	F	K	F	K	F	K	F	K	F	K	F	K		
ONKYO	T-909	F	1.7/9.8	4/17.2	1.5	80	3.0/14.7	35/36	45	40	0.08/0.15	0.1/0.2	80/74	Yes	13	949.95												
	T-4090	F	1.7/9.8	4/17.2	1.3	70	3.0/14.7	35/36	40	35	0.1/0.25	0.1/0.25	76/68	Yes	13	339.95												
	T-4040	F	1.9/10.8	4.5/18.3	1.5	60	3.5/16.1	35/36	40	30	0.15/0.3	0.15/0.3	73/66	No	12.1	229.95												
OPTONICA	ST-4201	K	1.7/9.8		1.2	65			45	35			72/65		12.1	300.00												
	ST-9405	K	1.6/9.3		1.2	80/35			50/45	40	0.2/0.3,		75/70	No	13.5	1,000.00												
	ST-7405	K	1.6/9.3		1.2	80/35			50/45	40	0.1/0.2		75/70	No	11	460.00												
PHASE LINEAR	5000-II	F	1.9/10.8	6/20.8	1.2	75	3.0/14.8	30/34.8	42	32	0.1/0.2		74/72	Yes	17	579.95												
	5100-II	F	1.9/10.8		1	60	3.2/15.2	41.1/37.5	55	44	0.05/0.08		80/75	Yes	10	449.95												
		F	1.9/10.8		1	60	3.2/15.2	41.1/37.5	55	44	0.05/0.08		80/75	Yes	10	449.95												
PIONEER	TX-9800		1.5/8.8		0.8/2	30/85	2.5/13.2	35/36.1	55	40	0.04/0.07		83/80	Yes	20½	450.00												
	TX-7800		1.6/9.3		1.0	75	3.3/15.5	39.2/37.1	50	35	0.05/0.08		83/79	Yes	18%	350.00												
	TX-6800		1.9/10.8		1.0	60	3.1/15	44/38	40	35	0.1/0.2		80/74	No	11%	200.00												
QUAD	FM3	F			3	46	5	30	40	0.3		70/70	No	6	395.00													
RADIO SHACK	TM-102														79.95													
REVOX	B 760	F	2	20	0.8	80			42	0.15		75	Yes	26½	1,649.00													
ROGERS	T.75	F	1.0/30	36/50	1.5	66/6.5	3.6/50	36/50	40	25	0.3/0.7		77/66	No	12	360.00												
ROTEL	RT-2100	F	1.5/8.8	15/28.8	0.8	80/35	3.5/16.1	35/36.2	47	45	0.05/0.07		80/75	Yes	16½	640.00												
	RT-2000	F	1.6/9.3	16/30	1	80/35	3.8/15.5		45	40	0.05/0.07		80/75	Yes	16½	460.00												
	RT-1000	F	1.9/10.8	5.5/20	1	60	3.5/16	35/36	42	35	0.1/0.25	0.2/0.35	75/65	No	10	250.00												
SAE	Two T3U		1.8/10.3	3/14.7	1.5	80	3.0/14.7	40/37.3	45	35	0.1/0.2		67/69	No	14	275.00												
	Two T7		1.8/10.3	4/17.3	1.5	65	4/17.3	30/34.8	45	40	0.1/0.22	0.28/0.4	76/67	No	12	375.00												
	Two T14		1.8/10.3	4/17.3	1.5/1	40/70	4/17.3	30/34.8	48	40	0.08/0.15	0.22/0.3	76/70	No	12	550.00												
	8000 Digital	F	1.6/9.3	15.0/28.8	1.5	120	5.0/19.2	30/34.8	45	35	0.15/0.20		70/68	Yes	20	700.00												
3200 Digital	F	1.8/10.3	20/31.3	1.5	100	6.5/21.5	40/37	40	35	0.15/0.20		70/78	No	15	400.00													
SANSUI	TU-217		1.83/10.5	/20	1	50	/13.8	/37	40	30	0.1/0.13	0.25/0.25	78/72	No	10½	190.00												
	TU-717		1.7/9.8	4.9/19	1	50/80	2.24/12.5	27.5/34	48	38	0.06/0.07	0.08/0.1	81/68	Yes	20%	370.00												
	TU-517		1.7/9.8	4.9/19	1	50/80	2.24/2.5	27.5/34	40	38	0.06/0.07	0.18/0.2	82/78	Yes	19%	260.00												
	TU-417		1.75/10.1	4.9/19	1	50	/13.5	/36.5	40	30	0.07/0.09	0.27/0.29	79/73	Yes	18%	275.00												
	TU-317		1.8/10.3	/19	1	50	/13.5	/36.5	40	30	0.07/0.09	0.27/0.29	79/73	Yes	11%	240.00												
	TU-X1		1.49/8.7	/14.5	0.8	55/80	2.24/12.5	27.5/34	50	40	0.02/0.03	0.04/0.05	86/83	Yes	35%	980.00												
	TU-919		1.54/9	3.1/15	0.9	50/80	2.24/12.5	27.5/34	50	35	0.04/0.06	0.08/0.15	82/76	Yes	21%	585.00												
SANYO	Plus T55		1.8/10.3		1.8	55/80	3.0/14.7	36/36.3	42/48	35/40	0.15/0.2	0.3/0.3	45	Yes		349.95												
	Plus T35		1.8/10.3		1.8	55/80	3.0/14.7	36/36.3	42/48	35/40	0.15/0.2	0.3/0.3	45	Yes		299.95												
	FM611K		1.9/10.8		1	75			45	45			75/65	Yes		169.95												
H.H. SCOTT	570T		1.8/10.3		1	70	3.5/16.1	33/35.6	50		0.1/0.2		75/70	Yes	13	249.95												
	530T		1.9/10.8		1.5	60	3.8/16.8	35/36	65		0.15/0.3		72/67	Yes	11½	199.95												
SEQUERRA	Model I	F	2/5	3.5/10	0.75	100	/10	/29	52	38	0.07/0.17		75/72	Yes	46	3,600.00												
SERIES 20	F-26	F	1.9/10.8		2	65/80	2.5/13.2	33.5/35.7	55	40	0.03/0.05		87/84	Yes	16½	1,000.00												
	F-28	F	1.8/10.3		0.8/1.5	35/70	2.8/14.1	35/36	55	50	0.04/0.05		84/81	Yes	19%	690.00												
SHARP	ST-1122	K	2/11.2		1.5				45	35			70		7.3	299.95												
	ST-1144	K	1.9/10.8		1.5				45	35			70		8.2	389.95												
SHERWOOD	S-32CP		1.7/9.84		1	70	2.8/14.17			35	0.1/0.2	0.15/0.25	74/68	Yes	14½	290.00												
SONY	ST-J60	F	1.8/10.3		1.0	85	3.5/16.1	40/37.3	50	45	0.06/0.08	0.06/0.15	77/72	No	8½	400.00												
	ST-A30	F	1.8/10.3		1.0	75	3.5/16.1	40/37.3	45	45	0.15/0.4		70/60	No	8	220.00												
	ST-P75	F	1.8/10.3		1.0	85	3.5/16.1	40/37.3	50	45	0.06/0.08	0.06/0.15	77/72	No	7%	500.00												
	ST-A7B	F	1.5/8.8		0.8/1.8	120/50	2.8/14.2	30/34.6	55	40	0.04/0.08	0.05/0.3	80/75	Yes	31%	900.00												
	ST-A6B	F	1.7/9.8		1.0/1.2	85/55	3.4/15.9	39/37.1	45	40	0.08/0.15	0.08/0.3	79/74	No	15%	310.00												
SPECTRO ACOUSTICS	220R	F	0.9/10.3	1.8/14.8	1.5	75	1.5/14.8	14/34	42	32	0.2/0.15		70/65	No	14	500.00												
TEAC	TX-300		15/11.5	17/37	1.5	42/87	6.4/17	31.7/37	45	40	0.2/0.2		72/60		13¼	270.00												
	TX-500		15/11.5	17/37	1.5	42/87	6.4/17	31.7/37	50	45	0.06/0.06		72/65		14%	350.00												
TECHNICS	ST-C01		1.9/10.8		1.0	75	3.9/17.0	45/38.3	45	35	0.1/0.15	0.15/0.25	75/70	No	6.4	260.00												
	ST-8011		1.9/10.8		1.0	60	3.9/17.0	47/38.6	45	35	0.15/0.3	0.3/0.4	75/70	No	7.1	170.00												
	ST-8044		1.9/10.8		1.0	75	3.9/17.0	47/38.6	45	35	0.15/0.3	0.3/0.4	75/70	No	9.3	200.00												
	ST-8077		1.9/10.8		1.0	75	3.6/16.3	40/37.2	45	35	0.08/0.1		75/70	No	9.7	300.00												
TOSHIBA	F-15		1.9/10.3		1.0	75			45		0.15		72/68		4.8	359.95												
	ST-665				1.0								72/68		7	299.95												
	ST-335		2/11.2		1.0	60			40			0.2/0.4	73/65		7.3	159.95												
	ST-420		2/10.8		1.0	60			40			0.2/0.3	72/68		18.3	229.95												
YAMAHA	T-2		1.5/8.8	28/34.2	1.0	100			55	48	0.05/0.05		88/85		15%	750.00												
	T-1		1.7/9.8	35/36	1.0	92			55	45	0.05/0.05		80/78		12¼	365.00												
	CT-1010		1.9/10.8	40/37.2	1.0	85			50	50	0.07/0.07		80/75		17	385.00												
	CT-810		1.8/10.3	40/37.2	1.0	80			50	50	0.08/0.1		80/75		13	285.00												
	CT-610H		1.5/3	40/37.2	1.0	85			45	45	0.07/0.1		80/75		14	225.00												
	CT-410H		1.8/10.3	40/37.2	1.0	82			40	35	0.1/0.15		74/69		12¼	185.00												



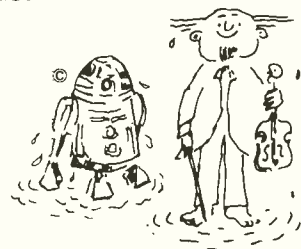
What would you do if you saw an orchestra drowning?

Twelve years ago, musicians all over the world were drowning in tape noise. We jumped in and began saving everyone we could, with our professional Dolby noise reduction system. Today, virtually every recording company in the world uses the Dolby system to make quieter master tapes.

Then we made a simpler Dolby system to save orchestras from drowning at home — first on cassettes, now on FM. Just about every manufacturer incorporates our music-saving circuitry in his tape recorders, while there are now more than 80 Dolby equipped FM products. Most recorded cassettes are Dolbyized, as are open-reel tapes. More than 100 stations broadcast Dolby FM.

Now, Dolby is going to the movies. We not only saved R2D2[®] from drowning — we brought him to you in stereo. Our professional noise reduction system is being put to a new use, as the basis of Dolby Stereo — a practical, economical system for wide-range stereo sound in neighborhood theatres (not just first-run houses).

In fact, we're making just about *everything* sound better. At Dolby Laboratories, we think . . . so that others can swim.



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 **Dolby**[®]

Dolby Laboratories

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RECEIVERS



Harman/Kardon hk670



Hitachi SR-904

JVC JR-S501



Marantz SR6000



Kenwood KR-9050



Optonica SA5901



Onkyo TX-4500II



Mitsubishi DA-C7



McIntosh Mac4100



Nakamichi 730

MANUFACTURER		MODEL	Type of Unit, See letter code		Ave. watts / chan., 8 ohms	% THD	% HF IM	Rated power bandwidth, Hz to kHz	dB S/N, "A" wtd., Phono rel 5mV	Dynamic overload, mV	Mono HF Sensitivity, μ V/dB	Stereo HF Sensitivity, μ V/dB	Capture Ratio, dB	Mono Signal Strength for 50-dB Quieting μ V/dB	Stereo Signal Strength for 50-dB Quieting μ V/dB	% THD, 100% Modulation, All Chan., Select., dB	Wide/narrow I.F. bandwidth	Max. S/N, dB, Mono/Stereo	Net Weight, lbs.	Suggested Price
ADVENT	300	F	15	0.5	0.15	40-20	77	100		2.5/13	35/39	1.6	3.5/16	35/39	0.15/0.2	70	73/70	11	289.00	
AIWA	AX-7800U		60	0.07	0.07		80						4/17.2	40/37.2	0.1/0.2	75	75/70	23.2	590.00	
	AX-7700U		40	0.1	0.1		72						4/17.2	44/38.1	0.25/0.4	65	73/68	21	300.00	
	AX-7300U		25	0.1	0.1		72						4/17.2	44/38.1	0.25/0.4	65	70/65	18.8	210.00	
AKAI	AA-R20		26	0.05		10-20	75	150				1.3			0.3/0.5	60	70	18.9	249.95	
	AA-R30		38	0.05		10-40	75	150				1.3			0.2/0.4	60	70	20	299.95	
	AA-R40		50	0.04		10-40	75	250				1			0.15/0.3	70	72	24.4	399.95	
	AA-R50		62	0.04		10-40	75	250	1.8			1			0.13	75	75	25.6	450.00	
AUDIO PRO	TA-150		70	0.1	0.1	20-20	70	150	1	/11	/15	1.2	/15	/30	0.3	75	70/65	25	1,135.00	
	TPA-150		NA	0.1	0.1	70	150			/11	/15	1.2	/15	/30	0.3	75	70/65	22	995.00	
BANG & OLUFSEN	Beomaster 1900	F		0.2	0.15	20-20	65	45		2.5/19.2	4.4/24		2.3/18.5	24/38.9	0.7/0.5	58	70/66	16 $\frac{1}{2}$	550.00	
	Beomaster 2400	F		0.2	0.15	20-20	65	45		2.5/19.2	4.4/24		2.3/18.5	24/38	0.7/0.5	58	70/66	16 $\frac{1}{2}$	650.00	
	Beomaster 4400	F		0.1	0.1	20-20	60	80		/16.4	/27		/18	/38	0.7/0.7	58	70/67	22	850.00	
BOSE	Spatial Control 550		100	0.09	0.09	20-20	83	145		1.9/10.8	3.3/15.6	1.8	3.5/16.11	35/36.11	0.1/0.25	70	65/70	36 $\frac{1}{2}$	799.00	
			40	0.09	0.09	20-20	76	100		2.0/11.25	3.5/16.11	1.9	3.8/16.82	40/37.27	0.25/0.5	60	60/65	15 $\frac{1}{2}$	349.00	
CALIBRE	215		16	0.05	0.05	20-20 ± 0.5	80	210		1.9/10.8	2.5/13.2	1.5	2.8/14.2	39.8/37.2	0.1/0.1	60	68	22	230.00	
	225		26	0.05	0.05	20-20 ± 0.5	80	210		1.9/10.8	2.5/13.2	1.5	2.8/14.2	39.8/37.2	0.1/0.1	60	72	23	280.00	
	240		42	0.05	0.05	20-20 ± 0.5	80	210		1.9/10.8	2.5/13.2	1.5	2.8/14.2	39.8/37.2	0.1/0.1	66	72	24 $\frac{1}{2}$	375.00	
CONCEPT	4.5D		45	0.04	0.04	20-20	78	220		1.8/10.3	6/20.8	1.1	2.8/14.1	38/36.8	0.1/0.1	78	68/72	30	490.00	
	7.5D		75	0.04	0.04	20-20	80	220		1.7/9.8	4.5/18.3	1	2.7/13.8	36/36.3	0.1/0.1	80	70/72	36	620.00	
	12.0D	F	120	0.02	0.02	20-20	80	220		1.7/9.8	3/14.7	0.8	2.7/13.8	36/36.3	0.1/0.1	85	72/74	50 $\frac{1}{2}$	900.00	
CRAIG	5504		25	0.5		20-20		150		1.6/9.3		1.5	3.5	40	0.3/0.5	60	65/60	17 $\frac{1}{2}$	299.95	
	5505		40	0.3		20-20		150		1.6/9.3		1.5	3.5	40	0.3/0.5	60	65/60	25 $\frac{1}{2}$	399.95	
	5506		55	0.1		20-20		170		1.5/8.7		1.0	3.0	35	0.1/0.3	70	75/65	28	479.95	
HARMAN/KARDON (Continued)	hk340		20	0.12	0.08	20-50	80	80	2	2.5		2	3.5	45	0.3/0.4	35	65	20	219.00	
	hk450		30	0.08	0.08	10-100	80	100	2	2.3		1.5	3.3	42	0.12/0.2	35	70	25	319.00	



Pioneer SX-1980



SAE Two R18



Sansui G-33000



Radio Shack STA-2200



H.H. Scott 380R



Sherwood S-7650CP



Tandberg TR-2080



Rotel RX-2002



Yamaha CR-2040



Thorens AT-410

MANUFACTURER	MODEL	Type of Unit. See letter code	Ave. watts/chan., 8 ohms	% THD	% IHF IM	Rated power bandwidth, Hz to kHz	dB S/Pk, "A" wtd., Phono ref 5mV	Phono overload, mV	Dynamic Headroom, 2 dB	Mono IHF Sensitivity, $\mu\text{V}/\text{dB}$	Stereo IHF Sensitivity, $\mu\text{V}/\text{dB}$	Capture Ratio, dB	Mono Signal Strength for 50-dB Quieting $\mu\text{V}/\text{dB}$	Stereo Signal Strength for 50-dB Quieting $\mu\text{V}/\text{dB}$	% THD, 100% Modulation, 1 kHz, Mono/Stereo	All Chan Select, dB Wide/Narrow 1/1, bandwidth	Max. S/N, dB, Mono/Stereo	Net Weight, lbs.	Suggested Price
HARMAN KARDON (Continued)	hk560		40	0.04	0.06	10-100	82	120	2	2		1.3	3.1	37	0.1/0.15	35	75	25	399.00
	hk670		60	0.03	0.06	8-100	82	225	2	1.9		1.3	3	35	0.09/0.1	35	75	36	569.00
HEATH	AR-1515	K	70	0.06	0.08	20-20	65	100		1.8/10.3	3.5/16.1	1.5	2.3/12.5	35/36.1	0.3/0.35	100	70/60	36	599.95
	AR-1429	K	35	0.1	0.1	20-20	65	90		1.8/10.3		1.8	3.1/15	4/17	65	30	30	349.95	
HITACHI	SR-2004		200	0.06	0.08	20-20	80	500	3	1.5/8.7	8.9/24	1	2.3/12.5	34.5	0.07/0.1	45/85	75/70	56.21	629.95
	SR-904		75	0.09	0.1	20-20	80	220	3	1.6/9.3	14/28	1	3.1/15	34.5/36	0.15/0.25	80	74/68	29.8	629.95
	SR-804		50	0.1	0.1	20-20	78	250	3	1.8/10.3	5.5/20	1	3.9/17	39/37	0.15/0.25	75	74/68	22.3	449.95
	SR-604		35	0.05	0.05	20-20	70	140	3	1.8/10.3	6.2/21	1	3.9/17	39/37	0.15/0.3	76	74/68	17.6	349.95
	SR-2010		15	0.3	0.3	20-20	78	130		1.9/10.8		1	3.9/17	39/37	0.15/0.3	55	74/68	11	199.95
JVC	SR-4010		25	0.05	0.05	20-20	78	130		1.9/10.8		1	3.9/17	39/37	0.15/0.3	76	75/70	11.4	249.95
	JR-S201		35	0.03	0.01			180		1.9/10.8		1	3/14.8	39.7/37.2	0.08/0.1	80	78/70	23.3	389.95
	JR-S301		60	0.03	0.01			190		1.9/10.8		1	3/14.8	39.7/37.2	0.08/0.1	80	78/70	27.3	499.95
	JR-S401		85	0.03	0.01			200		1.8/10.3		1	3/14.8	39.7/37.2	0.08/0.1	80	78/70	35.4	629.95
	JR-S501		120	0.03	0.01			250		1.8/10.3		1	3/14.8	39.7/37.2	0.08/0.1	80	78/70	46.2	729.95
R-55	R-55		25	0.03	0.03			120		1.8/10.3		1	14.8	38.3	0.15/0.3	65	82/70	15.7	219.95
	R-57		50	0.03	0.03			140		1.8/10.3		1	14.8	38.3	0.15/0.3	65	82/70	18.7	299.95
	R-555		35	0.03	0.03			140		1.8/10.3		1	14.8	38.3	0.15/0.3	65	78/68	23.1	299.95
KENWOOD	KR-9050		200	0.02	0.0045	20-20	91	260		1.7/9.8			2.8/14.1	35/36.1	0.07/0.08	30/60	83/76	52.9	1,100.00
	KR-8050		150	0.02	0.005	20-20	91	220		1.8/10.3			3.2/15.3	38/36.8	0.07/0.08	30/60	83/75	41.9	820.00
	KR-7050		80	0.02	0.007	20-20	91	200		1.8/10.3			3.5/16.1	43/37.9	0.08/0.09	30/60	83/75	33	660.00
	KR-6050		60	0.02	0.01	20-20	90	200		1.8/10.3			3.5/16.1	43/37.9	0.08/0.09	30/60	83/75	28.7	499.00
	KR-5010		45	0.03	0.02	20-20	88	140		1.8/10.3			3.5/16.1	43/37.9	0.08/0.09	25/50	76/70	19	399.00
	KR-4010		35	0.03	0.02	20-20	87	140		1.8/10.3			3.5/16.1	43/37.9	0.08/0.09	50	76/70	18.3	330.00
	KR-3010		27	0.05	0.05	20-20	87	140		1.8/10.3			3.8/16.8	45/38.3	0.08/0.09	50	76/70	15.7	280.00
KIRKSAETER	Moderator 50-75	F	45	0.025	0.008	20-20	75	70/170		1.8/10	3.3/17	1.5	2.5/13	30/35	0.15/0.2	90	74/70	29	1,000.00
LUX	R1030		30	0.05	0.1	10-40	85	280		2/11.2	4.8/19	1.5			65	72/68	20.7	395.00	
	R1040		40	0.05	0.05	10-50		150		2/11.2	4.8/19	1.2			55	74/70	26.4	495.00	
	R1050		50	0.05	0.05	10-50		150		1.8/10.3					70	74/70	29.7	595.00	
	R-1070		75	0.025	0.025	15-100	86	160		1.8/10.3		1.9			80	75	32.8	795.00	
	R1120		120	0.03	0.03	50-70	94	160		1.8/10.3	4/17.2	1.3					37.4	995.00	

RECEIVERS

Letter Key:
"F" indicates FM only
"K" indicates KIT

MANUFACTURER	MODEL	Type of Unit, See letter code	Ave. watts/chann. 8 ohms	% THD	% IFR IIM	Rated power bandwidth, Hz to kHz	dB S/N, "A" wtd., Phono ref 5mV	Phono overload, mV	Dynamic Headroom, 7 dB	Mono IFR Sensitivity, µV/8dB	Stereo IFR Sensitivity, µV/8dB	Capture Ratio, dB	Mono Signal Strength for 50-dB Quieting µV/8dB	Stereo Signal Strength for 50-dB Quieting µV/8dB	% THD, 100% Modulation, 1 kHz, Mono/Stereo	Aft. Chn. Select., dB Wide/Narrow 1% bandwidth	Max. S/N, dB, Mono/Stereo	Net Weight, lbs.	Suggested Price
MCINTOSH	MAC4100		75	0.05	0.05	20-20	79	100	1.5	2.5/13	5.5/20	1.8	3.5/16	20/31	0.18/0.38	75	70	40	1,499.00
MARANTZ	SR1000		20	0.09	0.09	20-20	81	130		1.9/10.8		1	2.9/14.9	42/37.7	0.15/0.3	60	75/68	14%	265.00
	SR2000		30	0.04	0.04	20-20	83	110		1.9/10.8		1	2.8/14.2	40/37.3	0.15/0.25	62	75/70	17½	325.00
	SR4000		50	0.025	0.025	20-20	85	130		1.8/10.3		1	2.7/13.9	38/36.8	0.15/0.25	65	78/70	22	400.00
	SR6000		70	0.025	0.025	20-20	87	225		1.7/9.8		1	2.5/13.2	35/36.1	0.15/0.2	65	80/72	26½	550.00
	SR8000		70	0.025	0.025	20-20	87	225		1.7/9.8		1	2.5/13.2	35/36.1	0.15/0.2	65	80/72	26½	695.00
	2285B		85	0.05	0.05	20-20	76.5	200		1.8/10.3		1	2.5/13.2	35/36	0.15/0.25	80	78/70	37½	660.00
	2330B		130	0.05	0.05	20-20	76.5	200		1.8/10.3		1	2.5/13.2	35/36	0.1/0.2	80	78/70	48½	800.00
	2385		185	0.05	0.05	20-20	77.5	200		1.5/8.75		1	2.2/12.1	25/33.2	0.1/0.2	85	80/75	57%	1,000.00
2600		300	0.03	0.03	20-20	81.5	200		1.5/8.75		1	2.2/12.1	25/33.2	0.1/0.2	85	82/75	60%	1,600.00	
MITSUBISHI	DA-C7 Tuner/Preamp.						81	200		2/11.2	7.8/23.1	1	5.5/20	55/40	0.08/0.1	50/75	76/73	16%	360.00
	DA-C20 Tuner/Preamp.						90	290		2/11.2	7.5/22.7	0.8	5/19.2	50/39.2	0.05/0.08	45/75	80/75	16½	510.00
NAD	7030		30	0.09	0.09	20-20	74	190	2.2	1.9/10.8		1.5	3.5/16	45/38.3	0.2/0.3	62	72/68	24	320.00
	7045		45	0.05	0.05	20-20	74	200	2.2	1.9/10.8		1.5	3.5/16	45/38.3	0.2/0.3	62	72/68	30	415.00
	7060		60	0.03	0.03	20-20	74	200	2.2	1.9/10.8		1.5	3.5/16	45/38.3	0.2/0.3	62	72/68	33	510.00
	7080		90	0.03	0.03	20-20	76	200	2.5	1.8/10.3		1.0	3.0/14.8	35/36.1	0.2/0.3	70	72/68	42	610.00
NAKAMICHI	730	F	105	0.02	0.01	10-20	83	120				1.5	4.5/18.3	45/38.3	0.1/0.15	70	75/68	38	1,200.00
	530	F	55	0.02	0.01	10-20	84	130				1.5	5/19.2	55/40	0.15/0.2	75	75/68	27½	850.00
NIKKO	NR-519		20	0.08	0.08	10-30	66	130		2.2/12		1.8	/15.2		0.2/0.3	55	70/60	16	249.95
	NR-719		35	0.05	0.05	10-30	88	150		1.8/10.3		1.5	/14.2	/36.2	0.08/0.18	55	81/75	22	319.95
	NR-819		45	0.05	0.05	10-30	88	150		1.8/10.3		1.5	/14.2	/36.2	0.08/0.18	55	81/75	23	369.95
	NR-1019		70	0.03	0.03	10-40	91	200		1.8/10.3		1.5	/13.5	/35.5	0.07/0.15	75	81/75	35	539.95
	NR-1219		100	0.03	0.03	10-40	91	250		1.8/10.3		1.5	/13.5	/35.5	0.07/0.15	75	81/75	39	649.95
ONKYO	TX-8500 II		160	0.05		20-20	79	250	1.4	1.6/9.3	4/17.2	1.3	3/14.7	35/36	0.15/0.25	70	70/65	61.6	999.95
	TX-6500 II		100	0.05		20-20	78	200	1.5	1.7/9.8	4/17.2	1.3	3/14.7	35/36	0.15/0.3	70	70/65	45.1	649.95
	TX-4500 II		60	0.1		20-20	76	200	1.6	1.8/10.3	4.5/18.3	1.5	4/17.2	40/37.2	0.2/0.4	70	70/65	33	479.95
	TX-2500 II		40	0.1		20-20	76	150	2.3	2.0/11.2	5/19.2	2	4/17.2	40/37.2	0.2/0.4	60	65/60	25.3	354.95
	TX-1500 II		17	0.3		20-20	77	100	2.0	2.3/12.4	5/19.2	1.5	4.5/18.3	50/39.2	0.25/0.5	60	65/60	16.1	234.95
	TX-20		30	0.08		20-20	74	200	2.3	1.8/10.8	4/17.2	1.5	3.5/16	35/36	0.12/0.3	55	72/66	15.8	329.95
OPTONICA	SA5901		125	0.02	0.02	20-20	80	400		1.7/9.8	5.6/20.2	1.2	2.45/13	31.6/35.2	0.1/0.3	80	84/75	46.4	800.00
	SA5602		80	0.03	0.01	20-20	80	280		1.7/9.8	5.6/20.2	1.2	2.45/13	31.6/35.2	0.1/0.3	80	80/73	39.8	600.00
	SA5402		65	0.035	0.01	20-20	76	260		1.8/10.3	5.6/20.2	1.2	3.55/16.2	31.6/35.2	0.2/0.4	72	73/68	27.6	450.00
	SA5202		45	0.04	0.04	20-20	73	160		1.9/10.8	5.6/20.2	1.2	3.55/16.2	31.6/35.2	0.2/0.4	60	73/67	27	330.00
	SA5101		25	0.04	0.04	20-20	73	150		1.9/10.8	5.6/20.2	1.2	3.55/16.2	31.6/35.2	0.1/0.2	60	73/66	14.3	280.00
PIONEER	SX-1980		270	0.02	0.03	20-20	93	300		1.5/8.75		1	2.2/11.5	34/36	0.07/0.1	80	83/85	78	1,295.00
	SX-1280		185	0.03	0.01	20-20	86	300		1.7/9.8		1	2.8/14.2	34/36	0.1/0.15	80	80/74	63½	950.00
	SX-1080		120	0.05	0.05	20-20	82	200		1.7/9.8		1	2.8/14.2	39/37	0.1/0.15	80	80/74	47	750.00
	SX-980		80	0.05	0.05	20-20	82	200		1.8/10.3		1	2.8/14.2	39/37	0.1/0.15	80	80/74	41½	650.00
	SX-880		60	0.05	0.05	20-20	82	200		1.8/10.3		1	3.6/16.2	39/37	0.07/0.15	75	80/72	27	475.00
	SX-780		45	0.05	0.05	20-20	82	200		1.8/10.3		1	3.6/16.2	39/37	0.07/0.15	75	80/72	24%	375.00
	SX-680		30	0.01	0.01	20-20	81	200		1.9/10.8		1	3.8/16.7	39/37	0.07/0.15	60	80/70	19%	300.00
	SX-580		20	0.3	0.3	20-20	79	150		1.9/10.8		1	3.8/16.7	39/37	0.07/0.15	60	80/70	18%	250.00
	QX-949A		60	0.3	0.3	20-20	70	100		/15	1.8	1			0.2/0.4	70		49½	750.00
	RADIO SHACK	SCR-1800		16	0.3		20-20	65	110	3.5	2		1.5	3.6			53	69/66	
STA-95			45	0.08		20-20	66	150	1.5	1.6		1.5	2.2/12			55	70/65		399.95
STA-240			60	0.05		20-20	69	250	2.7	2		1.5	3.3/15.6			68	71/66		429.95
STA-2200			60	0.02	0.01	20-20	66	200	3.6	1.8		1.5	2.8/14.2		0.3/0.2	70	72/64		599.95
STA-820			40	0.06		20-20	65	180	3.8	1.9		1.5	3/14.8		0.1/0.5	67	75/69		359.95
STA-800			35	0.08		20-20	68	110	3.5	2.5		1	2.6/13.5			55	67/58		319.95
STA-7			10	0.4		20-20	68	100	4.0	3.1		1.7	5.5/20			55	73/57		179.95
STA-430			10	0.2		20-20	64	120	3	3		3	4.5/18.3			63	75/58		159.95
STA-52B			16	0.2		20-20	63	115	2.4	2.5/13.2		2	6			65	63/56		199.95
STA-100			22	0.1		20-20	65	105	3.4	1.9		1.5	2.8/14.2			60	65/58		279.95
STA-2000D			75	0.05		20-20	63	230	3.3	1.7		1.5	2.8/14.2			75	74/66		499.95
STA-2100D			120	0.05		20-20	65	220	3	1.8		1.5	2.8/14.2			72	68/63		699.95
REFERENCE/ QUADRIFLEX		180R		18	0.15	0.05	20-20 ±0.5	70	120		1.9/10.8	4.5/18.3	2	3/14.8	38/36.8	0.25/0.5	65	70	19%
	240R		24	0.1	0.05	20-20 ±0.5	72	120		1.9/10.8	4.5/18.3	1.9	2.8/14.2	36/36.4	0.22/0.45	68	70	21	270.00
	300R		30	0.1	0.05	20-20 ±0.5	75	125		1.8/10.3	4.3/17.9	1.8	2.8/14.2	36/36.4	0.2/0.4	68	72	23	310.00

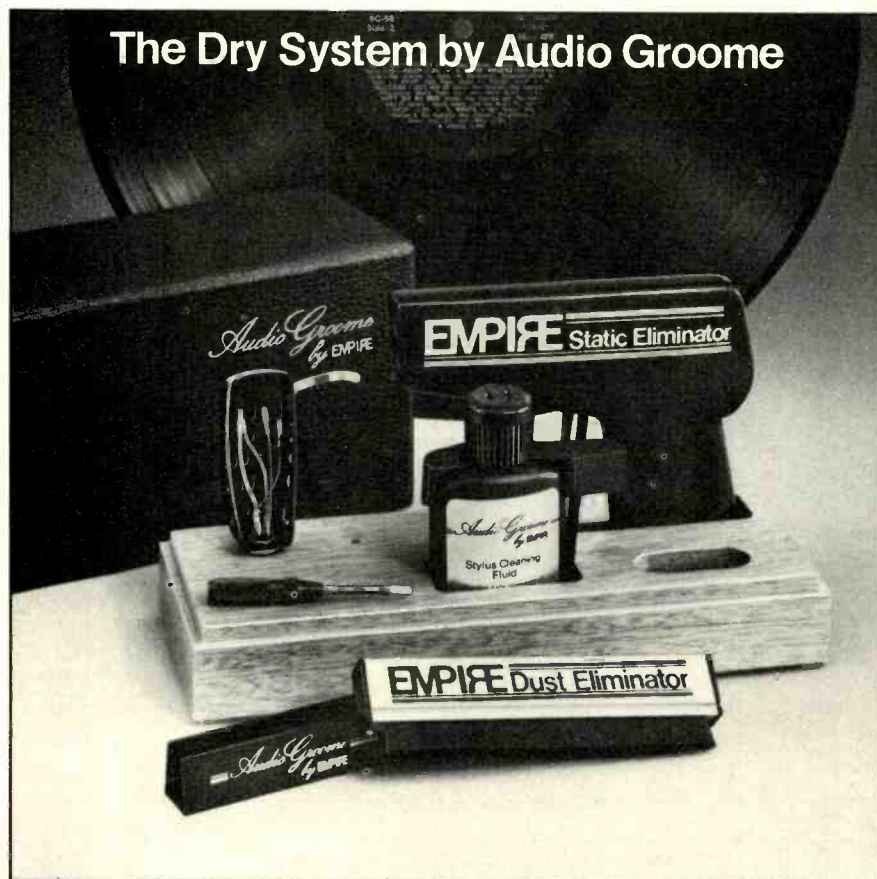
Letter Key:
 'P' indicates FM only.
 'K' indicates K11

			Ave. watts / chan. 8 ohms	% THD	% IHF IM	Rated power Hz to kHz	dB S/N - A w/d. Phono ref 5mV	Phono overload, mV	Dynamic Headroom, 2 dB	Mono IHF Sensitivity, μ V/dB	Stereo IHF Sensitivity, μ V/dB	Capture Ratio, dB	Mono Signal Strength for 50dB Disturb. μ /dB	Stereo Signal Strength for 50dB Disturb. μ /dB	% THD, 100% Modulation, 1 kHz, Mono/Stereo	All Chan Select, dB Wide/Narrow 1:1 bandwidth	Max. S/N, dB, Mono/Stereo	Net Weight, lbs.	Suggested Price
			0.1	0.04	20-20 ± 0.5	75	200	1.7/9.8	4.2/17.7	1.2	2.6/13.5	34/35.9	0.1/0.15	70	72	29 1/2	400.00		
			0.1	0.02	20-20 ± 0.5	80	200	1.7/9.8	4.2/17.7	1	2.6/13.5	34/35.9	0.1/0.15	72	72	33	480.00		
			0.02	0.05	5-50	75	220	1.86/1.76	1.6/9.3	1.0	3.9/15.5	38/37		75	75/70	39	850.00		
			0.02	0.05	5-50	75	220		1.7/9.8	1.0		38/37		75	75/70	36 1/2	750.00		
			0.06	0.1	5-50	67	200		1.9/10.8	1.5	4.8/14	45/40		75	70/65	16 1/2	300.00		
			0.03	0.05	5-50	70	150		1.7/9.8	1.5		38/37		75	70/65	23	400.00		
			0.04	0.05	10-50	70	200		1.9/10.8	1.5	4.8/14	38/37		70	70/65	23	350.00		
			0.06	0.08	10-50	70	200		1.9/10.8	1.5	4.8/14	44/38.2		70	70/65	17	290.00		
			0.5	0.5	10-50	180			2.0/11.2	2.0		47/39		50	75	15 1/2	310.00		
			0.5	0.5	10-50	70	180		2.0/11.2	2.0		47/39		55	70	17	220.00		
			0.05	0.05	20-20	84	150/300		1.8/10.3	1.5/1	4/17.3	30/34.7	0.09/0.15	35/70	76/70	55	1,350.00		
			0.05	0.05	20-20	84	150/300		1.8/10.3	1.5/1	4/17.3	50/34.7	0.09/0.15	35/70	76/67	47	1,100.00		
			0.05	0.05	20-20	74	150		1.8/10.3	1.5	4/17.3	35/36.1	0.1/0.22	65	74/65	35	800.00		
			0.05	0.05	20-20	72	150		2.0/11.25	2	4/17.3	40/37.3	0.15/0.25	65	72/63	30	650.00		
			0.09	0.09	20-20	72	125		2.0/11.2		5.0/19.2	40/37.3	0.15/0.25	80	68/65	20	335.00		
			0.009	0.009	5-20	120	350		1.5/8.7	3.1/15	0.9	2.3/12.5	/34	/0.002	55/90	82/77	100	1,900.00	
			0.009	0.009	5-20	120	350		1.5/8.7	3.1/15	0.9	2.3/12.5	/34	/0.002	55/90	82/77	92%	1,400.00	
			0.3	0.3	20-20	70	150		1.8/10.3	1.8/10.3	1.5	3.3/15.6	45/38	0.3/0.4	80	70/65	50.7	1,150.00	
			0.02	0.02	20-20	78/84	280		1.7/9.8	3.9/17	1	2.3/12.5	31/35	0.05/0.07	60/80	82/76	48%	1,100.00	
			0.025	0.025	20-20	78/84	250		1.7/9.8	3.9/17	1	2.8/14	34.7/36	0.1/0.15	70	76/71	39%	800.00	
			0.025	0.03	20-20	78/84	210		1.9/10.8	4.36/18	1	3.1/15	38.9/37	0.1/0.15	50	75/70	35 1/2	730.00	
			0.03	0.03	20-20	78/84	210		1.9/10.8	4.4/18	1	3.1/15	38.9/37	0.1/0.15	50	75/70	30%	630.00	
			0.05	0.05	20-20	76/82	200		1.9/10.8	/19	1	3.1/15	43.6/38	0.15/0.25	50	75/70	19	430.00	
			0.025	0.025	20-20	78/84	240		1.8/10.3	/17	1	2.8/14	34.7/36	0.13/0.18	75	72/68	30%	620.00	
			0.03	0.03	20-20	78/84	220		1.9/10.8	/18	1	3.1/15	38.9/37	0.13/0.18	70	72/68	28%	465.00	
			0.1	0.1	20-20	75/81	200		1.95/11	/19	1.3	3.1/15	43.6/38	0.15/0.25	50	71/68	17%	320.00	
			0.1	0.1	20-20	75/81	200		1.95/11	/19	1.3	3.1/15	43.6/38	0.15/0.25	50	71/68	16 1/2	270.00	
			0.05	0.05	20-20		210		1.9/10.8	4.8/19	1	3.1/15	43.6/38	0.1/0.15	50	75/70	24	465.00	
			0.06	0.06	20-20		210		1.9/10.8	4.8/19	1	3.1/15	43.6/38	0.1/0.15	50	75/70	20%	340.00	
			0.009		20-20	80				4.8/1.2	2.6/13.5	36/36.3	0.15/0.2	55/80	83/78		899.95		
			0.025		20-20	80				1.8/1.2	2.6/13.5	36/36.3	0.15/0.2	55/80	83/78		699.95		
			0.03	0.03	20-20	90				1.2	2.7/13.7	39/37	0.2/0.3	75			549.95		
			0.04	0.04	20-20	80				1.2	2.7/13.7	39/37	0.2/0.3	75			399.95		
			0.1		20-20	70	2.5/300	1.8/10.3		10				80	73/68		449.95		
			0.04		20-20	78	2.5/150	1.9/10.8		15				70	75/70		299.95		
			0.04		20-20	73	2.5/130	1.9/10.8		15				70	75/70		249.95		
			0.3		40-20	70	2.5/130	2/11.2		30				55	70/65		169.95		
			0.08		20-20	70			1.6/9.3				0.3/0.4	80	78/78		549.95		
			0.03	0.03	20-20	84	300/600	1.7/9.8		1.0	3.3/15.6	3.3/35.6	0.1/0.2	80	80/75	49	774.95		
			0.03	0.03	20-20	84	300/600	1.7/9.8		1.0	3.3/15.6	3.3/35.6	0.1/0.2	80	80/75	38	599.95		
			0.05	0.05	20-20	79	200	1.8/10.3		1.25	3.5/16.1	36/36.3	1.25/25	60	75/70	35 1/2	499.95		
			0.06	0.06	20-20	79	200	1.8/10.3		1.5	3.5/16.1	36/36.3	1.25/25	60	75/70	24 1/2	399.95		
			0.08	0.08	20-20	74	180	1.9/10.8		2.0	3.8/16.7	39/37	0.15/0.3	50	72/67	21	279.95		
			0.1	0.1	20-20	74	180	2.0/11.2		2.0	3.8/16.7	39/37	0.15/0.3	50	72/67	19	229.95		
			0.2	0.2	20-20	91	140	1.9/10.8		1.2	3.5/16.11		0.15/0.25	60	70/66	18	230.00		
			0.2	0.2	20-20	92	140	1.9/10.8		1.0	3.5/16.11		0.15/0.25	60	70/66	18	290.00		
			0.2	0.2	20-20	92	140	1.8/10.33		1.0	3.3/15.6		0.15/0.25	60	70/66	22	350.00		
			0.2	0.2	20-20	92	200	1.7/9.7		1.0	3.0/15		0.15/0.25	80	70/66	27	425.00		
			0.07	0.07	10-35	86	250	1.6/9.3		1	2.8/14.2	40/37.3	0.08/0.15	80/50	75/70	48 1/2	900.00		
			0.07	0.07	10-35	81	200	1.6/9.3		1	2.8/14.2	40/37.3	0.08/0.15	80/50	75/70	47%	700.00		
			0.07	0.07	10-35	81	200	1.7/9.8		1	2.9/14.5	40/37.3	0.08/0.15	75	75/70	44%	580.00		
			0.1	0.1	10-35	78	200	1.9/10.8		1	3.6/16.4	43/37.9	0.15/0.25	60	72/68	29%	430.00		
			0.1	0.1	10-35	78	200	1.9/10.8		1	3.6/16.4	43/37.9	0.15/0.25	60	72/68	26 1/2	330.00		
			0.1	0.3	10-35	76		1.9/10.8		1	3.6/16.4	43/37.9	0.2/0.3	60	72/68	17 1/2	260.00		
			0.2	0.2		76		2.2/12.1		2.5	4.5/18.3	45/38.3	0.2/0.8	35	70/60	18	220.00		
		K	0.5	0.4	40-20	86	50	/12	/12	1.5	/16.11	/42.13	0.3/0.5	52	68/65	23	225.00		
		K	0.5	0.15	30-20	90	100	/12	/12	1.5	/16.11	/37.20	0.3/0.5	52	68/65	25	275.00		
		F	0.09	0.09		80	90	3	1.9/10.8	1.5	3.5/16.2	32/35	0.4/0.5	80	76/74	22	650.00		
		F	0.09	0.09		80	90	3	1.9/10.8	1.5	3.5/16.2	32/35	0.4/0.5	80	76/74	22	800.00		
		F	0.05	0.05		82	120-500	3	1.7/9.8	0.9	3.0/14.8	32/35	0.2/0.3	80	78/75	27	1,200.00		

RECEIVERS

Letter Key: "F" indicates FM only
"K" indicates Kit

MANUFACTURER	MODEL	Type of Unit, See letter code	Ave. watts/chann., 8 ohms	% THD	% IMF IM	Rated power bandwidth, Hz to kHz	dB S/N, "A" wtd., Phono ref 5mV	Phono overload, mV	Dynamic Headroom, dB	Mono IMF Sensitivity, $\mu\text{V}/\text{dB}$	Stereo IMF Sensitivity, $\mu\text{V}/\text{dB}$	Capture Ratio, dB	Mono Signal Strength for 50-dB Quieting $\mu\text{V}/\text{dB}$	Stereo Signal Strength for 50-dB Quieting $\mu\text{V}/\text{dB}$	% THD, 100% Mod, kHz, Mono C/C	Alt. Char. Wide			
TECHNICS	SA-1000		330	0.03	0.03	20-20	97	300		1.9/10.8	5.5/20	1.0	1.2/12.8	17.7/36.2	0.1/0.1	85	83/80		
	SA-800		125	0.04	0.04	20-20	95	200		1.8/10.3	11/20	1.0	2.5/13.2	35.4/36.2	0.1/0.2	80	77/73		
	SA-700		100	0.04	0.04	20-20	95	200		1.8/10.3	11/20	1.0	2.5/13.2	35.4/36.2	0.1/0.2	80	77/73		
	SA-600		70	0.04	0.04	20-20	90	150		1.9/10.8		1.2	2.7/13.7	39.7/37.2	0.15/0.3	70	75/70		
	SA-500		55	0.04	0.04	20-20	90	150		1.9/10.8		1.2	2.7/13.7	39.7/37.2	0.15/0.3	70	75/70		
	SA-400		45	0.04	0.04	20-20	90	150		1.9/10.8		1.2	2.7/13.7	39.7/37.2	0.15/0.3	70	75/70		15
	SA-300		35	0.04	0.04	20-20	90	130		1.9/10.8		1.2	2.7/13.7	39.7/37.2	0.15/0.3	70	75/70		18
	SA-200		25	0.04	0.04	20-20	90	130		1.9/10.8		1.2	2.7/13.7	39.7/37.2	0.15/0.3	70	75/70		17
	SA-80		15	0.3	0.3	40-20	90	95		2.0/11.2		1.2	4.5/18.2	49/39	0.15/0.3	60	70/65		12
THORENS	AT-410	F	55	0.10		20-20	60	70		1.1/7.2	8/24	1.5	5.2/22	8	0.3/0.5		70/62	27%	
TOSHIBA	SA-850		50	0.03		10-35		200		1.8/10.3		1	3.2/15.3	45/38.2	0.2		72/68	26.4	519
	SA-7150		150	0.05		5-35		350		1.7/9.8		1	3/14.7	42/37.6	0.1	80/50	75/70	59.4	1,100
	SA-7100		100	0.05		5-35		350		1.7/9.8		1	3/14.7	42/37.6	0.2		75/68	42.8	669.95
	SA-775		75	0.05		5-35		350		1.7/9.8		1	3/14.7	42/37.6	0.2		75/68	40.7	549.95
	SA-750		55	0.08		10-35		200		1.8/10.3		1	3.2/15.3	45/38.2	0.2		75/68	28.6	379.95
	SA-735		35	0.08		10-35		200		1.9/10.8		1	3.5/16	50/39.2	0.2		75/68	25.3	299.95
	SA-725		25	0.08		10-35		200		1.9/10.8		1	3.5/16	50/39.2	0.3		70/65	21.6	249.95
VECTOR RESEARCH	VRX-9000		80	0.08	0.1	20-20	82	180		1.9/10.8		1.1	/19	/40	0.08/0.25	65	75/70	30%	750.00
	VR-7000		65	0.08	0.1	20-20	82	180		1.9/10.8		1.2	/19	/40	0.15/0.25	55	78/71	26	550.00
	VR-5000		45	0.08	0.1	20-20	82	180		1.9/10.8		1.2	/19	/40	0.15/0.25	55	78/71	24	400.00
	VR-2500		22	0.3	0.3	20-20	82	100		1.9/10.8		1.2	/19	/40	0.15/0.25	55	78/71	22	265.00
YAMAHA	CR-3020		160	0.05		20-20	96					1.0	/15.3	/37.2	0.07/0.09	85	80/75		1,500.00
	CR-2040		100	0.05		20-20	95					1.5	/15.3	/36.1	0.07/0.09	82	90/84		860.00
	CR-1040		80	0.05		20-20	95					1.5	/15.3	/36.1	0.07/0.09	82	90/84		660.00
	CR-840		60	0.05		20-20	94					1.5	/15.3	/37.3	0.1/0.1	82	84/80		495.00
	CR-640		40	0.05		20-20	94					1.5	/15.3	/37.3	0.1/0.1	82	84/80		395.00
	CR-220		15	0.05		20-20	96					1.5	/17.3	/39.2	0.2/0.3	60	70/65		235.00



The Dry System by Audio Groome

Record care that leaves behind clean sound, not chemicals.

Housed in a solid mahogany base with removable leatherette cover, the Dry System is a combination of Audio Groome products designed to prolong the life of your record collection. The position of each item within the package has been carefully considered so that when placed next to your turntable, the most frequently used are the most accessible.

1. Empire Static Eliminator: Millions of positive and negative ions are released to effectively neutralize the entire surface of the record. It stops dust before it starts.
2. Empire Dust Eliminator: Microbristles reach deep down into record grooves to lift dirt out with thousands of electrically conductive carbon fibres which neutralize the static charges that attract dust.
3. Empire Stylus Cleaning Kit: Built-up dirt on the stylus can disfigure the record grooves and ruin the stylus. Our special formula fluid and brush keeps your stylus free of dirt, helping to prolong record life.
4. Empire Universal Headshell: Many of today's audiophiles use more than one phono cartridge. This additional lightweight aluminum shell allows switching cartridges without constant remounting.
5. Empire Audiophile Screwdriver: The perfect tool for minor adjustments.

For complete information on Audio Groome accessories write to:
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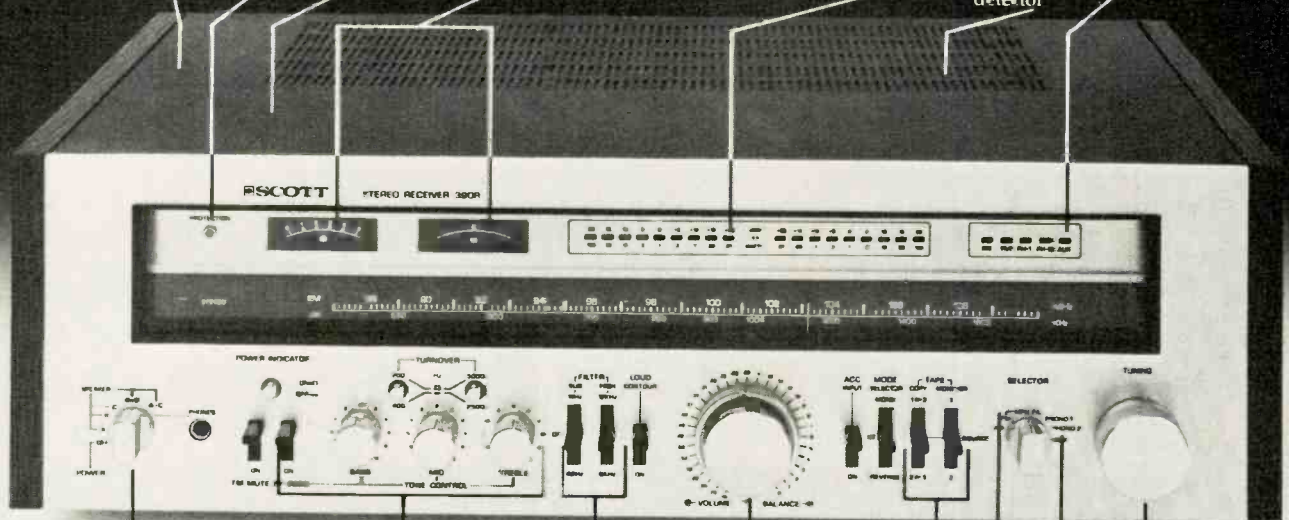
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Scott's new 390R is perhaps the most complete receiver ever made.

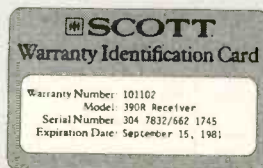
A professional control center for your entire sound system, the 390R delivers a full 120 watts per channel min. RMS, at 8 ohms from 20-20,000 Hz with no more than 0.03% THD. And it offers more options, features and flexibility than you'll find on most separates.

Compare the Scott 390R with any other receiver on the market today. If you can find one that does more... buy it.

Scott's unique, gold warranty card. Individualized with your warranty, model and serial numbers, and expiration date. Scott's fully transferable, three-year parts and labor-limited

warranty is your assurance of lasting pleasure.

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, Dept. ER, Woburn, MA 01801. In Canada: Paco Electronics, Ltd., Quebec, Canada.



SCOTT
The Name to listen to.
Makers of high quality high fidelity equipment since 1947.

TURNTABLES



ADC
1700DD



B & O Beogram 4004



Denon
DP-40F



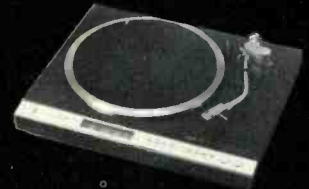
Dual 731-Q



Linn-Sondek LP-12



Harman/Kardon
ST-8



Hitachi HT-860



Kenwood
KD-750



Phase Linear
8000-II

MANUFACTURER	Model	Speeds—see code		Wow & Flutter - % 33 1/3, DIN 45-507	Rumble - dB, DIN 45-539	Motor type	Drive system	Speed Accuracy, ±%		Speed Adjustment Range, ±%	Speed Accuracy Indicator If Yes, give type?	Overall arm length, inches	Pivot-stylus dist., inches	Multi-play? If yes, # discs	Auto Cue = C; Auto off = O; Max. tracks, error, deg/in.	Anti-skate adjustment	Tracking Force Range, gms.	Total Cable Capacitance, pF	Damped cueing	Dimensions, inches	Price
		B	0.03					70	3												
ADC	1700DD	B	0.03	70	Quartz PLL	Direct		3	Strobe	12%	9%	No	C/O		Yes	0-3.5	238	Yes	18 1/2 x 15 x 6	279.95	
	1600DD	B	0.03	70	D.C. Brushless	Direct		3	Strobe	12%	9%	No	C/O	Yes	0-3.5	238	Yes	18 1/2 x 15 x 6	229.95		
	1510FG	B	0.05	67	D.C. Servo	Belt		3	Strobe	12%	9%	No	C/O	Yes	0-3.5	238	Yes	18 1/2 x 15 x 6	189.95		
	3001-DD	B	0.035	70	D.C. Brushless	Direct		5	Strobe			No	No					Yes	18 1/2 x 14 1/2 x 3	249.95	
AIWA	LP-3000	F	0.025	75	Quartz Servo	Direct	0.0025	6	Digital			7 1/4	No	C/O	0	No	0-3		Yes	18 1/2 x 17 1/2 x 5 1/2	1,200.00
	AP-2600	F	0.025	75	Quartz PLL Servo	Direct	0.0025	6.5	Digital			9%	No	O	2.1	Yes	0-3		Yes	18 1/2 x 15 1/2 x 6	400.00
	AP-2200	F	0.035	75	D.C. Servo	Direct		3	Strobe			8 1/2	No	C/O	6.3	Yes	0-3		Yes	16 1/2 x 14 1/2 x 4 1/2	190.00
AKAI	AP-B10C	B	0.05	65	Sync.	Belt		No						O					Yes	17.3 x 5.4 x 14	99.95
	AP-100	B	0.05	64	Sync.	Belt		No						O	Yes			Yes	17.5 x 5.8 x 14.1	119.95	
	AP-206	B	0.035	70	D.C. Servo	Direct	0.15	2.5						O	Yes			Yes	17.5 x 13.9 x 6.3	159.95	
	AP-207	B	0.035	70	D.C. Servo	Direct	0.15	2.5						C/O	Yes			Yes	17.5 x 13.9 x 6.3	199.95	
	AP-306	B	0.035	70	D.C. Servo	Direct	0.08	2.5	No					O	Yes			Yes	17.5 x 13.9 x 6.3	239.95	
	AP-307	B	0.035	70	D.C. Servo	Direct	0.08	2.5	No				No	C/O	Yes			Yes	17.5 x 13.9 x 6.3	279.95	
B+C/AVNET	20Z	B	0.1	-60	Sync.	Belt	0.3		No	10 1/4	7 1/4	6	C/O	Yes	1-4	125	Yes	16 x 14 x 6 1/2	99.95		
	40Z	B	0.08	-68	Sync.	Belt	0.1		No	11%	9	6	C/O	0.27	Yes	0.5-4	125	Yes	18 1/2 x 15 x 7 1/4	149.95	
	60Z	B	0.08	-68	Sync.	Belt	0.1	3	Strobe	11%	9	6	C/O	0.27	Yes	0.5-3	125	Yes	18 1/2 x 15 x 7 1/4	179.95	
	80Z	B	0.06	-70	A.C. Servo	Belt	0.03	3	Digital	11%	9	6	C/O	0.27	Yes	0.5-3	125	Yes	18 1/2 x 15 x 7 1/4	239.95	
	SP65	B	0.08	-68	Sync.	Belt	0.1	3	Strobe	11%	9	6	C/O	0.27	Yes	0.5-3	125	Yes	18 1/2 x 15 x 6	179.95	
	SP85	B	0.06	-70	A.C. Servo	Belt	0.03	3	Digital	11%	9	6	C/O	0.27	Yes	0.5-3	125	Yes	18 1/2 x 15 x 6	239.95	
BSR	XR-50	B	0.04	-66	A.C. Sync.	Belt	0.02			8 1/4		6	C/O	Yes	2-4	238	Yes	17 1/2 x 14 1/2 x 6 1/4	199.95		
	550SX	B	0.06	-65	D.C. Servo	Belt	0.02	3	Strobe			6	C/O	Yes	2-5	238	Yes	17 1/2 x 14 1/2 x 7 1/4	129.95		
	450SX	B	0.08	-62	A.C. Sync.	Belt	0.02					6	C/O	Yes	2-5	238	Yes	17 1/2 x 14 1/2 x 7 1/4	99.95		
	400	B	0.08	-62	A.C. Sync.	Belt	0.02					No	C/O	Yes	2-5	238	Yes	17 1/2 x 14 1/2 x 5 1/2	99.95		
BANG & OLUFSEN	Beogram 2402	B	0.03	63	D.C.	Belt		3	No	11	9	No	C/O	0.32	Yes	0-2	135	Yes	17 1/2 x 13 x 3 1/4	325.00 w. cartridge.	
	Beogram 4004	B	0.025	65	D.C.	Belt	0.2	3	No	6 1/4	6.1	No	C/O			0-2	135	Yes	19 x 14 1/2 x 4	850.00 w. cartridge.	
	Beogram 3400	B	0.03	65	D.C.	Belt		3	No	11	9	No	C/O	0.32	Yes	0-2	135	Yes	17 1/2 x 14 1/2 x 3 1/2	425.00 w. cartridge.	
CALIBRE	330	B	0.1	62	Hys. Sync.	Belt	0.3		No	11	8.4	No	O	0.2	Yes	0-4	220	Yes	17 1/2 x 13 1/2 x 5 1/4	145.00	
	360	B	0.035	70	D.C. Servo	Direct		5	Yes	11	8.4	No	O	0.2	Yes	0-3	220	Yes	17 1/2 x 13 1/2 x 7	195.00	
CONCEPT	20D	B	0.025	70	D.C. Servo	Direct		6	Strobe	11	8%	No	C	0.5	Yes	0-3	150	Yes	17 1/2 x 14 1/2 x 5 1/2	295.00	

Tangent Lupus Circus



Mitsubishi DP-EC20



JVC QL-F6



Yamaha YP-D10



TEAC PX-500



Thorens D-126 C Mk-II



Sansui XR-Q9



Visonik VT-5300

Pioneer PL-630



LETTER CODE FOR SPEEDS																							
A—33, 45, 78																							
B—33, 45																							
C—33, only																							
D—16, 33, 45, 78																							
E—16, 33, 45																							
F—Cont. variable																							
MANUFACTURER	Model	Speeds—see code	Wow & Flutter, % 33-1/2, DIN 45-507	Rumble, -dB, DIN 45-539	Motor type	Drive system	Speed Accuracy, ±%	Speed Adjustment Range, ±% if Yes, give type?	Speed Accuracy Indicator	Overall arm length, inches	Photostylus dia., inches	Multi-Play? If Yes, # discs	Auto Cue = C, Max Tracks, error, log./in.	Anti-skate adjustment	Tracking Force Range, gms. pf	Total Cable Capacitance, pF	Damped coupling	Dimensions, inches	Price				
CONNOISSEUR	BD1	B	0.065	-65	A.C. Sync.	Belt					No							18x15x6	135.00				
	BD2A	B	0.065	-65	A.C. Sync.	Belt			11	8 1/2	No	C	Yes	0-6	400	Yes	18x15x6	200.00					
	BD2A	B	0.065	-65	A.C. Sync.	Belt				8 1/2	No	C	Yes	0-6	400	Yes	15 1/2 x 14 1/2 x 5 1/2	190.00					
	Compact																						
	BD101	B	0.069	-70	A.C. Sync.	Belt					No							18x15x6	180.00				
	BD102/ SAU2	B	0.069	-70	A.C. Sync.	Belt				11	8 1/2	No	C	Yes	0-6	400	Yes	18x15x6	240.00				
	BD102/ SAU4	B	0.069	-70	A.C. Sync.	Belt				11 1/2	8 1/2	No	C	Yes	0-4	400	Yes	18x15x6	310.00				
	BD103	A	0.055	-77	D.C. Servo	Belt	5	Strobe				No						18x15x6	260.00				
	BD103/ SAU4	A	0.055	-77	D.C. Servo	Belt	5	Strobe	11 1/2	8 1/2	No	C	Yes	0-4	400	Yes	18x15x6	380.00					
BD103/ SAU2	A	0.055	-77	D.C. Servo	Belt	5	Strobe	11	8 1/2	No	C	Yes	0-6	400	Yes	17x15x6	235.00						
CRAIG	5102	B			Sync.	Belt			No	11.2	8.3	No	O	6	Yes	1-4	80	Yes	19 1/2 x 7 1/2 x 14	189.95			
	H120	A			Sync.	Rim			No	9.6	7.7	6	C/O		Yes	1.5-4	Yes	14 1/2 x 18 1/2 x 15 1/2	109.95				
DENON	DP 30L	B	0.018	-75	A.C. Servo	Direct	3	Strobe		8%	No	C/O	3	Yes	0-2.5		Yes	17 1/2 x 15 1/2 x 5	290.00				
	DP 1200	B	0.018	-75	A.C. Servo	Direct	3	Strobe		9%	No	C/O	2.5	Yes	0-2.5		Yes	19 x 15 1/2 x 6 1/2	375.00				
	DP 40F	B	0.015	-75	A.C. Servo	Quartz	0.002	LEDs		9%	No	C/O	2.5	Yes	0-2.5		Yes	19 x 17 1/2 x 5 1/2	500.00				
	DP 80	B	0.015	-77	A.C. Servo	Quartz Direct	0.002	Strobe		9%	No	C/O	2.5	Yes	0-2.5		Yes	14 1/2 dia. x 5 1/2 (No base)	870.00				
DUAL	1257	B	0.05	-68	Sync.	Belt	6	Strobe		8%	6	C/O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 7 1/2	179.95				
	1264	B	0.04	-70	Sync.	Belt	6	Strobe		8%	6	C/O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 7 1/2	275.00				
	506	B	0.04	-70	Sync.	Belt	6	Strobe		8%	O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 5 1/2	189.95					
	522	B	0.04	-70	Sync.	Belt	6	Strobe		8%	C/O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 5 1/2	225.00					
	606	B	0.03	-75	CMOS	Direct	10	Strobe		8%	O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 5 1/2	279.95					
	622	B	0.03	-75	CMOS	Direct	10	Strobe		8%	C/O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 5 1/2	319.95					
	650 RC	B	0.03	-75	CMOS	Direct	10	Strobe		8%	C/O	0.4	Yes	0-3	150	Yes	16 1/2 x 14 1/2 x 5 1/2	399.95					
	714Q	B	0.015	-78	Quartz	Direct	11	Strobe		8%	O	0.4	Yes	0-2	150	Yes	16 1/2 x 14 1/2 x 5 1/2	479.95					
	731Q	B	0.015	-78	Quartz	Direct	11	Strobe		8%	C/O	0.4	Yes	0-2	150	Yes	16 1/2 x 14 1/2 x 5 1/2	559.95					
EMPIRE SCIENTIFIC	698	B	0.04	68	Hys. Sync.	Belt	0.02	+4, -1.5	Strobe	12	9	No	O	0.5	Yes	0-2.5	100 or 210	Yes	17 1/2 x 15 1/2 x 8 1/2	400.00			
GARRARD	GT350	B	0.06	68	D.C. Servo	Belt	0.02	3	Strobe	10	9 1/4	6	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 14 3/4 x 7 1/2	229.95			
	GT250	B	0.08	65	Sync.	Belt	0.02			10	9 1/4	6	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 14 3/4 x 7 1/2	199.95			
	GT35	B	0.06	68	D.C. Servo	Belt	0.02	3	Strobe	10	9 1/4	6	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 13 3/4 x 5 1/2	219.95			
	GT25	B	0.08	65	Sync.	Belt	0.02			10	9 1/4	6	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 13 3/4 x 5 1/2	189.95			
	GT15	B	0.12	60	Sync.	Belt	0.02			8 1/2	8	6	C/O	0.5	Yes	0-4	110	Yes	16 1/2 x 13 1/2 x 7 1/2	144.95			
	GT12	B	0.15	55	Ind.	Belt	0.05			8 1/2	8	6	C/O	0.5	Yes	1-6	110	Yes	16 1/2 x 13 1/2 x 7 1/2	119.95			
	GT350AP	B	0.06	68	D.C. Servo	Belt	0.02	3	Strobe	10	9%	No	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 13 3/4 x 5 1/2	209.95			
	GT250AP	B	0.08	65	Sync.	Belt	0.02			10	9%	No	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 13 3/4 x 5 1/2	179.95			
	GT35AP	B	0.06	68	D.C. Servo	Belt	0.02	3	Strobe	10	9 1/4	No	C/O	0.5	Yes	0-4	110	Yes	17 1/2 x 13 3/4 x 5 1/2	199.95			

TURNTABLES

LETTER CODE FOR SPEEDS A—33, 45, 78 B—33, 45 C—33, only D—16, 33, 45, 78 E—16, 33, 45 F—Cont. variable		Model	Speeds—see code	Wow & Flutter, % 30, 1/2, DIN 45-507	Rumble, -dB, DIN 45-538	Motor type	Drive system	Speed Accuracy, ±%	Speed Adjustment Range, ±% If Yes, give type?	Overall arm length, inches	Pivot-stylus dist., inches	Multi-play? If yes, # discs	Auto. Cue = C Max. tracks, error, sec./in.	Anti-skate adjustment	Tracking Force Range, gms. pF	Total Cable Capacitance, pF	Damped cueing	Dimensions, inches	Price	
MICRO SEIKI	BL91L	B	0.02	-78	D.C. Servo	Belt	0.002	6	Strobe								24x19½x7½	1,099.00		
	BL91	B	0.02	-78	Brushless D.C. Servo	Belt	0.002	6	Strobe								21x17¼x7¼	700.00		
	BL51	B	0.04	-72	Brushless D.C. Servo	Belt	0.006	4	Strobe								18½x15¼x6½	390.00		
	DQ 3	B	0.025	-75	Brushless D.C. Servo	Direct	0.004	0	LEDs	12%	9%	No	No	1.5	Yes	0-3	150	Yes	18½x15¼x6½	475.00
	DQ 41	B	0.025	-75	Quartz D.C. Servo	Direct	0.009	0	No	12%	9%	No	0	1.5	Yes	0-3	150	Yes	18½x14¼x6¼	400.00
	DD 31	B	0.03	-75	Quartz D.C. Servo	Direct	0.08	6	Strobe	12%	9%	No	0	1.5	Yes	0-3	150	Yes	18½x14¼x6¼	350.00
	DD 24	B	0.03	-73	D.C. Servo	Direct	0.09	5	Strobe	11½	8%	No	0	1.7	Yes	0-3	150	Yes	17½x14¼x5¼	250.00
	MB 14	B	0.05	-65	A.C. Sync.	Belt	0.3	0	No	11½	8%	No	0	1.7	Yes	0-3	150	Yes	17½x14¼x5¼	175.00
MITSUBISHI	DP-EC7	B	0.03	-73	F.G.D.C. Servo	Direct	0.03	3	Strobe, Neon		9	No	C/O	2.9	Yes	0-3	50	Yes	17¼x15 x5¼	300.00
	DP-EC10	B	0.03	-75	F.G.D.C. Servo	Direct	0.03	3	Strobe, LED		9	No	C/O	2.9	Yes	0-3	50	Yes	18½x15½ x5¼	400.00
	DP-EC20	B	0.025	-80	Quartz D.C. Servo	Direct	0.001		Strobe, LED		9	No	C/O	2.9	Yes	0-3	50	Yes	18½x15½ x5¼	520.00
NAD	5020	B	0.06 Wrms.	-65	Sync.	Belt						No	0	0.5	Yes	0-3.5		Yes	18½x15x6	177.00
	5040	B	0.05 Wrms.	-67	D.C. Servo	Belt		6	Strobe			No	0	0.5	Yes	0-3.5		Yes	18½x15x6	212.00
	5080	B	0.03 Wrms.	-70	D.C. Servo	Direct		6	Strobe			No	0	0.5	Yes	0-3.5		Yes	18½x15x6	250.00
ONKYO	CP-1030F	B	0.07	75	D.C. Quartz	Direct	0.002		Strobe	11½	8%	No	C/O	1.33	Yes	1-4	170	Yes	17¼x14¼x5¼	314.95
	CP-1020F	B	0.08	72	F.G. Servo	Direct	0.15	2	Strobe	11½	8%	No	C/O	1.33	Yes	0.75-4	170	Yes	17¼x14¼x5¼	219.95
	CP-1010A	B	0.12	67	F.G. Servo	Belt	0.05	2	Strobe	11	8%	No	0	1.33	Yes	0.75-4	170	Yes	17¼x14¼x5¼	144.95
OPTONICA	RP7705	B	0.03	70	D.C. Servo	Direct	0.0005	4	Strobe		8.3		C/O		Yes	1-4		Yes	18.9x15.1x4.3	400.00
	RP4705	B	0.035	70	Quartz D.C. F.G. Servo	Direct	0.12	4	Strobe		8.3		C/O		Yes	1-4		Yes	18.9x15.1x4.3	280.00
	RP7505	B	0.03	70	D.C. F.G. Servo	Direct		4	Strobe		8.3		C/O		Yes	1-4		Yes	17½x14x5%	280.00
	RP7205	B	0.06	70	D.C. F.G. Serv.	Belt		4			8.3		C/O		Yes	1-4		Yes	17½x14x5%	200.00
OSAWA	Ariston	B	0.05	80	Sync.	Belt	0.3													600.00
PHASE LINEAR	8000 Series Two	13	0.013		Quartz PLL Hall	Direct	0.002		No	7.5		No	C/O	0				Yes	19.4x17.6x6	749.95
PIONEER	PL-630	B	0.025	75	D.C. Servo	Direct	0.002	6	Meter		9%	No	C/O		Yes	0-3	50	Yes	18½x16½x5¼	449.00
	PL-610	B	0.025	75	D.C. Servo	Direct	0.002	6	Meter		9%	No	0		Yes	0-3	50	Yes	18½x16½x5¼	399.00
	PL-560	B	0.025	73	D.C. Servo	Direct		6	Meter		8%	No	C/O		Yes	0-4	50	Yes	17¼x14¼x5¼	329.00
	PL-540	B	0.025	73	D.C. Servo	Direct		6	Strobe		8%	No	0		Yes	0-4	50	Yes	17¼x14¼x5¼	249.00
	PL-518	B	0.03	73	D.C. Servo	Direct		2	Strobe		8%	No	0		Yes	0-4	50	Yes	17¼x14¼x5¼	199.00
	PL-516	B	0.045	68	D.C. Servo	Direct		2	No		8%	No	0		Yes	0-4	50	Yes	17¼x14¼x5¼	159.00
	PL-514	B	0.055	65	Sync.	Belt			No		8%	No	0		Yes	0-4	50	Yes	17¼x14¼x5¼	139.00
	PL-512	B	0.055	65	Sync.	Belt			No		8%	No			No	0-3	50	Yes	17¼x14¼x5¼	100.00
QRK	Galaxy 12/C	B	0.07	-55	D.C. Servo	Idler	0.1					No	No						17¼x16½x2½	545.00
	16SA	A	0.1	-48	A.C.	Idler	0.1		No										15¼x15x5	305.00
		B	0.1	-48	A.C.	Idler	0.1		No										18¼x20x6¼	510.00
RADIO SHACK	Lab-500	B	0.025	70	Quartz Lock Servo	Direct	0.0005			12%				3	Yes	0-3		Yes	6¼x18¼x15¼	260.00
	Lab-400	B	0.03	65	D.C. Servo	Direct		4	Strobe	11%					Yes	0-4		Yes	5¼x17¼x14	200.00
	Lab-110	B				Belt									Yes			Yes	5¼x15¼x14	89.95
	Lab-260	B	0.09		4-Pole Sync.	Belt				8½					Yes	0-3		Yes	6x17¼x14¼	139.95
	Lab-58	B				Belt						Yes			Yes			Yes	7x15x13¼	99.95
	Lab-56	A				Belt						Yes			Yes			Yes		79.95
REFERENCE/QUADRAFLEX	510T	B	0.1	-60	A.C. Servo	Belt	0.3		No	11%	8½	No	0		Yes	0-4	130	Yes	17¼x14¼x5¼	139.95
	620T	B	0.03	-70	Sync. D.C. Servo	Direct		3	Strobe	11½	8½	No	0		Yes	0-3	210	Yes	18x13¼x6¼	249.95
RE VOX	B790	B	0.05	68	A.C. Servo	Direct	0.01	7	4 LEDs	1½	1½		0	0.5		0.5-2	300	Yes	17¼x13x5½	899.00 w.cart.
ROTEL	RP-9400	B	0.025		D.C. Quartz	Direct	0	5	Strobe	11%	10½	No	C/O		Yes	0.7-3		Yes	18x15x6	375.00
	RP-6400	B	0.04		D.C. Servo	Direct		5	Strobe	11%	8%	No	C/O		Yes	0.75-3		Yes	17x14x6	235.00
	RP-4400	B	0.04		F.G. Servo	Belt		5	Strobe	11%	8%	No	0		Yes	1-3		Yes	18x14x6	200.00
	RP-2400	B	0.07		4 Hys.	Belt			Strobe	11%	8%	No	0		Yes	1.5-3		Yes	18x14x6	160.00
SANSUI	XR-09	B	0.018	-78	D.C. Servo	Direct	0.002		Strobe		9%	No	C/O		Yes	0.5+		Yes	19½x15½x5¼	500.00
(Continued)	SR-929	B	0.022	-74	PLL Quartz D.C. Servo PLL Quartz	Direct	0.002	3.5	Strobe	9½	9½	No			Yes	0.5+	53	Yes	19½x15x6¼	530.00

ADC has four Sound Shaper® frequency equalizers that will improve your sound system. No matter how good it is. And at a cost that's lots less than trading in your components.

