

STEREO • MULTICHANNEL AUDIO • MUSIC  
**the absolute sound**<sup>®</sup>

**hi-fi+**

GUIDE TO

# HIGH-PERFORMANCE LOUDSPEAKERS

SPONSORED BY QUAD



# Contents

SPONSORED BY  
**Q U A D**

## Features

- [From The Editor](#)
- [On The Horizon](#)
- [Loudspeakers: Why Spend More?](#)
- [What to Listen For When Choosing Loudspeakers](#)

## Loudspeakers up to \$10k



- [B&W 684](#)
- [Coincident Super Victory](#)
- [DALI Mentor Menuet](#)
- [Esoteric MG-10](#)
- [Nola Boxer](#)
- [PSB Image T6](#)
- [PMC Fact](#)
- [Reference 3A Episode](#)
- [Rega RS5](#)
- [Sonus faber Liuto Tower](#)

## Loudspeakers \$10k-\$40k



- [Audio Physic Cardeas](#)
- [Focal Diablo Utopia](#)
- [KEF Reference 205/2](#)
- [Magico V2](#)
- [Martin Logan CLX](#)
- [Quad ESL-2905](#)
- [Raidho Eben C2](#)
- [Thiel CS3.7 Loudspeaker](#)
- [Vienna Acoustics "The Music"](#)
- [Von Schweikert Unifield Three](#)
- [Wilson Audio Sasha W/P](#)
- [YG Acoustics Kipod Studio](#)

## Loudspeakers over \$40k



- [Avalon Acoustics Time](#)
- [Focal Grande Utopia EM](#)
- [Magico M5](#)
- [Martens Coltrane Soprano](#)
- [MBL 101 X-Treme](#)
- [Verity Lohengrin II](#)
- [Wilson Audio MAXX 3](#)

*Click on one of the links above to jump to that section, feature or review.*

STEREO • MULTICHANNEL AUDIO • MUSIC

the absolute sound®



GUIDE TO

# HIGH-PERFORMANCE LOUDSPEAKERS

**publisher**..... Jim Hannon

**editors-in-chief**..... Robert Harley  
Alan Sircom

**executive editor**..... Jonathan Valin

**acquisitions manager  
and associate editor**..... Neil Gader

**founder; chairman,  
editorial advisory board** . Harry Pearson

**music editor** ..... Mark Lehman

**creative director** ..... Torquil Dewar

**art director** ..... Shelley Lai

**production coordinator** .. Aaron Chamberlain

**designer** ..... Mikki Bullock

**senior writers** ..... Anthony H. Cordesman

Wayne Garcia  
Robert E. Greene  
Chris Martens  
Tom Martin  
Dick Olsher  
Andrew Quint  
Paul Seydor  
Alan Taffel

**reviewers &  
contributing writers** ..... Roy Gregory

Ian Harris  
Jim Hannon  
Jacob Heilbrunn  
Jason Kennedy  
Chris Thomas

**NextScreen, LLC, Inc.**

**chairman and ceo** ..... Tom Martin

**vp/group publisher** ..... Jim Hannon

**advertising reps** ..... Cheryl Smith  
(512) 891-7775

Marvin Lewis  
MTM Sales  
(718) 225-8803

To sign up for Buyer's Guides  
alerts, [click here](#)

Address letters to the Editor:  
The Absolute Sound,  
4544 S. Lamar #G-300, Austin, TX 78745 or  
[rharley@nextscreen.com](mailto:rharley@nextscreen.com) or [alan@hifiplus.com](mailto:alan@hifiplus.com)

©2010 NextScreen, LLC

# FROM THE Editor

**W**elcome to the 2010 Stereo Loudspeaker Buyer's Guide, brought to you by *The Absolute Sound* and *Hi-Fi+* magazines. Whether you are looking for a small bookshelf speaker for a second system, just starting out and buying your first 'real' set of floorstanders or want a cost-no-object loudspeaker that makes a grand statement about your listening, it's all in here, a distillation of the finest loudspeakers we've heard in the last few years. We'll also bring you information on the latest developments in loudspeaker design from around the globe. Whatever the price, whatever the size and no matter how new... we've got it covered!

We've divided this Buyers Guide into three distinct sections, based on price; up to \$10,000, \$10,000-\$40,000 and over \$40,000 per pair. We think these are fair price points, given the tastes and demands of you the reader; there are many who think a loudspeaker costing over three figures is too expensive, and there are some who think anything less than six figures represents 'lo-fi'. So, we decided to cater for all. We've selected products that deliver excellent sound at their respective prices. No, we're sorry, but we haven't yet stumbled upon the \$300 standmount speaker that can fill a large room, have the volume, dynamic range and tonal balance of a \$300,000 floorstander and we don't think we'll find such a thing just yet.

What we have instead are speakers that deliver a stunning performance in their class. And as you go from class to class, so that performance becomes all the more stunning. It also often becomes more demanding of room, electronics and even listener; sitting in front of some of the best loudspeakers on the planet can focus your attention

on the music in a way that surprises listeners used to listening to background sounds.

It's a difficult thing to swallow in our new-found austerity, but sometimes you get what you pay for. And that's especially true in loudspeakers. Aside from the physically bigger, generally more exotically finished cabinet and the high-grade components, as you move up the price categories, so you buy a loudspeaker that can deliver a flatter frequency response across a wider range of frequencies, a more dynamic, open and accurate sound, and one that can play louder without distortion. Those used to more compromised loudspeaker designs are often shocked at just how much improvement a good loudspeaker can make.

And we've got plenty of good loudspeakers to choose from.

Alan Sircom

*Click here to turn the page.*

## ON THE HORIZON

# A Sneak Peak at the Best Loudspeakers Coming Your Way

Jim Hannon



← **Hansen** has premiered its flagship Grand Master loudspeaker—a ten-driver, ported, three-way floorstander—and it has already impressed our editors. RH thought it sounded “absolutely magnificent” on a wide range of material at CES, with a complete sense of ease and composure during loud and complex passages. JV thought that it sounded “simply fabulous” on every track he threw at it at CES, with wonderful balance, bass, dynamics, resolution, and musicality.

**Price: \$250,000.**

[hansenaudio.com](http://hansenaudio.com)

All prices are per pair



**Quad** has introduced Classique versions of its highly regarded electrostatic loudspeakers: the ESL-2805 and ESL-2905. While the new versions have the same electrostatic panels and design as the standard versions, they have upgraded finishes and grill cloths. The visually striking Quad ESL-2805 Classique sounded glorious at CES, driven by the new Quad integrated amplifier and the Merrill-Williams turntable, producing one of the best sounds at the show.

**Price: \$11,499 ESL-2805 Classique; \$14,499 ESL-2905 Classique.**

[quad-hifi.co.uk](http://quad-hifi.co.uk)

## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way

The new **Canton** Reference 2.2 is a floor-standing 3-way loudspeaker with a unique three chamber cabinet, aluminum drivers with Canton's patented triple curve cone and wave surround, and an aluminum oxide ceramic dome tweeter. As with the rest of the Reference line, the Reference 2.2 uses a high quality crossover network with electrical performance that is fully integrated with all the drivers and enclosure characteristics. The speaker also uses Canton's signature "DC" displacement control circuitry to limit uncontrolled driver excursions at infrasonic frequencies. The Reference 2.2 offers much of the performance of the flagship Reference 1.1, but in a slightly smaller size.

**Price: \$25,000.**  
[cantonusa.com](http://cantonusa.com)



How do you achieve the aesthetic grace of a slim tower with the greater extension of a three-way? **Burmester** solved the problem by incorporating a side-firing woofer into its new BP30. At CES, this speaker system sounded truly full-range; indeed, its bass would put many a subwoofer to shame. At the opposite frequency extreme is an air motion tweeter that was incredibly open and un-etched. These drivers, plus the mid, rest in a bass-reflex wood cabinet that can be finished to the buyer's taste or, as was the case with the show samples, painted to look like metal. (NB: Porsche colors are available for a modest premium.) Best of all, the BP30 sounded well worth its asking price.

**Price: \$15,995.**  
[burmester.de/en](http://burmester.de/en)

# FOR THE FIRST TIME EVER OWN A BRAND NEW \$15,000 SPEAKER FOR ONLY \$3,750



Von Schweikert Audio

Only available factory direct, **your money** goes to **sound quality** instead of mark-up, overpriced veneers and paint finishes.

limited time introductory price of \$3,750

### VR-33

- Full Range 25Hz - 30kHz
- 10" Woofer
- Premium European Components
- Can be placed against the wall in any size room
- Hand Crafted in California

*"I have heard nothing over the last 30 years that can touch the VR-33 in terms of imaging, soundstaging, and bass performance for anywhere NEAR their price."*

- GREG WEAVER  
 Positive Feedback - Online



We offer a full line of High End Audio and Home Theater Speakers as well as a complete line of cables.  
[VONSCHWEIKERT.COM](http://VONSCHWEIKERT.COM) :: 951.696.3662

## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way

**Magico** has unveiled its Q5, a 5-driver, 4-way floor-standing loudspeaker housed in a fully-damped, aluminum and brass, hard anodized enclosure. It features Magico-designed Nano-Tec drivers (two 9" woofers, a 9" mid-bass unit, and a 6" midrange) and a new beryllium tweeter, reported to have significantly wider extension, lower distortion and greater power handling. The Q5's remarkable coherence, low distortion, and rich, delicately detailed timbre and texture reminded JV of a gigantic Quad ESL-2905 at CES. A full review of the Q5 is pending.

**Price: \$54,000.**

[magico.net](http://magico.net)



The **Focal Stella Utopia Be EM** speaker system is the most recent entrant to join the ranks of Focal's renowned range of reference loudspeakers. This commanding three-way floor-standing loudspeaker employs a breakthrough Electro-Magnetic active bass driver system, combined with rare and precious metals, (27MM pure Beryllium tweeter) formed using precision engineering. The Stella is scaled to visually impress, as well as convey the very emotion and dynamics of live music. A few of our reviewers seem to love the Stella even more than the Grande Utopia in some respects.

**Price: \$90,000.**

[focal-fr.com](http://focal-fr.com)

**YG Acoustics** has introduced its newest and most affordable speaker—the Carmel. With a cabinet constructed of machined Aircraft Grade aluminum and a unique enclosure to minimize mechanical losses and resonances, the Carmel is an inviting and elegant floor standing speaker. It features a DualCoherent™ crossover between a highly modified ring-radiator type tweeter (the same tweeter used in the far more expensive YG Kipod Studio) and a special 7" woofer designed for both clarity and extension. The Carmel delivers ultra-transparent sound, with a huge yet precise soundstage. AT reported that at CES, the Carmel was admirably free of tizz with solid bass that was chock full of timbral information.

**Price: \$18,000.**

[ygacoustics.com](http://ygacoustics.com)



## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way

The prestigious 800 range from **Bowers & Wilkins** has been given the Diamond treatment. A major player in the new range, the 802 Diamond retains much of the uncompromising feature set of the flagship 800 model, but in a more slimline cabinet. As the name suggests, the new 802 features a tweeter made from industrial diamond, set in a Nautilus tapered tube enclosure. This sits upon the midrange head, which is molded from Marlan, a granite hard synthetic mineral filled resin, and sports B&W's distinctive Kevlar FST midrange driver. The main cabinet features Rohacell bass drivers in the company's Matrix cabinet and Flowport vents, and ultra-premium Gold/Silver/Oil Mundorf capacitors.

**Price: \$15,000.**

[bowers-wilkins.com](http://bowers-wilkins.com)



**Wilson Audio's** most affordable floorstander has just been upgraded. The new Sophia 3 pulls together the tweeter and midrange drivers from the epic MAXX 3 and Sasha W/P, adds a bass unit with a magnet structure twice the size of its predecessor and a radically revised cabinet. Although retaining the concept of an integrated cabinet, the Sophia 3 uses essentially the S-material top box from the Sasha W/P combined with the X-material for the bass cabinet.

**Price: \$16,700.**

[wilsonaudio.com](http://wilsonaudio.com)



Shown in Imperial Red  
Other custom colors available

## Grande Utopia EM™

**The Grande Utopia EM™:** The world's greatest loudspeaker has made its home in the best recording studios thanks to its undisputed power, eloquence and transparency. Its exacting precision delivers depth and detail that no-one would have dreamt possible. Benefactor of no less than eight technology patents, the Grande is a bold engineering triumph to which all others are measured. For the first time in your life, you too can live the essence of music: the vital pulse of the rhythm, the majesty of the orchestra.

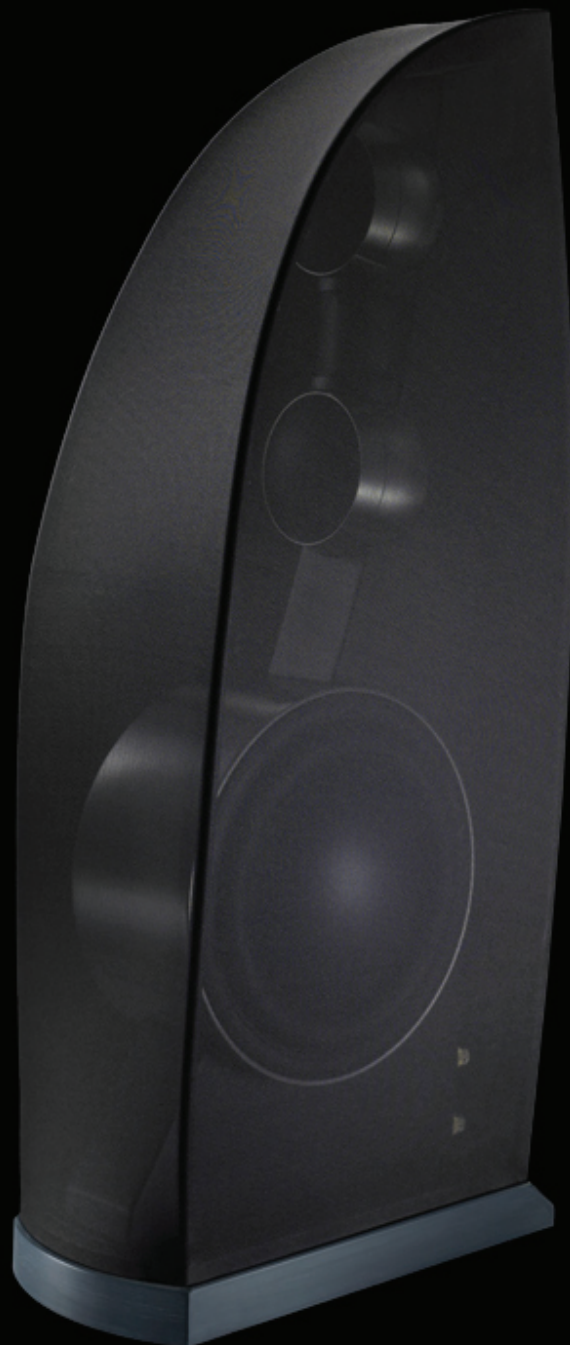
UTOPIA: yours to appreciate, and for all others to admire.

Grande Utopia VIP Sales | 800.254.2510 | [vip@grande-utopia.com](mailto:vip@grande-utopia.com)

**FOCAL**  
THE SPIRIT OF SOUND



## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way



**Coincident Speaker Technology** has introduced its first statement loudspeaker: The Pure Reference Extreme. The key difference between the Extreme and the standard Pure Reference is that the Extreme physically separates the enclosures for the mids/highs and the woofers to reduce vibrations and enhance cabinet rigidity, resulting in greater sonic purity and transient precision. The front baffle of the enclosure for the mids/highs is sloped to ensure precise time alignment between the drivers. Look for a full review in

TAS of this exciting new loudspeaker.  
**Prices: \$26,000 (Square monitor enclosure); \$26,800 (Trapezoid monitor enclosure).**  
[coincidentpeaker.com](http://coincidentpeaker.com)



Though it looks seemingly like other **Gallo** units, the new Nucleus Reference 3.5 loudspeaker features new midrange spheres with isolation bezels, a new tweeter, and a new ceramic woofer (replacing a paper unit) for reported gains in transparency, coherence, soundstaging and neutrality. When hearing a prototype at CES, AT marveled at how the Reference 3.5 was getting such authoritative bass out of essentially a non-existent enclosure while still sounding musical.

**Price: \$5995.**  
[roundsound.com](http://roundsound.com)

## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way



The **KEF** Reference 201/2 bookshelf loudspeakers are now available in 12 additional custom color, high gloss finishes that match those of high-end sports cars. These popular three-way bass reflex bookshelf speakers continue to be hand built in Maidstone England and combine a new 6.5" Uni-Q driver array, 6.5" ultra-low distortion LF drive unit and a 1" titanium dome tweeter. KEF's pioneering Uni-Q combo continues to evolve, producing even more refined soundstaging with time alignment. Like the floor-standing models in KEF's Reference series, the Reference 201/2 delivers a fluent, musical, full bodied sound, surprising in proportion to its modest dimensions, with a wide and deep soundstage.

**Price: \$5999 (standard finishes).**  
[kef.com/us](http://kef.com/us)

The **Wisdom L100i** is a line-source column of planar magnetic mid/high drivers handling all frequencies from 275Hz up, complemented below by eight 8" woofers. The L100i is bi-amped, so it requires the separate SC1 active crossover unit which provides "pro quality" room correction/equalization. According to CM, these speakers sounded terrific at CES, playing music with verve and stupendous lateral imaging. The big surprise was that these *in-wall* speakers were able to compete with the best-sounding speakers at CES.

**Price: \$28,500 (includes SC1 System Controller with room correction).**  
[wisdomaudio.com](http://wisdomaudio.com)



## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way



The new **Magneplanar 1.7** has already wowed both CM and JV. Where Magneplanar's classic MG1.6 used a planar magnetic mid/bass panel with a quasi-ribbon tweeter, the MG1.7 is a full-range quasi-ribbon-type speaker with what the Magneplanar folks describe as a wide-dispersion quasi-ribbon supertweeter. The result is a speaker that equals or surpasses the strengths of the MG1.6, while offering greater transient speed plus an even more detailed, more open, and more coherent sound. CM suggests that in terms of top-to-bottom cohesiveness, the MG1.7 may prove to be the best of all the Magneplanar speakers, and places near-top-tier sound quality within reach of a very wide range of music lovers, not just for an elite few.

**Price: \$1999.**  
[magnepan.com](http://magnepan.com)



A new **MartinLogan** hybrid electrostatic loudspeaker should start shipping this summer. Descended from MartinLogan's CLX loudspeaker, so favorably reviewed by JV, the new Ethos mates a slender 9.2" wide, curved electrostatic panel with an 8-inch woofer and 8-inch passive radiator. The woofer is powered by a 200 watt Class D amplifier and utilizes a 24-bit Vojtko DSP engine to extend bass performance down to a reported 34Hz (within 3dB). This sleek and compact hybrid 'stat looks very promising.

**Price: \$6499.**  
[martinlogan.com](http://martinlogan.com)



## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way



The latest product from **NOLA** Loudspeakers is the Metro Grand Reference which uses the same Raven true ribbon tweeter, special Alnico magnet midrange and smaller versions of the twin magnesium woofers used in the Baby Grand Reference, yet provides detailed musical bass to 26Hz. Occupying only one square foot of floor space, the Metro's open baffle design allows the tweeter and midrange units to operate in dipole mode. A pre-production version of the speaker demonstrated at CES was one of the highlights of the show for AT, producing "effortlessly great sound" at what he thought was a very competitive price.

**Price: \$25,000.**  
[nolaspeakers.com](http://nolaspeakers.com)

**Electrocompaniet's** The Nordic Tone, a floor-standing speaker of astonishing quality, impressed JV at both RMAF and CES with its outstanding dynamics, resolution, and bass. While it is scheduled for an intensive review in TAS, initial listening suggest this is potentially a great speaker that is consistently revealing details in the music and the mix that others don't, particularly in the bass and dynamics. For those who like their music gorgeous and powerful and who also want to hear all there is to hear, The Nordic Tone is already a top contender.

**Price: \$29,500.**  
[electrocompaniet.com](http://electrocompaniet.com)



## ON THE HORIZON - A Sneak Peak at the Best Loudspeakers Coming Your Way



**Verity Audio** has announced a new statement loudspeaker system. The Monsalvat is designed to fulfill the requirements of discerning customers with large, to very large, listening rooms. Main towers with a mid/high frequency module seated atop a lower midrange/bass module are complemented by low-bass modules that can be stacked to make towers of (4) 15" woofers per channel. The complete system is 99dB @ 1w/1m and requires no less than 6 channels of amplification. A Verity designed-and-manufactured active crossover is included, allowing amplitude adjustment of each module and delay between main towers and woofers. Expect Monsalvat's release in early-2011.

**Price: \$325,000 (estimated).**  
[verityaudio.com](http://verityaudio.com)

To complement high-performance loudspeakers, **REL Acoustics Ltd** has announced the Gibraltar G1 subwoofer. The G1 uses a sealed cabinet, with rigid internal bracing made of layered hardwood, housing a massive 12-inch carbon-fiber driver powered by a 700-watt Class A/B amplifier. Setup and adjustment is made easy by a unique analog rotary control based remote control. What is really striking, and demonstrated to great effect by Sumiko at CES, is that each Gibraltar model can be used in multiples by stacking the units using the optional stacking rails and "daisy chain" connectivity.

**Price: TBD.**  
[sumikoaudio.net](http://sumikoaudio.net)



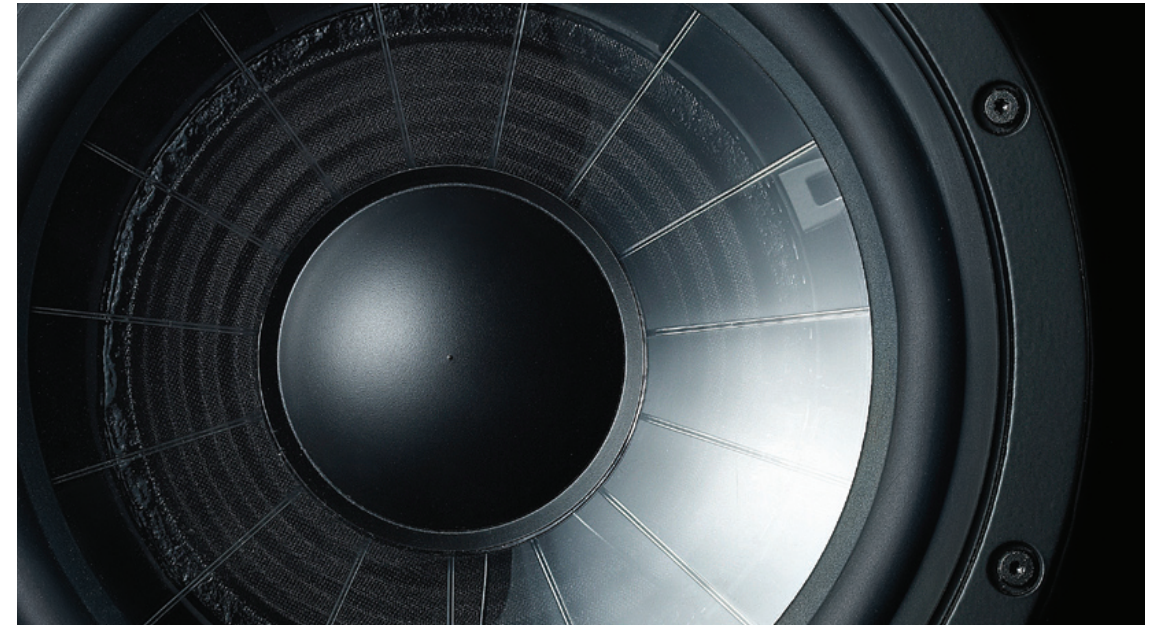
# Loudspeakers: Why Spend More?

Alan Sircom

It's possible to buy a pair of loudspeakers for just a few hundred bucks. It's also possible to buy a pair of loudspeakers for a few hundred thousand bucks. What's the difference, and why should you spend more?

Human hearing begins around 20Hz (20 cycles per second) and goes up to about 20kHz (20,000 cycles per second), although age, genetics and too many loud concerts frequently mean that latter figure begins to fall off rapidly after we reach our mid-30s. We can also hear across a dynamic range of almost 100dB, which means we are capable of comfortably perceiving sounds almost a million times louder than the quietest sounds we can hear. Just think of the difference in sound pressure between a mosquito buzzing a couple of feet from your ear late at night and the climax to the 1812 Overture and you'll see just how massive a task reproducing sound can be. However, even the cheapest electronics can replicate this 20Hz-20kHz range (and beyond) and dynamic range, in some cases with very great accuracy and stunningly low levels of distortion.

The same is not true for loudspeakers. Let's be honest here. The best loudspeaker ever made has deviations and distortions from that ideal that are an order of magnitude higher than apply to most modern audio electronics. And this is why you often get what you pay for in loudspeakers. As you climb further up the loudspeaker ladder, so you get a design that has smaller deviations from a flat frequency response across a wider frequency range, one that reaches down further into the lower end of the frequency range without diminishing the sound, can play with greater dynamic range (without sacrificing clarity), can present a greater sense of live instruments playing in a physical space and can deliver all of these things across a range of volume levels. It's possible today to find loudspeakers that do all of these things without sacrifice or compromise; possible, but expensive.



Yet, even at the very top end of the scale, there are still compromises to be made – some loudspeakers will prioritize flat frequency response over dynamic range, for example. Many more try to accommodate as many of these benefits as possible, but do so at the expense of amplifier compatibility or off-axis performance (the ability for more than one person in the room to hear the best possible sounds).

## Reducing Compromise

It's also worth noting that the limitations and compromises found in loudspeakers continue to improve, right across the board. Sometimes the best get better and that technology 'trickles down' to smaller or more affordable lines. Other times an innovation born of needing to make thousands of pairs of budget speakers 'trickles up' to more

exotic designs, refined and improved upon in the process. All of this means that the 'cone and dome' conventional dynamic loudspeaker may be externally very similar to designs from half a century ago, but produce a sound that is far closer to the audiophile goal today.