ADC Sound Shapers will improve your speakers. By extending the true bass response, including the critical mid bass.

ADC Sound Shapers will improve the relationship between your cartridge and speakers. From one of partial incompatibility to total compatibility.

They'll also eliminate rumble (low frequency overload), tape hiss and record scratches.

And that only scratches the surface of what ADC Sound Shapers can do. For instance, the walls, carpeting and furniture of your listening room physically bounce sound around so that some spots have less sound than other spots.

Lots less. ADC Sound Shapers will bring these "dead" spots to life.

Perhaps best of all, though, is a Sound Shaper's ability to let you re-equalize what a recording engineer mixed. If a horn section is overwhelming a piccolo, for example, you just slide the appropriate frequency lever. Presto, more piccolo. You can also vanquish a voice. Or boost a tuba.

Sound Shapers segment the entire spectrum of sound. To let you re-shape a sound track to your personal musical preferences. It's all the control you've ever dreamed of but never dreamed possible.

To get into equalizers, start with our Sound Shaper One which operates in five frequency ranges. Or our Sound Shaper One Ten which gives you greater control by operating in ten frequency ranges.

For more professional equalizers, there's our Sound Shaper

Two Mk II which functions in twelve frequency ranges with a two-channel LED meter. And there's our new Sound Shaper Three *Paraphoric™* Equalizer.

It combines all the advantages of a graphic equalizer with all the advantages of a parametric equalizer. Twelve primary frequency controls per channel. Plus twenty-four ancillary control positions per channel. The Sound Shaper Three is the ultimate in controlling and creating with your stereo system.

Take the ultimate step up in sound, without trading in a thing.

ADC Professional Products, a division of BSR Consumer Products Group, Route 303, Blauvelt, NY 10913. Distributed in Canada by BSR (Canada) Ltd., Ontario. ®Sound Shaper is a registered trademark of Audio Dynamics Corporation.

HOW TO TRADE UP YOUR RECEIVER, TUNER, AMP, TURNTABLE, CARTRIDGE AND SPEAKERS WITHOUT TRADING IN A THING.



ADC SOUND SHAPER®
FREQUENCY EQUALIZERS
A BSR COMPANY

TURNTABLES

LETTER CODE FOR SPEEDS A—33, 45, 78 B—33, 45 C—33, only D—16, 33, 45, 78 E—16, 33, 45 F—Cont. variable																					
MANUFACTURER	Model	Speeds—see code	Wow & Flutter % 33 1/3, DIN 45-507	Rumble - dB, DIN 45-539	Motor type	Drive system	Speed Accuracy, ±%	Speed Adjustment Range, ±% if Yes, give type?	Speed Accuracy Indicator	Overall arm length, inches	Pivot-ryhus dist., inches	Multi-play? if Yes, # discs	Auto. Cue = C; Mag. track, error, sec./in.	Anti-skate adjustment	Tracking Force Range gms. µF	Total Cable Capacitance, pF	Damped casing	Dimensions, inches	Price		
SANSUI (Continued)	SR-838	B	0.025	-72	D.C. Servo PLL Quartz	Direct	0.002	2.5	Strobe	9%	9%	No		Yes	0.5+		Yes	19 1/2 x 15 1/2 x 6 1/2	440.00		
	FR-Q5	B	0.025	-75	D.C. Servo PLL Quartz	Direct	0.002		Strobe	8%	8%	No	C/O	Yes	0.5+		Yes	17 1/2 x 15 1/2 x 5 1/2	340.00		
	FR-D4	B	0.028	-72	D.C. Servo PLL Quartz	Direct			Strobe	8%	8%	No	C/O	Yes	0.5+		Yes	17 1/2 x 15 1/2 x 5 1/2	240.00		
	FR-D3	B	0.028	-72	D.C. Servo	Direct			Strobe	8%	8%	No	O	Yes	1+		Yes	17 1/2 x 15 1/2 x 5 1/2	190.00		
	SR-B200S	B	0.07	-85	Sync.	Belt				8%	8%	No	O	Yes	1.5+		Yes	17 1/2 x 14 1/2 x 5 1/2	135.00		
SANYO	Plus Q80	B	0.025	-73	D.C. Servo Brushless	Direct			Quartz PLL	9.33			C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 6	549.95	
	Plus Q50	B	0.025	-73	D.C. Servo Brushless	Direct			Quartz PLL	9.33			C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 6	299.95	
	Plus Q40	B	0.03	-70	D.C. Servo Brushless	Direct			Quartz PLL	8.66			C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 6	199.95	
	Plus Q25	B	0.03	-70	D.C. Servo Brushless	Direct			Quartz PLL	8.66			C	1.5	Yes	0-3		Yes	17 1/2 x 15 1/2 x 5 1/2	179.95	
	TP1030	B	0.03	-70	D.C. Servo	Direct	3		Strobe				C	1.5	Yes	0-3		Yes	18 1/2 x 15 1/2 x 6 1/2	169.95	
	TP1012/A	B	0.04	-70	D.C. Servo	Direct	3		Strobe				C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 5 1/2	139.95	
	TP1010	B	0.05	-70	D.C. Servo	Belt	3		Strobe				C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 5 1/2	119.95	
TP1005	B	0.05	-60	D.C. Servo	Belt	3		Strobe				C	1.5	Yes	0-3		Yes	17 1/2 x 14 1/2 x 5 1/2	89.98		
H. H. SCOTT	PS97XV	B	0.03		Quartz PLL	Direct	0.005	3	Strobe	11%	8 1/2%	No	C/O	0.4	Yes	1-3	120	Yes	5 1/2 x 17 1/4 x 13 1/4	259.95	
	PS87A	B	0.03		F.G. Serv.	Direct		3	Strobe	11%	8 1/2%	No	C/O	0.4	Yes	1-3	120	Yes	5 1/2 x 17 1/4 x 13 1/4	209.95	
	PS77XV	B	0.03		Quartz PLL	Direct	0.005	3	Strobe	11%	8 1/2%	No	O	0.4	Yes	1-3	120	Yes	7 x 17 1/4 x 13 1/4	234.95	
	PS67A	B	0.03		F.G. Serv.	Direct		3	Strobe	11%	8 1/2%	No	O	0.4	Yes	1-3	120	Yes	7 x 17 1/4 x 13 1/4	199.95	
	PS47A	B	0.05		F.G. D.C.	Belt		3	Strobe	11%	8 1/2%	No	O	0.4	Yes	1-4	120	Yes	5 1/2 x 17 1/4 x 13 1/4	149.95	
PS17A	B	0.07		Sync.	Belt				11%	8 1/2%	No	O	0.4	Yes	1.5-4	120	Yes	5 1/2 x 17 1/4 x 13 1/4	129.95		
SERIES 20	PLC-590	B	0.025	75	Quartz PLL D.C. Hall	Direct	0.002	6										19 1/2 x 7 1/4 x 16	550.00		
SONY	PS-X70	B	0.025 Wrms	75	D.C. Brushless	Direct	0.002	10	Strobe	12 1/2%	9%	No	C/O	2.5	Yes	0-2.5	45	Yes	16 1/2 x 18 1/2 x 6 1/2	500.00	
	PS-X60	B	0.025 Wrms	75	D.C. Brushless	Direct	0.003		Strobe	12 1/2%	9%	No	C/O	2.5	Yes	0-2.5	50	Yes	16 1/2 x 18 1/2 x 6 1/2	400.00	
	PS-X50	B	0.025 Wrms	75	D.C. Brushless	Direct	0.003		Strobe	12 1/2%	9%	No	C/O	2.5	Yes	0-2.5	50	Yes	16 1/2 x 18 1/2 x 6 1/2	330.00	
	PS-X40	B	0.025 Wrms	73	D.C. Brushless	Direct	0.003		Strobe	11%	8 1/2%	No	C/O	3	Yes	0-3	50	Yes	15 1/2 x 17 1/2 x 5 1/2	275.00	
	PS-X30	B	0.03 Wrms	70	D.C. Brushless	Direct	0.003		Strobe	11%	8 1/2%	No	C/O	3	Yes	0-3	50	Yes	15 1/2 x 17 1/2 x 5 1/2	245.00	
	PS-X20	B	0.03 Wrms	73	D.C. Servo Brushless	Direct	0.003		Digital	11%	8 1/2%	No	C/O	3	Yes	0-3	80	Yes	15 1/2 x 17 1/2 x 5 1/2	210.00	
	PS-T25	B	0.04	70	D.C. Servo Brushless	Direct		4	Strobe	11%	8 1/2%	No	C/O		Yes	0-3	80	Yes	15 1/2 x 17 1/2 x 5 1/2	170.00	
	PS-T1	B	0.04	68	D.C. Servo Brushless	Direct		4	Strobe	11%	8 1/2%	No	C/O		Yes	0-3	80	Yes	14 1/2 x 17 1/2 x 5 1/2	140.00	
	PS-B80	B	0.02	78	D.C. Servo Brushless	Direct	0.002			12%	9%	No	C/O		Yes	0.5-3	45	Yes	16 1/2 x 19 1/2 x 7 1/2	1,800.00	
	PS-P7X	B	0.025	75	D.C. Servo Brushless	Direct	0.003		Digital	11%	8 1/2%	No	C/O		Yes	0-3	50	Yes	13 1/2 x 17 x 4 1/2	450.00	
TANGENT	Lupus Circus	C				Belt													499.00		
TEAC	PX-300	B	0.03	-70	D.C. Servo	Direct		6	Strobe	11 1/2%	7 1/2%	No	C	2	No		110	Yes	17 1/2 x 6 1/2 x 14 1/2	250.00	
	PX-500	B	0.03	-70	Quartz PLL	Direct			Strobe	11 1/2%	7 1/2%	No	C/O	2	No		110	Yes	17 1/2 x 6 1/2 x 14 1/2	365.00	
TECHNICS	SL-B1	B	0.045 Wrms	70	F.G. Servo	Belt		3	Strobe	11 1/2%	9%	No		0.4	Yes	0-3	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	100.00	
	SL-B2	B	0.045 Wrms	70	F.G. Servo	Belt		3	Strobe	11 1/2%	9%	No	O	0.4	Yes	0-3	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	130.00	
	SL-B3	B	0.045 Wrms	70	F.G. Servo	Belt		3	Strobe	11 1/2%	9%		C/O	0.4	Yes	0-3	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	150.00	
	SL-235	B	0.045 Wrms	70	F.G. Servo	Belt		3	Strobe	11 1/2%	9%	6	C/O	0.4	Yes	0-3	80-100	Yes	6 1/2 x 16 1/2 x 14 1/4	180.00	
	SL-D1	B	0.03	75	F.G. D.C. Servo	Direct		5	Strobe	11 1/2%	9%			0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	125.00	
	SL-D2	B	0.03	75	F.G. D.C. Servo	Direct		5	Strobe	11 1/2%	9%			0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	150.00	
	SL-D3	B	0.03	75	F.G. D.C. Servo	Direct		5	Strobe	11 1/2%	9%		C/O	0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	170.00	
	SL-3350	B	0.03	75	F.G. D.C. Servo	Direct		5	Strobe	11 1/2%	9%	6	C/O	0.4	Yes	0-2.5	80-100	Yes	7 1/2 x 16 1/2 x 14 1/4	240.00	
	SL-Q2	B	0.025	78	Quartz D.C. Brushless	Direct	0.002		Strobe	11 1/2%	9%			0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	200.00	
	SL-Q3	B	0.025	78	Quartz D.C. Brushless	Direct	0.002		Strobe	11 1/2%	9%		C/O	0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 16 1/2 x 14 1/4	240.00	
	SL-5350	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	6	Strobe	11 1/2%	9%	6	C/O	0.4	Yes	0-2.5	80-100	Yes	7 1/2 x 16 1/2 x 14 1/4	340.00	
	SL-1800 MK-2	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	6	Strobe	11 1/2%	9%			0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 17 1/2 x 15 1/2	300.00	
	SL-1700 MK-2	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	6	Strobe	11 1/2%	9%		O	0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 17 1/2 x 15 1/2	350.00	
	SL-1600 MK-2	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	6	Strobe	11 1/2%	9%		C/O	0.4	Yes	0-2.5	80-100	Yes	5 1/2 x 17 1/2 x 15 1/2	400.00	
	SL-1200 MK-2	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	8	Strobe	11 1/2%	9%			0.4	Yes	0-2.5		Yes	6 1/2 x 17 1/2 x 16 1/4	350.00	
	SP-10 MK-2	A	0.025	78	Quartz D.C. Brushless	Direct	0.002		Strobe											900.00	
	SP-15	A	0.025	78	Quartz D.C. Brushless	Direct	0.002	9.9	Strobe											3 1/2 x 13 1/2 x 14 1/4	600.00
	SP-25	B	0.025	78	Quartz D.C. Brushless	Direct	0.002	6	Strobe											3 1/2 x 13 1/2 x 14 1/4	400.00



If you don't clean and preserve your records with Sound Guard™, you're only scratching the surface.

Have you ever considered what it would cost to replace your record collection at today's prices? With that kind of investment at stake, it's no wonder that many music lovers have become more aware of record care. Regular cleaning of your records is important and necessary, but cleaning alone won't prevent them from wearing out. To protect your investment you need more than cleaning. You need both Sound Guard Cleaner and Sound Guard Preservative.

Sound Guard Record Preservative is a revolutionary dry lubricant which virtually eliminates record wear without affecting the fidelity of the record. And when you drag the hardest

substance found in nature—diamond—through the soft, intricate vinyl canyons of a phonograph record at phenomenal rates of acceleration, it doesn't matter how light you're tracking. Something's got to give, and that's the vinyl. But with a Sound Guard-treated record, even after 100 plays, there is no audible degradation of performance.*

Before and after you preserve your records, be sure to use our superior cleaner to remove the dust and oily films that can further mar

performance. (The cleaner will not remove the preservative's protective coating.)

Sound Guard offers the only complete program of record preservation and maintenance. It requires a little more time and effort than just cleaning. But how much did you say it would cost you to replace your record collection?

Sound Guard. Everything else is a lot of noise.



Sound Guard™

Sound Guard preservative-Sound Guard™ cleaner.
Sound Guard™ Total Record Care System.
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*We have the test results to prove it—write us and we'll send them to you

TURNTABLES

LETTER CODE FOR SPEEDS A—33, 45, 78 B—33, 45 C—33, only D—16, 33, 45, 78 E—16, 33, 45 F—Cont. variable		Model	Speeds—see code	Wow & Flutter % 33 1/3, DIN 45-507	Rumble, -dB, DIN 45-539	Motor type	Drive system	Speed Accuracy, ±%	Speed Adjustment Range, ±% Speed Accuracy Indicator If Yes, give type?	Overall arm length, inches	Photo-stylus dist., inches	Multi-play? If Yes, # discs	Auto Cue = C, Max. g/s = O, deg./in.	Anti-skate adjustment	Tracking Force range, gms. gf	Total Cable Capacitance, pF	Damped Cuing	Dimensions, inches	Price	
THORENS	TD-104	B	0.05	-65	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	8%	No	No	0.45	Yes	0.5-3	230	Yes	17 1/2 x 15 1/2 x 5	285.00
	TD-105	B	0.05	-65	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	8%	No	O	0.45	Yes	0.5-3	230	Yes	17 1/2 x 15 1/2 x 5	350.00
	TD-110	B	0.05	-68	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	8%	No	No	0.45	Yes	0.5-3	230	Yes	17 1/2 x 14 x 5 1/2	360.00
	TD-115	B	0.05	-68	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	8%	No	O	0.45	Yes	0.5-3	230	Yes	17 1/2 x 14 x 5 1/2	450.00
	TD-126 BMK III	A	0.04	-72	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	8%	No	O	0.45	Yes	0.5-3	230	Yes	19 7/8 x 15 1/2 x 6 1/4	675.00
	TD-126 CMK III	A	0.4	-72	D.C. Servo	Belt	0.01	6	Strobe	11 1/2	9	No	O	0.45	Yes	0.5-3	190	Yes	19 7/8 x 15 1/2 x 6 1/4	825.00
TD-160 BMK III	B	0.06	-65	A.C. Sync.	Belt	0.02		No										Yes	17 x 14 1/4 x 6	295.00
TOSHIBA	SR-A270		0.06	65	Sync.	Belt														
	SR-F451		0.05	65	D.C. Servo	Belt		3						3		1.5-2.3		Yes	17.6 x 5.7 x 14.1	114.95
	SR-FX70		0.022	75	D.C. Servo	Direct		2						2				Yes	16.6 x 5.5 x 14.1	149.95
	SR-F770		0.026	70	D.C. Servo	Direct		3						2				Yes	17.6 x 6 x 13.9	299.95
	SR-A272		0.06		D.C. Servo	Belt		3						3				Yes	17.6 x 5.9 x 13.9	199.95
	SR-F450		0.05		Sync.	Belt		3						2				Yes	17.6 x 5.7 x 14.1	
SR-F452		0.05		D.C. Servo	Belt		3						2				Yes	16.6 x 5.5 x 14.1		
VISONIK	VT-3300	B	0.09	65	Sync.	Belt	0.4			11 1/2	8%	C/O		Yes	0-3		Yes	17 3/4 x 14 3/4 x 5 1/2	165.00	
	VT-5300	B	0.08	67	D.C. Servo	Direct	0.1	4	Strobe	1 1/2	8%	C/O		Yes	0-3		Yes	17 3/4 x 14 3/4 x 5 1/2	215.00	
	VT-7300	B	0.06	68	D.C. Servo	Direct	0.1	4	Strobe	11 1/2	8%	C/O		Yes	0-3		Yes	17 3/4 x 15 1/2 x 5 1/2	250.00	
	VT-8300	B	0.05	70	D.C. Servo	Direct	0.05	4	Strobe	11 1/2	8%	C/O		Yes	0-2.5		Yes	17 3/4 x 15 1/2 x 5 1/2	300.00	
	VT-9300	B	0.035	75	D.C. Quartz	Direct	0.02		Strobe	11 1/2	8%	C/O		Yes	0-2.5		Yes	17 3/4 x 15 1/2 x 5 1/2	400.00	
YAMAHA	YP-D10	B	0.03		Hall D.C. Servo	Direct		3					C/O				Yes	14 7/8 x 18 1/2 x 6 1/2	670.00	
	YP-8	B	0.03		Hall D.C. Servo	Direct		3					C/O				Yes	14 7/8 x 18 1/2 x 6 1/2	440.00	
	YP-D71	B	0.075		Hall D.C. Servo	Direct							C/O				Yes		330.00	
	YP-D4	B	0.055		Hall D.C. Servo	Direct		4					C/O				Yes	17 1/2 x 16 1/2 x 5 1/2	230.00	
	YP-B4	B	0.07		Sync.	Belt							C/O				Yes	17 1/2 x 14 1/4 x 5 1/2	180.00	

The Watts Parastat



In 15 seconds your records are clean, dry and ready to play.

With some systems you pour liquid on your records (and rub it into the grooves), while with others you brush the dirt around (and rub it into the grooves). The Watts Parastat is neither of these.

By placing a plush velvet pad on either side of a soft nylon brush and adding a drop or two of Parastatik® fluid, a

remarkably efficient system is created.

The brush bristles lift the rubbish to the surface. The pads collect and remove it. And the Parastatik® fluid supplies just the right degree of humidity to relax dust collecting static without leaving any kind of film or deposit behind.

No other system does so much for

your records in so little time.

So when you want the best, ask for the original. The Parastat, by Cecil Watts.

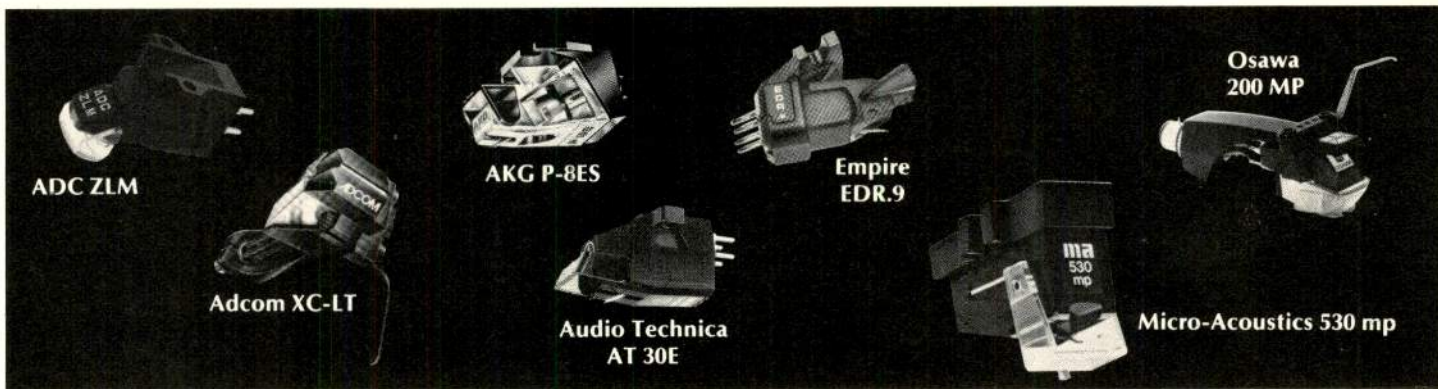
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Cecil E. Watts Ltd

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PHONO CARTRIDGES



LETTER CODE FOR STYLUS TYPE C—Conical S—Spherical E—Elliptical Q—For CD-4 use (Shibata, etc.)																	
MANUFACTURER	Model	Frequency response, Hz to 12,000	Principal moving iron coil: Moving Magnet, Moving Coil, etc. Ceramic, etc.	W. individual response curve	Channel separ., 1kHz, dB	Channel separ., 10kHz, dB	mV output, 1 kHz, 5 cm/sec. rms Lateral Velocity	Recommended tracking force range gms.	Recommended load resistance, ohms	Recommended load resistance, pf	Stylus type—use code	Stylus radius (radius), mils	Is stylus user or factory replaced?	Weight, gms.	Price	Replacement stylus Price	Notes
ADC	ZLM Improved	10-20 ±1	MI	Yes	30	20	5	¾-1½	47k	275	H	0.2x1.5	User	5%	135.00	79.95	Integrated cartridge & headshell with vertical tracking and overhang adjustments.
	XLM MKIII Improved	10-20 ±1	MI	No	28	18	5	0.9-1.5	47k	275	E	0.2x0.7	User	5%	110.00	54.95	
	XLM MKII Improved	15-24 ±2	MI	No	26	15	5.5	0.9-1.5	47k	275	E	0.3x0.7	User	5%	100.00	49.95	
	QLM36 MKIII Improved	15-20 ±2	MI	No	24	15	5.5	0.9-1.5	47k	275	E	0.3x0.7	User	5%	79.95	44.95	
	QLM34 MKIII Improved	20-20 ±2	MI	No	24		8	1½-3	47k	275	E	0.3x0.7	User	5%	64.95	39.95	
	QLM33 MKIII	20-20 ±3	MI	No	24		6	1-2	47k	275	S	0.7	User	5%	54.95	29.95	
	QLM32 MKIII	20-18 ±2	MI	No	20		7.5	2-4	47k	275	E	0.4x0.7	User	5%	49.95	24.95	
	QLM30 MKIII	20-18 ±3	MI	No	18		7.5	3-5	47k	275	S	0.7	User	5%	34.95	19.95	
	XLM MKIII Integra	10-20 ±1	MI	No	28	18	5.6	0.9-1.5	47k	275	E	0.2x0.7	User		120.00	54.95	
	XLM MKII Integra	15-24 ±2	MI	No	26	15	5.6	0.9-1.5	47k	275	E	0.3x0.7	User		110.00	49.95	
XLM MKI Integra	20-20 ±2	MI	No	24			1.1-1.9	47k	275	E	4x0.7	User		69.95	44.95		
AKG	P-8ES	10-28	MI	Yes	35	30	3.75	¾-1	47k	470	E	0.2x0.7	User	5.8	165.00	90.00	Transversal suspension system.
	P-8E	10-23	MI	Yes	35	30	4	¾-1	47k	470	E	0.2x0.7	User	5.8	115.00	60.00	As above.
	P-7E	10-22	MI	No	25	25	4.5	1-1.5	47k	470	E	0.3x0.7	User	5.8	80.00	40.00	As above.
	P-6E	20-20	MI	No	25	20	6.25	1.5-2	47k	470	E	0.4x0.8	User	5.8	60.00	25.00	As above.
	P-6R	20-20	MI	No	25	15	6.25	2-4	47k	470	S	0.7	User	5.8	50.00	20.00	As above.
ACUTEX	320III Str	20-45 ±0.75	MM	Yes	33	29	4	0.8-1.8	47k	125		0.3x1.6x0.5	User	6.2	185.00		
	315III Str	20-40 ±0.75	MM	Yes	32	28	4	0.9-1.9	47k	125		0.3x1.6x0.5	User	6.2	135.00		
	312 III Str	20-35 ±1	MM	No	30	27	4	1.2-2.5	47k	125		0.3x1.6x0.6	User	6.2	95.00		
	310 II E	20-25 ±1	MM	No	28	25	4	1.5-2.8	47k	125	E	0.3x0.7	User	6.2	75.00		
	307 II E	20-20 ±1.5	MM	No	27	25	4	1.8-2.8	47k	125	E	0.3x0.7	User	6.2	65.00		
	306 II	20-20 ±1.5	MM	No	27	25	4	2-3	47k	125	C	0.65	User	6.2	45.00		
ADCOM	XC-LT	20-40 ±2	MC	Yes	28	24	2.5	1.8-2.3	47k			0.25x1.5	Fact.	5	250.00		Low output model, 200.00
	XC-H	20-40 ±2	MC	Yes	28	24	2.5	1.8-2.3	47k			0.2x1	Fact.	5			Low output model, 180.00
	XC-E	20-40 ±2	MC	Yes	28	24	2.5	1.8-2.3	47k			0.4x0.7	Fact.	5	190.00		Low output model, 160.00
ANDANTE	Model E	12-30	MM	Yes	30	26	5	1-1.9	47k	250	E	0.2x0.8	User	6	80.00	50.00	
	Model S	18-27	MM	Yes	28	24	5	1-2½	47k	250	S	0.5	User	6	65.00	35.00	
	Model H	18-23	MM	Yes	27	24	10	1½-2½	47k	250	S	0.5	User	6	50.00	25.00	
AUDIO-TECHNICA	AT-10	20-20			25	15	4.8	2-3	47k	100-200	S	0.7	User	5½	40.00	25.00	
	AT-11	15-22			26	16	4.8	1½-2½	47k	100-200	S	0.7	User	5½	50.00	30.00	
	AT-11E	15-25			26	17	4.8	1½-2½	47k	100-200	E	0.4x0.7	User	5½	60.00	35.00	

All nine new Dual turntables feature ULM... the Ultra Low Mass tonearm and cartridge system with 8 grams total effective mass.

All it takes to appreciate the significance of Dual's new Ultra Low Mass system is a clear understanding of what happens when the stylus tracks warped records.

As the record warp rises and falls, the stylus should be able to follow it with a minimum of resistance from the tonearm. Otherwise, tracking angle and tracking force will vary widely as the stylus digs in on the way up the warp and takes off on the way down.

The high inertia of a conventional tonearm and cartridge combination, with approximately 18 grams total effective mass, can cause tracking force to vary as much as 30 percent. And a warp as small as 1.5 mm (barely discernible) can generate harmonic distortion of 2.7 percent. That's audible.

The new Dual ULM tonearm and cartridge system has only 8 grams total effective mass. Tracking the same warped record under the same conditions, harmonic distortion is reduced to only 0.01 percent. That's 270 times less!

Not only is the overall sound audibly improved, but stylus and record life are significantly extended.

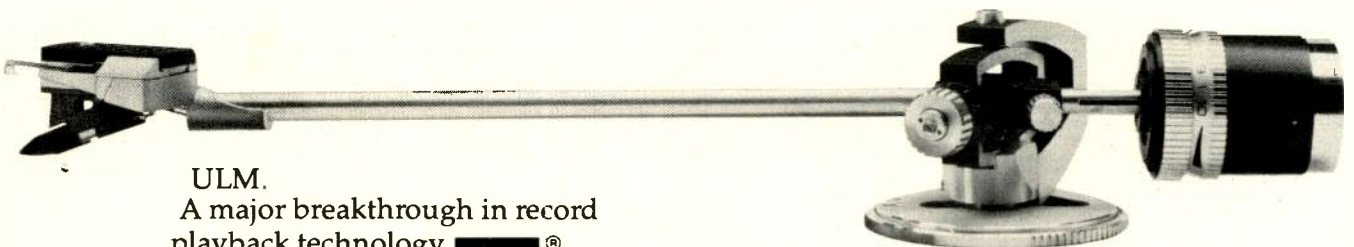
What has made the ULM system possible? First, Dual's straight-line tubular tonearm with its gyroscopic gimbal suspension and unique system for setting tracking force without increasing effective mass. This tonearm can now accept a cartridge weighing as little as 2 grams. Second, a new generation of cartridges that resulted from a collaboration between Dual and Ortofon. These ULM cartridges weigh only 2.5 grams, including mounting bracket and hardware.

Together, the new ULM tonearm and ULM cartridge form a perfectly matched system, with total effective mass less than half that of conventional tonearms and cartridges.

To experience the demonstrable advantages of ULM, bring a badly warped record to your Dual dealer. Listen to it when played with the ULM tonearm and cartridge system. You will hear the difference that ULM can make on all your records. Then you need only decide which of the nine new Dual turntables best meets your requirements for convenience and refinements.

Prices begin at less than \$180 for the multiple play model 1257. The top model, the automatic single-play 731Q with quartz PLL direct drive, is less than \$560. ULM cartridges are optional.

For the complete ULM story, please write to: United Audio,
120 So. Columbus Ave., Mt. Vernon, NY 10553.



ULM.
A major breakthrough in record
playback technology.

Dual®



PHONO CARTRIDGES



Ortofon
Concorde 30



Pickering
625-DJ



Shure
M95HE



Signet MK11E



Stanton
681EEES



Supex SD 900

Thorens
TMC 70



MANUFACTURER	Model	Frequency response, Hz to kHz, ±dB	Principle? Moving iron? Mt. Moving Magnet? Coil? MC? Ceramic? C	W. Individual response curve	Channel separ., kHz, dB	Channel separ., 10kHz, dB	mV output, 1 kHz, 5 cm/Sec. rms lateral velocity	Recommended tracking force, dynes	Recommended load resistance, pf	Stylus type—use code	Stylus radius (radius), mils	Is stylus user or factory replaceable?	Weight, gms.	Price	Replacement stylus price	Notes	
AUDIO-TECHNICA (Continued)	AT-12E	15-26			27	18	4.2	1-2	47k	100-200	E	0.4x0.7	User	5½	70.00	40.00	
	AT-12XE	15-28			28	19	4.2	1-2	47k	100-200	E	0.3x0.7	User	5½	85.00	45.00	
	AT-12Sa	15-45			30	20	2.7	¼-1%	47k	100-200	Q	†	User	5½	100.00	50.00	
	AT-13Ea	10-30			29	20	4.2	¼-1%	47k	100-200	E	0.2x0.7	User	5½	120.00	60.00	
	AT-14Sa	5-45			31	21	2.7	¼-1%	47k	100-200	Q	†	User	5½	150.00	75.00	
	AT-15XE	5-30			32	22	2.7	¼-1%	47k	100-200	E	0.2x0.7	User	8½	175.00	85.00	
	AT-15SS	5-45			33	23	2.7	¼-1%	47k	100-200	Q	†	User	8½	200.00	100.00	
	AT-20SS	5-50			35	25	2.7	¼-1%	47k	100-200	Q	†	User	8½	250.00	125.00	
	AT-30E	15-25	MC	No	25	15	0.28	1.4-2	20	100	E	0.3x0.7	User	5	125.00	65.00	
	AT-22	15-23	MM	No	30	20	2.2	0.9-1.7	47k	100-200	E	0.2x0.7	User	8.5	200.00	100.00	
	AT-23a	15-23	MM	No	30	20	2.2	0.9-1.7	47k	100-200	E	0.2x0.7	User	17.3	225.00	100.00	In shell.
	AT-24	10-25	MM	No	35	25	2.2	0.8-1.6	47k	100-200	E	0.2x0.7	User	8.5	250.00	150.00	
	AT-25	10-25	MM	No	35	25	2.2	0.8-1.6	47k	100-200	E	0.2x0.7	User	17.3	275.00	150.00	In shell.
AT-32	10-24	MC	No	30	20	0.4	1-2	17	100	E	0.2x0.7	Fact.	6.8	300.00			
ATP-1	20-20	MM	No	21	16	5.3	3-5	47k		C	0.6	User	7.2	45.00	25.00		
ATP-2	15-22	MM	No	23	17	5.3	3-5	47k		E	0.4x0.7	User	7.2	60.00	35.00		
ATP-2XN	15-22	MM	No	23	17	5.3	3-5	47k		E	0.4x0.7	User	7.2	90.00	35.00	As above w. extra stylus.	
ATP-3	15-25	MM	No	23	17	5.3	2-3	47k		E	0.3x0.7	User	7.2	80.00	50.00		
BANG & OLUFSEN	MMC 20CL	20-20 ±1	MI	Yes	30		2.12	1	47k	220	†	†	Fact.	4	200.00		†Contact line.
	MMC 20EN	20-20 ±2	MI	No	25		2.12	1.2	47k	220	E		Fact.	4	125.00	95.00	
	MMC 20E	20-20 ±2.5	MI	No	20		2.12	1.5	47k	220	E		Fact.	4	70.00	55.00	
	MMC 20S/MB	20-20 ±3	MI	No	20		2.12	1.5	47k	220	S		Fact.	4.4	45.00		
DECCA	MKVI Gold	20-20	MI		20		5	1½	50k	300	E	0.6x0.3	Fact.	4	199.50	80.00	
	MKVI Plum	20-20	MI		20		7.5	2	50k	300	S	0.6	Fact.	4	149.50	70.00	
DUAL	ULM50E	10-25	MM	No	25		3.5	1½-2½	47k	400	E	0.6x1.8	User	2.5	80.00	28.00	Ultra low mass, 2.5g. As above.
	ULM55E	10-25	MM	No	25		3.5	1-1½	47k	400	E	0.6x1.8	User	2.5	110.00	32.00	As above.
	ULM60E	10-30	MM	No	28		3.5	½-1¼	47k	400	E	0.6x1.8	User	2.5	150.00	64.00	As above.
DYNAVECTOR	10X	20-20	MC	No	20		1.8	1.5	47k	270	E	0.6	Fact.	9½	120.00	66.00	
	10A	20-40	MC	Yes	20		2	2.5	47k	270	C		Fact.	9½	160.00	88.00	
	20A MKII	20-20	MC	Yes	20		3.6	1.8	47k	270	E		Fact.	6	230.00	126.50	
	20B MKII	20-20	MC	Yes	20		3.6	1.8	47k	270	E		Fact.	6	290.00	159.50	
	20C	20-50	MC	Yes	20		0.18	1.5	47k	270	Q		Fact.	9½	350.00	92.50	
	30A	20-20	MC	Yes	20		1.8	1.5	47k	270	†		Fact.	19	370.00	203.50	†Shibata Type III, in headshell.
	30B	20-20	MC	Yes	20		1.8	1.5	47k	270	†		Fact.	19	410.00	225.30	†As above, in headshell.
	30C	20-40	MC	Yes	20		0.18	1.5	47k	270	Q		Fact.	19	450.00	247.50	
	100R	20-50	MC	Yes	20		0.2	1.5	47k	270	Q		Fact.	6	270.00	148.50	
	100D	20-50	MC	Yes	20		0.2	1.5	47k	270	Q		Fact.	6	1,000.00	550.00	
EMT	XSD-15	20-20 ±2	MC	Yes	25		0.75	2½	800		C	0.6	Fact.	21	450.00	150.00	
EMPIRE SCIENTIFIC (Continued)	EDR.9	20-35 ±1.75	MI	No	30	25	4.5	¼-1%	47k	NA	H	0.3x3.0	User	5.5	200.00	100.00	
	4000 DIN	10-50 ±3	MI	No	28	23	4.24	¼-1%	100k	100	QH	0.3x3.0	User	7	175.00	87.50	

HIGH SPEED RECEIVERS: FASTER RESPONSE MEANS MORE ACCURATE SOUND.

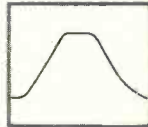
The new Kenwood receivers actually outperform all other receivers, as well as our competitors' separate amplifiers and tuners in transient response.

The reason is Kenwood's exclusive technical breakthrough: Hi-Speed. It allows our receivers to react more quickly to musical changes. So what comes out of your receiver matches precisely what went in.

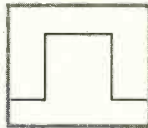
You'll hear the difference as dramatically accurate, open sound with superior imaging and detail. Like hearing an individual singer in a vocal group.

Hi-Speed is available in four models, all DC-amplified for clean bass response. Each one also has switchable wide and narrow IF bands for low-distortion FM reception, plus dual power meters.

And each Hi-Speed receiver has unique individual features that make a real difference in the tonal quality of music. Like dual power supplies that eliminate crosstalk distortion. Or a pulse count detector that digitally reduces FM distortion by half



Distorted waveform response produced by conventional receiver.



Square waveform response of Hi-Speed receiver.

while significantly reducing background noise. Or a built-in equalizer with ten turnover frequencies for full acoustic control.

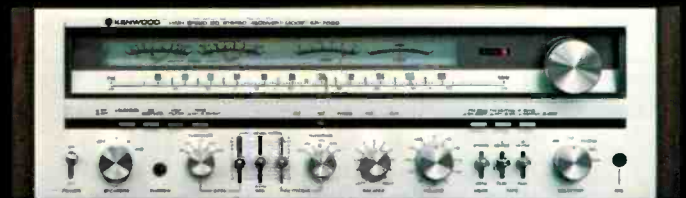
Whichever model you choose, you'll be getting the most advanced receiver technology and performance available today. Advances far beyond the competition.

Your Kenwood dealer will be happy to demonstrate Hi-Speed, now.

HI-SPEED™
Hear the future of high fidelity

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PHONO CARTRIDGES

MANUFACTURER	Model	Frequency response, Hz to KHz, dB	Principal Mounting: Moving Magnet, Moving Coil, MC, Ceramic, C		W. individual response curve	Channel separ. - 1kHz, dB	Channel separ. - 10kHz, dB	mV output, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended tracking force range, gms.	Recommended load resistance, ohms	Recommended load capacitance, pF	Stylus type—use code	Stylus radius (radius), mils	Is stylus user or factory applied?	Weight, gms.	Price	Replacement stylus Price	Notes
			MI	No														
EMPIRE SCIENTIFIC (Continued)	2000 Z	20-20 ±1	MI	No	30	30	4.24	¾-1¼	47k	300	E	0.2x0.7	User	7	150.00	75.00		
	2000 X	20-20 ±1.75	MI	No	27	18	5	¾-1½	47k	150	E	0.2x0.7	User	7	125.00	62.50		
	2000 T	20-20 ±1.5	MI	No	27	27	4.24	¾-1¼	47k	300	E	0.2x0.7	User	7	100.00	50.00		
	4000 DI	15-45 ±3	MI	No	24	20	4.24	1-1¼	100k	100	QH	0.3x3.0	User	7	100.00	50.00		
	2000 EII	20-20 ±2	MI	No	28	28	6.36	¾-1¼	47k	500	E	0.2x0.7	User	7	85.00	42.50		
	2000 EH	20-20 ±2	MI	No	25	25	6.36	¾-1¼	47k	500	E	0.2x0.7	User	7	70.00	35.00		
	2000 EI	20-20 ±3	MI	No	23	23	9.89	1-2	47k	500	E	0.2x0.7	User	7	60.00	30.00		
	2000 E	20-20 ±3	MI	No	23	23	9.89	1¼-2¼	47k	500	E	0.3x0.7	User	7	50.00	25.00		
	2000	20-20 ±3	MI	No	21	21	9.89	1½-3	47k	500	S	0.7	User	7	35.00	17.50		
	Broadcast One	20-20 ±1.5	MI	No	25	15	6.36	2-3½	47k	300	S	0.7	User	7	45.00	15.00		
FIDELITY RESEARCH	FR-1MK2	20-20 ±2	MC	Yes	-27		0.1	1.7	47k		E	0.2x0.8	Fact.	10	150.00	75.00		
	FR-1MK3HE+	10-40	MC	Yes	-26		0.14	2	47k		H		Fact.	10	230.00	115.00		
	FR-1MK3F	10-40	MC	Yes	-26		0.14	2	47k		H		Fact.	10	230.00	115.00		
	FR-1MK7	10-45	MC	Yes	-28		0.2	2.5	47k		H		Fact.	30	660.00	330.00		
FULTON	Fulton	10-60 ±0.5	MC	Yes	34	30	0.33	1½-1¾	4-47k	30	C	0.65	Fact.	5	350.00			
GOLDRING	G-820E	10-25 ±2	MM	Yes	20		5	¾-2	47k-100	350	E	0.3x0.7	User	7	60.00	24.00		
	G-820SE	10-25 ±1	MM	Yes	25		4	0.6-1¼	47k-100	350	E	0.3x0.7	User	7	85.00	51.00		
	G-820DJ	20-18 ±2	MM	Yes	20		5	1½-5	47k-100	350	C	0.6	User	7	85.00	28.60		
	G-900E	20-20 ±3	MM	Yes	20		6.5	1-3	47k-100	200-400	E	0.3x0.7	User	4	95.00	52.80		
	G-900SE2	20-20 ±2	MM	Yes	25		4.5	¾-1¼	47k-100	150-200	E	0.2x0.7	User	4	160.00	79.20		
	G-900S2	20-20 ±2	MM	Yes	25		4.5	¾-1¼	47k-100	150-200	C		User	4	160.00	79.20		
	G-850	20-18	MM	No	20		8	2¼-4	47k-100	350	C	0.6	User	7	30.00	12.80		
	G-850E	20-18	MM	No	20		8	2¼-4	47k-100	350	E	0.3x0.7	User	7	60.00	16.60		
	G-800	20-20 ±2	MM	Yes	20		5	1½-2¼	47k-100	350	C	0.5	User	7.5	40.00	14.50		
	G-800H	20-20 ±2	MM	Yes	20		8	1½-2¼	47k-100	350	C	0.5	User	7.5	40.00	14.50		
	G-800E	10-23 ±1	MM	Yes	20		5	¾-1¼	47k-100	350	E	0.3x0.7	User	7.5	70.00	26.40		
	G-800SE	10-23 ±1	MM	Yes	25		4	½-1¼	47k-100	350	E	0.3x0.7	User	7.5	87.00	44.00		
	G-820	20-20 ±2	MM	Yes	20		5	1½-4	47k-100	350	C	0.6	User	7	50.00	14.50		
G-820E																		
GRACE	SF-90	10-40 ±2	MM	Yes	30	25	5.5	½-2	47k	250	H	0.2x0.8	User	15	250.00	95.00		
	F9-L	10-40 ±2	MM	No	30	25	5.5	½-2	47k	250	H	0.2x0.8	User	6	159.00	79.50		
	F8-L	20-20 ±2	MM	No	30	23	5	½-2	47k	250	H	0.2x0.8	User	6½	110.00	55.00		
	F9-F	10-60 ±2	MM	No	30	27	3.5	½-2	100k	80	Q	†	User	6	195.00	97.50	†Shibata.	
	F8-C	15-25 ±3	MM	No	30	25	5	½-2¼	47k	250	E	0.2x0.8	User	6½	130.00	65.00		
	F9-U	10-50 ±2	MM	No	30	27	3.5	½-2	100k	80	Q	†	User	6	140.00	70.00	†Shibata.	
	F9-D	10-35 ±2	MM	No	30	23	5	½-2	47k	250	C	0.65	User	6	125.00	62.50		
GREAT AMERICAN SOUND	Sleeping Beauty Spherical	10-30	MC	Yes	25	18	0.3	1.8	20-1k	10k Max.	S	0.6	Fact.	5½	160.00	80.00		
	Sleeping Beauty Sup. Elliptical	5-40	MC	Yes	34	20	0.27	1.8	20-1k	10k Max.	E	0.3x0.6	Fact.	5½	200.00	100.00		
	Sleeping Beauty Shibata	5-45	MC	Yes	34	20	0.27	1.8	20-1k	10k Max.	H		Fact.	5½	240.00	120.00		
JVC	MC-2E	10-25	MC		25		0.02	1½, ±0.2	30		E	0.07x0.14	Fact.	8.7	199.95			
	MC-1	10-50	MC		27		0.2	1½, ±0.15	30		Q		Fact.	8.7	299.95			
LINN-SONDEK	DC 2100 K	10-50 ±1½	MC	No				1.6-2.2			E †	0.3x0.8	Fact.	5.7	350.00	262.50	†Modified elliptical.	
MICRO-ACOUSTICS	530-mp	5-20 ±1.25	Elect.	Yes	30	15	3.5	0.7-1.4			MP	†	User	††4	200.00	100.00	† Micro-Point. †† 3.2 g. without stylus guard.	
	2002-e	5-20 ±1.5	Elect.		30	15	3.5	0.7-1.4			E	2x7	User	††4	125.00	50.00		
	282-e	5-20 ±2	Elect.		25	15	3.5	0.75-1.5			E	2x7	User	5.2	95.00	45.00		

JBL'S NEW L150: ITS BOTTOM PUTS IT ON TOP.

JBL's new L150 takes you deeper into the low frequencies of music without taking you deeper into your budget.

This short-tower, floor-standing loudspeaker system produces bass with depth, power and transparency that comes incredibly close to a live performance.



A completely new 12" driver was created for the L150. It has an innovative magnetic assembly, the result of years of research at JBL. It

uses a stiff, heavy core that's been coated with an exclusive damping formulation for optimum mass and density.

And it has an unusually large 3" voice coil, which aids the L150's efficiency and its ability to respond to transients



(peaks, climaxes and sudden spurts) in music.

There's even more to the L150's bottom—a 12" passive radiator. It looks like a driver but it's not. We use it to replace a large

volume of air and contribute to the production of true, deep bass. Bass without boom.

If you're impressed with the L150's lows, you'll be equally impressed with its highs and mids. Its powerful 1" high-frequency

dome radiator provides wide dispersion throughout its range. And a 5" midrange transducer handles high volume levels without distorting. The maximum power recommended is 300 watts per channel.

The L150's other attributes include typical JBL accuracy—the kind that recording professionals rely on. Maximum power/flat frequency response. High efficiency. And extraordinary time/phase accuracy.

Before you believe that you can't afford a floor system, listen to an L150. While its bottom is tops, its price isn't.

James B. Lansing Sound, Inc., 3500 Balboa Boulevard, Northridge, CA 91329.

**FIRST
WITH THE
PROS.**



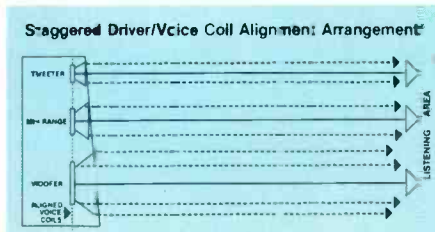
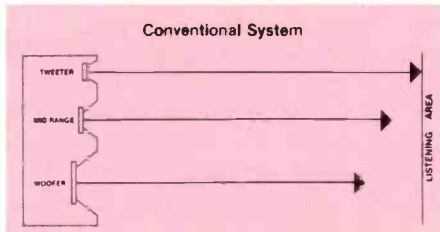
PHONO CARTRIDGES

LETTER CODE FOR STYLUS TYPE C—Conical S—Spherical E—Elliptical Q—For CD-4 use (Shibata, etc.)		Model	Frequency response, Hz to kHz, dB	Principle? Moving iron/MI, Moving Magnet/MI, Moving Coil/CC, Ceramic/C	W. Individual response curve	Channel separ., 1kHz, dB	Channel separ., 10kHz, dB	mv output, 1 kHz, 5 cm/Sec. rms lateral velocity	Recommended tracking force dynes	Recommended load resistance, kΩ	Stylus type—use code	Stylus radius (radial), mils	Is stylus user or factory replaced?	Weight, gms.	Price	Replacement stylus price	Notes
MANUFACTURER	MC																
NAD	9000		MC	No	20			1.2-1.8	47k	1000 Max.	E	Fact.	6	160.00			
NAGATRONICS	340S	20-20 ±3	MI	No	25			1½-2	50k	200-400	S	User	6	55.00	24.00	Tapered carbon fiber cantilever. Hand-selected 360CE. In headshell. Delta stylus.	
	344DE	20-25 ±3	MI	No	25			1½-2	50k	200-400	E	User	6	70.00			
	350E	10-25 ±4	MI	No	25			1½-2	50k	200-400	E	User	6.1	95.00	51.00		
	360CE	10-25 ±3	MI	No	25			1½-2	50k	200-400	E	User	6.1	135.00	67.00		
	360CEX	10-25 ±2.5	MI	Yes	25			1½-2	50k	200-400	E	User	6.1	165.00	67.00		
	HV-9100	10-25 ±3	Rib.	Yes	27		0.04	1.7	3.2	200-400	E	User		275.00	117.00		
	9600	10-25 ±2	MI	Yes	27			1.2-2	50k	150-350	H	User		225.00			
	165S	10-20	MI	No	25			1.7-2.3	47k	200-300	S	User	5.6	35.00	15.00		
	175IS	10-20	MI	No	25			1.7-2.3	47k	200-300	S	User	14.8	42.50	15.00		
	185E	10-22	MI	No	25			1.7-2.3	47k	200-300	E	User	5.6	45.00	24.00		
	195IE	10-22	MI	No	25			1.7-2.3	47k	200-300	E	User	14.8	55.00	24.00		
	200S	20-20	MI	No	25			1½-2	47k	200-400	S	User	5.7	45.00	23.00		
	210E	10-25	MI	No	25			1½-2	47k	200-400	E	User	5.8	84.00	48.00		
220CE	10-25	MI	No	25			1½-2	47k	200-400	E	User	5.8	120.00	63.00			
NAKAMICHI	MC-1000	10-65	MC	Yes	27			1.5-2.1	200		†	0.3x0.8	††	8.2	305.00	150.00††	† Shibata for stereo; †† non replaceable, trade-in avail. Same as above.
	MC-500	20-35	MC	Yes	25			1.9-2.5	50k		E	0.3x0.8	††	8.2	135.00	60.00††	
ONKYO	MC-100	20-50	MC	Yes	28	20	0.4	1½-2	24	150	E	0.3x2.6	Fact.	8½	170.00	100.00	
ORTOFON	MC30	20-20 ±1	MC	Yes	25		0.08	1.5	47k		†		Fact.	7	600.00	300.00	†Fine line.
	MC20	20-20 ±1	MC		25			1.5-2	47k		†	0.3	Fact.	7	205.00	100.00	
	MC10	10-20	MC		22			1.7-2.3	47k		E	0.3x0.7	Fact.	7	145.00	70.00	
	Concorde 30	+3,-2 20-25	MM		25		0.6	1.2-1.8	47k	400	†		User	6.5	165.00	90.00	
	LM30	20-25	MM		25		3	1.2-1.8	47k	400	†		User	2.6	150.00	90.00	
	LM30H	20-25	MM		25		3	0.8-1.2	47k	400	†		User	2.6	150.00	90.00	
	Concorde 20	20-20	MM		25		0.7	1.5-2.1	47k	400	†		User	6.5	125.00	70.00	
	LM20	20-20	MM		25		3.5	1.5-2.1	47k	400	†		User	2.6	115.00	70.00	
	LM20H	20-20	MM		25		3	0.8-1.2	47k	400	†		User	2.6	145.00	70.00	
	VMS20E	20-20	MM		25		5	0.75-1.5	47k	400	E	0.3x0.7	User	5	90.00	65.00	
	MK II	20-20	MM		20		5	1.5-1.3	47k	400	E	0.3x0.7	User	5	65.00	25.00	
	FF15E	20-20	MM		20		5	1.5-1.3	47k	400	E	0.3x0.7	User	5	65.00	25.00	
	MK II	20-20	MM		20		6.5	1.5-3	47k	400	E	0.3x0.7	User	5	45.00	15.00	
OSAWA	300MP	20-22	MI	Yes	25			1½-2	47k	270	E	0.3x0.7	User	5½	110.00	55.00	
	200 MP	20-20	MI	Yes	25			1½-2	47k	270	E	0.3x0.7	User	5½	75.00	40.00	
	110 MP	20-20	MI	Yes	25			1½-2	47k	270	E	0.3x0.7	User	5½	55.00	18.00	
	100 MP	20-20	MI	Yes	25			1½-2	47k	270	C	0.6	User	5½	45.00	15.00	
	188X	10-40 ±2	MC	Yes	30		2.5	½-1½	30		Q	0.1x2.5	User	9½	325.00	190.00	
	18X	10-35 ±2	MC	Yes	30		2.5	½-1½	30		Q	0.1x2.5	User	9½	240.00	130.00	
	18E	10-30 ±2	MC	Yes	30		2.5	½-1½	30		E	0.2-0.8	User	9½	195.00	110.00	
	117G	20-25 ±2	MC	Yes	25		3	½-1½	30		E	0.2-0.8	User	9	155.00	80.00	
	MP 20	20-23	MM	Yes	24			1.2-1.9	47k	100	E	0.4x0.7	User		175.00	100.00	
	MP 15	20-20	MM	Yes	24			1.5-2.2	47k	100	E	0.3x0.7	User		150.00	75.00	
	PICKERING	625-DJ	20-20	MM		30		4.4	1-4	47k	275	E	0.3x0.7	User		60.00	30.00
XSV/4000		10-36	MM		35			1	47k	275	H†		User		140.00		
XSV/5000		10-50	MM		35		0.7	1	47k	275	H†		User	5.7	200.00		
XUV/4500Q		10-50	MM		35		4	1, ±½	100k	100	Q		User	5½	139.95	56.00	
XSV/3000		10-30	MM		35		4.6	1, ±½	47k	275	Q		User	5½	99.95	39.95	
XV-15/1200E		10-30	MI		35		4	¾, ±¼	47k	275	E	0.2x0.7	User	5½	79.45	35.00	
XV-15/750E		10-25	MI		35		4	1, ±½	47k	275	E	0.3x0.7	User	5½	65.00	31.50	
XV-15/625E		10-25	MI		35		4	1, ±¼	47k	275	E	0.3x0.7	User	5½	59.95	30.00	
XV-15/400E		10-25	MI		35		5	1½, ±½	47k	275	E	0.4x0.7	User	5½	54.95	28.50	
XV-15/350		10-25	MI		35		5.5	2, ±1	47k	275	S	0.7	User	5½	49.95	26.25	
XV-15/200E		10-25	MI		35		7.3	3, ±1	47k	275	E	0.4x0.7	User	5½	34.95	23.95	
XV-15/150		10-20	MI		35		7.3	3, ±1	47k	275	S	0.7	User	5½	39.95	23.95	
XV-15/140E		10-20	MI		35		7.3	4, ±1	47k	275	E	0.5x0.7	User	5½	34.95	19.22	
XV-15/100		10-20	MI		35		7.3	4, ±1	47k	275	S	0.7	User	5½	29.95	16.47	
V-15 Micro		20-20	MI		30		5	1½, ±½	47k	275	E	0.4x0.7	User	6½	49.95	26.25	

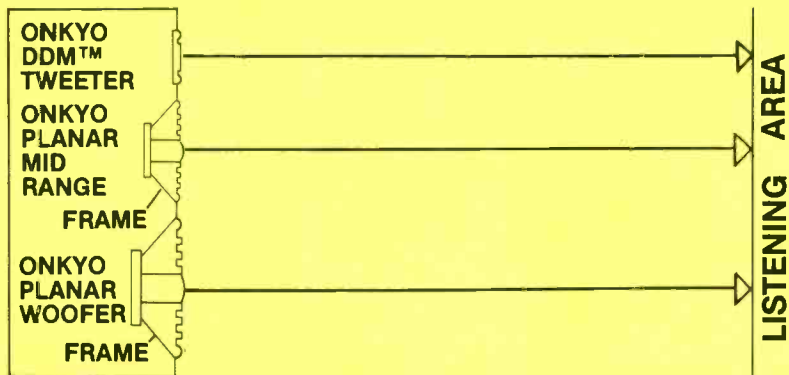
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Onkyo's Total Solution to Speaker Phase Problems

Model F-5000 Phase Aligned Array Speaker System



ONKYO F-5000 Phase Aligned Array™ System



By now, most audiophiles understand the importance of phase accuracy. During a live performance all the notes—or frequencies—produced by the musicians have specific phase (*time*) relationships to each other. And the many overtones—harmonics—within each note also have specific orders in time and strength. If these subtle musical phase relationships are confused or lost, so is true fidelity.

Loudspeakers, because they operate simultaneously in the separate worlds of electronics, mechanics and acoustics, have the worst problem with phase accuracy. And the most difficult to correct. In the attempt to correct for phase aberrations, speaker manufacturers have produced an odd assortment of peculiarly shaped enclosures and driver configurations. But these half-measures create as many problems as they solve.

Only Onkyo provides a *total* solution to the phase problem. The Onkyo Model F-5000 Phase Aligned Array™ is a three-way system whose *individual drivers are inherently phase accurate* because of their radically different—and technologically superior—construction.

The three planar (flat-diaphragm) drivers in the Model F-5000 were developed through laser interferometry and computer analysis of the phase-randomizing break-up modes in conventional driver cones. Onkyo's solutions for the F-5000 are embodied in the diaphragms of the 12" bass and 4" mid range drivers. They consist of essentially flat annularly ribbed polyurethane/felted paper patented laminations that are inert, stiff, and yet have exceptionally low mass.

The critical high-frequency reproducer (DDM — Direct Drive Membrane™) in the F-5000 employs an extremely thin and light polyamide membrane. The result is electrostatic-like clarity, definition and center imagery, without the typical electrostatic drive problems.

The computer-developed crossover network, designed for the required phase characteristics, employs only air-core inductors and Mylar® capacitors.

Onkyo's efforts and quality construction have resulted in smooth, wide frequency response, flat amplitude and precise linearity. Thus, the sound waves that come out of the system are almost mirror images of the sound waves that go into them.

The overall effect is one of clarity and transparency delivered from a unit that looks as good as it sounds.

Artistry in Sound

ONKYO®



Yamaha, the industry

When we set out to improve on our industry-accustomed receivers, we knew we had a tough task ahead of us. How do you top being the first in such precedent-setting developments as built-in moving coil head amps, negative feedback MPX demodulators, pilot signal cancellation circuits, and the same amazingly low distortion throughout our entire line? After much continuing research, effort and unique care in design, we have the answer. It's called the CR-2040, the first in Yamaha's new line of receivers that does what only Yamaha could do. Outdo ourselves.

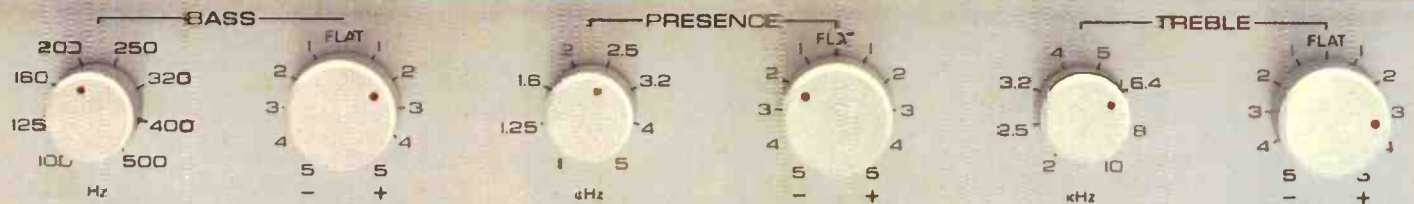
Unique continuously variable turnover tone controls. This unique Yamaha innovation gives you the tonal tailoring characteristics of both a parametric and a graphic equalizer. Without the added expense of having to purchase either. For instance, in addition to boosting or cutting the bass control $\pm 10\text{dB}$, you can also vary the turnover frequencies between 100 & 500 Hz to compensate for speaker deficiencies, room anomalies, etc., for unparalleled tonal tailoring flexibility. The same is true for the presence and treble controls.

Built-in moving coil head amp. More and more listeners are discovering the beautiful experience of music reproduced with a moving coil cartridge, such as Yamaha's newly introduced MC-1X and MC-1S. Discover this exquisite pleasure for yourself with the CR-2040's built-in moving coil head amp. This ultra-low noise head amp provides an ultra-quiet 86dB S/N ratio

Continuously variable loudness contour.

This control compensates for the ear's decreased sensitivity to bass and treble tones at low volume levels. And you're not just limited to compensation at only one specific volume setting as with other manufacturers' on/off-type loudness switches. The Yamaha continuously variable loudness contour assures you of full, accurate fidelity at any volume setting you choose. Another Yamaha exclusive!

Automatic operation. Without a doubt, the Yamaha CR-2040 is one of the most automated receivers in audio history. Instead of fiddling with dials and meters, you can sit back and let the automatic circuits do the work. Or if you choose manually override the circuits. Take the AUTO-DX circuit, for instance. We developed IF bandwidth switching for our world-acclaimed CT-7000 tuner. Now we've gone even further by improving this circuit so the receiver automatically chooses the correct bandwidth (local or DX) for the least noise. Working with this circuit is the AUTO BLEND circuit which eliminates annoying FM hiss to



to assure you of capturing all the high-end detail and imaging the MC experience affords. All you'll miss is the extra expense and added noise of an on-board head amp or step-up transformer.

Independent input and record out selectors. If you're a tape recording enthusiast, this feature is something you won't want to be without. It lets you select the signal from one program source to send to the REC OUT terminals for recording while you listen through your speakers to an entirely different program chosen on the INPUT selector. You can also dub from one tape to another even while listening to an entirely different program. It's another example of why Yamaha is the industry leader. We build in what the others can't even figure out.

make previously unlistenable stations more clearly audible. All without your lifting a finger. And Yamaha's exclusive OTS (Optimum Tuning System) automatically locks in and holds the desired station when you release the tuning knob.



leader...leads again!

Advanced circuitry. All these advanced features are backed by the most advanced internal circuitry imaginable. Like the auto tracking pilot signal canceller. Yamaha invented pilot signal cancellation and now we've improved it further. A special circuit not only senses the incoming 19kHz pilot signal (which is a part of FM broadcasts), it also automatically tracks any signal fluctuation which might occur. This assures you of complete pilot signal cancellation for interference-free FM listening. Yamaha does it again!

The all DC power amp section pours out a massive 120 watts per channel, both channels driven into 8 ohms, from 20Hz to 20kHz, with THD and I.M. an astronomically low 0.02%. That's a new low, even for Yamaha. And to keep tabs on all this pure power there's a twin LED power-monitoring system—green to indicate half power, red to indicate an overload condition.

The tuner section has a Yamaha-exclusive Direct Current-Negative Feedback—PLL MPX IC providing excellent phasing of the high frequencies for superb stereo separation and clearer sound. Our efforts to bring you the finest sound possible know no limits.

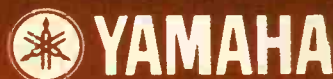
Human engineering. As incredibly advanced and complex as the CR-2040 is, it is incredibly simple to operate. The front panel is arranged in a clean and logical manner with the larger primary operational controls located on the central forward panel, and the smaller tone-tailoring controls located on the lower panel. It takes a minimum of effort to set up the CR-2040 for maximum listening pleasure.

The functionally beautiful front panel is complemented by a real wood cabinet with simulated ebony finish—the perfect finishing touch to the extraordinary CR-2040.

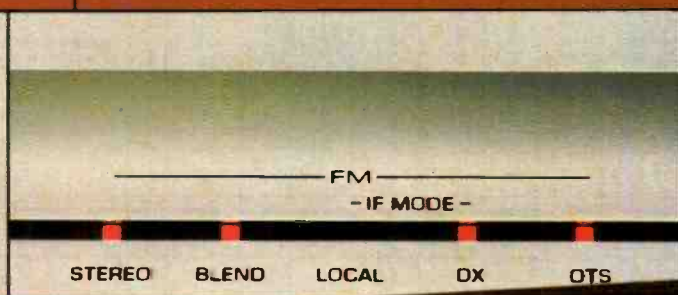
And the CR-2040 is just one of a whole new line of receivers from Yamaha. Each one offers, in its class, the ultimate in features, performance and pure musical pleasure. Visit your local Yamaha Audio Specialty Dealer and see and hear for yourself how we've outdone ourselves. He's listed in the Yellow Pages. Or write us: Yamaha, Audio Division, P.O. Box 6600, Buena Park, CA 90622.

From Yamaha, naturally.

0.02% THD



Yamaha, Audio Division, P.O. Box 6600, Buena Park CA 90622



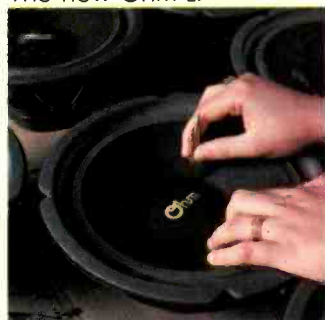
PHONO CARTRIDGES

MANUFACTURER	Model	Frequency response, Hz to KHz, dB	Principal Moving Element, Moving Magnet, Moving Coil, Ceramic, C		W, individual response curve	Channel separ., 1kHz, dB	Channel separ., 10kHz, dB	mV output, 1kHz, 5cm/sec. rms Lateral Velocity range, gms.	Recommended tracking force, dynes	Recommended load resistance, ohms	Recommended load capacitance, pF	Stylus type—Use code	Stylus radius (radii), mils	Is stylus user or factory replaced?	Weight, gms.	Price	Replacement stylus price	Notes
			Letter Code for Stylus Type	Letter Code for Stylus Type														
PICKERING (Continued)	V-15 Micro IV AM	20-20	MI		30		5.5	2, ±1	47k	275	S	0.7	User	6½	34.95	19.22		
	V-15 Micro IV ATE	20-18	MI		28		6	3, ±1	47k	275	E	0.4x0.7	User	6½	39.95	23.95		
	V-15 Micro IV AT	20-18	MI		28		7.3	3, ±1	47k	275	S	0.7	User	6½	29.95	16.47		
	V-15 Micro IV ACE	20-17	MI		26		7.3	4, ±1	47k	275	E	0.5x0.7	User	6½	29.95	16.47		
	V-15 Micro IV AC	20-17	MI		26		7.3	5, ±2	47k	275	S	0.7	User	6½	24.95	13.72		
PRECEDENT	Z-Mod	10-60 ±½	MM	No	32	28	4.25	1-1½	47k		E	0.6x0.3			175.00		Use with med. to high mass arms.	
PRECISION FIDELITY	KOETSU SG2	0-50	MC †				0.2	1½-2½	3		H	0.3X0.8	Fact. User	10.5 3.2	1,000.00 300.00	195.00 50.00	†Strain gauge system.	
PREMIER	LME	10-36	MC	Yes	30	27	0.5	1.3-2			E	0.3x0.8	Fact.	4.7	149.00	75.00		
	LMS	10-30	MC	Yes	27	24	0.5	1.3-2			S	0.6	Fact.	4.7	109.00	55.00		
RADIO SHACK	R1000ED	20-20 ±3	MM	No	25			¾-1½	47k		E	0.2x0.7	User		39.95			
	R27ED	30-20	MM	No	25			¾-1½	47k		E	0.2x0.7	User		29.95			
	R47ED	30-20	MM	No	20			1½-3	47k		E	0.4x0.7	User		24.95			
	R-9000E	20-20	MM	No	25			¾-1½	47k		E	0.2x0.7	User	9	49.95		In headshell.	
SHURE	V15 Type IV	10-25	MM	No	25	15	4	¾-1½	47k	250	H		User	6.4	165.00	60.00		
	V15 Type III	10-25	MM	No	25	15	3.5	¾-1½	47k	450	E	0.2x0.7	User	6.3	103.00	34.00		
	M95HE	20-20	MM	No	25		4.7	¾-1½	47k	450	H		User	6.3	97.50	34.00		
	SC39ED	20-20	MM	No	25		4	¾-1½	47k	250	E	0.2x0.7	User	6.3	100.00	56.00		
	SC39B	20-20	MM	No	20		4	1½-3	47k	250	S	0.7	User	6.3	60.00	18.00		
	SC39EJ	20-20	MM	No	20		4	1½-3	47k	250	E	0.4x0.7	User	6.3	70.00	26.00		
	M95ED	20-20	MM	No	25		4.7	¾-1½	47k	450	E	0.2x0.7	User	6.3	84.50	31.70		
	M93EJ	20-20	MM	No	20		4.7	1½-3	47k	450	E	0.4x0.7	User	6.3	67.50	25.95		
	M93E	20-20	MM	No	20		6.2	1½-3	47k	450	E	0.4x0.7	User	5.7	55.95	21.80		
	M91ED	20-20	MM	No	25		5	¾-1½	47k	450	E	0.2x0.7	User	5.8	72.95	28.50		
	M75ED	20-20	MM	No	25		5	¾-1½	47k	450	E	0.2x0.7	User	6.2	72.95	28.50		
	Type II M70EJ	20-20	MM	No	20		6.2	1½-3	47k	450	E	0.4x0.7	User	5.8	48.95	15.45		
	M70B	20-20	MM	No	20		6.2	1½-3	47k	450	S	0.6	User	5.8	43.50	12.05		
	M24H	20-50	MM	No	22		3	1-1½		100	Q		User	5.8	96.50	33.80		
SIGNET	TK1E	15-25	MM	No	26	17	4.8	1.5-2.5	47k	270	E	0.4x0.7	User	6.8	40.00	25.00	TK1E/H in shell, 45.00.	
	TK3E	15-28	MM	No	28	19	4.2	1-1.75	47k	270	E	0.3x0.7	User	6.8	55.00	30.00		
	TK5E	10-30	MM	No	25	20	4.2	0.75-1.75	47k	270	E	0.2x0.7	User	6.8	90.00	50.00		
	TK7E	5-30	MM	No	30	22	2.7	0.75-1.75	47k	270	E	0.2x0.7	User	6.8	160.00	75.00		
	TK7SU	5-45	MM	No	30	23	2.7	0.75-1.75	47k	270	E	0.2x0.7	User	6.8	185.00	100.00		
	TK9E	10-25	MM	No	35	25	2.2	0.75-1.75	47k	270	E	0.2x0.7	User	7.5	275.00			
	MK111E	5-50	MC	No	30	20	0.4	1-2	47k	100	E	0.2x0.7	Fact.	4.8	300.00	110.00	112E in shell, 325.00.	
SONUS	Gold-Blue	10-20 +2, -1			30		4	¾-1½	47k	400	Q		User	5½	154.00	81.50		
	Gold-Red	10-20 +2, -1			30		4	¾-1½	47k	400	E		User	5½	137.50	65.00		
	Gold-Green	10-20 +2, -1			30		4	¾-1½	47k	400	C		User	5½	121.00	48.50		
	Silver-P	20-20 ±2			30		5	1-1½	47k	400	Q		User	5½	99.00	55.00		
	Silver-E	20-20 ±2			30		5	1-1½	47k	400	E		User	5½	88.00	44.00		
	Dimension 5	10-20 ±1	MI	Yes	30	30	5	¾-1½	47k	400	†		User	5½	250.00	100.00	† Lambda stylus.	
	Black-A	10-20 +2, -1			25	20	5	1½-1¾	47k	400	E		User	5½	77.00	38.50		
	Black-C	10-20 +2, -1			25	20	5	1½-2	47k	400	S		User	5½	66.00	28.50		
SONY	XL-55	10-50	MC		30		0.2	1½-2½	40	100	E	0.3x0.8	Fact.	22	300.00		In headshell.	
STANTON	680 SL	20-20	MI	No	30		1.1	2-5	47k	275	†		User	5.5	87.50	43.75	†Stereohedron.	
	680EL	20-20	MI	No	30		0.82	2-5	47k	275	E	0.4x0.7	User	6.3	90.00	30.00	With extra stylus.	
	681EEE-S	12-22	MI	No	35		0.7	¾-1½	47k	275	†		User	6.3	115.00	57.50	†Stereohedron.	
	600EE	20-20 ±2.5	MI		35		5	1-2	47k	275	E	0.3x0.7	User	5	55.00	27.75		
	600E	20-20 ±2	MI		35		5	1½-3	47k	275	E	0.4x0.7	User	5	50.00	25.00		
	600A	20-20 ±2	MI		35		5	2-4	47k	275	S	0.7	User	5	45.00	20.25		
	500EE	10-20 ±3	MM		35		5	1-2	47k	275	E	0.3x0.7	User	5	40.00	25.00		
	500E	10-20 ±2	MM		35		5	2-5	47k	275	E	0.4x0.7	User	5	35.00	20.00		
	500A	10-20 ±2	MM		35		5	2-5	47k	275	S	0.7	User	5	30.00	12.00		
	500AA	10-20 ±2	MM		35		5	1-2½	47k	275	S	0.5	User	5	35.00	18.00		
	500AL	20-17 ±2.5	MM		28		5	3-7	47k	275	S	0.7	User	5	30.00	12.00		

Ohm's Law 9:

It is possible to make a loudspeaker that gets loud and still sounds good.

Ohm introduces another new loudspeaker that defies the traditional laws of loudspeaker design. The new Ohm I.



It used to be, if you liked listening to music as loud as life in your home, you had a tough choice to make. You could buy high efficiency "monster" systems, and put up with the boom and shriek. Or, if you wanted something smoother (with really deep bass), you could buy low efficiency systems. But then you'd need an amplifier big enough to power Toledo.

The Ohm I solves the problem. It can achieve



concert hall levels in your home effortlessly, with *no* sacrifice in bandwidth, linearity, or imaging abilities. While the Ohm I gets amazingly loud with as little as 10 watts input, it can handle 1000 watts comfortably.

It's the world's first *good and loud* loudspeaker.

Inside the Ohm I, you'll find everything we've learned about multi-driver dynamic loudspeaker design. It uses a total of five drivers, including a 12-inch, optimally-vented subwoofer with an incredible 72 ounce



magnet. Voice coils are cooled by magnetic fluid to increase power handling. The Ohm I's beautifully-finished, floor-standing enclosure is compact enough to fit gracefully into any home.

The new Ohm I's are already earning rave reviews from stereo critics. After listening to them, The



Complete Buyer's Guide to Stereo/Hifi Equipment

says, "The volume level was approaching the threshold of pain, but the speakers were showing no sign of strain. The response, regardless of level, was smooth and free from annoying colorations... Too often a loud loudspeaker is deficient in many other areas. Fortunately, this is not the case with the Ohm I..."

According to *Hifi Stereo Buyer's Guide* (8/79), the new Ohm I has "...a combination of efficiency and power handling that, as far as we know, is unmatched." They continue: "(The Ohm I) is one of the finest speakers we've ever heard. There is nothing it couldn't do and do it superbly...it thundered out the lowest pipe-organ pedal notes in a way that made us feel we were in a great cathedral...When appropriate, the bass was

discreet. It was all there, without saying 'Here I am'.... The treble filled the room with a spacious sweetness that seemed...downright seductive...(The Ohm I) will bring out the best from any program material and will also do justice to the coming glories of digital recording... this is a speaker with a future - for the future."

For a listening experience you've never enjoyed before except at a live performance, visit your local Ohm dealer. Ask to hear the world's first good and loud loudspeaker: the new Ohm I.



For 16 complete reviews, and full specifications, please write us at: Ohm Acoustics Corp., 241 Taaffe Place, Brooklyn, N.Y. 11205.

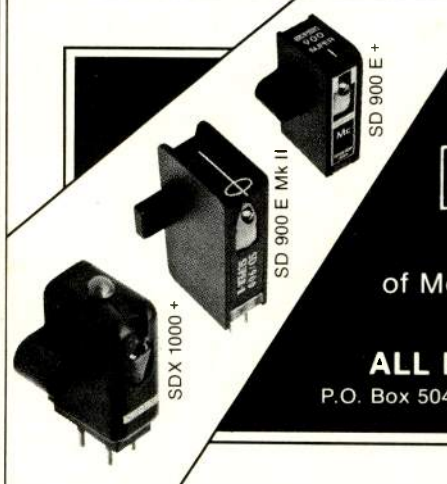


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PHONO CARTRIDGES

MANUFACTURER	Model	Frequency response, Hz to kHz, ±dB	MI	W. Individual response curve	Channel separ., 1kHz, dB	Channel separ., 10kHz, dB	mV output, 1 Hz, 5 cm/sec. rms Lateral Velocity	Recommended tracking force, grams	Recommended load resistance, ohms	Stylus type—use code	Stylus radius (radius), mils	Is stylus use or factory replaced?	Weight, gms.	Price	Replacement stylus price	Notes	
																	Principal Moving Iron/Mk. Moving Magnet/Mk. Moving Coil/Mk. Ceramic/C
STANTON (Continued)	681EEE	10-12 ±½	MI		35		3.5	¾-1½	47k	275	E	0.2x0.7	User	5½	82.00	41.00	
	681EE	10-10 ±½	MI		35		4.1	¾-1½	47k	275	E	0.2x0.7	User	5½	72.00	36.00	
	681A	10-10 ±½	MI		35		5.5	1½-3	47k	275	S	0.7	User	5½	66.00	30.00	
	681SE	10-10 ±½	MI		35		5.5	2-4	47k	275	E	0.4x0.7	User	5½	66.00	30.00	
	680EE 881S	20-20 10-25	MI MM		35 35		4.1 0.9	¾-1½ 1, ±¼	47k 47k	275 275	E †	0.3x0.7	User User	5½ 5.7	59.95 150.00	31.25 75.00	†Stereohedron.
SUMO	I	20-20 ±2	MM	Yes	25	25	5	1.25	47K	200	E	0.2x0.5	User	5.5	175.00	75.00	
	II	20-20 ±2	MC	Yes	27	27	0.1	1.8	500		E	0.3x0.7	Fact.	5.5	200.00	100.00	Response -3dB@50kHz.
SUPEX	SDX-1000	10-50 ±2	MC	Yes	30	27	0.2	1.2 -1.7			H	0.3x0.7	Fact.	4.7	500.00	250.00	Opt. SDT-1000 transformer.
	SD-900MkII	10-50 ±2	MC	Yes	30	27	0.2	1.2 -1.7			E	0.3x0.8	Fact.	10	350.00	175.00	
	SD-900E+ Super	10-50 ±3	MC	Yes	30	27	0.2	1.2 -1.7			E	0.3x0.8	Fact.	8	225.00	112.50	
	SD-901E+ Super	10-35 ±1.5	MC	Yes	30	27	2.0	1.2 -1.7	47k		E	0.3x0.8	Fact.	9	175.00	87.50	
THORENS	TMC 63	20-20 ±2	MC	Yes	25	25	0.75	1.7	22		H	0.3	Fact.		550.00		For TD-126 BMK III.
	TMC 70	20-20 ±2	MC	Yes	25	25	0.75	1.7	22		H	0.3	Fact.		550.00		For TD 110 and TD 115.
WIN LABORATORIES	SDT-10	5-25	†		20	20	50	2			E		User	2	550.00	150.00	† Semiconductor, with source mod- ule.
YAMAHA	MC-1S	10-20	MC		28			1.8 ±0.2				0.4x0.8	Fact.	7.8	200.00		
	MC-1X	10-20	MC		28			1.8 ±0.2				0.4x0.8	Fact.	8.5	250.00		In headshell.

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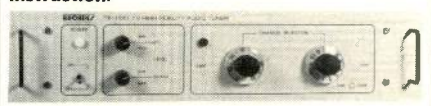
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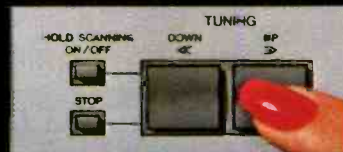
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AIWA's new AX-7800 is loaded with features. Like Memory Tuning that lets you preset up to 6 FM and 6 AM stations. Like a highly visible 9-

point LED peak power bar graph. Like independent bass and treble frequency turnover controls.

And the AX-7800's DC-power amplifier gives you 60 Watts per channel RMS at 8 ohms from 20Hz to 20KHz. With no more than 0.05% THD.

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TONEARMS



ADC LMF-2



Osawa AC-300 MK-II



Connoisseur SAU-4

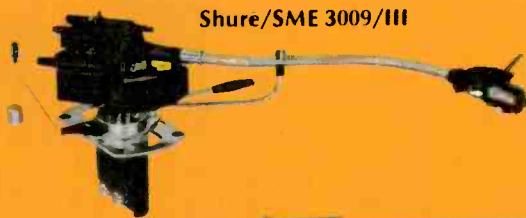


Grace G-714

	Model	Overall Length, inches	Pivot-Stylus Distance, inches	Cueing	Damped Cueing	Removable headshell	Maximum Tracking Error, degrees/inch	Anti-Skating Adjustment	Tracking Force Range, gms.	Total Cable Capacitance, pF.	Cartridge Weight Range, gms.	Vertical Bearing Type	Lateral Bearing Type	Price	Notes
ADC	ALT-1	12	9.33	Yes	Yes	Yes	1½	Yes	0-4	100/220	4-11	Ball	Ball	149.95	Carbon fiber arm & headshell. As above.
	LMF-1	12.33	9.33	Yes	Yes	No	1¼	Yes	0-2	100/220	4-11	Ball	Ball	205.00	
	LMF-2	12.33	9.33	Yes	Yes	Yes	1¼	Yes	0-2	100/220	3-11	Ball	Ball	215.00	
AUDIO-TECHNICA	AT-1005	12¾	9½		Opt.		1½	Yes	0-3	80	4-14	Ball	Ball	85.00	
	AT-1009	13	9½	Yes	Yes		1½	Yes	0-2½	80	4-14	Ball	Ball	175.00	
	AT-1010	13	9½	Yes	Yes		1½	Yes	0-2½	80	4-14	Ball	Ball	350.00	
AUDIOWORKS	AWX-4	Var.	Var.	No	No	No	Var.	Yes	0-5		0-20	Uni-pivot†	Uni-pivot†	195.00	†Damped; adj. azimuth and lateral stabilization.
CONNOISSEUR	SAU2	11	8½	Yes	Yes	Yes		Yes	0-6	400	4-19	Gimbal	Gimbal	80.00	Effective mass adj., 4-6 gms. As above.
	SAU4	11½	8½	Yes	Yes	Yes		Yes	0-4	400	4-8	Unipivot	Unipivot	135.00	
DECCA	London Int'l.		9½	No	No	Yes	0.5	Yes	0-3.5	120	4-13	Uni-pivot	Uni-pivot	149.50	
DENNESEN	ACLT-1	9½	7½	Yes	Yes	Yes	0	No		200		Air	Air	500.00	Straight line tracking.
DENON	DA-401	12½	9½	Yes	Yes	Yes	2.5	Yes	0-2	40	4-11	Ball	Ball	350.00	
FIDELITY RESEARCH	FR-66ss	15.059	12.087	Yes	Yes	Yes	1½	Yes	0-5	80	0-18	Radial Ball	Radial Ball	1,300.00	
	FR-64ss	12.677	9.646	Yes	Yes	Yes	1½	Yes	0-5	80	0-24	Radial Ball	Radial Ball	640.00	
	FR-14	12.24	9.65	Yes	Yes	Yes	1¼	Yes	0-3	80	1-12	Radial Ball	Radial Ball	400.00	
	FR-12	11.472	9.055	Yes	Yes	Yes	3	Yes	0-3	80	4-12	Radial Ball	Radial Ball	400.00	
GRACE	G-707 MkII	11¼	9½	Yes	Yes	No	1.5	Yes	0-3	100	4½-12	Needle/ Ball	Needle/ Ball	190.00	Black model, 200.00
	G-1040	12	9¼	Yes	Yes	Yes	1.5	Yes	0-3	100	4½-19	Needle/ Ball	Needle/ Ball	300.00	
	G-714	11¼	9½	Yes	Yes	Yes	1.4	No	0-3	100	4-13	Uni-pivot	Uni-pivot	275.00	Teak.
	G-704	11¼	9½	Yes	Yes	Yes	1.4	No	0-3	100	4-13	Uni-pivot	Uni-pivot	275.00	
	G-860	14¾	11¼	Yes	Yes	Yes	1.1	Yes	0-3	100	4-20	Needle/ Ball	Needle/ Ball	190.00	
	G-940	11¼	9½	Yes	Yes	Yes	1.4	No	0-3	100	4-17	Uni-pivot	Uni-pivot	175.00	
INFINITY SYSTEMS	Black Widow GF	11¾	9½	Yes	Yes			Yes		60	4-8½	Knife	Ball	245.00	Graphite/fiber arm tube.



SAEC
WE-308N



Shure/SME 3009/III



Soundaids



Signet XK-50



Stax UA-7-cfm

Model	Overall Length, inches	Pivot-Stylus Distance inches	Cueing	Damped Cueing	Removable headshell	Maximum Tracking Error, degrees/inch	Anti-Skating Adjustment	Tracking Force Range, gms.	Total Cable Capacitance, pf.	Vertical Bearing Type	Lateral Bearing Type	Price	Notes	
JML TA-3A	10½	9	Yes	†	No	0.33	Yes	½-4	<100	2-11	††	††	249.00	† Infinitely adjustable silicone damping, †† Jewelled uni-pivot, ball support bearing.
LINN-SONDEK LV-11			Yes	Yes	No		Yes	0-3		4-12	Gimbal	Gimbal	450.00	
LUSTRE GST-801 GST-1	11½ 11½	9¾ 9½	Yes Yes	Yes Yes	Yes Yes	1.1 1.5	Yes Yes	0-2½ 0-3	250 100	4-19 4-19	Radial Needle/ Ball	Radial Needle/ Ball	500.00 175.00	Adj. vertical tracking angle.
J.A. MICHELL ENG. Focus	10½	9.14	Yes	Yes	Yes	0.15	Yes	¼-6	165	3-16	Unipivot	Unipivot	225.00	
MICRO SEIKI CF-1 MA505LS	12¾ 14¾	9¾ 11¾	Yes Yes	Yes Yes	Yes Yes	1.5 0.3	Yes Yes	0-3 0-3	150 150	4-12 3-10.5	Ball Ball	Ball Ball	225.00 375.00	
OSAWA AC-300MK-II AC-3000MK II	13¾ 13¾	9¾ 9¾	Yes Yes	Yes Yes	Yes Yes	1 1	Yes Yes	0-2 0-2	210 210	6-12½ 6-12½	Uni- pivot Uni- pivot	Uni- pivot Uni- pivot	325.00 500.00	Oil-damped. As above, black anodized brass.
ORK Reik-O-Kut S-320 S-260	12¾ 15¾	8¾ 11	No No	No No	Yes Yes	1 1	Yes Yes	1 1		6.8-20.2 6.8-20.2	Pivot Ball Pivot Ball	Radial Ball Radial Ball	95.00 110.00	
SAEC WE308N WE308L WE308SX WE506/30	12.95 14.47 12.95 16.42	9.45 10.63 9.45 11.61	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	8 8 8 2½	Yes Yes Yes Yes	0-4 0-4 0-4 0-4	37 37 37 37	5-11 5½-12½ 4-15½ 5-15	Knife Knife Knife Knife	Ball Ball Ball Ball	239.95 279.95 599.95 799.95	
SHURE SME 3009 III SME 3009 IIIS SME 3009/S2 SME 3009 II		9 9 9 9	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	1½ 1½ 1½ 1½	Yes Yes Yes Yes	0-2½ 0-2½ 0-1½ 0-1½	293 75 127 127	0.1-13 0.1-13 2-8 2-8	Knife Knife Knife Knife	Ball Ball Ball Ball	294.00 240.00 190.00 177.00	With fluid damper.
SIGNET XK50	13¾	9¾	Yes	Yes	No	1½	Yes	0-1½	75	4-11	Ball	Ball	400.00	
SOUNDAIDS SoundAids			Yes	Yes	No	1½	Yes	¼-2	90	2-7	Ball		90.00	
STAX UA7-cfm	13	9	Yes	Yes	Yes	0.25	Yes	0-3	115	2-35	Uni-pivot	Uni-pivot	335.00	Carbon fiber tonearm tube.
SUMIKO The ARM	9	8¾	Yes	Yes	No	1¼	Yes	0-4	150	4-12	Needle/ Ball	Needle/ Ball	1,000.00	
WIN LABS SDA-10	13¾	9¾	Yes	Yes	Yes	1¼	Yes	0-5	125	2.5-6	Unipivot	Unipivot	950.00	

CASSETTE & 8-TRACK TAPE DECKS



B+C/Avnet T-4M



Nakamichi 680

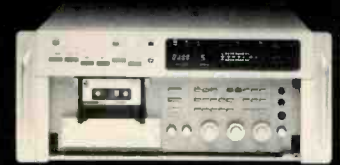


Dual C839RC



SAE Two C3D

Onkyo TA-2080



Phase Linear 7000-II



Marantz SD-9000



MANUFACTURER	Model	X = cassette; 8 if cartridge	Auto Off Yes	Frequency response, Hz±Hz ±dB -with best tape	Top Load=F; Front Load=F	Number of Heads	% wow & flutter, W rms	S/N, dB, without Dolby	S/N, dB, with Dolby	Number of bias & EQ settings	Mike mixing (1=yes, no, inputs)	Locking pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
AIWA	AD-6900II	X	Yes	25-18 +2, -3	F	3	0.04	58	68	3	Yes	Yes	Yes	Yes	17 1/2 x 12 1/2 x 4 1/4	22.5	1,000.00		Metal tape capability, wireless remote control, double needle meter. Metal tape capability. As above.
	AD-6700	X	Yes	25-17 +2, -3	F	2	0.04	55	65	3	No	Yes	Yes	Yes	17 1/2 x 12 1/2 x 4 1/4	20.9	750.00		Metal tape capability. As above.
	AD-L40U	X	Yes	20-17 +2, -3	F	2	0.04	55	65	3	No	Yes	No	Yes	17 1/2 x 11 1/2 x 5 1/2	17	490.00		
	AD-6800	X	Yes	30-17 +2, -3	F	2	0.05	55	65	3	No	Yes	Yes	Yes	18 1/2 x 13 1/2 x 6 1/2	24.3	550.00		
	AD-6600	X	Yes	30-16 ±3	F	2	0.04	55	65	3	No	Yes	Yes	Yes	17 1/2 x 13 x 5 1/2	18.7	490.00		
	AD-1260	X	Yes	30-16	T	2	0.08	52	62	3	No	Yes	No	Yes	15 1/2 x 10 x 5 1/2	9.9	260.00		
	AD-M200	X	Yes	30-14 ±3	F	2	0.06	52	62	3	No	Yes	No	Yes	16 1/2 x 10 x 5 1/2		260.00		
	AD-M100	X	Yes	30-14 ±3	F	2	0.07	50	60	1	Yes	No	No	No	16 1/2 x 10 x 5 1/2		210.00		
	AD-6550	X	Yes	30-15 ±3	F	2	0.05	55	65	3	Yes	No	Yes	Yes	17 1/2 x 13 x 5 1/2	18.5	450.00		
	AD-6450	X	Yes	30-15 ±3	F	2	0.05	55	65	3	Yes	No	No	Yes	17 1/2 x 13 x 5 1/2	18.5	380.00		
	AD-6350	X	Yes	30-16 ±3	F	2	0.08	55	65	3	Yes	No	No	Yes	17 1/2 x 13 x 7 1/2	16.8	320.00		
	SD-L22	X	Yes	25-16	F	2	0.09	60	2		No	No	No	Yes	8 1/2 x 7 1/2 x 2 1/2	6	260.00		Mini.
	AKAI	CS-703D	X	Yes	40-15	F	2	0.06	56	66	2	No	Yes	No	No	15 x 5.9 x 10.5	6	199.95	
GXC-706D		X	Yes	35-15 ±3	F	2	0.055	56	66	4	No	Yes	No	No	17.3 x 5.9 x 11.4	6.5	249.95		
GXC-732D		X	Yes	35-15 ±3	F	(2) 3	0.06	56	66	4	No	Yes	No	No	17.3 x 6.3 x 11.4	17.7	350.00		Quick reverse record/playback. As above.
GXC-735D		X	Yes	35-16 ±3	F	(2) 3	0.045	56	66	4	2	Yes	No	Yes	17.3 x 5.9 x 11.4	21.4	499.95		
GX-M30		X	Yes	30-19 ±3	F	2	0.04	61	71	4	2	Yes	No	Yes	17.3 x 6.2 x 10.9	17	299.95		
GX-M50		X	Yes	25-21 ±3	F	3	0.04	62	72	4	2	Yes	No	Yes	17.3 x 6.2 x 10.9	16	375.00		Dolby FM. As above.
GX-F80		X	Yes	25-21 ±3	F	3	0.035	62	72	4	2	Yes	No	Yes	17.3 x 5.3 x 13.4	20	495.00		Dolby FM, solenoid controls.
GX-F90		X	Yes	25-21 ±3	F	3	0.03	62	72	4	2	Yes	No	Yes	17.3 x 4.1 x 14.6	22	595.00		
CR-83D	8	Yes	60-14 ±3	F	2	0.15	48				Yes	No	No	16.5 x 4.3 x 9.6	11.7	225.00			
B+C/AVNET	T-05	X	Yes	30-18 ±3	F	2	0.07	55	63	4	No	Yes	No	Yes	15 1/2 x 5 1/2 x 9 1/2	11.3	209.95		Dolby N/R, MPX filter defeat.
	T-1 (1 1/2)	X	Yes	30-18 ±3	F	2	0.06	55	63	6	No	Yes	No	Yes	15 1/2 x 6 x 9 1/2	11.7	299.95		As above, plus two-speed. Specs. here, 1 1/2-ips.
	T-1 (3/4)			30-20 ±3			0.04	59	67										Specs. here, 3/4-ips.
	T-2 (1 1/2)	X	Yes	25-19 ±3	F	2	0.06	56	64	6	No	Yes	No	Yes	16 1/2 x 6 x 9 1/2	12.8	349.95		Features as above, plus overload LED; two-speed, here, 1 1/2-ips.
	T-2 (3/4)			25-21 ±3			0.04	60	68										Specs. here, 3/4-ips.
	T-3 (1 1/2)	X	Yes	20-20 ±3	F	3	0.05	57	65	6	No	Yes	No	Yes	17 1/2 x 6 1/2 x 10	14.8	529.95		Features as above, plus dual capstans and Record Cal; two-speed, here, 1 1/2-ips.

(Continued)



Pioneer CT-F1250



Teac C-2



Tandberg TCD-440A



Sherwood CD-200 CP

Thorens PC-650



H.H. Scott 670D



Sanyo D60

MANUFACTURER	Model	'X' = cassette; 'T' = cartridge	Auto Off	Frequency response, Hz-Hz, \pm dB	Top Load = T; Front Load = F	Number of Heads	% wow & flutter	S/N, dB, W rms	S/N, dB, without Dolby	Number of tapes & EQ settings	Micro mixing (I) yes, no	Locking pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
B+C/AVNET (Continued)	T-3 (3%)			20-22 \pm 3			0.03	61 69											Specs. here, 3% ips.
	T-4M (1%)	X	Yes	20-21 \pm 3	F 3		0.05	60 68 6	2	Yes	No	Yes	Yes	Yes	17"x6 1/2"x10	18	849.95	Features as above, plus two motor, solenoid, metal tape capability, MPU, bar graph display, bias trim; two-speed, here, 1 1/2 ips. Specs. here, 3% ips.	
	T-4M (3%)			20-24 \pm 3			0.03	64 72											
BANG & OLUFSEN	Beocord 5000	X	Yes	30-15	T 2		0.05	57 65 2	No	Yes	No	No	Yes	Yes	18 1/2"x11x3 3/4"	19 1/4"	695.00		
	Beocord 1900	X	Yes	30-15	T 2		0.15	56 64 2	No	Yes	No	Yes	Yes	Yes	15 1/2"x9 1/2"x3 3/4"	11	495.00		
CALIBRE	440	X	Yes	30-15.5 \pm 3	F 2		0.06	53 61.5 3	No	Yes	No	Yes	Yes	Yes	8.16x12.6x4.8	15.7	335.00		LEDs, Dolby FM.
CRAIG	S201	X	Yes	30-10 \pm 2	F 2		0.1	50 60 3	No	Yes	No	No	No	No	17x6 1/4x11 1/4"	12 3/4"	299.95		
	H221	X	Yes	40-15 \pm 3	F 2		0.15	40 50 3	No	Yes	No	No	No	No	15 1/2"x5 1/4x10 1/2"	8 3/4"	219.95		
	H261	B	Yes	60-10 \pm 3	F 2		0.1	45 55 1	No	Yes	No	No	No	No	12 1/2"x4 1/2x8 1/2"	4 1/2"	159.95		
	H241	B	Yes	60-10 \pm 3	F 2		0.1	45 55 1	No	No	No	No	No	No	8 1/2"x3 1/2x9 1/2"	4 1/2"	71.95		
DUAL	C810	X	Yes	20-17 \pm 3	F 2		0.045	67 3	No	Yes	No	No	Yes	Yes	17 1/2"x5 1/4x13 1/4"	17 1/2"	329.95		
	C820	X	Yes	20-19 \pm 3	F 2		0.04	67 6	No	Yes	Yes	Yes	Yes	Yes	17 1/2"x5 1/4x13 1/4"	20	419.95		LED EQ indicators, metal tape capability.
	C830	X	Yes	20-20 \pm 3	F 3		0.035	69 6 2	Yes	Yes	Yes	Yes	Yes	Yes	17 1/2"x5 1/4x13 1/4"	20	499.95		As above.
	C839RC	X	Yes	20-20 \pm 3	F 2		0.03	69 6 2	Yes	Yes	Yes	Yes	Yes	Yes	17 1/2"x5 1/4x13 1/4"	25	850.00		As above, auto reverse with opt. remote control, solenoid operation.
EUMIG	CCD	X	Yes	20-20 \pm 3	T 3		0.05	64 72 3	2	Yes	No	Yes	Yes	Yes		16	1,300.00		W. remote control.
	F1-1000	X	Yes	20-20 \pm 3	F 3		0.035	64 72 3	2	Yes	Yes	Yes	Yes	Yes		22	1,550.00		Computer transport and bias, EQ, Dolby calibration.
HARMAN/ KARDON	hk1500	X	Yes	30-15 \pm 3	F 2		0.06	55 63 2		Yes	No	No	1	16 1/2"x10 1/4x7 1/4"	17	249.00			
	hk2500	X	Yes	20-16 \pm 3	F 2		0.06	55 63 3		Yes	No	Yes	2	16 1/2"x10 1/4x7 1/4"	18	319.00			
	hk3500	X	Yes	20-17.5 \pm 3	F 3		0.05	57 65 3	2	Yes	No	Yes	2	16 1/2"x10 1/4x7 1/4"	20	549.00			Phase compensated.
HITACHI	D-5500	X	Yes	30-19 \pm 3	F 3		0.028	60 68 Var.	2	Yes	No	Yes	3	17 1/2"x12 1/2x7 1/4"	31	1,200.00			Wireless remote, dual capstan, 2 motor, Dolby FM, computer bias/level/EQ, memory repeat play.
(Continued)																			

CASSETTE & 8-TRACK TAPE DECKS

MANUFACTURER	Model	X = cassette, R = 8-track	Auto Off	Frequency response Hz-kHz ±dB	Top Load: T, Front Load: F	Number of Heads	% wow & flutter	S/N, dB, without Dolby	S/N, dB, with Dolby	Number of bias & EQ settings	Mike mixing II yes, no, inputs	Locking pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
HITACHI (Continued)	D-7500	X	Yes	30-18 ±3	F 3	0.05	60 68	3 2	Yes	No	Yes	Yes	Yes	17½x10x7½	19%	695.00		Dual capstan, Dolby FM, Dolby N/R record cal., Hall element, playback head, opt. remote, logic controls.	
	D-980	X	Yes	30-18 ±3	F 3	0.03	59 67	Var. 2	Yes	No	Yes	3	17½x12½x7½	17	549.95		Opt. remote, logic controls, dual capstan, 2 motor, Dolby N/R record cal., fine bias, memory repeat play, Dolby FM.		
	D-850	X	Yes	30-15 ±3	F 3	0.05		3	No	Yes	No	No	Pk. Mtr.	17½x10x5½	15.4	399.95		Dual capstan, Dolby N/R record cal., FM Dolby.	
	D-777	X	Yes	30-15 ±3	F 3	0.06	58 66	Var. 2	Yes	No	No			17½x10x6½	17	449.95		Dual direction record/playback, fine bias & bias meter, auto reverse continuous play.	
	D-75S	X	Yes	30-17 ±3	F 2	0.04	58 66	4		Yes	No	No	Yes	17½x10½x4½	13.6	379.95		Metal tape capability, logic, repeat play/auto rewind.	
	D-55S	X	Yes	30-15 ±3	F 2	0.05	56 64	3		Yes	No	No	Yes	17½x10½x4½	12.5	279.95		Music Search System.	
	D-40S	X	Yes	30-15 ±3	F 2	0.055	56 64	3		Yes	No	No	5	17½x10½x4½	11	229.95		Dual meters + 5 LED peak indicators.	
D-230	X	Yes	30-13 ±3	F 2	0.07	55 63	3		Yes	No	No	No	15½x10x5½	8.75	179.95				
JVC	KD-A8	X	Yes	25-17 ±3	F 2	0.035	60 70	4		Yes		Yes	Yes	17½x15½x4½	24.2	749.95			
	KD-85	X	Yes	30-17 ±3	F 2	0.05	57 67	3		Yes			Yes	17½x13½x6½	18.3	429.95			
	KD-85	X	Yes	30-17 ±3	F 2	0.04	57 67	3		Yes			Yes	17½x12½x6½	21.8	529.95			
	KD-S201	X	Yes	30-16 ±3	F 2	0.06	56 66	3		Yes				19½x14½x6½	20.5	389.95			
	KD-1770II	X	Yes	30-16 ±3	T 2	0.05	56 66	3		Yes				16½x10½x4½	12.1	379.95			
	KD-3030	X	Yes	30-16 ±3	F 2	0.05	57 67	3		Yes		Yes		18½x13½x8½	25.3	549.95			
	KD-A1	X	Yes	40-15 ±3	F 2	0.08	57 67	2		Yes				15½x10½x5½	9	179.95			
	KD-10	X	Yes	40-15 ±3	F 2	0.06	56 66	3		Yes				16½x10½x5½	11.7	209.95			
	KD-A3	X	Yes	30-16 ±3	F 2	0.055	60 70	4		Yes				16½x10½x5½	12.3				
	KD-A5	X	Yes	30-16 ±3	F 2	0.04	60 70	4		Yes				16½x11½x4½	15				
	KD-A6	X	Yes	25-17 ±3	F 2	0.04	60 70	4		Yes		Yes		17½x12½x4½	18	479.95			
	KD-A7	X	Yes	25-17 ±3	F 2	0.04	60 70	4		Yes		Yes		17½x12½x4½	17.6				
	KD-A77	X	Yes	25-18 ±3	F 3	0.04	60 70	4		Yes		Yes		17½x15x4½	19.8				
KD-2	X	Yes	30-16 ±3	T 2	0.09	57 67	3		Yes				10½x11½x3½	7.9	349.95				
KD-1636II	X	Yes	30-16 ±3	T 2	0.08	57 67	3		Yes				14½x9½x4	10.3	399.95				
KENWOOD	KX-1030	X	Yes	35-17 ±3	F 3	0.06	55 65	3	Yes	Yes		Yes	Yes	16½x13½x6½	16.5	450.00			
	KX-830	X	Yes	35-15 ±3	F 2	0.06	52 62	3	Yes	Yes		Yes	Yes	16½x13½x16½	16.5	325.00			
	KX-760	X	Yes	30-16 ±3	F 2	0.05	50 60	3	Yes	Yes				18½x11½x5½	14.3	350.00			
	KX-650	X	Yes	30-16 ±3	F 2	0.05	52 62	2		Yes				17½x13½x6½	14.3	299.00			
	KX-650	X	Yes	30-16 ±3	F 2	0.05	52 62	2		Yes				15½x11½x6½	11.8	235.00			
LUX	5K50	X	Yes	30-18 ±3	F 3	0.03	56 66	Var. 2	Yes	No	Yes	Yes	Yes	17½x14½x5½	27.5	1,995.00			
	K12	X	Yes	30-20 ±3	F 2	0.04	60 69	3	2	Yes	No	Yes	Yes	17½x9½x5	23.1	995.00		Metal tape capability.	
	K10	X	Yes	30-20 ±3	F 2	0.04	60 69	3	2	Yes	No	Yes	Yes	17½x14½x5	23.1	745.00		As above.	
	K5A	X	Yes	30-20 ±3	F 2	0.06	58 65	3	2	Yes	No	Yes	Yes	17½x10½x6	12.8	495.00		As above.	
MARANTZ	SD-9000	X	Yes	25-23 ±3	F 3	0.03	62 72	4	2	Yes	No	Yes	Yes	16½x11½x5½	22	775.00		2 speed, metal tape capability, programmable playback.	
	SD-8000	X	Yes	25-23 ±3	F 2	0.03	62 72	4	2	Yes	No	Yes	Yes	16½x11½x5½	22	650.00		As above.	
	SD-6000	X	Yes	30-22 ±3	F 2	0.03	61 71	4	2	Yes	No		Yes	16½x11½x5½	19½	520.00		2 speeds, metal tape capability, 2 motor.	
	SD-4000	X	Yes	30-19 ±3	F 3	0.05	57 67	4	2	Yes	No		Yes	16½x9½x5½	19½	435.00		2 speed, metal tape capability.	
	SD-3000	X	Yes	35-19 ±3	F 2	0.05	57 67	3		Yes	No		Yes	16½x9½x5½	15½	295.00		2 speed.	
	SD-1000	X	Yes	35-19 ±3	F 2	0.06	57 66	3		Yes	No	No	No	16½x9½x5½	13½	235.00		2-speed.	
	SD-800	X	Yes	35-16 ±3	F 2	0.08	54 63	3		Yes	No	No	No	16½x9½x5½	12½	200.00			
MITSUBISHI	DT-10	X	Yes	40-15 ±3	F 2	0.06	56 64	2	2	Yes	No	Yes	Yes	16½x14½x6½	21	370.00			
	DT-30	X	Yes	40-20 ±3	F 3	0.05	58 66	3	2	Yes	No	Yes	Yes	16½x14½x6½	23	650.00		Closed loop dual capstan, automatic spacing pause system (ASPS), bias and azimuth adj.	
	MT-01	X	Yes	40-15 ±3	F 2	0.05	56 64	3	2	Yes	No	Yes	Yes	10½x9½x5½	13½	560.00		Mini. closed loop dual capstan, ASPS.	
NAD	6020															275.00			
	6100															425.00			

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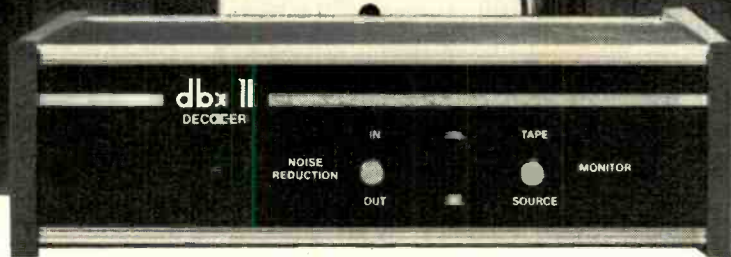
PRECEPT™



CASSETTE & 8-TRACK TAPE DECKS

MANUFACTURER	Model	"X" = cassette & 8-track	Auto Off	Frequency response, Hz/kHz \pm dB	Top Load [†] , Front Load ^{††}	Number of heads	% wow & flutter, w rms	S/N, dB, without Dolby	S/N, dB, with Dolby	Number of bias & EQ settings	Mike mixing (1=yes, no, inputs)	Locking pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
NAKAMICHI	1000II	X	Yes	35-20 \pm 3	F	3	0.05	65	2/2	3	Yes	No	Yes	Yes	20% \times 8% \times 11%	38	1,650.00		
	700II	X	Yes	35-20 \pm 3	F	3	0.05	65	2/2	3	Yes	No	Yes	Yes	20% \times 5% \times 10%	28	1,140.00		
	680	X	Yes	20-20 \pm 3	F	3	0.04	66	3/2	No	Yes	No	Yes	Yes	19% \times 12% \times 4%	18	1,350.00	2-speed (1 $\frac{1}{2}$ and 15/16 ips), metal tape capability. Metal tape capability.	
	582	X	Yes	20-20 \pm 3	F	3	0.05	66	3/2	No	Yes	No	Yes	Yes	19% \times 13% \times 5%	18 $\frac{1}{2}$	890.00		
	581	X	Yes	20-20 \pm 3	F	3	0.05	66	3/2	No	Yes	No	Yes	Yes	19% \times 13% \times 5%	18 $\frac{1}{2}$	770.00		
	580	X	Yes	20-20 \pm 3	F	2	0.05	63	2/2	No	Yes	No	Yes	Yes	19% \times 13% \times 5%	18 $\frac{1}{2}$	650.00	Opt. wireless remote control.	
	550	X	Yes	40-17 \pm 3	T	2	0.08	65	2	3	Yes	Yes	No	Yes	12% \times 13% \times 3 $\frac{1}{2}$	11 $\frac{1}{4}$	630.00	A.C. battery power, with A.C. pack.	
	350	X	Yes	40-15 \pm 3	T	2	0.08	58	2	3	Yes	No	No	Yes	7% \times 9% \times 3 $\frac{1}{2}$	6 $\frac{1}{4}$	440.00	With A.C. power pack.	
	250	X	Yes	40-17 \pm 3	T	1	0.08	62	2	No	No	No	No	No	7% \times 9% \times 3 $\frac{1}{2}$	6 $\frac{1}{2}$	335.00	As above, play back only.	
OPTONICA	RT 6905	X	Yes		F	4	0.038	60	70	4	2	Yes		Yes	Yes		35		Bias & sensitivity adj., metal tape capability, MPX filter, computer cue, timing & counting, peak & hold.
	RT 6506	X	Yes	30-18 \pm 3	F	2	0.45	58	68	4	2	Yes		Yes	Yes	17% \times 14% \times 5%	17.6		metal tape capability, MPX filter, peak, computer features as above.
	RT 6501	X	Yes	30-17 \pm 3	F	2	0.45	58	68	3	2	Yes		Yes	Yes	17.4% \times 14.1% \times 5%	19.9		MPX filter, computer features as above.
	RT 6206	X	Yes	30-19 \pm 3	F	2	0.4	57	67	4	2	Yes		No	Yes	1.7% \times 10% \times 5%			Peak & hold, metal tape capability, solenoid operation.
	RT 6201	X	Yes	30-16 \pm 3	F	2	0.5	57	67	3		Yes		No	Yes	16.6% \times 11.1% \times 6	18.5		Solenoid operation.
	RT 6105	X	Yes	30-16 \pm 3			0.55	57	67	4	2	Yes		No	Yes	17% \times 10% \times 5%	13.2		Peak, metal tape capability.
	RT 6005	X	Yes	30-14 \pm 3			0.6	57	67	3		Yes		No	Yes	17% \times 10% \times 5%	12.8		Peak.
	RT 1515	X	Yes	30-15 \pm 3			0.75	52	62	3		Yes	Yes	No	Yes	16.1% \times 9.6% \times 6.2	12.1		
PHASE LINEAR	7000-II	X		25-19 \pm 3	F	3	0.03	60	70	†	2	Yes		Yes	Yes	19% \times 15% \times 8 $\frac{1}{2}$	38	1,349.95	†Auto/bias EQ with 9 memories, metal tape capability.
PIONEER	CT-F1250	X	Yes	20-20	F	3	0.03	69	Var.	2	Yes	Yes	Yes	Yes	16% \times 14% \times 7%	24	695.00	Metal tape capability.	
	CT-F950	X	Yes	20-19	F	3	0.04	69	3	No	Yes	No	Yes	Yes	16% \times 14% \times 7%	22 $\frac{1}{4}$	595.00	As above.	
	CT-F850	X	Yes	20-19	F	3	0.04	69	3	No	Yes	No	No	Yes	16% \times 14% \times 5%	20 $\frac{1}{4}$	495.00	As above.	
	CT-F750	X	Yes	20-18	F	3†	0.05	69	3	No	Yes	No	No	Yes	16% \times 13% \times 5%	17 $\frac{1}{4}$	395.00	†3rd head for auto reverse, play/record; metal tape capability.	
	CT-F650	X	Yes	20-18	F	2	0.05	69	3	No	Yes	No	No	No	16% \times 13% \times 5%	15 $\frac{1}{4}$	295.00	Metal tape capability.	
	CT-F500	X	Yes	30-16	F	2	0.05	64	3	No	Yes	No	No	No	15% \times 10% \times 5 $\frac{1}{2}$	11	195.00		
	RADIO SHACK	SCT-16	X	Yes	30-15 \pm 3	F	2	0.07	60	6	No	Yes	No	No	No	15% \times 10% \times 5%	12 $\frac{1}{2}$	299.95	
SCT-30		X	Yes	30-16 \pm 3	F	3	0.06	61	6	No	Yes	No	No	No	18% \times 10% \times 5 $\frac{1}{2}$	16 $\frac{1}{2}$	399.95	Dual capstan, adj. bias, Dolby FM.	
SCT-19		X	Yes	30-14 \pm 3	F	2	0.08	59	4	No	Yes	No	No	No	15% \times 9% \times 5%	10 $\frac{1}{4}$	199.95		
SCT-3000		X	Yes	30-20 \pm 3	F	3	0.05	61	3	No	Yes	No	Yes	Yes	17% \times 11% \times 4%		579.95	As above.	
SCT-20		X	Yes	30-13 \pm 3	F	2	0.12	58	4	No	Yes	No	No	No	13% \times 11% \times 5 $\frac{1}{2}$		149.95		
SCT-12		X	Yes	50-11 \pm 3	T	2	0.2	48	2	No	Yes	No	No	No	5% \times 9% \times 3 $\frac{1}{2}$	4	79.95	Auto level control.	
SCP-2		X	Yes	50-10 \pm 3	T	1	0.2	52				Yes	No	No	5% \times 9% \times 3		49.95	Playback only.	
TR-169		B	Yes	50-10 \pm 3	F	1	0.2	46				No	No	No	8% \times 8% \times 4		49.95	As above.	
TR-884		B	Yes	50-10 \pm 3	F	2	0.2	45		No	No	No	No	No	4% \times 13% \times 8%		99.95		
TR-883		B	Yes	50-13 \pm 3	F	2	0.15	48		No	Yes	No	No	No	4% \times 14% \times 8%		139.95		
TR-803	B	Yes	50-13 \pm 3	F	2	0.14	48	56		No	Yes	No	No	5% \times 16% \times 10%		199.95			
REFERENCE/QUADRAFLEX	412D	X	Yes	30-18 \pm 3	F	2	0.06	56	62	3	No	Yes	No	No	15% \times 10% \times 6%	18 $\frac{1}{2}$	249.95	Metal tape capability.	

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With the cooperation of many respected record labels, dbx has obtained superbly engineered master tapes for remastering as dbx Encoded Discs. By use of unique dbx noise reduction technology, the surface noise on dbx Encoded Discs is typically 30dB lower than on conventional records, and in many cases, they will provide up to a 50% increase in dynamic range (the difference between the loudest and the quietest music passages).

On conventional records, loud passages of music are cut on the master disc as widely-spaced grooves. Music of wide dynamic range, therefore, requires limiting the playing time of each LP side. Even worse, music peaks are often compressed to allow cutting narrower grooves, while quiet passages are boosted to keep the signal above the record surface noise level.

Limiting, compression and "gain riding" of the music signal need not be employed when producing dbx Encoded Discs, because of the unique operation of the dbx encode/decode process. The full dynamic range

present in the original master tape is provided by dbx Encoded Discs without restricting playing time. Any noise you'll hear will more than likely be the noise that was present in the original master tape. Turntable rumble and groove echo disappear along with the record surface noise, while inner-groove distortion is reduced as well.

dbx Encoded Discs have been described as the most significant advance in recorded disc technology since the introduction of stereo some 25 years ago. However, this is something you should judge for yourself. Visit your nearest dbx dealer and let him play a dbx Encoded Disc through the dbx Model 21 Disc Decoder on any quality stereo system. You too can enter the new, noise-free world of recorded music for less than the cost of a fine phono cartridge.