The big changes are in materials sciences and in the tools and techniques used by the modern designer. We've come a long way from doped paper cones in simple plywood enclosures; ultra-light spun metal and a variety of plastic materials (from polypropylene to Kevlar) have been used in drive unit design, while all manner of MDF, metal, plastic, glassfiber and stone-loaded resins have been used to make loudspeaker cabinets of greater intricacy and resilience. Crossover networks can sport components derived from the space program (Teflon capacitors, for example),

and even the traditional fillings that fill the interior of a loudspeaker have benefited from years of technology (out goes long-haired wool; in comes Dacron). Some of these innovations have helped to bring more accurate performance down to far cheaper loudspeaker designs, but many have helped make high-end speakers even better than their predecessors. These elements have given designers more scope to break free of the narrow constraints imposed by materials essentially unchanged from the 1920s to the 1970s.



As important in loudspeaker development, the changes to the way a professional manufacturer can measure, design and create loudspeakers has changed beyond all recognition in recent years. While it's still possible to design speakers using your ears and knowledge alone (and good designs are almost invariably fine tuned by ear), most loudspeaker manufacturers rely on a plethora of instruments and computer programs to examine the way every aspect of the loudspeaker works in order to make it work better. And, in many cases, a combination of small, almost inaudible and incremental changes to a design can end up making substantial changes to the sound quality of the loudspeaker as a whole. The use of laser interferometry to view the properties of the vibration across the front baffle of a loudspeaker is still beyond the reach of the smaller loudspeaker designer, but many of the design tools that used to be prohibitively expensive a few years ago are now standard computer programs; this gives even relatively small manufacturers the chance to use a range of technologies when designing loudspeakers and as a consequence, many high-end speakers from small specialist manufacturers have improved significantly in recent years.

### Reading The Right Specifications

From a user perspective, what should you look out for? What parameters in the specification sheet are important, and what can you comfortably forget about? From the perspective of connecting the loudspeaker to an amplifier, the two most important figures are sensitivity and impedance (ideally expressed as both 'nominal' and 'minimum'). Sensitivity or efficiency is an expression of how much undistorted sound you can get out of a loudspeaker for a single watt of power output. In other words, a sensitivity rating

of 85dB (more accurately, 85dB/W/m) means for a listener sitting one meter from the loudspeaker, one watt of amplifier power will return a listening level of 85dB. The higher the figure, the less power needed to be able to play music and vice versa (it's also surprising just how much power is needed to express something approaching the dynamic range of a piano even at relatively low levels). A sensitivity figure of about 88dB is average today.

Impedance is a measure of how demanding a load the loudspeaker is for an amplifier. Impedance is not a static rating, and varies according to frequency, so is often given both as a nominal (overall) and minimum (worst case) figure, in ohms. A amplifier that 'sees' a relatively benign eight-ohm nominal load, and a minimum impedance of just six ohms has a very easy life, where one that is connected to a speaker that had just over three ohm impedance at best and approaching one ohm at worst will struggle. In the latter case, careful matching to a large power amplifier is mandatory, because amplifiers with a less 'stiff' power supply may not be able to deliver sufficient power. Fortunately, such loudspeakers are relatively rare today and those that are punishing loads are usually high-end designs and are unlikely to be partnered with 'lesser' amp designs.

Unfortunately, selecting the right amplifier for any given loudspeaker is not as easy as the specs might imply. The specifications give broad guidelines (a single-ended triode amplifier will struggle to work with a 1.2ohm minimum impedance loudspeaker; a loudspeaker with 98dB sensitivity is unlikely to be a good match with a 1kW behemoth solid-state power amp), but the only real way of determining synergy with an amplifier is to listen to the two in combination, or take the advice of someone who has heard that combo. Reviewers also frequently cite systems that work together well.

Frequency response is a useful indicator of quality, as well as potential matching with room and equipment. A loudspeaker's frequency response is often cited with limits. The smaller these limits are, the tighter the tolerance of the loudspeaker design. A loudspeaker that claims 40Hz-20kHz  $\pm 3$ dB is going to provide a sound closer to the original source than one that claims 40Hz-20kHz  $\pm 6$ dB, because that last number allows for greater variation across the frequency range. Sometimes, this is due to smaller loudspeakers rolling off naturally in the bass, but the same statistic can hide boosts or dips in the frequency response. Surprisingly, some of these are deliberate, like the artificial 80Hz boost found in some smaller loudspeakers, designed specifically to make them sound 'bigger' than they should.

The first number also represents real-world bass performance. A full-range loudspeaker system should provide sounds from 20Hz. In reality, only a handful of loudspeakers can deliver good, accurate bass in the first octave (16Hz-32Hz), but as this is the domain of the 32' and 64' organ pipe, this is arguably not that important in musical replay. Nevertheless, deep bass is also useful to create accurate soundstaging and image solidity, as it includes components of environmental sounds like Underground trains rumbling below London's Kingsway Hall, which means even if the music doesn't reach that low, an underpinning of bass below 32Hz is useful for truly accurate reproduction.

Other aspects of speaker design are not so commonly pinned down in simple numerical analysis. Loudspeaker off-axis performance, time alignment, crossover design and more are all crucial parameters of a loudspeaker's performance, but not ones that lend themselves to number crunching, at least not outside of the design studio.

But it's here also that the designer's personal tastes begin to manifest. Some manufacturers, for example, demand a loudspeaker to have good off-axis performance, meaning those not sitting in the 'hot seat' (the optimum position at the apex of the listening isosceles triangle) get to hear good sound too. The arguments for good off-axis performance suggest that getting this parameter right almost guarantees good performance in other areas. Some argue that because audio listening is often a solitary pursuit, good off-axis performance is irrelevant, as long as the on-axis sound is excellent. Similar arguments abound regarding all parameters of sound. Even coloration, arguably the first thing a manufacturer tries to eliminate, has its supporters; horn loudspeakers are often criticized for their coloration next to conventional dynamic designs, but their supporters consider that coloration comparatively unimportant next to the increased presence and dynamic range a horn design offers. An important issue here is not to be swayed by arguments either way, but trust your ears when choosing loudspeakers.

### Finding the Ideal Demonstration

So, what should you use when selecting loudspeakers? First, try to find a demonstration studio that is broadly similar in size and construction to your own listening room. There's no sense in selecting a pair of loudspeakers in a room one-third or three times the size of your own space, because the interaction between room and loudspeaker is a close-knit one. Ideally, this means a home demonstration, but this can be difficult to achieve with huge full-range speaker designs. For similar reasons, your dealer should be able to replicate your system as best as possible, or failing that bring your own equipment in for the

demonstration. Naturally, bring along your own music; try to bring along a broad, representative spread of music you listen to and know well, as well as audiophile test discs, but keep the number of discs relatively low. A good loudspeaker system should not only showcase your music well, but should naturally invite you to deepen your music collection and widen your musical tastes. Being pragmatic, if 99% of your music is opera for example, it's worth weighting your listening to accommodate that, but it's also worth considering the long game – tastes change over time, and the music you listen to today might not be the same as the music you listen to in five or 10 years time. We recommend that even if your musical tastes are very narrow, try to select loudspeakers that play the widest range of musical material well, and for this reason unamplified instruments (especially ones you are most familiar with) recorded in a natural acoustic still represent the gold standard of subjective listening tests. Generally, if a speaker gets live, acoustic voices and instruments right, it will be able to play a wider range of sounds than a speaker designed to bring out the best in pop records.

Loudspeaker technology has progressed significantly through most of the 20th and the first decade of the 21st Centuries. But development has not come to an end. Each new improvement in the loudspeaker design creates additional demands on the rest of the developmental process. Significant improvements don't happen overnight, but if you bought a high-end loudspeaker 10 or 20 years ago, you should hear what the new generation has to offer. **tas**





# What to Listen For When Choosing Loudspeakers

Robert Harley

## Finding the Right Loudspeaker— Before You Buy

You've done your homework, read reviews, and narrowed down your list of candidate loudspeakers based on the criteria described earlier (favorable reviews, brand reputation, etc.)—you know what you want. Now it's time to go out and listen. This is a crucial part of shopping for a loudspeaker, and one that should be approached carefully. Rather than buying a pair of speakers on your first visit to a dealer, consider this initial audition to be simply the next step. Don't be in a hurry to buy the first loudspeaker you like. Even if it sounds very good to you, you won't know how good it is until you've auditioned several products.

Choosing an appropriate amplifier power-output range for your loudspeakers, listening tastes, room, and budget is essential to getting the best sound for your money. If the amplifier is under-powered for your needs, you'll never hear the system at its full potential. The sound will be constricted, fatiguing, lack dynamics, and the music will have a sense of strain on climaxes. Conversely, if you spend too much of your budget on a bigger amplifier than you need, you may be shortchanging other components. Choosing just the right amplifier power is of paramount importance.

Audition the loudspeaker with a wide range

of familiar recordings of your own choosing. Remember that a dealer's strategic selection of music can highlight a loudspeaker's best qualities and conceal its weaknesses—after all, his job is to present his products in the best light. Further, auditioning with only audiophile-quality recordings won't tell you much about how the loudspeaker will perform with the music you'll be playing at home, most of which was likely not recorded to high audiophile standards. Still, audiophile recordings are excellent for discovering specific performance aspects of a loudspeaker. The music selected for auditioning should therefore be a combination of your favorite music, and diagnostic recordings chosen to reveal different aspects of the loudspeaker's performance. When listening to your favorite music, forget about specific sonic characteristics and pay attention to how much you're enjoying the sound. Shift into the analytical mode only when playing the diagnostic recordings.

Visit the dealer when business is slow so you can spend at least an hour with the loudspeaker. Some loudspeakers are appealing at first, and then lose their luster as their flaws begin to emerge over time. The time to lose patience with the speakers is in the dealer's showroom, not a week after you've bought them. And don't try to audition more than two sets of loudspeakers in a



single dealer visit. If you must choose between three models, select between the first two on one visit, then return to compare the winner of the first audition with the third contender. You should listen to each candidate as long as you want (within reason) to be sure you're making the right purchasing decision.

Some loudspeakers have different tonal

balances at different listening heights. Be sure to audition the loudspeaker at the same listening height as your listening chair at home. A typical listening height is 36", measured from the floor to your ears. Further, some loudspeakers with first-order crossovers sound different if you sit too close to them. When in the showroom, move back and forth a few feet to be certain the loudspeaker

will sound the same as it should at your listening distance at home.

Make sure the loudspeakers are driven by electronics and source components of comparable quality to your components. It's easy to become infatuated with a delicious sound in a dealer's showroom, only to be disappointed when you connect the loudspeakers to less good electronics. Ideally, you should drive the loudspeakers under audition with the same quality of power amp as you have at home, or as you intend to buy with the loudspeakers.

Of course, the best way to audition loudspeakers is in your own home—you're under no pressure, you can listen for as long as you like, and you can hear how the loudspeaker performs with your electronics and in your listening room. Home audition removes much of the guesswork from choosing a loudspeaker. But because it's impractical to take every contender home, and because many dealers will not allow this, save your home auditioning for only those loudspeakers you are seriously considering.

### What to Listen For

There are several common flaws in loudspeaker performance that you should listen for. Though some of these flaws are unavoidable in the lower price ranges, a loudspeaker exhibiting too many of them should be quickly passed over.

Listen for thick, slow, and tubby bass. One of the most annoying characteristics of poor loudspeakers is colored, peaky, and pitchless bass. You should hear distinct pitches in bass notes, not a low-frequency, "one-note" growling under the music. Male speaking voice is a good test for upper-bass colorations; it shouldn't have an excessive or unnatural chesty sound.

Certain bass notes shouldn't sound louder than others. Listen to solo piano with descending or ascending lines played evenly in the instrument's left-hand, or lower, registers. Each note should be even in tone and volume, and clearly articulated. If one note sounds different from the others, it's an indication that the loudspeaker may have a problem at that frequency.

The bottom end should be tight, clean, and "quick." When it comes to bass, quality is more important than quantity. Poor-quality bass is a constant reminder that the music is being artificially reproduced, making it that much harder to hear only the music and not the loudspeakers. The paradigm of what bass should *not* sound like is a "boom truck." Those car stereos are designed for maximum output at a single frequency, not articulate and tuneful bass. Unfortunately, more bass is generally an indicator of worse bass performance in low- to moderately-priced loudspeakers. A lean, tight, and articulate bass is preferable in the long run to the plodding boominess that characterizes inferior loudspeakers.

Listen to kickdrum and bass guitar working together. You should hear the bass drum's dynamic envelope through the bass guitar. The drum should lock in rhythmically rather than seem to lag slightly behind the bass guitar. A loudspeaker that gets this wrong dilutes rhythmic power, making the rhythm sound sluggish, even slower. But when you listen to a loudspeaker that gets this right, you'll find your foot tapping and hear a more "upbeat" and involving quality to the music.

Midrange coloration is a particularly annoying problem with some loudspeakers. Fortunately, coloration levels are vastly lower in today's

loudspeakers than they were even 15 years ago. Still, there are lots of colored loudspeakers out there. These can be identified by their "cupped hands" coloration on vocals, a nasal quality, or an emphasis on certain vowel sounds. A problem a little higher in frequency is manifested as a "clangy" piano sound. A good loudspeaker will present vocals as pure, open, and seeming to exist independently of the loudspeakers. Midrange problems will also make the music sound as though it is coming out of boxes rather than existing in space.

Poor treble performance is characterized by grainy or dirty sound to violins, cymbals, and vocal sibilants (s and sh sounds). Cymbals should not splash across the soundstage, sounding like bursts of undifferentiated white noise. Instead, the treble should be integrated with the rest of the music and not call attention to itself. The treble shouldn't sound hard and metallic; instead, cymbals should have some delicacy, texture, and pitch. If you find that a pair of speakers is making you aware of the treble as a separate component of the music, keep looking.

Another thing to listen for in loudspeakers is their ability to play loudly without congestion. The sounds of some loudspeakers will be fine at low levels, but will congeal and produce a giant roar when pushed to high volumes. Listen to orchestral music with crescendos—the sound should not collapse and coarsen during loud, complex passages.

Finally, the loudspeakers should "disappear" into the soundstage. A good pair of loudspeakers will unfold the music in space before you, giving no clue that the sound is coming from two boxes placed at opposite sides of the room. Singers should be heard as pinpoint, palpable images

directly between the loudspeakers (if that's how they've been recorded). The sonic image of an instrument should not "pull" to one side or another when the instrument moves between registers. The music should sound open and transparent, not thick, murky, or opaque. Overall, the less you're aware of the loudspeakers themselves, the better.

Some loudspeakers with less-than-high-end aspirations have colorations intentionally designed into them. The bass is made to be big and fat, the treble excessively bright to give the illusion of "clarity." Such speakers are usually extremely sensitive, so that they'll play loudly in comparisons with speakers of normal sensitivity. These loudspeakers may impress the unwary in a two-minute demonstration, but will become extremely annoying not long after you've brought them home. You're unlikely to find such products in a true high-end audio store.

Finally, the surest sign that a loudspeaker will provide long-term musical satisfaction at home is if, during the audition, you find yourself greatly enjoying the music and not thinking about loudspeakers at all. **tas**

Excerpted from *The Complete Guide to High-End Audio*, third edition. © by Robert Harley. [hifibooks.com](http://hifibooks.com)

EQUIPMENT REVIEWS

# Loudspeakers up to \$10k



# Bowers & Wilkins 684

## Six of the best

Alan Sircom

**T**he 600 Series has been a constant stream of musical pleasure for entry-level and cash-strapped audio enthusiasts for the longest time. The latest iteration builds on this, but with a twist or two. Like many modern audio products, the new 600 range - two standmounts, two floorstanders and a subwoofer - features local design and global production. The 684 floorstander tested here is typical; it is designed in the Steyning plant in West Sussex, England and built in China.

Curiously, the nomenclature is back to front. Normally, the higher the number, the better the speaker, but the top model in the 600 range is the 685, and below this model are the 685 standmount and the entry-level 686. It's nothing to get concerned about of course, but might cause confusion when trawling through the price comparison sites.

The 684 is a ported, two-and-a-half-way design. It's sporting the now standard B&W issue Flowport golfball-pitted port both fore and aft, a 25mm aluminium dome tweeter and a pair of 165mm Kevlar mid-bass units with hard 'bullet' phase plugs in the acoustic centre of each driver.

Each speaker comes supplied with a pair of 'flexibungs' (I've got all her movies); these allow the speaker to be extremely fine tuned to its environment, as you can have the front bung in, the rear bung out, in, out, in/out and the middle of the bung out. In total, this gives you nine different

acoustic modifications to the same loudspeaker and that gives you a lot of freedom in positioning and room size. That being said, the best placement is in a room around 12'x16' or larger, firing down the length of the room and approximately half a metre from the rear and side walls. I found that after a lot of experimentation, the best sound came from using the outer portion of the bungs in both speakers, but the dynamics of my room meant it worked well (arguably better) with left bung being complete and the right being just the doughnut, not the whole bung, with a mild toe-in.

My only gripe here concerns the manual, which makes little useful mention of how to use the flexibungs and many will just give up because of this. It's worth the effort and experimentation, because the loudspeaker benefits greatly from trying out all the different options. So, here's what the manual should say on this - The two ports are tuned to slightly



## EQUIPMENT REVIEW - Bowers and Wilkins 684 loudspeaker



different frequencies with and without ports; the rear port can be used to subtly tailor the way the loudspeaker interacts with the room. If you have to place the speakers closer to the rear wall than the recommended half metre, try inserting the bungs into the rear ports (first the round outer section of the bung, then the bung entirely). Don't make snap decisions. The front port tailors the bass output for the room; once you have positioned the speaker properly, experiment with the front bungs in order to accurately match the bass to the rest of the performance. Once again, don't jump to any snap decisions.

Initially, Bowers and Wilkins supplied the 684 with just the spikes, and initial findings surrounding the speaker ('best played loud') reflected possible issues with centre of gravity. Soon after, the 684 shipped with a black plinth with a set of spacers to raise the speaker a centimetre or so off the baseplate, house spikes and widen the footprint. That, plus the slight increase in mass at the base of the speaker, does help give the 684 a sturdy footing. The company includes both spikes and little white rubber feet for those mounting on bare floors. Purists might think anything other than spikes is an abomination, but this is a practical solution that – in practice – works better on a hard wood floor than spikes in this context.

The finish is very slick, although irrespective of whether you use the grilles or not, you are faced with a big slab of flat black to the front and the plinth. The rear and sides are finished in several vinyl woodprint wraps, including light oak, cherry, wengé and black ash. Personally, I think the speakers look better with grilles off, highlighting that distinctive off-centre Bowers & Wilkins tweeter surround logo. I also think the speakers

benefit from grille removal where possible; although supposedly acoustically transparent, I'm not entirely convinced and felt the speaker lost a bit of mid and top clarity with the grilles in place. The bi-wire rear panel is usefully set low, so speaker cables rise only a few inches up the back of the speaker itself.

These are deceptively heavy loudspeakers (thanks in part to the B&W trait of a healthy amount of internal bracing) and the plinths mean they top 39lbs. And they are efficient and easy to drive too; 90dB sensitivity, with an eight ohm impedance (although the company also claims a three-ohm minimum impedance).

The 684 makes a typical Bowers and Wilkins sound, again with a twist or two; very clean, extremely neutral and very, very competent. Exciting too, the combination of taut, surprisingly deep bass and bright treble makes for a speaker with a zing to them. Twist number one: perhaps a little too much zing for some. It's not a rising treble, nor is it a treble with a definite peak or sting, but the 684 seems to make the top end of a piano sound more like a piano than a real piano.

For most, though, this will just make the speakers sound exciting and alive. Playing Lambchop's *Is A Woman* album through the 684 showed just how minor this treble lift is; the sound is very open and Kurt Wagner's speak-sing vocals come across brilliantly, thanks to a very open and clean midrange. The top remains untouched, except for a very slight increase in the guitar vibrato effect. This is a subtle effect on a relatively obscure background part of the mix.

Bass is exceptionally good, and not just 'for the money'. Once the experiment process with bungs and placement is over, bass is both deep and

taut, and that easy drive means it will be like that irrespective of the amplifier used. And this is one of the most important plus points for the 684 – it's remarkably unfussy as to its business partners. It will deliver a remarkably similar performance

### SPECS & PRICING

#### Bowers and Wilkins 684

**Type:** Two-and-a-half way reflex loaded floorstanding loudspeaker

**Driver Complement:**

1x 25mm aluminium dome tweeter

1x 165mm woven Kevlar® cone bass /midrange

1x 165mm woven Kevlar® cone bass

**Bandwidth:** 44Hz-22kHz +3dB on reference axis  
-6dB at 34Hz and 50kHz

**Sensitivity:** 90dB (2.83V, 1m)

**Impedance:** 8 ohms nominal (minimum 3 ohms)

**Dimensions (WxHxD, not including plinth or feet):** 198 x 910 x 300mm

**Weight:** 18.2kg

**Finishes:** Black Ash Vinyl, Light Oak Vinyl, Red Cherry Vinyl, Wengé Vinyl

#### U.S.

**Price:** \$1100/pr

#### B&W GROUP NORTH AMERICA

54 Concord Street  
North Reading, MA  
01864  
(978) 664-2870

#### U.K.

**Price:** £700/pr

#### BW GROUP LTD

+44 (0) 1903 221 500  
bowers-wilkins.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Bowers and Wilkins 684 loudspeaker

whether it's the most expensive part of the signal chain, or the cheapest. Differences are still apparent, but not as marked as many designs. And yet, this doesn't come at the expense of the musical presentation. It's a remarkable leveller of equipment. I suspect that might disenfranchise those who want the sound of their expensive CD and amps to be immediately apparent, but for many others this is a handy bonus. Arcam, Cambridge Audio, Marantz, NAD and (obviously, given the company connections) Rotel would be logical choices for electronics happiness.

The 600 Series speakers have often had exciting treble and deeper than you might expect bass for any given cabinet size. The problem in the past has been a sound that had 'all top, all bottom... nothing in between'. Worse, as you went up the 600 Series, so the gap between bass and treble widened. Fortunately, based on the evidence of the 684 at least, those days are gone and one of the best parts of this loudspeaker is its clean, open midrange. There are so many recordings that demand a good midrange, but *All Is Yes* by The Blessing really takes advantage of this. The percussive piano and drum kit, coupled with a Miles-esque muted trumpet can all so easily degrade into a midrange-free zone, but the 684 brings out the less accented bit in the middle.

Stereo is fine, although those looking for a pair of speakers that throw out a huge soundstage or a lot of image depth will be disappointed. Increasing toe-in improves stereo imaging considerably, but does so by trading precision in the bass. It's a question of balance.

In fact, balance is the key to the Bowers & Wilkins 684. There are speakers that might do one or two things better (superior imaging, for

example), but at the expense of other aspects (overall balance, detail, compatibility, fun). These will prove perhaps more attractive to people seeking the same. However, the 684 should be considered the default choice for loudspeakers for the money. It's the benchmark. +



# Largest Consumer Audio & Home Entertainment Show in the US!

Oct. 15 · 16 · 17  
Denver, CO

FEAST  
ON THE  
FUTURE  
OF  
SOUND

Rocky Mountain  
Audio Fest  
www.audiofest.net



Over 100  
Listening Rooms

Systems for  
all Budgets

Seminars by  
Industry Experts

Live  
Entertainment

# Coincident Speaker Technology Super Victory

## Ribbon Magic

Sue Kraft

**M**y long time audiophile cohort said it best when he stopped by one day, soon after Coincident's new Super Victory loudspeakers had arrived. He wondered aloud what I thought of the new ribbon tweeters. Nodding towards the sweet spot, I motioned for him to have a seat. It wasn't more than 30 seconds into the music that I could see "a look" come over my normally poker-faced friend. "Holy high end, Batman, the sound just slaps you right in the face." I couldn't help but laugh as I had been similarly "slapped" just a few days earlier. And I mean that in the best possible way.

The sound that didn't surprise me too much was the 'thud' of the price dropping on my Coincident Super Eclipse speakers with silk dome tweeters. (I hate when that happens.) While I'm still not ready to put them out to pasture quite yet, I can understand why they've been discontinued. For only a few dollars more you can buy a speaker that is significantly better. There seems to be a bit of a gap now between the Partial Eclipse (silk dome tweeters) at \$4,500 and the Super Victory at \$9,500. I'd dig deep for the Super Victory if it were my listening room, which is exactly what I'm doing right now. If anyone is interested in a pair of lady-driven speakers only used on Sunday to play chamber music, you know where to find me.

The Super Victory was introduced in 2008 as a scaled-down version of Coincident's \$15,000 Total Victory IV. I was impressed that owner and

designer Israel Blume did not scale down quality, only the overall size of the speaker and number of drivers. There is one fewer 7" proprietary composite (treated paper) midrange as well as one fewer 12" side-firing Nomex cone woofer in the Super Victory versus the TV IV. Otherwise drive units in this three-way, nearly 4' tall floorstander are identical, as are the Extreme internal wiring, crossover components, enclosure construction and materials, and outrigger extender feet with oversized spikes. This is not always the case with some companies, as oft-times 'scaled down' can mean cutting corners or using similar but inferior parts. Israel Blume doesn't make 'cheap' speakers, only varying sizes to accommodate room and budget limitations.

According to Blume, the newly developed, isodynamic planar ribbon tweeter with a radiating

surface less than the volume of a cubic inch of air is three times as large as the ribbon previously used in the TV II. This ribbon is a purely resistive load at a flat 8 ohms. Very high sensitivity is partly due to the use of a highly powerful neodymium magnet structure that measures 3" x 6" and weighs in excess of two pounds. An ultra-rigid, solid aluminum faceplate ensures resonant-free reproduction and the elimination of diffraction affects. All well and good, but how do they sound? Stunning!

With a sensitivity of 92.5dB and impedance of 10 ohms (never dipping below 8 ohms), the Super Victory has a minimum power requirement of just 3 watts and a maximum of 500. I'll admit to raising my eyebrows a bit, especially with the minimum 3 watt power requirement. I was fresh out of flea-powered amps at the time, but I did have several



## EQUIPMENT REVIEW - Coincident Speaker Technology Super Victory Loudspeaker

Atma-Sphere OTL (output transformerless) tube amps on hand that seemed an interesting alternative, as OTLs flourish on sensitive speakers. Add to the mix an Atma-Sphere MP-3 preamp and a Meridian 808.2i (the best CD playback I've heard to date) and I'm getting goosebumps. I know we all have our preferences, but for me, this tube-based system would be on my desert island short list. Was the Super Victory up to the challenge? In spades!