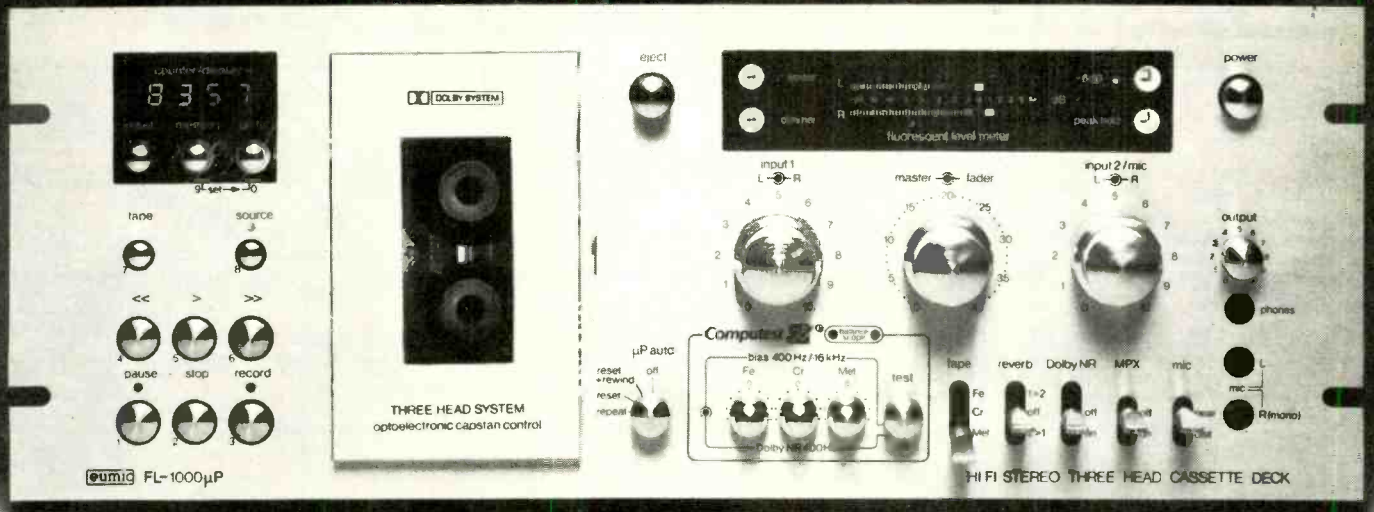
dbx

dbx, Incorporated
71 Chapel Street, Dept. 1
Newton, MA 02195
617/964-3210

Making Good Sound Better

CASSETTE & 8-TRACK TAPE DECKS

Manufacturer	Model	"X" = cassette, "8" = 8-track	Auto Off	Frequency response, Hz-kHz, \pm dB with best tape	Top Load?; Front Load?; F	Number of Heads	% wow & flutter, W rms	S/N, dB, without Dolby	S/N, dB, with Dolby	Number of bias & EQ settings	Mike mixing?; Yes, no, inputs	Locking pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
ROTEL	RD-2200M	X		30-19 \pm 3	F 2	0.05	56 64 3	No	Yes	No	Yes	Yes	Yes	Yes	19x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	450.00		Metal tape compatible.
	RD-2000	X		30-16 \pm 3	F 2	0.05	54 63 3	No	Yes	No	Yes	Yes	Yes	Yes	19x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	14	370.00		
	RD-1000	X		30-17 \pm 3	F 2	0.045	56 64 3	No	Yes	No	Yes	Yes	Yes	Yes	17x3 $\frac{1}{2}$ x11 $\frac{1}{2}$	17	440.00		Solenoid operation, auto-rewind/repeat.
	RD-18F	X		30-15 \pm 3	F 2	0.08	53 63 2	No	No	No	No	Yes	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	12	250.00		
	RD-25F	X		30-16 \pm 3	F 2	0.06	54 63 3	No	Yes	No	No	Yes	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	340.00		
SAE	Two C4	X		30-18 \pm 2.5	F 2	0.06	57 65 3	No	Yes	No	Yes	No	No	No	18 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	20	500.00		Full Logic controls, opt. remote.
	Two C3D	X		30-18 \pm 3	F 2	0.06	56 64 3	No	Yes	No	Yes	No	No	No	17.4x14x5.3	18	400.00		
SANSUI	SC-5330	X	Yes	20-20 \pm 3	F 2	0.038	59 69 3	2	Yes	Yes	Yes	Yes	Yes	Yes	19x12x7 $\frac{1}{2}$	19.4	520.00		Metal tape capability, full logic solenoid controls.
	SC-3330	X	Yes	20-16 \pm 3	F 2	0.04	59 69 3	2	Yes	No	Yes	Yes	Yes	Yes	19x12x6 $\frac{1}{2}$	19.1	420.00		Metal tape capability, LED indicators.
	SC-3300	X	Yes	20-16 \pm 3	F 2	0.04	59 69 3	2	Yes	No	Yes	Yes	Yes	Yes	17x12x6 $\frac{1}{2}$	16.3	420.00		As above.
	SC-1330	X	Yes	20-16 \pm 3	F 2	0.05	59 69 3	2	Yes	No	Yes	Yes	Yes	Yes	19x12 $\frac{1}{2}$ x6 $\frac{1}{2}$	15.2	320.00		As above.
	SC-1300	X	Yes	20-16 \pm 3	F 2	0.05	59 69 3	2	Yes	No	Yes	Yes	Yes	Yes	17x12 $\frac{1}{2}$ x6 $\frac{1}{2}$	13	320.00		As above.
D-90	X	Yes	35-15 \pm 3	F 2	0.055	59 69 2	No	Yes	No	No	No	No	No	17x9 $\frac{1}{2}$ x5 $\frac{1}{2}$	10.8	200.00			
SANYO	RD5008	X	Yes	30-14	F 2	0.1	60	2						Yes	14x8x5		129.95		
	RD5030	X	Yes	30-16	F 2	0.08	62	3	2					Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		159.95		
	RD5250	X	Yes	30-16	F 2	0.08	64	3	2					Yes	16 $\frac{1}{2}$ x12x6		169.95		
	RD5035	X	Yes	30-19	F 2	0.08	62	4	2					Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		189.95		Metal tape capability.
	RD5340	X	Yes	30-17	F 2	0.05	64	3	2					Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$		229.95		
	RD5350	X	Yes	30-17	F 2	0.04	64	3	2					Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x6 $\frac{1}{2}$		239.95		
	Plus D45	X	Yes	30-19	F 2	0.05	59	67	4	2		Yes		Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		259.95		Metal tape capability.
	Plus D55	X	Yes	20-20	F 2	0.04	62	70	4	2		Yes		Yes	17 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		289.95		As above.
	Plus D60	X	Yes	20-20	F 2	0.04	62	70	4	2		Yes		Yes	17 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		329.95		
	Plus D62	X	Yes	20-20	F 2	0.04	62	70	4	2		Yes		Yes	17 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$		329.95		Metal tape capability.
	Plus D65	X	Yes	20-20	F 3	0.04	62	70	4	2		Yes		Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$		399.95		As above, with electronic touch controls.
	RD5370	X	Yes	30-19	F 3	0.04	62	70	4	2		Yes	Yes	Yes	17 $\frac{1}{2}$ x12 $\frac{1}{2}$ x6 $\frac{1}{2}$		399.95		
	RD5372	X	Yes	30-19	F 3	0.04	62	70	4	2	Yes	Yes	Yes	Yes	17 $\frac{1}{2}$ x12 $\frac{1}{2}$ x6 $\frac{1}{2}$		499.95		Metal tape capability, 2-motor solenoid operation.
H.H. SCOTT	670D	X	Yes	25-16 \pm 3	F 2	0.07	56 64 3		Yes	No	Yes	Yes	Yes	5 $\frac{1}{2}$ x17x11 $\frac{1}{2}$	18	249.95		Rack mount opt.	
SHARP	RT 4488	X	Yes	20-16	F 2	0.048	58 68 4	2	Yes	No	Yes	Yes	Yes	17x5 $\frac{1}{2}$ x14 $\frac{1}{2}$	21	499.95		Computer cue, counting & timing; MPX filter, metal tape capability, peak & hold.	
	RT 3388A	X	Yes	30-16 \pm 3	F 2	0.055	58 68 3	2	Yes	No	Yes	Yes	Yes	17 $\frac{1}{2}$ x5 $\frac{1}{2}$ x14 $\frac{1}{2}$	21	409.95		Computer features as above.	
	RT 2266	X	Yes	30-18 \pm 3	F 2	0.045	57 67 4	2	Yes	No	No	Yes	Yes	17x5 $\frac{1}{2}$ x10 $\frac{1}{2}$	20	449.95		Solenoid operation, metal tape capability, peak & hold.	
	RT 2251	X	Yes	30-16 \pm 3	F 2	0.055	56 66 3		Yes	No	No	Yes	Yes	16 $\frac{1}{2}$ x6x11 $\frac{1}{2}$	21	359.95		Solenoid operation.	
	RT 1199	X	Yes	40-16 \pm 3	F 2	0.058	57 67 4	2	Yes	No	No	Yes	Yes	17x5 $\frac{1}{2}$ x10 $\frac{1}{2}$	16	329.95		Metal tape capability, peak & hold.	
	RT 1177	X	Yes	40-14 \pm 3	F 2	0.065	57 67 3		Yes	No	No	Yes	Yes	17x5 $\frac{1}{2}$ x10 $\frac{1}{2}$	16	269.95			
	RT 1165II	X	Yes	30-14 \pm 3	F 2	0.08	52 62 3	2	Yes	No	No	Yes	Yes	15 $\frac{1}{2}$ x6 $\frac{1}{2}$ x8 $\frac{1}{2}$	16	239.95		Editor control.	
	RT 1157II	X	Yes	40-14 \pm 3	F 2	0.08	52 62 3		Yes	No	No	No	No	15 $\frac{1}{2}$ x6 $\frac{1}{2}$ x8 $\frac{1}{2}$	16	219.95			
RT 1144	X	Yes	40-13 \pm 3	F 2	0.08	52 62 3		Yes	No	No	No	No	16 $\frac{1}{2}$ x6 $\frac{1}{2}$ x8 $\frac{1}{2}$	15	189.95				
RT 1125	X	Yes	40-13 \pm 3	F 2	0.09	50	3		Yes	No	No	No	16 $\frac{1}{2}$ x6 $\frac{1}{2}$ x9 $\frac{1}{2}$	15	169.95				
SHERWOOD	CD-200 CP	X	Yes	30-17 \pm 3	F 2	0.08	58 68 3	2	Yes	No	Yes	Yes	Yes	17x12 $\frac{1}{2}$ x6	16 $\frac{1}{2}$	330.00			
SONY	TC-K75	X	Yes	30-18 \pm 3	F 3	0.04	60 70	Var.	No	Yes	No	Yes	Yes	17x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	14	600.00		Var. bias, solenoid logic controls.	
	TC-K65	X	Yes	30-18 \pm 3	F 2	0.04	59 69 3	2	Yes	No	Yes	Yes	Yes	17x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	500.00		Metal-tape capable, solenoid logic controls, random music sensor.	
	TC-K55	X	Yes	30-17 \pm 3	F 2	0.04	58 68 3	No	Yes	No	No	No	No	17x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	400.00		Solenoid logic controls.	
	TC-K45	X	Yes	30-15 \pm 3	F 2	0.05	58 68 3	No	Yes	No	Yes	Yes	Yes	17x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	320.00		Auto-play.	
	TC-K35	X	Yes	30-15 \pm 3	F 2	0.05	58 68 3	No	Yes	No	No	No	No	17x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13	250.00			
	TC-K1	X	Yes	50-13 \pm 3	F 2	0.08	55 65 3	No	Yes	No	No	No	No	17 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	11	180.00			
	TC-K96R	X	Yes	30-16 \pm 3	F 3	0.05	59 69 3	2	Yes	No	Yes	No	No	18 $\frac{1}{2}$ x12 $\frac{1}{2}$ x6 $\frac{1}{2}$	21	620.00		Computer auto reverse, solenoid logic controls, remote.	
	TC-K88B	X	Yes	30-19 \pm 3	F 2	0.03	60 70 3	No	Yes	No	No	Yes	Yes	16 $\frac{1}{2}$ x14 $\frac{1}{2}$ x3 $\frac{1}{2}$	22				
TC-D5	X	No	30-16 \pm 3	T 2	0.06	59 69 3	No	Yes	Yes	Yes	No	Yes	9 $\frac{1}{2}$ x6 $\frac{1}{2}$ x1 $\frac{1}{2}$	3 $\frac{1}{2}$	680.00				
TC-K60	X	Yes	30-16 \pm 3	F 2	0.045	59 69 3	No	Yes	No	Yes	Yes	Yes	18 $\frac{1}{2}$ x12 $\frac{1}{2}$ x6 $\frac{1}{2}$	18 $\frac{1}{2}$	550.00				
TANDBERG	TCD-320	X	Yes	40-17 \pm 3	T 2	0.09	56 66 2	No	Yes	No	No	Yes	Yes	18 $\frac{1}{2}$ x4 $\frac{1}{2}$ x9	15	700.00		3 motors, dual capstan.	
	TCD-340A	X	Yes	40-18 \pm 3	T 3	0.08	56 66 2	No	No	No	No	Yes	Yes	18 $\frac{1}{2}$ x4 $\frac{1}{2}$ x9	15	1,200.00		Actilinear recording system; 3 motors, dual capstan.	



Calling the FL-1000 a cassette deck is like calling a Ferrari transportation.

The owner of a Ferrari knows his car is much more than transportation. It'll get you there, but with a difference. A difference that comes from years of dedication to building precision machinery with an emphasis on performance and pleasure.

Similarly, anyone who uses the new Eumig FL-1000 immediately recognizes how much better it is—and how much more it does—than any other cassette deck. Much like the Ferrari, it is built for total satisfaction, to give top performance and instant response, where the competition just... works.

The FL-1000 has the most sophisticated microprocessor ever used in a cassette deck. It's so sophisticated, in fact, that it can be directly interconnected with most popular minicomputers through its standard IEEE buss for data storage and retrieval or automated music programming. The microprocessor provides logic-perfect tape transport supervision, plus automatic programmable stop and repeat. There's even an automatic searching mode to select any programmed point on the tape just by punching digits on the keyboard. The tape counter is purely electronic, with digital readouts, and the motor automatically slows when it approaches your selection and stops at the perfect point so you hear only what you programmed.

Our Computest automated test system and 400Hz and 14kHz test oscillators help you set optimum bias, equalization and Dolby™ levels for any tape, including the newest pure metal formulations. And our superb switchable limiter circuit—absolutely

undetected in operation—assures distortion-free recordings with any tape or sound source.

Instead of clunking solenoids, the FL-1000 uses two electronically controlled motors for mechanical functions and to move the tape. The capstan motor incorporates Eumig's unique optoelectronic control. Instead of heavy flywheels and cumbersome belts, we use a low-mass disc with 2500 precisely photo-etched lines that are read by an optical sensor at the rate of 15,000 pulses per second. Speed correction is instantaneous, and wow and flutter are kept to an insignificant 0.035%.

Naturally the Eumig FL-1000 has three heads and double Dolby for true monitoring. And added flexibility is provided by two mixable stereo inputs with a cross fader, reverb without patch cords, fixed and variable outputs, fluorescent level meters with peak hold, and even a read-out that says "END" when the tape is finished.

If you want to understand and appreciate a fine car, a test drive is best. It's much the same with the FL-1000; so visit your Eumig dealer to audition the FL-1000 and the companion tuner, preamp and power amp. To set the right mood, make the trip in a Ferrari.



eumig®

Eumig (USA) Inc.,
Lake Success Business Park, 225 Community Drive,
Great Neck, New York 11020, (516) 466-6533
Enter No. 28 on Reader Service Card

CASSETTE & 8-TRACK TAPE DECKS

MANUFACTURER	Model	X = cassette, Y = 8-track		Frequency response, Hz-kHz \pm dB	Top Load: F = Front Load, F = Front	Number of Heads	% wow & flutter, w rms	S/N, dB, without Dolby	S/N, dB, with Dolby	Number of bias & EQ settings	Mike mixing (Y = no. inputs)	Locking/pause control	Limiter	Memory Rewind	Peak level indicator(s)	Dimensions, inches	Net Weight, lbs.	Price	Notes
		Auto Off	Auto Off																
TANBERG (Continued)	TCD-440A	X	Yes	20-20 \pm 3	T	3	0.06	58	70	3	No	No	No	Yes	2	18 $\frac{1}{2}$ x4 $\frac{1}{4}$ x9		1,600.00	Dyn. EQ and actilinear record system 3 motors; logic-flying start.
TEAC	A-601 R	X	Yes	40-14 \pm 3	F	2	0.08	55	65	3	2	Yes	No	Yes	No	17 $\frac{1}{2}$ x12 $\frac{1}{2}$ x7	26 $\frac{1}{2}$	650.00	Auto reverse, instant direction change.
	CX-650R	X	Yes	40-15 \pm 3	F	3	0.06	56	66	3	2	Yes	No	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	26 $\frac{1}{2}$	700.00	Auto reverse, bi-directional & programmable record/play.
	M-124	X	Yes	40-14 \pm 3	F	2	0.07	55	65	2	2	Yes	No	Yes	No	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x6 $\frac{1}{4}$	15 $\frac{1}{4}$	450.00	Sync-cassette, cross feed mike-blend.
	C-3	X	Yes	30-18 \pm 3	F	3	0.05	58	68	3	2	Yes	No	Yes	Yes	19x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	22	600.00	Metal tape capability, opt. dbx, dual process Dolby N/R.
	C-2	X	Yes	30-18 \pm 3	F	3	0.05	58	68	3	2	Yes	No	Yes	Yes	19x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	31	1,000.00	As above.
	C-1	X	Yes	30-18 \pm 3	F	3	0.04	60	70	3	2	Yes	No	Yes	Yes	18 $\frac{1}{2}$ x13 $\frac{1}{2}$ x6 $\frac{1}{4}$	32	1,350.00	Bias/EQ card, pitch control, 3 motor, opt. dbr.
	A-510	X	Yes	40-14 \pm 3	F	2	0.06	56	66	3	2	Yes	No	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	20	475.00	F. L. bar meter.
	A-430	X	Yes	40-15 \pm 3	F	3	0.07	55	65	3	2	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x6 $\frac{1}{2}$	18 $\frac{1}{2}$	500.00	Auto bias, metal tape capability.
	A-550RX	X	Yes	30-17 \pm 3	F	2	0.05	56	66	3	2	Yes	No	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	22	550.00	Built-in dbx.
	CX-210	X	Yes	40-14 \pm 3	F	2	0.07	55	65	2	2	Yes	No	No	No	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13 $\frac{1}{2}$	200.00	
	CX-270	X	Yes	40-14 \pm 3	F	2	0.07	55	65	2	2	Yes	No	No	Yes	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5 $\frac{1}{2}$	13 $\frac{1}{2}$	250.00	F. L. bar meter.
	A-300	X	Yes	40-14 \pm 3	F	3	0.07	55	65	2	2	Yes	No	Yes	No	16 $\frac{1}{2}$ x11 $\frac{1}{2}$ x6 $\frac{1}{2}$	15 $\frac{1}{2}$	425.00	
	A-500	X	Yes	40-14 \pm 3	F	2	0.06	56	66	3	2	Yes	No	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	20	425.00	
TECHNICS	RS-9900US	X	Yes	25-20 \pm 3	F	3	0.04	57	67	3	2	Yes	No	Yes	Yes	Two Unit	51 $\frac{1}{2}$	2,000.00	Opt. remote, var. bias & EQ, logic solenoid controls. Dolby cal., oscillator.
	RS-M95	X	Yes	20-20 \pm 3	F	3	0.03	60	70	4	No	Yes	No	Two	Yes	5 $\frac{1}{2}$ x17 $\frac{1}{2}$ x13 $\frac{1}{2}$	26	1,300.00	Metal-tape capable, var. bias.
	RS-M85II	X	Yes	30-17 \pm 3	F	2	0.035	59	69	4	No	Yes	No	Yes	Yes	19x15 $\frac{1}{2}$ x3 $\frac{1}{2}$	23	700.00	Var. bias, metal-tape capable, solenoid controls.
	RS-M65	X	Yes	30-160 \pm 3	F	2	0.035	59	69	3	No	Yes	No	Yes	Yes	19x13 $\frac{1}{2}$ x3 $\frac{1}{2}$	16 $\frac{1}{2}$	550.00	Var. bias, IC logic controls.
	RS-M68	X	Yes	20-17	F	2	0.06	57	67	3		Yes	No	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x6 $\frac{1}{2}$	24	550.00	Auto reverse record & PB, memory auto-play.
	RS-M56	X	Yes	30-17	F	2	0.045	57	67	3	2	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	17	500.00	Micro computer music selector.
	RS-288	X	Yes	20-18	F	2	0.056	58	68	4	2	Yes	NO	Yes	Yes	17 $\frac{1}{2}$ x13 $\frac{1}{2}$ x5 $\frac{1}{2}$	21	480.00	Solenoid controls, var. bias.
	RS-M63	X	Yes	30-17 \pm 3	F	3	0.05	57	67	3	2	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	14	450.00	Metal-tape capable, var. bias, memory auto-play.
	RS-M44	X	Yes	30-17	F	2	0.05	57	67	3	No	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	14 $\frac{1}{2}$	400.00	Var. bias, music & selector.
	RS-M33	X	Yes	30-17	F	2	0.05	57	67	3	No	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	14 $\frac{1}{2}$	350.00	Memory auto-play.
	RS-M22	X	Yes	30-16	F	2	0.05	57	67	3	No	Yes	No	Yes	Yes	16 $\frac{1}{2}$ x10 $\frac{1}{2}$ x5 $\frac{1}{2}$	14 $\frac{1}{2}$	300.00	Rewind auto-play.
THORENS	PC-650	X	No	30-15 \pm 3	F	3	0.06	56	64	3	2	Yes	Yes	Yes	Yes	17 $\frac{1}{2}$ x14x5 $\frac{1}{2}$	19	1,300.00	
UHER/ MINEROFF	CR210	X	Yes	30-18 \pm 2.5	F	2	0.06	57	64	2	No	Yes	No	Yes	Yes	2x4x6	6	1,130.00	Auto Reverse.
	CR240	X	Yes	30-18 \pm 2.5	F	2	0.06	60	68	3	No	Yes	Yes	No	Yes	2x4x8	7	1,211.00	
VECTOR RESEARCH	VCX-600	X	Yes	30-20	F	3	0.06	56	65	3	2	Yes		Yes	No	17 $\frac{1}{2}$ x14 $\frac{1}{2}$ x5 $\frac{1}{2}$	22	750.00	Computer music search, metal tape capability, var. bias.
	VCX-500	X	Yes	30-20	F	2	0.06	56	65	3	2	Yes		Yes	No	17 $\frac{1}{2}$ x14 $\frac{1}{2}$ x5 $\frac{1}{2}$	22	575.00	Metal tape capability, var. bias, opt. remote control.
	VCX-300	X	Yes	30-19	F	2	0.09	56	65	3	2	Yes		Yes	No	17 $\frac{1}{2}$ x14 $\frac{1}{2}$ x5 $\frac{1}{2}$	17	400.00	Metal tape capability, var. bias.
YAMAHA	TC-1000	X		30-18 \pm 3		2	0.05	60	69		2							650.00	
	TC-920B	X		30-16 \pm 3		2	0.03	60	69									600.00	
	TC-720	X		40-15 \pm 3		2	0.06	57	66									450.00	
	TC-520	X		30-15 \pm 3		2	0.07	57	66									320.00	
	TC-320	X		40-16 \pm 3		2	0.07											240.00	

The Universal Expander

Dynamic range limiting during the production of records (and of FM broadcasts) has long been a source of irritation for music lovers. As playback equipment improves, the limitations of most program material become more and more obvious. The vast majority of records are produced with the lowest common denominator in mind—a system that is restricted in its ability to recreate natural dynamic range.

With the introduction of the Dynamic Expander, MXR's Consumer Products Group has achieved its goal of providing a signal expansion technique for all types of music compatible with the finest audiophile equipment available.

Enter the typical dynamic range expander:

While dynamics are restored, a series of disturbing side effects becomes apparent. Because typical expanders cannot distinguish scratches, ticks, pops, and rumble from music, these noises trigger the expansion circuitry. More importantly, because most existing expanders have a fixed value release time, they seem to 'pump' with some music, and hiss or 'breathe' with other kinds of music.

In most cases these drawbacks have outweighed the advantages of expansion for the critical listener.

Enter MXR's Dynamic Expander:

a linear signal processor with up to 8 dB upward expansion (restoring musical peaks) and as much as 21 dB downward expansion (reducing noise). MXR has solved the problem of 'breathing and pumping' by providing a variable release-time control that tailors the response characteristics of the expander to the program material.

A sophisticated level detection circuit discriminates between music and unwanted information such as

rumble and scratches. To monitor gain changes, a unique LED display accurately indicates the expander's effect on the signal whether in or out of the circuit. A level control adjusts the detector's sensitivity to optimize the expansion for varying signal levels, and additional controls provide in/out bypass switching and versatile taping facilities.

The MXR Dynamic Expander preserves the bandwidth, stereo image, and spectral balance of the original signal even after processing. Dynamic range expansion that is musically natural will restore the excitement and nuance that makes live music so emotionally satisfying, and will let you rediscover your cherished recordings.

Harnessing innovative technology and sophisticated production techniques, MXR continues its commitment to the music lover.

The expanding universe of signal-enhancing equipment from MXR's Consumer Products Group gives demanding music listeners maximum performance from their playback systems regardless of room acoustics or program deficiencies. The MXR Comander allows you to maintain the dynamic range of source material through open reel or cassette tape decks. Environmental equalization is easily achieved with your choice of stereo 10 band (full octave), stereo 15 band (two-third octave) or professional one-third octave equalizers all built to the exacting performance specs for which MXR is famous. See your MXR dealer.

MXR Innovations, Inc., 247 N. Goodman Street,
Rochester, New York 14607, (716) 442-5320

MXR Consumer Products Group



OPEN-REEL TAPE DECKS



Akai
Pro-1000



Pioneer
RT-2044



Radio Shack TR-3000

LETTER CODE FOR SPEEDS																								
A—7½, 3¾, 1½																								
B—7½, 3¾																								
C—7½, 3¾, 1½, 15/16																								
D—1½																								
E—15, 7½, 3¾																								
F—15, 7½																								
G—15, 7½, 3¾, 1½																								
H—15/16																								
Model	Speeds—see letter code	Maximum reel size, inches	Number of heads	Number of tracks	Number of channels	Number of motors	Drive motor type	Drive to capstan	Freq. resp. Hz/kHz, \pm dB with best tape at highest machine speed	Wow & Flutter, DIN 45-907, %	S/N, db	Output level at 0 VU, mV	Dolby N/R included	Mike mixing	Mike input Z, ohms	Record level indicator(s), type and quantity	Dimensions, inches	Weight, lbs.	Price, \$	Notes				
AKAI	GX-255	B	7	4	4	2	3	A.C. Servo	Direct	30-24 \pm 3	0.04	61	775	No	Yes	600	2 Mtrs.	17.3x16.5x9.5	35	650.00				
	GX-267D	B	7	6	4	2	3	A.C. Servo	Direct	30-25 \pm 3	0.04	60	775	No	Yes	600	2 Mtrs.	17.3x18.5x9.8	45.5	850.00				
	GX-620	B	10½	3	4	2	3	A.C. Servo	Direct	30-26 \pm 3	0.03	62	775	No	Yes	600	2 Mtrs.	17.4x17.6x9.5	39	725.00				
	GX-635D	B	10½	6	4	2	3	A.C. Servo	Direct	30-27 \pm 3	0.03	62	775	No	Yes	600	2 Mtrs.	17.4x19x10.1	46.1	995.00	Model GX-635DB with Dolby N/R, 1,095.00.			
	GX-650D	E	10½	3	4	2	3	A.C. Servo	Direct	30-30 \pm 3	0.04	58	775	No	Yes	600	2 Mtrs.	17.4x20.6x10	57.6	1,295.00				
	1722II	B	7	2	4	2	1	Ind.	Belt	30-21 \pm 3	0.14	50	1.23 V	No	No	600	2 Mtrs.	14x14.1x9.8	29	475.00				
	GX-4000D	B	7	3	4	2	1	Ind.	Belt	30-24 \pm 3	0.08	60	775	No	Yes	600	2 Mtrs.	17.3x12.4x9.1	29.1	399.95	Model GX-4000DB with Dolby N/R, 499.95.			
	GX-2700SS	B	7	4	4	2/4	3	A.C. Servo	Direct	30-21 \pm 3	0.07	54	775	No	Yes	600	4 Mtrs.	17.3x18.3x7.5	39.2	1,075.00				
	GX-6300SS	B	10½	4	4	4/2	3	A.C. Servo	Direct	30-21 \pm 3	0.06	54	775	No	Yes	600	4 Mtrs.	17.3x20.7x9.4	45.5	1,250.00				
	Pro-1000	E	10½	4	4/2	2	3	A.C. Servo	Direct	50-20 \pm 1	0.025	60	775	No	Yes	600/10K	2 Mtrs.	18x16¼x8½	62½	1,995.00	† Amp, 18x9x9; 22½ lbs.			
NAGRA	IV SD	E	10½	3	2	2	1	Closed Loop Servo	Direct	30-20 \pm 2	0.03 Wrms	72	1V	No	Yes	LO	1 Dual-Needle Peak	13.2x9.6x4.5	11.6	5,750.00				
PIONEER	RT-2044	F	10½	3	4	4	3	Hys. Sync.	Belt	30-28 \pm 3	0.04	55	450	No	Yes	27k	4 Mtrs.	18½x27½x10½	95	2,010.00				
	RT-2022	F	10½	3	2	2	3	Hys. Sync.	Belt	30-28 \pm 3	0.04	57	450	No	Yes	27k	2 Mtrs.	18½x21½x10½	78	1,590.00				
	RT-909	B	10½	4	4	2	3	F.G.D.C. Servo		20-30 \pm 3	0.04	60	450	No	Yes	2.6k	3 Mtrs.	18½x13½x12½	47½	895.00	Auto reverse. Fluoroscanner meters.			
	RT-901	B	10½	3	4	2	3	F.G.D.C. Servo		20-20 \pm 3	0.04	60	450	No	Yes	2.6k	3 Mtrs.	18½x13½x12½	46	795.00	Fluoroscanner meters.			
	RT-707	B	7	4	4	2	3	F.G.A.C. Servo	Direct	30-24 \pm 3	0.05	58	450	No	Yes	27k	2 Mtrs.	9x14x9	44	695.00	Auto reverse.			
	RT-701	B	7	3	4	2	3	F.G.A.C. Servo	Direct	30-24 \pm 3	0.05	58	450	No	Yes	27k	2 Mtrs.	19x14x9	43	595.00				
RADIO SHACK	TR-3000	B	7"	3	4	2	3	F.G.D.C. Servo	Belt	30-28 \pm 3	0.06	58	450	No	Yes	10k	2 VU Mtrs.	16x12¾x9¼	26½	449.95				
RE VOX	B77	B	10½	3	2/4	2	3	AC Servo	Direct	30-20 \pm 2	0.08	67	387	Opt.	No	20k	2 Mtrs.	17½x16¼x8½	37½	1,499.00				
	A700	E	10½	3	2/4	2	3	AC Servo	Direct	30-20 \pm 2	0.06	67	387	No	Yes	50, 600	2 Mtrs.	19x18¼x7	53	2,999.00				
SONY	TC-766-2	F	10½	3	2	2	3	A.C. Servo	Belt	30-30 \pm 3	0.018	64	775	No	Yes	10k	2 VU	17½x20½x9¼	58½	1,300.00	Opt. remote.			
	TC-765	B	10½	3	4	2	3	A.C. Servo	Belt	30-25 \pm 3	0.04	61	775	No	Yes	10k	2 VU	17½x20½x9¼	58½	1,200.00	As above.			
	TC-399	A	7	3	4	2			Belt	30-25 \pm 3	0.06	61	775	No	Yes	10k	2 VU	16½x17¼x7½	28½	500.00	Auto off.			
TANDBERG	TD-20A	B, F	10½	3	2/4	2	4	Phase Lock	Belt	20-26 \pm 2	0.04	69	1.5V	No	Yes	50-700	2 Mtrs.	17½x17½x6	38	1,500.00				

ReVox 877



Tandberg TD-20A



Teac X-10



LETTER CODE FOR SPEEDS		Model		Speeds — see letter code		Maximum reel size, inches		Number of heads		Number of tracks		Number of channels		Drive motor type		Drive to capstan		Freq. resp. Hz-KHz, ±dB with best tape at highest machine speed		Wow & Flutter, DIN 45507, %		S/N, db		Output level @ 0 VU, mV		Dolby B/R included		Mike mixing		Mike input Z, ohms		Record level indicator(s), Type and quantity		Dimensions, inches		Weight, lbs.		Price, \$		Notes	
TEAC	A-6100 MKII	F	10½	4	2	2	3	Hys. Sync.	Direct	40-22 ±3	0.03	67	300	No	Yes	600	2 VU	17½x20½x8½	48½	1,400.00	2/4-track play.																				
	A-6600	B	10½	4	4	2	3	D.C.	Direct	40-20 ±3	0.05	65	300	No	Yes	600	2 VU	21½x18½x10½	49½	1,575.00	Auto reverse/continuous play, twin capstan, bi-directional cueing.																				
	A-3300 SX 2T	F	10½	3	2	2	3	Hys. Sync.	Direct	30-26 ±3	0.04	67	300	No	Yes	600	2 VU	17½x17½x8½	44	1,050.00																					
	A-2340SX	B	7	3	4	4	3	Hys. Sync.	Direct	40-18 ±3	0.08	62	300	No	Yes	600	4 VU	13½x17½x8½	48½	1,175.00	Simul-sync., cueing.																				
	A-3440	F	10½	3	4	4	3	Hys. Snc.	Direct	40-22 ±3	0.04	65	300	No	Yes	600	4 VU	17½x20½x9½	55	1,600.00	Simul-sync, pitch control, cueing.																				
	X-10	B	10½	3	4	2	3	D.C.	Direct	40-20 ±3	0.03	63	450	No	Yes	200	2 VU	17x17½x10½	44	1,000.00	Dual capstan, closed loop, optional dbx, remote control, pitch control, cueing.																				
	X-10R	B	10½	6	4	2	3	D.C.	Direct	40-20 ±3	0.03	63	450	No	Yes	200	2 VU	17x17½x10½	44	1,150.00	Optional dbx, auto reverse, bi-directional record/play.																				
	X-7	B	7	3	4	2	3	D.C.	Direct	40-20 ±3	0.03	63	450	No	Yes	200	2 VU	17x14½x10½	39½	700.00	Dual capstan, pitch control, rec. mute, rack mount.																				
X-7R	B	7	6	4	2	3	D.C.	Direct	40-20 ±3	0.03	63	450	No	Yes	200	2 VU	17x14½x10½	39½	800.00	Dual capstan, pitch control, bi-directional record/play, rec. mute.																					
TECHNICS	RS-1500US	E	10½	4	2/4	2	3	A.C. Servo Quartz	Direct	30-30 ±3	0.018	60	550	No	Yes	200-10k	2 Mtrs.	19½x17½x10½	57	1,500.00	Adj. bias & EQ, timer start, full-logic solenoid controls. As above.																				
	RS-1506US	E	10½	4	4/2	2	3	A.C. Servo Quartz	Direct	10-30 ±3	0.018	57	550	No	Yes	200-10k	2 Mtrs.	19½x17½x10½	57	1,500.00																					
	RS-1520US	E	10½	4	2	2	3	A.C. Servo Quartz	Direct	30-30 ±3	0.018	60	1228	No	Yes	4.7k	2 Mtrs.	19½x18x10½	61	2,000.00	Pro version w. bal. inputs, edit dump, fine bias & EQ, true VU mtrs.																				
	RS-1700	E	10½	6	4	2	3	A.C. Servo Quartz	Direct	30-30 ±3	0.018	57	550	No	Yes	200-10k	2 Mtrs.	19½x17½x10½	58	2,000.00	Auto reverse play, record.																				
UHER/MARTEL	4400IC	C	5	2	4	2	1	Servo	Idler	35-20 ±2	0.15	62	1 V	No	No	Low	2 Peak Mtrs.	11x3½x9	8½	889.00																					
	5000	f	5½	2	2	1	1	Hys. Sync.	Idler	40-16 ±3	0.2	60	900	No	No	Low	1 Peak Mtr.	13x6x13	19	899.00	†3½, 1½, 15/16 ips.																				
	4000IC	C	5	2	2	1	1	Servo	Idler	35-20 ±2	0.15	64	1 V	No	No	Low	1 Peak Mtr.	11x3½x9	8	810.00																					
UHER/MINEROFF	4000L	C	5	2	2	2	1	Servo	Belt	20-20 ±2.5	0.1	58	350	No	No	600	1 Mtr.	18½x7x13½	9	861.00																					
	SG561	C	7	4	4/2	2	1	Hys. Sync.	Idler	20-20 ±2.5	0.07	65	500	No	Yes	600	2 Mtrs.	18½x7x13½	26	1,407.00																					
	SG521	A	7	2	4/2	2	1	Hys. Sync.	Idler	20-20 ±3	0.07	62	500	No	Yes	600	2 Mtrs.	18½x7x13½	18	858.00																					

EQUALIZERS



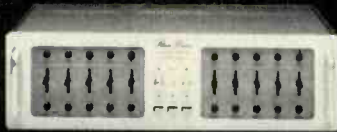
ADC
Sound Shaper Three



Audio Control C-101



Crown
EQ-2



Phase Linear 1100 Series Two



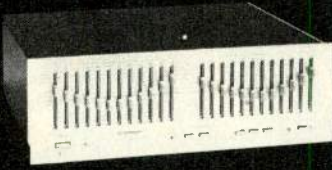
JVC SEA-80



Rotel RE-2000

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	Variable Center Frequencies	Variable Filter "Q"	Dimensions, inches	Weight, lbs.	Price, \$	Notes	
ADC	Sound Shaper Three	2	12	Var.	12	1	0.018	90	Yes	No	19x6 1/4x12	22	499.95	
	Sound Shaper Two/Mk 2	2	12		12	1	0.02	85	No	No	16 1/2x6 1/4x6 1/2	13	329.95	
	Sound Shaper One Ten	2	10	1	12	1	0.02	80	No	No	14 1/2x6 1/4x6 1/2	11	229.95	
	Sound Shaper One	2	5		12	2.45	0.05	80	No	No	10 1/2x5 1/2x6 1/2	6	119.95	
AUDIO CONTROL	520B	2	5	†	15	7	0.04	106	No	No	2.6x12.3x5	2 1/2	119.00	† 18dB/oct. subsonic filter, 36, 60, 120, 1k, 15.5k controls. Subsonic & infrasonic filters, EQ tape, stereo paired sliders. As above with pink noise generator. LED display real time analyzer, pink noise, microphone incl.
	C-22	2	10	1	15	7	0.04	106	No	No	19x3.5x6.5	6 1/4	249.00	
	C-25	2	10	1	15	7	0.025	106	No	No	19x3.5x6.5	7	299.00	
	C-101	2	10	1	15	7	0.025	106	No	No	19x3.5x6.5	8	549.00	
CERWIN-VEGA	GE-2	2	13	Var.	12	2	0.05	85	No	No	19x5 1/2x7 1/4	12	600.00	Half-octave below 250 Hz, subsonic filter.
CROWN	EQ-2	2	11	1/2	15	2.5	0.01	90	Yes		19x7x14 1/2	16	1,095.00	
DEVLIN	AECC-41	2	10	1	12	4	0.05	90	Yes	No	19x5 1/4x9 1/2	12	695.00	
HEATH	AD-1305	2	5		12	1.5	0.05	90			4 1/2x17 1/2x8	11	129.95	Kit.
JVC	SEA-20GL	2	7		12	4	0.03	70			4x15 1/2x10 1/2	7.5	189.95	
	SEA-50	2	10		12	4	0.03	80			6 1/2x16 1/2x13 1/2	15.2	289.95	
	SEA-80	2	10		12	2	0.003	118			6 1/4x17 1/2x12 1/2	17.6	599.95	
	SEA-7070	2	11		12	2	0.005	106	Yes		16 1/2x16 1/2x13 1/2	18.9	779.95	
KLARK-TEKNIK	DN22	2	11	1	12	9	0.05	95	No	No	19x5 1/2x8 1/2	18	830.00	12 dB/octave low to high filters, opt. balanced input & output. I.S.O., opt. balanced input & output.
	DN27	1	27	1/2	12	9	0.05	90	No	No	19x5 1/2x8 1/2	15	780.00	
LT SOUND	PEQ	2	4	Var.	15	1	0.007	90	Yes	Yes	19x3 1/2x7		475.00	
LUX	G11	2	10		12	6	0.005	115	No	No	17 1/4x12 1/2x4 7/8	12.9	495.00	
McINTOSH	MQ104	2	4	Var.	15	2.5	0.05	90	Yes	Yes	9 1/4x5 1/2x3 3/8	5	298.00	
MXR INNOVATIONS	Stereo Graphic	2	10	1	12	1	0.05	95	No	No	9 1/4x2x7	4 1/2	219.95	ISO centers.
	Stereo Fifteen Band	2	15	1/2	12	1	0.02	95	No	No	19x3 1/2x6	7	325.00	As Above.
	One-Third Octave	1	31	1/2	12	1	0.01	90	No	No	19x3 1/2x6	7	350.00	As Above.
MARANTZ	EQ10	2	10	1	10				No	No	16 1/2x2 1/2x7 1/4		200.00	
NIKKO	EQ-1	2	10	1	12	1	0.007	100	No	No	18 1/2x3 3/8x9 1/4	11	299.95	
	EQ-2	2	6	1.7	12	1	0.05	100	No	No			199.95	
ONKYO	E-30	2	11	1	10/5	1.5	0.01	100	No	No	17 1/4x14 1/4x3 1/4	14.3	549.95	
PHASE LINEAR	1100 Series Two	2	5	0.18-1.8		2	0.02	100	Yes	Yes	19x8x5 1/2	9.5	599.95	Parametric.
PIONEER	SG-9800	2	12	1	10	7.5	0.02	92	No	No	5 1/2x16 1/2x14	15 1/2	395.00	
	SG-9500	2	10	1	10	2	0.03	90	No	No	5 1/2x16 1/2x13 1/2	15 1/4	345.00	
QUADRAFLEX	210EQ	2	12	1	12	2	0.05	85	No	No	15 1/2x6 1/2x7	8 1/2	199.95	

Pioneer
SG-9800



MXR Stereo Fifteen Band



SAE 2800



Soundcraftsmen TG3044-R



Superex Gem-1



Spectro Acoustics 210R

	Model	No. of Channels	No. of Bands	Bandwidth, octaves	Boost/Cut Range, ± dB	Rated Output, rms V	% THD at rated output	dB S/M at rated output	Variable Center Frequencies	Variable Filter "Q"	Dimensions, inches	Weight, lbs.	Price, \$	Notes
RADIO SHACK	31-1987	2	5	1	12	10	0.02	80	No	No	4½x10½x6		69.95	
ROTEL	RE-2000	2	10	1	12	3.5	0.005	100	No	No	19x5½x13½	14	370.00	2 Tape Monitors.
	RE-700	2	7	1½	12	3.5	0.009	100	No	No	16½x10x5½	7½	180.00	
SAE	180	2	2	0.3-3.6	16	2.5	0.02	90	Yes	Yes	17½x4¼x3½	20	250.00	Full parametric.
	2800	2	4	0.3-3.6	16	2.5	0.02	95	Yes	Yes	19x8¼x3½	18	600.00	
	1800	2	2	0.3-3.6	16	2.5	0.02	95	Yes	Yes	19x5¼x3½	16	350.00	
	EQ4	1	4	0.1-3	16	2.83	0.02	100	Yes	Yes		8	320.00	High-pass filter, individual filter overload protectors.
SANSUI	SE-7	2	10	½	12	5	0.008	110	No	No	19x6½x11¼	10½	300.00	
	SE-5	2	8		12	5	0.008	110	No	No	19x4½x11¼	8½	230.00	
SHURE	MR610	1	8	1	12†	5	0.5	71			12x7x2½	4	177.60	†Cut only.
	SR107	1	10	1	15	6.2	1	99			18x8x1¼	7½	297.00	
SONTEC	HF-230	2	3	Var.	12	1	0.001	85	Yes	Yes	19x1¼x6	9	990.00	
SOUNDCRAFTSMEN	AE2420-R	2	10	1	16	10	0.01	105	No	No	19x5¼x11	30	499.00	Analyzer with pink noise generator, balance LEDs. LEDs for balancing zero-gain controls.
	RP2215-R	2	10	1	22	10	0.01	114	No	No	19x5¼x11	22	370.00	
	TG3044-R	2	21	Var.	22	10	0.01	114	No	No	19x5¼x11	23	550.00	As above with balanced or unbalanced output.
	RP2201-R	2	10	1	16	10	0.01†	105	No	No	19x5¼x11	21	299.00	Zero-gain controls.
	SE450	2	10	0	16	19	0.01	105	No	No	17x3½x10	14	249.00	As above.
SPECTRO ACOUSTICS	210R	2	10	1	15	2	0.03	96	No	No	19x5¼x7	9	300.00	
	2102R	2	10	1	15	2	0.03	96	No	No	19x3½x7¼	9	225.00	
SUPEREX	Gem-1	2	5	¾	12	2	0.02	92	No	No	6¼x4¼x2¼	2¼	89.95	
SYMMETRIC SOUND SYSTEMS	EQ-2	2	12	5/6	10	2	0.02	92	No	No	9¾x3¾x5¼	4	100.00	Kit.
TEAC	G5-20	2	10	1	12	0.3	0.03	82	No	No	17¾x3¾x6¾	10	350.00	
TECHNICS	SH-9010	2	5	Var.	12	1	0.02	90	Yes	Yes	4x19x14¼	13.2	540.00	
	SH-8010	2	5		12	1	0.05	95	No	No	3¾x17x9	7.1	180.00	
WHITE INSTRUMENTS	4002	1	27	½	10	6.1	0.2	92			18½x3½x8	11	780.00	Active EQ, opt. low-level bi-amp crossover.
	4004	1	24	½	15	6.1	0.1				19x3½x8	13	1,100.00	Passive EQ, high- & low-pass filters, opt. low-level bi-amp crossover, 600-ohm/600-ohm.
	4100	2	10	1	10	6.1	0.1	92			18½x3½x6	8	700.00	Active EQ, phono connect., low-level bi-amp crossover.
	4201	1	27	½	15	6.1	0.2	92			19x3½x8	11	800.00	Active cut-only EQ, high-pass filter, 10-dB make-up gain, opt. low-level bi-amp crossover.
	4220	1	9	1	10	6.1	0.1				19x1¼x6	6	220.00	Passive EQ, designed to interface with Hi-Z gear without matching loss, opt. low-level bi-amp crossover.
	4301	1	41	Var.	10	6.1	0.2	92			19x5¼x8	18	1,300.00	Active EQ, high-pass filter, input atten., opt. low-level bi-amp or tri-amp crossover, mid & high freq. trimmers.

HEADPHONES



Model	Operating Principle (Dynamic, electrostatic, etc.)	Frequency Range, Hz to kHz	Impedance, ohms	Sensitivity, dB SPL for 1 mW input	Maximum input, mW	Cord Length, feet	% THD at 95 dB SPL	Cord Style Flat—F Coiled—C	Weight, ounces	Price	Notes	
AKG	K-340	ES/Dyn.	15-25	400	95	10V	10	0.1	C	14	189.00	Two-way design with passive diaphragms in each circumaural earcup. No external polarization required.
	K-240	Dyn.	15-20	600	102	11V	10	0.3	F	10½	85.00	Six passive diaphragms in each semi-open earcup.
	K-141	Dyn.	20-20	600	98	11V	10	0.5	F	9½	69.00	Semi-open design.
	K-140S	Dyn.	20-20	600	97	11V	10	0.5	F	9	55.00	Supra-aural design.
	K-40	Dyn.	50-15	200	94	7V	10	1.0	F	6	27.00	Supra-aural design.
ACUTEX	HTS-1	Dyn.	35-22	8	115		10	0.5	F	7	49.95	
AUDIO-TECHNICA	ATH-1	Dyn.	30-20	4-16	93		8¼	0.8	F	4¾	29.95	
	ATH-3	Dyn.	25-20	4-16	94		11½	0.5	F	7	59.95	
	ATH-5	Dyn.	20-20	4-16	96		11½	0.4	F	7¼	79.95	
	ATH-6	ES	20-22	4-16	98		8¼	0.35	F	7½	99.95	W. impedance matching adapter.
	ATH-7	ES	10-22	4-16	98		8¼	0.25	F	7½	149.95	As above plus program and peak LEDs.
AUDIOTEX	30-5207	Dyn.	30-20	8			10		C	24	40.60	
	30-5203	Dyn.	20-25	8			10		C	24	36.35	
	30-5201	Dyn.	20-25	8			10		C	19	34.30	
BANG & OLUFSEN	U70	Dyn.	16-20	140	94†	2000	10	1	F	10.6	85.00	Semi-open design, † at 8 mW.
BEYER	DT 220	Dyn.	20-20	400	102	2000	10	1	F	9	64.95	
	DT 302	Dyn.	20-20	600	97	3790	10	1	F	3	29.95	Open-air design.
	DT 440	Dyn.	20-20	600	100	1580	10	1	F	9	64.95	
	DT 441	Dyn.	20-20	600	100	1580	10	1	F	9	74.95	
	ET 1000	ES	10-25	†	100		8		F	13	279.00	†With power supply.
CONCEPT	CEH	Dyn.	20-25	150	96	3T	12	0.25	F/C	10½	85.00	†W.
HERVIC	HP-1	Dyn.	18-22		100				C	6.7	55.00	
INFINITY SYSTEMS	ES1	ES	20-20 ±2	4-16	†	††	8	0.1	F	9	275.00	†96dB SPL @2 V input @ 1 kHz, ††50W @100 Hz.
JVC	HM-200E	D	20-20	600	96	500	6.6		F	24	99.95	Built-in binaural mike.
	HM-100	D	50-10	8	96		6.6		F	19	69.95	As above.
KOSS	ESP/10	ES	20-22	180	†		10	0.5	C	14	350.00	†1.9 V-rms at 1 kHz into E/10 energizer.
	PRO/4	Dyn.	10-22	220	†		10	0.5	C	15.5	85.00	†0.70 V-rms, sine wave, at 1 kHz.
	TRIPLE A	Dyn.	10-22	245	†		10	0.3	C	16.8	80.00	†0.6 V-rms, sine wave, at 1 kHz.
	TECHNICIAN/VFR	Dyn.	10-22	245	†		10	0.3	C	15.9	59.95	†0.70 V-rms, sine wave, at 1 kHz.
	TECH/2	Dyn.	10-22	245	†		10	0.5	C	13.6	54.95	†0.25 V-rms, sine wave, at 1 kHz.
	K/145	Dyn.	20-20	87	†		10	0.5	C	13.4	39.95	†0.09 V-rms, sine wave, at 1 kHz.
	K/135	Dyn.	10-18	98	†		10	1	C	14	39.95	†0.08 V-rms, sine wave, at 1 kHz.
	KO/727B	Dyn.	10-18	100	†		10	1	C	16.5	39.95	†0.14 V-rms, sine wave, at 1 kHz.
	K/6ALC	Dyn.	10-16	94	†		10	1	C	14	29.95	†0.15 V-rms, sine wave, at 1 kHz.
	K/6A	Dyn.	10-16	100	†		10	1	C	13	29.95	†1.1 V-rms, sine wave at 1 kHz.
	HV/11C	High Vel.	15-30	132.5	†		10	0.5	C	10.8	59.95	†0.9 V-rms, sine wave, at 1 kHz.
	HV/1A	High Vel.	15-30	157	†		10	0.5	C	10.1	54.95	†0.8 V-rms, sine wave, at 1 kHz.
	HV/1	High Vel.	20-20	168	†		10	0.5	C	10.1	49.95	
NAKAMICHI	HF-100	Dyn.	20-20	8	90	500†	8	0.8††	C	14	55.00	†mW, ††@100Hz, 110dB SPL.
PICKERING	OA-3A	Dyn.	20-20	100	110	0.2†	10	0.5††	F	7½	45.00	Open design, † Wrms, †† @ 110 dB.
	OA-5A	Dyn.	20-22	100	110	0.1†	10	0.5††	F	7½	60.00	As above.
	OA-7	Dyn.	20-22	100	110	0.1†	10	0.5††	F	6	70.00	As above.
PIONEER	SE-700	HPM	20-20	4-16	100	30k	10		F	10	100.00	
	SE-500	HPM	20-20	4-16	100	30k	10		F	11	70.00	
	Monitor 10	Dyn.	20-20	22	100	3.7k	16½		C	19	80.00	
(Continued)	SE-6	Dyn.	20-20	250	102	7k	10		F	7.2	70.00	

Sansui SS-80



Signet TK-22



Stanton XXI



Stax SR-5



Superex TRL-88



Wharfedale ID-2



Yamaha YH-1000



	Model	Operating principle (dynamic, electrostatic,)	Frequency range, Hz to kHz	Impedance, ohms	Sensitivity, dB SPL for 1 mW input	Maximum input, mV	Cord length, feet	% THD at 95 dB SPL	Cord Style Flat — F Coiled — C	Weight, ounces	Price	Notes		
PIONEER (Continued)	SE-4	Dyn.	20-20	250	96	7k	10		F	7.6	50.00			
	SE-2	Dyn.	20-20	250	99	7k	8½		F	7.3	30.00	†2-way.		
	SE-505	Dyn.†	20-20	4-15	98	2k	16½		C	24	75.00			
	SE-405	Dyn.	20-20	4-16	103	2k	16½		C	17	55.00			
	SE-305	Dyn.	20-20	4-16	98	2k	16½		C	15	45.00			
	SE-205	Dyn.	20-20	4-16		500	8½		F	15	30.00			
PRECISION FIDELITY	Fontek A4	ES	25-20	130	104†	30W	8	0.02	F	7	300.00		† At 1 W input.	
QUADRAFLEX	Q12	Dyn.	50-14 ±4	50	90	850	10	2.5	C	8	17.95			
	Q25	Dyn.	20-18.5 ±3.5	34.5	96	1250	10	2.0	C	10	29.95			
	Q35	Dyn.	20-20 ±3.5	122	93	1500	10	1.5	C	13	44.95			
	Q45	Dyn.	20-20 ±2	80	95	1800	10	1.0	C	10	54.95			
RADIO SHACK	Nova-30	Dyn.	30-18	8		500	10		C	14.2	25.00	Left/Right volume controls, 3½" speakers. Independent volume controls on earcups. Polyester-film dynamic elements. 6 passive diaphragms.		
	Pro-20	Dyn.	10-16	8		500	10		C		29.95			
	Nova-Pro	Dyn.	20-20	8	105	500	10		C		36.95			
	Pro-10	Dyn.	20-20	4-16	96	100	10		C	10	40.00			
	LV-10	Dyn.	20-20	4-16			10	0.5	C	10	40.00			
	Pro II	Dyn.	10-22	4-18			10		C		50.00			
Pro 50	Dyn.	16-20	600						10½	79.95				
REVOX	RH 310	Dyn.	20-20	600					F		80.00			
ROTEL	RH-930	Elect. Cond.	20-30	Adj.	104	200	14		C	10	80.00			
SAE	7000	Dyn.	30-19	400	90	1000	10	2	F	10	50.00	Semi-isolation design.		
SANSUI	SS-30	Dyn.	20-20	8	108	500	7		F	12	30.00	Separate channel controls. As above.		
	SS-40	Dyn.	20-20	8	108	500	7		F	13	42.00			
	CS-60	Dyn.	20-20	8	108	500	7		F	15	54.00			
	SS-80	Dyn.	20-20	200	108	500	12		C	17	72.00			
	SS-100	Dyn.	20-20	60	94	250	7		F	13	118.00			
	SENNHEISER	HD 400	Dyn.	20-18	600	88	15V	10	1.3	F	3		43.80	Open air design. Open air phones with ear surrounding cushions. Monaural, for TV listening. Sealed ear cushions. Wireless, built-in receiver for Infrared light. As above, but mono for TV listening. †Electret/electrostatic.
HD 414		Dyn.	16-20	2000	102	18V	10	1	F	4.8	74.80			
HD 420		Dyn.	18-20	600	94	8V	10	0.6	F	4.5	84.80			
HD 430		Dyn.	16-20	600	94	8V	10	0.6	F	6.7	119.00			
HD 424		Dyn.	16-20	2000	102	18V	10	0.9	F	6.7	108.80			
HD 4004		Dyn.	100-6	17	82	5V	25	1.5	F	0.6	32.50			
HD 224		Dyn.	16-20	200	94	7k	10	0.9	F	9	136.00			
HDI 434		Dyn.	16-20							13.5	211.00			
HDI 406		Mag.	50-7					1.5		2	108.00			
Unipolar		†	16-22	8				0.5	F	12	384.00			
SIGNET		TK22	Dyn.	20-20	4-16	96	4500		0.4		9	80.00	High/Low sensitivity switch.	
		TK33	Elect. Cond.,	10-22.5	4-18	100	20		0.1		10	250.00		
SONY	ECR 500	ES	20-20	30	91	12V	7½	0.03	F	12	120.00	Open air design.		
	DR-27	Dyn.	20-25	110	104	50 mW	6	0.03	F	15	100.00			
	DR-26	Dyn.	20-25	110	104	50 mW	6	0.03	F	14½	85.00			
	DR-25	Dyn.	20-22	110	104	50 mW	6	0.1	F	13	70.00			
	DR-55	Dyn.	20-20	14	102	100 mW	9	0.15	C	13½	50.00			
	DR-54	Dyn.	20-20	14	102	100 mW	9	0.15	C	13	40.00			
	DR-53	Dyn.	20-20	14	102	100 mW	9	0.15	C	12½	30.00			
	DR-6M	Dyn.	20-20	28	110	10 mW	6	0.1	F	12½	65.00			
	DR-2	Dyn.	20-20	10	104	100 mW	6	0.25	F	10½	22.00			

HEADPHONES

	Model	Operating Principle (dynamic, electrostatic, etc.)	Frequency Range, Hz to kHz	Impedance, ohms	Sensitivity, dB SPL for 1 mW input	Maximum Input, mV	Cord Length, feet	% THD at 95 dB SPL	Cord Style Flat — F Coiled — C	Weight, ounces	Price	Notes
STANTON	Dyna 55	Dyn.	20-22	100	110	0.25	10	0.25	F	5½	60.00	
	Dyna 35	Dyn.	20-20	15	100	0.2	10	0.5	F	7	45.00	
	XXI	Dyn.	20-22	100	100		10	0.5	F	6	70.00	Ultra-thin.
STAX	SR-44	Elect.	20-25				8	0.3	F	8	120.00	With SRD-4 adaptor.
	SR-5	ES	30-25				8	0.3	F	14	175.00	With SRD-6 adaptor.
	SRX-III	ES	30-25				8	0.1	F	14	300.00	With SRD-7 adaptor.
	SR-Sigma	ES	30-35				8	0.09	F	16	450.00	With SRD-7 adaptor, front-facing driver.
SUPEREX	TRL-88	Dyn.	18-24	100			7	0.4	F	4.2	49.95	Open air design.
	SM-700	Dyn.	10-20	35	†		15	0.2	C	10	69.95	† 110 dB SPL for 10 mW
	Classic CL-1	Dyn.	10-20	35	†		15	0.3	C	10	59.95	† 110 dB SPL for 10 mW.
			14									
	Pro VI Monitor		15-22	44	4-16		10	0.4	C	18	60.00	2-way.
	TRL-99	Dyn.	15-20	44	35	†	15	0.4	C	10	54.95	† 110 dB SPL for 10 mW.
	TRL-3	Dyn.	40-20	80	†		15	0.5	C	10	44.95	† 100 dB SPL for 6 mW, open design.
	TRL-77	Dyn.	45-20	80	†		7	0.8	F	11½	34.95	† 100 dB SPL for 6 mW, open design.
	TRL-66	Dyn.	30-15	4-16	4-16		7	1	F	11	19.95	
	935	Dyn.	20-19	4-16	4-16		10	0.9	C	15	24.95	
PEP 81	ES	15-19	4-16	4-16		15	0.2	C	11	150.00		
PEP 79E	ES	15-18	4-16	4-16		15	0.2	C	11	90.00		
TECHNICS	EAM-830	Dyn.	15-35		96	3000	10		C	13	80.00	
	EAM-820	Dyn.	15-30		93	3000	10		C	12	60.00	
	EAM-810	Dyn.	20-25		91	1000	10		S	11	40.00	
WHARFEDALE	ID2	Dyn.	20-20	60	90			0.35	F	11½	120.00	
YAMAHA	YH-3	Dyn.	20-20	150	93†			0.3		8	35.00	†For 1 mV.
	YH-2	Dyn.	20-20	150				0.3†		7	50.00	†For 90 dB SPL. Supra-aural.
	YH-1	Dyn.	20-20	150				0.3†		9	65.00	

Should You Have Subwoofers?

At \$145.00 per channel, the answer may be yes.



"Full-range" speaker systems (even the best ones) are made to have falling response in the octave from 40 to 20 Hz. This is the result of a compromise required to achieve reasonable cabinet size and efficiency.

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Despite this, some people go to extraordinary lengths to achieve bottom-octave reproduction. A pair of subwoofer systems, with an electronic crossover and the extra power amplifier to drive them, can easily cost over \$2,000 and will occupy a lot of space.

Most sensible people would agree that flat response in the bottom octave is

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Some full-range speaker systems, including those made by Allison, have woofers with as much cone area and as much linear excursion capability as a subwoofer. With the proper equalization these systems can produce flat power output down to 20 Hz. The Electronic Subwoofer system provides that equalization, and it also provides cut-off filters operating at 18 dB per octave below 20 Hz and above 20 kHz. Its price (\$290) and size (14½ by 4½ by 1¾ inches) make it a uniquely practical investment in lowest-octave bass restoration.

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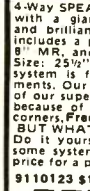
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SPECTRUM "Q" SPEAKERS * Ferro fld damped

Ref. No.	FAR	FR	MgWt	PoW	Dia	VCD	EACH/PAIR
Y0541	1.3k	22k	9oz	50	4	¼	6.88/11.88
Y0203	2	22	9	100	4	1	11.88/21.88
30248							7.88/14.88
30331							14.88/27.88
70449	3	15	4	5	1-5/8	9/16	3.00/5.00
*B0111W	.5	12	9	70	5	1	10.88/18.88
*D540	.5	12	9	70	5	1	16.88/29.88
SMRS	.8	12	3	35	5	9/16	8.88/15.88
B0110W	.35	3	20	75	8	1½	22.88/42.88
Y0006	.5	12	60	8	12	1	16.88/29.88
B0114	.27	2	40	100	10	2	32.88/59.88
B0115	.24	2	20	75	10	1½	17.88/33.88
B0116	.20	2	4	100	12	2	34.88/67.88
B0124	.21	2	26	90	12	2	29.88/56.88
B0117	.34	2	12	60	12	1½	17.88/33.88
B0118	Passive Radiator						12.88/23.88
B0119	Passive Radiator						8.88/15.88
B0120	Passive Radiator						6.88/11.88

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Take our Ditton 33. It provides natural, open-sounding performance. With color-free tonal quality and the widest dispersion of even the highest frequencies. Sound superiority that is perceptibly better to the ear. And we're counting on your making careful comparisons to judge that superiority for yourself.

All three Ditton speakers shown here with their proud specs, right down to the diminutive bookshelf UL 6, are value leaders in their category. All superbly crafted in teak or walnut wood finishes to grace any decor.

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Then go out there and compare Celestion with the whole world of speakers. Discover which comes closest to your ideal—to the music you can already hear

in your own mind's ear. That's when you'll be ready to decide.

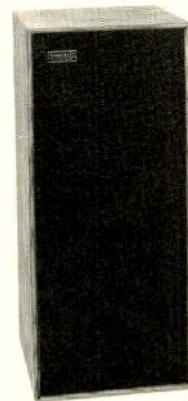
Sound idea. Don't you think?



Ditton 33

For exceptional performance, this compact speaker system employs a sealed enclosure, high compliance woofer, a transmission-line loaded mid-range speaker, and a pressure-dome tweeter (the HD

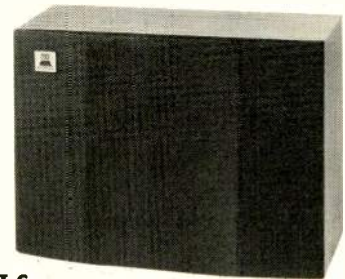
1000) for smooth, even frequency response. Overall response is 25 Hz to 28,000 Hz. Here is the speaker proportioned to fit the furnishing scheme of any room without dominating it, yet able to optimise performance of the highest quality.



Ditton 15 XR

Bass response is audibly extended to 30 Hz in the

Ditton 15 XR:— a remarkable accomplishment for so compact an enclosure. That's achieved by our Auxiliary Bass Radiator (ABR) device, which also reduces Doppler and harmonic distortion, improves the system's dynamic range and power-handling while providing excellent efficiency. Tonal quality is comparable to the most expensive Celestion speaker.



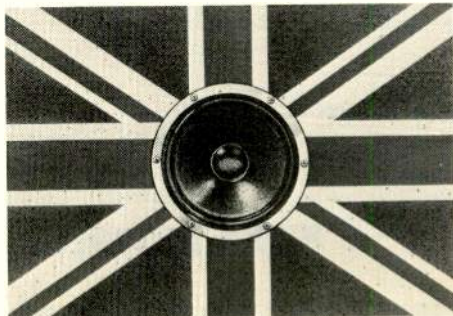
UL 6

A Grand Prix award winner for its natural sound and its clean 35 Hz to 28,000 Hz response. Speaker complement includes the new HD 1000 soft-dome tweeter, a bass driver with massive magnet and a 1.5 inch (38 mm)

voice coil for high power handling. The ABR unit is here, too, extending bass response while raising efficiency and reducing distortion. That difference, compared with others in its own and higher price classes, is dramatic.

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LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia. - inches	Midrange dia. - inches	Midrange type	Tweeter dia. - inches	Tweeter Type	Level controls: W=woofer, M=midrange, T=tweeter, ST=super-tweeter	Anechoic freq. response Hz to kHz & dB	dB SPL / watt / meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms, Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
AAL	C112	Ac. Sus.	12	5	Cone	3	Cone	M,T	25-25	10	1k, 7k	8	28½x16 x 15	Blk. Wal.	Blk.	54	299.00	
	C110	Ac. Sus.	10	5	Cone	3	Cone	M,T	30-20	10	1k, 7k	8	23x41 x 11	Blk. Wal.	Blk.	34	199.00	
	C108	Ac. Sus.	8			3	Cone	T	35-20	5	4k	8	20x11½ x 10	Blk. Wal.	Blk.	26	149.00	
	C120	Ac. Sus.	(2) 10	5	Cone	3	Cone	M,T	25-20	10	1k, 7k	16	35x14 x 11	Bel. Wal.	Blk.	58	349.00	
	Studio 50	Ac. Sus.	6½			3	Pz.	T	40-25	5	4k	8	15½x9½ x 9	Oak. Wal.	Blk.	11	99.00	
	Studio 100	Ac. Sus.	8			3	Pz.	T	35-25	5	4k	8	22½x12½ x 9	Oak. Wal.	Blk.	17	129.00	
	Studio 200	Ac. Sus.	10	5½	Cone	3	Pz.	M,T	27-25	10	1k, 5k	8	24½x12½ x 11½	Oak. Wal.	Blk.	27	159.00	
	Studio 300	Ac. Sus.	12	5½	Cone	3	Pz.	M,T	25-25	10	1k, 5k	8	27½x16½ x 11½	Oak. Wal.	Blk.	32	199.00	
	Studio 400	Ac. Sus.	(2) 10	5½	Cone	3	Pz.	M,T	25-25	10	1k, 5k	4	35x14½ x 11½	Oak. Wal.	Blk.	38	239.00	
	Studio 500	Ac. Sus.	15	(2) 5½	Cones	3	Pz.	M,T	20-25	10	1k, 5k	8	35x14½ x 11½	Oak. Wal.	Blk.	39	259.00	
	Add-Array	Dir. Rad.		(4) 3		(4) 3	Pz.	T	5,000-25		5k		6¾x17¼ x 10½	Wal. Wal.		12	119.00	
	Apollo 830	Ac. Sus.	8			3	Cone	T	35-20	5	4k	8	23x12 x 8	Wal. Wal.	Knit. Brn.	17	49.00	
	Apollo 2915	Ported	15	(2) 5½	Cones	2	Cone	M,T	20-22	5	1k, 5k	8	30x18 x 11	Wal. Wal.	Brn. Knit	39	169.00	
	Apollo 2712	Ported	12	5½	Cone	2	Cone	M,T	25-22	5	1k, 5k	8	27x16 x 11	Wal. Wal.	Brn. Knit	36	119.00	
	Apollo 8853	Ported	(2) 8	5½	Cone	2	Cone	M,T	25-22	5	1k, 5k	16	37x13 x 11	Wal. Wal.	Brn. Knit	39	159.00	
	Pro Sound MS 12	Dir. Rad.	12			3	pz.	T	100-20	25	5k	8	23x16 x 16	Blk. Wal.	Steel mesh	35	210.00	
	Pro Sound MS 212	Dir. Rad.	(2) 12	4x10				M	70-14	30	1.5k	4	36x16 x 16	Blk. Wal.	Steel mesh	58	370.00	
	Pro Sound SC410	Ac. Sus.	(4) 10			(3) 3	Pz.	T	60-25	20	5k	8	48x13 x 11	Blk. Wal.	Blk.	85	320.00	
	Pro Sound BH15	Horn	15						45-4			8	36½x30 x 24	Blk. Wal.	Stell mesh	126	510.00	
	Pro Sound W212	Horn	(2) 12						40-5			4	28x48 x 20	Blk. Wal.		140	640.00	
	Pro Sound W215	Horn	(2) 15						40-5			4	35x60 x 24	Blk. Wal.		225	875.00	
	Pro Sound MR12	Horn	12						200-3			8	30x17 x 25	Blk. Wal.	Steel mesh	87	430.00	
	Pro Sound RH9040	Dir. Rad.							400-10			8	41x19 x 32	Blk. Wal.		83	900.00	
	Pro Sound MT70	Dir. Rad.		8x18	Horn	(4) 3	Pz.	M,T	1200-25		7k	8	11½x30 x 11½	Blk. Wal.		45	450.00	
	Pro Sound MA14	Dir. Rad.				(14) 3	Pz.	T	7-25				11½x30 x 11½	Blk. Wal.		38	325.00	
	Disco One	Ported	15	4x10	Horn	(4) 3	Pz.	M,T	35-25	20	1.5k, 7k	8	29x21 x 16	Blk. Wal.	Knit, Blk.	87	370.00	

(Continued)

At Audio Research our only business is providing the highest definition in music reproduction.

On the following 11 pages you find our major products, followed by our authorized dealer listing. Each of these products represents a serious effort to provide two things — sound quality and construction quality. We do not offer one or two "state-of-the-art products" in order to merchandise some less costly products. No, at Audio Research, quality is our only business, and each of these products is constructed without compromise with quality, each offering different features and/or application.

5 Power Amplifiers:

4 Solid State: D52B, D100B, D110B, D350B
1 Vacuum Tube: D79

1 Electronic Crossover:

EC-22 (Vacuum Tube)

3 Preamp/Stereo Control Units:

2 Solid State: SP-4A, SP-5
1 Vacuum Tube: SP-6A

2 Moving Coil Pre-preamplifiers:

1 Solid State: MCP-2

1 Vacuum Tube: MCP-22

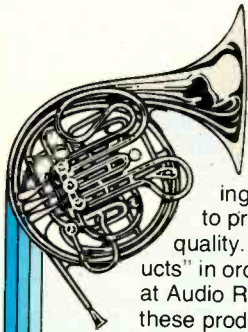
Note: The wood cabinets shown on some of the products on the following pages are optional extra cost accessories.

If you desire more information about any of these products a detailed specification sheet is available upon request.