Neither the 60W Atma-Sphere M60 nor 100W Novacron with 6C33-B output tubes had any difficulty driving the SV in a medium/large 14' x 20' room. It was dynamics gone wild from the finely detailed precision of the gorgeously extended high frequencies to the tight control and definition of the side-firing 12" woofer. The M60 was more neutral with deeper bass, while the Novacron fuller in the bottom octaves with a touch more warmth in the midrange. Both amps flaunted nearly unrestrained dynamics through the SV, but without the type of in-your-face impact that will set you back in your easy chair. Based on my experience, the unfettered and unforced dynamic range of the OTL is one of its truly unique characteristics, and the Super Victory could not have done a better job of recreating the experience.

I did swap out the OTLs for a Balanced Audio Technology 50W VK-55 tube amp with excellent results as well. BAT gear has always been blessed with a gorgeous midrange that is only further enhanced by the inherent fullness of the 7" midrange driver of the SV. The VK-55 was gutsier and more robust on the bottom end (another BAT hallmark) but never to the point of overwhelming the room. The Super Victory always maintained tight bass control, making for a more room-

friendly speaker. (A good attribute in my book.) There's nothing worse than getting your new pair of speakers home from the store only to find out you have to stuff socks in the ports to keep every pane of glass from rattling. This might impress your friends, but I've come to appreciate articulation on the bottom end rather than having to leash my woofers to keep them from getting loose.

I initially set up the SV in a smaller 12' x 12' room, but ultimately preferred them in the larger room. The small room is fully treated with Echo Busters and sounds quite good, but I didn't feel like I could sit far enough back to comfortably listen. If you don't mind nearfield listening, they might be perfect for that spare bedroom converted to a music room. In the larger room the Super Victory was happiest about 3' from the front wall and 6-7' apart, with the woofers facing out. And I was much happier sitting further back with room to stretch.

I was initially concerned that perhaps the new ribbon tweeters would be more directional than the silk domes I was accustomed to, thus shrinking the sweet spot and forcing me to modify my listening habits. Unless I'm listening late at night and happen to doze off, I've never been able to sit in the sweet spot like a statue for hours at a time without moving. I cringe sometimes when I see the uncomfortable chairs some audiophiles sit on, one even stacked with books on the seat to be at the precise height required for the system. The thought of sitting in a chair like that, unable to move my head for fear of losing the center image just wouldn't work for me.

It is true when you stand directly in front of the Super Victory you hear almost no sound from the

ribbon tweeter, but as soon as you step back, the soundstage absolutely sparkles with depth and spaciousness that can be enjoyed by everyone in the room.. The precision, speed, and intricacy of the high frequencies with no edge whatsoever is quite addictive. I can't say for sure what the dispersion is, but it quickly became a non-issue. No need to sit on a wooden straightback chair, atop a stack of books, with head clamped in place to hear the center image.

I've always liked the slim profile of Coincident speakers, and don't even mind the missing grilles. A very long time ago when I first met Israel Blume I asked why he didn't use grilles on his speakers. He answered by asking me if I'd put old jalopy hubcaps on a fine sports car. Good point. So for the last 10 years when friends ask why I don't have grilles on my speakers, I simply tell them I enjoy letting my lug nuts hang out. One nitpick might be the lack of color choices. The cabinets are nicely made but your only options are black, light cherry, or dark cherry. My hands-down favorite would be the dark cherry. Then not only will your speakers sound like you paid twice as much, but they will look it as well.

I've owned several pairs of Coincident speakers in the past and can attest to the fact they perform well with solid-state. But if I could afford to upgrade to the Super Victory, you'd probably only see the reflection of tubes in my eyes. Not only is the SV on my desert island short list, it's also on my things-to-buy short list. Do you think Israel Blume would notice if I switched speakers and returned the Super Eclipse instead? **tbs**

### SPECS & PRICING

#### Coincident Speaker Technology Super Victory Loudspeaker

**Driver complement:** One Isodynamic planar ribbon tweeter; one 7" treated paper midrange; one 12" Nomex cone woofer  
**Sensitivity:** 92.5dB  
**Impedance:** 10 ohms (always between 8-16 ohms)  
**Power requirements:** 3W-500W  
**Frequency response:** 25Hz-35kHz  
**Dimensions:** 47" x 9" x 17"  
**Weight:** 125 lbs. each

#### U.S.

**Price:** \$9499/pr

#### COINCIDENT SPEAKER TECHNOLOGY

19 Strauss Road  
 Thornhill, Ontario,  
 Canada L4J 8Z6  
 (905) 660-0800  
 iblume@  
 coincidentspeaker.com  
 coincidentspeaker.com

#### U.K.

**Price:** Super Victory not distributed in UK. Price on application only

#### MUSICOLOGY

+44(0)1273 700759  
 musicology.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](#)



# DALI Mentor Menuet

## The loudspeaker for the rest of us

Neil Gader

**M**any people equate the size of a loudspeaker with a commitment to high-end values. Nothing could be further from the truth. Most of us live in a world of limits. We don't have a Gulfstream waiting on the tarmac, a *rosso corsa* sports car in our palazzo's garage, or even a small auditorium for our stereo. Fact is, a well-executed smaller speaker of the stand-mounted variety can in many instances get us further down the road toward the musical truth than hi-fi 'wisdom' suggests. Consequently, there are more of these real-world speakers on the market today than ever before. But within this extremely popular segment are varieties targeted for specific applications and room sizes. Cases in point: the DALI Mentor Menuet and the Nola Boxer. Both are designed by highly respected companies, both are two-way compacts suitable for smaller environs, yet each fills a distinctive niche.

It's easy to be fooled by a small speaker that measures a mere 10 inches tall. Don't be. DALI has jammed a lot of technology into this highly musical, two-way, bass-reflex design. Beautifully crafted, the enclosure has a smoothly curved and seamless front baffle designed to be an acoustically inert platform for the drivers. And DALI installs rubber gaskets to decouple those drivers from the cabinet and provide an airtight seal to it. Internally, the Menuet features a flared upward-angled port, which has been designed to minimize turbulence and reduce port noise. The angled design also permits a longer port, which results in a lower tuning-frequency than what would ordinarily be possible in an enclosure of this volume.

The Menuet borrows its soft dome tweeter from its larger siblings. The tweeter uses an oversized 28mm voice coil rather than the typical 25mm one. Its dome diaphragm is very lightweight, which allows DALI to make the diaphragm substantially larger than the average dome without sacrificing

speed. The power-handling of this transducer has been further enhanced via a powerful motor system with a neodymium magnet and back-mounted aluminum heat sink. The 4.5" woofer incorporates DALI's wood-fiber cone—a technology derived from its flagship Euphonia models. DALI points out that the wood fiber adds stiffness, ensuring non-uniform break-up characteristics.

As I alluded to earlier, the Menuet is designed to fill a specific niche—to be elegant and unobtrusive. Tuned for placement against a rear wall or boundary (shelf- or wall-mounting is also encouraged), it gathers significant mid/upper-bass reinforcement in this position. DALI's placement recommendations should be scrupulously followed, because once you find the speaker's sweetspot—about a foot-and-a-half from the rear wall worked wonders in my room—the Menuet sounds most cohesive, gathering energy from the back wall, bulking up in the 50–60Hz range, and finding its inner Superman to yield results that are



## EQUIPMENT REVIEW - DALI Mentor Menuet loudspeaker

utterly musical and compelling. With that wall reinforcement there's more acoustic and ambient recovery going on, particularly with symphonic, chamber, and jazz recordings. Without the reinforcement, the Menuet will have a prevailing balance that could generously be characterized as "light," lacking in weight and drive.

The Menuet embodies a size-defying sense of tonal refinement and restraint that too often goes missing in this segment. This particular mini doesn't push excess treble energy at the listener, nor does it try to reach beyond the physical limits of its small bass transducer. The Menuet is truly

expressive in its handling of vocals. It's fast and coherent, able to elicit details from a *cappella* singer Laurel Massé on *Feather & Bone* [Premonition]—from her dark chest resonances to her rich breathy top octaves. The speaker is capable of sustained high output, yet remains very controlled. In tonal balance, it's civilized, even a bit polite in the upper mids, but has no precipitous dips, spikes, or ridges. Yes, the presentation is lighter weight, something that lends the "air" in the upper octaves a drier, more papery texture and that smudges harmonic detail a trifle. Foundation-rattling bass is clearly out of the question, and dynamically it's no hell-raiser. These constraints dampen the large-scale liveliness of the Menuet, although it does a beautiful job reproducing midrange and treble micro-dynamics.

However, those interested in the intimacy of a quasi-nearfield experience will discover a whole new relationship with the Menuet. Up close and personal with the Menuet, you'll discover a fifth gear. It shines in this environment; closer proximity means you can ramp down big-room playback levels, resulting in more open dynamics, greater soundstage depth, and finer detail. The Menuet really begins to dance rhythmically and vanishes from the soundstage without a trace. Orchestral scale is miniaturized—no big surprise—but this is easy to adapt to given the enhanced sense of weight, dynamic thrust, and pressurization in the nearfield environment. I developed a great fondness for the musical honesty of the DALI Mentor Menuet. To be sure, it's a small-space/nearfield specialist, but for those desiring a sweet taste of the high end without hijacking the room, my highest recommendation goes this bite-sized and big-hearted Danish treat. **tas**

### SPECS & PRICING

#### DALI Mentor Menuet

**Type:** Two-way bass-reflex dynamic loudspeaker

**Driver complement:** One 4.5" woofer, one 1.1" tweeter

**Frequency response:** 59Hz-25kHz

**Sensitivity:** 86dB

**Nominal impedance:** 4 ohms

**Dimensions:** 5.9" x 9.8" x 9"

**Weight:** 8.2 lbs. (net each)

#### U.S.

**Price:** \$1500/pr

#### THE SOUND

#### ORGANISATION

159 Leslie Street

Dallas, TX 75207

(972) 234-0182

dalispeakers.com

#### U.K.

**Price:** £895/pr

#### DALI UK

PO Box 639

Huntingdon

PE29 9GS

0845 644 3537

dali-uk.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](http://AVGUIDE.COM)

You can visit a manufacturer's website by clicking on their ad!

# Performance series

L2 Series Loudspeakers  
99 Series Electronics

"this system is something of a musical genius"

– What Hi-Fi? Sound and Vision

WHAT HI-FI?  
SOUND AND VISION



The Quad 99 series electronics and L2 series loudspeakers are a match made in heaven. Detail, accuracy and refinement all combine to present one of the most musical and insightful systems available – and with our new 99CDP-2, will integrate seamlessly into your digital world allowing up to 6 digital sources to benefit from our state-of-the-art DACs

# QUAD

the closest approach to the original sound.

# Esoteric MG-10

## Purity, Precision, and Generosity

Wayne Garcia

**T**he audiophile vernacular can be frustratingly limited. Although it's useful and even necessary—especially from this side of the keyboard—as a means to describe the sound of components as we hear them, as it is with wine tasting notes our lexicon remains cliché-prone and lacking when it comes to describing what something as complex as our senses actually experience.

This inescapable reality hit me hard as I was jotting down note after note about Esoteric's outstanding loudspeaker, the two-way, stand-mounted, superbly crafted, *all* magnesium driver MG-10 (\$2800, plus \$1800 for dedicated stands.)

Rather curiously, the challenge is not because the MG-10 is difficult to “get” and describe—in fact it is one of the most immediately excellent speakers I've encountered—but because to describe the MG-10 while doing it justice requires more than the usual litany of terms. As Samuel Beckett wrote, “I can't go on, I'll go on.”

My colleague Dick Olsher did a fine job of nailing what Esoteric accomplished with the MG-10's larger sibling, the \$8200 MG-20, when he wrote in Issue 177, “I have to respect a speaker that does not impose its personality on the music.”

My few happy months with the MG-10 have confirmed that Olsher was right about these Esoteric designs, which are the first loudspeakers from Teac's high-end division, and also said to be the first loudspeakers to employ all magnesium drivers. This speaker does impart little of itself on the music played through it. It is, I believe, as neutral as anything I've heard, a speaker that really does channel all that comes before it. That said, no speaker is entirely neutral. So what exactly does the

MG-10 sound like?

In some ways, like no other speaker system I've heard. It's very pure but in no way sterile. It's fast, but not obviously so—as in, “Wow, that's one fast speaker”—but rather in a way that equals high resolution and transparency to the source, while offering insights into both a recording's quality and the musical performance. Searching for an analogy my mind leapt to thoughts of white Burgundy, wines, which, at their best, combine the almost spiritual with the hedonistic, wines of intense purity and precision, yet also wines of generosity.

The MG-10's attributes no doubt begin with those magnesium drive units. And while they possess the qualities noted above, these super-low-mass drivers also manage not to possess the unnatural-sounding metallic overtones that have left many of us wary of other metal-driver designs. In the MG-10 the driver complement comprises a 6.5" low-frequency unit that, at 1.9kHz, crosses over to a mere half-inch-diameter dome tweeter (the floorstanding MG-20 uses a pair of LF drivers).

Driver development and manufacturing is the result of a three-way partnership between Esoteric, which might be called the visionary behind the project, Britain's Tannoy, which plays a large part in both the design and manufacturing processes at its



## EQUIPMENT REVIEW - Esoteric MG-10 Loudspeaker

Scottish facility, and Japan's Nippon Kinzoku, the metal-manufacturing firm that helped create the drivers, and which developed the thin proprietary coatings, one of which is ceramic, that aid in damping resonances (the woofer also uses a corrugated cone to aid in resonance control).

I've gone on record before as a major fan of two-way designs, and while the MG-10 has the sort of top-to-bottom coherence one expects from a fine two-way, there seems little doubt that it's truly exceptionally seamless in large part because its drivers are cut, if you will, from the same cloth (see what I mean about hard-to-avoid clichés?).

Reference Recordings' latest, *Britten's Orchestra* (reviewed in Issue 201), is an excellent disc for a speaker review due to its very extended frequency range. From the shimmering opening strains of "Dawn," from *Four Sea Interludes*, to the earthquake-like rumbles of the percussion and the throaty brass of the "Storm" passage, the MG-10 delivered the music with a rare tonal as well as dynamic uniformity. Indeed, this degree of coherence is something more akin to what I'm used to hearing from planar speakers such as Quads, the quasi-ribbon models from Magnepan, or my recently departed long-term reference, the premium-priced Kharma Mini Exquisite, than from most other dynamic-driver box designs. Reaching back to that wine analogy, think of the MG-10 as delivering purity, precision, and generosity.

It must be said that achieving such a neutral yet expressive voice also requires a fine crossover network. Without divulging much, Esoteric's information sheet boasts of "ultra-high-grade components," such as "ICW 'ClarityCAP' film

capacitors"—whatever they are—for HF network and "large and low-loss laminated silicone and steel core inductors." I suppose it goes without saying that a company that put so much effort into developing such outstanding drivers has wired them to excellent crossover components. But perhaps the most telling bit of information Esoteric reveals is that the crossover is hard-wired by hand (no printed circuit boards) with silver-coated van den Hul connecting cables. Rear-panel connections allow for bi-wiring, and also feature an unusual fifth binding post for grounding the speaker, which is said to an effective aid against RF (I confess that I never used or needed to use it).

On the subject of expressive voices, check out Nina Simone's version of "I Loves You Porgy," from *Four Women: The Nina Simone Philips Recordings* [Verve], and what you'll hear is one of the most direct sounding, practically reach-out-and-touch-immediate reproductions of a human voice there is—one the MG-10 places in your room with a remarkable lack of box or driver coloration, one that simply seems to be "there" by way of the conjuring tricks that make this hobby so damn alluring on an aural level and so endlessly satisfying on musical and emotional ones. Simone's voice, a seductive marriage of smoke and roses, will at times have you leaning forward with its whisper-soft intimacy, and at others breathless with its touching—yet never schmaltzy—combination of heartache and defiance.

Or flip to Side Two of Mobile Fidelity's recent (and outstanding) mono edition of Sinatra's *Only The Lonely*. First note how the MG-10's coherence and easy naturalness are equally impressive with

a male voice (not all speakers are, which is one reason so many hi-fi demos are conducted with recordings of female singers). And with a speaker that gets out of the way like this one does, the rewards are high when it comes to gaining insights into Sinatra's unparalleled way with a phrase and the pure beauty of his baritone, as he purrs and practically moans his way through "Blues in the Night."

The third major component of the design, the cabinet, is not only strikingly and elegantly understated from a visual point-of-view—indeed, the speaker's construction is first-class in every way—but features non-parallel side panels to minimize internal standing waves, and an inch-thick, ported baffle and internal cross-bracing to ensure rigidity.

It perhaps should come as no surprise that a speaker capable of such clarity and precision is quite sensitive to room placement (also see my sidebar on the "optional" stands.) They need about three feet from sidewalls and at least a foot from the rear as a starting place. And moving these babies a fraction of an inch this way or that can dramatically alter the tonal balance from Laurel to Hardy—from lean to fat.

Toe-in is also critical. The manual asks you to be bold, and angle the speakers so that the cross-axis point lands one-to-three feet in front of the listening position. Although rooms and tastes will vary, given my small room dimensions and that I'm only about seven feet from the front baffles, this didn't really work in my room, giving me laser precision but truncated width and depth. I opted for something of a less dramatic angle that seemed to give me pretty much the best of both worlds—focus and spaciousness.

### SPECS & PRICING

#### MG-10

**Type:** Two-way, bass-reflex loudspeaker  
**Driver complement:** .5" magnesium dome tweeter; 6.5" magnesium cone woofer  
**Frequency response:** 41Hz-44kHz  
**Sensitivity:** 87.5dB  
**Impedance:** 6 ohms  
**Recommended amplifier power:** 20-120Wpc  
**Dimensions:** 8.5" x 17.33" x 11.75"  
**Weight:** 16.5 lbs.

#### STANDMG10

**Dimensions:** 10.2" x 24.5" x 12.12"  
**Weight:** 28.2 lbs.

#### U.S.

**MG-10**  
**Price:** \$2800/pr  
**STANDMG10**  
**Price:** \$1800/pr

**TEAC AMERICA INC.**  
 7733 Telegraph Road  
 Montebello, California  
 90640  
 (323) 726-0303  
 teac.com

#### U.K.

**Not Distributed in the UK. Price on application**

**SYMMETRY LTD**  
 17 Holywell Hill  
 St. Albans Herts AL1 1DT  
 +44(0)1727 865488  
 symmetry-systems.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Esoteric MG-10 Loudspeaker

Of course, the purpose of Esoteric's recommended toe-in is to maximize the soundstaging effect, which is another of the MG-10's strengths.

Again, though, it's not simply that the MG-10 sounds big (it does), or open (ditto), or deep or wide, or all of the things we hope for from a



speaker. It's that it can, as a speaker should, clearly differentiate, say, Rudy Van Gelder's Hackensack, NJ, studio from his later space in Englewood Cliffs. Or give you an aural snapshot of the excellent acoustics of the Community of Christ Auditorium in Independence, MO, where Keith Johnson recorded *Britten Orchestra*. Or, yes, even in mono, transport you to the Capitol studio where Sinatra and the Nelson Riddle gang laid down his most magnificent and melancholy tracks.

Dynamics are likewise very finely expressed both on the micro-and macro-levels, though, since the MG-10 is a two-way monitor, there will come a point, as with a full-on orchestral climax or grinding rock such as The Dead Weather's "60 Feet Tall" from *Horehound* [Third Man], where the speaker seems to hit a wall that tells you enough is enough.

And, as with pretty much every ported design on this planet, there are moments when you simply know the darn vent is there. Be it a rare *hint* of hollowness to a male voice, a drum thwack, or even a hard-to-identify something in the sound of a hall. I'm certainly picking nits since 90% or more of the world's speakers have ports, but, hey, a critic's gotta do his job, right? Still, please do note the italicization of the word "hint" above. It is merely that, and something most listeners are likely not to even notice unless they've been exposed to something like a Magico Mini II or a box-free planar design.

I don't know if I've succeeded in avoiding any audiophile verbal traps here, but what I hope I have accomplished is to at least to give you something of a sense of not only what Esoteric's MG-10 sounds like, but how special I think this

## THE STANDS

Perhaps you did a double take at the MG-10's price as listed in the main article. As I stated, at \$2800 I think this speaker represents an excellent value. But \$1800 for a pair of stands? Or essentially two-thirds the price of the speakers? Seems a bit stiff, doesn't it?

Well, first of all the STANDMG10 is "optional," which means you could instead get away for a fraction of that amount by purchasing, say, one of Sound Anchor's excellent monitor stands. But they won't look as sexy, and, while I'm sure the speakers would sound just fine, I would guess, because I haven't actually heard the difference, that the MG-10's excellence will suffer a bit.

But before you make that decision I would like to suggest that you think of the MG-10 and STANDMG10 as a complete package designed to work together. Besides, this is no ordinary stand.

It was custom-designed specifically for this speaker, and features a steel column that's been "heavily damped with Teflon-powdered polypropylene grain to reduce the mechanical resonance of the column." The machined duralumin (a compound of copper, manganese, and magnesium alloy) top plate not only precisely mirrors the MG-10's footprint, it also allows you to bolt the speakers to the stands via threaded inserts on the speakers' undersides. Trust me, this makes an audible difference. Finally, the .6"-thick bottom plate is crafted from solid aluminum and features Esoteric's proprietary self-leveling "3 pin-point feet" system, which is available alone in Japan for \$300.

All in all, the STANDMG10 shows the same devotion to excellence that the Esoteric team lavished on the remarkable speaker it was designed to support. **WG**

speaker is. In brief, it is among the most neutral, musically satisfying, and exciting speakers I've heard. It is a speaker that will stay with me long after it has been returned to its maker (and shortly before I am). It may also, in time, be looked at as a marker for a new era in metal-driver technology. And the fact that it delivers so much musical pleasure, at a price point accessible to many, makes it sweeter still. **tas**

# Nola Boxer

## The Little Loudspeaker That Could

Neil Gader

**F**or high-end aficionados, Nola needs little introduction. Its open-baffle dipole designs, which include the Baby Grand and the majestic four-tower flagship, the Grand Reference IV.1, are the stuff of dreams for many of us. Music is reproduced on such a transparent and forceful scale that even the most jaded will listen with rapt attention. The good news for those just starting up in the high end is that veteran designer and Nola president Carl Marchisotto has an equally deft touch with small affordable speakers, as Nola's latest effort, the Boxer, clearly attests.

At barely fifteen-inches tall the Boxer is an unassuming, blue-collar two-way compact in a bass-reflex enclosure—it's also the only box speaker that Nola makes. The Boxer's loaded by a rear-firing twin-flared port for low distortion and noise. It incorporates a low-mass 6.5" bass/midrange driver with a laminated pulp cone. The high-frequency driver is a high-resolution silk dome tweeter. The crossover is a shallow-slope design using high-purity polypropylene caps, air-core inductors, and 2% metal-film resistors. It incorporates the same vibration-isolated, hand-wired crossover as Nola's bigger models and the same passive components used in Nola's \$22,000 Metro Grand. It is assembled by hand with point-to-point wiring, using a proprietary low-loss oxygen-free copper wire.

The physical profile of the Boxer may be working class, but, oh my, does this baby play uptown. Its overall sonic character is unerringly musical, midrange-ripe with a fine balance of warmth and detail and the propulsive energy of a finely-honed athlete. Its presentation is not shy or recessed; its treble isn't brittle or

fatiguing. There's substance to every octave with no energy suck-outs. The result is a wide-range dynamic transducer that is always musically truthful. The soundstage is very large and open, yet has excellent focus. The Boxer also exhibits the moves you'd expect of a smart two-way—vivid images, quick transient responses, and the kind of resolution I encountered on Lyle Lovett's "North Dakota" from Joshua Judges Ruth [Curb], where the soft vocal harmonies and parallel melodic lines snapped into focus at even the lowest levels. *tas*

But what makes the Boxer so special is the extent to which Marchisotto has transported the qualities of his large-scale, open-baffle designs into such a petite box. There's much the same characteristic air and openness without any boxiness—not surprising given Marchisotto's history of designing iconic dipole speakers for the likes of Dahlquist and Alon. For much of the Boxer's sonic excellence, the credit must go to its exemplary mid/upper bass, which was solid and tight and extended in my room. Unlike many compacts that can't punch their way out of paper bags, the Boxer has enough drive to recreate orchestral-



## EQUIPMENT REVIEW - Nola Boxer Loudspeakers

style weight, soundstage cues, and concert-hall immersiveness. During the opening segment of Tchaikovsky's Violin Concerto in D Major with Anne Sophie-Mutter [DG], the Boxer immediately conveyed the way the orchestra wakes up the hall's acoustic. And during Jen Chapin's rendition of "Renewable" from ReVisions [Chesky], the Boxer punched outside of its weight class, reproducing the dueling baritone sax and standup bass with dynamic authenticity. It should be noted that the large port outputs a great deal of energy, so distance from the rear wall does require some experimentation.

Ultimately the Boxer, like every other speaker,

has limits. When over-driven, the port's tuning will intrude and thicken the mix—the lowest notes of cello or brass or plucked bass viols become less well defined, somewhat reducing timbral clarity and low-level decay.

Any major issues? Not really, and the trade-offs—such as they are—are honest and distributed with a subtlety that doesn't dampen the quality and intensity of the Boxer's overall performance. In the vocal ranges I noted a small presence-range droop, a hint of sibilance, and, as was to be expected, a bit of compression during high-octane flurries of percussion. During Glinka's The Lark [RCA], the solo piano's energy and air were not always fully reproduced; as a result lower midrange arpeggios were dynamically a bit muted, and the treble octaves slightly glassy.

Post review, I asked Marchisotto about the challenges of designing at this price point: "The keys are the midrange and midbass areas. We aim for a clear dimensional midrange with as much 'air' as we can get and a naturally dynamic, clean midbass. Many designs today compress the midbass in order to attain more apparent detail. I find these designs tiring to listen to, as they are not musical, regardless of the other sonic characteristics provided." In my view, mission accomplished—a designer after my own listening biases.