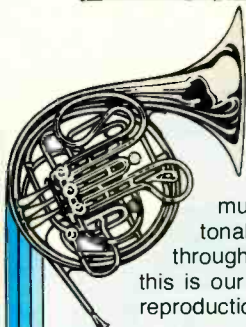
Write:

Dept. A
Audio Research Corporation
Box 6003
Minneapolis, MN 55406

audio research®



MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls W=woofer; M=midrange; T=tweeter; ST=super-tweeter	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
AAL (Continued)	Disco Tower Ser. 2	Ported	15	12	Cone	(4) 3	Pz.	M, T	30-25		20	1.5k, 7k	4	46"x21 x 16	Blk. Vin.	Knit, Blk.	130	450.00
	Super Jock	Horn Laby. Horn Laby.	15	8x18	Horn	(4) 3	Pz.	M, T	30-25		20	1.2k, 7k	8	57x24 x 28	Blk. Vin.	Knit, Blk.	205	625.00
	Disco Monster	Horn Laby.	(2) 15						30-8		20		4	50x30 x 25	Blk. Vin.	Knit, Blk.	211	585.00
	Pro Tweeter Array	Dir. Rad.				(8) 3	Pz.	T	7k-25	25				11½x16½ x 11½	Blk. Vin.	Knit, Blk.	20	210.00
	Monster Tweeter Array Micro 100B	Ac. Sus.	4			(14) 3	Pz.	T	7k-25					11½x30 x 11½	Blk. Vin.	Knit, Blk.	38	325.00
		Ac. Sus.	4			1	Soft Dome	T			5			7½x4½ x 4½	Alum.	Wire Mesh	5½	110.00
ADC	B-300 Subwoofer (With Amp)	Bass. Ref.	12						30-150 ±1.5		60/80/100			23"x23" x 22"	Opt.		95	495.00
ADS	L200	Ac. Sus.	4			1	Soft Dome		55-22 ±5	90	5	2.5k	4/3.6	4¼x4¼ x 6¾	Opt.	Alum.	4½	113.00
	L200C	Ac. Sus.	4			1	Soft Dome		55-22 ±5	90	5	2.5k	4/3.6	4¼x4¼ x 6¾	Satin, Blk.	Alum.	4½	118.00
	L300	Ac. Sus.	5¼			1	Soft Dome		40-23 ±5	91	5	2.5k	4/3.6	5¾x5¾ x 8½	Opt.	Alum.	7	145.00
	L300C	Ac. Sus.	5¼			1	Soft Dome		40-23 ±5	91	5	2.5k	4/3.6	5¾x5¾ x 8½	Satin, Blk.	Alum.	7	150.00
	L300i	Ac. Sus.	5¼			1	Soft Dome		50-20 ±3	90	10	2.5k	4/3.6		Alum., Blk.	Alum., Blk.	3¾	118.00
	L420	Ac. Sus.	7			1	Soft Dome		30-22 ±5	91	15	1.5k	8/6	11"x8½ x 20	Wal. Vin.	Cloth, Blk.	24	115.00
	L520	Ac. Sus.	8			1	Soft Dome		26-22 ±5	91	10	1.5k	8/6	12½x10¼ x 21½	Wal. Vin.	Cloth, Blk.	30	150.00
	L620	Ac. Sus.	10			1	Soft Dome		22-22 ±5	91	15	1.5k	8/6	14"x11¼ x 25½	Wal. Vin.	Cloth, Blk.	40	200.00
	L630	Ac. Sus.	10	1½	Soft Dome	¾	Soft Dome		22-22 ±5	91	20	650,4k	8/6	14"x11¼ x 25½	Wal. Vin.	Cloth, Blk.	42	285.00
	L710/II	Ac. Sus.	(2) 7	2	Soft Dome	¾	Soft Dome		25-30 ±5	92	15	550,4k	6/4	12"x10½ x 21½	Nat. Wal.	Cloth, Blk.	35	285.00
	L810/II	Ac. Sus.	(2) 8	2	Soft Dome	¾	Soft Dome		20-30 ±5	93	20	550,4k	6/4	14"x11¼ x 25½	Nat. Wal.	Cloth, Blk.	46½	370.00
	L910/II	Ac. Sus.	(2) 10	2	Soft Dome	¾	Soft Dome	M, T	18-25 ±5	93	15	550,4k	6/4	19"x15¼ x 33½	Nat. Wal.	Cloth, Blk.	100	720.00
		2002 W. Amp.	Ac. Sus.	4			1	Soft Dome	T	55-20 ±5	103	2.5k	43k	6¼x5½ x 4¼	Alum., Blk.	Alum., Blk.	5	470.00 Pair
	2001 W. Amp.	Ac. Sus.	4			1	Soft Dome	T	50-22 ±5	106	2.5k	43k	6¼x4¼ x 4¼	Alum., Blk.	Alum., Blk.	4	599.00 Pair	
AARDVARK QUARK	The Bass Box	Trans. Line	12					W	14-200	40	50-150	8	23"x14¾ x 47"	Opt.	Cloth, Blk.	125	750.00 with x-over.	
ACCULAB	220	Ac. Sus.	10		Cone	2¼	Cone		40-18.5 ±4.5	89.9	4	6.5k	8	13x10½ x 22½	Vin.	Cloth, Brn.	26	150.00
	320	Ac. Sus.	10	3%	Cone	2¼	Cone		40-18.5 ±4	91	4	3.3k, 7.5k	8	13x10½ x 22½	Vin.	Cloth, Brn.	27	175.00
	340	Ac. Sus.	12	3%	Cone	2¼	Cone		33-18.5 ±4	91	4	3.3k, 7.5k	8	14"x11 x 25½	Vin.	Cloth, Brn.	39	220.00
	440	Ac. Sus.	12	3%	Cone	2¼ 3½	Cone, Pz.		33-30 ±4	91	5	3.3k, 7.5k, 10k	8	14"x11 x 25½	Vin.	Cloth, Brn.	38	250.00



The High Definition® Approach

In photography, it is the razor-sharp resolution and faithful adherence to hues, tones, and shadings of the subject. In music, it is the strict re-creation of musical transients and subtle tonal structures which give the listener the sensation of "listening through" a music system to the "live" performance. At Audio Research this is our ONLY business — providing the highest definition in music reproduction.

D-52B High Definition® Power Amplifier

Our smallest wattage amplifier — but of the very highest sound quality for music systems where its power is adequate. Recommended especially for multiway speakers with bi-amplification as well as for the many small high quality speaker systems available.

Rated 50 watts RMS per channel
(180 watts mono mode - 8 ohms)
Internal Impedance .012 ohm

Near "Class A" performance
80 joule energy storage
power supply



D-52B

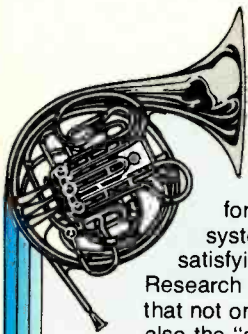
audio research

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MINNEAPOLIS, MINN. 55406

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Level control? W = woofer, M = midrange, T = tweeter, ST = super tweeter	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms; Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
ACOUSTAT	Monitor Three	ES	45x28							30-20 ±3	110			30x19x62	Opt.		200	2,335.00 Pair with amp.	
	Monitor Four	ES	45x35							30-20 ±3	110			37x19x62	Opt.		230	3,000.00 Pair with amp.	
ACOUSTI-PHASE	Phase Monitor	Bass Ref.	12			1	Dome	T		35-20 ±4	93	10	1.5k	8/4	25x15 x13½	Wood Vin.	Cloth, Br.	48	189.95
	Phase III +	Bass Ref.	12	5	Cone	1	Dome	T		32-20 ±3	95	10	900, 5k	8/4	25x15 x13½	Wal. Bu. Blk	Cloth, Br.	50	359.95
	Disco II	Double Ported	15	(2) 2x6	Horns	(4) 3	Pz.			28-30	96	20	2k, 6k	4	29x18 x15½	Black Laq.	Wire Mesh, Blk.	75	449.95
	Micro-Phase Phase I	Bass Ref.	6½			1	Dome			48-20 ±4	93	3	1.6k	8	17½x10½ x8	Wood Vin.	Cloth, Br.	38	199.90 Pair
	Phase I	Bass Ref.	8			1	Dome	T		40-20 ±4	93	5	1.6k	8	21½x12½ x10½	Wood Vin.	Cloth, Br.	29	139.95
	Phase II	Bass Ref.	10	5	Cone	1	Dome	T		35-20 ±3	94	10	1.2k, 5k	8/4	24½x14½ x12½	Wal.	Cloth, Br.	48	229.95
ACOUSTIC RESEARCH	AR9	Ac. Sus.	12	8, 1½	Cone, Dome	¾	Dome	M, T		28-25 ±2	87	15	200, 1.2k, 7k	4	52½x15 x15½	Oil, Wal.	Cloth, Blk.	130	750.00
	AR90	Ac. Sus.	10	8, 1½	Cone, Dome	¾	Dome	M, T		32-25 ±2	87	15	200, 1.2k, 7k	4	43¾x14½ x15½	Oil, Wal.	Cloth, Blk.	82	550.00
	AR91	Ac. Sus.	12	1½	Dome	¾	Dome	M, T		35-25 ±2	87	15	700, 7.5k	4	31½x14 x11½	Oil, Wal.	Cloth, Blk.	53	400.00
	AR92	Ac. Sus.	10	1½	Dome	¾	Dome	M, T		44-25 ±2	87	15	700, 7.5k	4	31¾x14 x11½	Oil, Wal.	Cloth, Blk.	46	300.00
	AR25	Ac. Sus.	8			1¼	Cone	T		48-22 ±2	86	15	2k	8	11¾x21½ x7¾	Wal. Vin.	Foam, Blk.	24	110.00
	AR18	Ac. Sus.	8			1¼	Cone	T		62-22 ±2	86	15	2k	8	9¾x16½ x6¾	Wal. Vin.	Foam, Blk.	13½	78.00
	AR14	Ac. Sus.	10			1	Dome	T		44-22 ±2	86	15	1.3k	8	13¾x25 x10¾	Wal. Oil.	Foam, Blk.	35	180.00
ACOUSTIQUE 3A	Alphase	P.L.D.	8			¾	Dome			60-30 ±3	89	20	7k	8	10x10 x21	Wal. Vin.	Cloth	20	179.00
	Apogee MK II Auditorat	Bass Ref.	11			¾	Dome			55-30 ±3	93	10	5k	8	12x10 x25	Wal. Ven.	Cloth	26	249.00
	Apogee Monitor	P.L.D.	10	4	Cone	¾	Dome			50-30 ±3	92	10	1.8k, 5k	8	12x12 x28	Wal. Ven.	Cloth	33	299.00
	Adagio	P.L.D.	11	1½	Dome	¾	Dome			50-30 ±3	90	20	1.2k, 7k	8	13x12 x31	Wal. Ven.	Cloth	40	449.00
	Aitio	Inf. Baf.	11	2	Dome	¾	Dome			40-30 ±3	90	40	500, 5k	8	13x12 x31	Wal. Ven.	Cloth	53	559.00
	Aitio	Dipole	8	8			Pz.			50-30 ±3	95	5	6k	8	11x11 x30	Wal. Ven.	Cloth	35	219.00
	Allegretto MK II	Bass Ref.	11	(2)	Horns		Horn			55-20 ±3	94	5	1.5k, 6k	8	12x12 x31	Wal. Ven.	Cloth	48	375.00
	Allegro	Dipole	(2) 11	6¾	Cone					50-20 ±3	94	5	800, 6k	8		Wal. Ven.	Cloth	100	539.00
	Linear De Control	Feedbk.	11	2	Dome	¾	Dome			35-30 ±3	91	5	400, 6k	8	12x8x18	Wal. Ven.	Cloth	48	679.00

(Continued)



The Quality Approach

Audio Research products are built FOR perfectionists, BY perfectionists. Basic to the nature of a perfectionist is a love for quality, whether it be in fine automobiles, cameras, or music systems. Simple appreciation of a quality built product can be very satisfying. The extra measure of enjoyment in ownership of an Audio Research product comes from the knowledge that you own a component that not only represents the "state-of-the-art" in music reproduction, but also the "state-of-the-art" in construction quality.

D-100B High Definition® Power Amplifier

Rated 100 watts RMS per channel
(360 watts mono mode - 8 ohms)

75 joule energy storage power supply

The D-100B shares with all Audio Research amplifiers total stability to drive any kind of load — from electrostatic speaker to induction motor — with complete stability. Built to continuous commercial service standards. Second generation Analog Module® Technology.



D-100B

audio research

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MINNEAPOLIS, MINN. 55406

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls: W=woofer; M=midrange; T=tweeter; ST=super-tweeter	Anechoic freq. response Hz to kHz ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms; Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
ACOUSTIQUE 3A (Continued)	Master Control TR 800 Sub Bass	Feedbk.	11	2	Dome		Ribbon		30-40 ±3	94	5	400, 6k	8	12x8 x18	Wal. Ven.	Cloth	48	1,000.00
		Feedbk.	(2) 11						30-100 ±1.5	Adj.	20	100	8	27x30 x12	Laq. or Maple Opt.	Cloth	97	1,300.00
	TR 1000 Sub Bass	Feedbk.	(3) 11						30-100 ±1.5	Adj.	20	100	8	27x47 x12	Opt.	Cloth	143	1,800.00
	Atom 3 Satellite Prelude	P.L.D.	8	2	Dome	¾	Dome		100-30 ±3	91	20	1.8k, 7k	8	7x10 x17	Opt.	Cloth	30	660.00
		Feedbk.	11	4	Cone	¾	Dome		40-30 ±3	92	5	800, 6k	8	12x8 x18		Cloth	44	499.00
	TR 1200 Sub Bass Atom 2 Satellite Reference	Feedbk.	(4) 11						30-100 ±1.5	Adj.	20	100	8	28x35 x14	Wal. Ven.	Cloth	135	1,665.00
	P.L.D.	8				Ribbon		100-40 ±3	92	20	6k	8	9x3x19	Wal. Ven.	Cloth	22	600.00	
		(2) 11	8,2	Cone, Dome		Ribbon		20-40 ±3	94	With Amp	150, 1.8k, 6k	8	13x13x47	Wal. Ven.	Cloth	110	2,900.00	
ACUSTA CRAFT	CVW-10	Vented	(2) 10						50-100 ±3	91	20	100	8	21x21 x21½	Oil. Wal.	Cloth, Brn.	70	299.00
	CVW-12	Vented	12						42-100 ±3	91	20	100	8	21x21 x21½	Oil. Wal.	Cloth, Brn.	70	240.00
	CVS-3	Ac. Sus.	10	6			Horn		65-15 ±3	91	20	400, 4k	8	17x5½ x42	Oil. Wal.	Cloth, Brn.	55	285.00
	CVS-2	Ac. Sus.	8	6	1	Dome			70-20 ±3	91	15	400, 4k	8	12x5½ x21½	Oil. Wal.	Cloth, Brn.	24	150.00
	CVS-1	Ac. Sus.	6		1	Dome			105-20 ±3	91	10	2.5k	8	8x5½ x12	Oil. Wal.	Cloth, Brn.	12	85.00
	CV-19	Vented	12	(2) 6			Horn		42-15 ±3	96	20	400, 4k	4	16½x12¼ x44	Oil. Wal.	Cloth, Brn.	95	299.00
	CV-18	Vented	12	(2) 6			Horn		42-15 ±3	96	20	400, 4k	4	18x15¼ x33	Oil. Wal.	Cloth, Brn.	95	299.00
	CV-15	Vented	10	6			Horn		42-15 ±3	91	20	400, 4k	8	16½x11½ x30	Oil. Wal.	Cloth, Brn.	60	215.00
	CV-14	Vented	10	6	1	Dome			50-20 ±3	91	20	400, 4k	8	15½x11½ x23	Oil. Wal.	Cloth, Brn.	55	160.00
	CV-12	Vented	10		1	Dome			50-20 ±3	91	15	1.5k	8	15½x11½ x23	Oil. Wal.	Cloth, Brn.	49	130.00
	Model 10	Ac. Sus.	8		1	Dome			65-20 ±3	92	10	1.5k	8	11¼x9½ x18	Oil. Wal.	Cloth, Brn.	30	90.00
	Model 6	Ac. Sus.	6		1	Dome			105-20 ±3	91	10	2.5k	8	7x5½ x11½	Oil. Wal.	Cloth, Brn.	10	75.00
	ACUTEX	4.2		10	4½	3	Cone	M		35-20 ±3	99	15		8	13x11x23		Cloth, Brn.	28
3.1			8	4½	3	Dome			40-20 ±3	99	15		8	11x9x21		Cloth, Brn.	23	149.00
MTS		Ac. Sus.	4		1	Dome			100-20 ±3	83	12	2.5k	8	4½x4 x7½	Metal	Metal	5.5	99.00
MTSII		Ac. Sus.	5		1	Horn			50-20 ±3	87	10	2.5k	8	5¼x5 x10¼	Metal	Metal	8.8	139.00
MTSIII		Ac. Sus.	6		1	Horn			45-20 ±3	90	10	2.5k	8	3¼x6½ x13	Wal. Ven.	Cloth, Brn.	10.4	149.00
ADCOM	GFW-1 Subwoofer	Inf. Baf.	10						22-150 ±3	86	20	150	4/3	17½x17½x15½	Opt.	Cloth, Blk.	36	289.95

The Musical Approach

High Definition® music reproduction is accomplished by a design approach that considers, first and foremost, the complex, constantly changing phenomena of musical waveforms. The musical approach requires designs which go beyond good "static" specifications to perform in actual use — music reproduction. Audio Research products have good "static" specifications which exceed the specifications of many competitive products. However, it is the musical approach in Audio Research products that sets them apart. The musical approach gives Audio Research products a hard-to-define, elusive, musical quality which is difficult to measure but easy to hear.

D-110B High Definition® Power Amplifier

Rated 110 watts RMS per channel
(440 watts mono mode — 8 ohms)

300 joule energy storage power supply

The D-110B — a combination of the D-100B circuitry with the D-350B power supply — rebaised to higher operating current and fan cooled, provides the highest possible measure of musical quality.



D-110B

audio research

2843-26th AVE. SO.
MINNEAPOLIS, MINN. 55406

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls: W, w, wof; H, h, midrange; T, T, tweeter; ST, ST, sub(tweeter)	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms; Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
ADVANCE SPEAKER	A-II	Pas. Rad.	8,10		1	Dome	T		30-20 ±3	90	15	2k	8/6	10½x14½x26½	Vin. & Wal.	Cloth, Brn.	44	378.00 Pair
	V-II	Ac. Sus.	8		1	Dome	T		45-20 ±3	92	15	1.8k	8	9½x11½x20	Vin. & Wal.	Cloth, Brn.	24	258.00 Pair
	D-II	Ported	8		1½	Dome			45-17 ±4	93	10	2.5k	8	7x12x17½	Vin.	Cloth, Brn.	20	198.00 Pair
	A+	Pas. Rad.	(2) 8, (2) 10		(2) 1	Domes			25-20 ±3	86	50	2k	8/5	10½x14½x52	Wal.	Cloth, Brn.	80	900.00 Pair
ADVENT	New Advent Loudspeaker Advent/1	Ac. Sus.	10		1½	Dome	T			89	20	1.8k	8/4.8	14½x11½x26	Oil. Wal., Vin.	Cloth, Grey	47	179.00
		Ac. Sus.	10		1½	Dome	T			89	15	1.8k	8/4.8	13½x9¼x22	Oil. Wal., Vin.	Cloth, Grey	29	135.00
	Advent/4	Ac. Sus.	8		1½	Cone				88	10	2.8k	8/6	11x8x18½	Oil. Wal., Vin.	Cloth, Grey	15	180.00 Pair
	Powered Advent Loudspeaker 400	Ac. Sus.	10		1½	Dome	B,T			Self		1.8k		14½x13x28½	Oil. Wal., Vin.	Cloth, Grey	58	499.00
	Advent/2	Ac. Sus.	6		1½	Cone				84			8/8	6½x6x11	White Vin.	Silver	5½	35.00
	Advent/3	Ac. Sus.	6		1½	Cone				89	10	1.5k	8/4.8	11x8x20	White Vin.	Cloth, Grey	18½	89.00
AKAI	S-82		8		3	Cone			60-17 ±5			4k	8	11x19x6½	Wood Grain Vin.	Cloth, Brn.		90.00 Pair
	SW-7		5		2	Horn	No		55-22	92		10k	4	5.3x8.6x4.8	Blk. Matte, Oil. Wal.	Metal, Blk.	5.3	160.00 Pair
	SW-137II	Bass Ref.	10	5	Cone	1½	Cone	M	40-20	92		1.5k,5k	8	13.5x23.3x11.8	Oil. Wal.	Cloth, Brn.	25.8	199.95
	SW-127	Bas. Ref.	8		1½	Cone			40-20	92		4k	8	12.2x20.4x9	Oil. Wal.	Cloth, Brn.	25.8	125.00
	SW-157II	Bas. Ref.	12	5	Cone	1½	Cone	M,T	30-20	92		1.5k,5k	8	15.7x26.9x11.8	Oil. Wal.	Cloth, Brn.	36.1	295.00
	SW-177	Inf. Baf.	15	5½	Cone	(2) 1½	Cones	M,T	25-20	94		700,5k	8	17.3x27.3x12.2	Oil. Wal.	Cloth, Brn.	46.3	395.00
ALLISON ACOUSTICS	One	Closed	(2) 10	(2) 3½	Cones	(2) 1	Cones	M,T		87	30	350, 3.75k	8/7	19x10¼x40	Oil. Wal.	Plas., Blk.	67	420.00
	Two	Closed	(2) 8	(2) 3½	Cones	(2) 1	Cones	M,T		87	30	350, 3.75k	8/7	16x9¾x36	Oil. Wal.	Plas., Blk.	57	350.00
	Three	Closed	10	3½	Cones	1	Cone	M,T		87	30	350, 3.75k	4/3.5	15¼x10x40	Oil. Wal.	Plas., Blk.	45	290.00
	Four	Closed	8		(2) 1	Cones	M,T,			87	30	2k	8/6.5	19¾x10x11	Oil. Wal.	Plas., Blk.	23½	195.00
	Five	Closed	8		1	Cone	T			87	15	2k	4/3.5	18¼x10x11	Oil. Wal.	Plas., Blk.	21	160.00
	Six	Closed	8		1	Cone	T			87	15	2k	4/3.5	11¼x11¼x11¼	Vin., Wal.	Plas., Blk.	17	125.00

The Common Approach

All Audio Research components share a number of things in common.

For example, all have heavy gauge two color anodized aluminum front panels for lasting durability and beauty. Most small parts (capacitors, resistors, transistors, etc.) are selected from quality American vendors for availability and reliability — and of course, all are used at conservative levels to assure long life.

The D-350B High Definition® Power Amplifier

Rated 350 watts RMS per channel — 8 ohms
(more than 1 KW total into 4 ohms)

300 joule energy storage power supply

Speaker line fuses

Logic circuitry with relay for added protection against subsonic or DC output.



D-350B

audio research

2843-26th AVE. SO.
MINNEAPOLIS, MINN. 55406

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control? W=woofer; M=midrange; T=tweeter; ST=super-tweeter	Anechoic freq. response Hz to kHz, ±dB	dB SPL / watt / meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance ohms: Nominal / minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$	
ALTEC LANSING	Santana II	Vented	12		5	Cone	T		40-20	89	12	2.5k	8	19x16x25%	Oil. Wal.	Cloth, Blk.	67	299.00	
	19	Vented	15			Horn	B,T		30-20	99	10	1.2k	8	30x21x39	Opt.	Cloth, Blk.	166	799.00	
	18	Co-axial Drivers	15			Horn	B,T		30-20	100	10	1.5k	8	40x18x26	Oil. Oak	Cloth, Blk.	168	749.00	
	14	Vented	12			Horn	B,T		35-20	95	10	1.5k	8	21x16½x30	Oil. Wal.	Cloth, Blk.	95	495.00	
	9	Vented	12	6½	Cone	5	Cone	M,T		40-20	93	12	800,7k	8	17½x15x26½	Oil. Oak	Cloth, Opt.	64	359.00
	7	Vented	12	6½	Cone	4	Cone	M,T		45-20	90	15	850,8k	8	16x14½x25	Oil. Wal.	Cloth, Opt.	49¼	269.00
	5	Vented	12			(2) 4	Cones		45-20	91.5	12	1.5k	8	14½x12x25½	Wall. Oil.	Cloth, Blk.	38¼	199.00	
	3	Vented	10			4	Cone		50-20	90.5	10	1.5k	8	12½x11½x24	Wall. Oil.	Cloth, Blk.	32½	169.00	
	1	Inf. Baf	8			4	Cone		50-20	89	10	3.5k	8	12x11x22½	Oil. Wal.	Cloth, Blk.	26	129.00	
AMERICAN MONITOR	6	Ac. Sus.	8		2½	Cone			50-18.5	89	5	2.5k	8	9½x8¼x17¼	Vin.	Cloth, Brn.	15	99.95	
	8x	Ac. Sus.	8		2	Cone	T		35-20	91.5	10	2.5k	8	12x9½x23	Vin.	Cloth, Brn.	30	149.95	
	10x	Ported	10		2	Cone	T		30-20	92	10	2.5k	8	14¼x11½x25½	Vin.	Cloth, Brn.	43	199.95	
	12x	Ported	12	4½	Cone	2	Cone	M,T	35-20	93.5	10	1.5k, 7.5k	8	14¼x11½x25½	Vin.	Cloth, Brn.	44	249.95	
	14	Ported	12	4½	Cone	2	Cone	M,T	30-20	93.5	10	1.5k, 7.5k	8	14½x12½x37½	Oil. Wal.	Cloth, Brn.	73	329.95	
	16x	Ported	12	4½	Cones	3,2	Pz., Cone	M,T	32-30	93.5	10	1.5k, 7.5k, 12k	8	15x13½x26½	Oil. Wal.	Cloth, Brn.	46	399.95	
	18xp	Ported	15	(2) 4½	Cones	3,2	Pz., Cone	M,T	27-30	94	10	1.5k, 7.5k, 12k	4	20x16½x32	Oil. Wal.	Cloth, Brn.	78	599.95	
ATLANTIS CORP.	Award 333	Ac. Sus.	8		2	Cone			65-18 ±7	85	2		8	18x12x9	Vin.	Cloth, Brn.	14	59.95	
	Award 444	Ac. Sus.	10		2	Cone			60-18 ±7	87	2	1.5k	8	21x13x10	Vin.	Cloth, Brn.	18	89.95	
	Award 555	Ac. Sus.	10	5	Cone	2	Cone		55-18 ±6	88	2	700, 3k	8	24x14x10½	Vin.	Cloth, Brn.	25	119.95	
	Award 666	Ac. Sus.	12	5	Cone	2	Cone		55-18 ±6	90	2	700, 3k	8	27x15x10½	Vin.	Cloth, Brn.	28	149.95	
	Atlantean I	Bass Ref.	10	5	Cone	1	Dome	T	55-20 ±5	90	25	800, 4k	4	12½x13½x23	Birch Vin.	Cloth, Brn.	36½	199.00	
	Atlantean II	Bass Ref.	12	5	Cone	1	Dome	T	50-20 ±5	92	25	800, 4k	4	14¼x13½x25	Birch Vin.	Cloth, Brn.	46½	279.00	
	Atlantean III	Bass Ref.	15	5	Cone	(2) 1	Domes	T	50-20 ±5	95	25	800, 4k	4	18x14¼x30	Birch Vln.	Cloth, Brn.	63½	349.00	
	Oracle 208	Ac. Sus.	(2) 8	1½	Dome	1	Dome		40-20 ±5	83	30	800, 3k	4	16¼x13½x31½	Oil. Rose.	Blk.	53	279.95	
	Oracle 210	Ac. Sus.	(2) 10	5, ½	Cone, Dome	1	Dome		38-20 ±5	86	25	500, 1k, 3k	4	18x15x34¼	Oil. Rose.	Blk.	70	349.95	
	Oracle 212	Ac. Sus.	(2) 12	5, 1½	Cone, Dome	1	Dome		38-20 ±5	87	25	500, 1k, 3k	4	19½x16½x37¼	Oil. Rose.	Blk.	85	449.95	
AUDIO ILLUSIONS	Master Illusionist I		(2) 12						35-20 ±4	92	50	600, 3k	4/3,7	16½x16½x44	Oil. Wal.	Cloth, Blk.	78	775.00	



A "Last Generation" Product

This special product, a vacuum tube power amplifier, represents the state-of-the-art of this technology. It is expensive and will be available only in limited quantity for a reasonable period of time.

The D79 was conceived in response to demand from and for audio perfectionists. While it is not necessarily the "ultimate" amplifier, and will not provide its intrinsic performance with all speaker systems, it will provide a new standard of what we at Audio Research Corporation call High Definition® reproduction of music within its power capability throughout much of the audio range when used with suitable speaker systems.

The D79 Amplifier

Rated 75 watts RMS per channel — 4, 8 or 16 ohms
550 joule energy storage power supply
Near military construction quality



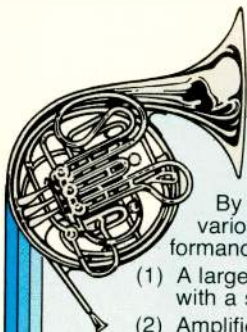
D79

audio research

2843-26th AVE. SO.
MINNEAPOLIS, MINN. 55406

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control? (W = woofer, M = midrange, T = tweeter, S = subwoofer)	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
AUDIO PRO	A4-14	Blamped	(2) 5	4½	Cone	1	Dome	B,T	30-20 +0, -3	NA	300, 2.5k		12½x10½x 20½	Opt.	Foam, Blk.	35	1,600.00	
	B2-50	Amped Subwoofer	(2) 6						20-200 +0, -3	NA			18½x17½x 21½	Opt.	Cloth, Blk.	64	795.00	
AUDIO PULSE	AP52 AP102	Ported Ported	6 (2) 6			2 (2) 2½	Cone Cones		80-20 40-30	25 100		8 8	11x19½x7 35x8½x8½	Wal. Wal.		15 29½		
AUDIOALLEY	AS-4	Inf. Baf.	12	5	Cone	3, 2	Cone, Dome	M,T	30-20 ±5	97	10	700, 1.3k, 10k	8	24x15x10½	Oil. Wal.	Cloth, Brn.	35	400.00 Pair
	AS-3	Inf. Baf.	10	4½	Cone	3	Cone		35-20 ±5	97	5	1k, 5k	8	22x13x8	Oil. Wal.	Cloth, Brn.	24	230.00 Pair
	AS-2	Inf. Baf.	8	4½	Cone	3	Cone		40-20 ±5	97	5	1k, 5k	8	22x13x6	Oil. Wal.	Cloth, Brn.	20	1,190.00 Pair
	AS-1	Inf. Baf.	8			3	Cone		40-20 ±5	97	5	4k	8	22x13x8	Oil. Wal.	Cloth, Brn.	20	160.00 Pair
AUDIOANALYST	A-76XL	Bass Ref.	8			1½	Dome, Cone		50-18 ±4	88.6	5	2k	8/7	12½x10½x 21	Wal. Vin.	Cloth, Blk.	28½	117.95
	A-100XL	Bass Ref.	10	2	Cone	1½	Dome, Cone	M,T	40-20 ±3	90.5	10	1.5k, 7.5k	8/6	13¾x12x 24½	Wal. Vin.	Cloth, Blk.	41	207.00
	A-200XL	Bass Ref.	12	4½	Cone	(2) 2 1½	Domes, Cone	M,T	30-20 ±3	91	10	1k, 4k, 10k	8/6	15x12¾x 27	Wal. Vin.	Cloth, Blk.	58	339.95
	A-400XL	Bass Ref.	(4) 8	(2) 2	Cones	(2) 1½	Dome, Cone		28-20 ±3	90	10	150, 2k, 10k	4/4	17¾x10½x 41½	Wal. Vin.	Cloth, Blk.	60	359.95
	M2	Ac. Sus.	5			1	Dome		46-20 ±4	89	10	2k	4/4	6x7x 9½	Oil. Wal.	Cloth, Blk.	8½	149.00
	M4v-II	Bass Ref.	8			1	Dome		40-20 ±4	89	10	2k	8/7	12½x10½x 21	Wal. Vin.	Cloth, Blk.	28	139.00
	M5	Bass Ref.	10			1	Dome		33-20 ±3	90	10	2k	8/6	13¾x11¾x 24½	Wal. Vin.	Cloth, Blk.	41	189.00
	M6	Ac. Sus.	10	4½	Cone	1	Dome	M,T	30-20 ±3	88	15	700, 2k	8/6	13¾x11¾x 24½	Oil. Wal.	Cloth, Blk.	45	299.00
	M8	Ac. Sus.	12	4½	Cone	1, ½	Dome	M,T	27-25	88	15	600, 2k, 15k	8/6	15½x11¾x 27½	Oil. Wal.	Cloth, Blk.	56	399.00
	B1	Bass Ref.	12						22-120 ±3	89	10	120	4/4	15½x11¾x 27½	Wal. Oil.	Cloth, Blk.	50	279.00
	M12	Ac. Sus.	(2) 10	(3) 4½	Cones	(3) 1 (2) ½	Domes	M,T	24-25 ±3	91	15	200, 2k, 15k	4/4	13½x16½x 40	Oil. Wal.	Cloth, Blk.	115	800.00
AUDIOTEX	94-1200	Ac. Sus.	8			1½	Phen. Ring		45-20	2	5k	8/4	12x17½x20½	Wal. Vin.	Knit, Brn.	14	59.95	
	94-1300	Ac. Sus.	10			1½	Phen. Ring		40-20	5	5k	8/4	13¾x11½ x21½	Wal. Vin.	Knit, Brn.	16	69.95	
	94-1350	Ac. Sus.	10	4½	Cone	1½	Phen. Ring		40-20	6	2.5k, 5k	8/4	14x10½x24	Wal. Vin.	Knit, Brn.	21	89.95	
	94-1400	Ac. Sus.	12	4½	Cone	1½	Phen. Ring		35-20	8	2.5k, 5k	8/4	17x12½x26	Wal. Vin.	Knit, Brn.	29	99.95	
AVID	80a	Ac. Sus.	8			1½	Cone		55-17 ±3.5	89	8	3k	8/7	12x8½ x19½	Wal. Vin.	Cloth, Br.	18	95.00
	110	Ac. Sus.	8			1	Soft Dome		48-20 ±3	89	10	2.5k	8/6	12½x9½ x21½	Wal. Vin.	Cloth, Br.	29	135.00



How to Make the Best Speaker Systems Even Better

Many of the current state-of-the-art speakers have provision for using more than one amplifier.

By dividing the audio spectrum in two or more sections, various combinations of improved speaker/amplifier performance become possible. For example:

- (1) A large amplifier can be used for bass response, together with a smaller high quality amplifier for the treble.
- (2) Amplifiers of different gain/power specifications can be used together.
- (3) Speakers of different efficiencies can be used together.
- (4) Higher SPL's can be achieved.
- (5) Lower system distortion can be possible from both the improved amplifier performance as well as possible speaker network reduction.

The EC-22 Electronic Crossover

The EC-22 is a two-way state-of-the-art vacuum tube variable frequency electronic crossover, featuring separate switch

selectable crossover frequencies with 18 dB/Octave (Butterworth) slopes for the bass channel's two lowest frequencies (upper bass and all treble slopes are 6 dB/Octave) with semi-precision level adjustment and other features for making this product a most useful tool for audiophiles and music lovers.

Available November 1979.

EC-22



audio research

2843-26th AVE. SO.
MINNEAPOLIS, MINN. 55406

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control? (W=woofer, M=midrange, T=tweeter; S=super tweeter)	Anechoic freq. response Hz to kHz @dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms, Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
AVID (Continued)	102a	Ac. Sus.	10				Dome	M,T	44-18 ±3	85	15	2.2k	8/6	15x9 1/2 x25	Wal. Vin.	Cloth, Br.	38	165.00
	230	Ac. Sus.	10	4 1/2	Cone	1	Soft Dome	M,T	40-20 ±3	88	15	475.4k	8/6	15x10 x25	Wal. Vin.	Cloth, Br.	40	225.00
	330	Ac. Sus.	12	2	Soft Dome	1	Soft Dome	M,T		88	15	575.5k	8/6	17x10 1/4 x30 1/4	Oil. Wal.	Cloth, Br.	66	400.00
AXIOM	TLT-1	Trans. Line	8	8	Cone	1	Dome		30-20 ±3	92	20		8/7.4	13x13 x38	Oil. Wal.	Cloth, Blk.	65	250.00
	TLB-1	Trans. Line	8	8	Cone	1	Dome		35-20 ±3	92	20		8/7.4	15 1/2x10x 26 1/2	Oil. Wal.	Cloth, Blk.	45	190.00
B+I+C	TPR 200	Tuned Port	8	1 1/2			Pz.			90	5		8/6	11 1/4x11 1/4x 32 1/2	Wal.	Nylon, Blk.	37	219.95
	TPR 400	Tuned Port	10	1 1/2			Pz.			92	3		8/5	13x13x 38 1/2	Oil. Wal.	Nylon, Blk.	49	299.95
	TPR 600	Tuned Port	12	1 1/2			Pz.			93	3		8/5	15 1/4x15 1/4x 41 1/2	Oil. Wal.	Nylon, Blk.	67	369.95
	B11	Tuned Port	8			2	Dome	M		85	12	2k	8/6	11x9x18 1/2	Wal. Wal.	Cloth, Brn.	19	
	B22	Tuned Port	8	5	Cone	1 1/2	Dome	M		87	10	800, 10k	8/5	13x10x22	Wal.	Cloth, Brn.	25	
	B44	Tuned Port	10	5	Cone	1 1/2	Dome	M		89	8	600, 10k	8/5	14 1/2x10 1/2x 25 1/2	Wal.	Cloth, Brn.	35	
	B66	Tuned Port	12	5	Cone	1 1/2	Dome	M		91	6	400, 10k	8/5	15 1/2x13 1/2x 26 1/2	Oil. Wal.	Cloth, Brn.	44 1/2	
B&W	DM2/II	Vented Port	8	4	Cone	1		M,T	50-18 ±3		25	400.3k	8	10 1/2x13x2 1/2	Wal./ Teak	Cloth, Opt.	48 1/2	465.00
	DM5	Ac. Sus.	5			0.8	Dome		100-18 ±5	85	15	4.5k	8/3	8x18x18	Wal./ Teak	Foam, Blk.	17	169.00
	DM4	Vented	7	1 1/2	Dome	1 1/2	Dome		20-20 ±5	90	10	2.5k, 14k	8/3	10x10x21	Wal./ Teak	Cloth, Opt.	24 1/2	275.00
	DM6	Ac. Sus.	9	5	Cone	0.8	Dome	B,M,T	50-20 ±3	85	25	500, 5k	8/2	16x15x37	Wal./ Teak	Cloth, Blk.	80	695.00
	DM7							M,T	30-25	95	50		8	35 1/2x10 1/4 x14 1/2	Wal./ Teak	Cloth, Opt.	66	595.00
	DM80/801		10.63	4	Cone	1	Dome	M,T	45-20 ±2	85	50	400,3.5k	8	17x22x38	Wal./ Teak	Cloth, Brn.	97	2,500.00 Pair
BANG & OLUFSEN	M-100-2	Vented	12	4,2 1/2	Cones	1 1/2, 3/4	Domes		35-22 ±4	20		550,2.5k,8k	4	15 1/2x12x 29 1/2	Rose- wd.	Cloth, Blk.	50.7	1,400.00 Pair
	M-75	Ac.Sus.	10	5,2 1/2	Cones	1	Dome		38-20 ±4	20		500,4.5k	4	14x10 1/4x 25 1/2	Rose- wd.	Cloth, Blk.	37.4	980.00 Pair
	S-75	Ac.Sus.	10	5,2	Cones	1	Dome		42-20 ±4	20		700,4k	4	12 1/2x9 1/2x 23 1/2	Rose- wd.	Cloth, Blk.	24.2	570.00 Pair
	P-45	Ac.Sus.	(2) 5	3 1/2	Cone	1	Dome		55-20 ±4	20		2k	4	13 1/2x5 1/2x 25 1/2	Rose- wd.	Cloth, Blk.	17.6	450.00 Pair
	S-45-2	Ac.Sus.	8	3 1/2	P.L. Cone	1	Dome		49-20 ±4	20		2k	4	10 1/2x8x 18 1/2	Rose- wd.	Cloth, Blk.	15.4	338.00 Pair
	S-40	Ac.Sus.	8			1	Dome		49-20 ±4	10		3k	4	10 1/2x7 1/4x 18 1/2	Rose- wd.	Cloth, Blk.	13.2	200.00 Pair
	P-30	Ac.Sus.	6 1/2			1	Dome		58-20 ±4	10		3k	4	11 1/2x4 1/4x 21 1/2	Rose- wd.	Cloth, Blk.	11	330.00 Pair
	C-75	Log Line	(2) 4			1	Dome		75-20 ±4	10		2.5k	6	4 1/4x7 1/4x 12 1/2	Opt.	Cloth, Blk.	11	395.00 Pair
	C-40	Log Line	4			1	Dome		120-20 ±4	10		2.5k	6	4 1/4x7 1/4x 7 1/2	Opt.	Cloth, Blk.	7.7	295.00 Pair



The Analog Module® Approach

All of Audio Research's products (except the vacuum-tube units) share in common our exclusive Analog Module® technology.

Simply stated the Analog Module® is nothing more than the practical packaging of our proprietary circuitry to employ the bi-polar transistor (and other discreet components) in a linear fashion for low distortion audio applications. The end results include straight-forward designs, easy maintenance, high performance audio products from these basic building blocks.

The SP-4A High Definition® Stereo Control Preamp

The SP-4A is our most deluxe control unit, with ample features to satisfy the most involved "audiophile".

Frequency Response: -3 dB, 5 Hz and 100kHz

Distortion: Less than .005% THD or IMD @ 2V RMS output.

2 dB stepped controls — programmable magnetic inputs



SP-4A

audio research

2843-26th AVE. SO.
MINNEAPOLIS, MINN. 55406

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls: W=woofer, M=midrange, S=subwoofer (S1=super-tweeter)	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance ohms: Normal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$	
BETA SOUND	065	Horn	12	10%	Horn	4 3/4 x 1 1/4	Horn	M	32-18.5 ±5	88	15	800, 3.5k	8/6	17 1/4 x 14 x 25 1/4	Laq. Wal. Blk.	Foam, Blk.	70	940.00	
	075	Horn	12	10%	Horn	4 3/4 x 1 1/4	Horn	M	30-18.5 ±3	92	15	700, 3.5k	8/6	20 3/4 x 16 1/2 x 38 1/4	Laq. Wal. Blk.	Foam, Blk.	90	1,280.00	
	1001 B	Horn	12	10%	Horn	4 3/4 x 1 1/4	Horn	M	27-18.5 ±3	96	30	600, 3.5k	8/6	25 1/2 x 21 1/2 x 41	Laq. Wal. Blk.	Foam, Blk.	150	1,600.00	
BEVERIDGE	2SW-2	ES Line	(2) 12						20-20 ±3			100	8	24x15 x78	Oil. Wal. Blk.	Foam, Blk.	500	7,000.00	
	3	ES Line	4(10)						20-20 ±3	84		200	8	21 dia.x78	Wal. Oak. Wal.	Foam, Blk.	400	3,500.00	
	HD Subwoofer	Ac. Sus.	12						20-400 ±2	86	50		8	16 1/2 x 22 x 26	Oil. Wal.	None	100	1,000.00	
BLACKMAX SYSTEMS	B50	Pas. Rad.	10	5	Cone	1	Done	No	40-20 ±3	89	10	65, 1.25k, 4.5k	8/5	12x12x50	Wal. Ven. Wal.	Cloth, Blk.	68	329.95	
	B40	Vented	10	5	Cone	1	Dome	No	50-20 ±3	88	10	1.25k, 4.5k	8/5	12x12x38	Wal. Ven. Wal.	Cloth, Blk.	54	249.95	
	B30	Vented	10			1	Dome	No	60-20 ±4	89	10	2.8k	8/6	12x12x26	Wal. Ven. Wal.	Cloth, Blk.	40	169.95	
	B20	Vented	8			1	Dome	No	60-20 ±4	87	10	2.5k	8/6	12x10 1/2 x 18	Wal. Ven. Wal.	Cloth, Blk.	32	139.95	
BOSE	301	Ported	8			3	Dome					10	1.2k, 3k	8	10 1/2 x 17 x 19 1/2	Wal. Vin. Wal.	Foam	18	121.00
	501	Ac. Sus.	10			3	Dome					20	1.5k, 3k	4	24x14 1/2 x 14 1/2	Wal. Vin. Wal.	Cloth, Brn.	42	212.00
	601	Ported	(2) 8			(4) 3	Dome					15	2k	8	25 1/2 x 15 x 13	Wal. Ven. Wal.	Cloth, Brn.	36	299.50
	901		(9) 4 1/2									10		8	12 1/2 x 21 x 13	Wal. Ven. Wal.	Cloth, Brn.	35	859.00
BOSTON ACOUSTICS	A200	Ac. Sus.	10	4	Cone	1	Dome		38-20 ±2.5	90	20	450,3k	8/5.5	21x6 1/2 x 41 1/2	Oil. Wal.	Cloth, Blk.	65	350.00	
BRAUN	Output C	Ac. Sus.	4			1	Dome		50-25	86	10	1.5k	8	4 1/4 x 4 1/2 x 6 1/4	Alum. Alum., Blk.	Alum., Blk.	14	249.00	
	L-200	Ac. Sus.	5 1/2			1	Dome		40-25	86	10	1.5k	8/4	6 1/4 x 5 1/2 x 10	Alum. Alum., Blk.	Alum., Blk.	21	289.00	
	L-300	Ac. Sus.	5 1/2	2	Dome	3/4	Dome		35-25	86	10	600,3k	8	6 1/4 x 6 1/4 x 10	Alum. Alum., Blk.	Alum., Blk.	31	429.00	
	SM-1002	Ac. Sus.	7	2	Dome	3/4	Dome		33-25	89	10	500,4k	8/4	8 3/4 x 7 1/2 x 13 1/2	Wal. Ven. Wal.	Alum., Blk.	30	578.00	
	SM-1003	Ac. Sus.	8.3	2	Dome	3/4	Dome		28-25	89	10	500,3k	8/4	9 1/4 x 8 1/4 x 16	Wal. Ven. Wal.	Alum., Blk.	21	339.00	
	SM-1004	Ac. Sus.	10	2	Dome	3/4	Dome		25-25	89	10	500,3k	8/4	10 1/2 x 9 x 19	Wal. Ven. Wal.	Alum., Blk.	26	379.00	
	L-1030	Ac. Sus.	10	2	Dome	3/4	Dome		20-25	88	15	500,3k	8/4	12 1/2 x 10 1/2 x 27 1/2	Wal. Ven. Wal.	Alum., Blk.	42	479.00	
	LW-1 Subwoofer	Ac. Sus.	2x10						18-200	Adj.	40	200	8/4	27 1/2 x 27 1/2 x 12 1/2	Wal. Ven. Opt.	Alum., Blk.	93	698.00	
CANNON-TLS	1232T	Pas. Rad.	12	5 1/2	Cone	2x5	Pz.	M,T	20-30 ±5	92	18	400,3k	6/5	14x14 1/4 x 39	Wal. Vin. Wal. Vin.	Cloth, Brn.	65	499.95	
	1232	Pas. Rad.	12	5 1/2	Cone	2x5	Pz.	M,T	25-30 ±5	92	15	400,3k	6/5	14x14 1/4 x 25	Wal. Vin. Wal. Vin.	Cloth, Brn.	50	399.95	



The Simple Approach

In Audio, perhaps more so than in any other electronic discipline, the concept of "simpler is better" proves true. The SP-5, although elegant, is such a product. By eliminating all but essential features, a basic stereo control of the highest quality becomes available at a modest cost.

The SP-5 High Definition® Stereo Control Preamplifier

Frequency Response: -3 dB, 5 Hz and 100kHz
 Distortion: Less than .005% THD or IMD
 Segmented controls, 2 dB steps



SP-5

audio research

2843-26th AVE. SO.
 MINNEAPOLIS, MINN. 55406

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter type	Level control? (W=woofer, M=midrange, T=tweeter; ST=super tweeter)	Frequency response, Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance, ohms	Monitor/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
CANNON-TLS (Continued)	1032	Pas. Rad.	10	5½	Cone	2x5	Pz.	M,T	25-25 ±5	90.5	12	400,3k	6/5	14x14¼x 25	Wal. Vin.	Cloth, Brn.	45	299.95	
	1022	Pas. Rad.	10			2x5	Pz.	T	30-20 ±5	90.5	10	3k	6/5	12¼x13½x 22	Wal. Vin.	Cloth, Brn.	35	199.95	
CANTON	GLE 40	Ac. Sus.	6						42-30	88	10	1.4k	4	10½x5½x7	Opt.	Alum., Brn.	9	125.00	
	GLE 50	Ac. Sus.	7	1¼	Dome	¾	Dome		36-30	88	10	800, 2.2k	4	12¾x7x8¾	Opt.	Alum., Brn.	17	195.00	
	GLE 60	Ac. Sus.	8¾	1¼	Dome	¾	Dome		28-30	88	10	800, 2.2k	4	14½x8½x9¾	Opt.	Alum., Brn.	19	259.00	
	GLE 100	Ac. Sus.	12	1½	Dome	¾	Dome		22-30	89	20	800, 2.6k	8/4	21¾x11½x 13½	Oil. Wal.	Alum., Brn.	37	450.00	
	HC 100	Ac. Sus.	4¼			¾	Dome		48-30	86	5	1.7k	4	7½x5¼x4¼	Opt.	Alum., Opt.	10	190.00	
CELESTION	Ditton 662	Pas. Rad.	12	2	Dome	1	Dome		38-20 ±3		20	700,4.5k	8	41¾x15-¾x 11½	Opt.	Cloth, Brn.	74.8	749.50	
	Ditton 551	Ported	10	2	Dome	1	Dome	M,T	38-20 ±3		20	600,4.5k	8	28¾x15½x13	Opt.	Cloth, Brn.	55	499.50	
	Ditton 442	A.C. Sus.	12	6	Cone	1	Dome		45-20 ±3		20	600,4.5k	8	30x15-¾x 11½	Opt.	Cloth, Brn.	52.8	419.50	
	Ditton 33	A.C. Sus.	10	5	Cone	1	Dome		70-22 ±2		10	500,2.5k	8/4	24x13¾x10½	Opt.	Cloth, Blk.	34	319.50	
	UL-6	Pas. Rad.	6			1	Dome		80-20 ±3		20	2.5k	8/4	11½x16x8¾	Opt.	Cloth, Blk.	22.5	234.50	
	Ditton 15XR	Pas. Rad.	8			1	Dome		60-20 ±4		10	2.4k	8	22x9¾x9½	Opt.	Cloth, Blk.	18	209.50	
CERWIN-VEGA	A-10	Bass Ref.	10				Dhorm	T	38-20 ±4	92	5	2k	8/4	13x11¼x24	Oil. Wal.	Cloth, Blk.	38	189.00	
	A-123	Bass Ref.	12	6	Cone		Dhorm	M,T	38-20 ±4	97	5	500, 5k	8/4	14½x11½x25	Oil. Wal.	Cloth, Blk.	50	310.00	
	S-1	Bass Ref.	12	6½	Cone		Dhorm	M,T	28-20 ±4	98	5	300, 4k	8/4	14½x14x25	Oil. Wal.	Cloth, Brn.	55	435.00	
	313	Bass Ref.	12	6	Cone		Horn	M,T	30-17 ±4	100	5	700, 3.5k	8/4	15¾x15¾x30	Oil. Wal.	Cloth, Brn.	63	330.00	
	316R	Bass Ref.	15	6½	Cone	(2)	Horns	M,T	30-17 ±4	103	5	500, 3.5k	8/4	18½x17¾x34	Oil. Wal.	Cloth, Brn.	82	499.00	
	12TR	Bass Ref.	12	6½	Cone	(2)	Horns	M,T	28-20 ±4	102	5	250, 4k	8/4	13½x13½x40	Oil. Wal.	Cloth, Brn.	76	470.00	
	HED	Bass Ref.	6				Dhorm	T	60-20 ±4	90	5	3k	8/4	10x8x14	Opt. Wal.	Cloth, Blk.	12	85.00	
	U-6	Bass Ref.	10				Dhorm	T	42-20 ±4	94	5	2k	8/4	13½x11x24¾	Opt. Wal.	Cloth, Blk.	36	170.00	
	U-10	Bass Ref.	12				Horn	T	45-17 ±4	96	5	2k	8/4	15½x11x25	Opt. Wal.	Cloth, Blk.	37	195.00	
	U-12	Bass Ref.	12	5			Horn	M,T	45-17 ±4	96	5	700, 4k	8/4	12¾x14¾x25	Opt. Wal.	Cloth, Blk.	52	215.00	
	HED	Bass Ref.	15				Horn	T	32-17 ±4	103	5	2k	8/4	10x17¾x31	Opt. Wal.	Cloth, Blk.	80	325.00	
	U-123	Bass Ref.	12	6	Cone		Horn	M,T	38-17 ±4	98	5	700, 4k	8/4	15½x15x26¾	Opt. Wal.	Cloth, Blk.	56	265.00	
	U-15	Bass Ref.	15	6	Cone		Horn	M,T	32-17 ±4	103	5	700, 4k	8/4	19x17¾x32	Opt. Wal.	Cloth, Blk.	105	375.00	
	U-321	Bass Ref.	12	(2) 6	Cone		Horn	M,T	32-17 ±4	98	5	700, 4k	8/4	15½x15x39½	Opt. Wal.	Cloth, Blk.	75	390.00	
	HED	Bass Ref.	15				Horn	M,T	32-17 ±4	103	5	700, 4k	8/4	19x17¾x32	Opt. Wal.	Cloth, Blk.	105	375.00	
	U-351	Bass Ref.	12				Horn	M,T	32-17 ±4	98	5	700, 4k	8/4	15½x15x39½	Opt. Wal.	Cloth, Blk.	75	390.00	
	UT-12R	Bass Ref.	12				Horn	M,T	32-17 ±4	98	5	700, 4k	8/4	15½x15x39½	Opt. Wal.	Cloth, Blk.	75	390.00	
CHAPMAN SOUND	SCJ1	Air Sus.	12	5	Cone	1	Dome	T	30-20	90	25	350, 3.5k	4	18x13x28	Wal.	Cloth, Blk.	65	800.00 Pair	
	310	Air Sus.	10	5	Cone	1	Dome	T	35-20	88	25	400, 3.5k	4	14x11x21½	Wal.	Cloth, Blk.	43	650.00 Pair	
	250	Air Sus.	5			1	Dome	T	60-20	86	15	3.5k	8	8x7¾x13	Wal.	Cloth, Blk.	14	400.00 Pair	



Listen Through the Music System

It is very easy, these days, to talk of sophisticated signal processing equipment that purports to do this or that, but the real measure of audio equipment is not what it does, but what it *does not do*. Simply to amplify, without adding to, or taking from the musical signal is very difficult, and this is always achieved only in measure. Interestingly enough, you cannot learn that measure of performance from the "specifications" because they relate only to static test conditions, and so we invite you to listen to,

The SP-6A High Definition® Preamplifier/Stereo Control

Some of the specifications:

Response -3 dB @ .05 Hz and 250kHz (high Z)

Output: 60 V RMS (Hi Z) at less than ½% THD at 1kHz

Maximum Input Magnetic Phono without overload: 1 kHz — 500 mV RMS
10kHz — 1.5 V RMS



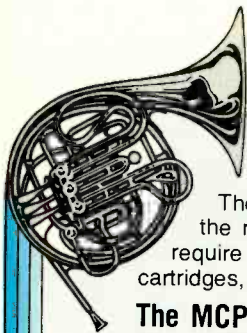
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MINNEAPOLIS, MINN. 55406

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls: W=woofer; M=midrange; T=tweeter; S=super/tweeter	Anechoic freq. response Hz to kHz, ±dB	dB SPL / watt/meter	Recommended min. amp. power	Crossovers frequencies, Hz.	Impedance Ohms Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
CHARTWELL	PM 110	Bass Reflex	6½		1	Dome			65-20 ±3	86	10	2.5k	8/5	9x8¼x18¼	Opt.	Foam, Blk.	16½	499.00 Pair
	PM 210	Bass Reflex	8		1	Dome			50-20 ±3	89	10	2.8k	8/5	13¼x11¼x26	Opt.	Foam, Blk.	33	850.00 Pair
	PM 410	Bass Reflex	12	4	Cone	1.4	Dome		40-20 ±3	92	20	300, 2.4k	8/6	15¼x13x34¼	Opt.	Foam, Blk.	66	1,500.00 Pair
	LS3/5a	Ac.Sus.	5		1	Dome			70-20 ±3	82	25	3k	15/8	7½x6¼x12	Opt.	Cloth, Blk.	11½	499.00 Pair
	PM 450P	Bass Reflex	12		1.4	Dome			40-20 ±3	94	30	1.8k	8/6.8	17½x15½x30	Opt.	Foam, Blk.	70	2,400.00 Pair
CIZEK	1	Ac. Sus.	10		1	Dome	T		35-17 ±2	88	15	1.5k	7¼/4¼	25x15½x9¼	Oil. Wal. Opt.	Foam, Brn.	48	219.00
	2	Ac. Sus.	8		1	Dome	T		38-17 ±2	88	15	1.5k	7¼/4¼	21x13x9	Oil. Wal. Opt.	Foam, Brn.	38	149.00
	3	Ac. Sus.	8		1	Dome	T		48-17 ±2	88	15	1.5k	7¼/4¼	19x11¼x7½	Hick. Vin. Opt.	Foam, Brn.	25	99.00
	MG-27 Subwoofer	Ac. Sus.	(2) 10						27-200 ±3	86	25	200	4	29x17¼x12½	Oil. Wal. Opt.	Foam, Brn.	86	295.00
	KA-1	Ac. Sus.	6½		1	Dome			70-20 ±3	88	15	1.5k	4	13¼x9x8¾	Oil. Wal. Opt.	Foam, Brn.	17	295.00
CLARKE SYSTEMS	Precedent	Ac. Sus.	12	4½	Cone	1	Dome		30-20 ±4	89	30	500, 4k	8/5	15x13x31	Chest. Lam. Opt.	Cloth, Brn.	68	599.00 Pair
	Encore	Tuned Port	8		1	Dome			40-20 ±4	88	20	3k	8/4	12x12x22	Chest. Lam. Opt.	Cloth, Brn.	35	330.00 Pair
	Prelude	Tuned Port	8		1¾	Ring			45-18 ±4	90	20	5k	8/4	12x12x22	Chest. Lam. Opt.	Cloth, Brn.	32	258.00 Pair
	Tempo	Tuned Port	8		1¾	Ring			55-18 ±4	90	10	5k	8/5	10x9½x18	Chest. Lam. Opt.	Cloth, Brn.	24	198.00 Pair
CONCEPT	CE2	Pas. Rad.	10			Heil	M,T		35-23 ±3	91	20	1.5k	6	14¼x14x25½	Oil. Wal. Opt.	Cloth, Brn.	54	345.00
	CE1	Pas. Rad.	10			Heil	M,T		30-23 ±3	91	20	1.4k	6	15¼x15x40	Oil. Wal. Opt.	Cloth, Brn.	91	445.00
	CEM	Pas. Rad.	12			Heil	M,T		25-23 ±3	91	25	1.3k	6	18x15½x45	Oil. Wal. Opt.	Cloth, Brn.	102	595.00
DCM	Time Window	Hybrid Trans. Line									10		8/6	14¼x11¼x36	Wal. Opt.	Foam, Blk.	32	660.00 Pair
	QED	Hybrid Trans. Line									10		12/8	11¼x9¾x36	Wal. Opt.	Foam, Blk.	35	480.00 Pair
	Time Base	Subwoofer									40-70		6/4	30x18x18	Wal. Opt.	Foam, Blk.	45	770.00 Pair
DECCA	London Super Tweeter			4x5½	Horn, Ribbon			7k-30k		15	7k Req.d	8	4x5½x4	Alum. Opt.		5	199.50	
DENNESEN	ESL110	Ac.Sus	5		(4) 2¼	ES			40-25 ±3	89	20	2.8k	8/4	23x8x7½	Oil. Wal. Opt.	Foam, Blk.	25	300.00
	ESL203	Ac.Sus	8	2½	(5) 2¼	ES			25-25	87	35	800, 2.8k	8/4	11¼x8x40	Oil. Wal. Opt.	Foam, Blk.	60	875.00
	180	Ac.Sus	8		(5) 2¼	ES			40-25	86	35	1.25k	6/3	13½x7½x21½	Oil. Wal. Opt.	Foam, Blk.	30	220.00



The Specialized Approach Products to Meet a Need

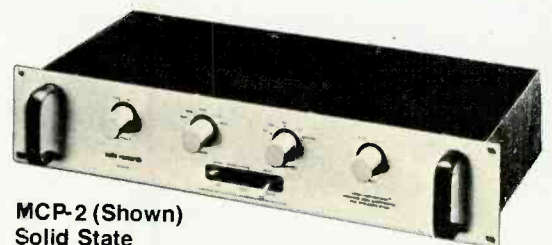
The very best phonograph pickup cartridges include several technologies. One of these is the "moving coil" cartridge. These cartridges tend to have very small signal output because of the requirement for low moving mass. Most music systems will require a special "step-up" system to obtain the benefits of these cartridges, and for these we offer

The MCP-2 and the MCP-22 High Definition® Moving Coil Phono Cartridge Pre-Preamplifiers

Features include adjustable gain, adjustable input impedance, selectable inputs and outputs, a muting switch and vanishingly low distortion. These products will become available in early to mid 1980.

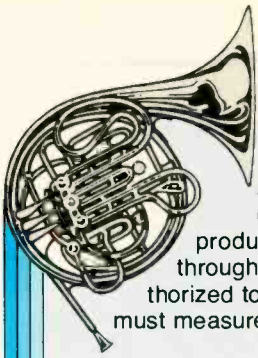
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MCP-2 (Shown)
Solid State

MCP-22
Vacuum Tube



The Audio Research® Dealer Family

At Audio Research the quality approach does not stop with the manufactured product. This approach is extended to you through our authorized dealer. To become authorized to sell Audio Research products, a dealer must measure up to our standards.

An Audio Research dealer must have:

- A high degree of integrity and reliability.
- The ability to recognize good sound (a dealer with this capability is worth knowing).
- The ability to determine the customer's needs and meet those needs within the framework of the customer's budget.

- The ability to assemble and install a musically natural system that realizes the full potential of its components.
- A commitment to provide full service to the customer.
- Stability. No one likes to purchase the current favorite of a dealer, only to come back and find the product is now out of favor. The audio specialist dealer who carefully evaluates and selects the products he sells is of greater service to the consumer than those who are always promoting the latest esoteric fad.

In short, an Audio Research dealer provides a high level of integrity, expertise, and service. Few dealers meet those requirements. Get to know your Audio Research dealer. We think he will meet your standards, too.