The Nola Boxer exemplifies what a budget two-way compact should be. Easy to underestimate, it's the kind of ringer that doesn't telegraph its intentions until the bell sounds. That's when you realize you've placed your bet on a winner—and that the competition had better duck and take cover. **tas**

### SPECS & PRICING

#### Nola Boxer

**Type:** Two-way, dynamic driver, bass reflex loudspeaker

**Driver Complement:** 6.5" laminated cone, 1" silk dome

**Frequency Response:** 44Hz-28kHz

**Sensitivity:** 90dB

**Impedance:** 8 ohms

**Dimensions:** 15.5" x 8" x 11.5"

#### U.S.

**Price:** \$1500/pr

#### ACCENT SPEAKER TECHNOLOGY, LTD.

1511 Lincoln Ave.,  
 Holbrook, NY 11741  
 (631) 738-2540  
 nolaspeakers.com

#### U.K.

**Price:** Boxer not distributed in the UK. Price on application

**ARTISAN AUDIO**  
 +44(0)1494 858471  
 artisanaudio.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](http://AVGUIDE.COM)



## sound choices

### No. 1 Contender: Nola Baby Grand Reference

"This, folks, makes for quite a remarkable package, which is why I am elevating the Baby Grand References to my itty-bitsty pantheon. I've simply never heard a full orchestra in full cry sound more "there" in my listening room than I did with the Baby Grand References"....

Jonathan Valin (TAS)



## Nola Loudspeakers

1603 pine street san francisco ca. 94109  
 ph:415-614-1118  
 www.audiovisionsf.com

- dali
- dynaudio
- gallo
- jl audio
- kef
- nola**
- psb
- quad
- raidho
- rel acoustics
- rockport technology
- thiel
- triangle
- ultrasone
- wilson benesch
- arcam
- audio research
- audioquest
- bat
- bel canto
- benz
- cardas
- cary audio
- chord
- clearaudio
- composite products
- finite elemente
- harmonic resolution systems
- harmonic tech
- integra
- lyngdorf audio
- lyra
- marantz
- micromega
- msb tech
- naim audio
- nordost
- nuforce
- primaluna
- pro-ject
- ps audio
- quadraspire
- rega
- richard gray
- runco
- shunyata research
- sim 2
- simaudio moon
- sonos
- soundsmith
- vpi

# PSB Image T6

## Science Meets Black Art

Robert E. Greene

In years gone by, audio people used to refer to speaker design and manufacture as a Black Art. And they had a point. Not so long ago, hand-doped drivers and special response-contouring in crossovers to (try to) fix driver errors were the rule.

But times change. New materials have made drivers better behaved and more consistent in manufacture. And advances in test procedures and test facilities have made the evaluation of designs easier—PSB’s new T6 reviewed here was designed with the help of the Canadian National Research Council (NRC) acoustic testing lab. In effect, speaker design has been considerably rationalized. This all ought to add up to good speakers being less expensive to design and build. And in this respect the PSB Image T6 is a very much a case in point. It is rationally designed, and it does indeed offer remarkable musical performance at its price. And yet, the art has not gone out of the whole process. Designer Paul Barton told me that, while the general outlines of his design follow theory, much of what he does is a matter of intuition as far as the fine details are concerned. And, of course, the fine details matter a great deal. Well, one can only admire how superbly his intuition works and be glad for his mastery of the aspects of the process that remain in effect an art.

A quick tour of the sound, from the bottom

up: The T6 has real bass,  $-3\text{dB}$  at 35Hz, a little “bloom” but good pitch definition, and realistic warmth and fullness. No miniaturization here! Its double-port and double-woofer design give really smooth bass— lower, middle, and upper—in the actual listening room through correct treatment of the floor-loading issue, unfortunately a rarity in floorstander designs but very much a feature here. The midrange is very clean and quite neutral sounding. And the treble is extended and again very clean sounding.

Resolution of detail is excellent. One gets a real taste of high-end presentation of detail at this semi-budget price. These speakers are extraordinarily transparent. If you wanted to write down every note of every part of a multi-layered piece of music just by listening, this would be a good speaker to use. The drivers seem well-behaved, indeed, and the sound very clean and clear. Perceived distortion levels are very low. (So are the measured levels, from the manufacturer’s measurements.) It is an audiophile tradition to say that no dynamic-driver speaker can approach electrostatic low levels of distortion, but the T6





## EQUIPMENT REVIEW - PSB Image T6 Loudspeaker



sounds quite close to that low level of distortion. The midrange is really clean and pure.

Imaging is also excellent—the speakers have minimized diffraction and they vanish into the soundfield most satisfyingly. Interestingly, the out-of-phase sound on test tracks for speaker phasing is more perfectly directionless and the in-phase more tightly focused than usual. I shall have a few sonic nits to pick later—after all, this is a TAS review—but this is high-end sound in all directions, never mind the low price.

The speakers look elegant. The dark cherry finish of the review samples has the warm glow of fine furniture, and the curved surfaces give a special gracefulness. After a listen in our audio room, Paige approved enough not only of the sound but also of the looks to suggest moving the T6s up into the living room. They made the cut in both sound and appearance.

The design goal of the PSB T6 as I understand it was to make a speaker with flat response, wide and uniform radiation pattern, and (as Paul Barton described to me) not only smooth off-axis frontal behavior but smooth directivity, smooth “power response.” The power response was intended to be free of glitches and to droop smoothly with increasing frequency in the top end, smoothly sloped down with increasing frequency in “room response.” This might be called a textbook ideal, but it is far from easy to pull off!

Incidentally, I am really indebted to designer Paul Barton for his detailed answers to my technical questions and for sharing a great deal of information on the measured performance of the T6s. But for people who worry about such things, I listened long and wrote this review except for very minor revisions before seeing any measurements at all—not even my own, as my measurement system was temporarily down. My comments on frequency response were based on

listening and experimenting with what small EQ changes improved the sound to my ears, not on any preconceived ideas from measurements. Interestingly, my observations fit essentially line by line with the measurement information supplied later by Paul Barton from the Canadian NRC facility.

A bit technical there in the description, all that about power response and so on—but it all adds up to things that are musically important. The well-balanced sound comes out into the room with real naturalness and no sense of the listener being restricted to a tiny sweet spot, nor of the sweet-spot sound being erratically different from the overall “room sound.”

Now there are alternative approaches to making a speaker work in a room involving much narrower radiation patterns, and it is no secret to TAS readers that I have a soft spot for the narrow-pattern approach. But truly, the most crucial point is not so much wideness-versus-narrowness as such, but rather smooth variation of the pattern with frequency, and this the T6s do very well. This speaker really sounds like music at some deep level and very much *not* like a speaker, in a way hard to put into words in detail but very easy to hear.

The T6s are not perfect—if they could be, what would the higher-priced PSB models be for? The tweeter, while very pure sounding, has to my ears a slightly different tonal color than the midrange driver, a little metal-dome sweetness—not unpleasant, just a bit of extra color, heard mostly on high massed strings. Also to my ears, the treble is slightly “hot” in the real top, in the context of overall flat response, and the sound a little bit “hard.” Paul Barton, as I understood him, is quite intent upon not having any of the British “politeness,” which was derived from a combination of a deliberate dip in the 2–6kHz range—the “BBC [or Gundry] dip”—and the directionality arising at the top of the operating range of large midrange drivers. Fair enough, to eschew this, an esthetic judgment call—but to my ears

## EQUIPMENT REVIEW - PSB Image T6 Loudspeaker

the T6s go a bit too far in the other direction with what seems to me a little excess around 4kHz. The T6s do not do much tempering of the wind to the shorn lamb as far as program material is concerned.

The exact perceived balance can be altered by changing seating height and by more or less toe-in. The speaker has a quite smooth variation of response with respect to such changes, so one can use them for adjustment to taste without introducing coloration.

The midrange does a fine job of the human voice, which sounds natural and naturally balanced. Most instruments are similarly well served. The T6s were not at their absolute best on solo piano recordings, on which the speaker exhibited a certain coloration of the specifics of piano tone. This is subtle, though, and might pass without notice unless you listen to a real piano in direct comparison. I think this came from a little bit of extra energy from the midrange driver, a little projection around 1.5kHz, since a little EQ down at that frequency largely eliminated it. (This little excess can make the midrange driver come out a bit at close range on material that is at all midrange-forward). But overall, the sound is quite uncolored.

The treble is so clean that its slight excess, if excess it be, is less disturbing than it could be, and for some types of music the little extra zip and presence may actually enhance the experience. I get some idea that the T6 is perhaps intended for young people and their livelier music, with the more expensive Synchrony line, which I gather has a slightly less “live” balance, intended for the older, presumably richer, but more sedate customers.

I experimented with pulling the treble/upper-mid

down a little. Lenbrook Industries, parent company of PSB, also owns NAD, whose products feature tone controls, so I did not feel guilty experimenting with such adjustments, though I used the ZSystems rdp-1 digital EQ rather than a tone control in the usual sense. For things like classical orchestral music, this small adjustment, specifically pulling a dB or so out at 4kHz and as noted a tad out around 1–1.5kHz, gave what seemed to me a more natural balance. But the T6s as they are were by no means unsatisfactory. Indeed, they are very much in line with current practice in the high end where a dB or two of extra treble has seemingly become regarded as preferable to a dB or two too little. But a little less treble made things better to my ears.

The bass was much to my liking, warm, full, yet defined in pitch. The bass has, compared to, say, sealed boxes optimized for bass tightness, a little “bloom”—like a concert, arguably, but perhaps not ideal for some music where bass tightness is called for. For orchestral music, it was fine indeed. Overall, the sound was very smooth and natural. And orchestral sound was well balanced and exceptionally convincing.

As I mentioned, the T6s really dealt effectively with the floor-loading issue, a pet peeve of mine: It is all very well to say that rooms vary, and of course they do. But everyone has a floor. It is dismaying that most floorstanders do not do anything to accommodate the loading by the inevitable floor. This can be a huge effect, both in terms of measurement and, more importantly, musically.

Much to PSB’s credit, the T6s were deliberately designed to work correctly with a floor beneath them. The PSB Web site makes an explicit point

of this, as well it should. The musical effect was profound and profoundly desirable. Round and about, one can find reviews commenting on how the PSB floorstanders are overly warm. Don’t you believe it! This is what music really sounds like, and invidious comparison to other floorstanders is just revealing the others’ floor dip. And floor dip is neither on the recordings nor a feature of real music. And if you are inclined to use DSP to make the bass in room even closer to perfect, you will find not much to correct and the correction easy, since the speaker lacks those cancellation dips that are so hard to deal with.

The T6s sounded remarkably like a real orchestra on the Telarc *Bohemia*, with the spectacularly well recorded *Carmen* Suites in particular. The T6s also revealed clearly the striking tonal beauty of the Dvorak *Legends* recording by Fischer and the Budapest Festival Orchestra [Philips]; they also revealed the microphone patterns and the differences among the tracks, which come in two sets, recorded at different times.

The result was truly like what HP calls the gestalt of a real orchestra, with minimal sense of sound from speakers as such. Smaller scaled music—Ulf Bastien’s *Winterreise* recording [Ars Musici], for example—was equally convincing. And the resolution of detail, the clarity, the intelligibility of words, the positioning of images precisely and convincingly were all most gratifying both in audiophile and in strictly musical terms.

It is a perennial topic among audiophiles, how far recorded music is from live, with the glass-half-full side commenting on the similarities, the half-empty side noting the differences. To an extent surprising in a relatively inexpensive speaker, the T6s make the argument for similarity to live sound

very convincingly. These speakers can sound remarkably like the real thing. And you will never be able to go back to speakers with that floor dip between 100 and 300Hz again, that is for sure.

Perfect, not quite, but startlingly close at the price, yes, indeed. **tas**

### SPECS & PRICING

#### PSB Image T6 Loudspeaker

**Type:** Three-way floorstanding loudspeaker

**Driver complement:** Two 6.5” woofers, one 5.5” midrange, one 1” titanium dome tweeter

**Frequency response:** Bass: -1.5dB at 45Hz, -3dB at 32Hz, -10dB at 28Hz; treble: +/-1.5dB at 20kHz

**Sensitivity:** anechoic, 88dB; in room, typically 91dB

**Impedance:** 8 ohms nominal, 4 ohms minimum

**Power handling:** 200 watts program maximum, 20 watts minimum recommended amplifier power

**Dimensions:** 43” x 7.75” x 14.75”

#### U.S.

**Price:** \$1199/pr

#### PSB SPEAKERS

##### INTERNATIONAL

633 Granite Court  
Pickering, Ontario, L1W  
3K1  
Canada  
(905) 831-6555  
info@PSBspeakers.com  
psbspeakers.com

#### U.K.

Image range not distributed in UK

##### ARMOUR HE

Units 7 & 8, Stortford  
Hall Industrial Park  
Dunmow Road, Bishops  
Stortford, Herts  
CM23 5GZ  
+44(0)1279 501111  
armourhe.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)



# PMC Fact 8

Elegant design, studio heritage

Jason Kennedy

Once in a while a component comes along that really twists your melon as some hop heads from 'Madchester' once proclaimed. These things realign your expectations and make life rather dull when the manufacturer wants them back again. January is a long dull month with a tax bill to pay at the end of it and a deficit of sunlight, but this year my January was enlightened in no small manner by two pieces of equipment, the Rega Isis CD player and the PMC Fact 8. Now, I like PMC speakers, they are usually good if not very good for their given price points and some - specifically the pro models - are near the top of the 'if I won the lottery' wish list. But it's been a while since a pair of those has come my way and you forget what you're missing after a while and adjust to the far from scrappy results of coming out of the regular speakers. Then PMC brings out a new a rather different speaker, something that is distinctly more elegant than most thanks to the cleanest cabinet design to hit this business in a long time. It's also different because of the way it sounds, which is quite hard to put your finger on until you hear another good speaker and wonder why it sounds a bit thick.

The Fact 8 is a new breed of PMC, it has the company's trademark ATL or advanced transmission line but in other respects does not resemble anything that Luton's finest audio equipment manufacturer has built before. For a start it has a perfectly rectilinear, sharp edged cabinet which doesn't sit on a plinth but rests on two chrome plated bars. These extend the footprint to provide greater stability and are threaded to accept equally shiny 6mm spikes, but not ordinary examples of the breed. The spikes have a rounded end as well so that you can place them on a hard floor without leaving holes. And if you really want to protect the floor there are plastic caps to put over the 'spikes'.

The all important drive units do not seem all that special at a glance but look at a whole bass driver and you will see that the 140mm bass unit has an unusually substantial magnet on the back of its cast alloy chassis. The cone itself appears to be about 95mm in diameter and is coated with what PMC describes as a 'feather light stiff-matte doping process', this is combined with an 'excursion braking system' (a spider?) that controls maximum excursion. Despite the existence of three drive units the Fact 8 is a two-way, itself quite unusual because this sort of configuration is generally used in two and half way designs. More unusual, in fact downright radical is the 1.7kHz crossover point that

## EQUIPMENT REVIEW - PMC Fact 8 loudspeaker

designer Pete Thomas has chosen. This is around a kilohertz below the norm and leaves the tweeter with a lot of bandwidth to cover, it's not therefore your run of the mill 25mm dome. Rather it's a drive unit with a 19mm central dome and a large roll-surround that brings the overall diameter up to 34mm, a combination of characteristics that when combined with high quality engineering allows it to go wide and to cope with power handling that PMC expects of its designs.

While PMC doesn't manufacture drive units it does all the R&D work on them and has them built

to its specifications so the tweeter on this speaker is not one you'll find elsewhere. It has a large enclosure on the back that damps any resonance and the dome itself is made of Sonomex. Putting that name into Google brings up the SEAS Excel range of tweeters which have a similar construction but different specs alongside prices that start at £84, which is already expensive, factor in the custom build requirement and the margins for distributors and dealers and it becomes apparent why this speaker costs what it does.

The crossover has to be pretty cleverly put

together to cope with the challenges of taking the tweeter down so low, it runs a 24dB/octave slope as a low-pass roll off for the bass units and a 32dB/octave one to bring the tweeter in above them. The latter is not a slope I've heard of before but is presumably required to take the tweeter low enough without letting it get to its resonant frequency. The actual crossover board sits on a lozenge shaped PCB behind the terminal block on the speaker. Alongside the beautiful fact Ag silver plated binding posts there are switches that allow you to control the output of the bass and treble sections of the speaker. Treble or HF can be increased or decreased by 2dB while bass can be reduced by 3dB or 6dB. If you want to increase bass output you merely put the speakers closer to the rear wall. I found them pretty easy to site, results did vary and it was fairly easy to tune the bass output to a desirable level with the wall about half a metre behind them.

As is the PMC way bass output is augmented by an ATL or advanced transmission line that starts behind the bass drivers and vents through a slot at the front in phase with the output from the drivers. In the fact 8 an extra chamber has been added above the vent and behind the front baffle, thanks to a cunning choice of aperture size this chamber absorbs any upper bass harmonics that remain and damps them out. It looks and sounds simple enough but if the speed and resolution in the bass on this speaker is anything to go by it works rather well. In fact the whole thing works rather well.

This is the most open box speaker I have ever encountered and it's phenomenally revealing, to call it a wolf in sheep's clothing is an understatement. How can something this elegant produce both high precision imaging in all three dimensions as

well as proper bass. The latter is perhaps the most impressive give the box and driver size, after all a narrow baffle and compact drivers are proven quantities if you want great imaging, but it's rare to hear such well extended, well timed and effortless low frequencies from something so discreet. But it shouldn't be a surprise, PMC is renowned for getting its speakers to deliver uncannily clean



### SPECS & PRICING

#### PMC Fact 8

**System:** 2-way ATL

**Tweeter:** 19mm Sonomex dome with 34mm surround

**Bass driver:** 140mm paper cone x2

**Sensitivity:** 88dB

**Impedance:** 8 ohms

**Dimensions HxWxD:** 103x15.5x38cm

**Weight:** 20kg

Bass and treble output level switching

Magnetic grille

**Finishes:** rich walnut, natural oak, tiger ebony, graphite poplar

#### U.S.

**Price:** \$9999/pr

#### PMC USA, LLC

17952 Sky Park Circle  
Building 45, Suite A  
Irvine, CA 92614  
(949) 861-3350  
pmc-speakers.com

#### U.K.

**Price:** £4,600/pr

#### PMC LTD

+44(0)870 444 1044  
pmc-speakers.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - PMC Fact 8 loudspeaker

and effortless bass and in the fact 8 it has refined the ATL system that is largely responsible for this reputation. It's not a wall shaker in the style of the EB and PB models I've tried but it certainly delivers gravitas, and unlike its bigger stable-mates does so in an unusually unboxy fashion – this cabinet is clearly stiff where it needs to be.

The degree of resolution on offer makes it very easy to differentiate between partnering components, it was clear for instance that the Rega Osiris amplifier is not as high in terms of fidelity as a Classé pre/power. The latter delivering a lot more of the space, depth and realism of a recording while the integrated Rega times rather better and draws you into the music more effectively. When combined with the Isis CD player this system is uncannily musical, drawing out the tunes from all manner of material in effortless fashion. The result with Mimetism's 20.1 CDP and 15.2 integrated was far more dynamic, extremely fleet of foot and natural. This pairing comes in at about £10k yet seemed very well matched to the fact 8s which fight well above their weight in terms of imaging and coherence. I didn't have any of the Bryston amplification that PMC distributes to hand but imagine that it's bigger amps with their effortless power would really get this speaker jumping. Power handling is good as you'd expect of PMC and better than you expect of the drive units. But appearances are deceptive, this may be a smooth looking design with normal looking drive units but if you've read this far you'll know better.

The combination of qualities on offer here is significantly greater than the sum of its parts, the phenomenally open character reveals nuances and details that more expensive designs miss and these combine to give a far fuller musical

and more three dimensional picture than most. More importantly it lets guitarists like Henry Kaiser deliver his licks in truly blistering style.

Make no mistake this speaker is the real deal, the fact (pun only slightly intended) that it looks so good is a just a distraction. But, a very nice distraction nevertheless. The days of studio brands making studio-derived speakers with what's enthusiastically called a 'business-like' finish are fortunately a thing of the past, judging by the facts of the Fact. +



# Reference 3A Episode

## Eminently Listenable

Dick Olsher

**T**he Episode, the latest addition to the Reference 3A speaker lineup, may be fairly summed up as the Grand Veena's smaller brother. Positioned between the Veena and Grand Veena it is said to offer an easier amplifier load and greater sensitivity. The Episode uses an 8" full-range version of the Grand Veena's 6.5" main driver, but the 1" tweeter, the Murata super-tweeter, and the Bybee Quantum Purifier are common to both.

To describe the Episode's design as a two-way box speaker with a super tweeter would be superficial at best. Its *raison d'être* is a wide-range driver featuring a flared woven-carbon-fiber cone similar in shape to that of an exponential horn, except that the degree of flare is even more extreme than that, and is denoted as "hyper-exponential" by the folks at Reference 3A. The rationale for the flare is to improve high-frequency response. The wide-range driver is operated wide open without a low-pass filter. Measured by *itself* on axis (by disconnecting the tweeters), its frequency response was reasonably flat to 5kHz with extension to about 10kHz without evidence of any significant breakup resonances. Beyond 10kHz, the response starts rolling off quickly and

exhibits a "last-gasp" breakup mode centered at around 14.5kHz. Wide response and no crossover network translate into uniform phase response and excellent time domain behavior. The fly in the ointment for any wide-range driver is treble dispersion. The phase plug helps some, but even so, moving the microphone to about 10 degrees off-axis produced a dramatically different frequency response with a gentle roll-off starting at around 2kHz.

Measured full-range, by reconnecting the tweeter and super tweeter, the Episode produced a surprisingly uniform response at 10 degrees—even better than that measured on the tweeter axis. While the on-axis response highlighted a slightly hot treble range, off-axis the response gelled,



## EQUIPMENT REVIEW - Reference 3A Episode Loudspeaker

producing one of the most uniform response curves I've measured to date at my listening seat. Not surprisingly, the owner's manual recommends that the speakers "be positioned straight out to the general listening area with the tweeters on the outside and *no toe-in* to the listening position." This raised an eyebrow initially as I am accustomed to optimizing the soundstage by tweaking three parameters: distance to the rear wall, spacing between the speakers, and toe-in angle. In fact, the classic approach is to toe-in speakers so that the tweeter axes intersect in front of the listening seat. That worked very well with the Esoteric MG-20s, so naturally I felt that one of the available degrees of freedom was being taken away from me and I was determined to experiment in this regard anyway. What I discovered was that while a toe-in did help expand soundstage width and depth, the resultant sound wasn't as smooth and a bit too hot in the treble for my taste. Since the 1" tweeter rolls in around 3kHz (a first-order network), when listened to off-axis (e.g., 10 degrees), it contributes most of the upper midrange and presence region output at the listening seat. I think that this is preferable—cleaner-sounding relative to having the wide-range driver contribute much in the way of direct sound over these octaves. Conclusion: The folks at Reference 3A know what they're talking about. I suggest that you closely abide by their set-up recommendations.

The 1" tweeter features a silk dome and a copper Faraday ring. It is built to Reference 3A's specifications in Asia and is currently modified in-house for more controlled back-chamber pressure-release to minimize dome breakup modes. The Murata super-tweeter features a spherical piezoelectric diaphragm and is actually

advertised as a "harmonic enhancer." It presents a bit of an enigma in that it kicks in around 19kHz and its range extends to over 80kHz, well beyond the limits of human hearing. Precious few of us can hear anything above 15kHz, and with some program material (standard Red Book CD), there is absolutely nothing above 22kHz anyway. So it's fair to ask if there's a benefit to such a device. When I reviewed an earlier stand-alone version of this super-tweeter some years ago, I found its effect to be addictive. It helped bridge the gap between live and reproduced music. When I disconnected the super-tweeters, the effect was akin to turning off the lights—the presentation became darker and less present. It stands to reason that, in the context of the Episode, the Murata adds a dose of sonic Viagra to what otherwise would have been a soft and laid-back treble range.

The Episode benefits significantly from attention to detail, and I mean lots of little details. Reference 3A's Tash Goka reminded me of the famous quote that God is in the details, and added in jest that the details get so much attention probably because there is no crossover to play with. The main driver is mechanically grounded to the cabinet's spine brace. In addition, it is treated with Anti-Vibration Magic Fluid, which is applied much like paint in thin layers to the voice coil, cone, and shorting ring to dampen microscopic vibrational energy. Cabinet walls are constructed with different thickness of boards, ranging between 25 and 40mm, to minimize cabinet vibrational resonances. Highest-quality components are used, including Bybee Quantum Purifiers and Mundorf caps. Current production further benefits from several upgrades. Internal wiring is now PTFE-coated continuous-cast pure copper. Optimal wire thickness is used for each

driver: 0.6 mm for the tweeter and 0.8 mm for the wide range. Soft brass screws are used to fasten drivers for reduced driver/frame resonances. The floor pads and cones are now made of brass and the cones are larger and height adjustable. The binding posts and jumpers have been upgraded as well and I'm told that all connectors, internal wiring, and metal driver parts are now being cryogenically treated.

Note that a long break-in period is mandatory. With time, a slight veiling of the soundstage lifted much like the morning fog. And the midrange smooths out as well. A fair amount of effort was expended searching for an optimum amplifier match. I tried both the ModWright KWA 150 and the Pass Labs XA30.5 amps, and in both cases I admired the resultant bass reach and definition. Bass response in my room was flat to 40Hz, and I found it hard to believe that the Episode is in fact a bass-reflex design. But it is, with a box tuning of around 45Hz. Jazz bass lines were tightly controlled with almost no added cabinet signature, making it possible to resolve pitch modulation to a degree rare in a box speaker. Yet I was still unhappy with soundstage dimensions and, mainly, my inability to connect with the music. The tonal balance deviated slightly from neutral with a perceived lightening up of the lower midrange and upper bass. For all these reasons it seemed logical to try a tube amp. In went the Audio Space Reference 3.1 (300B) power amp and you should have heard the resultant "whoosh" sound as I instantly got sucked into the performance. There is no doubt in my mind that the Episode needs and wants a tube amp to sound its best. OK, so bass control might suffer a bit, but it's a small price to pay for a truckload of sonic magic. Note that the impedance

magnitude over the frequency range of 150Hz to 20kHz is quite flat and tube-amp-friendly, lying within a narrow band of 5.5 to 8.5 ohms. Expect only a minor interaction with a tube amp's source impedance.

With tubes firmly in control I could report that image outlines were solidly anchored within the confines of the soundstage, and fleshed out in palpable fashion. Depth perspective was still diminished relative to what I was able to obtain

### SPECS & PRICING

#### Reference 3A Episode Loudspeaker

**Frequency response:** 38Hz-20kHz, +/-3dB (up to 100kHz with Murata super-tweeter)

**Sensitivity:** 91dB/1W

**Power handling:** 120W RMS

**Nominal Impedance:** 8 ohms

**Weight:** 55 lbs.

#### U.S.

**Price:** \$5500/pr in wood veneer; \$5995/pr in high-gloss piano black

#### REFERENCE 3A

F342 Frederick Street  
Kitchener, Ontario  
N2H 2N9  
Canada  
(519) 749-1565  
info@reference3a.com  
reference3a.com

#### U.K.

**Price:** £5,095/pr in wood veneer; £5,605/pr in high-gloss piano black

#### ABSOLUTE ANALOGUE

PO Box 30429,  
London,  
NW6 7GY  
+44(0)20 8459 8113  
Absolute\_Analogue@email.msn.com  
absoluteanalogue.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Reference 3A Episode Loudspeaker

with the more expensive Esoteric MG-20, which has raised the bar to new heights when it comes box-speaker soundstaging. The Episode sailed right through female vocals with excellent timbre accuracy and emotional expressiveness. Male voice was uncolored—a testament to a lack of resonances in the lower midrange. String tone was luscious, and harmonic colors were portrayed vividly. There was plenty of detail in evidence, yet at no time did I perceive the presentation to be hyper-detailed. The music boogied along naturally and scored high on the listenability scale.

I absolutely hate a comatose-sounding speaker, and let me make this perfectly clear, the Episode is far from zombie-like in its reproduction of dynamic contrasts. In fact, the dynamic range from soft to loud was reproduced with plenty of conviction. However, there was occasional trouble during loud program peaks, at which point the upper midrange and presence regions congested and turned hard and shouty. This was an issue with both analog and digital program material and with both the Audio Space and higher-power ModWright KWA 150 amplifiers. The upper midrange is the transition region where the 1" dome tweeter kicks in. I wondered if the tweeter was being sufficiently protected by a first-order network, which forces the tweeter to work harder with decreasing frequency. Obviously, it is working from a power-handling standpoint, but its distortion spectrum appeared to rise significantly whenever it was hit hard. If you're looking for a speaker to deploy in a large room, I suspect the Episode is not for you.

The demise of box speakers has been greatly exaggerated. You would think that, at least in the high end, high-tech speakers such as electrostatics and planar/ribbon magnetics would

have displaced cone-driver technology. But electrodynamic speakers survived the challenge because they can be miniaturized to blend into a smallish domestic environment or be made large enough to reach levels of bass extension and dynamics unattainable otherwise. In addition, many audiophiles prefer a box speaker's soundstaging with its pinpoint imaging precision. The Episode is a case in point. No, the midrange lacks electrostatic transparency, and neither does the dome tweeter approximate the performance of a ribbon transducer. When set up as recommended, there's much to cheer and not much to complain about. The Episode is a complete package, well-engineered and executed; it sounds coherent and musical—felicitous on female voice and in harmonic colors. And you don't get cheated at the frequency extremes. In particular, bass definition and extension are excellent—as good as they get at this price point. Then there's the Murata super-tweeter, which serves to animate the upper registers. When driven within its dynamic comfort zone, the overall presentation can best be characterized as eminently listenable—lively and engaging without being assertive. At its asking price, the Episode represents a superb deal for music lovers and audiophiles alike. **tas**







## Rega RS5

**Affordable and Musically Satisfying**

**Wayne Garcia**

**F**or most of us who have followed England's Rega for the past 30 or so years, the name conjures thin-slab turntables of ultra-simplicity and high-performance-to-cost ratio. What many do not realize, or may be barely aware of, is that Rega also builds really good electronics and, yes, even loudspeakers. The company successfully made the transition from a relatively small craftshop into a fully modern manufacturing company, occupying a 30,000+ square-foot factory and design center that employs more than 50 people. The entire production is dedicated to two-channel products. Rega makes most of the parts in house, and uses local suppliers whenever possible.

## EQUIPMENT REVIEW - Rega RS5 Loudspeaker

This polymorphous nature is but a part of the Rega story. More significantly, even in the days when nearly every other manufacturer decided that home theater was the most likely path to long-term prosperity, Rega held firm to its dedication to good old-fashioned stereophonic sound. Put another way, Rega never felt that you had to sell bags of popcorn in order to get music lovers to stay in their seats. Just good, engaging, and compelling sound at workingman's prices. Adding to the firm's iconoclasm is this: In a day when outsourcing is about as commonplace as a Republican sex scandal, Rega does not outsource. While many a fine product is built overseas (see B&W above), Rega builds all its gear in the U.K., and sources pretty much all its

### The Rega opened a large window on the sound

component parts from local suppliers. Funny, isn't it, how this sort of backward thinking suddenly seems very *forward* thinking?

Now, I've been a Rega fan for a long time. I once sold mountains of its turntables at retail, and have reviewed nearly as many of its products over the years. But the \$1600 RS5 is not only the first Rega speaker I've reviewed; it's one of the few I've ever heard. According to U.S. importer Steve Daniels of the Sound Organisation, the RS5 is the first RS-series Rega speaker to be reviewed on these shores.

Like B&W's CM7, the RS5 is a relatively

tiny tower design. And while it may not be as "finished" as that model—it lacks the sexy gloss cabinet, slick metal work, and overall refinement mentioned above—this is a speaker that, from the first notes, tells you it's got something special to offer.

Listening to Bright Eyes' *I'm Wide Awake, It's Morning* [Saddle Creek LP] revealed an outstanding balance between Conor Oberst's introspective, slightly quivering voice, the shimmering clarity of the acoustic guitars, and the rumbling, beautifully defined drums. The Rega RS5 opened up a large window to the sound that, while focused and grounded, seemed at the same time to blossom beyond the boundaries of the cabinet.

This open window to the event would confirm itself on records ranging from Neil Young's *Live at Massey Hall* [Reprise CD], where Young's voice and big ol' Martin dreadnought are engulfed by the venue's ambience and enthusiastic crowd, to Donald Byrd's *The Cat Walk* [Music Matters Blue Note LP (review this issue)], where you virtually get to peek in on a Rudy Van Gelder recording session, to a seat at Ligeti's comic nightmare opera *Le Grande Macabre* [Sony CD], a stunning recording that pretty much defines words such as "transparent" and "palpable."

I believe that much of this quality begins with Rega's cabinet, available in natural cherry or black ash veneers, which is relatively lightweight and quite rigid. The midrange driver is sealed within its own chamber, tweeter below, while a bass driver fires out the side and a front-loaded vent hovers near the enclosure's spiked bottom.

The side woofers and front vents also allow

for quite a bit flexibility when it comes to room placement—woofers inside or out depending on proximity to sidewalls, with the front ports allowing for closer to rear-wall placement in smaller rooms.

The new, hand-assembled-in-house HF20-ZRR tweeter is a Rega-designed silk dome with excellent detail, air, and smooth response. The midrange and bass units are also built in house, and Rega's RR125 mid/bass driver should be singled out for its musicality and integration within the design. Rega also boasts of its simple, easy-to-drive crossover networks, which are in keeping with the company's "less is more" philosophy.

Returning to Wilco's new record emphasized the RS5's strengths—excellent clarity, an uncluttered stage, natural tonality, a large transparent presentation, and fine focus. Its tonal balance is nearly spot-on, though some, no doubt, will prefer a more muscular sound.

And while this was never intended to be a "shoot-out" review, it's more or less impossible not to draw a few general comparisons. Where the CM7 is rich, bold, and dramatically upfront, the RS5 presents a leaner, more chiseled sound that invites you in.

And here I can't help but draw an analogy to wine. Take one varietal, say, Pinot Noir. One producer makes a big, velvety, fruit-forward version, while another's is lighter and less overtly fruity. At day's end you have two very different yet equally satisfying expressions of the grape. **tss**

## SPECS & PRICING

### Rega RS5

**Type:** Three-way, floorstanding front-vented loudspeaker

**Driver complement:** Rega HF20-ZRR tweeter, RR125 midrange, 7" side-firing woofer

**Sensitivity:** 89dB

**Impedance:** 6 ohms

**Recommended amplifier power:** 30-500Wpc

**Dimensions:** 9.7" x 32.7" x 9.7"

**Weight:** 26.5 lbs.

### U.S.

**Price:** \$1600/pr

**THE SOUND ORGANISATION**  
159 Leslie Street  
Dallas, Texas 75207  
(972) 234-0182  
soundorg.com  
rega.co.uk

### U.K.

**Price:** £898/pr

**REGA RESEARCH**  
6 Coopers Way,  
Temple Farm Industrial  
Estate,  
Southend on Sea,  
Essex SS2 5TE  
rega.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](#)

# Sonus faber Liuto Tower

## The Bad Boy from Italy

Neil Gader

I'd just finished shutting off the system after a lengthy session listening to a wide range of LPs. There was The Police's *Synchronicity*, a smattering of Jennifer Warnes and Holly Cole and Tom Waits, and, just for good measure, the Atlanta Brass Ensemble performing Copland's *Fanfare For The Common Man* on no less than the classic Crystal Recordings direct-to-disc LP. As the mighty Plinius Hiato integrated amp (with 300 raging Aussie watts per channel) cooled down I began noting my impressions, I thought to myself, *mamma mia*, a speaker even Slash would love. Meet Liuto, the latest addition to the Sonus faber family. The name is Italian for lute but any resemblance to the baroque-era gut-string instrument brought to life in concert by virtuosos like Julian Bream, Narciso Yepes, or John Williams is purely coincidental. This is the speaker your mother warned you about. One that'll get you blacklisted by that stuffy condo homeowners association. Yes, a Sonus faber—the same manufacturer known for its elite *Homage Series* speakers christened with iconic names like *Guarneri* and *Stradivari*. The Liuto is the devilish bad boy of the lineup with no respect for its elders.

Technically, the Liuto replaces the *Domus* line, and falls between the *Toy* line and the *Classic* models like the \$13k *Cremona M*. It's available not only as the floorstander considered here but as the *Monitor*, a stand-mounted compact, and the *Smart*, a multipurpose surround/center channel. While Liuto maintains classic Sonus visual cues such as the lute-shaped side panels, Liuto is a cleaner, more contemporary take that should be an easier and more décor-neutral fit into most rooms. Dressed in a glossy rock-star black finish, Liuto is

positively stunning. The only awkwardness is that the outrigger-style spiked footers stabilizing the rear have not been carried forward to the front—a visual mismatch.

The Liuto is a three-way, vented, medium-sized floorstander roughly 41" tall. It uses all new drivers including a 6" polypropylene/textile midrange, a 9" aluminum/magnesium woofer, and a return to the larger 1" soft-dome tweeter of earlier models. Its sensitivity and impedance suggest it's an easy speaker



## EQUIPMENT REVIEW - Sonus faber Liuto Tower loudspeaker

to drive, and sure enough lightweight amps will do the job, *kind of*. But as is always the case in audio the more watts you bring to the party the more good things are bound to happen. So it was with the Liuto.

John Hunter of U.S. importer Sumiko told me the Liuto reminded him of early SF designs like the Electa and Electa Amator. The difference is the improved speed of the newly developed damped-aluminum-cone woofer. In opting for the speed and slam of the new driver and in order to maximize its potential, a lower crossover point of 350Hz was required. Sonus therefore needed a midrange that could kick in at a lower frequency and a tweeter which could also perform a half-octave lower. Enter the large chamber soft dome instead of the smaller-surface-area ring radiator of Sonus Domus models. As Hunter explained, for Sonus, this has always been the order of things—the primary directive is to get the drivers right and the crossover will fall into place, rather than “fixing it in the mix.”

Sonically the Liuto applies its handiwork with a familiar Sonus blend of midrange warmth, instrumental detail, an enveloping soundstage, and low-frequency extension that seems comfortable well into the 30-cycle range. It’s a signature sound that embodies the kind of *va-va-voom* sensuousness you can sink into. Like the perfect *doppio espresso*, complete with golden *crema*, there’s a slightly darker tonal character to the weighty, chocolaty low-end, and an appealing treble that is detailed but doesn’t skew to the clinical. As good as the bass is (and it truly is *robusto*) it will require some serious attention to placement or it can get a bit thick and unruly (as deep bass does if not optimized). Find the sweet



This is the speaker your mother warned you about. The one that will get you blacklisted by that stuffy homeowner’s condo association.

spot, however, and the low frequencies impart a wonderfully tactile impression that lets you hear the skins of drums, the fingertips lighting on the strings of a standup bass, any kind of deep acoustic instruments that sends low-frequency ripples into the air. Is it the fastest bass I’ve heard? No, but it’s very good, especially for a bass-reflex design of this magnitude. The Liuto’s treble region has the knack of balancing articulation and refulgent harmonics while steering clear of raw edginess. The brass ensemble from Holly Cole’s “The Briar and the Rose” [Alert] is one of my favorite tests. It can and has sounded horribly synthetic, but the Liuto conveys the specific natural timbre of each player, all superbly delineated.

Dynamics could be the biggest story here. At micro and macro levels, the Liuto really turns up the heat on many fine two-ways, 2.5-ways, and even some three-ways. Lively would be an understatement—call Liuto, Sonus Unchained. For example the massive arrays of percussion and tympani during *Fanfare* swept across the soundspace like cascading howitzers evincing an utter lack of smearing during the full-bore brass passages. Likewise, string-section layering, microdynamic interplay, and depth cues were vividly and authentically rendered.

Almost as impressive is an all-encompassing soundfield that moves energy into every corner of the soundstage. Orchestral depth is simply stunning. Even in my small room I could hear

the mass of chorus and horns layered along the wall behind the speakers as I listened to the final movement of Beethoven’s Ninth in the Solti/Chicago version [Decca]. I don’t hear a Jekyll and Hyde split between on-axis and off-axis behavior that tends to lock heads in a single position. I’d guess its power response measurement is likely

### SPECS & PRICING

#### Sonus faber Liuto Tower

Type: Three-way vented box

Drivers: 1" fabric dome tweeter, polypropylene/textile 6" mid, 9" aluminum/magnesium alloy woofer

Frequency response: 40Hz-25kHz

Sensitivity: 89dB

Impedance: 8 ohm

Dimensions: 40.6" x 9.3" x 16.25"

Weight: 66 lbs.

#### U.S.

Price: \$5998/pr

#### SUMIKO AUDIO

2431 Fifth Street  
Berkeley, CA 94710  
(510) 843-4500  
sumikoaudio.net

#### U.K.

Price: £3,371/pr

#### ABSOLUTE SOUNDS

58 Durham Road,  
London, SW20 OTW  
+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Sonus faber Liuto Tower loudspeaker

excellent.

It's a matter of taste whether one will object to the soothing quality that the Liuto applies to vocalists. It's a subtle inflection but as I listened to Tom Waits perform "Georgia Lee" and "Take It With Me" from his *Mule Variations* LP [Anti/Epitaph] I came to the conclusion that a portion of his throaty near-guttural presence was slightly weakened. It was indeed the same voice, but through the Liuto it sounded as if Waits had just downed a hot tea with honey and lemon; the pointy shards of vocal grit and gravel had been smoothed over. For female singers, however, this tonal equation resolved somewhat differently. During Jennifer Warnes' "The Ballad of the Runaway Horse" from *Famous Blue Raincoat* [Shout/Cisco], the Liuto pulled a bit more articulation and transient information from her voice, which lent the track a slightly drier, tighter character. In the upper mids there was brief dry patch as if a bit of energizing air had escaped the soundstage. In my

the lateral spread of the speakers in my room and distancing the sidewall reflection point a few inches. It improved the body and the centering of the vocal and pulled the singer into stronger focus.

Since the Liuto was designed to bring much of the performance of the Cremona M to a less lofty price point, comparisons to that vaunted speaker are inevitable. The Liuto fares well even though it is a different animal. The Cremona M is a bit flatter tonally across the octaves, goes a bit deeper, and commands greater control. It also exhibits a more exacting top end. However, it may not be quite as viscerally exciting. Like I said the Liuto has this effusive and unabashed party animal signature whereas the Cremona M seems a bit more buttoned down and thoughtful about each note it reproduces. And it's pretty much a dead heat on transients. The Liuto's interdriver coherence is very good for its price, but depending on the recording there isn't quite the same of-a-piece quality as the

the Cremona's stomping grounds, which is very good news for the prospective Liuto buyer.

The Liuto may not possess the last scintilla of nuance or the haughty finishing school behavior of the Cremona and the Homage Series flagships but it's a high-voltage performer, both infinitely entertaining and musical. It's also a flat-out great value—not a virtue always associated with Sonus faber. In fact during these hard luck times for everyone's beaten-down 401(k), the Liuto might be just the stimulus we've been waiting for. Pound for pound, dollar for dollar, it's the best speaker in the proud Sonus family. **tas**

The Liuto may not possess the last scintilla of nuance or the haughty finishing school behavior of the Cremona and the Homage Series flagships, but it's a high-voltage performer.

view, more a small subtraction than a weakness, but unlike the Waits, which maintained an overall warmer tonality, the Warnes cooled the sound slightly. Ultimately I found that I could improve this coloration somewhat (not entirely) by reducing

superbly integrated Cremona M. And neither has the point-source single-driver-style coherence of a great two-way like my reference ATCs. Fact is, for less than half the cost of the Cremona M, you'll be getting a speaker that comes mighty close to





EQUIPMENT REVIEWS

# Loudspeakers \$10k-\$40k

THIS SECTION  
BROUGHT  
TO YOU BY  
QUAD



# Audio Physic Cardeas

Welcome to the new Europe!

Alan Sircom

There something reassuringly European about the Audio Physic range. Elegantly designed, subtle and very well thought out, the range is well-built, priced intelligently and manages to be popular both with the flat-earth crowd (after a bit of quality away-from-the-wall speaker action) and collectors of high-end Americana wanting a loudspeaker that fits in with our European design sensitivities.

The Cardeas is second from top in the Audio Physic range, but the Kronos flagship is long in the tooth now. And for once, Audio Physic trickles technology up, not down. The key stories in recent tales of Audio Physic centre around the company's Hyper Holographic Cone Technology, which first appeared in the Avanti and Virgo 5 models further down the line. Then came Cardeas, which takes the technology up a notch or six. In Greek mythology, Cardea was the goddess of protecting the home, but at 55kg, it's probably your spine (rather than the door hinges) that needs protecting.

Cardeas is a sealed box loudspeaker, medium-large by European standards and it requires a relatively large room in Eurozone terms too. This is in part because the Cardeas is a deep loudspeaker that needs to be a metre or so away from side and rear walls and needs to be a good 2.25 metres apart. But the old Audio Physic recipe of firing across the width of the room, with speakers set far wider than usual is not required here. It's more conventional in layout and room design.

What hasn't changed is the narrow front baffle that made Audio Physic so ground-breaking in the first place. The slimmer the front of the speaker the better the imaging, but with that imaging comes increased diffraction effects causing unwanted peaks and dips in the frequency response (this is usually perceived as increased coloration instead of obvious frequency anomalies). There are many ways around this (horn-loaded drivers, stick-on cork or foam surrounds, and the rest). Audio Physic's plan has been to use incredibly careful drive unit placement to minimise diffraction, but ensure the drivers are doing their level best to prevent diffraction effects in the first place.

Part of that is the use of the new Hyper Holographic Cone driver technology; yes, Audio Physic takes the rare and difficult path of designing its own drivers. In the woofer, this custom driver uses an aluminium frame with a plastic inner basket (most designs use plastic or metal, not the two together) allowing the heat dissipation properties of the former to blend with the improved damping of



## EQUIPMENT REVIEW - Audio Physic Cardeas loudspeaker

the latter. In the tweeter, Audio Physic went right back to the foundation stones of box speaker design and has just reinvented the cone tweeter for the high-end, albeit a cone tweeter with a dome sealing element presenting to the listener. Cone tweeters went out of fashion years ago, because they were either too stiff or too heavy, resulting in a tweeter that quacked like a duck or rolled off not long after the top registers of a bass guitar. Much of those problems were due to the relatively limited materials on offer some time ago and new low-mass, soft materials effectively solve those problems. The result is effectively the

elimination of the ringing effects that can plague dome tweeter designs. A foam surround aids the reduction of diffraction effects and Audio Physic's neat Active Cone Damping system (a silicone/rubber ring on the outer ring of the cone pushing back on the cone during its excursion) helps cut down ringing still further. All the drive units are ceramic-coated aluminium designs.

The result is a big, passive three and a half-way design with a 260mm side-firing bass unit, two 150mm mid/bass units, another 150mm unit as midrange and a 39mm dome on cone tweeter.

Isolation is a key part of the Cardeas ethos. The

inside of the cabinet is multi-chambered to isolate the individual speaker 'ways'. The tweeter, mid, mid-bass and each individual WBT binding post are independently mounted on what Audio Physic calls its String Suspension Concept, while the tweeter's crossover is directly wired, eliminating the need for potentially resonant PCBs in the high-frequency region. The WBT posts already rest in the company's Vibration Control Terminal; to then further isolate them from the surroundings is either gilding the lily or taking vibration control very seriously. Either way, it's impressive from a taking things seriously point of view.

This is one of the most character changing speakers out there. Out of the box, you'll get on the phone and start moaning because the speaker sounds 'pony' (Cockney rhyming slang — Pony and Trap...). A week of through playing later, a magical transformation happens and everything beds in nicely. We used the Cardeas in a system comprising Oracle's sweet-looking, top-loading integrated CD player into a Belles VT-01 pre and 200 watt mono power amps. This made a perfect match for the loudspeakers, and fits nicely into the 40-350W amp recommendations Audio Physic suggests for the Cardeas. From a bit of experimentation, when it comes to power amps, transistors are your friends but tubes should be approached with caution. It's not a tough load, but those bass drivers could go all 'plummy' when used with an amplifier that thinks damping factor is something to do with a barometer.

The Cardeas does everything Audio Physic traditionally does well, great imaging, clean and detailed presentation, crystal clear midrange tonality, but with more, and more bass to boot. This was perhaps one of the stumbling blocks of

previous Audio Physic products like the classic Step; the cheaper models were ideal for small rooms, but the bass was either MIA or slightly out of, ahem, step with the rest of the performance.

The Cardeas has a clever and revelatory bass. It's not there until you need it, then it kicks in perfectly well, perfectly accurately, perfectly



### SPECS & PRICING

#### Audio Physic Cardeas

Three and a half way floorstanding loudspeaker  
Infinite baffle design

**Driver Complement:** 39mm HHCT cone tweeter

150mm HHCM midrange

2x 150mm HHCM mid/bass units

260mm bass driver

**Frequency Response:** 25Hz-40kHz

**Sensitivity:** 89dB

**Impedance:** 4 ohms

**Dimensions (WxHxD):** 30.5x119x59.5cm

**Weight:** 55kg

#### U.S.

**Price:** \$30,000/pr  
(regular finish)

\$32,500/pr (special  
finishes)

#### DIMEXS INC.

9692 Trans-Canada Hwy  
Montreal, Qc, H4S 1V9  
888-384-1555  
dimexs.com

#### U.K.

**Price:** £16,500/pr  
(depending on finish)

**AUDIO PHYSIC**  
audiophysic.de

Distributed by  
**C-TECH AUDIO**  
+44 (0)7738 714 619  
c-techaudio.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)



## EQUIPMENT REVIEW - Audio Physic Cardeas loudspeaker

deeply. There's a very slight warmth to the upper mids; mild enough to pass unnoticed on any normal speaker, but the clarity of the rest of the Cardeas is so remarkable that its mild warmth (it makes a dreadnought acoustic guitar sound more like a jumbo acoustic guitar) is apparent. The fact that it's only noticeable on specific instruments — and really likely only noticeable to someone who gets the difference in tonality between a dreadnought and a jumbo — paints it as really mild. Like so mild, you'd forgive it on a speaker costing twice as much.

Ray LaMontagne's *Trouble* exemplifies precisely what is good about this loudspeaker. The loudspeaker is perfectly good at processing his unique blend of alt.folk and alt.country, making the presentation musically enticing and articulate. What it also does is act like your inner musicologist. The level of detail in the mix makes you pick out not just all his performance, but the performance of those who influenced him. One track sounds like he's singing with the Band, another sounds like he's standing in for Van Morrison and so on. The same applied to the excellent eponymous XX album — all those 'Nico sings while Joy Division meets the Cure' dismissals on tracks like 'VCR' are valid, but behind that is a new band that actually has something of a bass-line. That's crystal clear here.

These are some of the cleanest, driest sounding loudspeakers I've heard, but in

an entirely correct way. They will make almost any other loudspeaker sound like it's got a righteous overhang and a bass boom. Don't take that 'dry' sound for 'light'... this is a deep, powerful and dynamic sounding loudspeaker, just not one that adds any sense of excess fat to the sound. This might be disconcerting for people more used to the box joining in with the musical celebration, but it makes things like Little Feat's *Dixie Chicken* (on Mobile Fidelity) sound more like you are in the studio than in the listening room.