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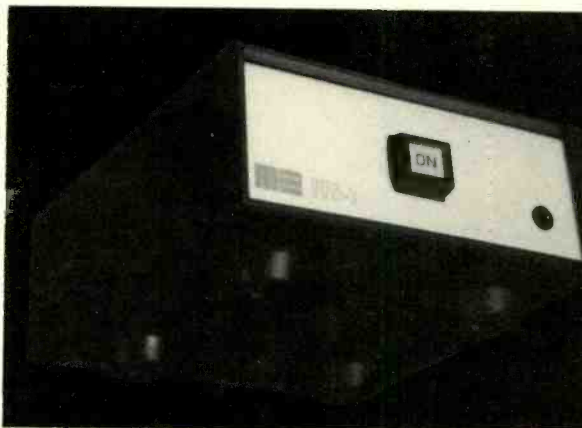
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LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control: W=woofer, M=midrange, T=tweeter, ST=super-tweeter	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
DESIGN ACOUSTICS	D-12A	Ac. Sus./ Vented	(2) 8	1 1/4, (2) 5	Dome, Cones	(2) 1, (3) 1 1/2	Domes, Cones	L, M, T	30-18 ±2	89	25	650, 2k	4/3	22 dia. x 26	Oil. Wal.	Cloth, Blk.	70	750.00
	D-8	Pas. Rad.	(2) 10	5	Cone	1, (4) 2	Dome, Cones	L, M, T	30-17 ±2	94.5	15	600, 1.5k	4/3	44x16 1/2 x 12 1/2	Oil. Wal.	Cloth, Blk.	70	590.00
	D-6	Ac. Sus./ Vented	10	5	Cone	(5) 2 1/2	Cones	L, T	30-15 ±2	92	20	800, 2k	8/5	24 1/2 x 16 1/2 x 13	Oil. Wal.	Cloth, Blk.	50	390.00
	D-4A	Ac. Sus./ Vented	(2) 8	5	Cone	1, (2) 1 1/2	Dome, Cones	L, T	35-18 ±3	90	20	700, 2k	4/3	38x11 x 16 1/2	Oil. Wal.	Cloth, Blk.	55	345.00
	D-3	Ac. Sus./ Vented	10	5	Cone	1	Dome	T	40-20 ±3	89	20	500, 2.5k	8/6	25 1/2 x 14 3/4 x 12	Oil. Wal.	Cloth, Brn.	40	240.00
	D-2	Ac. Sus./ Vented	10			1	Dome	T	40-18 ±3 1/2	90	20	1.5k	8/6	34x12 1/2 x 12 1/4	Oil. Wal.	Cloth & Foam, Blk.	35	220.00
	D1-W	Ac. Sus./ Vented	8			1 1/2	Cone			87.5	15	1.5k	8/6	21 1/4 x 12 x 8	Oil. Wal.	Cloth, Blk.	19	135.00
	D1-A	Ac. Sus./ Vented	8			1 1/2	Cone			87.5	15	1.5k	8/6	20 3/4 x 11 x 8	Oil. Alum.	Cloth, Blk.	12	125.00
EPI	M-70C	Ac. Sus.	6			1	Inv. Dome		60-20 ±3	86.5	10	1.8k	8	10 1/2 x 7 1/2 x 16	Vin.	Cloth, Blk.	17 1/2	79.00
	M-100	Ac. Sus.	8			1	Inv. Dome		48-20 ±3	87	12	1.8k	8	11 x 9 x 21	Opt.	Cloth, Blk.	25	125.00
	M-120C	Ac. Sus.	10			1	Inv. Dome	T	38-20 ±3	88	25	1.8k	8	15 x 11 x 25	Vin.	Cloth, Blk.	42	159.00
	M-200C	Pas. Rad.	8, 12			1	Inv. Dome	T	36-20 ±3	90	15	1.8k	8	17 x 11 x 32 3/4	Oil. Wal.	Cloth, Blk.	60	275.00
	M-500	Pas. Rad.	10, (2) 12	4	Cone	1	Inv. Dome		45-20 ±3	89	15	750, 3k	4	12 x 14 x 36	Opt.	Cloth, Blk.	50	399.00
ESS	AMT Monitor	Pas. Rad.	12				Heil	T	30-23 ±3	91	20	1k	5	15 1/2 x 15 1/2 x 39 1/4	Oil. Wal.	Cloth, Brn.	103	650.00
	AMT IB	Pas. Rad.	12				Heil	M, T	35-23 ±3	91.5	20	1k	6	16 1/2 x 16 1/2 x 35 1/2	Oil. Wal.	Cloth, Brn.	85	507.00
	AMT Bookshelf	Pas. Rad.	12				Heil	T	40-23 ±3	92	20	1k	6	14 x 14 x 24	Oil. Wal.	Cloth, Brn.	65	456.00
	PS 4A	Pas. Rad.	10				Heil	T	35-42 ±3	93	15	2k	6	12 1/2 x 12 1/2 x 35	Vin.	Cloth, Brn.	48	370.00
	PS 5A	Pas. Rad.	10				Heil	T	40-20 ±3	93	15	2.4k	6	14 x 14 x 24 1/2	Vin.	Cloth, Brn.	36	270.00
	PS 8A	Pas. Rad.	8				Heil	T	50-20 ±3	93	10	2.4k	6	12 1/2 x 10 3/4 x 22	Vin.	Cloth, Brn.	30	205.00
	PS 9A	Pas. Rad.	8				Heil	T	55-20 ±3	92	10	2.4k	6	11 1/2 x 9 1/2 x 19 1/4	Vin.	Cloth, Brn.	23	175.00
	Tempest Classic	Pas. Rad.	10				Heil	M, T	38-24 ±3	90	15	1.5k	5	13 1/2 x 15 1/2 x 33 3/4	Oil. Wal.	Cloth, Brn.	55	407.00
	Tempest Bookshelf #1	Pas. Rad.	10				Heil	T	42-23 ±3	93	15	2.4k	6	14 x 14 x 24	Oil. Wal.	Cloth, Brn.	50	310.00
	Tempest Bookshelf #2	Pas. Rad.	8				Heil	T	50-23 ±3	93	15	2.4k	6	12 1/2 x 13 x 24	Oil. Wal.	Cloth, Brn.	45	246.00
ESTranslator	320	ES Bi-polar	(2) 10			666 sq. in.	ES		30-22	35	200, 1.2k	8	43 1/2 x 21 1/2 x 9 1/2		Blk.	47	499.00	
	310	ES Bi-polar	12			416 sq. in.	ES		40-22	35	200, 1.2k	8	38 x 17 x 9 1/2		Blk.	32	349.00	



Simple Makes Perfect

The PPA-1 pre-amplifier is a simple battery-operated step-up device for moving-coil cartridges. The simple Class A circuit has no TIM, no SID, zero feedback, and is hand-matched to 1% tolerances in a simple dual mono design. The styling is simple elegance with 16 ga. steel wrapped in heavy aluminum. And the sound... simply amazing. If you haven't heard the PPA-1, you haven't heard your moving-coil... it's as simple as that.

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How to get an honest 30Hz from a 1.25 cubic foot speaker system.

The story behind the new KLH Computer Controlled Loudspeakers.™

With the introduction of acoustic suspension more than 20 years ago, the loudspeaker industry took an impressive step forward. This technology allowed speaker manufacturers to achieve full-range frequency response in a cabinet substantially smaller than any previous full-range loudspeaker.

Since then, breakthroughs have come and gone in the industry. But none that has significantly reduced the size of a true, full-range system.

The reason is actually quite simple. Accurate bass reproduction requires a woofer to displace a large volume of air. In a small system with a small woofer, the woofer cone must therefore travel a long way to reproduce the lower frequencies.

Although a small woofer is perfectly adequate most of the time, occasional high level, low frequency signals can drive the cone well beyond its intended excursion, causing severe overload distortion.

To avoid this, it has been necessary to attenuate lower frequencies in smaller systems. Which is why small speakers have always had compromised bass.

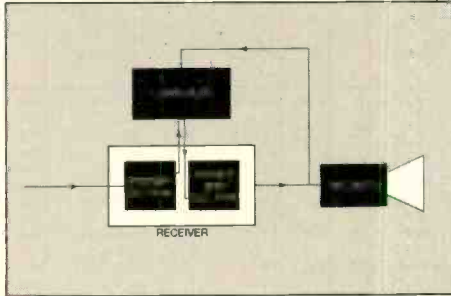
The KLH Analog Bass Computer.™*

To solve this problem, we developed a completely new approach — computer control.

We designed a separate component, the KLH Analog Bass Computer, as an integral part of the entire speaker system. This component sits next to the receiver or amplifier and constantly monitors its output. The computer derives an electronic analog of cone motion, and controls the woofer at the precise instant at which overload distortion would otherwise occur.

With this kind of accurate, reliable control, our designers were free to extract the optimum theoretical performance for any given cabinet size. And develop a line of loudspeakers that can deliver extended bass response in cabi-

nets that are substantially smaller than ever before possible.



The KLH-1 is one example. From a 1.25 cubic foot cabinet, it delivers bass to 30 Hz (-3dB) at 105 dB s.p.l. with absolutely no possibility of overload distortion.

Beyond the Computer.

Since the Analog Bass Computer and the speakers must be designed as a single, integrated system, we started from scratch with the objective of optimizing our new technology.

To achieve the widest possible

bandwidth with acceptable efficiency, we employed sixth-order equalized systems. Combined with the Analog Bass Computer, these systems provide a -3dB point equal to conventional acoustic suspension systems of at least four times their volume.

In keeping with our objectives, we also refused to compromise other elements of the design.

For our cones, we selected polypropylene, a material first developed for use in studio monitors by BBC engineers. The movement of polypropylene reflects the electrical signal more faithfully than either paper or bextrene. The result is a remarkably clear, transparent, uncolored midrange.

For our speaker baskets, we used die-cast aluminum rather than stamped steel.

And we used massive magnet assemblies, optimized for the sixth-order design.

Three Applications.

Finally, we applied all we had learned to accomplish three distinct objectives.

Our first objective was to produce a speaker that raises the absolute level of low-frequency response in a cabinet that is still practical for the home environment. The new KLH-1 does exactly that. It delivers flat bass to 30 Hz (-3dB) from a floor standing unit just 11" x 30½" x 10¼". At a price per pair of \$1100** including Analog Bass Computer.

Our second objective was to provide the best possible combination of price and performance. Our solution is the KLH-2. At \$660** per pair with computer, the KLH-2 can deliver flat bass to 38 Hz (-3dB) at 102 dB s.p.l.

from a cabinet that measures 10¼" x 21" x 8½".

Our third and final objective was to design a moderately priced speaker with performance equal to or better than anything near the cost, in a cabinet one fourth the size. This is the KLH-3. It measures 8½" x 12½" x 6", delivers bass to 40 Hz (-3dB) at 95 dB s.p.l. and costs \$450 ** per pair including computer.

The new line of KLH Computer Controlled Loudspeakers.



Listen to them.

For more information, call toll-free 800-225-6042 (in Mass. 1-800-532-9566). Or write KLH Research and Development Corp., 145 University Avenue, Westwood, MA 02090. In Canada: The Pringle Group, Ontario.



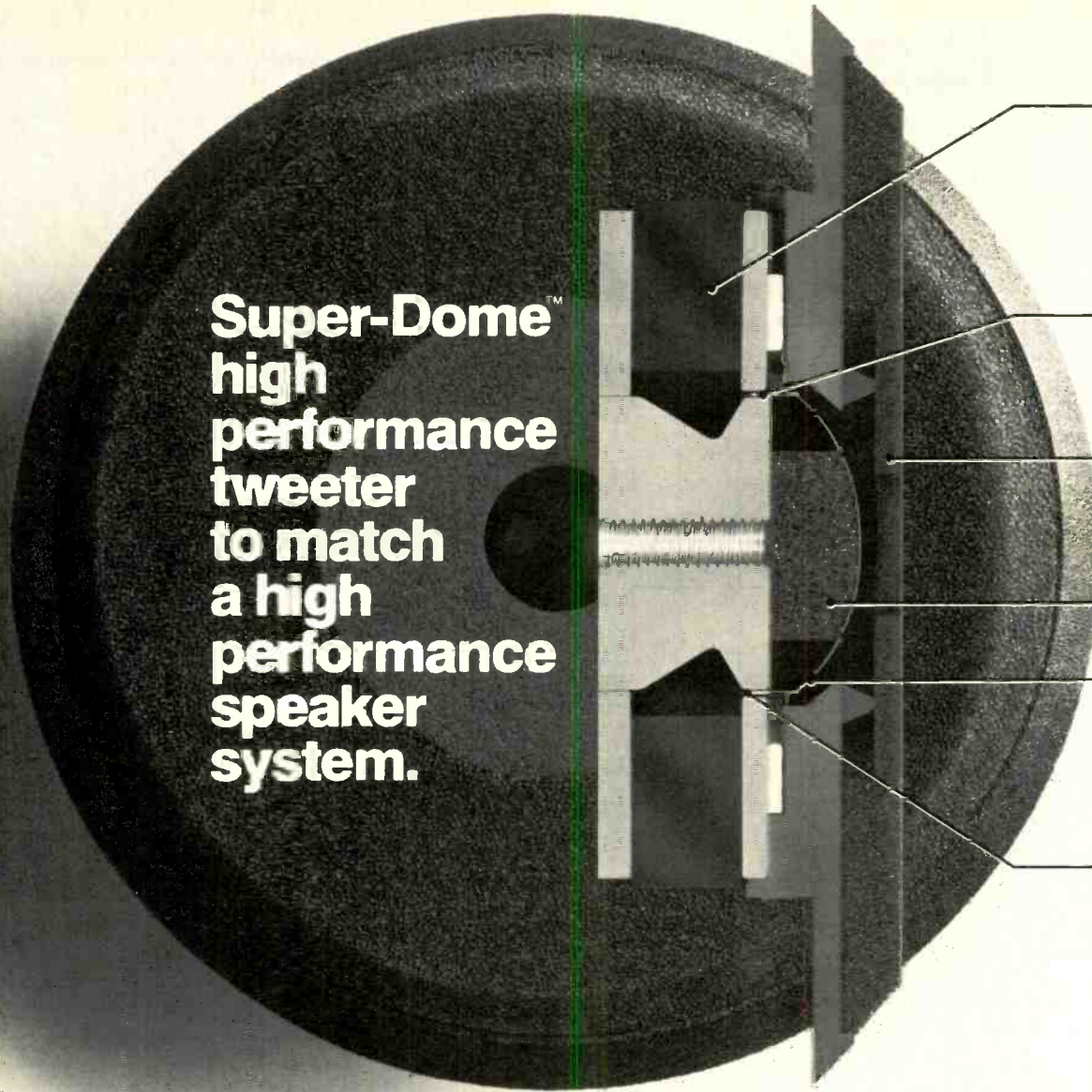
*Patent applied for.

**Manufacturer's suggested retail price.

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Legal control? W=woofer; M=midrange; T=tweeter; S=super tweeter	Anechoic freq. response Hz to kHz, ± dB	SPL, watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance Ohms Nominal/minimum	Dimensions, inches	Finish	Grille Material	Color	Weight, lbs.	Price \$
ESTranslator (Continued)	300	ES	10							50-22	35	200, 1.2k	8	24½x14¼			Blk.	18	199.00	
	290	ES Bi-polar ES Bi-polar	8							70-22	25	200, 1.2k	8	21¼x12½			Blk.	14	139.00	
ELECTRO-VOICE	Interface: D Series II	Vented	12	6½	Cone		Horn	T	28-18 ±2.5	97	1.5	40,350, 3k	8/5	21¼x15½	Wal.	Cloth,	114	1,750.00		
	Interface:C Series II	Vented	10	6½	Cone	1½	Dome	T	30-18 ±2.5	93	2.8	42,400, 2.5k	6/4	20x12½	Wal.	Brn. Cloth,	60	995.00		
	Interface:B Series III	Vented	12	8	Cone	1½	Dome	T	30-18 ±2.5	92	3.6	42, 1.5k	8/5	16x11x	Wal.	Brn. Cloth,	42	735.00		
	Interface:A Series III	Vented	12	8	Cone	1½	Dome	T	35-18 ±2.5	92	3.6	49, 1.5k	8/5	15½x8¼	Wal.	Brn. Cloth,	30	550.00		
	Interface:3 Series II	Vented	12	8	Cone	1½	Dome	T	40-18 ±3	92	3.6	57, 1.5k	8/5	14½x13¼	Wal.	Brn. Cloth,	33	199.00		
	Interface:2 Series II	Vented	10	8	Cone	1½	Dome	T	47-18 ±3	92	3.6	66, 1.5k	8/5	13½x10½	Wal.	Brn. Cloth,	25	160.00		
	Interface:1 Series II	Vented		8	Cone	1½	Dome	T	56-18 ±3	92	3.6	76, 1.5k	8/5	11½x9¼	Wal.	Brn. Cloth,	23	120.00		
EPICURE	M-5	Ac. Sus.	6			1	Inv. Dome		50-20 ±3	84		1.8k	8	11x8	Vin.	Cloth,	18	90.00		
	M-10	Ac. Sus.	8			1	Inv. Dome	T	42-20 ±3	86	12	1.8k	8	12x9½	Vin.	Brn. Cloth,	33	125.00		
	M-11	Tuned Port	6			1	Inv. Dome	T	38-20 ±3	84	15	1.8k	8	13½x9½	Oil.	Brn. Cloth,	36	159.00		
	M-14	Pas. Rad.	6,8			1	Inv. Dome	T	28-20 ±3		15	1.8k	8	13½x9	Wal.	Brn. Cloth,	40	199.00		
	M-20+	Ac. Sus.	(2) 8			(2) 1	Inv. Domes	T	28-20 ±3	86	20	1.8k	8	18½x12	Wal.	Brn. Cloth,	64	275.00		
	M-400+	Ac. Sus.	(4) 6			(4) 1	Inv. Domes	T	32-20 ±3	85	30	1.8k		14x14	Oil.	Cloth,	90	450.00		
	M-1000	Ac. Sus.	(4) 8			(4) 1	Inv. Domes	T	22-20 ±3	87	40	1.8k	8	18x18	Wal.	Brn. Cloth,	180	1,000.00		
	3.0	Ac. Sus.	10	6	Cone	1	Inv. Dome	T	32-20 ±3	30	475, 2.6k		4	16½x16½	Oil.	Foam, Blk.	61	575.00		
FRANKMANN RESEARCH	Reference Standard Monitor	3-Piece	(4) 12	(2) 6	Cones		Horn, Cone	T	24-22 ±4	96	10	200, 5k, 10k	8/4		Opt.	Cloth, Blk.	105	895.00 Set		
	C ₂ Module (Subwoofer)	Inf. Baf.	(8) 12						16-200 ±4	96	10	200	8/4	50x24x30	Opt.	Cloth, Blk.	130	800.00		
	8/4		12	6	Cone		Horn, Cone		30-22 ±4	90	40	250, 5k, 10k	8/4	16x24x42	Opt.	Cloth, Blk.	80	650.00 Pair		
	C' Module (Subwoofer)	Inf. Baf.	(4) 12						24-200 ±4	96	10	200	8/4	29x20x29	Opt.	Cloth, Blk.	70	400.00		
FRAZIER	Super Midget	Tuned Slot	4						50-12 ±5	89	1		8	15½x6¼	Wal.	Cloth,	13	60.00		
	CAD-1	Tuned Slot	8			3	Cone		50-14	93	1	3k	8	19x10½x	Wal.	Cloth,	26	101.00		
	Monte Carlo	Tuned Slot	8			3½	Pz.		50-25	93	5	4k	8	19x10½x	Vin.	Blk.	31	132.00		
	Mark IV	Tuned Slot	10			3x7	Horn	T	40-18	96	10	2k	8	24x14x	Oil.	Cloth,	44	233.00		
	Concerto	Tuned Slot	10	3x7	Horn	¾	Pz.	T	35-25	96	10	2k, 4k	8	21½x16x16	Wal.	Black Cloth,	56	315.00		
	Mark V	Tuned Slot	12	(2) 4	Cones	¾	Pz.	M, T	35-25	96	10	500, 4k	8	25½x14x12½	Wal.	Black Cloth,	55	385.00		
	Seven	Tuned Slot	12	(2) 4	Cones	(2) ¾	Pz.	M, T	25-25	99	10	400, 4k	8	29x19x16	Wal.	Black Cloth,	100	515.00		
	Frazier's Thing	Tuned Slot	10, 12	3x14	Horn	(2) ¾	Pz.	M, T	20-25	99	10	800, 4k	4	50x24x18	Wal.	Cloth,	146	1,074.00		
	Eleven	Tuned Slot	12, 15	(4) 4	Cones	(2) ¾	Pz.	M, T	16-25	107	10	400, 4k	4	55x30x18	Wal.	Black Foam, Blk.	250	1,440.00		
FRIED PRODUCTS	Super Monitor	Trans. Line	12	6	Cone	1	Dome		17-20 ±3	88	25	85, 3.2k	8	30x15x52	Opt.	Foam, Blk.	140	4,000.00 Pair		
	Super Monitor Subwoofer	Trans. Line	12						17-200 Hz	89	25		8	30x15x38	Opt.	Foam, Blk.	125	3,000.00 Pair		
	H/2 System	Trans. Line	10	5	Cone	1	Dome		17-20 ±3	89	25	110, 3.2k	8	See T & B/2	Wal.	Foam, Blk.	205	2,100.00 Syst.		
	T Subwoofer	Trans. Line	10						17-200Hz	90	25		8	44x25x21	Wal.	Foam, Blk.	175	1,500.00 Pair		
	D Subwoofer	Line Tun.	10						30-200Hz	90	25		8	18x14x31	Wal.	Foam, Blk.	70	500.00 Pair		
	O Subwoofer	Trans. Line	10						20-200Hz	90	25		8	25x14x30	Foam, Blk.	80	500.00 Pair			
	M/2	Trans. Line	8	5	Cone	1	Dome		20-20 ±3	87	25	110, 3.2k	8	22½x12x43	Wal.	Foam, Blk.	95	950.00		
	R/III	Line Tun.	10	5	Cone	1	Dome	M	32-20 ±3	90	25	350, 3.5k	8	16x14½x28	Oil.	Foam, Blk.	55	550.00		
	C	Line Tun.	6			1	Dome		50-20 ±3	89	25	3.2k	8	10½x9x13½	Wal.	Foam, Blk.	17	950.00 Pair		
	W	Line Tun.	8	4	Cone	1	Dome	M	40-20 ±3	90	25	750, 3k	8	14x10x25	Oil.	Cloth, Blk.	38	350.00		
	B/2	Mod. Inf. Baf.	5			1	Dome		60-20 ±3	87	25	3.2k	8	8½x6¾x12½	Wal.	Foam, Blk.	14	600.00 Pair		
Q	Line Tun.	8			1	Dome	T	45-18 ±3	86	35	2.5k	8	11½x9½x19¼	Wal.	Foam, Blk.	23	140.00			
Superdome					¾	Dome		10k-35k ±3	92			8/8	6x6x6	Vin.		6	100.00			
FULTON (Continued)	FMI 80	Inf. Baf.	8			(2) 2¼	Cones		50-22	88	10	1.6k	8	9½x8½x17¼	Oil.	Cloth,	20	199.00		
	FMI 100	Inf. Baf.	10			(4) 2¼	Cones	T	40-22 ±2	85	15	950	8	12½x9½x22	Wal.	Blk. Cloth,	31	279.00		

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tweeter
to match
a high
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- High-density Acoustifoam™ lens for the wide dispersion associated with smaller, low-output dome radiators.
- Foam damper smoothes response in the upper octave.
- Two layers of phenolic-impregnated linen, bonded together with wave patterns intersecting at 45°, produce a dome of high stiffness, dimensional stability, and strength.
- Ferro fluid held magnetically in the voice-coil gap damps coil motion for smooth response in the lower octaves.

The Super-Dome™ tweeter in the new generation of Interface speakers represents an extraordinary development in speaker design. Electro-Voice engineers have developed the first high-performance tweeter capable of matching the high efficiency and extended bass response found in our optimally vented, computer designed Interface:A. Super-Dome has the sonic excellence normally associated with a dome tweeter and the efficiency heretofore found only in cone tweeters — two to four times that found in a standard dome. Plus, its voice coil will withstand a full 25 watts power input long term. That's *five times* the power handling capacity of other standard dome or cone tweeters.

While the angle of dispersion narrows at high frequencies with conventional tweeters, the high-density Acoustifoam™ lens in Super-Dome helps keep dispersion constant in the upper octaves. Acoustically transparent at lower tweeter frequencies, the lens becomes opaque at higher frequencies, reducing the effective diameter of the radiating surface, thus increasing the angle of dispersion.



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The result is the wide, uniform high-frequency dispersion necessary for precise localization of sound, both lateral and front-to-back.

Super-Dome is found in six of seven speakers in the new third-generation Interface line. No matter which model you decide to buy, you are assured of outstanding performance and model-to-model sonic integrity. Our goal remains the same as it was in 1973 when we introduced the first Interface speaker — to offer you a speaker that sounds like music.

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Interface®

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter type	Level control? w/woofer, Midrange, Tweeter (ST=step/tweeter)	Acoustic freq. response Hz to kHz ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance Ohms; Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
FULTON (Continued)	Nuance	Inf. Baf.	10	5	Cone	2	Cone	M,T	34-42 ±1.5	85	35	680,6.5k, 15k	8	14x13x34	Oil. Wal.	Cloth, Brn. Cloth, Blk.	80	495.00
	Premiere		(2) 12, 10	5,8	Cones	3		7	13-80 ±1	82	50	39,122, 425,2.4k, 8k, 26k	8	25x22x60	Oil. Wal.		300	4,495.00 Pair
FUNDAMENTAL RESEARCH	Large Infrasonix	Air Sus.	(2) 10								75		4/3	15x16x38½	Wal. Lam.	Cloth, Blk.	85	450.00
	Smaller Infrasonix	Air Sus.	10								75		8/6	13x13x28	Wal. Lam.	Cloth, Black.	50	299.00
	Disco Punch	Vented	(4) 12								75		8/6	60x18x24	Blk.	Metal, Blk.	225	750.00
GALE	GS401	Ac.Sus.	(2)8	4	Cone	¾	Dome	M,T	35-20 ±5	82	40	475,5k	8/3½	13x12x23¼	Opt.	Cloth, Blk.	48	525.00
GEMINI	110	AC. Sus.	8			1	Dome		72-20 ±3	90	7	1.5k	8/8	11x9x20	Wal.	Cloth, Blk.	26	110.00
GRAFYX	SP-Six- "Cone"	Tuned Port	6			2	Cone		50-20 ±3	85	10	2k	8.12/ 6.5	16x10x7½	Vin.	Cloth, Brn.	15	75.00
	SP-Ten	Tuned Port	10			1	Hard Dome		35-20 ±3	87	10	2k	8/6.5	26½x15x 13½	Vin.	Cloth, Brn.	48	169.00
	SP-Eight	Tuned Port	8			1	Hard Dome		40-20 ±3	86	10	2k	8.5/ 6.5	25x14x10	Vin.	Cloth, Brn.	39	139.00
	SP-Six	Tuned Port	6			1	Hard Dome		42-20 ±3	85	10	2k	8.5/ 6.5	20½x12x8	Vin.	Cloth,Brn.	25	109.00
GREAT WHITE WHALE	Point 3	3-Piece	(2) 10	5		1			20-20 ±3		20	125,4k	8		Opt.	Cloth, Blk.	80	395.00
	Point 4	Ac.Sus.	10	5,8		1,1½		M,T	20-20 ±2.5		50	80,300, 2.5k,8k	4	19½x11½x 41¼	Opt.	Cloth, Blk.	80 Set 90 Pair	900.00 Pair
HARTKE SYSTEMS	Monitor	Inf. Baf.	8			1½	Dome	T	35-25 ±2.5		35	2.5k	8	12½x 19½x10½	Oak	Mesh, Blk.	25	600.00 Pair
	Tweeter Modules					1½	Dome	T	5k-25k ±2.5			5k	8	5x5x2½	Wal.	Mesh, Blk.	2	200.00 Pair
HEATH	ASX-1383	Ac. Sus.	10	5	Cone	1	Dome		40-25 ±3		10	750,4k	8	14½x11½ x 26	Rswd.	Cloth, Brn.	50	589.95 Pair
	AS-1373	Ac. Sus.	10	4½	Cone	1	Dome	M,T	40-20 ±3		10	500,3k	8	13½x13¼ x 36	Wal.	Foam, Grey	47	319.95 Pair
HITACHI	HS-330	Inf. Baf.	10	2½	Cone	1½	Cone	M,T	40-20 ±15	92	10	900,3.5k	8/6	12½x12x 22½	Wal. Vin.	Cloth, Blk.	28.7	249.95
	HS-371	Inf. Baf.	2	5	Cone	1	Dome	T	40-20 ±15	92	10	1.2k,3.8k	8	14½x12½x 23½	Wal. Vin.	Cloth, Blk.	31.3	199.95
	HS-430	Vented	12	2½	Cone	1	Cone	M,T	35-20 ±15	92	10	700,4k	8/5.3	14½x14½x 26½	Wal. Vin.	Cloth, Blk.	46.1	399.95
	HSA-3100	Vented	10	5	Cone	3	Cone		45-20		10		8	14½x11½x 23½	Rose. Vin.	Cloth, Blk.	28½	100.00
	HSA-3120	Vented	12	5	Cone	3	Cone		40-20		10		8	16x12½x 25½	Rose. Vin.	Cloth, Blk.	38½	150.00
	HS-1M	Inf. Baf.	4			1	Cone		50-20 ±15	85	15	2.7k	8	4½x4¾x7½	Alum.	Metal, Blk.	5½	199.95
IMF	RSPM Mark IV	Trans. Line	11½x8½	6	Cone	1¼,¾	Dome, ST	M,T	17-20		50	350,3k,13k	8/4	39½x16½ x19½	Nat. Wal.	Cloth, Blk.	118	2,850.00 Pair
	Monitor TLS-80 Mark II	Trans. Line	11½x8½	6	Cone	1¼,¾	Dome, ST	M,T	20-20		40	350,3k,13k	8/4	38½x16 x18	Nat. Wal.	Cloth, Blk.	96	2,100.00 Pair
	Studio TLS-50 Mark II	Trans. Line	8	4	Cone	1,¾	Dome, ST	M,T	23-20		30	375,3k,15k	8/4	36x14 x15	Nat. Wal.	Cloth, Blk.	60	1,250.00 Pair
	ALS-40 Mark II	Active Line	(2) 8	4	Cone	1	Dome	M,T	28-20		25	150,375,3k	8/4	26½x13½ x13½	Nat. Wal.	Cloth, Blk.	40	\$1,050.00 Pair
	ALS-30	Active Line	(2) 6½	4	Cone	1	Dome	M,T	29-20		25	250,450,3.5k	8/4	22½x11 x11½	Nat. Wal.	Cloth, Blk.	35	900.00 Pair
	Super Compact Mark II	Bass Ref.	8	4	Cone	1	Dome		30-20		20	375,3.5k	8/4	18x11 x11½	Wal.	Cloth, Blk.	23	594.00 Pair
IMAGE ACOUSTICS	3	Ac. Sus.	(2) 10	(2) 5	Cone	(2) 1	Dome	T	30-20 ±5	91	25	800, 3.3k	4	16x16x36	Oil. Wal.	Cloth, Blk.	75	500.00
	8	Ac. Sus.	(2) 8	(2) 5	Cone	(2) 1	Dome	T	35-20 ±5	92	20	800 3.3k	4	15x15x30	Oil. Wal.	Cloth, Blk.	50	400.00
	2A	Pas. Rad.	(2) 6½			(2) 1	Dome		40-20 ±5	90	20	2.5k	4	14x14x28	Oil. Wal.	Cloth, Blk.	45	300.00
	7A	Pas. Rad.	(2) 8			(2) 1	Dome		40-20 ±5	92	15	2.5k	4	14x14x28	Wal. Lam.	Cloth, Blk.	45	250.00
	6A	Pas. Rad.	(2) 6½			(2) 1	Dome		45-20 ±5	90	15	2.5k	4	13x13x24	Wal. Lam.	Cloth, Blk.	35	200.00
	5A	Pas. Rad.	(2) 5			(2) 1	Dome		50-20 ±5	89	10	2.5k	4	12x12x20	Wal. Lam.	Cloth Blk.	25	150.00
INFINITY SYSTEMS	RS4.5	Pas. Rad.	(2) 12	(4)	EMIM	(4)	EMIT Rib.	M,T	24-32		100	150,5k	4	64½x26½x 14½	Oak	Cloth	190	3,450.00 Pair
	RS2.5	Ac.Sus.	12	(2)	EMIM	(2)	EMIT Rib.		30-32		100	300,5k	4	51x18x11	Oak		117	836.00
	RS1.5		12	5	Cone	(1)	EMIT Rib.								Oak			470.00
	0.1		5				EMIT Rib.		65-32		20	3k	4	11x6½x5¼	Oak	Metal, Blk.	25 Pair	184.00
	Qe	Ac.Sus.	8			2x5	EMIT Rib.		47-32 ±3		10	2.5k	4 or 8	18x12x10	Birch. Vin.	Cloth, Brn.	24	127.00
	Qa	Ac.Sus.	10			2x5	EMIT Rib.		42-32 ±3		15	2.5k	4	25x14x12	Birch Vin.	Cloth, Brn.	40	175.00

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LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofers	Midrange	Midrange type	Tweeter	Tweeter type	Level control? W in woofer; M in midrange; T in tweeter; ST in super tweeter	Anechoic freq. response Hz to kHz	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance, Ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
INFINITY SYSTEMS (Continued)	Qb	Ac.Sus	10	4	Cone	2x5	EMIT Rib.		42-32 ±3	15	600,4k	4	25x14½x12	Birch Vn. Wal.	Cloth, Brn.	43	207.00	
	Qjr	Ac.Sus.	12	1½	Dome	2x1½	EMIT Rib.	M, T	40-32 ±3	25	600,4k	4	25x14½x12	Wal.	Cloth, Blk.	50	299.00	
	QRS	Ac.Sus.	15	(3) 22x¼	EMIT Rib.	(3) 3x½	EMIT Rib.	B, M, T	18-32 ±2	150	100,4k	4	76x48x24	Wal.	Cloth, Blk.	Pair	6,500.00	
	3000B	Bass Ref.	12	4½	Cone	2½	Cone	M, T	35-20 ±4.5	10	500,5k	8	24¼x14½x12	Birch Vn. Wal.	Cloth, Blk.	45	235.00	
	Column II	Slot Loaded	(2) 10	4½	Cone	(2) 1½	Pz.	M, T	35-20 ±3.5	15	750,5k	8	39¼x14x12½	Wal.	Cloth, Blk.	75	384.00	
INNOTECH	D24	Trans.Line	(2) 5	1½	Dome	1	Dome		35-20	85	30	3.5k, 7.5k	8	30¼x15% x36½	Oil. Wal.	Foam	50	427.00
ITONE	VMPS 101b	Ported	8			1%	Phen.		50-17 ±3	98	10	3.5k	8/8	12x9x18	Wal. Vn. Wal.	Cloth, Blk.	18	72.00
	404b	Ported	8			1	Soft Dome	T	45-19 ±3	97	10	3.2k	8/8	12x9x18	Wal. Vn. Wal.	Cloth, Blk.	20	109.00
	606c	Ported	10			1	Soft Dome	T	40-19 ±3	98	10	3.4k	8/8	12½x12x23	Oil. Wal.	Cloth, Blk.	35	169.00
	707	Ported	10	5	Cone	1	Dome	M, T	38-20 ±3	98	10	600, 5k	8/6	15½x11x26	Wal. Vn. Wal.	Cloth, Blk.	45	219.00
	808c	Ported	12	5	Cone	1	Dome	M, T	35-20 ±3	99	10	400, 5k	8/6	15½x11x26	Wal. Vn. Wal.	Cloth, Blk.	48	259.00
	Mini-Tower II		(2) 12	5	Cone	(2) 1, 3	Dome, Horn	M, T, ST	28-30 ±3	98	10	80, 600, 5k, 12k	8/6	15x16x35	Wal. Vn. Teak	Cloth, Blk.	70	389.00
	Tower II		(3) 12	5	Cone	(2) 3, 1	Dome, Horn	M, T, ST	22-30 ±3	103	15	80, 200, 600, 5k, 12k	4/4	15x16x43	Oil. Wal.	Cloth, Blk.	90	549.00
	Super Tower		(2) 15, 12	(2) 5	Cone	(3) 1, 3	Dome, Horn	M, T, ST	20-30 ±3	102	15	80, 200, 600, 5k, 12k	4/4	18x19x50	Teak	Cloth, Blk.	130	799.00
	Super Tower II		(2) 15, (3) 12	(4) 5	Cone	(5) 1, (2) 3	Dome, Horn		17-30 ±3	103	15	100, 600, 5k, 12k	6/6	21x17x82	Opt.	Cloth, Blk.	300	1,499.00
JBL	L19	Bass Ref.	8			1.4	Cone	T		87	10	2.5k	8	13x10x21	Oil. Wal.	Cloth, Opt.	29	175.00
	L40	Bass Ref.	10			1	Dome	T		88	10	1.8k	8	15x11½x23	Oil. Wal.	Cloth, Opt.	44	250.00
	L50	Bass Ref.	10	5	Cone	1.4	Cone	M, T		88	10	800, 3k	8	14¼x11% x24½	Oil. Wal.	Cloth, Opt.	47	325.00
	L110	Bass Ref.	10	5	Cone	1	Dome	M, T		89	10	800, 4k	8	23½x14¼ x11%	Oil. Wal.	Cloth, Opt.	50	410.00
	L150	Pass. Rad.	12, 12	5	Cone	1	Dome	M, T		88	10	1k, 4k	8	41½x17x13	Oil. Wal.	Cloth, Opt.	80	595.00
	L220	Pass. Rad.	15, 14	5	Cone		Horn	M, T		90	10	800, 5k	8	48¼x20% x15%	Oil. Wal.	Cloth, Brn.	106	875.00
	L222	Pass. Rad.	14, 15	5	Cone		Horn	M, T		90	10	800, 5k	8	48¼x20% x15%	Oil. Wal.	Cloth, Blk.	106	895.00
	L300	Bass Ref.	15				Horn	Horn	M, T	93	10	800, 8.5k	8	31¼x23 x22%	Oil. Wal.	Cloth, Opt.	145	1,250.00
	L100 - 4311WX	Bass Ref.	12	5	Cone	1.4	Cone	M, T		91	10	1.5k, 6k	8	23½x14¼ x11%	Oil. Wal.	Cloth, Blk.	42	365.00
	D4400	Horn	(2) 15	(2)	Horn	3%	Horn	M, T		96	10	500, 7k	8	35½x103% x24%	Oil. Wal.	Pair	695	4,800.00
	Paragon 502	Bass Ref.	8			3	Cone			10	2k	4	21¼x13½ x11%	Wal. Vn. Wal.	Cloth, Brn.	27½	139.95	
	702	Bass Ref.	10	5	Cone	3	Cone	M, T		10	600, 3k	4	25½x15% x11%	Wal. Vn. Wal.	Cloth, Brn.	38	179.95	
	902	Bass Ref.	12	5	Cone	3	Cone	M, T		10	600, 3k	4	27½x17% x12%	Wal. Vn. Wal.	Cloth, Brn.	44½	219.95	
JVC	SM-3	Ac. Sus.	3%			1	Dome			86	2.5k	8	4½x4½x7%	Alum.		4.8	169.90	
	SM-5	Ac. Sus.	5½			1	Dome			88	2.5k	8	5% x5% x9%	Alum.		9.2	298.90	
	SK-400H	Bass Ref.	8			2%	Cone			91	2k	8	10% x10% x17%	Wal. Vn. Wal.	Cloth, Brn.	17.6	149.90	
	SK-500H	Bass Ref.	10			2%	Cone			92	2k	8	12½x12% x19%	Wal. Vn. Wal.	Cloth, Brn.	Pair	209.90	
	SK-600H	Bass Ref.	10	2%	Cone	2	Cone			92	1.2k, 10k	8	12½x12% x19%	Wal. Vn. Wal.	Cloth, Brn.	Pair	239.90	
	SK-700H	Bass Ref.	10	5	Cone	1	Dome	M, T		93	900, 9k	8	13½x13% x22%	Wal. Vn. Wal.	Cloth, Brn.	Pair	179.95	
	SK-1000H	Bass Ref.	12	5	Cone	1	Dome	M, T		94	900, 9k	8	15% x13% x25%	Wal. Vn. Wal.	Cloth, Brn.	48.5	279.95	
	Zero-3	Bass Ref.	10	2%	Dome	2½x%	Ribbon	M, T		91	1.5k, 7k	6	12% x13% x22%	Oil. Rose.	Cloth, Blk.	39.6	319.95	
	Zero-5	Bass Ref.	12	3%	Dome	2½x%	Ribbon	M, T		91.5	500, 5k	6	14% x13% x25%	Oil. Rose.	Cloth, Blk.	46.2	399.95	
	Zero-9	Bass Ref.	(2) 12	3%	Dome	3½x%	Ribbon	M, T		92	450, 5.5k	6	16% x16% x41%	Oil. Rose.	Cloth, Blk.	92.4	699.95	
JANIS AUDIO	W1	Slot Load.	15						30-100 ±1	87	60	100	7	22x22x17½	Oil. Wal.	Wood, Blk.	100	675.00
	W2	Slot Load.	15						33-100 ±1	87	60	100	7	22x22x17½	Oil. Wal.	Wood, Blk.	90	450.00
JENSEN	20	Ac.Sus.	8			2	Cone		70-18 ±3	88	10	4k	8/6	18½x11 x8%	Wal. Vn. Wal.	Cloth, Brn.	18	89.95
	30	Ac.Sus.	10	3½	Cone	2	Cone		60-18 ±3	89	10	1.5k, 4k	8/6	24½x15 x10	Wal. Vn. Wal.	Cloth, Brn.	28	169.95
	LS-2b	Ac.Sus.	8			2	Cone		65-18 ±3	88	10	4k	8/6	18¼x11 x9%	Wal. Vn. Wal.	Knit, Brn.	18	99.95

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Tweeter Type	Level controls T=woofer; M=midrange; TW=tweeter; ST=super-tweeter	Anechoic freq. Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz		Impedance, ohms Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
JENSEN (Continued)	LS-3b	Ac.Sus.	10		2	Cone	T	60-18 ±3	88	10	3.5k	8/6	23x12½ x10¼	Wal. Vin.	Knit. Brn.	28	154.95				
	LS-4b	Ac.Sus.	10	3½	Cone	2	Cone	M,T	55-18 ±3	89	10	1k,4k	8/6	24½x13½ x12½	Wal. Vin.	Knit. Brn.	40	219.95			
	LS-5b	Ac.Sus.	12	(2) 3½	Cones	1	Dome	M,T	50-20 ±3	90	10	1k,4k	8/6	26x15½ x13%	Wal. Vin.	Knit. Brn.	50	279.95			
	LS-6b	Ac.Sus.	15	(2) 3½	Cones	1	Dome	M,T	45-20 ±3	90	10	1k,4k	8/6	30½x18% x16%	Wal. Ven.	Knit. Brn.	70	369.95			
	System B	Vented	12	6,1¼	Cone, Dome	1,2	Dome, Cone	M,T	37-21 ±2	90	9	300,1.8k, 8k	8/5	33½x16½ x11%	Wal. Brn.	Knit. Brn.	85	549.95			
JONSON	President	Inf. Baf.	(2) 10	(5) 1½	Dome	(3) 1	Dome		25-20	80	50	2k, 4k	15	21½x20x43	Oil. Wal. Oil. Wal.	Plas., Blk. Oil. Wal.	120	1,598.00 Pair			
	Ambassador	Inf. Baf.	10	(5) 1½	Dome	(3) 1	Dome		30-20	82	50	2k, 4k	10	18x20x37	Oil. Wal. Oil. Wal.	Plas., Blk. Plas., Blk.	90	1,210.00 Pair			
JUMETTITE	CR602	Inf. Baf.	2x10		¾x3	Horn		38-16 ±3	91	30	600	4/2.5	17x17x47¼	Oil. Wal. Oil. Wal.	Silk, Sand Silk, Sand	112	1,900.00 Pair				
	FW603	Inf. Baf.	3x10		¾x3	Horn		38-16 ±3	90	30	600	4/2.5	22x14x47¼	Oil. Wal. Oil. Wal.	Silk, Sand Silk, Sand	130	2,400.00 Pair				
KA/KINETIC AUDIO	Imp	TAL (Tapered Ac.Line)	12	5	Cone	1¼	Dome	M,T	34-22 ±2.5	93	15	300,2k	8	14½x9 x24	Wal. Ven.	Knit. Blk.	48	299.00			
	Stat	Dual TAL	(2) 5		Cone	1¼	Dome	T	36-22 ±2.5	94	10	1.8k	4	10½x9 x17½	Wal. Ven.	Knit. Blk.	38	399.00			
	Impulse	TAL	12	5	Cone	1¼	Dome	M,T	20-22 ±2.5	90	35	175,2k	8	14½x14 x26	Wal. Ven.	Knit. Blk.	85	499.00			
	Trapezoid	TAL	12	5	Cone	1¼,1	Dome, Dome	M,T, ST	18-22 ±2.5	91	35	175,2k 7.5k	8	16x14 x40	Wal. Ven.	Knit. Blk.	115	699.00			
	Labyrinth	TAL/Laby.	12	6½	Cone	1¼,1	Dome, Dome, Dome	M,T, ST, ST	16-22 ±2.5	91	35	90,2k, 7.5k	8	16x18 x48	Wal. Ven.	Knit. Blk.	165	1,299.00			
	Pulse	TAL	8			1	Dome	ST	36-22 ±2.5	92	10	1.8k	8	10½x9 x24	Wal. Ven.	Knit. Blk.	40	199.00			
	Trapezoid Subwoofer	TAL	12						18-2 ±1.5	91	25	40,90, 175,2k	8	16x14 x40	Wal. Ven.	Cloth, Blk.	85	399.00			
	Labyrinth Subwoofer	TAL/Laby.	12						18-2 ±1.5	91	25	40,90, 180,2k	8	16x18 x48	Wal. Ven.	Cloth, Blk.	125	699.00			
	Titan Labyrinth	Dual TAL/Laby.	(2) 12	(2) 5	Cones	(2) 1¼	Domes, Domes	M,T, ST, ST	14-22 ±2	95	15	90,2k, 7.5k	4	31x18 x48	Wal. Ven.	Knit. Blk.	375	1,999.00			
	Labyrinth Trapezium	TAL/Laby.	12	5	Cone	1¼,1	Dome, Dome	M,T, ST	16-40 ±1.5	90	35	60,1.8k 7.5k	8	18x20 x60	Wal. Ven.	Knit. Blk.	235	2,999.00			
	Impulse Subwoofer	TAL	12						18-2 ±1.5	91	25	40,90, 175,2k	8	14½x14 x26	Wal. Ven.	Knit. Blk.	58	299.00			
	Impulse	TAL	12	5	Cone	1¼	Dome	M,T	20-22 ±2.5	90	35	175,2k	8	14½x14 x26	Wal. Ven.	Knit. Blk.	85	499.00			
	TAS	Dual TAL	(2) 12	5	Cone	1¼,1	Dome, Dome	T, ST	25-22 ±2.5	97	15	300,2.5k, 7.5k	4	24x18 x40	Wal. Ven.	Knit. Blk.	185	999.00			
	Amp Eater	Quad TAL	(4) 12	(2) 5	Cones	(2) 1¼	Domes, Domes	T, ST	12-22 ±2.5	99	10	300,2.5k, 7.5k	2 or 8	31x18 x48	Wal. Ven.	Knit. Blk.	315	1,499.00			
Colossus	TAL	(8) 12	(4) 5	Cones	(4) 1¼	Domes, Domes	T, ST	8-28 ±2.5	105	5	300, 2.5k, 7.5k	1 or 4	36x20 x72	Wal. Ven.	Knit. Blk.	600	2,699.00				
KEF	Corelli	Inf. Baf.	8		¾	Dome		50-30 ±3		25		8	11x8% x18%	Wal./ Teak	Cloth, Brn.	20	215.00				
	Calinda	Bas. Rad., Bass Ref.	8		¾	Dome		40-30 ±3		15		8	11x13% x27%	Wal./ Teak	Cloth, Brn.	42	350.00				
	Cantata	Inf. Baf.	9x13	5	Cone	1½	Dome	M,T	35-20 ±3	15		8	13% x15% x32%	Wal./ Teak	Cloth, Brn.	70	625.00				
	104aB	Bas. Rad., Bass Ref.	8		¾	Dome	M	50-20 ±2		15		8	13x10% x24%	Wal./ Teak	Foam, Blk.	36	425.00				
	105	Cohere. Phase	12	5	Cone	1½	Dome		30-25 ±2	40		8	16% x17% x38	Wal./ Teak	Cloth, Blk.	80	950.00				
	101	Inf. Baf.	5		¾	Dome		90-30 ±2		20		8	7% x7% x13%	Wal./ Teak	Cloth, Blk.	12½	250.00				
	303	Inf. Baf.	8		1	Dome		70-20 ±3		10		8	10% x9 x20	Wal./ Teak	Cloth, Blk.	18	175.00				
	304	Inf. Baf.	(2) 8		1	Dome		60-20 ±3		10		8	11x12% x26%	Satin, Blk.	Cloth, Blk.	30	295.00				
KLH	1		(2) 8	4½	Cone	1	Dome		30-20 ±3	87	40	500, 4k	8	11x10% x30%	Oil. Wal.	Cloth, Blk.	125	1,100.00 Pair			
	2		8	4½	Cone	1	Dome		38-20 ±3	87	40	500, 4k	8	10% x8% x21	Oil. Wal.	Cloth, Blk.	90	660.00 Pair			
	3		6		1	Dome		40-20 ±3	85	40	2.85k	8	8½x8 x12½	Oil. Wal.	Cloth, Blk.	50	450.00 Pair				
	4	Vented	6		1	Dome		63-20 ±3	85	20	2.85k	8	8% x6x12½	Oil. Wal.	Cloth, Blk.	50	290.00 Pair				
KENWOOD	LS-1900	Ported	13	5%	Cone		Horn	M,T	30-21	92	50	600,5k	8	22% x17% x41%	Wal.	Cloth, Black	127.9	1,165.00			
	LS-1800	Ported	13	5%	Cone		Horn	M,T	32-20	92	50	900,5k	8	15% x12% x27%	Wal.	Cloth, Black	64.9	550.00			
	LS-1200	Ported	10	4	Cone	1%	Cone	M,T	35-20	90	40	1k, 6k	8	13% x12% x25%	Wal. Vin.	Cloth, Blk.	47.3	365.00			
	LS-408B	Ported	12	4%	Cone	1%	Cone	M,T	40-20	92	20	2k,5k	8	16% x14% x29	Wal. Wal.	Cloth, Blk.	50	310.00			
	LS-407	Ported	10	4%	Cone	1%	Cone	M,T	40-20	93	20	2k,5k	8	15% x13% x25%	Wal. Vin.	Cloth, Blk.	40	245.00			
	LS-405	Ported	10			1%	Cone		50-20	93	10	2.5k	8	13% x12% x23%	Wal. Vin.	Cloth, Blk.	30	175.00			
	LS-404	Ported	8			1%	Cone		50-20	90	10	4k	8	12% x10 x21	Wal. Vin.	Cloth, Blk.	26.2	285.00 Pair			

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter type	Level control? (W=woofer, M=midrange, T=tweeter; S=super tweeter)	Anechoic freq. response Hz to kHz, ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance, ohms; Nominal minimum	Dimensions, inches	Finish	Grille Material	Color	Weight, lbs.	Price \$
KIRKSAETER	Monitor 100	Ac. Sus.	8	1½	Dome	1	Dome	M, T	28-25	10	650,4.5k	8/4	10½x16½x7½	Opt.	Cloth, Brn.		17.6	325.00	
	Monitor 120	Ac. Sus.	10	1½	Dome	1	Dome	M, T	22-25	10	650,4.5k	8/4	11½x18½x9½	Opt.	Cloth, Brn.		24½	400.00	
	Monitor 150	Ac. Sus.	12	1½	Dome	1	Dome	M, T	20-25	10	650,4.5k	8/4	13½x22½x10½	Opt.	Cloth, Brn.		33	650.00	
	Monitor 250	Ac. Sus.	(2) 10	(2) 1½	Domes	(2) 1	Domes	M, T	18-25	20	650,4.5k	8/4	18½x26½x9½	Wal.	Cloth, Brn.		46.3	850.00	
	Monitor 400	Ac. Sus.	(4) 8	(4) 1½	Domes	(4) 1	Domes	M, T	16-25	30	650,4.5k	8/4	18½x26½x13½	Wal.	Cloth, Brn.		59½	1,400.00	
KLIPSCH	Heresy	Inf. Baf.	12		Horn		Horn		50-17 ±5	96	15	700,6k	8/9,8	15½x13½x21½	Opt.	Cloth; Opt.		55	310.00
	Cornwall	Vented	15		Horn		Horn		38-17 ±5	98	6	600,6k	8/5	22½x15½x35½	Opt.	Cloth, Opt.		108	495.00
	LaScala	Horn	15		Horn		Horn		45-17 ±5	104	2	400,6k	8/5	23½x24½x35½	Birch	Cloth, Opt.		110	660.00
	Belle Klipsch	Horn	15		Horn		Horn		45-17 ±5	104	2	400,6k	8/5	30½x18½x35½	Opt.	Cloth, Opt.		125	2,025.00
	Klipschorn	Horn	15		Horn		Horn		35-17 ±5	104	2	400,6k	8/5,1	31½x28½x52	Opt.	Cloth, Opt.		240	935.00
KOSS	CM/530	Pas. Rad.	8			1				89	15	2.8k		13½x11¼x24	Oil, Pec.	Knit, Brn.		35	229.95
	CM/1010	Pas. Rad.	8			1		T		92	15	2.5k		15½x11x28	Oil, Pec.	Knit, Brn.		43.5	349.95
	CM/1020	Twin Port	10	4½	Cone	1		M, T		95	15	450,3k		15½x13¼x33	Oil, Pec.	Knit, Brn.		60	449.95
	CM/1030	Twin Port	10	(2) 4½	Cones	1		M, T		96	15	400, 2.5k,6k		16½x14½x38½	Oil, Pec.	Knit, Brn.		74	549.95
LANCER	SC-8	Vented	(2) 12	5	Dome	1	Dome	M, T	20-22k	92	8	500, 4.5k	8	18x13½x28	Wal.	Knit, Blk.		65	359.50
	SC-7A	Ac. Sus.	12	5	Cone	1	Dome	M, T	20-20k	90	8	500, 4.5k	8	14x12x25	Wal.	Knit, Blk.		53	269.50
	SC-9T	Ac. Sus.	10	5	Cone	(2) 1	Domes	M, T	20-20k	89	10	500, 4.5k	8	12x12x38	Wal.	Knit, Blk.		57	249.50
	SC-4A	Ac. Sus.	12	5	Cone	2¼	Cone	M, T	20-20k	91	10	750,6k	8	15x12½x23½	Wal.	Knit, Brn.		53	229.50
	SC-11	Ac. Sus.	10	5	Cone	2¼	Cone	M, T	20-20k	90	10	750,6k	8	12½x10x22¼	Wal.	Knit, Tan		39	199.50
	SC-10A	Ac. Sus.	10		2¼	Cone		T	20-20k	90	10	2k	8	12½x10x20¼	Wal.	Knit, Brn.		33	139.50
	9535-2	Vented	12	2¼	Cone	2¼	Cone		30-20k	93	5	3k	8	14½x11¼x25	Wal.	Cloth, Opt.		33	99.50
	9534X	Vented	8	3	Cone				40-18k	92	5	3k	8	11¼x11¼x23½	Wal.	Cloth, Opt.		27	69.50
	9711	Vented	8						45-15k	90	3		8	10x9½x20¼	Wal.	Cloth, Opt.		19	54.50
	SC-1	Ac. Sus.	6	1					40-18k	88	5	3k	8	8x7½x11½	Wal.	Cloth, Opt.		17	34.50
LINN-SONDEK	DSM Isobarik	Isobarik	(2) 12x9	(2) 5	Cones	2 (1)	Domes		16-20 ±2		50	375,3k	4/4	15x16½x30	Teak	Foam, Blk.		95	3100.00
	S.A.R.A. Isobarik	Isobarik	(2) 8			1	Dome		40-20 ±2				4/4	13x10x17	Teak	Foam, Blk.		33	1470.00
McINTOSH	ML-10C	Ac.Sus.	10	1½	Dome	2¼	Cone			89	30	1k,7k	8/6,2	12½x12½x25	Wal. Ven.	Wood		47	319.00
	XR3	Ac.Sus.	10	5,1½	Cone, Dome	(2) 2%	Cones			89	30	700,1.4k,7k	8/6,2	12½x12x27	Wal. Ven.	Cloth, Blk.		52	425.00
	XR5	Ac.Sus.	12	8,1½	Cone, Dome	(2) 2%	Cones			89	30	250,1.4k,7k	8/6,2	15x12x30	Wal. Ven.	Cloth, Blk.		69	599.00
	XR6	Ac.Sus.	12	8,1½	Cone, Dome	1	Dome			89	30	250,1.4k,7k	8/6,2	13x17½x30	Wal. Ven.	Cloth, Blk.		81	749.00
	XR7	Ac.Sus.	(2) 12	8,(2) 1½	Cone, Dome	(4) 2%	Cones			89	30	250,1.4k,7k	8/6,2	19½x14½x40½	Wal. Ven.	Cloth, Blk.		118	1,099.00
	XR14	Ac.Sus.	10	5,1½	Cone, Domes	1	Dome			89	30	700,1.4k,7k	8/6,2	14½x10x30½	Wal. Ven.	Cloth, Blk.		52	399.00
M&K	Bottom End II Subwoofer	Ac. Sus.	12						26-300	30			4	18x18x16½	Opt.	Cloth, Opt.		52	170.00
	Goliath II Subwoofer	Ac. Sus.	12						26-150	30	Adj.		4	18x18x16½	Opt.	Cloth, Opt.		57	235.00
	Studio/Disco IV Subwoofer	Ac. Sus.	(4) 12						26-300	30			4	23x23x40	Wal.	Cloth, Blk.		140	495.00
	Satellite I Volkwoofer	Ac. Sus. Servo F.B.	(2) 5 12			(2) 1	Domes	M, T B	55-22 ±3 14-100 ±3	7.5 7.5	1.78k 100		4	6½x7½x21 18x18x16½	Opt. Opt.	Cloth, Opt. Cloth, Opt.		25 65	195.00 445.00
MANHATTAN PACIFIC	Nova RF-5	Ac.Sus.	12½	1¾	Dome	1	Dome	M, T		90	20	700,3.5k	8/7	45x17x12	Oil, Wal.	Cloth, Blk.		90	449.00
	Nova RF-6	Ac.Sus.	12	1¾	Dome	1	Dome	M, T		90	20	700,4.5k	8/7	35x17x12	Oil, Wal.	Cloth, Blk.		83	349.00
	Nova RF-7	Ac.Sus.	12	4	Cone	1	Dome	M, T		90	20	700,4.5k	8/6	31x17x12	Oil, Wal.	Cloth, Blk.		75	279.00
	Nova RF-S	Ac. Sus. Subwoofer	12							91	20	115	4	31x17x12	Oil, Wal.	Cloth, Blk.		71	269.00
	Nova RF-1	Ac.Sus.	13	1¾	Dome	1	Dome	M, T		88	40	750,4.5k	8/6	45x17x12	Oil, Wal.	Cloth, Blk.		102	1,249.00
MARANTZ	HD-440	Ac.Sus.	8	3½	Cone	3½	Cone		45-18 ±3	10			8	11¼x8½x19½	Wal. Vin.	Cloth, Brn.		25.3	110.00
	HD-550		8	5	Cone	1½	Dome	M, T	40-20 ±3	88	10	800,3k	8	12½x9½x22½	Wal. Vin.	Cloth, Brn.		38.7	200.00
	HD-660		10	5	Cone	1½	Dome	M, T	35-20 ±3	88	10	750,2.5k	8	14½x11½x24½	Oil, Wal.	Cloth, Brn.		49	270.00
	HD-770		12	5	Cone	1½, 1	Domes	M, T, ST	33-22 ±3	90	10	750,2.3k, 5k	8	16x12x40½	Oil, Wal.	Cloth, Brn.		74.3	330.00
	HD-880		12	5	Cone	1½, 1	Domes	M, T, ST	30-22 ±3	90	10	750,2.3k,5k	8	15x11¼x26½	Oil, Wal.	Cloth, Brn.		56.6	420.00
	DS-900		10	5	Cone	1½	Dome	M, T	35-20 ±3	88	10	750,2.5k	8	15x12x28½	Oil, Wal.	Cloth, Brn.		55	320.00
	DS-920		12	5	Cone	1½	Dome	M, T	33-20 ±3	90	10	750,2.5k	8	15x12x38½	Oil, Wal.	Cloth, Brn.		65	380.00

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level controls: W=woofer; M=midrange; T=tweeter; ST=super/tweeter			dB SPL / watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material	Color	Weight, lbs.	Price \$
								Level controls	W=woofer	M=midrange										
MARANTZ (Continued)	DS-930		12	5	Cone	1½,1	Domes	M,T	33-22	±3	90	10	750,2.3k,5k	8	15x12x28½	Oil. Wal.	Cloth, Brn.	28½	380.00	
	DS-940		12	5	Cone	1½,1	Domes	M,T	30-22	±3	90	10	750,2.3k,5k	8	15x12x45%	Wal. Brn.	Cloth, Brn.	82.1	440.00	
	4MkII	Ac.Sus	8		1%	Cone			60-15	±5	88	10	3.5k	8	11¼x8¼x19%	Wal. Brn.	Cloth, Brn.	21.6	80.00	
	5MkII	Ac.Sus	8		1%	Cone			40-18	±3	88	10	2.5k	8	12x9½x23	Wal. Brn.	Cloth, Brn.	33	115.00	
	6MkII	Ducted Port	10		1%	Cone	T		35-20	±3	88	10	2.5k	8	14¼x11½x25½	Wal. Brn.	Cloth, Brn.	45.8	140.00	
	7MkII	Ac.Sus	12	5	Cone	1%	Cone	M,T	35-20	±3	88	10	800,3.5k	8	14¼x11½x25½	Wal. Brn.	Cloth, Brn.	49.3	180.00	
	8MkII	Ac.Sus	15	5	Cone	1%	Cone	M,T	30-20	±3	91	10	800,3k	8	18x13x34	Wal. Brn.	Cloth, Brn.	70	260.00	
MARTIN	TL 1650	Trans. Line	6½		1	Dome			38-20	±3	88	35	1500	8	25¼x8x11½	Coa. Blk.	Brn.	65	250.00	
	TL 2050	Trans. Line	8		1	Dome			36-22	±3	90	35	1200	8	29¼x9½x10	Coa. Blk.	Brn.	45	350.00	
	TL 3050	Trans. Line	10	2	Dome	1	Dome	M,T	32-20	±4	87	100	90,4k	8	48½x12½x11¼	Coa. Blk.	Brn.	77	550.00	
	TL 4050	Trans. Line	(2) 11	5	Cone	1	Dome	M,T	28-22	±4	92	100	100,900,4k	8	52¼x12½x11¼	Coa. Blk.	Brn.	84	650.00	
	Gamma Gold 3000M	Bias Port	10	2	Dome	1	Dome	M,T	34-20	±3	90	35	900,4.4k	8	25¼x14x11¼	Bu. Block	Brn.	55	329.00	
	Gamma Gold 2008M	Bias Port	8		1	Dome	T		36-20	±5	91	35	1200	8	18x10½x9½	Bu. Block	Brn.	30	159.00	
	Gamma Gold 2006M	Bias Port	6½		1	Dome	T		40-20	±4	91	25	1500	8	13x18½x9	Bu. Block	Brn.	17½	129.00	
	Gamma 204X	Ac. Sus.	5		3	Phen.	T		50-18		87	15	1500	8	11x6¼x7	Coa. Brn.	Brn.	9	99.00	
	Gamma 208X	Ac. Sus.	8		3	Phen.	T		40-18		90	15	1500	8	18x10¼x9½	Coa. Brn.	Brn.	26	119.00	
	Gamma 308X	Ac. Sus.	8	5	3	Phen.	M,T		40-18		90	15	1k,5k	8	21¼x12¼x7	Coa. Brn.	Brn.	27	139.00	
	Gamma 310X	Ac. Sus.	10	5	2		M,T		36-18		91	15	900,4.5k	8	21¼x12¼x10	Coa. Brn.	Brn.	37	219.00	
	Gamma 412X	Bias Port	12	5	2	Cone	M,T		32-20		90	25	750,4.5k	8	25¼x14x11¼	Coa. Brn.	Brn.	48	269.00	
	Gamma 315X	Ac. Sus.	15	5	2	Cone	M,T		30-20		90	25	600,5k	8	27x15¼x11¼	Coa. Brn.	Brn.	50	289.00	
	Magnificat	Ac. Sus.	(2) 12	5	(2) 2		M,T		28-20		92	35	500,4k	4	37¼x18x14	Coa. Brn.	Brn.	86	449.00	
MATRECS	MA-83	Ac. Sus.	8		3	Cone			35-20		2	5k	8/4	7¼x11¼x18%	Wal. Vin.	Knit, Brn.	14	48.50		
	MA-103	Ac. Sus.	10		3	Cone			35-22		5	.5k	8/4	12x9% x20	Wal. Vin.	Knit, Brn.	18½	65.50		
	MA-105	Ac. Sus.	10	4½	Cone	1	Dome	T	35-22		5	2.5k, 5k	8/4	13% x9% x22	Wal. Vin.	Knit, Brn.	30	165.50		
	MA-211	Pas. Rad.	10	4½	Cone	1%	Phen. Ring	M,T	40-22		8	2.5k, 5k	8/4	14¼x10% x32%	Wal. Vin.	Knit, Brn.	40	173.50		
	MA-124	Ac. Sus.	12	4½	Cone	1%	Phen. Ring		35-22		8	2.5k, 5k	8/4	15x9% x24	Wal. Vin.	Knit, Brn.	36	131.50		
	MA-130	Ac. Sus.	12	6	Cone	1	Dome	M,T	35-22		8	1k, 5k	8/4	15x9% x24	Wal. Vin.	Knit, Brn.	37	179.50		
MESA	15	Ac.Sus.	3¾		2¼	Cone			60-20	±6	5	3k		3% x3x6		Alum.	5½	129.95		
	30	Ac.Sus.	4			Hard Dome			60-25		10	3.5k		7¼x4% x4¼			10	238.00		
	50	Ac.Sus.	5	3	1x½	Horn			50-25		10	1.8k,9k		9½x6½ x4% x4%	Wal. Vin.	Cloth, Blk.	13	300.00		
	45	Vented	8		3	Dome	T		45-22		15	85,3k		21x11½ x9%	Wal. Ven.	Cloth, Blk.	23	119.00		
	65	Vented	10		3	Dome	T		40-22		15	80,2.5k		23x12½ x10%	Wal. Ven.	Cloth, Blk.	32	169.00		
	85	Vented	10		3	Dome	M,T		36-22		15	900,6k		25¼x14¼ x11¼	Wal. Ven.	Cloth, Blk.	45	229.00		
	125	Vented	12		3	Dome	M,T		30-22		15	900,6k		27½x16 x13	Wal. Ven.	Cloth, Blk.	55	279.00		
	500	Bass Ref.	8		3	Dome	T		35-20		10	4.5k		21x12½x9	Wal. Ven.	Cloth, Blk.	25	109.00		
	600	Bass Ref.	10	5	Cone	3	Dome	M,T	40-20		10	2k,5.5k		24¼x14 x10% x10%	Wal. Ven.	Cloth, Blk.	34	199.00		
	S-35	Satellite	5		4½	Dome			115-17		5	200		9¼x6% x5½	Wal. Vin.	Cloth, Blk.	6	139.00		
MS-80	Subwoofer	10						30-115		5	200		16x18x16	Wal. Vin.	Cloth, Blk.	32	249.00			
MICRO-ACOUSTICS	MS-1				(4) 1¼ (1) ST	Dyn.	T		3.5-18	±2			16	9% x5¼ x3%	Wal.	Beige	2.5	117.00		
	FRM-1ax	Ac. Sus.	10		(2) 1¼	Dyn.	T		28-22		89	1.5k,2k	8	15% x12% x25%	Wal. Vin.	Cloth, Opt.	40	225.00		
	FRM-2ax	Ac. Sus.	10		(2) 1¼	Dyn.	T		30-20		89	1.8k	8	15% x12% x25%	Wal. Vin.	Foam, Brn.	38	180.00		
	FRM-3ax	Twin Ducted Port	8		2	Dyn.			33-20		91	2.5k	8	12% x9% x22	Wal. Vin.	Foam, Brn.	24¼	279.00		
MIRSCH	OM2-20	Ac.Sus.	8		1	Dome			50-20		86	20	3k	8	10¼x8¼ x18%	Rswd. Blk.	14½	129.95		
	OM3-30	Ac.Sus.	8	5	Cone	1	Dome		35-20		90	30	700,3k	8	13% x9 x19%	Rswd. Blk.	26½	219.95		
	OM3-40	Ac.Sus.	10	5	Cone	1	Dome	M,T	30-20		90	30	600,3k	8	15x10% x22	Rswd. Blk.	35	339.95		
	OM21	Ac.Sus.	7		1	Dome			50-20	±3	90	30	3k	8	11x11 x11	Rswd. Blk.	15½	180.00		
	OM50	Ac.Sus.	8		1	Dome			35-20	±3	90	30	4k	8	10½x11½ x17½	Rswd. Blk.	22	240.00		
	OM61	Ac.Sus.	8	5	Cone	1	Dome	M,T	30-20	±3	92	40	700,3k	8	12½x16 x23	Rswd. Blk.	37½	360.00		
	OM71	Pas. Rad.	8, (2) 10	5	Cone	1	Dome	M,T	25-20	±3	87	40	700,4k	8	12½x16 x23	Rswd. Blk.	44	460.00		