And out of the listening room, too. It's one of the secret acid tests of any good speaker system. If it sounds good outside the room, it's often doing something right. By removing your direct attention to the sound and listening to it at one remove, you hear almost unconsciously how the system sounds in terms of musical cohesiveness and dynamic drive. It's here that these speakers sound pretty damn fantastic. Kenny Burrell's *Midnight Blue* is a fine example of this. Cool guitar, sax and percussion

jazz from the late 1960s, it's not that difficult to get this to sound good in the listening room, but walk out of the room and it often sounds remarkably flat. Not here, the sound is like the guys hanging

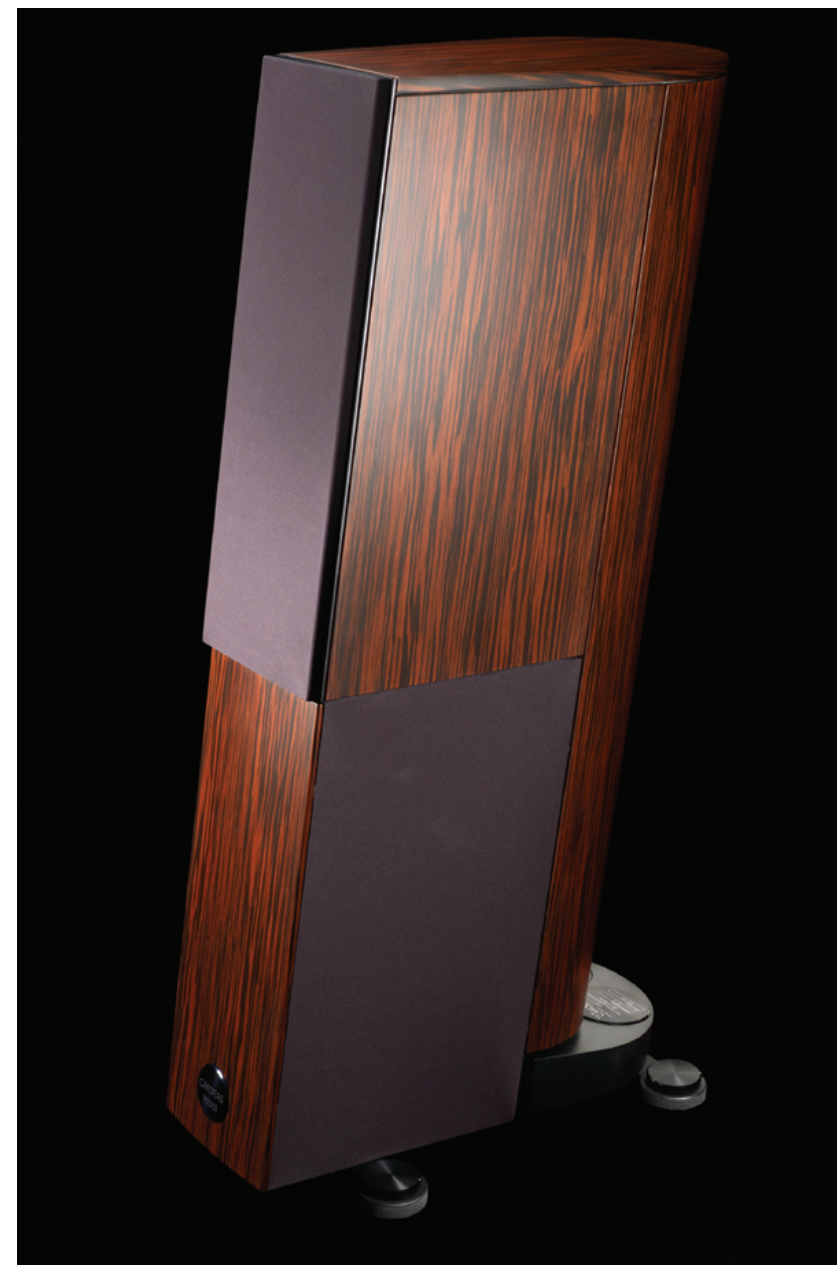
out in your living room. Short of donning an Austin Powers outfit, calling people 'hep cats' and having drummers called 'Clem' on speed-dial, this is as close as you can get to recreating the event in the home. Niiiiice.

One of the things I've always admired about Audio Physic is their inability to shout music at you. In this respect, they are very much like the best BBC designs, only without the sense of restraint some of those thin-walled loudspeakers bring to the party. But where the BBC designs are almost frozen in time (thanks to that part of the corporation being closed down), this is the speaker for those who want to take that classic line of development a step further from a sonic standing. This loudspeaker raises that power exponentially. The tweeter is the sort of understated player that never gets in the way of anything, and it's only when you go back to other brash, tinny, tizzy, hard, soft, bright or dull sounding tweeters, do you realise what Audio Physic is doing is so very right in

“They will make almost any other loudspeaker sound like it's got a righteous overhang and a bass boom.”

this speaker. That extends further down the audio band than usual, too, with remarkably honest sounding midrange and bass.

This helps make sense of



## EQUIPMENT REVIEW - Audio Physic Cardeas loudspeaker

Shostakovich's Trio for Piano, Violin and Violoncello, which is one of those strange pieces of music that often sounds more musically coherent the smaller the system is. It sounds fantastic and entirely understandable when you play it in a car, but often full-range systems focus your attention on the fireworks at the expense of the musical themes going on behind that. This still gives the weight to the music, but adds in a lot of the musical information that is left behind by many more 'flashy' systems.

Imagery is an interesting issue with the Cardeas. Like much of the overall performance, it doesn't grab you, but gently impresses you with its unforced, natural soundscapes. At first, it takes some getting used to, because so many products try to paint so obvious an imagery picture that they could make mono sound like surround sound. Put on something rich and deep — like Ali Farke Toure's last album — and the soundstage fills out. Instruments and voices hang in the space between the speakers like they were nailed there. Then replace it with something more close miked and lacking in air — like the Vampire Weekend album — and the soundstaging goes away. But not the fun — this poorly recorded album is the polar opposite of what constitutes good audiophile recording, but is full of the sort of energy that the modern music scene is so good at. Many high-end speakers will reduce this to the unlistenable pile; the Cardeas doesn't 'pretty up' the sound, but it makes it sound enjoyable.

If there's a drawback to this, it's that many who are in the market for a big statement loudspeaker are after big statement sounds. This is like the best two-way loudspeaker grown tall, with none of the problems you can sometimes get with

a too-large two-way. That's a recipe for tightly focused sound and real-world instruments, but if you are wanting 200' tall pianos and piccolos with added 64' organ pipes, look elsewhere. I'm exaggerating somewhat, but those who equate high-end with 'big audio' will find these speakers wanting... for all the reasons that make them a world-class design.

Audio Physic's latest docks alongside some serious players in the high-end world — all the big high-end loudspeaker names have products at this price point, although some of these brands consider the Cardeas' price to be an entry point. This was a concern, because it would be so easy to come up with a loudspeaker that adds nothing that wasn't covered by the rivals. Instead, the Cardeas manages to add to the pantheon of high-end. If you are tired of large-scale loudspeakers sounding big and fat and boomy in the bass, and want something that delivers big speaker scale with all the fast, precise and detailed performance of a neat little two-way loudspeaker, this is arguably the best of the bunch. +



# "The Finest Loudspeaker on the planet"

Ask many of the most respected music industry professionals in the world what their speaker of choice is - the answer is surprisingly common. The Quad ESL opens a window on a recording unlike any other speaker.

More hi-fi critics regard the Quad ESL as an absolute reference for their listening than any other loudspeaker. They are regularly praised by leading magazines, winning Golden Ears from The Absolute Sound (USA); and not just 'Product of the Year', but also 'Component of the Year' from Stereophile (USA); a Diapason D'Or award (France); and a 'System of the Year' award from Hi-Fi News magazine.

For those involved in the recording industry, their reputation is unsurpassed.

The transparency of their reproduction has won them many fans. For professional musicians and studios, this is an invaluable asset. It allows them to hear exactly what has been recorded in perfect balance.

Because of their speed and neutrality, they are unaffected by the overhang and self-imposed character of moving-coil alternatives.

Using the Quad ESLs for listening at home, you can be sure that your experience will mirror that of the concert hall. You will hear detail and depth never before noticed and each listening session will draw you into the music - transforming your appreciation of every great performance and every great recording.

*The perfect reproduction, without colour. Natural and detailed. Nothing can surpass the relaxed and absolutely neutral presentation of the Loudspeaker regarded by critics simply as*  
....the closest approach to the original sound

**"I have to say that this is the finest speaker on the planet"**

– Ken Kessler, *Hi-Fi News*

**"I know of no other speaker I'd rather own, regardless of price"**

– Sam Tellig, *Stereophile magazine*

**"By the highest standards, the 2905s get everything right to a degree that had me shaking my head in awe"**

– Noel Keywood, *Hi-Fi World*

**"One of hi-fi's true classics redefined: this is the best Quad electrostatic design ever, and a truly world-class speaker"**

– *What Hi-Fi? Sound and Vision*

Taiga LLC, 310 Tosca Drive, Stoughton MA 02072 - Phone 781-341-1234 - Email [info@taigallc.com](mailto:info@taigallc.com)



# QUAD

# Focal Diablo Utopia

Future Perfect...

Chris Thomas

I recently realised that I have reviewed no fewer than six Focal speakers for Hi-Fi+ over the years, so I can't hide my general admiration for them. For me the most interesting have always been those designated Be, as that suffix denotes the speakers that use their famous Beryllium tweeter, first seen in the second generation Utopia collection more than six years ago. To my ears this inverse-domed unit not only instantly set a new standard but also made many other speakers sound dull and dated. Initially it was only seen in the flagship Utopia models, but variations were soon available in the more affordable Electra range. The unit's high frequency extension has never been in doubt, but in more recent versions, Focal has extended its working range downward, further into that territory usually covered in two-way stand mounts by the bass/mid driver. There was a lucidity and tonal illumination to the balance of those new speaker models; one that I felt sure would soon carry over into a new Utopia range, as and when it appeared.

The Micro-Utopia Be has been my personal loudspeaker choice for several years, employed in countless reviews. It is a testament to Focal that, until recently, I hadn't found any other stand-mount speaker that could match its unique balance of attributes. I have heard other superb HF units of course. The ribbon in the Eben C1, the twin-ribbon in the JAS Orsa, Piega's extraordinary magnetostatic mid/hf driver in the TC 10X and the Scanspeak ring radiator in the Wilson Duette are

all excellent in themselves, but it is their design implementation that really counts. Both the Wilson and the Eben are so successful because they are superbly integrated with their respective cabinets – and with the very different bass/mid drivers they sit above.

Fast-forward to summer 2008, thirteen years after the very first Utopia series appeared and the rumours that Focal have been working on the third generation range are confirmed as the



## EQUIPMENT REVIEW - Focal Diablo Utopia loudspeaker

### RUNNING-IN AND A READER HEALTH WARNING...

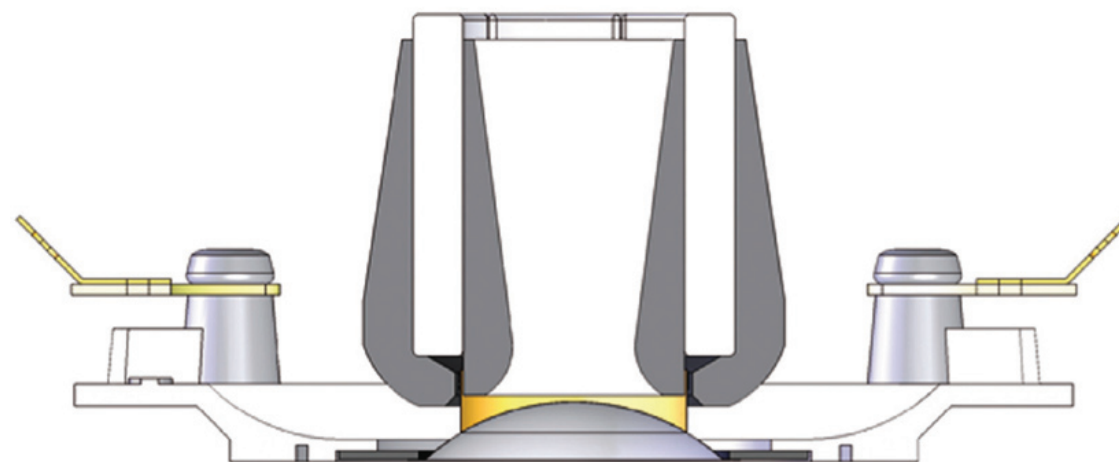
The rather striking pair of red Diablos you see in the photographs were not the actual pair I reviewed. Due to schedules, logistics and RG's (thankful) insistence that I was supplied with a fully run-in speaker, I used a black pair for the listening. These, as I understand it, had been soundly and continuously thrashed for some considerable time, so they would be ready to go when I first plugged them in. As you see from the review, I loved them. But then I took delivery of the red ones and heard just how bad a pair of brand new Diablos can really sound. The difference between the two versions was simply staggering. So, on no account audition a pair of these speakers that have not already had extensive use, because if you do then you will certainly wonder what all the fuss is about and that would be a real shame.

Grande EM, Scala and Diablo are announced. Focal's design team believe that they have a tremendous advantage over most of their competitors, in that they manufacture just about the whole loudspeaker in-house. Apart from a driver's chassis and magnets they control every other facet of production, allowing them to start at the top by designing the flagship model and then incorporate what they have learned through their

extensive research into the models lower down the range. Having spent a couple of days recently being shown around both the driver manufacturing facility and the separate cabinet workshop, I must say that the whole set-up is enormously impressive. As well as retaining control over all aspects of production, a situation that frees them from reliance on sub-contractors, this level of integrated manufacturing also allows them to react quickly and decisively to changes in technology or the market. For example, few manufacturers these days actually build their own cabinets and many high-profile speaker brands out-source the work. Which approach is best depends on the individual business concerned – and the technology and materials involved. The investment in machinery required to create the boat-backed, multi-ply cabinets used by B&W (amongst others) would clearly be beyond a single speaker company, the manufacturer in this instance off-setting the cost across multiple markets, products and customers. But more traditional methods don't require such heavy investment, and there is also the cultural aspect to be considered, something that I believe is very important to Focal.

#### The Cabinet

The cabinets are made in the Burgundy region of France, at Bourbon-Lancy in a factory that looks and smells like the studio of an instrument maker, though MDF and interesting veneers are their materials of choice, as opposed to exotic hardwoods. The whiff of wood, glue and lacquers permeates the various sections of this old artisan shop that started life building fine furniture in 1939. I watched the cabinets for the Diablo take shape and pass through complex cutting, gluing,



sealing and sanding stations before finally being ready for painting and final finishing, prior to being shipped two hours south to St Etienne for driver installation. Focal's design goal is to ensure that all of the magnet's power should drive the cone rather than moving the cabinet. Where the first Utopia range featured lead-lined cabinets to add mass, the second series saw the lead removed in favour of what they call Gamma construction. This aimed at providing enough stiffness to resist internal vibration by using massive cabinet walls. The third generation though, takes these concepts much further. Now the whole structure has been re-thought with the aid of resonance analysis



and vibration cartography that shows a three dimensional representation of the cabinet's movement under load. Take a closer look at that bass enclosure and you will see that the Diablo has a far more complex, tapering shape than the Micro. Sheer mass though is not the only answer, despite having a 50mm baffle. The cartography data analysis also allowed them to strategically locate internal bracing to keep the cabinet walls as inert as possible without having to resort to panels of absurd thicknesses. The result is a significantly more effective and an altogether more elegant solution. The reflex system survives but has moved and is now a laminar slot port on the front of the cabinet,

## EQUIPMENT REVIEW - Focal Diablo Utopia loudspeaker

beneath the larger driver rather than between it and the tweeter.

### The Drivers

The W-sandwich driver was one of the key elements of the original Utopia line. This laminate cone is based around a foam core, of varying thickness according to application, and ultra-thin glass coats layered front and rear, from one to three deep. In this way Focal can shape the response curves of the drivers and choose the damping levels, whether it is to be used as a midrange or bass driver. The new Utopia range still employ this construction but, critically, the cone edge is now precision laser cut with the exact edge profile required, before being glued to the roll surround. This is a key factor in improving driver performance and consistency, as the accuracy of this join is absolutely crucial to the driver's behaviour and Focal are extremely keen to point out the huge performance gains this expensive procedure has bought about. The arrangement of Power Flower magnets on the rear of the Diablo's 165mm woofer remain, but these have also been modified, along with the chassis, spider and voice-coil, aimed at reducing magnetic leakage and increasing driver efficiency.

The Electra Be range was the first time Focal introduced the IAL (Infinite Acoustic Loading) tweeter. The objective was to operate the driver loaded in a tuned cavity. For the IAL 2nd generation, installed throughout the new Utopia line, the concept has been further developed. This necessitated opening the rear of the tweeter by redesigning the whole magnetic assembly and shifting it from the back to the sides of the unit. The inverted Beryllium dome enabled them to maintain



an extremely low moving mass (Beryllium is two and a half times lighter and seven times more rigid than Titanium for the same mass) and push the response down to achieve both low frequency extension and reduce the resonant frequency. By operating the rear of the driver into free air Focal's approach seems to be conceptually similar to Eben, who went to enormous lengths to remove the magnet system and general superstructure from the rear of their bass/mid driver, to startling effect. The lack of reflected energy and thermal compression are just as obvious here. The Neodymium magnet arrangement is now a five-section encased design, looking rather like a jet engine, extending lengthways backward from the dome circumference. The dome size itself has increased slightly to 27mm and the new Poron surround is also considered by Focal to be vital to the unit's stellar performance. The range now covered by the tweeter is from 2.2kHz to 40 kHz and this means that the critical area between 2 and 5kHz is now handled by an ultra responsive light dome rather than a bigger, midrange driver and therein lies one of the key reasons why the Diablo does what it does to such startling effect. The tweeter sits in its own enclosure with the same profile as the bass cabinet, the cavity behind the unit tuned to act as a Helmholtz Resonator at the resonant frequency of the tweeter itself, thus damping the impedance peak. Damping this resonance with the Helmholtz reduces distortion considerably and its effect is felt throughout the bandwidth.

The build quality and finish is exemplary. The Diablo bolts directly onto the steel top-plate of what is unquestionably the best stand that Focal have ever supplied. It's solid 40mm MDF base

mirrors the shape of the speaker cabinet as does the sand-filled aluminium pedestal and the angle of the speaker's time-aligned baffle is continued through the rake of the stand. If you have a wooden floor I would suggest that you use the heavy-duty spikes provided, with floor protectors, as the alternative of rubber inserts softens the speaker's

### SPECS & PRICING

#### The Focal Diablo Utopia

**Type:** Two-way, stand-mount reflex-loaded speaker

**Drivers:** 1x 165mm "W" Cone Power Flower Woofer  
1x 27mm IAL 2 inverted Beryllium dome Tweeter

**Bandwidth:** 44Hz-40kHz +3dB

**Sensitivity:** 89dB

**Nominal impedance:** 8 Ohms

**Minimal impedance:** 4 Ohms

**Crossover Frequency:** 2.2kHz

**Dimensions (WxHxD):** 258 x 431x 427mm

**Weight:** 20kg

**Lacquered Finishes:** Warm Grey, Piano Black, Imperial Red

#### U.S.

**Price:** \$13,990/pr (with stands)

#### AUDIO PLUS SERVICES

156 Lawrence Paquette  
Industrial Drive  
Champlain, NY 12919  
(800) 663-9352  
audioplusservices.com

#### U.K.

**Price:** £7,899/pr including stands

#### FOCAL UK

0845 660260  
focal-uk.com

#### FOCAL

www.focal-fr.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](#)

## EQUIPMENT REVIEW - Focal Diablo Utopia loudspeaker

remarkable leading edge clarity. When it comes to positioning, room layout will obviously be a consideration, but generally the advice must be to operate them in as much free air as space affords to allow them room to breathe and certainly keep them as far from sidewalls as possible.

Like all high quality speakers, the Diablo puts a magnifying glass to the rest of the system that comes before it and believe me, this particular speaker throws things into pin sharp focus as it is as revealing as a stand mount gets. It can't really be looked upon as a Micro Utopia Be replacement as about the only thing they share is the single pair of WBT connectors. Cabinet, drivers, crossover, stand and price are all way too different to make any comparison meaningful. But the Micro can certainly serve as a point of reference. System requirements are simple because the Diablo has so much potential that it will respond to the very best your audio electronics have to offer. There is no performance wall to come up against. If you have a large room and want more bandwidth and scale, then look at the Scala. If you have a massive room with bottomless pockets to match, then the Grande has to be on your list, but for small to mid-sized rooms the Diablo is a perfect fit. The system requirements though are essentially the same. I have always been intrigued by ultra high quality electronics and cables driving the simple purity of the best two-way stand-mount speakers and the Diablo fits that particular bill perfectly. So, I used two systems.

First I employed a Burmester CD 001 CD player and a Vitus SS-010 integrated 25 Watt, Class A amplifier with a full loom of Vitus cables. The second and more expensive was an Esoteric P-03/D-03 SACD player and DAC feeding either

an Ayre KX-R or a Lyra Connoisseur 4.2L SE line stage, driving a pair of Ayre MX-R mono-bloc power amplifiers. All the electronics, for both systems, were sat on a Stillpoints ESS rack with Level-3 shelving, including both Thor and Quantum Qx4 power conditioners, while this time the cabling was Nordost Valhalla mains leads and Odin interconnects and speaker cables. The Vitus system is a beautifully integrated, free-flowing set-up that is subtle, sweet and open in nature. It is a real music-lovers system (with less boxes). The second set up is certainly a no-compromise, musically powerful, super high-resolution package, but the Diablo has all the potential to make an entirely viable system. This Utopia is absolutely not one of those speakers where you should consider what is the least in accompanying electronics that you can get away with. It's not that it is particularly difficult to drive. It just cries out for and deserves real quality. Get it wrong and it will sound tilted toward the treble because that tweeter installation will provide a forensic examination of everything that goes before it.

As a long term Micro UtopiaBe user, I was very aware of their particular qualities when I sat to listen to the Diablo for the first time. I know their strengths and weaknesses as well as any speaker, but it only took about 30 seconds for me to realise just how different the new baby Utopia is. Through the bass, the feeling of control and fluid movement combines with a speed and pitch clarity that is infectious. Where the Micro was growing vague and soft around the edges, the Diablo is sharply focussed with more efficient use of bass energy and that opens the ear to a world of expression and technique. There is no bunching or sense that articulation begins to suffer as the frequency drops.



It has power and weight, but it is supremely agile and never holds the flow and musical progression back. Like all good speakers the Diablo only shows you its real bass extension when the music calls for it and it is often surprising just how low it can reach. Focal have been cute too, I think, by not trying to extract the last ounce of bass from that cabinet. It doesn't have that compressive punch that can fool you into overestimating a speaker's true ability, but it is still taut and at ease under rigorous pressure. With a solo upright acoustic bass or a couple of bowed cellos to deal with, it is clean, explicit and tonally superb. Whether the strings are being picked or bowed, the Diablo is comfortable. This is of course, in no small way, a reflection of the system electronics but the message is that if you give it some serious low frequency work to do, it will show you just how much grip it really has. You can hear that the cabinet is not storing energy when you ask it to show you the transient power of a kick-drum or the intricacies of a slapped bass riff. Even so, I can still imagine some people complaining that there isn't enough bass, so I'll disagree before they even say it and suggest that they improve the signal quality and listen again.

I was struck by how beautifully balanced and poised the music remained up through the broad mid-band. But the thing that really grabs you (and never lets go) is just how bright the instruments are. When I use the term bright, I don't mean it in any way detrimentally or as a comment on the speaker's overall balance. That new tweeter's influence is really being felt here and it increases driver coherence enormously. I spend a lot of my time around real instruments, played by people who know their way around them and

## EQUIPMENT REVIEW - Focal Diablo Utopia loudspeaker

I understand just how much high frequency information they produce. Even an electric bass guitar has a brightness and energy about it that comes from the playing action and pickups. Most audio systems have a tendency to damp and mute everything that passes through and resolve them as loose representations of instruments that you could never really mistake for reality, if you know just how raw the real thing actually sounds. This is where the Diablo absolutely excels. That tweeter reaches down into areas where big, damped cones usually operate and shows how it should be done, simply by articulating the voices, speed, delicacy and tonal character of each instrument more accurately. Its life, subtlety and textural range are remarkable and makes the bitter, squeezed astringency of many other hf units sound like sucking a lemon through a tennis racket. So, everything sounds brighter and crisper and this has repercussions in terms of pure note control. Leading edge articulation is fantastic. From the high impact of the first energy input, there is no compression and no sense that the speaker is muting the development at that single point in time and it carries on right through the note and into the longest and purest decay that I have heard. But it is also a speaker with remarkable density and the glowing luminescence it throws onto the instruments is not remotely thin or diluted as a result. The difference this makes to the stability of piano alone is enormous. It has a quite striking transparency in its presentation and a sense that you can reach out and touch the music and is equally at home on simple recordings as it is on the most complex of multi-track mixes. Closely miked vocals can sound spellbindingly real, as does the range of colourful harmonics that you hear in

cymbals. It's as if you can see the whole thing from front to back shimmering with metallic energy, like the cymbal itself is operating in free air in front of you and this high frequency dynamic detailing is so clear and uncompressed that when a drummer is really working the top end of his kit you have complete focus on every explosive, resonating element with no smearing, or harshness. A drummer friend even told me he could identify different makes of cymbal through the Diablo. As I mentioned before, this speaker has a sense of reality that is extremely rare and it is also loose and supple when it comes to rhythm. Any time signature is opened up with superb control and this gives insights into phrasing and timing within that framework that is the equal of any speaker I have heard. The way they are totally responsive to rhythmic emphasis and ultra sensitive to "pushes" where the tempo gets an accentuation of the beat means that their portrayal of the subtleties of movement within a piece is also totally addictive.

The Diablo creates a soundstage that is so broad and deep that you can practically walk in and look around, reflecting the their transparency and "see-through" character. This is not a conservatively voiced speaker. When you are listening in the near-field, as I do, the mid-band and high-end is a little forward, but I wouldn't change a decibel of it because it's intimacy, immediacy and stunning clarity draw you deeper and deeper, delivering a very close physical relationship to the musicians and their performance. With this tweeter installation in their armoury it would have been so easy for Focal to have come up with a speaker, full of resolution and micro detail, that was in some way clinical or even academic to listen to, but they haven't. What they have made is unquestionably one of the great

high-end stand mount speakers available today. Some will think it is the best, but I have heard some of the competition and they too are very good, underlining just how meaningless the notion of "best" really is. There are always considerations of personal taste and system electronics, individual demands and circumstances. I love listening to music through the Diablo because its musical potential is virtually unlimited. It works equally well with all musical styles and genres and I believe that, at its price, it is a bit of a steal. Achieving all of these things means that it is certainly demanding when it comes to matching electronics and it will absolutely reward the sort of care taken in system building and installation that RG and I have been writing about for a while now. But the payback is pure musical involvement and enjoyment and there is no substitute for that, regardless of cost. **tas**





# KEF Reference 205/2

## The Middle-Weight Contender

Roy Gregory

**K**EF's long-running Reference series has seen many incarnations over the 30 or so years of its existence, some sonically and commercially more successful than others. But experience with both the flagship 207/2 and the smallest model in the range, the three-way standmounted 203/2 suggest that the current incarnation is a (if not the) highpoint in that illustrious history. So impressive and musically fundamental were the improvements in the 207/2 over the original version, that the sub-woofer, which had made such a difference to that earlier iteration, was rendered totally unnecessary. Improvements across the board to all the drive-units, but especially the latest evolution of the Uni-Q mid/treble driver, brought significant benefits in terms of weight, scale, coherence and resolution. They also obviated the need for the hyper-tweeter employed in the previous model, making for greater visual coherence too. Add in a range of flawless lacquered finishes and really well sorted accessories, combined with a more transparent but also more forgiving presentation, and the significant hike in price between the original and /2 versions of the speaker was more than justified.