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control (W=woofer, M=midrange, S=satellite, ST=super tweeter)	Anechoic freq. response Hz to kHz, ± dB	Recommended min. amp. power	Crossover frequencies, Hz	Impedance options Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$	
MITSUBISHI	MS-10	Ac. Sus.	10		2	Cone	T		35-20 ±4	87		1.5k	6/5	12"x11 1/2" x 22 1/2"	Oil. Wal.	Cloth, Blk.	32	165.00
	MS-20	Ac. Sus.	12		2	Cone	T		35-20 ±4	88		1.5k	6/3	14"x11 1/2" x 24"	Oil. Wal.	Cloth, Blk.	40	275.00
	MS-30	Ac. Sus.	12	4	Cone	1 1/2	Dome	M,T	30-20 ±4	88		800,5k	6/5	15"x13 1/2" x 26"	Oil. Wal.	Cloth, Blk.	55	395.00
	MS-40	Ac. Sus.	12	4	Cone	1 1/2	Dome	M,T	25-20 ±4	87		600,5k	6/5	15"x5 1/2" x 34"	Oil. Wal.	Cloth, Blk.	77	550.00
MODULAR ACOUSTICS	2000 Sub-woofer	Inf. Baf.	(2) 10						22-150	90	25	150	8	25"x15 1/4" x 22 1/4"	Oil. Wal.	Cloth, Blk.	45	289.50
	2200 Satellite	Air Sus.	5		1	Soft Dome			65-20	90	10	2.2k	8	8x6 x13	Oil. Wal.	Cloth, Blk.	10	104.50
	2800	Air Sus.	8		1	Soft Dome			40-20	89	15	2.2k	8	11 1/2"x9 3/4" x 19"	Oil. Wal.	Cloth, Blk.	18	124.50
	3200	Air Sus.	10	2	Dome	1	Soft Dome	M,T	35-20	89	20	700, 5k	8	16x16 x38 1/2"	Oil. Wal.	Cloth, Blk.	30	294.50
	3400	Air Sus.	(2) 8	2	Dome	1	Soft Dome	M,T	32-20	90	15	700, 5k	8	12"x10 1/4" x 36"	Oil. Wal.	Cloth, Blk.	45	349.50
	3800	Inf. Baf.	(2) 10 8	2	Dome	1	Soft Dome	M,T	22-20	91	30	125, 700, 5k	4	23"x12 1/2" x 42 1/2"	Oil. Wal.	Cloth, Blk.	60	499.50
MONITOR AUDIO	MA4	Ported	8		1 1/2	Dome			30-20 ±2.5	83	30	3.2k	8	12"x11x23 1/2"	Opt. Blk.	Blk.	36	360.00
	MA1	Ported	8x12	7	Cone	1 1/2	Dome		30-20 ±2.5	83	30	375,3k	8	15x13"x30"	Opt. Blk.	Blk.	60	500.00
	MA3	Ported	8x12	7	Cone	1 1/2	Dome		30-20 ±2.5	84	30	400, 3.5k	8	15x13"x30"	Opt. Blk.	Blk.	60	640.00
	MA7	Ported	6		1 1/2	Dome			40-22 ±3	86	30	35k	8	16x9x8	Opt. Blk.	Blk.	16	175.00
	MAB 5	Ac. Sus.	8		1 1/2	Dome			37-22 ±3	83	35	3.2k	8	16x9x8	Opt. Blk.	Blk.	18	210.00
MORDAUNT-SHORT	Carnival	Inf. Baf.	8		2 1/2	Cone			85-17 ±3		10	3.5k	8/4	9 1/2"x5"x15 1/2"	Wal., Teak	Cloth, Blk.	23 1/2	275.00
	Festival	Inf. Baf.	8		1/2	Dome			75-20 ±3		12	3.5k	8/4	11x7"x17 1/2"	Wal., Teak	Cloth, Blk.	28 1/2	385.00
	Pageant	Bass Ref.	8		1	Dome	M,T		65-20 ±3		15	3.5k	8/4	13x9x21	Wal., Teak	Cloth, Blk.	42 1/2	495.00
	Signifier	Bass. Ref.	12	5	Cone	1	Dome	M,T	20-20 ±2		25	4k	8/4	15"x12 1/2" x 31"	Wal., Teak	Cloth, Blk.	128	1,490.00
NAMCO	221	Ac. Sus.	8	4	Cone	1	Dome		40-23	93	10	2k, 9k	8	9 1/2"x9"x19 1/2"	Wal.	Cloth, Blk.	20	139.95
	331	Ac. Sus.	10	5	Cone	1	Dome	T	35-23	93	10	900, 9k	8	12"x11"x22 1/2"	Wal.	Cloth, Blk.	33	189.95
	551	Ac. Sus.	12	5	Cone	1	Dome	T	30-23	93	15	900, 9k	8	14"x11"x25 1/2"	Wal.	Cloth, Blk.	42	269.95
OHM	F	Inf. Baf.	12x16 Walsh						37-19 ±0.4	84	75		4/3,7	17"x17 1/2" x44	Oil. Wal.	Cloth, Blk.	104	950.00
	I	Vented	12,8	1 1/2	Dome	(2)1	Domes	M, T, ST	32-21 ±3.5	92	10	100,2k, 10k	4/4	15"x15 1/2" x33"	Oil. Wal.	Cloth, Blk.	94	675.00
	H	Pas.Rad.	8	2	Cone	1	Dome	T,ST	32-20 ±4	88	10	1.7k, 5k	8/4	26 1/2"x9 3/4" x14	Oil. Wal.	Cloth, Blk.	54	360.00
	Subwoofer	Pas.Rad.	2x8					M	32-140 ±4	87	10	140	8/4	15x15x 16	Oil. Wal.	Cloth, Blk.	65	340.00
	N	Vented	10	2	Cone	1	Dome	T,ST	37-20 ±4	88	10	1.7, 10k	8/6	25x9 3/4" x14	Oil. Wal.	Cloth, Blk.	44	275.00
	C	Vented	8	2	Cone	2	Cone	T,ST	42-20 ±4	89	8	1.7k, 10k	8/4	20x9 3/4" x12	Oil. Wal.	Cloth, Blk.	35	185.00
	L	Vented	4		1	Dome			120-20 ±4	87	5	3.5k	4/4	7 1/2"x4 1/2" x4 1/2"	Alum., Blk.	Cloth, Blk.	10	
	E	Inf.Baf.	8	2	Cone			T	65-19 ±4	88	7	1.7k	8/6	21 1/2"x7 1/2" x11 1/2"	Oil. Wal.	Cloth, Blk.	22	
ONKYO	F-5000	Ac. Sus.	12 1/4	4	Planer	1/2x2		M,T	28-20	88		1.2k, 5k	6	19"x10 1/4" x31"	Rswd.	Cloth, Blk.		499.95
	M-240	Ac. Sus.	15	4	Cone	1	Dome	M,T	35-20	93		700, 4.5k	8	16 1/2"x13x16 1/2"	Rswd.	Cloth, Blk.		259.95
	M-160	Ac. Sus.	12		2 1/2	Cone	T		35-20	91		2k	8	13 1/2"x12 1/2"x22	Rswd.	Cloth, Blk.		174.95
OPTONICA	CP-5151	Ac. Sus.	12	2	Dome		Ribbon	M,T	40-15	90	20	500,6k	8	27 1/2"x15 1/2" x13	Vin.	Cloth, Blk.	61.9	400.00
	CP-2121	Pas. Rad.	10		3	Hard Cone			40-20	93	10	1.2k	8	28 1/2"x14 1/2" x12"	Vin.	Cloth, Blk.	39.8	190.00
PSB	Avantini II	Bass Ref.	7		1	Dome			70-20 ±2		20	1.5k	8	14 1/2"x8 1/2"x8	Hick. Vin.	Cloth, Blk.	15	200.00
	Avante IIa	Bass Ref.	8		1	Dome			60-20 ±2		25	1.5k	8	19 1/2"x11x10	Opt. Blk.	Cloth, Blk.	25	340.00
	Passif I	Pas. Rad.	7		1	Dome			50-20 ±2		30		8	26x12x10 1/4"	Opt. Blk.	Cloth, Blk.	30	460.00
	Passif IIa	Pas. Rad.	8		1	Dome			41-20 ±2		40		8	29 1/2"x13 1/2" x12 3/4"	Oil. Wal.	Cloth, Blk.	35	590.00
	Beta IIa	Ac. Sus. MFB	8		1	Dome			25-20 ±2		80		4	23x12x10 1/4"	Opt. Blk.	Cloth, Blk.	35	1,190.00
PERFECTIONIST AUDIO	Sub Woofer One	Trans. Line	(2) 8x13				No		10-240 ±0.9	95	20	100-200	8/4	72x27x24	Oil. Wal.	Cloth, Blk.	380	2,500.00
	Sub Woofer Two	Trans. Line	8				No		18-240 ±0.9	93	20	100-200	8/4	47x12x18	Oil. Wal.	Cloth, Blk.	95	900.00
PETROFF LABS	PL-6D	Dipole		(4) 4 1/2	Cones	2,2	Cone, Dome	T	100-20 ±2	90	50	100,5k	8/6	12x4 1/2" x42	Syn. Wal.	Cloth, Blk.	30	400.00
	PL-6W	Subwoofer	(2) 10						30-100 ±4	90	50	100	8/6	25 1/2"x15 1/2" x14	Syn. Wal.	Cloth, Blk.	50	198.00

MANUFACTURER	Model	Enclosure type	Woofer dia., inches			Midrange dia., inches			Tweeter dia., inches			Level controls: W=woofer, 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 \$
			Woofer dia.	Woofer dia.	Woofer dia.	Midrange dia.	Midrange dia.	Midrange dia.	Tweeter dia.	Tweeter dia.	Tweeter dia.	W	M	T	dB SPL/watt/meter		Hz	kHz	Impedance	Nominal						
PIONEER	HPM-150	Bass Ref.	15%	4	Cone	1%	Cone	M,T	25-40	92.5	10	750, 2.6k, 8.5k	6.3/4	17% \times 17% \times 38%	Wal.	Cloth, Blk.	82%	550.00								
	HPM-100	Bass Ref.	12	4	Cone	1%	Cone	M,T	30-25	92.5	15	1.2k, 4k, 12k	8/6	15% \times 15% \times 26%	Wal.	Cloth, Blk.	58%	350.00								
	HPM-60	Bass Ref.	10	4	Cone	1%	Cone	M,T	30-25	92.5	15	1.2k, 4k, 12k	8	13% \times 12% \times 24	Wal.	Cloth, Blk.	38%	260.00								
	Project 120	Bass Ref.	10	5	Cone	1%	Cone		30-20	92	20	1k, 4k	8	13% \times 9% \times 23	Wal.	Cloth, Blk.	26	145.00								
	Project 80	Bass Ref.	8			1%	Cone		35-20	92	10	1.5k	8	10% \times 8% \times 18% \times 8%	Wal.	Cloth, Blk.	12%	99.00								
	Project 60A	Bass Ref.	8			1%	Cone		50-20	10	10	3k	8	10% \times 8% \times 18%	Wal.	Foam, Blk.	12	80.00								
	HPM-40	Bass Ref.	10			1%	Cone		35-25	91	10	4k, 10k	8	12% \times 12% \times 22%	Wal.	Cloth, Blk.	28%	180.00								
	CS-99A	Inf. Baf.	15	4%	Cone	3	Cone	M,T	25-22	97	50	1.2k, 3.2k	8	16% \times 11% \times 24%	Wal.	Cloth, Blk.	43%	350.00								
	CS-66G	Inf. Baf.	10	6%	Cone	3	Cone		35-20	92.5	20	1k, 7k	8	12% \times 11% \times 21%	Wal.	Cloth, Blk.	26%	140.00								
PLASMATRONICS	Hill Type 1	Inf. Baf.	15	6%	Cone		Plasma	T	18-20 ±3	107	100	125,700,1k	8/6	25 \times 19 \times 57%	Opt.	Cloth, Blk.	288									
POLK AUDIO	R.T.A. Model 12	Pas. Rad.	12	(2) 6 1/2	Cones	1	Dome		19-25 ±2	96	10	45,3k	6/3	45 \times 15 \times 12	Opt.	Cloth, Blk.	75	374.95								
	Model 10A	Pas. Rad.	10	(2) 6 1/2	Cones	1	Dome		30-20.5 ±2	94	10	60,3k	6/3	28 \times 15 \times 12	Opt.	Cloth, Blk.	50	239.95								
	Model 7B	Pas. Rad.	10	6 1/2	Cone	1	Dome		30-20.5 ±2	92	10	60,3k	8/3.5	24 \times 14 \times 9%	Opt.	Cloth, Blk.	35	174.95								
	Model 5A Mini Monitor	Pas. Rad.	8	6 1/2	Cone	1	Dome		40-21 ±3	92	10	60,3k	8/3.5	21% \times 10% \times 8%	Opt.	Cloth, Blk.	29	129.95								
PRECEDENT	MZ-Mod 3	Trans. Line	8	5	Cone	3/4	Dome		40-20 ±3	88	25	600, 3.5k	8	39 \times 29 \times 16	Teak	Foam, Blk.	125	1,495.00								
	MZ-Mod 2	Trans. Line	5	5	Cone	3/4	Dome		70-20 ±3	88	25	3.5k	8	36% \times 7% \times 13	Teak	Foam, Blk.	50	747.50								
	Panorama	Dyn.	8	2 1/2	Dome	1	Dome		40-20 ±3	92	10	800	8	50 \times 13% \times 13%	Wal.	Foam, Blk.	40	795.00								
	Vista	Dyn.	8			1	Dome		50-20 ±3.5	90	10	2.5k	8	26 \times 15% \times 15%	Wal.	Foam, Blk.	30	380.00								
PYRAMID	T-1	Ribbon				3% \times 3%	Ribbon	T	3k-50k ±3	93	50		12	4% \times 7% \times 4%	Alum.	Foam, Blk.	8%	1,175.00								
	Metronome 2+2W		14	8, 4 1/2	Cone	1%	Cone	T	28-20 ±3	88	150		8	27% \times 16% \times 46	Opt.	Cloth, Blk.	181	4,000.00								
	Metronome 3		(2) 8	4 1/2	Cone	1/2 \times 3	Ribbon	T	35-35 ±3	90	75		6	21% \times 15% \times 34	Oil.	Foam, Blk.	100	1,700.00								
QUAD	ELS	Dipole							45-18				15	36 \times 10 \times 31			40	1,500.00								
QYSONIC	Array	Vented	(2) 8	4 1/2	Cone	2, 1	Cone, Dome	M, T, ST	28-5 ±3	92	30	500, 3k, 8k	6/4	12% \times 8% \times 48	Oil.	Cloth, Blk.	135	479.00								
	Tad II	Vented	(2) 6			2, 2	Cones		40-25 ±3	90	15	2k, 8k	6/4	9 \times 6% \times 29	Wal.	Cloth, Blk.	26	225.00								
	Spree Micro	Vented Term. Line	(2) 4 1/2			2	Cone		55-22 ±3	85	10	3k	6/4	6% \times 5% \times 17	Wal.	Cloth, Blk.	13	139.00								
	Laug Subwoofer	Term. Line	(2) 3			2	Cone		80-22 ±3	80	8	4k	6/4	5 \times 4% \times 12	Wal.	Cloth, Blk.	13	99.00								
RTR INDUSTRIES	PS/1	Ac. Sus.	8	1 1/2	Soft Dome	1	Soft Dome	T	65-20 ±2	90.5	25	1.5k, 9k	6	12% \times 8 \times 21%	Oil.	Knit, Blk.	35	325.00								
	DAC/1		12, (2) 15						16-150 ±1.5	40	120		6	29% \times 28 \times 21%	Oil.	Knit, Blk.	135	600.00								
	800D	Ac. Sus.	8, 10	1 1/2	Soft Dome	1	Soft Dome	W, M, T	36-20 ±2	90.5	25	9k	6	23% \times 13% \times 37%	Oil.	Knit, Blk.	76	600.00								
	ESR-6	Add-on Tweeter				(6)3 \times 6	ES	W,T	15k-20k ±2	15	1.5k		8	14% \times 12 \times 19%	Oil.	Cloth, Blk.	23	50.00								
	ESR-15	Add-on Tweeter				(15)3 \times 6	ES	W,T	1.25k-20k ±2	15	1.25k		8	16% \times 11% \times 19%	Oil.	Cloth, Blk.	48	400.00								
	DR-1	Trans. Line	(2) 10, 12		ES		ES	T	28-20 ±2	75	325		8	16% \times 16% \times 49	Oil.	Knit, Blk.	165	1,495.00								
	G-10	Vented	10			1	Dome	T	48-20 ±3	91	10	2k	6	14% \times 11 \times 25%	Vin.	Knit, Blk.	44	190.00								
	G-200	Pas. Rad.	10, 12			1	Dome	T	38-20 ±3	91	10	2k	6	14% \times 12% \times 36	Oil.	Knit, Blk.	62	270.00								
	EXP-8v	Ac. Sus.	8			3/4	Cone	T	48-18.5 ±4	90	12	2k	8	11% \times 8% \times 19%	Vin.	Knit, Blk.	27	100.00								
	75D	Ac. Sus.	10	1 1/2	Soft Dome	1	Soft Dome	M,T	40-20 ±3	90.5	20	1.25k, 10k	6	14% \times 11% \times 25%	Vin.	Knit, Blk.	48	250.00								
300D	Ac. Sus.	(2) 10	1 1/2	Soft Dome	1	Soft Dome	M,T	36-20 ±2	90.5	25	1.25k	4	14% \times 12% \times 42	Oil.	Knit, Blk.	75	400.00									
600D	Ac. Sus.	(2) 12	(2) 1 1/2	Soft Domes	(2) 1	Soft Domes	M,T	32-20 ±2	91.5	25	950, 10k	4	16% \times 16% \times 48	Oil.	Knit, Blk.	112	600.00									
RADIO SHACK	Minimus 7	Ac. Sus.	4				Dome		50-20 ±5			2.5k		7 \times 6% \times 4%	Alum.	Alum., Blk.	4%	49.95								
	Optimus 25	Ac. Sus.	10	4	Cone	2	Cone	M,T						25% \times 14 \times 11 1/2	Oil.	Cloth, Blk.	4%	139.95								
	Optimus 27	Pas. Rad.	6 1/2			1	Dome						8	27% \times 15% \times 6	Oil.	Cloth, Blk.		149.95								
	Optimus 10	Pas. Rad.	8			3/4	Dome		42-20 ±3			60, 2.5k		25% \times 15% \times 10%	Oil.	Cloth, Blk.	45	139.95								
	Optimus 23	Tuned Port	10			3	Cone		20-20 ±4.5			1.2k		22% \times 12% \times 10%	Oil.	Cloth, Blk.	30%	99.95								
	Optimus T-200	(2) 10	6 1/2	Cone	2	Horn	M,T		50-20					34 \times 12% \times 12 1/2	Oil.	Cloth, Blk.		259.95								
	Mach One	Ac. Sus.	15		Horn		Horn	M,T	20-25	25				28% \times 17% \times 12	Oil.	Cloth, Blk.	65	239.95								
	Optimus T-100	Ac. Sus.	(2) 8			3	Cone	T	55-18	12	3.5k			36 \times 13 \times 12%	Oil.	Cloth, Blk.	46	179.95								

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Tweeter Type	Low freq. control? (W=woofer, M=midrange, T=tweeter; ST=super-tweeter)	Antipole freq. response dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
REFERENCE/ QUADRAFLEX	208L	Ac. Sus.	8			2½	Corné		55-20 ±4		10	3k	8	14x9x19%	Blk./ Teak. Vin.	Cloth, Grey	17	89.95	
	228L	Pas. Rad.	8			1	Dome		45-20 ±4		10	3k	8	15x10¼x26%	Blk./ Teak. Vin.	Cloth, Grey	30	129.95	
	310L	Ac. Sus.	10	6½	Cone	1	Dome		38-20 ±4		10	600, 4k	8	16x11½x28%	Blk./ Teak. Vin.	Cloth, Grey	42	179.95	
	312L	Ac. Sus.	12	6½	Cone	1	Soft Dome		32-22.5 ±4		10	600, 4k	8	18x13x31%	Blk./ Teak. Vin.	Cloth, Grey	48	269.95	
REVOX	BX350		5		Cone	1	Dome	T	30-20		10	3.2k	4	20.5x13.7x 11.6	Oil Wal. Oil	Cloth	30%	395.00	
	BX4100		5	6%	Cone	¾	Dome	M,T	25-25		20	450, 4.8k	4	30.3x17.7x 15.7	Oil Wal. Oil	Cloth	66	1,199.00	
ROGERS	Reference Monitor LS3/5a	Ac. Sus.	13						45-150 ±2	85	40	150	8/4	16½x18x32½	Opt.	Cloth, Blk.	78	2,100.00	
	Compact Monitor 2	Ac. Sus. Ac. Sus. Bass Reflex	5 8 8			1 1 1	Dome Dome Dome		70-20 ±3 50-20 ±3 40-20 ±3	82 85 85	25 20	3k 2.5k 2.5k, 15k	15/8 8/4 8/4	7½x6½x12 11x10¼x10 12x12x25	Opt. Opt. Opt.	Cloth, Blk. Cloth, Blk. Cloth, Blk.	11½ 25 31	499.00 Pair 630.00 Pair 840.00 Pair	
				1	Dome	1	Dome												
SANSUI	J33	Ac. Sus.	8½	1		1	Dome		45-20	90		2k	6	9½x7½x16%	Blk. Laq. Alum.	Mesh, Blk.	15.9	450.00 Pair	
	J11	Pas. Rad.	4,4	1		1	Dome		80-20	85		2.5k	5	4½x5½x11%	Mesh, Blk.	Mesh, Blk.	6.4	290.00 Pair	
	SPA-3100	Ac. Sus.	12	5½	Cone	2x5	Pz.	M,T	35-22				8	15½x12x24%	Sim. Wal. Blk.	Cloth, Blk.	38.5	400.00 Pair	
	SPA-2100	Ac. Sus.	10	5½	Cone	2x5	Pz.	M,T	40-22				8	13½x11½x 22%	Sim. Wal. Blk.	Cloth, Blk.	26.8	300.00 Pair	
	SPA-1100	Ac. Sus.	10			2x5	Pz.		45-22				8	13½x11½x 22%	Sim. Wal. Blk.	Cloth, Blk.	24.8	200.00 Pair	
	SP-X8700	Bass Ref.	17	6½	Cone	6½x 2¼, (3) 2	Horn, Cones	M/T/ ST	22-23	99		1k, 6k, 10k	8	18½x10½x 27%	Sim. Wal. Wal.	Wood, Brn.	42.5	335.00 Pair	
	SP-X7700	Bass Ref.	16	4%	Cone	6x2, (2) 1½	Horn, Cones	M/T/ ST	25-22	97		1.7k, 4k, 14k	8	17½x11½x26	Sim. Wal. Wal.	Wood, Brn.	38.8	290.00 Pair	
	SP-X6700	Bass Ref.	13	4%	Cone	6x2, (2) 1½	Horn, Cones	M/T/ ST	30-22	95		2k, 12k, 17k	8	15½x11½x25	Sim. Wal. Wal.	Wood, Brn.	31.3	235.00 Pair	
	SP-L800	Bass Ref.	(2) 12			2½	Horn	T	30-20	95		1.5k	8	18½x15½x38	Wal. Ven. Wal.	Cloth	94.4	950.00 Pair	
	SP-L700	Bass Ref.	(2) 10			2%	Horn	T	30-25	93		2k	8	17x14½x35½	Wal. Ven. Wal.	Cloth	81.5	680.00 Pair	
	SP-X9700	Bass Ref.	17	8%	Cone	(2) 6¼ x2¼, (3) 2	Horns, Cones	M/T/ ST	22-23	100		7k, 7k, 15k	8	18½x10½x 27%	Sim. Wal. Wal.	Wood, Brn.	44.8	390.00 Pair	
H.H. SCOTT	Pro 100B	Air Sus.	15	(2) 4½	Cones	(2) 1	Domes	M,T	36-20 ±4	94	20	700, 3.5k	4	29½x19x 14½	Oil. Wal.	Knit, Blk.	67	549.95	
	197B	Air Sus.	15	4½	Cone	1	Dome	M,T	38-20 ±4	95	15	750, 3.5k	8/6	27½x16½ x10%	Wal. Oil.	Knit, Brn.	54	279.95	
	196W	Air Sus.	12	4½	Cone	1	Dome	M,T	38-20 ±4	96	15	800, 3.5k	8/6	25½x15x 10%	Oil. Wal.	Knit, Brn.	42	279.95	
	196B	Air Sus.	12	4½	Cone	1	Dome	M,T	38-20 ±4	96	15	800, 3.5k	8/6	25½x15x 10%	Wal. Wal.	Knit, Brn.	42	249.95	
	188T	Air Sus.	10	4½	Cone	1	Dome	M,T	38-20 ±4	95.4	10	900, 3.5k	8/6	33½x13½x 10%	Wal. Wal.	Knit, Brn.	44	229.95	
	186B	Air Sus.	10	4½	Cone	1	Dome	M,T	38-20 ±4	95	10	900, 3.5k	8/6	24x13½x 10%	Wal. Wal.	Knit, Brn.	20	199.95	
	177B	Air Sus.	8	4½	Cone	1¼	Cone		50-18 ±4	94	7	1.2k, 3.5k	8/6	18½x10½x 9%	Wal. Wal.	Knit, Brn.	20	119.95	
	176B	Bass Reflex	8			1¼	Cone		60-18 ±4	93.5	5	3.5k	8/6	18x10½x 8%	Wal. Wal.	Knit, Brn.	17	89.95	
	166	Air Sus.	6½			1	Dome		55-20 ±4	92.5	10	2.2k	8/7	13x7½x 6½	Hick. Vin.	Knit, Brn.	22	119.95	
SERVILINEAR	II		10	4½	Cone	1	Pz.	M,T			25		8/6	14½x14½ x26%	Rswd. Blk.	Cloth, Blk.	55	200.00	
	III		10, 8	4½	Cone	1	Pz.	M,T			50		8/6	16x16x31½	Rswd.	Cloth, Blk.	78	300.00	
	IV		10, 8	4½	Cone	1x3	Pz.	M,T			75		8/6	17x17x34	Rswd.	Cloth, Blk.	86	400.00	
	V		10, 10, 8	8, 4½	Cones	1x3	Pz.	M,T			100		8/6	18x18x43	Rswd.	Cloth, Blk.	108	600.00	
	VI		12, 10, 10	8, 4½	Cones	1x3	Pz.	M,T			150		8/6	19½x19½ x 46%	Rswd.	Cloth, Blk.	125	800.00	
	VII		15, 12, 10	8, 4½	Cones	1x5	Pz.	M,T			200		8/6	23½x23½ x 52%	Rswd.	Cloth, Blk.	225	1,000.00	
SHAHINIAN ACOUSTICS	Obelisk	Trans. Line Pas. Rad.	8			(4) 1	Domes		35-18 +2,-3	90	10	2k	6/4	12x14x27	Opt.	Opt.	42	450.00	
SHURE	SR112W	Bass Ref.	(2) 8				Horn	T	45-16 ±5	87	10	2.6k	8/6	23½x15½x 16%	Wood Grain Vin.	Cloth, Brn.	42	378.00	
	SR112B	Bass Ref.	(2) 8				Horn	T	45-16 ±5	87	10	2.6k	8/6	23x15x15%	Vin.	Cloth, Blk.	38	367.00	
	SR116B	Bass Ref.	(2) 8				Horn	T	45-16 ±5	87	10	2.6k	8/6	23x15x15%	Vin.	Cloth, Blk.	39	415.00	
SNELL ACOUSTICS	Type A	Ac. Sus.	10	4	Cone	1	Dome		36-18 ±1.5	80	275, 2.5k	/4	23½x13x46½	Opt.	Cloth, Opt.	97	1,680.00 Pair		
SONEX	Two MkII	Pas. Rad.	(2) 6½	3½	Cone	1	Dome	No	55-18 ±3	90	50	80, 1.3k, 7k	8/3.5	16x12½x35½	Satin Wal.	Cloth, Brn.	58	750.00	

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Level control (W=woofer; M=midrange; T=tweeter; S1=super tweeter)	Anechoic freq. response Hz to kHz ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies-Hz.	Impedance, ohms; Nominal/minimum	Dimensions, inches		Finish	Grille Material/Color	Weight, lbs.	Price \$
SONIC SYSTEMS	Studio B1	Ac. Sus.	8	4	Cone	1	Soft Dome	M	45-20 ±3		10		8	12½x11¼x23½	Oil. Wal.	Cloth, Blk.	30	150.00		
	Studio B2	Ac. Sus.	10	5	Cone	1	Soft Dome	M	40-20 ±3		10		8	14½x12¼x24½	Oil. Wal.	Cloth, Blk.	40	185.00		
	Studio B3	Ac. Sus.	12	5	Cone	1	Dome	M,T	35-20 ±3		10		8	16½x13¼x25½	Oil. Wal.	Cloth, Blk.	50	225.00		
	Tower	Slot Load	12			(2)	Horns	T	30-20 ±3	94	10	1.2k	8	21½x19x39½	Oil. Wal.	Cloth, Blk.	135	1,100.00		
SONY	SSU-2070	Ac.Sus.	10	3¼	Cone	2½	Dome	M,T			20		8	14½x14½x25½	Oil. Wal.	Cloth, Brn.	40	200.00		
	SSU-1270	Ac.Sus.	10	3¼	Cone	2	Cone		40-20 ±5		20	2k,7k	8	14½x10½x25½	Wal. Vin.	Cloth, Blk.	25	200.00		
	SSU-1070	Ac.Sus.	10		Cone	2½	Cone		40-20 ±5		15	3k	8	14½x10½x25½	Wal. Vin.	Cloth, Brn.	23	170.00		
	SS-5GX	Ac.Sus.	5			1	Dome		65-20 ±4,8	86	10	1.5k	8	6½x8½x9½	Oil. Wal.	Metal, Blk.	8½	600.00		
	SS-G7	Bass Ref.	15	4	Cone	1½	Dome	M,T	30-20 ±5	94	20	550,4.5k	8	20x17½x37	Oil. Wal.	Cloth, Brn.	121	1,000.00		
	SSU-4000	Bass Ref.	10	3¼	Cone	1	Dome	M,T	30-20 ±5	91	20	550,4.5k	8	13½x14¼x46%	Oil. Wal.	Cloth, Brn.	70½	400.00		
	SSU-3000	Bass Ref.	10	3¼	Cone	1	Dome	M,T	35-20 ±5	91	20	600,4.5k	8	13½x14¼x34%	Oil. Wal.	Cloth, Brn.	59½	300.00		
SOUNDAIDS	SoundAids	Add-On Tweeter				3	Pz.		5k-20k ±3		10	5k		4½x4x3¼				50.00	Pair	
SPEAKERLAB	S.1	Ac. Sus.	6			1	Dome	T		88	15	2.5k	8/4	10x7x5	Wal.		10	99.00		
	PSW1	Ac.Sus.	(2) 10	10						88	15		150	18x29x15½	Wal.		62	400.00		
	S1	Ac. Sus.	8			1	Dome	T		92	10	2.5k	8	20½x11½x8½	Wal.		31	115.00		
	S2	Ac. Sus.	10			1	Dome	T		92	10	2k	4	26½x15¼x10%	Wal.		51	159.00		
	S2.5	Ac. Sus.	10	6	Cone	1	Dome	M,T		91	15	600,4k	8	26½x15¼x10%	Wal.		56	215.00		
	S3	Ac. Sus.	12	6	Cone	1	Dome	M,T		91	15	600,4k	8	27½x15½x11%	Wal.		69	275.00		
	S4	Ac. Sus.	12	6	Cone	4x	Horn	M,T.		91	15	600,5k	8	27½x15½x11%	Wal.		70	310.00		
	S6WA	Ac. Sus.	12	14½x4%	Horn	4x	Horn	M,T		91	15	1k,5k	8	27½x15½x11%	Wal.		71	360.00		
	S7WA	Ac. Sus.	10, 12	14½x4%	Horn	4x	Horn	M,T		92	15	1k,5k	4	36x18x13	Wal.		90	500.00		
	SK	Horn	15	6x17	Horn	4x8%	Horn	M,T		101	10	400,5k	8	50x32½x28	Wal.		220	650.00		
S30	Nestorovic	8,10	5	Cone	1	Dome	M,T		91	25	750,4k	8	31x13x10%	Wal.		70	70.00			
SD1000	3-Piece	12	6½	Cone	1	Dome	M,T		94	15	160,2k	8		Oak		105	1,190.00			
SPENDOR SPEAKERS	BC-3	Mod. Ref.	12	8	Cone	(2) 1¼	Dome		50-14 ±2		50	700, 3k,13k	8/6	15½x15½x31%	Opt.	Cloth, Blk.	75	900.00		
	BC-1	Mod. Ref.	8			(2) 1¼	Dome		60-14 ±3		25	3k,13k	8/6	12x12x25	Opt.	Cloth, Blk.	31	415.00		
	SA-1	Ac. Sus.	6			1	Dome		70-14 ±3		20	3k	8/6	9x9x12	Opt.	Cloth, Blk.	16	250.00		
SYMDEX CORP.	Sigma	Ac. Sus.	6½			1	Dome		55-22 ±3	87	50	2.5k	8/7.5	10x6x21%	Oil. Wal.	Foam, Brn.	21½	598.00		
	Omega Subwoofer	Ac. Sus.	10						25-125 ±1.5	87	50	125	9/8		Oil. Wal.	Cloth, Blk.	Pair	798.00		
	Omega System	Ac. Sus.	10	6½	Cone	1	Dome		25-22 ±1.5	87	50	125, 2.5k	8/7.5		Oil. Wal.	Cloth, Blk.	Pair	1,395.00		
SYNERGISTICS	S12B	Ac.Sus.	8			2½	Cone		55-18 ±4		6	3.2k	8	9½x8½x17%	Wal. Vin.	Cloth, Blk.	17	100.00		
	S22B	Ac.Sus.	8			2½	Cone		55-18 ±4		6	3.2k	8	12x9½x23	Wal. Vin.	Cloth, Blk.	29	130.00		
	S23	Pas Rad.	8			2½	Cone	T	44-18 ±4		6	50,2.5k	8	12x9½x23	Wal. Vin.	Cloth, Blk.	28	150.00		
	S33	Pas. Rad.	8			2½	Cone	T	40-18 ±4		6	50,2.5k	8	14½x11½x25½	Wal. Vin.	Cloth, Blk.	37	175.00		
	S46	Pas. Rad.	8			2½	Cone	T	35-18 ±4		6	45,2.5k	8	14x11½x25½	Wal. Vin.	Cloth, Blk.	40	250.00		
	S51C	Pas. Rad.	8			2½	Cone	T	35-24 ±4		6	45,2.5k, 12.5k	8	14½x11½x25½	Wal. Ven.	Cloth, Blk.	41	325.00		
	S53	Pas. Rad.	8			(4) 2½	Cones	T	40-18 ±4		6	50,2.5k	8	14½x12½x30	Wal. Ven.	Cloth, Blk.	46	325.00		
	S63	Pas. Rad.	8			(4) 2½	Cones	T	32-24 ±4		6	45,2.5k, 12.5k	8	21½x15x40	Wal. Ven.	Cloth, Blk.	64	400.00		
	S73	Pas. Rad.	(2) 8				Bipolar	T	30-20 ±3		6	45,2k	8	21½x15x46%	Wal. Ven.	Cloth, Blk.	79	575.00		
	S92	Ac. Sus.	12	4½			Bipolar	M,T	24-20 ±4		35	140,2k	8	23x4x61	Wal. Ven.	Cloth, Blk.	70	2,000.00		
S92 Subwoofer	Ac. Sus.	(2) 12						24-120 ±3	87	35	120	8	36x18x19%	Wal. Ven.	Cloth, Blk.	130	Pair with S92 subwoofer. 500.00			
3D ACOUSTICS	3D 610B	3 piece Tuned Port		6	Cone	1	Dome					115, 2k						400.00		
TANGENT	SPL1		4¼			1	Dome		90-25 ±3	91	10	3k	8	7x10½x7%	Opt. Wal.	Cloth, Brn.	220.00	Pair		
	SPL3		10			1½	Dome										425.00	Pair		
(Continued)	SPL5		10			¾	Dome		55-30 ±3		20		6	10x14½x11%	Opt.		629.00	Pair		
	TM3	Inf. Bas. Ref.	5½			¾	Dome		40-30 ±3		20		6	12x24½x12½	Opt.		350.00	Pair		
TM1	Bas. Ref.	5½			¾	Dome				20			6		Opt.		500.00	Pair		

LOUDSPEAKERS

MANUFACTURER	Model	Enclosure type	Woofer dia., inches		Midrange dia., inches		Tweeter dia., inches		Legal controls? W=woofer; M=midrange; T=tweeter; S=super/tweeter	Anechoic freq. response Hz to kHz, 3 dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz	Impedance ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material Color	Weight, lbs.	Price \$
			8	4	1	1	1	1											
TANGENT (Continued)	RS4	Bass Ref.	8							35-30 ±3	30		6	12x24½x12½	Opt.			760.00 Pair	
	RS6	Bass Ref.	8							30-30 ±3	30		6	12x31½x12½	Opt.			1,080.00 Pair	
	RS8	Inf. Baf.	10	8	Cone	1	Dome			30-33 ±3	35		6		Opt.			1,550.00 Pair	
TANNOY	Buckingham	Ported						M, T		35-20 ±3	95	50	350, 3.5k	8	24x18x46	Oil. Wal.	Cloth, Brn.	212	2,250.00
	Windsor	Ported						M, T		40-20 ±3	92	50	350, 3.5k	8	23x16x33	Oil. Wal.	Cloth, Brn.	125	1,250.00
	Arden	Ported						M, T		45-20 ±3	91	40	1k	8	21x14½x39	Oil. Wal.	Cloth, Brn.	124	777.00
	Berkeley	Ported						M, T		45-20 ±3	91	40	1k	8	21x12x33	Oil. Wal.	Cloth, Brn.	90	655.00
	T225	Pass. Rad.						M, T		45-20 ±3	89	25	3.5k	8	15x12x28	Oil. Wal.	Cloth, Brn.	55	495.00
	T185	Pass. Rad.						M, T		45-20 ±3	89	25	3.5k	8	15x11x26	Oil. Wal.	Cloth, Brn.	55	425.00
	T125	Ported						T		50-20 ±3	88	20	5k	8	12x10x24	Oil. Wal.	Cloth, Brn.	45	228.00
TECHNICS	SB-7070	Vented	13½	4,6½	Cone	1	Dome	M, T		45-18 ±2	92		350, 1.2k, 4k	8/4,5	17½x16½x40%	Wood	Cloth, Brn.	73	450.00
	SB-6060	Vented	12	4	Cone	1	Dome	M, T		17-20 ±2	92		1.1k, 3k	8/5,6	15½x12%	Wood	Cloth, Brn.	52	350.00
	SB-4500B	Vented	10			2½	Cone			20-20 ±2	90.5		2k	6	13½x12%	Wood	Cloth, Brn.	32	300.00 Pair.
	SB-L300	Vented	12	4	Cone		Horn	M, T			90		1.6k, 4.5k	8/5,6	14½x12%	Wood	Cloth, Brn.	40	250.00
	SB-L200	Vented	10	4	Cone		Horn	T			90		1.9k, 5k	8/6,3	13½x12%	Wood	Cloth, Brn.	32	200.00
	SB-L100	Vented	10				Horn				89.5		3.2k	8	11½x10%	Wood	Cloth, Brn.	24	150.00
	SB-P1000	Vented	8			2½	Cone				91		4k	8	13½x9%	Wood	Cloth, Brn.	20	180.00 Pair.
THIEL	02	Ported	6½			1	Dome			45-18 ±2	92	10	2k	8/6	11x9½x19	Opt.	Cloth, Blk.	22	250.00 Pair
	03	Elec. EQ	10	5	Cone	1	Dome			27-20 ±2	92	20	500, 4k	8/6	12x12x38	Opt.	Cloth, Blk.	42	875.00 Pair
	04	Pass. Rad.	6½			1	Dome			20-20 ±2	88	20	3k	8/6	10x10x36	Opt.	Cloth, Blk.	34	500.00 Pair
THORENS	HP 360	Dipole	(9) 6	4	Cone	2½	Cone			45-22	95	80		4	22½x3½x34½	Blk.	Cloth, Blk.	46½	750.00
	HP 380	Dipole	(15) 6	4	Cone	2½	Cone			35-22	95	80		4	31½x3½x47½	Blk.	Cloth, Blk.	78½	1,100.00
TRUSONIC	Monitor Seven	Ac. Sus.	(2) 12	6	Cone	(4) 3		M, T		25-22 ±4	94	20	500, 4k	4	24x17 x 44	Oil. Oak	Knit, Brn.	156	990.00
VANDERSTEEN AUDIO	Two	Pass. Rad.	8,12	2	Dome	1	Dome	M, T		47-24 ±3	90	40	525, 4.5k	8/6	16½x10½x36%	Dark Ash	Cloth, Blk.	46	860.00 Pair
	Three	Pass. Rad.	0,12	6½,2	Cone, Dome	1	Dome	M, T		24-26 ±3	88	80	200, 1.2k, 4.5k	8/7	15½x17½x57	Dark Ash	Cloth, Blk.	129	1,840.00 Pair
	Four	Ac. Sus.	(2) 10	6½,2	Cone, Dome	1,½	Dome	W, M, T		12-32 ±3	88	80	200, 1.2k, 4.5k, 10k	8/7	22x15x57	Dark Ash	Cloth, Blk.	186	3600.00 Pair
VISONIK	302MO	Air. Sus.	4			2	Cone			50-22 +4,-8	85	10	2k	/4	4½x4½x6%	Grey	Metal, Blk.	5	100.00
	5000	Air. Sus.	4			1	Dome			50-25 +4,-8	85	10	2.5k	/4	4½x4½x6%	Grey	Metal, Blk.	5	130.00
	502	Air. Sus.	4			¾	Dome			45-30 +4,-8	20	1.4k		/4	4½x4½x6%	Grey	Metal, Blk.	5½	120.00
	6000	Air. Sus.	4			1	Dome			45-25 +4,-8	84	10	2.5k	4	5x5½x7%	Grey, Brn.	Metal, Blk.	6½	150.00
	602	Air. Sus.	5			1	Dome			40-25 +4,-8	20	1.4k		4	5½x5½x9%	Brn. Blk.	Metal, Blk.	8.8	170.00
	7000	Air. Sus.	5			1	Dome			40-25 +4,-8	86	15	2.5k	4	6½x6½x9%	Grey, Brn.	Metal, Blk.	10	185.00
	702	Air. Sus.	7			1	Dome			35-25 +4,-8	20	2.1k		4	7½x7½x12%	Grey, Brn.	Metal, Blk.	14.3	230.00
	803	Air. Sus.	7	1½	Dome	¾	Dome			35-30 +4,-8	20	1.1k, 4.5k		4	7½x7½x12%	Grey, Brn.	Metal, Blk.	16½	280.00
	9000	Air. Sus.	7	1½	Dome	¾	Dome			35-25 +4,-8	20	900, 4.5k		4	9½x9½x14%	Grey, Brn.	Metal, Blk.	19½	300.00
	SUB 1/D502	Air. Sus.	12	4	Cone	¾	Dome			20-30 +4,-8	83	50	160, 1.4k	6	23½x17x13%	Oil. Wal.	Cloth, Brn.	65	640.00 3 pieces
	SUB 2/D6000	Air. Sus.	10	4	Cone	1	Dome			25-25 +4,-8	85	30	160, 2.5k	4	19x14½x12%	Oil. Wal.	Cloth, Brn.	37	600.00 3 pieces
	EURO 5	Air. Sus.	8			1	Dome			30-25 +4,-8	15	1.3k		4	19x11x9%	Oil. Wal.	Cloth, Brn.	24	200.00
	EURO 7	Air. Sus.	(2) 7	1½	Dome	1	Dome			30-25 +4,-8	15	900, 4.5k		4	24x13½x9½	Oil. Wal.	Cloth, Brn.	32	360.00
DICK WAGNER	DW-1	Inf. Baf.	(8) 12	(16) 4	Dipole Cones		Planar & Omni	W, M, T		27-19 ±4	86	100	600, 6k	8	48x20x63	Rose.	Cloth, Opt.	200	6,000.00 Pair
WATSON LABORATORIES	10A	Dipole	(3) 10	(2) 5	Cone	(2) 1, ¾, 1¼	Soft Domes	M, T		17-24 ±3	91	100	150, 800, 4k, 16k	4/3.5	23½x21½x47	Opt.	Cloth, Blk.	85	2,300.00 Pair
	7	Dipole	10, 7	5	Cone	1, 1¼	Soft Domes	M, T		24-19 ±3	89	50	200, 800, 4k	4/3.4	19½x15x33	Opt.	Cloth, Blk.	62	1,430.00 Pair
	5	Inf. Baf.	10	5	Cone	1	Soft Dome	T		25-19 ±3	92.5	50	500, 3.3k	4/4	15x13x32	Wal.	Cloth, Blk.	40	870.00 Pair
	10W-2 Subwoofer	Dipole	(2) 10				Soft Dome			18-200 ±3	92	75	200	4/4	23½x21½x15	Rose-wd. Rose-wd.	Cloth, Blk.	46	450.00
	25W 4 Chan. Subwoofer	Dipole	(8) 10						14-150 ±3	92	100	150	4	51x36x18	Rose-wd. Rose-wd.	Cloth, Blk.	190	1,800.00	

MANUFACTURER	Model	Enclosure type	Woofer dia., inches	Midrange dia., inches	Midrange type	Tweeter dia., inches	Tweeter Type	Level control: W=woofer; M=midrange; T=tweeter; ST=super-tweeter	Anchoic freq; response Hz to kHz; ± dB	dB SPL/watt/meter	Recommended min. amp. power	Crossover frequencies, Hz.	Impedance ohms: Nominal/minimum	Dimensions, inches	Finish	Grille Material/Color	Weight, lbs.	Price \$
JORDAN WATTS	801	Bass Ref.	4	8	1	Dome		30-20 ±3	95	20	5.5k	8/6	19½x12½ x57%	Opt.	Cloth	184½	2,750.00	
	601	Bass Ref.	4	6	1	Dome		30-20 ±3	93.5	20	5.5k	6/4½	18½x12½ x44%	Opt.	Cloth	139	1,800.00	
	401	Bass Ref.	4	4	1	Dome	M,T	30-20 ±3	92	20	5.5k	8/6	15½x12½ x35%	Opt.	Cloth	99½	1,200.00	
WHARFEDALE	E30	Bass Ref.	(2) 6%	Cones	1	Horn	T	63-18 ±3	94	15	4k	8	13½x10¼ x26%	Wal. Ven.	Mesh	34	300.00	
	E90	Bass Ref.	(2) 10	Cones	1	Horn	M,T	43-18 ±3	95	15	1k,5k	8	15½x11¼ x45%	Wal. Ven.	Mesh, Blk.	112	850.00	
	E70	Bass Ref.	10	(2) 4	Cones	1	Horn	M,T	50-18 ±3	94	15	800,7k	8	13½x14x32	Wal. Ven.	Mesh	70	525.00
	E50	Bass Ref.	10	4	Cone	1	Horn	M,T	55-18 ±3	94	15	800,7k	8	13½x13½x26	Wal. Ven.	Mesh	42	430.00
	XP12C (Dovedale)	Bass Ref.	(2) 8	4	Cone			T	35-26 ±3	88	10	800,5k	6	15½x12¼ x25½	Wal. Ven.		55.1	385.00
	XP100 (Teesdale)	Bass Ref.	8	4	Cone			T	40-26 ±3	87	10	800,5k	6	13½x11x22½	Wal. Ven.		31	285.00
	XP-20 (Denton)	Ac. Sus.	6%			2	Cone		65-18 ±3	88	10	3.5k	6	9¼x6¼x14	Wal. Ven.	Cloth, Brn.		90.00
	XP-80 (Glendale)	Ac. Sus.	10	4	Cone	¼	Dome	W,T	50-20 ±3	86	10	1.3k, 4.5k	6	12x10½x22¼	Wal. Ven.	Cloth, Brn.	70	210.00
	XP-60 (Linton)	Ac. Sus.	8	4	Cone	¼	Dome	W,T	60-20 ±3	87	10	1k, 4.5k	6	10½x9¼ x18%	Wal. Ven.	Cloth, Brn.		160.00
	XP-40 (Shelton)	Ac. Sus.	8		¼		Dome		63-20 ±3	86		3.5k	6	9¼x9½x16¼	Wal. Ven.	Cloth, Brn.		115.00
	L300	Ac. Sus.	6%	4	1¼x1				63-20 ±3	88		1k, 5.5k	6		Wal. Ven.			275.00
YAMAHA	NS-1000	Ac.Sus.					M,T	40-20		50	500,6k	8	28x15½x14½			85%	1,500.00	
	NS-1000M	Ac.Sus.					M,T	40-20		50	500,6k	8	28x15½x14½			68½	1,050.00	
	NS-690H	Ac.Sus.					M,T	35-20			800,6k	8	24½x13¼ x12%			59½	700.00	



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MICROPHONES

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AT-812

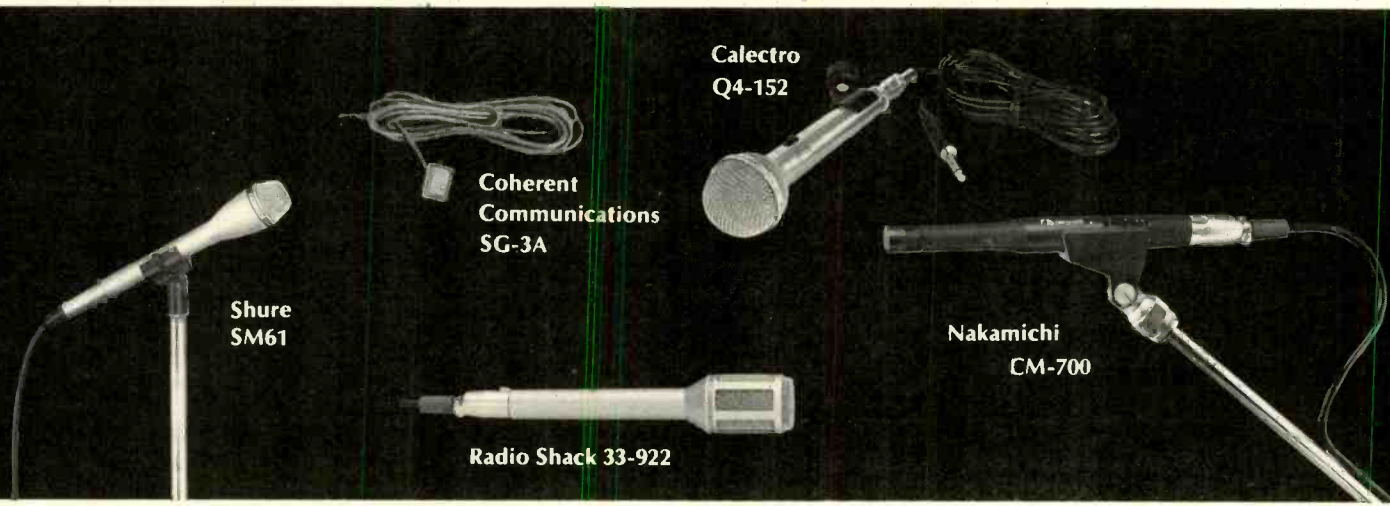
AKG
D-330 BT

Eddor-Calrec
CM4050

Cerwin-Vega UE-1

Audiotex
30-2316

MANUFACTURER	Model	Directional Pattern	Operating Principle	Case Material	Most Commonly Used For	Actual Impedance, 1 kHz, ohms	Operating Range, Hz to kHz	Open-Circuit sens., 1 kHz, dB re: 1 V / 1 uBar	Connector on mike?	Cable length, feet	Connector on Equipment End of Cable	Dimension inches, length x diameter	Weight, ounces	Mounting Method	Price, \$	Notes
AKG	C424	Card. X4	Cond.	Brass	Studio	200	20-20	-64.4	XLR	66	Multi	10 1/2 x 1 1/2	18	%x27	2,000.00	Quad mike with preattenuator.
	C422	Var. X2	Cond.	Brass	Studio	200	20-20	-66	XLR	66	Multi	9 1/4 x 1 1/2	15 1/2	%x27	1,900.00	Stereo mike—9 pattern remote control.
	C34	Var. X2	Cond.	Brass	Studio	200	20-20	-64.4	XLR	66	Multi	7 1/4 x 1 1/2	9 1/4	%x27	1,300.00	Stereo mike—9 pattern remote control.
	C33	Card. X2	Cond.	Brass	Studio	200	20-20	-64.4	XLR	66	Multi	7 1/4 x 1 1/2	9 1/4	%x27	775.00	Stereo mike.
	C414EB	Var.	Cond.	Brass	Studio	200	20-20	-42	XLR		Not Furn.	5 1/2 x 1 3/4	12	%x27	675.00	4 pattern selection with bass roll-off and preattenuator.
	C451E	Mod. Card.	Cond. Elect.	Brass	Studio	200	20-20	-39.5	XLR		Not Furn.	5 x 1/2	3 1/2	%x27	295.00	Modular system.
	C501E	Card.	Elect.	Brass	Flat	200	40-20	-48	XLR		Not Furn.	5 1/4 x 3/4	3 1/2	%x27	150.00	As above.
	C502E	Omni	Elect.	Brass	Flat	200	20-20	-48	XLR		Not Furn.	5 1/4 x 3/4	3 1/2	%x27	150.00	As above.
	C505E	Card.	Elect.	Brass	Flat	200	40-20	-48	XLR		Not Furn.	5 1/4 x 3/4	5 1/2	%x27	155.00	As above.
	D-224E	Card.	Dyn.	Brass	Studio	200	20-20	-56.5	XLR		Not Furn.	7 1/4 x 1	10	%x27	360.00	Two-way transducer with bass roll-off.
	D-222EB	Card.	Dyn.	Zinc	Studio	200	20-17	-55.5	XLR		Not Furn.	8 1/4 x 1 1/4	9	%x27	195.00	As above.
	D-200E	Card.	Dyn.	Alum.	Instr.	200	20-16	-56	XLR		Not Furn.	7 1/4 x 1 1/4	8 1/2	%x27	125.00	Two-way transducer system.
	D-330BT	Sup. Card.	Dyn.	Zinc	Pro-Vocal	200	50-20	-60.2	XLR		Not Furn.	7 1/2 x 1 1/2	12	%x27	185.00	Bass and treble EQ.
	D-320B	Card.	Dyn.	Zinc	Vocal	200	80-18	-57	XLR		Not Furn.	7 1/2 x 2	10 1/2	%x27	145.00	Bass EQ.
	D-310	Card.	Dyn.	Zinc	Vocal	200	80-18	-58	XLR		Not Furn.	7 1/2 x 2	8 1/2	%x27	110.00	On/Off switch opt.
D-2000E	Sup. Card.	Dyn.	Zinc	Music, Vocal	200	35-17	-52	XLR		Not Furn.	6 1/2 x 2 1/4	11	%x27	150.00	B-M-Off-EQ switch.	
D-1000E	Card.	Dyn.	Brass	Music, Vocal	200	40-17	-52	XLR		Not Furn.	6 1/2 x 1 1/2	8 1/2	%x27	100.00	B-M-S EQ switch.	
D-190E	Card.	Dyn.	Brass	Multi	200	30-15	-52	XLR		Not Furn.	6 1/4 x 1 1/2	6 1/2	%x27	90.00	On/Off switch opt.	
D-160E	Omni	Dyn.	Brass	Flat	200	40-20	-58	XLR		Not Furn.	5 1/2 x 3/4	4 1/2	%x27	88.00	Elastic suspension.	
D-120E	Card.	Dyn.	Alum.	Multi	200	100-17	-54	XLR		Not Furn.	6 1/2 x 2 1/4	5 1/4	%x27	75.00	On/Off switch opt.	
D-12E	Card.	Dyn.	Brass	Instr.	400	40-17	-52	XLR		Not Furn.	5 1/2 x 2 3/4	18	%x27	205.00	Elastic-steel suspension swivel joint.	
AUDIO-TECHNICA	AT-801	Omni.	Elect.	Alum.		600	40-18	-142	A3F	16 1/2	Phone	7 1/2 x 1 1/2	5 1/2	%x27	70.00	on/off switch.
	AT-802	Omni.	Dyn.	Alum.		600	50-16	-150	A3F	16 1/2	Phone	7 x 1 1/2	5	%x27	70.00	
	AT-803S	Omni.	Elect.	Alum.	Lav.	600	50-15	-151	A3F	16 1/2	Not furn.	1 x 1/4	0.1	Clip	85.00	Belt clip/battery pack, on/off switch.
	AT-805S	Omni.	Elect.	Alum.	Lav.	600	50-15	-151	A3F	16 1/2	Phone	2 x 1/2	1	Clip	50.00	On/off switch.
	AT-811	Card.	Elect.	Alum.		600	50-20	-150	A3F	16 1/2	Phone	8 x 1 1/2	7	%x27	85.00	As above.
	AT-812	Card.	Dyn.	Alum.		600	50-18	-155	A3F	16 1/2	Phone	8 x 1 1/2	7 1/2	%x27	95.00	As above.
	AT-813	Card.	Elect.	Alum.		600	20-20	-153	A3F	16 1/2	Phone	8 x 2	6 1/2	%x27	100.00	Blast filter, on/off switch.
AT-814	Card.	Dyn.	Alum.		600	50-16	-72	A3F	16 1/2	Phone	7 1/2 x 1 1/2	10	%x27	115.00		
AT-816/2	Card.	Dyn.	ABS.		600	60-15	-62		13	XLR Phone	8 1/2 x 1 3/4	6.7	Std.	60.00/Pr.	Stereo pair.	
AUDIOTEX	30-2312	Omni	Dyn.	Alum.	Vocal	200/50k	55-13	-85/-62		15	Phone	7 x 1	4	%x27	34.65	Dual impedance, On-Off slide switch, windscreen.
	30-2314	Card.	Dyn.	Alum.	Music	500/30k	50-13	-58		20	Phone	6 1/4 x 1	8 1/2	%x27	39.30	Dual impedance, volume control with On-Off switch, lav. holder.
	30-2310	Card.	Dyn.	Alum.	Music	600/50k	100-12	-73/-54		10	Phone	5 1/2 x 7/8	6	%x27	31.80	Dual impedance, On-Off slide switch.



Shure
SM61

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Communications
SG-3A

Calectro
Q4-152

Nakamichi
CM-700

Radio Shack 33-922

MANUFACTURER	Model	Directional Pattern	Operating Principle	Case Material	Most Commonly Used For	Actual Impedance, 1 kHz, ohms	Operating Range, Hz to kHz	Open-Circuit sens., 1 kHz, dB re: 1 V/1ubar	Connector on mike?	Cable length, feet	Connector on Equipment End of Cable	Dimension, inches, length x diameter	Weight, ounces	Mounting Method	Price, \$	Notes
AUDIOTEX (Continued)	30-2318	Card.	Cond.	Plas.	Vocal	1k	40-16	-65	Att.	13	Mini.	1½x½	2½	½x27	25.05	Lapel mike with the tack and battery.
	30-2316	Card.	Cond.	Alum.	Music	600	50-13	-69	Att.	20	Phone	7½x¼	9	½x27	57.10	On/Off switch.
BEYER	M818	Card.	Dyn.	Metal	Gen.	500	50-16	-148	No	6½	Var.	5.5x1.3 x 1.3	9½		149.95 Pair	Double ribbon.
	M400	Super Card.	Dyn.	Alum.	Vocal	200	50-16	-146	XLR	15	Not Furn.	7x2	9		119.00	
	M160	Hyper Card.	Rib.	Alum.	Flat	200			A3F						334.00	Opt. bass roll-off switch.
	M260S	Hyper Card.	Rib.	Brass	Flat	200	50-18	-153	A3F	15	Not Furn.	9½x2	10½		189.00	
	M500	Hyper Card.	Rib.	Alum.	Vocal	200	40-18	-153	A3F	15	Not Furn.	7½x2	8½		199.00	
	M69	Card.	Dyn.	Steel	Flat	200	50-16	-144	A3F	15	Not Furn.	7½x2	8%		149.95	
	M88	Hyper Card.	Dyn.	Brass	Flat	200	30-20	-144	A3F	15	*Not Furn.	7½x2	10%		299.00	
	M201	Hyper Card.	Dyn.	Brass	Flat	200	40-18	-149	A3F	15	Not Furn.	6½x1	7%		179.00	
MC711	Omni.	Cond.	Brass	Flat	200	40-20		A3F		Not Furn.				425.00	MC-711/714 capsule series uses common preamp shaft, CV710.	
	MC712	Card.	Cond.	Brass	Flat	200	40-20		A3F		Not Furn.				455.00	
	MC713	Card.	Cond.	Brass	Flat	200	40-20		A3F		Not Furn.				460.00	
	MC714	Card.	Cond.	Brass	Flat	200	40-20		A3F		Not Furn.				490.00	
CALECTRO	Q4-157	Omni	Dyn.	Alum.	Vocal	200/50/k	55-13	-85/-62		15	Phone	7x1	4	½x27	29.95	Dual impedance, On-Off switch.
	Q4-152	Card.	Dyn.	Alum.	Music	30k	50-13	-58		10	Phone	6½x1	8½	½x27	33.95	On-Off slide switch.
	Q4-158	Card.	Dyn.	Alum.	Music	600/50k	100-12	-73/-54		10	Phone	5½x½	6	½x27	27.00	Dual impedance, On-Off slide switch.
	Q4-142	Card.	Dyn.	Alum.	Music	30k	100-15	-59	Att.	3	Mini.	3¼x¼	2½	½x27	13.95	Hand-held or lav.
CERWIN-VEGA	UE-1	Card.	Elect. Cond.	Alum.	Instr.	10k/600	80-20	-70	A3M	16	Phone	7.9x1.9		½x27	125.00	
	UD-1	Card.	Dyn.	Alum.	Vocal	200	70-15	-73	A3M	16	Phone	7.3x1.6		½x27	100.00	
COHERENT COMMUNICATIONS	74A	Omni	Elect.	ABS	Lav.	3k	20-20	-60	Var.	4½		0.46x 0.33x 0.326	¾	Tie-clip	139.00	Can be used unbalanced.
	74C	Omni	Elect.	ABS	Instr.	150	20-20	-60	XLR	8,15		0.46x 0.33x 0.326	¾	Var.	185.00	Handles 140 dB SPL plus.
	SG-3A		Elect.	ABS	Disco, Sports	150/3k	50-12	-60	Var.	8,15		0.695x 0.315x 0.18	¾	Var.	195.00	Unbalanced, 149.00; noise cancelling, avail. in boom, headset, or separate.
EDCOR-CALREC	CM1001C	Omni	Cond.	Brass		200	20-20	-62	Can. XLR		Not Furn.	5½x½	4	½x27	270.00	48 V phantom powered.
	CM1050C	Card.	Cond.	Brass	Gen.	200	30-20	-62	Can. XLR		Not Furn.	5½x½	4	½x27	270.00	As above.
	CM1051C	Card.	Cond.	Brass	Gen.	200	40-20	-62	Can. XLR		Not Furn.	5½x½	4	½x27	270.00	Bass roll-off, 48 V phantom powered.
	CM2050C	Card.	Cond.	Brass	Gen.	200	30-20	-64	Can. XLR		Not Furn.	6¼x½	4.2	½x27	302.00	Modular, 48 V phantom powered.