But there's no escaping the fact that at £12,000, the 207/2 is beyond many people's pocket, while its imposing bulk and considerable depth mean that fewer still be able to comfortably accommodate it. Look no further than the success of B&W's 802 and 802D models to appreciate just how critical speaker footprint is to market penetration. Which is what makes KEF's Reference 205/2 such an intriguing prospect. In many respects, it bears exactly the same relationship to the 207/2 that

the 802s bear to their larger 800 and 801 cousins. The smaller cabinet contains the same mid and treble technology, mechanical construction, finish options and quality of crossover components as the flagship speaker, but coupled to a pair of smaller diameter bass units without quite the same thunderous reach.

You can read a detailed description of the technology in the 207/2 review, back in Issue 53, but here are the highlights. The Uni-Q cone

## EQUIPMENT REVIEW - KEF Reference 205/2 loudspeaker



has been re-shaped, a shallower profile and flat surround improving dispersion, while developments in the nature and disposition of the cone material itself have also improved its mechanical behavior. Simultaneously, a new dome profile, arched former and more powerful magnet assembly have allowed venting of the co-axial tweeter as well as a considerable increase in high-frequency extension. The result is a more natural balance, lower colouration and increased dynamic range across the output from 350Hz upwards to a claimed -3dB point of 60kHz.

The Uni-Q driver peeps from the top of a slim, boat backed cabinet whose curved walls and extensive bracing create an extremely rigid cabinet without resorting to sheer mass, with all its associated problems. The two, 8" bass drivers are each housed in their own, separate, front ported enclosure, the whole system being tri-wirable. In addition, sockets in the top of the terminal panel allow the listen to trim the treble output level in four discrete steps between +0.75 and - 1.5dB, and align the bass contour for free-space or near-wall siting. Together these adjustments provide a useful and usable degree of room compensation. Spikes are large M8 types, with even larger locking discs that also serve as visual "feet", but the narrow footprint of the 205/2 does mean that overall stability is compromised somewhat, so bear that in mind if boisterous children or large dogs play a central role in your life.

One of the things that separates the different ranges of KEF Reference speakers, is just how critically revealing they are. A

speaker like the 105/3 was way to critical for its own good, telling you altogether too much about the system feeding it, with the result that it was a seriously underrated performer.

KEF learnt that lesson well, and over the years they've managed to dial back the destructive tendencies while retaining still astonishing levels of musical insight. It's a path that's achieved an apex in the 207/2 and a quality that's only slightly diminished in this model. Which means that while the 205/2 will rarely sound unpleasant, no matter the system indignities heaped on its back, the requisite care and attention to setup and matching will reap rich rewards.

They don't require anything fancy, just good practice done properly, when it comes to placement, leveling and wiring them up. One thing that really needs to go is the tri-wire links provided, which might be better than the average bent metal plate, but are readily improved upon, with obvious sonic benefits. Indeed, rather than tri-wiring the speaker, I'd use the best cable I could afford to single-wire them, and then have two sets of straps made from the same wire. Chord Co. cables do seem to offer a particularly happy match to the KEFs, and they already offer links of this type.

Having said all that, the 205's role as "almost 207s but easier to live with" is perhaps the biggest obstacle to realizing their potential performance in the real world. Paradoxically, the very cost and expense of the 207 makes people give it the space and respect it demands. The more benign and manageable exterior of the 205 might encourage the taking of liberties – which would be a huge mistake, for if anything, the performance of the smaller speaker is even more placement

critical than the bigger model. Good practice done properly means exactly what it says – with heavy emphasis on the good and the properly. Why? Just like the 207s, the glory of the 205 is in the continuity and unexaggerated coherence

### SPECS & PRICING

**Type:** Three-way reflex loaded loudspeaker

**Driver Complement:** 1x 25mm titanium dome

Uni-Q tweeter

1x 165mm Uni-Q midrange

2x 200mm pulp cone bass

**Bandwidth:** 45Hz - 60kHz +3dB

35Hz -6dB

**Sensitivity:** 90dB

**Impedance:** 8 Ohms nominal

3.2 Ohms minimum

**Dimensions (WxHxD):** 285 x 1105 x 433mm

**Weight:** 33kg

**Finishes:** High gloss black, walnut or cherry. Satin black, walnut, cherry or sycamore

#### U.S.

**Prices:** \$13,999/pr

#### GP ACOUSTICS (US)

10 Timber Lane

Marlboro, New Jersey

07746

(732) 683-2356

kef.com/us

#### U.K.

**Prices:**

High Gloss - £7,999/pr

Satin - £5,999/pr

#### KEF AUDIO LTD

Ecclestone Road

Tovil, Maidstone

Kent ME15 6QP

+44(0)1622 672261

kef.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](https://www.avguide.com)

[www.theabsolutesound.com](https://www.theabsolutesound.com)

## EQUIPMENT REVIEW - KEF Reference 205/2 loudspeaker

it brings to reproducing music. But whereas the 207's easy extension provides a natural balance to the seamless extension of the Uni-Q driver, the 205 doesn't reach as deep and as a result, its bottom end has been carefully tailored to deliver (the impression if not the reality of) a little extra weight. Half an inch too far back and the bass goes soft, rounded and disjointed. Half an inch too far forward and it becomes lean and musically disconnected, robbing the music of

drive and purpose, structure and foundation. But get it in the right place... Get it in the right place and the 205 rewards you with a measure of coherence and communication, a rhythmic and structural integrity that anchors the performance and allows the performers to breathe over that secure footing.

Play something as sparse and starkly unadorned as Keith Jarrett's Koln Concert (rendered starker still by the ECM recording) and the 205s are

utterly unobtrusive, allowing the protracted and convoluted musical developments to shift and evolve through each theme, each rhythmic and melodic pattern, in a single, continuous line, never wavering, never losing its way, never stumbling at the transition. The focus is on the playing, with Jarrett's masterful command of shape and tempo, melody and development holding the music together and conjuring an evershifting emotional landscape. It's only when the disc ends that you realise that you never even noticed the system playing it. Yet solo piano, with its range and percussive qualities is one of the hardest instruments to reproduce. The 205s do so without leaving their mark, and that's impressive indeed.

Of course, it would be unreasonable to expect the 205 to match the remarkable performance of the 207. The junior model can't match the effortless scale and sheer dynamic range of the flagship. It doesn't conjure the acoustic space with such natural transparency, or deliver images with quite the focus or dimensionality – but it gets close; surprisingly close. Close enough that, if you hadn't heard the bigger speaker, you wouldn't feel the lack. So, comparing and contrasting different performances of the Dvorak Cello Concerto, the Starker reading on Mercury is satisfyingly, almost bombastically explosive through its opening, the Piatigorsky on RCA is warmer, more rounded and more lyrical, less purposeful or pointed in its playing, but smoother and more seductive in character. The KEFs effortlessly differentiate the styles and strengths of these two musical masters. But perhaps their most telling contribution is on the recent Queyras reading for Harmonia Mundi, a performance that maybe lacks the sheer authority of the others through the first

movement, but is achingly beautiful in the Adagio ma no troppo that follows. Here the 205s deliver all the grace in the solo playing, but underpin it with a sweeping orchestral majesty that dials up the romance without adding a layer of schmaltze. It's a stunning performance – from everyone (and everything) involved.

That easy flow and natural tonal warmth is equally evident across the vocal palette, with voices as disparate as Zinka Milanov and Lyle Lovett feeling the benefit. Subtle inflexions and the catch of a breath bring singers to life, again leading your attention into the music and its making – and away from the system reproducing it. This ability to step away from the performance is what marks the KEFs apart from so many speakers that fall into the trap of desperately trying to impress. Work with them and you'll discover hidden depths when it comes to musical expression and involvement. I loathe the kind of mathematical formulae that try to express performance as a function of price; 90% of the sound for 60% of the cost always struck me as overly simplistic and way too pat, but in the case of the 205 it really is that straightforward. It's not just shared DNA we're talking about. So much of the technology, so many of the parts in this speaker are shared with the 207, that realizing the benefits comes down to the engineering implementation (and a bit of care). KEF have done their part spectacularly well – the rest is down to you...+





# Magico V2

## Explosive Eloquence

Neil Gader

**T**he Magico V2 sells for \$18,000 a pair—not an insubstantial amount by any means. But that’s not really the news—there are already a surprising number of components that bump up against the \$20k level. The real news is that this two-and-a-half-way floorstander—actually the *bottom* of the lineup in Magico’s Murderer’s Row of Loudspeakers—is Magico’s answer to the question of whether it can successfully translate the R&D that inspired its statement products like the V3, the Mini II, and the remarkable M5 to an “entry-level” offering. Can magic strike twice (or thrice)? Is the V2 a true Magico?

The best way to think of the V2 is as a slightly condensed and concentrated version of its Magico stablemates. But it is not stripped down. Similarities rather than differences abound. In construction, it most closely resembles the larger three-way, four-driver V3 (reviewed in Issue 179), with the notable difference that the V2 drops the 6” Nano-Tec midrange of the V3 and retains the pair of 7” Nano-Tec mid/bass drivers. Unlike the V3 however, the V2 uses the proprietary Magico 1” ring-radiator tweeter also found on the vaunted M5. Impedance mirrors the V3 at 4 ohms; sensitivity is 89dB, also roughly the same as the V3. The drivers are back-mounted to the aircraft-grade 6061-T aluminum faceplate, which is itself mounted to the front baffle via internal tensioning rods. The mounting screws only see aluminum, not softer wood contact points, thus ensuring a tight fit even after years of playing.

Interestingly the V2 and V3 match each other in height at 42”, but the V2 is considerably shallower and narrower making it a much more room-friendly speaker. The sophisticated crossover is a masterpiece to admire, with a parts list that rivals the entire cost of many loudspeakers!

The V2, like all Magico speakers, is an acoustic-suspension design in a seventeen-ply vertically stacked Baltic birch enclosure that almost imperceptibly angles back a few degrees to align the drivers for phase coherence. The heavily damped interior employs the aforementioned tension-coupling mechanism, where a trio of aluminum rods and rear-panel fasteners draws the aluminum baffle against the enclosure in the way a cylinder head is torqued into the block of an engine. The result is a cabinet of such rigidity and aversion to flex it borders on overkill. A final comparison—the V2 weighs in at 120 pounds,

the V3 at 160 pounds—like a super-bantamweight to a middleweight. To put things in full pugilistic perspective, the M5 at 360 pounds and Model 6 at 650 pounds would be the super- and unlimited heavyweights of the stable. But clearly, Alon Wolf and his team are not slumming with the V2.

From the moment the needle hits the groove, it’s plain to hear that their intentions are as serious as a heart attack. But the key word to describe the V2’s overall performance envelope is discipline. There was no single piece of music that could derail it or upset its composure (mirroring the demeanor of Magico’s unflappable creator, Alon Wolf). It’s also a paradigm of balance, striking a sweet blend of tonality, dynamics, imaging, transparency, where no single criteria attempts to grab more of the attention than another.

Tonal balance in the lower octaves is rich and fully

## EQUIPMENT REVIEW - Magico V2 Loudspeaker

realized although not plummy and overbearing. The mids are full-bodied, the treble region smooth and airy with just a hint of brilliance in the sibilance range. The character of the V2 steers clear of overt romanticism yet it never crosses the line into sonic sterility. Soundstage depth is excellent and on a par with its broad lateral spread of images. As dynamic as the V2 is, it doesn't convey an overtly forward balance. In fact on some vocal recordings it almost seems to pocket the singer a row to two further back than I'm accustomed to. If it's not dead-bang flat, it never deviates very far from neutrality. Inter-driver transitions are seamless and there is little indication that floor cancellations are sucking out upper-bass energy. The Magico team places great stock in ameliorating these issues in its crossover design, but most particularly the infamous baffle-step—the 6dB difference in gain due to baffle reinforcement in the midrange followed by a comparable gain deficit as the longer bass wavelengths lose that reinforcement. Observationally, my in-room experience validates Magico's approach, as transitions from roughly 200 Hz and below were essentially flat by listening tests and test tones, except for some typical room gain in the 40–50Hz range.

This is all a way of describing how the V2 drills deeper into the sonic picture, nibbling past the thin gauze and glaze that obscure transparency. Its sensitivity to low-level secondary details is, in a word, *dogged*. It sifts through an orchestra and suddenly a harp or triangle seemingly buried alive in a far corner of the stage snaps into view. Or the fluttering skin sound off a drum head reveals itself. Zils on a distant tambourine no longer blur or, in the case of Linda Ronstadt's angelic harmony

during “Under African Skies” from *Graceland* [Warner], her iconic voice—as deep in the mix as it is—appears luminescent. The same held true with large assemblages of voices, each individual distinctively reproduced within the penumbra of a multi-layered chorale. On Rutter's *Requiem* [Reference Recordings], the V2 captures the dual sensation of music vaulting heavenward into the church, as the anchor of a deep organ descends into the earth.

As I reflected on its resolving power, transient speed, and fidelity-to-timbre, I found the V2 became less identifiable as a cone-driver system. It began resembling an imaginary hybrid, reflecting the distortion-free speed and transparency of an electrostat panel with the turbocharger-ready thrust of a dynamic driver. Although its coherence can give even dedicated two-ways a run for the money, the V2 truly begins to shine when you start throwing complexities its way. The full-bore Atlanta Brass Ensemble and percussion section blasting out Copland's *Fanfare for the Common Man*, for example. Like a juggler who is tossed one bowling pin after another from an offstage assistant, the V2 is acrobatically gifted in the way it manages to keep so much information in the air without dropping a note.

The V2 forces one to reconsider the entire micro-dynamic relationship. Even during familiar recordings, like Dire Straits' *Love Over Gold*, the most pin-drop quiet passages are quieter still, more fully revealing the unique tactile inflections of the nylon-string guitar during “Private Investigations” and the cascading toms of “Telegraph Road.” And the loudest cacophonous instances are—mercy—louder still. During “Mars” from Previn's performance of *The Planets* [EMI], I

found myself riding the volume control more than normal, a result of the outside of the dynamic envelope having been pushed just a bit more.

Quick story: Back in the 70s I became addicted to early Linda Ronstadt records, particularly her *Simple Man*, *Simple Dreams* and *Hasten Down the Wind* albums which featured hits like Warren Zevons's “Poor, Poor Pitiful Me” and loads of Karla Bonoff. The players were the cream of the crop of the acoustic singer-songwriter era, JD Souther, Danny Kortchmar, Russ Kunkel, and Leland Sklar. When I replayed those discs, the Magicos brought a low-level focus to details that I thought were hopelessly indistinct, either because of the pressing or the record's engineering or mastering. Not true. The V2 depicted every instrument in a uniquely layered perspective. No instrument seemed to exist at the exact same depth in the soundspace. Each was unique. But nothing was as breathtaking as the articulation the Magicos expressed with background singers. These voices, from Don Henley to JD Souther, were each so distinctive and identifiable that it was as if I were hearing these old recordings for the first time.

Weaknesses? No Achilles' heel here. Okay, the bottom half of the lowest octave is absent—a minor deficit that certainly doesn't hold the V2 back much. At a strong lower limit of 30Hz organ devotees could be thinking subwoofer (forget it, Magico ain't making one), but good luck keeping pace with those tight-fisted Nano-Tec drivers. Also, bass timbre could be characterized as dry, even overly controlled, and lacking the rush of resonant content more typically encountered in bass-reflex designs. Admittedly, I'm an acoustic-suspension fan and thus prefer the V2

presentation, but neither iteration touches all the bases in quite a fully realized naturalistic way. Dipole bass, like the Jamo R909, still strikes me as more authentic, but when rock-level dynamics and output are required dipoles tend to run out of steam. At the other end of the spectrum, the V2 possesses a slow upward tilt in the lower treble that hones leading-edge information somewhat. Most prominently strings and brass. It's not a peaky coloration by any means and the added energy actually flatters most music. Unless you're

### SPECS & PRICING

#### Magico V2 Loudspeaker

**Type:** Two-and-a-half-way floorstanding dynamic loudspeaker

**Driver complement:** Two 7" Nano-Tec woofers, one 1" MR-1 ring-radiator tweeter

**Frequency response:** 32Hz-40kHz

**Sensitivity:** 89dB

**Impedance:** 4 ohms

**Recommended amplifier power:** 50-300 watts

**Dimensions:** 10" x 42" x 12"

**Weight:** 120 lbs. (each)

#### U.S.

**Price:** \$18,000/pr

#### MAGICO LLC

932 Parker Street, #2  
Berkeley, CA 94710  
(510) 653-8802  
magico.net

#### U.K.

**Price:** £18,901/pr

#### ABSOLUTE SOUNDS

58 Durham Road,  
London, SW20 0TW  
+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Magico V2 Loudspeaker

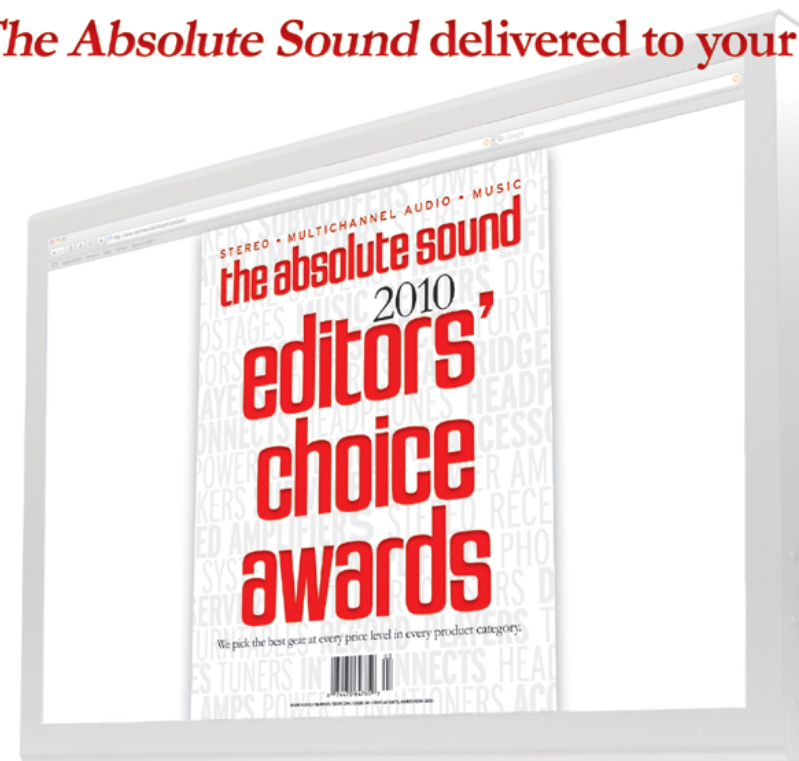
deeply sensitive to such matters, you'll be too consumed by the tweeter's musicality to notice.

Note also that if there is something amiss with the chain of electronics upstream, the V2 will be happy to let you know. Suddenly that special amp that you once had so much faith in can't keep up with the broader demands and athleticism of the V2. It has a palette for highly refined power, and even a hundred high-resolution watts will barely elicit a wink from the V2. At around two-hundred it finally grumbles to life. Give it 250 or, better yet, 300Wpc, and the V2 jumps off the launch pad like its name implies it should. (A quick call out to the Sumiko Palo Santos Presentation cartridge—review to come—and Plinius Hiato integrated [Issue 201]. Their performance with the V2 contributed to the finest resolution I've yet attained in my listening room.)

Returning to the question posed at the outset of this article—yes, the V2 is pure Magico through and through. In many ways it's everything an audiophile could hope for from the high-end experience. The totality of execution is superb. Its performance echoes the musicality of the company's no-holds-barred efforts. Its reasonable size can't quite match the sheer majesty of Magico's heavies, but on so many levels there are few speakers I've reviewed that have ever been as satisfying. The V2 may be *the* speaker to beat in the under-\$20k bracket. **tas**

# Good things come to those who **don't** wait!

Get *The Absolute Sound* delivered to your inbox.



## Why wait for the postal service!

Subscribe to the PDF edition of *The Absolute Sound* for only \$14.95. That's our lowest subscription price.

- Looks like the print edition—every page is there
- Delivered directly to your inbox
- Makes archiving of back issues a snap
- International subscribers: get delivery right away without the extra cost and hassle

Subscribe today at [www.nextnewsstand.com](http://www.nextnewsstand.com)  
(Individual and Back Issues also available)

# MartinLogan CLX

## A New Standard of Transparency

Jonathan Valin

It was just a few months ago (in Issue 186) that I reviewed the \$13k Quad ESL-2905 electrostatic loudspeaker—the best 'stat I'd yet heard, the highest resolution transducer I'd heard, and the speaker that I told you I would buy if I were in the market for a speaker.

Comes now the \$22.6k MartinLogan CLX, the long-awaited successor to the long-defunct CLS, MartinLogan's one-and-only full-range electrostat, and though it doesn't unequivocally push the considerably less expensive ESL-2905 out of my shopping cart, it has certainly made me reconsider what I'd buy if I were buying, electrostatically speaking.

To spare you the suspense, the MartinLogan CLX trumps the Quad ESL-2905 in every area of performance save for bass and sheer density of tone color. Not only is it higher in low-level resolution than the Quad ESL-2905, it sets a new standard for midrange resolution, resolving low-level timbral and dynamic details that I have literally never heard before on disc after disc and that, in and of themselves, make the instruments and vocalists on these discs sound much more realistic. It is also considerably more neutral in balance than the somewhat darker and unquestionably more voluptuous Quad ESL-2905; it will play a good deal louder than the Quad ESL-2905 without distortion; it is far and away more transparent to sources than the ESL-2905, which tends to turn everything you put on a turntable or in a CD player some alluring shade of gorgeous; its soundstage is (depending on the disc, of course) wider than that of the Quad ESL-2905 (though I'm not sure it's typically

quite as deep, due to the way the Quad's output is contoured in the bass, midband, and treble); and it disappears as a sound source more completely than any other electrostat I've heard and (with a couple of signal exceptions that I will get to) than any other loudspeaker I've heard, save for the MBL 101 X-Treme.

This is the good news. Now, here's the not-so-good. First, though nothing like the bright, thin, overly aggressive CLS of yore, the CLX is not an inherently warm or beautifying loudspeaker. In fact, it has no perceivable color of its own (bespeaking very low levels of distortion); it sounds as "see-through" as it looks. As a result, the CLX seems to reproduce what's actually on records with exceptionally high fidelity. Practically, what this means is that, from the midbass on up, you will hear...*everything*. Good recording technique, bad recording technique, mediocre recording technique, spotlighting, overdubs, tape edits...you'll hear them all without editorialization. If a record is bright and aggressive it will sound bright and aggressive; if a record is dull, dark, or muddy it will sound dull, dark, or muddy.

I know I've talked about transparency to sources in the past. But, honestly, I've never heard a loudspeaker that's as



## EQUIPMENT REVIEW - MartinLogan CLX Full-Range Electrostatic Loudspeaker

### HOW COME YOU CAN SEE THROUGH CLXes?

One of the things that has always set MartinLogan electrostats apart is their transparency. I mean this literally: You can see through them. Other 'stats and planars come with dustcovers to keep prying fingers and airborne contaminants away from the drivers and stators. How come MartinLogans don't?

Well, for one thing, the more objects between you and any driver the more veiled its presentation. Most of us routinely take the dustcovers off dynamic speakers when we play them. Following this same logic, MartinLogan has done the job for us. The CLX, like the CLS before it, is only "covered" by its perforated grilles, which also function as its stators. What you're looking at, if you look through the holes in these grille/stators, is the electrostatically charged PET membrane itself.

But if the charged stators are exposed, why don't they pose a hazard if you brush up against them? For two reasons. First, though the diaphragm is charged with high voltage, current is low. Second, the grille/stators are coated on all sides with a proprietary Nylon

insulation. As far as I know, no one has ever been shocked—much less hurt—by a CLS or a CLX.

With no dust covers and virtually no box (just a narrow wooden frame on three sides), the CLXes put very few material objects between you and them. Undoubtedly, part of their legendary acoustic transparency results from their boxless, dustcover-less physical transparency.

The CLXes do have one added bit of structure that the CLSes didn't—a sidepiece made from a material called EcoSound extending back from the outside rear edge of the woofer panel. You might think this sidepiece adds rigidity to the frame, but that's not its primary purpose. It is there to decrease low-frequency rear-wave cancellation,—a problem common to all dipole loudspeakers,—by increasing the air path length behind the CLX and delaying the out-of-phase back wave. The consequent reduction in front-wave cancellation boosts overall low-frequency output. **JV**

transparent as this one. It even registers changes and tweaks in source-hardware to a degree I've never come across before. For instance, I fiddled with the magnetic anti-skating on the superb Da Vinci Grandeeza tonearm many times when the AAS Gabriel/Da Vinci 'table was upstairs in my "big system" room. I could hear differences, of course. But, save for when I made relatively

large adjustments, they were tough to quantify. Downstairs, in the CLX system, an eighth of a turn of the anti-skate in either direction is instantly recognizable as a step forward or a step back. Or take a record I've heard countless times in the past, Joni Mitchell's *Blue* (in the superior Steve Hoffmann reissue from Warner). Pick any cut where Joni backs herself up on multiple

potted-in tracks, each with various amounts of potted-in echo. On an average stereo, even on a very good stereo, this artifice isn't supposed to draw too much attention to itself—those voices aren't supposed to sound artificially potted in, even though they are. Through the CLXes, the overdub is unmistakable. You can almost hear the difference in tape hiss on the laid-in tracks, and you can certainly hear the difference in miking and echo and venue. Joni's voice, doubled and tripled, pops up like a separate pocket of time and space—a different soundstage within the larger soundstage. Or consider the voices of Amy Helm and Theresa Williams backing up Levon Helm in real time on his zesty (with a thank-you to Maude Le-bowski) cover of A. P. Carter's "Single Girl, Married Girl" (from *Dirt Farmer*). This is high-lonesome accompaniment—sometimes shouted as much as sung—but despite the loudness of the women's roughhewn voices it isn't that easy to hear what they're actually singing on other speakers. It is through the CLXes. Every word, every breath, every intonation, every crescendo. Or de-crescendo. Speaking of which (and as long as we're talking high lonesome), on Ian and Sylvia's rendition of that sad old ballad "Blue" from their eponymous first album on Vanguard, Sylvia sings unusually high-pitched, sweet, and very soft harmony on the refrain. In fact, I didn't even realize she was singing on some of the verses and certainly couldn't make out the words, pitches, and timbres of these true *pppp*'s. Here, as if by magic, all is revealed.