(Continued)

MICROPHONES

MANUFACTURER	Model	Directional Pattern	Operating Principle	Case Material	Most Commonly Used For	Actual Impedance, 1 kHz, ohms	Operating Range, Hz to kHz	Open Circuit Sens., 1 kHz, dB re: 1 V/1 uBar	Connector on mike?	Cable length, feet	Connector on Equipment End of Cable	Dimension, inches: length x diameter	Weight, ounces	Mounting Method	Price, \$	Notes
EDCOR-CALREC (Continued)	CM2150C	Card.	Cond.	Brass	Gen.	200	30-20	-64	Can. XLR		Not Furn.	6 1/4 x 1/2	4.2	%x27	332.00	7.5 to 54 V phantom powered; CM2156C same as 2150C with metal mesh pop-screen, 346.00.
	CM4050	Multi	Cond.	Brass	†	30	20-20	-46	Can. XLR	165	Yes	9 1/2 x 1 1/2 x 2 1/2	19	%x27	8,550.00	For XY, MS, Quad and Ambisonic surround, remote control.
ELECTRO-VOICE	RE20	Card.	Dyn.	Steel	Flat	50/150/250	45-18	-150	Swcft. A3F	15	Not Furn.	8 1/2 x 2 1/4	26	%x27	349.00	Variable-D for no up-close bass boost.
	RE15	Sup. Card.	Dyn.	Steel	Flat	150	80-15	-150	Swcft. A3F	15	Not Furn.	6 3/4 x 1 1/2	6	%x27	202.00	As above.
	RE10	Sup. Card.	Dyn.	Steel	Flat	150	90-13	-150	Swcft. A3F	15	Not Furn.	6 3/4 x 1 1/2	6	%x27	127.50	As above.
	660	Sup. Card.	Dyn.	Zinc	Flat	150/HIZ	90-13	-150	Swcft. A3F	15	Not Furn.	6 1/2 x 1 1/2	10 1/2	%x27	82.75	As above.
	DS35	Card.	Dyn.	Steel	Vocal	150	60-17	-148	Swcft. A3F	15	Not Furn.	7 1/4 x 1 1/2	9.2	%x27	115.50	Single-D for up-close bass boost.
	671A	Card.	Dyn.	Zinc	Vocal	150/HIZ	60-14	-151	Swcft. A3F	15	Not Furn.	6 1/4 x 1 1/4	8	%x27	86.25	As above.
	CS15P	Card.	Cond.	Steel	Flat	150	40-18	-137	Swcft. A3F	15	Not Furn.	6 1/4 x 1 1/2	8	%x27	237.00	As above, plus phantom powered.
	1776	Card.	Cond.	Zinc	Vocal	150	60-18	-144	Swcft. A3F	15	Not Furn.	7 1/2 x 1 1/2	12	%x27	111.50	Single-D for up-close bass boost, battery powered. Model 1777 phantom powered.
	RE55	Omni	Dyn.	Steel	Flat	150	40-20	-150	Swcft. A3F	15	Not Furn.	10 1/2 x 1 1/2	8.5	%x27	232.00	Used as secondary lab standard.
	DO54	Omni	Dyn.	Steel	Flat	150	50-18	-149	Swcft. A3F	15	Not Furn.	5 3/4 x 1 1/2	6.5	%x27	112.50	
	636	Omni	Dyn.	Steel/Zinc	Flat	150/HIZ	60-13	-154	E-V QC4M	15	Not Furn.	10 1/4 x 1 1/2	15	%x27	86.25	
	635A	Omni	Dyn.	Steel	Vocal	150	80-13	-149	Swcft. A3F	15	Not Furn.	5 3/4 x 1 1/2	6	%x27	69.75	
	631B	Omni	Dyn.	Zinc	Vocal	150/HIZ	80-13	-150	Swcft. A3F	15	Not Furn.	6 1/4 x 1 1/2	6	%x27	60.75	Removable On-Off switch.
	CO15P	Omni	Cond.	Steel	Flat	150	20-20	-141	Swcft. A3F	15	Not Furn.	6 3/4 x 1 1/2	7 1/2	%x27	255.00	
	RE85	Omni	Dyn.	Steel	Vocal	150	90-10	-155	No	30	Not Furn.	2 3/4 x 7/8	8	Lav.	106.50	
	647AL	Omni	Dyn.	Alum.	Vocal	150	60-12	-155	No	18	Not Furn.	3 3/4 x 3/4	2	Lav.	79.75	647AH for Hi-Z.
	CO90	Omni	Cond.	Brass	Vocal	150	40-15	-148	No	6	Swcft. A3M		1	Tie-clip	112.50	Lavalier.
	RE18	Card.	Dyn.	Steel	Flat	150	80-15	-150	Swcft. A3F	15	Not Furn.	7 x 1 1/4	8	%x27	225.00	Shock-mounted Variable-D.
	DO56	Omni	Dyn.	Steel/Alum.	Vocal	150	80-18	-155	Swcft. A3F	15	Not Furn.	6 1/4 x 1 1/2	6 1/2	%x27	100.00	Shock-mounted.
JVC	M-201	Uni-Dir.	Elect.	Alum.		600	40-18		Phone	10	Phone	8 3/4 x 3 1/2	13	%x27	59.95	
	M-510	Super Dir.	Elect.	Alum.		600	40-20		Phone	15	Cannon	16 x 1	9	%x27	189.95	
	HM-200E	Binaur.	Elect.			600	40-18		Phone	6.6	Phone				99.95	
NAKAMICHI	CM-1000	Card.†	Cond.	Metal	Studio	600	20-20	-67	XLR-3	15	XLR-3			%x27	355.00	With power supply, †omni capsule opt.
	CM-700	Card./Omni†	Elect.	Metal	Studio	600	20-20	-65	XLR-3	15	Phone			%x27	185.00	†With two capsules.
	CM-300	Card./Omni†	Elect.	Metal	Studio	200	30-18	-76	XLR-3	15	Phone			%x27	135.00	†As above.
	CM-100	Card.†	Elect.	Metal	Studio	200	30-18	-76	XLR-3	15	Phone			%x27	85.00	†Omni capsule opt.
	CM-50	Omni	Elect.	Metal	Vocal	250	20-18	-75	Phone	6	Phone	1 1/4 x 1/2		%x27	135.00	With tie-clip.
	DM-1000	Card.	Dyn.	Metal	Studio	250	30-18	-76	XLR-3	15	Phone			%x27	245.00	Triple pop/blast filter.
	DM-500	Card.	Dyn.	Metal	Studio	250	50-15	-73	XLR-3	15	Phone			%x27	85.00	Pop/blast filter.
RADIO SHACK	33-992	Card.	Dyn.	Alum.	Vocal	600/50k	80-12	-72/-53		6	Phone			%x27	29.95	
	33-983	Card.	Dyn.	Alum.	Vocal	200/50k	80-13	-81/-59	Swcft. A3F	15	Amph. HI-Z or 1/4" plug			%x27	55.95	
	33-919	Card.	Elect.	Alum.	Orch.	600	300-15	-72		10	2 Phone			%x27	34.95	Stereo mike, Narrow/Wide switch.
	33-922	Card.	Dyn.	Alum.	Orch. Vocal	200	80-15	-76	Swcft. A3F	16	Phone			%x27	59.95	
	33-985	Omni	Dyn.	Alum.	Vocal	250/50k	90-11	-80/-57		15	Phone			%x27	19.95	
	33-922	Card.	Dyn.	Alum.	Vocal	600/50k	80-12	-72/-53		6	Phone			%x27	29.95	
	33-1045	Card.	Elect.	Alum.	Vocal	600	30-15	-70		10	Phone			%x27	29.95	
	33-1059	Uni, omni	Elect.	Alum.	Var.	600	50-13	-73		10	Phone			%x27	39.95	Uni-omni switch.
REVOX	N3500	Hyper Card.	Dyn.	Alum.		600	40-18		XLR	16	XLR				160.00	
SANSUI	DM 11	Card.	Dyn.	Alum.	Vocal	600	100-15	-76		19 1/2	Phone			%x27	110.00	
	EM 1	Card.	Cond.	Alum.	Vocal	600	50-15	-71.5		19 1/2					80.00	

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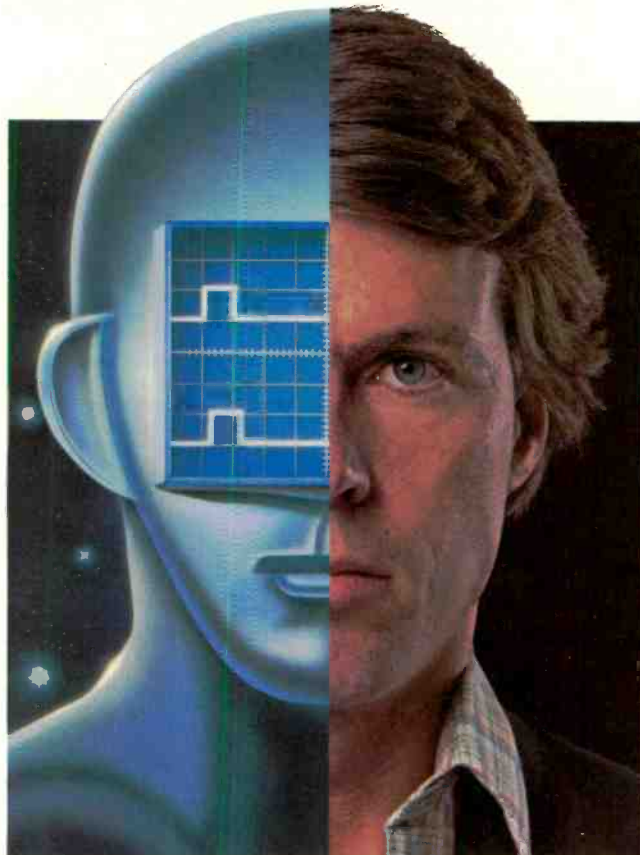
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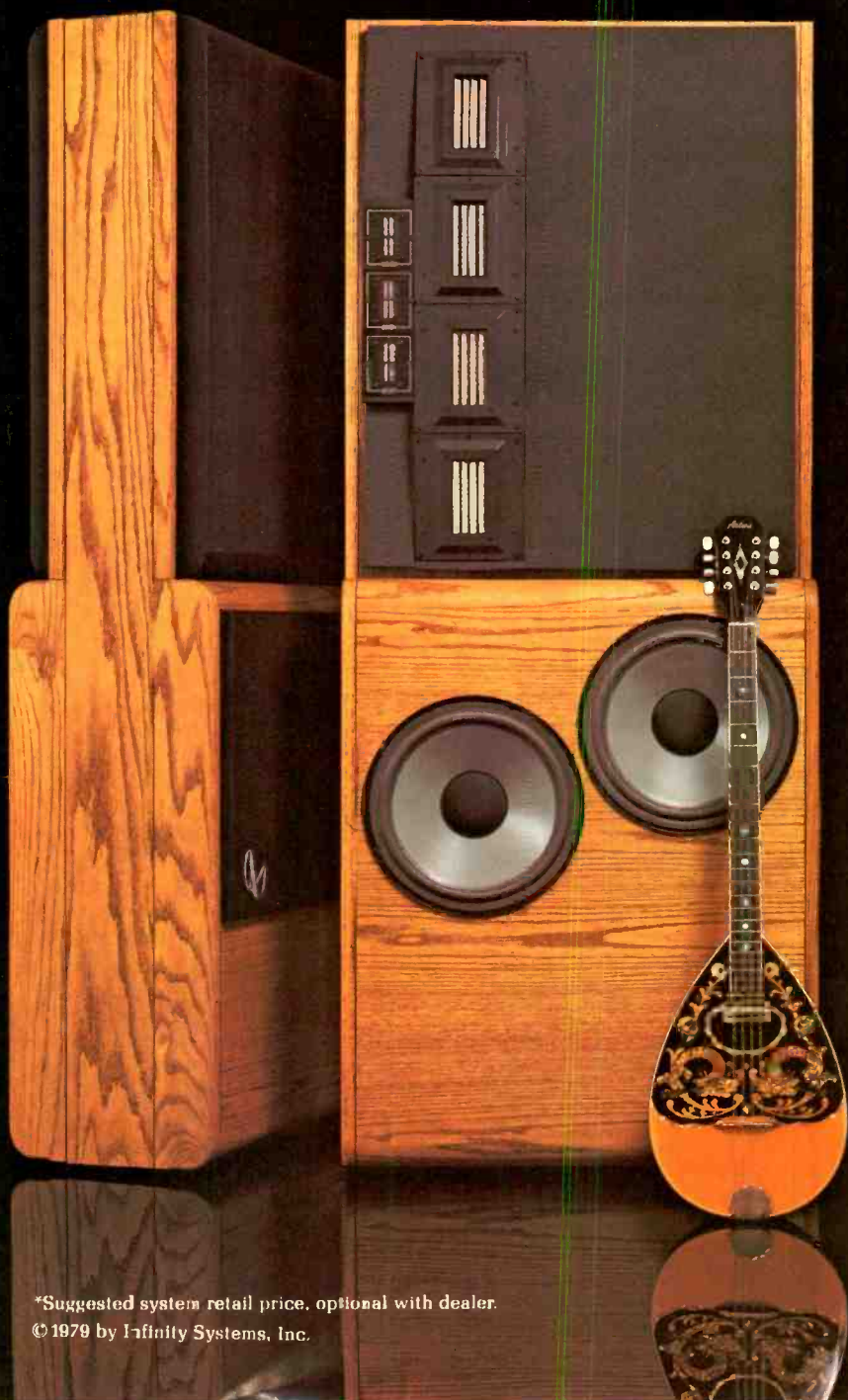


MICROPHONES

MANUFACTURER	Model	Directional Pattern	Operating Principle	Case Material	Mounting	Most Commonly Used For	Actual Impedance, 1 kHz, ohms	Operating Range, Hz to kHz	Open-Circuit sens., 1 kHz, dB re. 1 V / 1 µbar	Connector on mike?	Cable length, feet	Connector on Equipment End of Cable	Dimensions, inches, length x diameter	Weight, ounces	Mounting Method	Price, \$	Notes
SCHOEPS SCHALLTECHNIK	CMC 32	Omni	Cond.	Nick.	Symph.	20	20-20	-35	XLR-3M		N/A	5x3/4	2.8	3/4x27	605.00	Interchangeable capsules.	
	CMC 34	Card.	Cond.	Nick.		20	40-20	-35	XLR-3M			5x3/4	2.8	3/4x27	620.00	As above.	
	CMC 38	Bi-Dir.	Cond.	Nick.		20	40-16	-35	XLR-3M			5 1/4x3/4	2.8	3/4x27	730.00	As above, with radial sound pick-up.	
	CMC341	Hypercard.	Cond.	Nick.		20	40-20	-35	XLR-3M			5x3/4	2.8	3/4x27	680.00	Interchangeable capsules.	
	CMC 35	Omni/Card.	Cond.	Nick.		20	40-20	-35	XLR-3M			5x3/4	2.8	3/4x27	775.00	2-pattern switchable.	
	CMC 36	O./C./Bi-D.	Cond.	Nick.		20	40-16	-35	XLR-3M			5 1/4x3/4	2.8	3/4x27	930.00	3-pattern switchable.	
	CMTS301	O./C./Bi-D.	Cond.	Nick.		Symph.	20	40-16	-35	XLR-5M			8 1/2x1	11 1/4	3/4x27	1,875.00	Coincident stereo mike.
MSTC 34	2 x Card.	Cond.	Nick.			20	40-20	-35	XLR-5M			7x2 1/2	9	3/4x27	1,235.00	ORTF stereo mike.	
CM 03	Omni	Cond.	Nick.		Dialog	20	20-18	-35	XLR-3M	3/4	Spec. Coll.	1 1/4x3/4	1.4		855.00	Lavalier.	
SENNHEISER	MD211	Omni	Dyn.	Brass	Studio/ Instr.	200	30-20	-153	A3M	15	Not Furn.				327.00		
	MD402	Sup. Card.	Dyn.	Alum. Plastic		200	80-12	-152	A3M	15	Not Furn.				79.50		
	MD421	Card.	Dyn.			200	30-17	-151	A3M	15	Not Furn.				300.00	Adj. bass response, high overload.	
	MD431	Sup. Card.	Dyn.	Zinc		200	30-20	-151	A3m	15	Not Furn.				339.00	Built-in EQ and shockmount.	
	MD441	Sup. Card.	Dyn.	Alum.	Vocat	200	40-16	-151	A3M	15	Not Furn.				418.00	Internal shockmount, high vol. before feedback.	
	MKE202	Omni	Elect. Cond.	Metal		200	50-15	-144	A3M						215.00		
	MKE402	Sup. Card.	Elect. Cond.	Metal		200	50-15	-144	A3M						238.00		
	MKE802	Club	Elect. Cond.	Metal	Shotgun	200	50-15	-138	A3M						293.00		
	MKE10	Omni	Elect. Cond.	Brass		1k	40-20								146.00		
	MKE2002	Binaural	Cond.	Metal	Music	1.5k	40-20	-135							454.00		
	MKH106	Omni	Cond.	Metal	Studio	2	20-20								510.00	12 V AB powered.	
	MKH106 P48U	Omni	Cond.	Metal	Studio	10	20-20								510.00	48 V phantom powered.	
	MKH406 TU	Card.	Cond.	Metal	Studio	2	40-20								598.00	12 V AB powered.	
	MKH406 P48U	Card.	Cond.	Metal	Studio	10	40-20								598.00	48 V phantom powered.	
MKH416 TU	Sup. Card.	Cond.	Metal	Studio	20	40-20								637.00	12 V AB powered.		
MKH416 P48U	Sup. Card.	Cond.	Metal	Studio	10	40-20								637.00	48 V phantom powered.		
MKH816 TU	Shotgun	Cond.	Metal	Studio	20	40-20								842.00	12 V AB powered.		
MKH816 P48U	Shotgun	Cond.	Metal	Studio	10	50-20								842.00	48 V phantom powered.		
SHURE	516EQ	Card.	Dyn.	Zinc	Vocal	170	50-15	-81	Swcft. A3F	15	Phone	6 1/4x1 1/2	9 1/2	3/4x27	100.80	Built-in filters.	
	545SD	Card.	Dyn.	Zinc	Vocal	240/39k	50-15	-77	Swcft. A3F	15	Not Furn.	6 1/4x1 1/2	9	3/4x27	96.60	On-Off switch.	
	565SD	Card.	Dyn.	Zinc	Vocal	240/39k	50-15	-78	Swcft. A3F	15	Not Furn.	6 1/4x2	10 1/2	3/4x27	106.80	As above.	
	589S	Card.	Dyn.	Zinc	Vocal	160/34k	90-13	-83	Swcft. A3F	15	Not Furn.	7x1 1/2	12	3/4x27	73.20	As above.	
	SM57	Card.	Dyn.	Zinc	Instr. Vocal	65/270	40-15	-82	Swcft. A3F	20	Not Furn.	6 1/4x1 1/2	10	3/4x27	118.80		
	SM58	Card.	Dyn.	Zinc/Alum.	Instr. Vocal	65/270	50-15	-83	Swcft. A3F	20	Not Furn.	6 1/4x2	15	3/4x27	151.80		
	SM59	Card.	Dyn.	Alum.	Instr. Vocal	160	50-15	-83	Swcft. A3F	20	Swcft. A3M	7 1/4x1 1/2	7.6	3/4x27	158.40	Hum-bucking coil with shock mount.	
	SM81	Card.	Elect. Cond.	Steel	Prof. Record.	85	20-20	-64	Swcft. A3F	25	Swcft. A3M	8 1/2x1	8	3/4x27	250.00	Two-position roll-off.	
	515SB	Card.	Dyn.	Zinc	Speech	170	80-13	-82	Att. Cable	15	Not Furn.	6 1/2x1 1/2	22	3/4x27	43.65	On-Off switch.	
	SM61	Omni	Dyn.	Alum.	Vocal	175	50-14	-82	Swcft. A3F	20	Not Furn.	7 1/4x1 1/2	5.2	3/4x27	106.20		
SONY	C-48	Card., Omni, Fig. 8	Cond.	Alloy	Var.	250	30-16	-61	XLR			9x2 1/2 x1 1/2	20 1/2	3/4x27		48 V phantom powered, 9V battery powered.	
	C-37P	Card., Omni	Cond.	Alloy	Var.	250	30-16	-70	Att.	20	XLR	7 1/4x1 1/2	18	3/4x27	455.00	48 V phantom powered.	
	ECM 56F	Card.	Elect. Cond.	Alloy	Var.	250	20-20	-74	Att.	20	XLR	8 1/4x2	17	3/4x27	245.00	48 V phantom powered, 9 V battery.	
	ECM 65F	Card.	Elect. Cond.	Alloy	Vocal	250	70-20	-74	XLR	20	XLR	7x1 1/2	7 1/2	3/4x27	235.00	As above.	
	ECM 33F	Card.	Elect. Cond.	Alloy	Instr.	250	20-20	-74	XLR	20	XLR	7x1	6 1/2	3/4x27	185.00	As above.	
	ECM 990F	Stereo	Elect. Cond.	Alloy	Free Field	200	40-16	-76.8		9	Phone	8 1/4x1	11.3	3/4x27	150.00	1.5 V battery, bass roll-off switch.	
	ECM 30	Omni	Elect. Cond.	Alloy	Speech	250	40-13	-75	Att.	10	XLR	3/4x3/4	0.18	3/4x27	105.00	1.5 V battery, balanced output.	
	ECM 23F	Card.	Elect. Cond.	Alloy	Instr., Vocal	250	20-20	-75	XLR	20	Phone	7 1/2x1	6.7	3/4x27	100.00	1.5 V battery, 8 dB pad, bass roll-off switch.	
ECM 260F	Card.	Elect. Cond.	Alloy, ABS	Var.	200	50-14	-74	XLR	20	Phone	7 1/4x1 1/2	4.4	3/4x27	63.00	1.5 V battery.		
TECHNICS	RP-3330	Card.	Dyn.	Alum.	Vocal	400	50-12	-78		10	Phone	6 1/2x2	5 1/2	Std.	30.00	Built-in wind screen & on-off switch.	
	RP-3500E	Card.	Elect.	Alum.	Close-up	600	50-12	-68		16	Phone	8 1/4x1 1/2	4 1/4	Std.	60.00	As above.	
	RP-3210E	Stereo Card.	Elect.	Alum.	Stereo	600	50-12	-70		10	M-3	7 1/4x2 1/2	3 1/4	Std.	60.00	160 degree separation, built-in wind screen	
	RP-3540E	Card.	Elect.	Alum.	General	600	40-14	-70		16	Phone	9x1 1/2	6 1/2	Std.	70.00	As RP-3330.	

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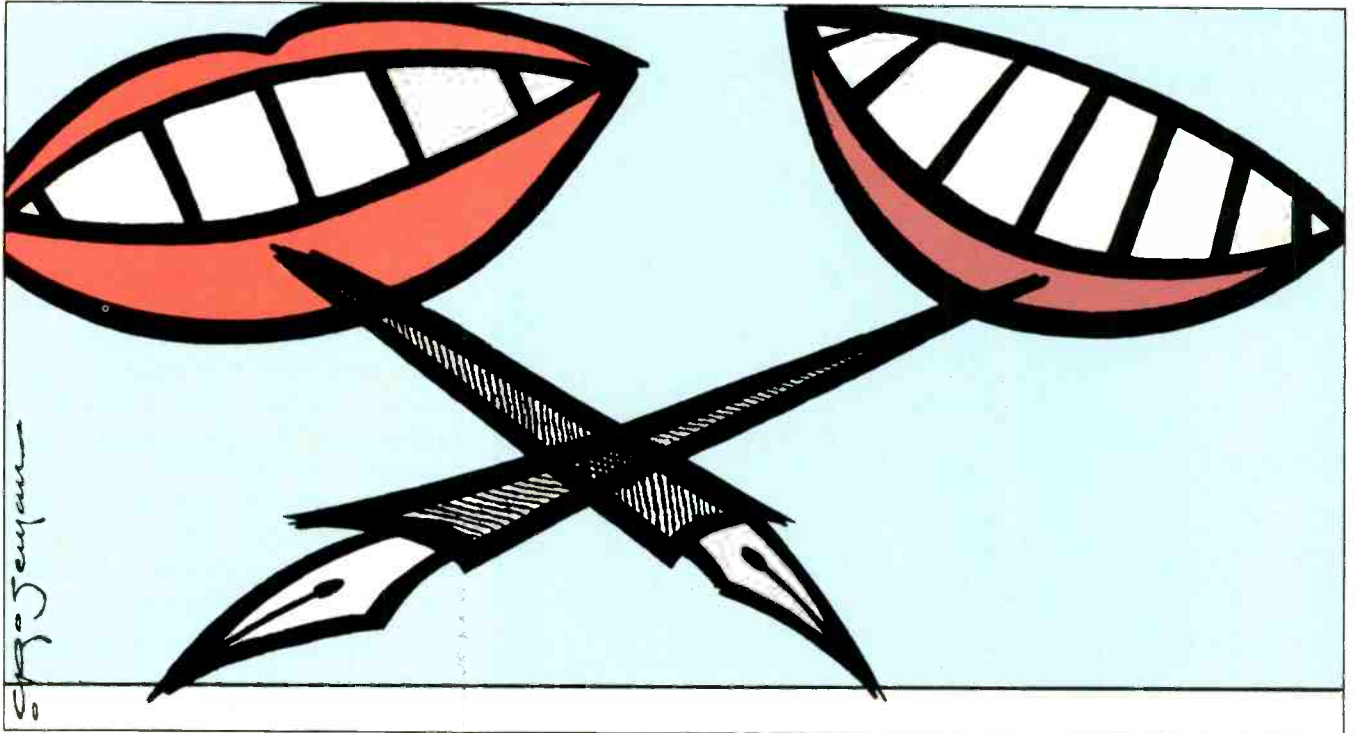
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Michael Tearson

Jon Tiven

The column



Spy: Carly Simon

Elektra 5E506, stereo, \$8.98.

Mingus: Joni Mitchell

Asylum 5E-505, stereo, \$8.98.

It has been theorized that there are many artists who only have so many songs in them and therefore quickly begin repeating themselves and clutching at straws if they don't go into retirement. Joni and Carly are both well along in their careers and seem to have pumped their wells dry. They are making concerted efforts at breathing new life into their art by finding new musical allies or aspiring to "higher" forms than pop music — but for my tastes, it's no less dry. Both **Spy** and **Mingus** seem well-intentioned, but both leave me cold.

Carly, if you can believe this one, is trying to rock 'n' roll by teaming up with Frank Carillo (a rock would-be has-been) writing a song called *Pure Sin* which almost is emotive but fails the final test. Perhaps it's because the players who accompany her are studio cats who get paid not to express themselves or because the teamings with hubby James haven't worked to her benefit, but Carly hasn't really come

up with a killer tune in many a day. The most creativity she can muster is finding themes to base her album covers around — one wonders whether she's pushing the fact that she did the title song for last year's James Bond film a little too hard. The real tragedy is that about a year ago I witnessed one of her rare performances, this at a small coffeehouse, and she performed all of her greatest hits with such magnificence that one was impelled to wait for the live album (the evening's performance was recorded), but alas, no such disc emerged. It would have been the best Carly Simon album in years, but instead this stuff gets released.

Ms. Mitchell is a little out of her element, collaborating with jazz great Charlie Mingus, but now that she's had her hits, she's out to try for some serious music. Her limelight's been stolen recently by clone Rickie Lee Jones, so Joni's album doesn't even attempt to go after her usual audience but instead is a tribute to the late Mr. Mingus. Unfortunately it comes off like Van Halen Salutes Chuck Berry. Despite its sincerity **Mingus** is no great

aesthetic accomplishment and is at times embarrassing. One can only hope consumers will respond in kind.

J.T.

Sound: B-

Performance: C-

Back To The Egg: Wings

Columbia FC 36057, stereo, \$8.98.

Paul McCartney is the most maligned rock figure by the rock press simply because (a) he seems too perfect, (b) most rock journalists love to poke fun at Linda, and (c) he grants interviews very infrequently. However, he does happen to be one of the most creative, unpredictable, and musical figures in pop music today, not to mention one of the most successful (if he really wanted to, he could probably afford to buy or start his own record company). Although his last single *Goodnight Tonight* was disco (quite unhip in most critical circles, unless the artist is other than caucasian), his latest album should win him some sort of critical approval as there are plenty of rock numbers and they're all played in the top of each side's sequence. In

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addition, well-liked English musicians such as Bruce Thomas (Elvis McManus' bassist), The Who's Kenney Jones & Pete Townshend, Zeppelin's Bonham & Jones, ex-Face Ronnie Lane, and The Shadows' legendary Hank Marvin appear on two of the album's better cuts, the instrumental *Rockestra Theme* and *So Glad To See You Here*.

Personally, I'd agree that the album is a notch over **London Town** but not much more, as McCartney's albums have been consistently enjoyable through the many changes of Wings personnel. Although Geoff Britton is my favorite Wings drummer to date (he made a one-off called *Junior's*



Farm which was simply breathtaking three-chord bashing from start to finish), newcomer Steve Holly is stealing his thunder and Lawrence Juber easily beats out Jimmy McCullough as Wings' best guitarist ever (check out the punkish *Spin It On* for the evidence). The album is slightly less experimental musically than its predecessors, although sonically it reaches for new heights of density — McCartney & Co. go for a band sound on about half the tracks, and the Macca Magick works best when he rocks out (*Getting Closer, Old Siam, Sir*). I must

say, however, that the quieter moments on the album aren't quite up to par for the man, and he seems to have restrained his love of synthesizers, at least for the moment. This particular Wings shows great promise, and **Back To The Egg** is an excellent album — but I hadn't expected less, and somehow with McCartney's continuing ascension of musical standards one hopes for an even greater geometrical progression once this lineup gels. J.T.

Sound: A+

Performance: A-

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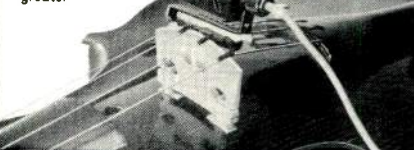
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Rust Never Sleeps: Neil Young & Crazy Horse

Reprise HS 2295, stereo, \$8.98.

Although James Taylor as a punk rocker might have been more amusing, and Johnny Rotten as a singer/songwriter seemed a cruel joke, Neil Young's foray into the New Wave marketplace is a surprisingly smooth transition on **Rust Never Sleeps**. If Young's commitment to rock music or his sense of humor was to be doubted from his last album, his latest is his funniest, boldest, and even his most musical statement since his first two albums.

Even punk rockers might find side two highly listenable, because even though it features Neil in his most acoustic, his emotional and tortured vocal delivery is quite enthralling, particularly on *Thrasher* and the much heralded *Pocohontas*. If someone had told me that he was saving his best material for the soundtrack to his film (which this is), I would have been able to excuse his past few records, but this appears not to be the case, as many of these tunes are a couple of years old. And side two, where Neil is accompa-

nied by Crazy Horse on some genuine punk rock anthems — what more could you want from this hermit? *Hey Hey My My* is an ode to The Sex Pistols complete with Paul Cook drum sound, Young's technically horrendous but somehow engaging lead guitar stuttering, and Young playing a heavy metal riff through an octave box — who would have thought that there was but a thin line between The Pistols and Crosby Stills & Nash? Not I. J.T.

Sound: A-

Performance: A

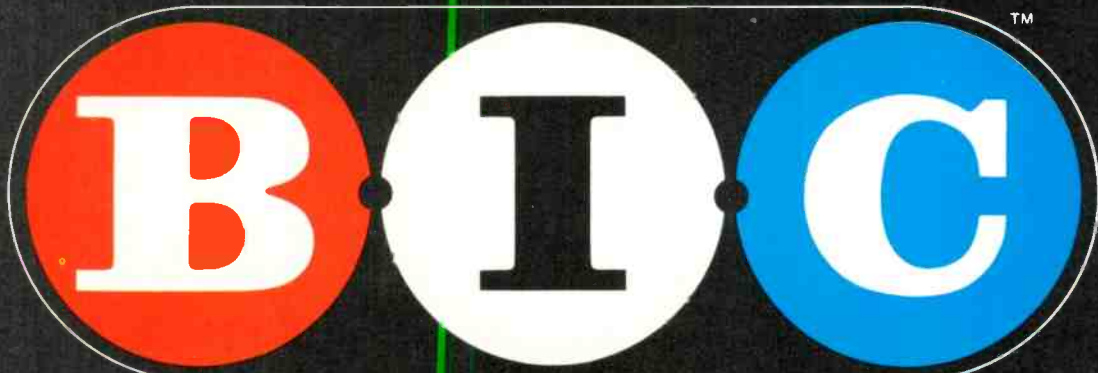
The Incredible Shrinking Dickies: The Dickies

A&M SP-4742, stereo, \$7.98.

The Dickies are a joke. And a bad joke at that. They manifest all the worst elements of New Wave/Punk as they mount an admittedly silly and premeditated effort to become a commercial sensation. Fortunately the effort appears to be pre-doomed.

Their pre-album singles were pressed on white vinyl, and the album is on yellow, as a sticker on the cover screams. The guys are posed with

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some props repossessed from Alice Cooper's stage act, and one guy wears PJs. Thus they've got their trendiness covered.

Getting down to basics and I mean music and vinyl, the first things that impressed me about the album were the bubbles, scratches, nicks, and black streaks in my copy. When it gets to the turntable, it is unbearably noisy. But then, the music is so distorted and terrible that it really matters little.

Most of their songs are indistinguishable buzzes in the best Ramones fashion, but with humor sufficiently hidden as to be undetectable. The biggest giggles come from material they cover, *Eve of Destruction* which is on the album and *Silent Night*, their Christmas single which is not.

The Incredible Shrinking Dickies. For masochistic punkers only. M.T.

Sound: F Pressing: F Performance: F

Black Rose — A Rock Legend: Thin Lizzy

Warner Brothers BSK 3338, stereo, \$7.98.

Tough/passionate. This is the coin that Thin Lizzy personifies. With Gary Moore signing on as the new second lead guitarist, the album marks a turning point for the band. The assistance of Tony Visconti, as co-producer with the band, has helped Lizzy achieve an excellent album.

Side one is the cooking side. It rocks without a break from the first strains of *Do Anything You Want To* and on through *Toughest Street in Town*, *S&M* and *Waiting for an Alibi* with punch after punch before the side closes with the wistful *My Sarah* as a change of pace.

The toughness of side one's rockers gives way to desperation on the flip with *Got to Give It Up* and *Get Out of Here*, both songs about characters pushed to their limits. Then comes the

side's pace changer *With Love* which sets up the album's showpiece/finale *Roisin Dubh (Black Rose) A Rock Legend*. *Black Rose* is a tribute to the band's roots and Irish legacy. Group leader/singer/bassist Phil Lynott sings,

**Tell me the legends of long ago
When the kings and queens would dance in the
realms of the Black Rose**

**And play me their melodies so that I might
know**

And I could tell my children-o.

This is the cornerstone of a genuine masterwork. The lyrics tell of figures of Irish history and legend, as the melody works its way into a medley of folk and fiddle tunes including, among others, brief snatches of *Oh, Shanandoah*, *Will Ye Go Lassie Go*, *Danny Boy (Londonderry Aire)*, *The Little Beggeman* and more before yielding to a note-perfect lift from Fairport Convention's *Dirty Linen*, featuring sensational stereo effects on the twin guitars before returning to the corner-

Labour of Lust: Nick Lowe

Columbia JC-36087, stereo, \$7.98.

Are Carlene Carter and Nick Lowe courting each other via a musical exchange — she with the Anglo-rocking

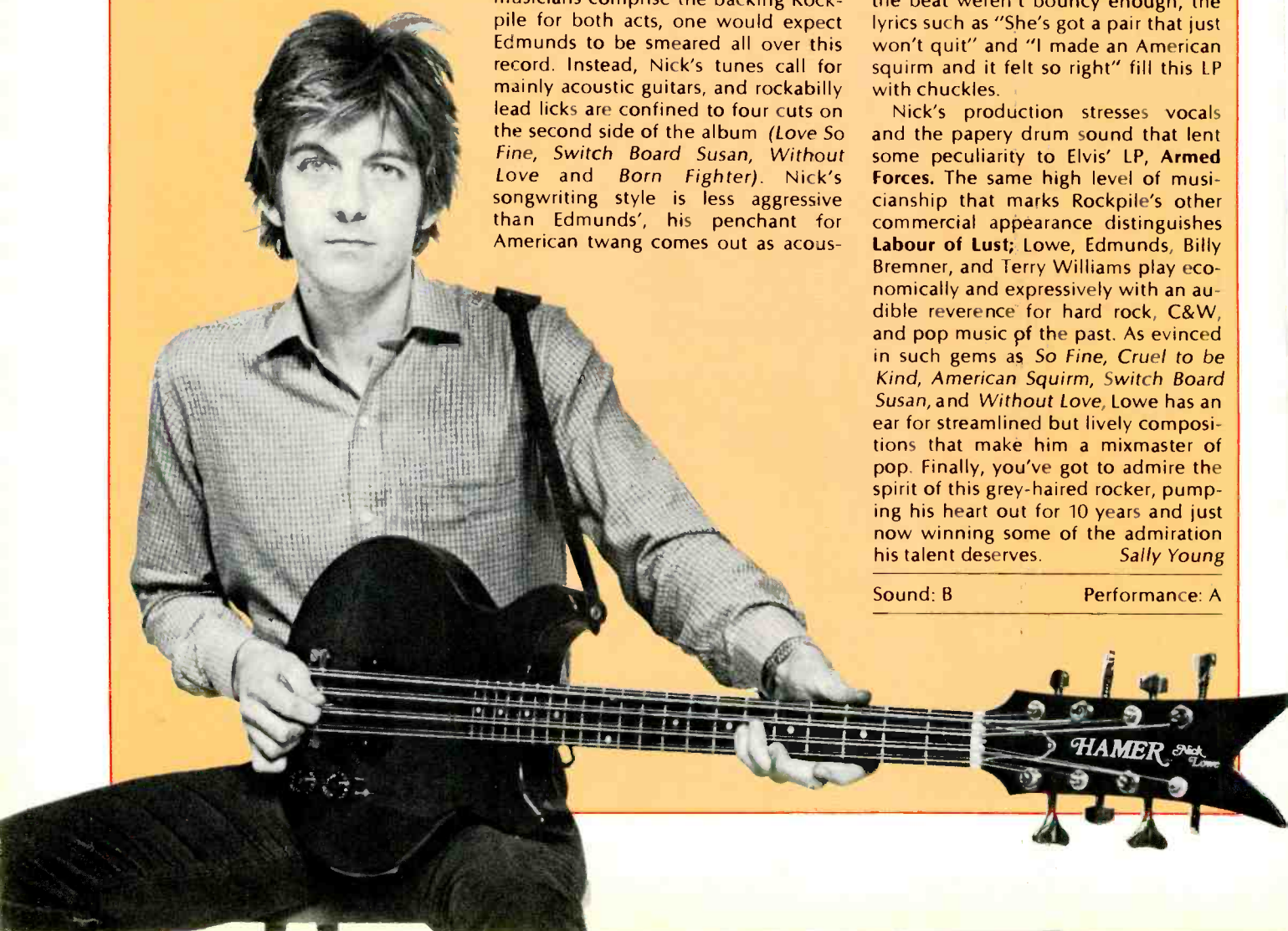
Rumour who played on her last album and he on this noticeably C&W flavored LP, suggestively titled **Labour of Lust?** Nick's pal Dave Edmunds is a C&W addict too, and since the same musicians comprise the backing Rockpile for both acts, one would expect Edmunds to be smeared all over this record. Instead, Nick's tunes call for mainly acoustic guitars, and rockabilly lead licks are confined to four cuts on the second side of the album (*Love So Fine*, *Switch Board Susan*, *Without Love* and *Born Fighter*). Nick's songwriting style is less aggressive than Edmunds', his penchant for American twang comes out as acous-

tic-type ballads where Edmunds would go whining rockabilly. Nick is also a better melodist, a more varied songwriter, and humor contributes much to the charm of his tunes. As if the beat weren't bouncy enough, the lyrics such as "She's got a pair that just won't quit" and "I made an American squirm and it felt so right" fill this LP with chuckles.

Nick's production stresses vocals and the papery drum sound that lent some peculiarity to Elvis' LP, **Armed Forces**. The same high level of musicianship that marks Rockpile's other commercial appearance distinguishes **Labour of Lust**; Lowe, Edmunds, Billy Bremner, and Terry Williams play economically and expressively with an audible reverence for hard rock, C&W, and pop music of the past. As evinced in such gems as *So Fine*, *Cruel to be Kind*, *American Squirm*, *Switch Board Susan*, and *Without Love*, Lowe has an ear for streamlined but lively compositions that make him a mixmaster of pop. Finally, you've got to admire the spirit of this grey-haired rocker, pumping his heart out for 10 years and just now winning some of the admiration his talent deserves. Sally Young

Sound: B

Performance: A



stone quatrain at the end.

Black Rose is a triumphant album for Thin Lizzy, a band that has seen peaks, valleys and plateaus. By rights it should catapult them into the limelight they have been denied since their hit *The Boys Are Back In Town*. Thin Lizzy is proud, passionate, and deeply lyrical even at their hardest. **Black Rose** is perhaps their most fully realized album. M.T.

Sound: A- Performance: A-

Final Vinyl: Hot Tuna

Grunt BXL 1-3357, stereo, \$7.98

Hot Tuna's last album is a retrospective that boasts a good cross-section of the band in chronological sequence. Both Tuna's blues side — *Hesitation Blues*, *Candy Man*, *Keep On Truckin'*, *Hot Jelly Roll Blues* — and Jorma Kaukonen's lyrical songmaking — *Water Song*, *Funky #7*, *Easy Now*, *Song from the Stainless Cymbal* — are equally well represented.

Bassist Jack Casady was recently quoted saying that towards the end, it didn't matter to people what or how well Hot Tuna played, but how long, and that's basically why the band finally broke up. The band may have been erratic since Jorma and Jack formed it as a Jefferson Airplane splinter, sometimes brilliant and joyous, sometimes lethargic or opaque, but **Final Vinyl** preserves a lot of the best. M.T.

Sound: B Performance: A-

Living Chicago Blues

Vol. I: The Jimmy Johnson Blues Band, Eddie Shaw And The Wolf Gang, Left Hand Frank And His Blues Band;

Vol. II: Carey Bell's Blues Harp Band, Magic Slim And The Teardrops, Johnny "Big Moose" Walker;

Vol. III: The Lonnie Brooks Blues Band, Pinetop Perkins, The S.O.B. Band.

Alligator AL 7701, AL 7702, AL 7703, stereo, \$7.98.

Reports of the impending death of the blues have been greatly exaggerated by writers too shortsighted to see beyond the major record label catalogs. A weekend spent in Chicago amply attests to the continuing vitality of the music as performed by a wealth of talented but overlooked or outright ignored bluesmen. **Living Chicago Blues** divides each of three albums in this series among a trio of lesser known Chicago blues bands.

Jimmy Johnson, known to date primarily as a rhythm guitarist for blues masters Jimmy Dawkins and Otis Rush, kicks the first volume off to a

Secrets: Robert Palmer
Island ILPS 9544, stereo, \$7.98.

Robert Palmer's vocal quality is not too different from that of Paul Rodgers, Frankie Miller, or Foreigner's lead guy, but Mr. Palmer has chosen a path far different from those of his peers. Discarding the aggressive approach of hard rock, Palmer is the cool singer with reggae roots — Bob Marley meets Frank Sinatra. While his pipes are something to be reckoned with, his songwriting talents are relatively meager, so his choice of cover material pretty much determines how interesting each of his records is. **Secrets** is spotty at best, with some high points on side one but a tremendous vacuity of substance on side two.

The opener, *Bad Case of Loving You* (written by Moon Martin, a fine songwriter and dull performer) is among the album's most rocking tunes, where we find Robert sounding not unlike Bob Seger with his backing unit mimicking The Silver Bullet Band with great accuracy. The two originals, *Too Good To Be True* and *In Walks Love Again* are both passable, but lyrically cliché and hardly the riveting song that makes for hit fodder. Todd Rundgren's *Can We Still Be Friends* is the surprise of the album, a tune perfectly suited for Palmer's slick delivery and one that I wouldn't have guessed Palmer would have chosen to cover. He makes it very much his own, and even betters the original. *Mean Old World* is written by Andy Fraser, perhaps the best unknown songwriter in the world, but unfortunately it's not one of his better tunes — perhaps Palmer should tackle *Bring It On Home* or *Changed Man*, both of which are excellent and far more intense works. John David's *Love Stop* is a song that suits Palmer's voice well, but the structure of the tune isn't particularly interesting and induced this listener to cut short side one.

Side two is distinguished by *Jealous*, a punkish tune penned by Jo Allen, who co-authored some of the other tunes on side two, all of which are wholly ignorable. It's become painfully obvious that Palmer is a great singer but a limited artist due to his lack of a suitable collaborator. He should confine himself to primarily interpreting the songs of others, or take a week off with Andy Fraser and write some killer tunes — there are a few choice singles here, but it's a crime to call this an album. Sally Young

Sound: B Performance: C+



strong start with a moving interpretation of the latter's *Your Turn To Cry*. His confident, soaring R&B-styled vocals effectively counterpoint raw, emotional guitar lines reminiscent of his former bosses.

When Howlin' Wolf died in 1976, his band decided to continue touring as Eddie Shaw and the Wolf Gang. Backed by a group long and intimately familiar with his work, Shaw blows a jabbing, chattering sax that inevitably sets a house rocking. Hubert Sumlin, who helped define Wolf's sound for nearly 25 years, adequately handles

the guitar chores, but fails to sparkle as he has in the past. Left Hand Frank Craig plays guitar with an admirable economy of phrasing; 30 years of club work have trimmed any fat that was ever in his music. If his increasingly rare vintage blues style is not as immediately dazzling as that currently championed by Chicago's West Side guitarists, its richness and thoughtful subtlety make it every bit as satisfying.

Carey Bell is hardly an unknown quantity to blues fans. Bell was one of the best students of the wildly imaginative Little Walter, and once again he

blows nothing but unadorned, mainstream Chicago blues harp. His band is competent enough, but falls short of providing the needed backing.

Magic Slim picks a very clean, stinging guitar that recalls Albert King in its inflections. His three-piece band, The Teardrops, backs him with a tightly crafted sound that would do credit to bigger and better known units. Johnny "Big Moose" Walker, the newest member of the Wolf Gang, has previously performed on keyboards with Earl Hooker, Jimmy Dawkins, and Mighty Joe Young. His *Cry, Cry Darling* features some superior slide guitar from Louis Myers of The Aces, Chicago's famed back-up band, but Walker's set never really catches fire.

The music of guitarist Lonnie Brooks reflects the mixture of blues and soul popular among Chicago's younger bluesmen. He doesn't pull off this sometimes tricky combination quite as deftly as Mighty Joe Young or Son Seals, however, and often his soul influences come too much to the fore. His skillful guitar work redeems any shortcomings of his approach, and a B.B. King-tinged *Lonely, Lonely Nights* finds him convincing in a purer blues vein.

Pinetop Perkins was chosen by Muddy Waters to fill the piano chair in his band left empty by the death of the great Otis Spann. That's a fitting indication of the high esteem in which Pinetop is held by his peers. He's only an average vocalist, however, and leads his band of current and former Waters' sidemen through paces that sound, unsurprisingly, very much like the work these musicians do behind the blues patriarch.

Bluesmen usually go through a period of apprenticeship longer than the careers of most rock groups before ever recording with their own groups. In a break with the past, the S.O.B. Band (that's short for Sons Of The Blues, of course) is led by Lurrie Bell (Carey Bell's 19-year-old son and one of Koko Taylor's guitarists) and Billy Branch (at 26, currently blowing harp for Willie Dixon). Bell has a sensitive touch for understatement that he uses to good advantage on *Have You Ever Loved A Woman*.

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Sound	Performance
Vol. I: B+	B+
Vol. II: B+	B
Vol. III: B+	B-

Jazz & blues



Turning Point: John Coltrane
Bethlehem 6024, mono, \$6.98.
Dial Africa: John Coltrane
Savoy 1110, mono, \$6.98.
Afro Blue Impressions: John Coltrane
Pablo 2620-101, stereo, \$7.98.

No musician played a bigger part in changing the sound and shape of jazz during the late '50s and early '60s than John Coltrane. On the Bethlehem and Savoy collections, recorded in 1957 and 1958, one hears budding genius; the Pablo double-set, recorded when the Coltrane quartet was touring Europe in 1962, is a milestone performance.

The 1957-58 was a period of transition for Trane, and, while neither the Bethlehem nor the Savoy LPs offers spectacular music, they do showcase some highly professional musical statements made in a neo-bop setting by an emerging giant. Certainly there is nothing on either of these two albums to compare with the Coltrane sessions with Miles Davis and Thelonious Monk recorded in 1958 and 1959. The Bethlehem release is made up mostly of Art Blakey big-band sides plus two quintet numbers, and the sound quality has an unfortunate harsh edge to it. The Savoy-Dial Africa consists of Savoy sessions from May

and June of 1958. Fine work can be heard from Wilbur Hardin, an almost forgotten bop trumpet man with a rich, full-bodied tone, and from trombonist Curtis Fuller. The two brass men merge on several selections and execute a number of interesting and original be-bop lines, but the rest of the solo work does not sustain interest. The outstanding cut here is Coltrane's wistful and poignant *Once in a While*.

The music on the Pablo double-set originates from the autumn of 1962. Here we have the classic Coltrane quartet — Coltrane, McCoy Tyner, Jimmy Garrison, Elvin Jones — in new versions of pieces that have already inspired outstanding performances by these four musicians. There are side-long treatments of *My Favorite Things* and *Chasin' The Trane* (Tyner dropping out). Other tracks include *Afro Blue*, *Naima*, *Lonnie's Lament*, and the Billie Eckstine ballad, *I Want to Talk About You*. The improvising is exalted, elaborate, intensely impassioned, technically brilliant. One is again dazzled by the cohesion, the remarkable

chemistry of the Coltrane/Tyner/Garrison/Jones unit.

This Pablo is, unquestionably, a landmark recording by one of modern jazz's landmark groups. Too bad it suffers a bit from the sonic drawbacks of a live session. The sound quality is not as full and lively as it might have been.

John Lissner

Turning Point

Sound: B Performance: B+

Dial Africa

Sound: B+ Performance: A-

Afro Blue Impressions

Sound: B+ Performance: A+

Juggernaut: Frank Capp and Nat Pierce
Concord Jazz CJ-40, stereo, \$7.98.

They still revere the classic big-band sound in Los Angeles. Such rehearsal groups as the Bill Berry and Frankie Capp/Nat Pierce bands, who draw their personnel from the top West Coast studio jazz musicians, hold regular weekly concerts for small but enthusiastic audiences. The Berry band plays Monday nights at Dante's in North Hollywood, and on the week-ends, the Capp/Pierce ensemble holds

forth at King Arthur's, a club in LA's San Fernando Valley. **Juggernaut** was recorded live at King Arthur's, and what we get is a reasonable facsimile of the original Count Basie Band.

Pianist Nat Pierce is an amazing stand-in for Basie at the keyboard as he plays with the master's easy swing and subtle rhythmic conception. On a Basie standard like *Avenue C* or *Basie's Back in Town*, Pierce exhibits the same laid-back touch and facility to establish a swinging groove, the same ability to stimulate and support soloists. Indeed, there are some excellent men on this date — Bill Berry and

Blue Mitchell on trumpet, Richie Kamuca and Plas Johnson on tenor; Marshall Royal on alto — and they all offer strong, uncluttered, straight-ahead jazz solos. But none shows the remarkable sensitivity to the Basie sound that the rhythm section of Pierce on piano, veteran swing man Al Hendrickson, guitar; Chuck Berghofer, bass, and Frankie Capp on drums, display. On *Dickie's Dream* in particular, the rhythm team produces the same lifting, airy atmosphere generated on the original recordings.

The band's ensemble poise is adequate if not inspired — but then no

group of studio musicians, no matter how dedicated or talented, could possibly recreate the controlled, fierce, loosely swinging power of the late-'30s to early-'40s Basie band. *Moten Swing*, for example, is an easy-going performance, but lacks the jaunty pulsation of the original. (I have heard the Harry James band play this arrangement better.) Despite these reservations, **Juggernaut** is a very acceptable, well-recorded, "live" big-band LP. It's too bad that side b is marred by three pseudo-blues vocals by singer Ernie Andrews, who tries to sound like a cross between Joe Williams and Lou Rawls. The band plays impressively behind him, but he is tedious, mannered, and banal. *John Lissner*

Sound: A-

Performance: A-

Way Of The Sun: Jade Warrior Antilles AN-7068, stereo, \$7.98.

Way of the Sun is the latest imaginary journey from Jon Field and Tony Duhig, who comprise Jade Warrior. Like all their recordings since the fourth, **Floating Worlds**, they combine flutes, stringed instruments, percussion, and keyboards into an exotic fabric that draws its threads from the music of several exotic cultures. On *Way of the Sun* they take us to South America and the days of the Incas, whose lives and religion were ruled by their worship of the sun. They evoke the image of the tropics and occasionally interject a samba-like rhythm, but like all their works, it is an international blend that draws from Eastern, Oriental, and African musics, distilled through their own Western background and using the piercing sound of the electric guitar.

Using elaborate multi-tracking and dubbing techniques, Jade Warrior's music becomes a many-faceted array of sound layers. Heavily fuzzed guitars are layered like orchestral string sections to underpin ethereal flute ensembles, while gentle harps cavort in the air. This is Jade Warrior's most overtly rhythmic and melodic album. The fusion beat of *River Song* and its mysterious flutes make a smooth transition into *Carnival's* celebratory jungle polyrhythms and soaring guitar choirs.

Jade Warrior's music takes you places. Though they've used the images of the South American Indians and their sun worship, you can create your own visions of light and color. Even Duhig and Field don't agree on specific images when they are playing because their "music conjures up different images . . . you see what you want to see." Their musical palette is so broad that they invoke universal con-

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cepts. *The Death of Ra* is a mournful cry of lament with a poignant guitar edged by triumph and understanding. It's meant to depict the setting and "death" of the sun, but I also had the image of fallen heroes or of Viking warriors on their long-ship funeral pyres.

Jade Warrior is master of studio recording techniques. They mix electric and acoustic instruments into an organic unity that still retains each instrument's purity and individual characteristics. Their stereo technique splits instruments into separate channels and creates a sense of cinematic movement. They sacrifice nothing in presence or dynamics, but they do add a little bit of tape hiss. The only drawback of this record is the pressing. Antilles used to be the budget line for Island Records at \$4.98 list. Unfortunately, the rise to \$7.98 has been accompanied by a proportional decrease in the quality of the pressings, which are now noisy and full of pops.

Jade Warrior's music is so natural that I don't believe they are consciously trying to make the perfect synthesis. But they have succeeded well.

John Diliberto

Sound: B- Performance: A+

Tudo Benn: Joe Pass

Pablo 2310-824, stereo, \$8.98.

These are warm, relaxed, low-key performances of contemporary Brazilian pop/jazz. Most of the tunes are fine standards written by Jobim, Deodato, Oscar Neves, and Marcos Valle. The tempos are lilting and easy-going. The supporting players — percussionist Paulino de Costa, drummer Claudio Sion, pianist Don Grusin, and guitarists Octavia Bailly and Oscar Neves — are sensitive and tasteful. Not surprisingly, most of the selections are *bossa nova* tunes, a style which suits Pass' gift for melodic playing. Songs like *Wave* and *Corcovado* provide excellent material for Pass as he probes their harmonic structures with dazzling virtuosity.

John Lissner

Sound: A Performance: A

This Is New: Teddi King

Inner City 1044, stereo, \$7.98.

This is one of the finest vocal collections I've heard in the past 10 years. Teddi King died November 18, 1977, after several years of illness. At the time of her death she was in the middle of producing this Ira and George Gershwin album. She died before she could complete it, but she did tape eight selections, and these Gershwin songs sound as if they were written for

her. Pianist Dave McKenna recorded solos of the remaining songs for the balance of the album.

Whether Teddi King was strictly a jazz artist seems to be a moot point; she certainly was a jazz-oriented singer who transcended stylistic considerations. She listened to and admired jazz stylists like Billie Holiday and Lee Wiley, caberet performers like Mabel Mercer, and in her earlier days, big-band singers like Helen Forrest and Francis Wayne. Indeed, in the highly trained aspect of her singing, she had two important attributes of the great band vocalists — precise intonation

and flawless articulation, and she combined them with the clever, resourceful phrasing of the jazz singer.

This superb Inner City release showcases Ms. King, who first attracted attention as a singer with the Nat Pierce band in Boston and later with the George Shearing Quintet, as a mature artist at the peak of her musical powers even when beset by illness. The King voice, while not big, had warmth and color; it had style and subtlety; it was beautifully balanced, finely controlled and full of expressive nuances. This King collection might be described as the jazz equivalent of a *leid-*

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er recital — it is that good. Dave McKenna, a fine jazz pianist in his own right, plays tunes like *I Can't Get Started* and *Long Ago and Far Away*, and they are evocative renditions, totally in keeping with the kind of feeling Ms. King projects on her performances. There are many splendid King tracks including incredibly expressive interpretations of *This is New, But Not For Me, Isn't It a Pity, How Long Has This Been Going On*, and *Here's What I'm Here For*. The eight King selections were beautifully recorded by Columbia engineer Edward T. Graham at Columbia's 30th Street studios in New York City.

Sound: B+ Performance: A+

Waterbearer: Sally Oldfield
Chrysalis CHR 1211, stereo, \$7.98.

Sally Oldfield is Mike Oldfield's (**Tubular Bells**) sister. Though this is her first solo album, she's no newcomer, having performed with Mike in 1968 as a duo called The Sallyangie, which produced one obscure album, **The Children of One**. For **Waterbearer** she has used all the melodic inventiveness and the layered structures that typify Mike's work, plus her own fragile soprano, to create a thematic piece based on quotations and images from J.R.R. Tolkien's "Lord of the Rings" and "The Silmarillion." Playing almost all of the instruments herself, Sally produces infectious melodic cycles with the brilliant summertime colors of vibes, guitars, synthesizers, keyboards, and percussion. Even more than Mike, Sally has listened to the minimalist works of Steve Reich and employed them in a song context. On top of this she sings songs of whimsy and songs of spiritual enlightenment that edge towards banality, but are saved by the captivating vulnerability of her breathy soprano.

Sound: A- Performance: A-

Force Majeure: Tangerine Dream
Virgin V 2111 (import), stereo, \$9.98.

The new direction of Tangerine Dream is indicated in the power of their titles, **Force Majeure**, **Thru Metamorphic Rocks**, and **Cloudburst Flight**. In the past, Dream was content to create dreamy soundscapes that were like floating in space. They're still out beyond the atmosphere, but instead of floating they send you careening through space in a capsule set on overdrive. With the addition of Klaus Krieger on drums, the use of acoustic instruments, strong melodies and fusion rhythms, their music is more diverse and multi-dimensional than ever before. A period of rhythmic drive is

supplanted by a section of free-falling electronics only to transmute into a soaring melody played by Edgar Froese's triumphant guitar. After a few misses on the **Stratosfear** and **Cyclone** albums, Tangerine Dream has found the new direction they were seeking.

John Diliberto

Sound: A Performance: A

Hey Ba-Ba-Re-Bop!: Johnny Shines
Rounder 2020, stereo, \$7.98.

"Are you another one of those guys who wants to put crutches under my ass?" That was how veteran bluesman Lonnie Johnson reportedly addressed an interviewer who he feared exemplified what writer Charles Keil labels the "moldy fig" mentality: The tendency of the media to withhold the slightest recognition from bluesmen who labor in obscurity often until their twilight years.

Since his rediscovery in the mid-'60s, bluesman Johnny Shines has cut more records than he ever did during the heyday of the Delta blues when he hoboed around the country with the legendary Robert Johnson. Born in 1915, he's outlasted most of his contemporaries and has benefited from a renaissance of genuine interest in his music as well as periodic waves of blues nostalgia. Fortunately, Mr. Shines, a former construction worker, has weathered the years well. He's a sometimes mesmerizing performer, with a startlingly robust voice that belies his status as a senior citizen.

Hey Ba-Ba-Re-Bop!, a solo, live set recorded in Boston in 1971, finds him in peak form and more involved with his material than on many of his recent studio sides. This highly entertaining album should go a long way toward explaining to the uninitiated the fascination that the heavily rhythmic, thickly textured Delta blues of the pre-W.W. II South holds for its many fans. Too often such songs are performed with an air of reverence that stifles their vitality. Mr. Shines, however, is a master at delivering his largely traditional numbers with an insight and freshness that allows them to speak with a timeless eloquence to contemporary audiences. *Milk Cow Blues* is the set's high-water mark, a showcase for his forceful slide guitar work topped by a shouted vocal almost scary in its intensity.

Only time will tell if this set ranks as the definitive Johnny Shines album, but it's already a necessary purchase for fans of acoustic blues.

Roy Greenberg

Sound: B Performance: A-

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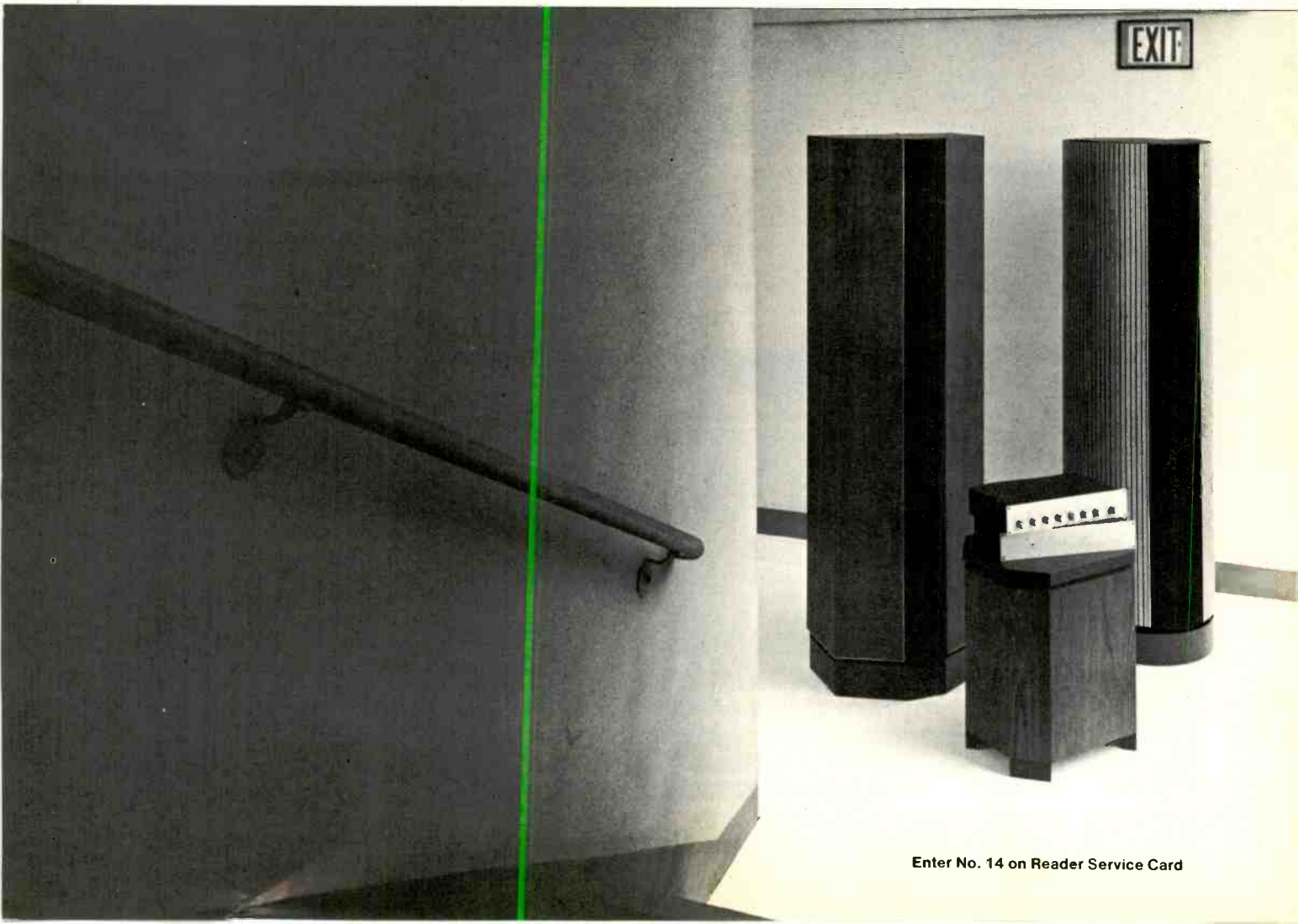
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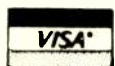
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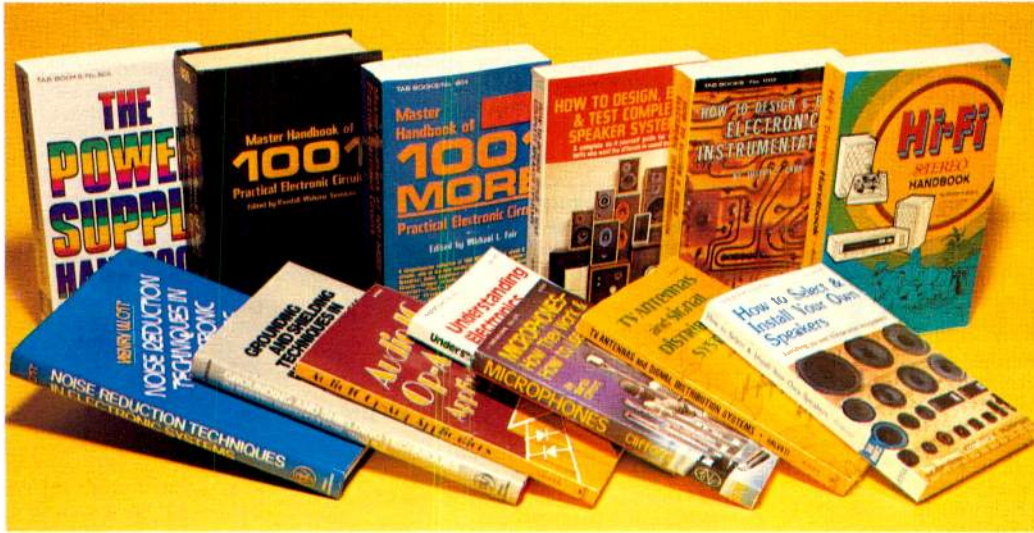
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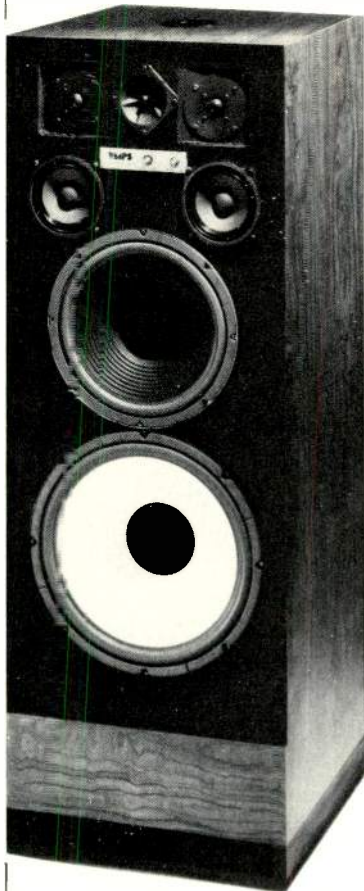
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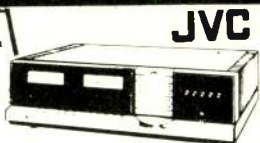
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