Folks, I've had some mighty discerning speakers come through my listening room over the past few years. Save for the Symposium Acoustics Panoramas, not a one of them holds





## EQUIPMENT REVIEW - MartinLogan CLX Full-Range Electrostatic Loudspeaker

### SETTING UP THE CLXes

In part because they combine a large curvilinear panel with a large flat panel, the CLXes are rather tricky to set up. Happily, the manual that accompanies them is easy to understand and gives you explicit and reliable set-up instructions. To begin, you will want to situate these speakers at least four feet from backwalls and at least three feet from sidewalls and at least five-to-six feet apart (measured from the center of one CLX panel to the center of the other CLX panel—seating distance will, of course, dictate how much separation you need, although locating any planar speaker too far from its mate can result in suckout in the midbass). I prefer the Xes on their excellent (supplied) spikes, although don't put them on spikes until they are properly placed. Assuming you've got them about where you want them, you'll now face the questions of toe-in and tilt.

The amount of toe-in you use with CLXes is critical to their imaging and soundstaging and overall frequency balance. MartinLogan has a method you should use (which involves shining a flashlight toward the curvilinear panel from the "sweet spot" and making sure the reflected light is shining back from a specific spot on the speaker—the outer third of the CLS panel). This will get you precisely where you want to be with toe-in, which, in practice, isn't very much (just a few degrees

a candle to this one with it comes to recording the slightest acoustic tremor. From *mezzoforte* to the softest *pianissimo* an LP or CD is capable of reproducing, these are the most revealing, least colored, lowest distortion transducers I've had in my home.

Now, this transparency to sources is swell for a record/equipment reviewer, but for an ordinary listener it may be a somewhat mixed bag. Because of their incredible ability to clearly preserve the lowest-level timbral and dynamic details—what acousticians call "jitter" (not to be confused with the digital timing errors also called "jitter")—the CLXes can make many instruments, particularly strings and voices, sound more real than virtually anything else I've auditioned. To hear the clarity with which they reproduce the tiniest nuances of the way, say, Ian Tyson brushes or plucks the strings of his guitar on the aforementioned *Ian and Sylvia* album is to hear something so much closer to the way guitars sound in life that it makes virtually every other stereophonic presentation sound smeared in time, congealed and opaque. It also tends to make you think—with reason—that you've never truly heard what's on certain records before. Discs that you may have thought sounded great or, at least, more-than-acceptably-good through other transducers (even other terrific transducers) may come out of the wash an entirely different color than they went in. Highly manipulated studio recordings, for example, simply and unmistakably sound highly manipulated and "canned" (moving from the two-or-three mike simplicity of *Ian and Sylvia* to something like the multitracked, multi-overdubbed Joni Mitchell album *Heijira* is an unforgettable little lesson in how much studio-

recording aesthetics changed from 1961 to 1976). Some of you—maybe most of you—may not *want* to hear records reproduced with this kind of honesty. It's a bit like watching a play while simultaneously seeing through the sets to the people behind the flats who are running the lights and sound, and dressing the actors. It is only the rarest records—and the very best—that won't show their artifices much more clearly than you've heard them before.

And then there is the CLXes' bass.

Though a *major* improvement in the mid-to-upper bass (and everywhere else) over the original, way-too-lean-and-hence-too-bright-and-piercing CLSes, the CLXes are not world-beaters in the bottommost octaves. It's not that they don't bring the same clarity to the bass that they do to the midrange and treble. They just don't bring the same power (and their power in the mids and the treble is, as you will shortly be apprised, somewhat limited to begin with). Also, they don't have great extension on the bottom. Or, at least, they don't in my room as it is currently configured.

I have to be careful here because I'm not entirely satisfied with my newly converted second listening room at this point, particularly in the bass, and other listeners whose judgment I respect claim to have gotten deeper low end than I'm getting. So take what I'm about to say with a grain of salt. (I will report again on the CLXes' bottom octaves when I've set the room up more to my liking.)

As it stands, the CLXes go down more or less flat to about 55–60Hz or so. (MartinLogan, to its credit, doesn't promise you a rose garden here. It rates the CLX as down 3dB at 56Hz, which is just plain honest. In ML's view, if you want *really* low

bass, you need to add a couple of its Descent *i* subs, which come equipped with a special crossover specifically tailored for the CLX. I will report at a later date on how well these subs blend—but, until then, don't get your hopes up.)

Now 55 or so cycles isn't very deep bass, and because the CLXes' mid-to-upper bass is so

### SPECS & PRICING

#### MartinLogan CLX Full-Range Electrostatic Loudspeaker

**Type:** Full-range electrostatic loudspeaker

**High-frequency transducers:** 57" CLS (curvilinear line source) XStat electrostatic

**Low-frequency transducer:** 57" (145cm) DualForce double-diaphragm, triple-stator dipole low-frequency electrostatic

**Crossover frequency:** 360Hz

**Frequency response:** 56-23,000Hz +/-3dB

**Sensitivity:** 90dB/2.8V/1m

**Impedance:** 6 ohms (0.7 ohms at 20kHz)

**Power handling:** 225W (continuous)

**Dimensions:** 70.3" x 25.75" x 14.69"

**Weight:** 110 lbs.

#### U.S.

**Price:** \$22,699/pr

#### MARTINLOGAN

2101 Delaware  
Lawrence, KS 66046  
(785) 749-0133  
martinlogan.com

#### U.K.

**Price:** £20,432/pr

#### ABSOLUTE SOUNDS

58 Durham Road,  
London, SW20 0TW  
+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - MartinLogan CLX Full-Range Electrostatic Loudspeaker

away from parallel-to-the-seating-position). Some folks seem to like the speakers tilted back a slight bit. I prefer them straight up and down, although the height of your listening chair and room acoustics will play key roles in this decision.

Speaking of room acoustics, remember that the CLXes have a different dispersion pattern than other 'stats. Columnar line sources with curved drivers, they will reflect off sidewalls to a certain extent and you may want to damp the point of first reflection on your sidewalls. You may also want to damp the walls immediately behind these 'stats, though I do not recommend overdamping. If you're getting too much midbass, corner traps can fix it. Everything depends on the size and shape and relative liveness or deadness of the room.

I don't know whether I ought to mention this or not—for fear that some of you will start fiddling where you shouldn't—but you (or, preferably, your MartinLogan dealer) can adjust the upper-bass/lower midrange balance of the CLX. Inside the crossover/transformer box on the back of the speaker are two groups of

switches that, properly set, can boost output in the power range from the factory-default "flat" setting. IMO, *they should be left alone!*

As for driving the CLXes, though they are relatively sensitive for electrostats (90dB) with a nominal impedance of 6 ohms, they are not as easy a load as this may suggest, since they dip in impedance to 0.7 ohms at 20kHz. Assuming that you care about (and can hear) the topmost treble, you'll need an amp capable of handling such a very low impedance load. This means solid state—and really good solid state, at that.

I've had tremendous luck with the Swiss-made Soullution 710, which has got to be the most finely detailed and neutral solid-state amplifier I've ever heard. Unfortunately, it's quite expensive. You could make do quite well, I would think, with something in the 200-400 watt range from Bryston or Parasound or, for a bit more money, Pass. You can also use tubes, albeit at a very small price in high-frequency extension (although a bit of added tube plumpness in the low end might be a good thing with these speakers). **JV**

flat and neutral, it doesn't sound as deep, full, or powerful as, say, the bass of the Quad ESL-2905, which is deliberately elevated through the mid-to-upper bass, from about 60Hz–200Hz. I could live uncomplainingly with the greater timbral honesty of the CLXes in the bass if they didn't seem to progressively lose dynamic range and scale as well as frequency extension as they descend in pitch. Oh, they're quite marvelous down to, say,

the low C of the cello (about 65Hz), but below that they seem to peter out a bit. This means—once again, as things now stand—that power instruments like bass drums or bottom-octave piano, though clear as the proverbial, are also a bit short-changed in impact and pitch. Turning the volume up helps a little, but not enough, in my opinion. Things that I *know* should sound very deep-reaching and thunderously dynamic, like

the drum strikes that dot the *Allegro con brio* of Roberto Gerhard's Third Symphony [Angel] or the piano on Zsolt Durkó's Schoenbergian *Fire Music* [Hungaroton], aren't. They are a little too laid-back and are literally laid-back in the soundstage. They don't leap to the fore, as they should, when they are sounded with explosive power.

I don't want to overdo this. The CLXes' bass is leagues ahead of that of the CLSes, but it is (as Martin Logan admits) limited in a way that the rest of this marvelous speaker is not, and because it lacks some dynamism and extension it makes the rest of the speaker seem a little lacking in foundation, a little lacking in large-scale clout. Once again, this isn't the CLS; this isn't an X-ray machine. But it could use a bit more power delivery at the very bottom.

Some of the CLXes problem in the bass is simply the lack of "body" that plagues all electrostats. They just don't have the "weight" of cones (or Radialstrahlers), and it isn't just in the bass. You hear it everywhere—a slight two-dimensionality that makes voices and instruments sound as if they are projected on a screen (as opposed to the freestanding statuary of an MBL 101 X-Treme or a Magico Mini II). To be fair, there is less of this effect with the CLXes than with other 'stats (including the Quad ESL-2905).

There is also *none* of the sense that I've gotten with every other electrostat of listening through "windows," of the physical presence of the speakers.

Putting aside their tonal balance and congenital lack of weight, as I said earlier the CLXes disappear better as sound sources than any planar dipole I've heard. For all intents and purposes, they just aren't there.

Perhaps this exceptional disappearing act is because they *aren't* like other 'stats or planars in certain key respects. As those of you familiar with the original CLS or any of ML's hybrid electrostats already know, MartinLogan electrostatic panels are curved ("CLS" stands for "curvilinear line source"). There were and are several good reasons for making the mid/treble 'stat panel belly out. First, this increases horizontal dispersion and lowers "beaming" in the treble, reducing the "head in the vise" effect endemic to large planars. Second, it makes the speaker sound more like a columnar line source whose sound originates a bit behind the panel. This was the theory behind the CLS, at least. In practice, the CLS was less "beamy" and far more open and neutral than flat panels, but because it was sucked out in the upper bass/lower midrange and tipped up in the upper mids, it was also thinner and brighter and markedly more aggressive than many flat panels.

That was then. As I noted in my review of the nifty little MartinLogan Source in Issue 180, MartinLogan has since completely redesigned its electrostatic panels—improving everything from the density of perforations in the stators (which, ML claims, now expose twice as much panel surface as traditional 'stats) to the suspension of the electrostatic diaphragm (which is now far more rigid) to the membranes themselves (which are now made of super-lightweight, plasma-deposited PET) to the ultra-transparent Votjko crossovers (yes, Virginia, there is a Votjko—he's the guy who designs all of ML's crossovers). In addition to these improvements, ML has tried something that I don't think has been tried before in the lower midrange and bass. Below 360Hz the CLXes cross over from the curvilinear mid/

## EQUIPMENT REVIEW - MartinLogan CLX Full-Range Electrostatic Loudspeaker

treble panels to large, flat, “triple-stator,” “dual-membrane” bass panels, physically located just outside the curved mid/tweets. (The Quad ESL-2905 also uses separate flat bass panels, in addition to its twin concentric time-delayed panels, to bolster the bass, although Quad’s flat bass panels are not double-layered like MartinLogan’s.)

As I explained in my Quad review, all electrostats suspend a featherweight membrane coated with an electro-conductive material and

charged with very-high-voltage bias current between two “stators” that are alternately fed the positive and negative signals from the amplifier. The “push” and “pull” that these signals exercise on the electrostatically charged membrane cause it to vibrate, producing sound. MartinLogan’s triple-stator, dual-membrane bass panels go this one better. Instead of a single membrane suspended between two stators, ML’s triple-stator setup suspends two membranes between three stators, doubling the force with which bass notes are sounded.

There is no question that the CLX is much, much stronger and flatter and fuller and more natural in the so-called “power region” between 100-400Hz than the CLS was. It is one of the most obvious and welcome differences between the “X” and the “S,” and one has to think that MartinLogan’s ingenious bass panels are the reasons why. This said, doubling up on bass drivers doesn’t seem to have extended the very low end as much as one might have thought. What it has done, however, is allow the CLX to play considerably louder (I’d guesstimate 5 or so dB louder) without crashing into its own stators than the Quad ESL-2905 does. Oh, you can still “clip” the CLXes by overdriving them, although they won’t distort with a crackling noise (like the Quads do); instead, they brighten and soften up when they are overstressed, losing dynamic impact and gaining upper-midrange brilliance. If dynamics are getting softer and rounder and the upper mids more piercing as the sound get louder, then it’s time to turn the volume down.

While we’re on the subject of dynamics, let me add a word or two about the CLXes’ range and scale. As I’ve already noted, you cannot (or, at

least, I cannot) find a more discerning loudspeaker than this one from *pppp* to *mf*. From whisper soft to moderately loud, dynamic range is audibly expanded, with sensational revelation of low-level details that go unregistered via other transducers. The CLX is incredibly fast and supernaturally clear, and yet it never sounds etched or analytical as the CLS could, largely, I think, because while it is reproducing subtle changes in dynamics fully and realistically, it is also reproducing subtle changes of tone color just as fully and realistically. Here speed is accompanied by dense lifelike timbre (assuming the recording has dense lifelike timbre, of course). In a peculiar way this makes the CLX less sensationally “showy” than the CLS, because it’s not constantly spotlighting detail (shouting out how transparent it is) but blending raw detail with pigment. The CLS used to show you the bones of music; the CLX also gives you the rosy flesh.

At *mezzoforte* to *ffff* levels, the CLX is as good as electrostats get. Which is to say, pretty good. Once again, lacking the full weight and body of cones or Radialstrahlers, ‘stats are “softer” and less hard-hitting, less three-dimensional, less knock-you-on-your-butt powerful than dynamic speakers (or than music is in life) at loud to very loud levels. This simply comes with the territory and is not to be counted as a major demerit (unless, of course, you habitually listen to music at loud to very loud levels). The CLXes will still thrill you with the sweep of a full orchestra in full cry; they just won’t thrill you as much as something like the incomparable MBL 101 X-Tremes do.

Finally, a word on that most crucial of subjects: realism. Because of their speed, their coherence, their low levels of distortion, electrostats make

certain aspects of the sound of instruments and vocalists—for instance, tone colors, the low-level details that describe the kind of instrument you’re listening to and the way it is being played, transients—sound more lifelike than virtually any other type of transducer, save perhaps for the finest ribbons. The CLXes go this one better—and paradoxically one worse. Because they are so neutral in balance, so “not there” as sound sources, so low in distortion and high in transparency, they make my better and best recordings, particularly of smaller-scale music, sound more realistic than any other speaker I’ve had in my home (at low to medium-loud volumes). At the same time, because they are so neutral, so “not there” as sound sources, so low in distortion and high in transparency, they also make my less-than-great recordings sound exactly like what they are.

If you can live with this kind of honesty, then, IMO, you cannot find a better speaker for any amount of money, provided that you don’t also demand crashing dynamics at 100dB+ SPLs. If you want many of these same virtues in a more *gemütlich* package with the bonus of more powerful and extended low bass, then by all means go for the Quad ESL-2905. As for me...I’ll give up that bottom octave for this unparalleled level of midbass-to-top-treble neutrality and transparency and realism. The CLXes are my new dipole references. tas



# Quad ESL-2905

Heavenly

Jonathan Valin

**B**efore I begin to heap praise on Quad's new ESL-2905 electrostat, which, if there were a Platonic realm of loudspeakers, would come as close to the electrostatic ideal as any 'stat I've yet heard (and I've heard and owned a few), let me say a few words about what a Quad ESL-2905 *won't* do.

First and perhaps foremost for many of you, it won't play *real* loud. And I don't just mean this in an average-SPL sense (although I mean that, too). If a record contains a hard-enough transient, like, say, the gunshot-snaps of the strings on J.W. Warren's guitar near the beginning of "Have You Seen Corinna?" from Mark Levinson's truly great coastal-blues compilation *Came So Far* [MusicMakers], the 2905 will literally make you wince trying to cope with them, even if you're playing back the cut at relatively moderate *average* levels. Because the Quad is so fast and faithful and willing to go, it doesn't compress or round off hard transients; it tries, instead, to reproduce their full dynamic scale but ends up flying at full speed smack into the plate glass window of its own diaphragm-excursion limits, distorting with a literal shattering sound (and if you persist, shutting itself down via its panel-protection circuits before any permanent damage can be done). In other words, though it is well nigh incomparable in transient speed and clarity, the 2905 is also restricted (at the loud end) in dynamic range to *peaks* of about 95dB SPL. I believe that Quad's Peter Walker, the patriarch of

electrostatic loudspeaker design, once said that every record has "its own correct volume level." What he failed to add was, "Particularly when you use a dynamically handicapped speaker like an electrostat."

Second (and for the same reason), it won't play *real* loud in the bass. Some reviewers (who should know better) have declared the Quad 2905 to be the last word in low-end high fidelity, even on heavy-duty rock 'n' roll. While it *is* exceptionally fast, standard-settingly clear, and (up to a point) naturally full and surprisingly powerful and robust in the bottom, it most certainly isn't the last word in low-end extension, flatness, or dynamics. Like a lot of British speakers, the 2905 has been designed to fool you into thinking it has deeper bass than it really does. To this end, its otherwise excellent frequency response is bumped up a tad in the 40–80Hz range before it begins to plummet (down ten or twelve dB by the time it hits 30Hz). The neat thing about this psychoacoustic trick is that because the dipole Quads are so fast and clear, relatively low in distortion (though not, according to a report in *Hi-Fi News*, quite as low as some of the best dynamic competition), and



## EQUIPMENT REVIEW - Quad ESL-2905 Electrostatic Loudspeaker

### SETTING UP AND DRIVING THE QUAD ESL-2905

It is often said that dipoles are easier to set up than directional speakers. This has always been both true and untrue. While dipoles don't have the sidewall-reflection problems that wide-dispersion cone speakers have, you still have to deal with backwall and backwall-to-sidewall reflections (and, in the ESL-2905's case, the slight rise in the midbass), which means you're going to want pull these things out into the room by about three or four feet and keep them a few feet (at least) from sidewalls. You're also going to want to tune toe-in and speaker-to-speaker-to-listening-position distance by ear. (At least in my modestly sized listening room, I think the ESL-2905s did better with a small amount of toe-in, rather than being parallel to backwalls and at right angles to sidewalls.) There aren't any hard-and-fast rules here, as everything depends on the size and shape and relative "aliveness" of your listening room, although I do think that the ESL-2905s will generally require less "room treatment" than other speakers. (Unless you live in a glassed-in condo, be wary of overdamping your digs.)

You're going to want to attach the weight that Quad supplies to the bottom of each speaker's transformer box to add a little extra mass to the frame, and you're also going to want to attach the supplied spikes. When doing both of these things, be sure to gently lower the speaker face-forward onto a clean rug

by grasping it at its sides. Never lift or lower or move the ESL-2905s by grabbing its rear support-strut. (You're going to need at least two people, BTW, to get the ESL-2905s out of their shipping cartons, and a room with very tall ceilings, as the outside box needs to be lifted straight up and off to gain access to the inner packing and the speakers themselves.) Like all electrostats, the ESL-2905s' high-voltage power supplies need to be plugged into the wall. (Quad supplies the power cords, although you may want to experiment with aftermarket brands.) The speakers also need to "charge up" for a day or so before you play them (or, at least, before you listen to them critically).

As for driving the Quads, I'm sure that many amps, tube and solid-state in the 50-200W range will fit the bill. However, I can strongly recommend one particular combination: the Air Tight ATM-3 monoblocks—beautifully made, one-hundred-watt, 6CA7-based, ultralinear/triode-mode-switchable tube amplifiers that are simply a marriage made in heaven with these speakers. (So, for that matter, is the amp's superb matching preamplifier, the ATC-2.) Also great (for a good deal more dough) are Emotive Audio's 50W, 6550-based Vita monoblocks (and matching Epifania preamplifier). **JV**

well-controlled in dispersion, you don't really notice this small rise the way you would with a cone speaker in a resonant box. Save for a teeny recording-dependent bit of plumminess on instruments that happen to be playing right where the Quad's low-end peaks (around 60Hz), the thing sounds so beautifully balanced, so full, fast, rich, and natural in the bass—with a clarity of line that, as noted, sets a new standard in low-end resolution—you might easily think that you were hearing all the way down into the bottom octave (although you aren't). Up to a point, the 2905 delivers things like hard timp or bass drum strikes, cello and doublebass played legato or staccato, low-pitched winds or brass, and even electric bass guitar and Hammond organ with *exceptionally* lifelike timbre and dynamics. (Part of the Quad's little secret in the bass is that the transients of these instruments are not in the bass but in the midrange, where the Quad's speed and low distortion are superlative; another part is that, since many bass-range instruments don't have the narrower directionality, steeper transients, and wider dynamic envelope of higher-pitched instruments, they inherently sound "softer," more billowy, less focused and, hence, less explosively dynamic, even when they're being played loud.) *But...* try turning the volume up (above mid-90dB peaks) on Kodo drums or the synth on Paula Cole's "Tiger Lily" or the big pipe organ on the Sheffield recording of Mendelssohn's Organ Sonatas, and you'll hit that same plate-glass window in the bass you hit in the midband.

Third, the Quad 2905 won't play *real* loud in the top treble, although here the problem isn't an electrostat's inevitable struggle with diaphragm-excursion limits. It would be if the Quad played

with equal power all the way out to 20kHz, but it doesn't. It rolls off (once again, I think, by design) above 15–16kHz and, though it measures quite respectably flat up this point, it actually sounds more rolled-off on top than it is (just the opposite of its bass). Oh, it will reproduce top-octave piano with the kind of natural sparkle that people pay big bucks for in a ribbon-based transducer, and if there is a better speaker in all this wide world on violins, solo or massed, I haven't heard it. Strings are ravishingly beautiful, even when played with energy in their upper octaves. Whether it's the roll-off on the very top (or the roll in combination with the slight rise on the bottom), the Quad simply takes almost all the edge off recordings that can (and often do) sound edgy on other speakers, and yet it does this without robbing most instruments of their authentic tonal and dynamic character. Most, I say, but not all. The Quad 2905 will reproduce something like a thumb roll on a tambourine with a clarity that lets you hear the skin and every zil. Unfortunately, it also sometimes makes things like cymbal crashes and bells sound a bit tambourine-like—a little like they're being shaken or brushed rather than struck. There is a softness up on top—an airlessness and darkness and reduction of size and power delivery—that is a little reminiscent of CD (which, you may recall, is also bandwidth limited in the treble).

Fourth, the vocal and instrumental images projected by the Quad ESL-2905 don't have as much three-dimensional body as they do through great dynamic speakers. They sound a bit the way medieval art looks—exquisitely detailed and gorgeous, almost gold-leafed, in color, but somewhat flattened in perspective. By this, I don't mean that the soundstage of the Quads lack for

## EQUIPMENT REVIEW - Quad ESL-2905 Electrostatic Loudspeaker

### HOW ELECTROSTATS WORK (AND HOW QUAD 2905S WORK)

Although the theory behind electrostatic loudspeakers dates back to the nineteenth century, it took the invention of Mylar (in 1949) and, later, other plastic films to make the theory practical. Prior to this, what electrostaticians had lacked was an extremely lightweight, suitably flexible material capable of holding a constant charge to serve as the loudspeaker's diaphragm.

In a 'stat that diaphragm is impregnated with an electro-conductive material and then connected to a very-high-voltage power supply that keeps it at a constant charge. This charged, freestanding diaphragm is then sandwiched between two fixed perforated grids called stators, with air gaps (and usually some sort of additional protective spacers) between it and either grid of sufficient width to allow the diaphragm to move freely without actually contacting the stators (this would cause sparking or "arcing" and leave burn holes in the plastic membrane). The stators are fed the audio signal from your amplifier—one stator getting the positive half of the signal, the other the negative half—generating a varying electrostatic field between them. This field causes the charged diaphragm to vibrate like the cone of a dynamic speaker, moving forward and back in response to the fluctuating polarity of the audio signal.

The advantages of electrostatic drive are

many. Being extremely low in mass (often lower than the air that helps support it) and charged equally throughout its entire area, a 'stat's diaphragm moves very quickly and uniformly, increasing perceived transient speed and low-level resolution, and lowering harmonic distortion to the levels of some preamplifiers. In addition, since it doesn't need to be back-loaded by a sealed or ported enclosure, a 'stat doesn't have box coloration (or much of same); it doesn't need elaborate crossovers, either, since it is driven full-range.

However, there are also downsides to electrostatic drive. For one thing, electrostats are typically limited in bass response by low-frequency phase cancellation (due to their dipolar dispersion) and by the limited excursion of their diaphragms (see "arcing," above), which also reduces their dynamic range and scale. In addition, they are prone to "beaming" in the treble. (This highly directional projection of high frequencies is due to the large size of the driver relative to the "small" wavelengths it is attempting to reproduce.) Treble-beaming mandates that the listener sit in one spot, directly on axis with the 'stat panel (the so-called "head-in-a-vice" effect), and makes off-axis listening generally much less satisfactory.

Although America's Arthur Janzsen designed and marketed the first widely

depth or width or that the images within it are crowded into a single plane, as in a painting by Cimabue. On the contrary, the ESL-2905s have excellent lateral spread (though not as good as, say, a Magico Mini II), very good depth (ditto), outstanding clarity, astonishingly fine retrieval of ambient cues and of instrumental decay, and tight image focus. Rather, it is the individual images themselves that seem a bit "flat" in volume. All 'stats typically sound as if they miss some of the natural weight, body, and three-dimensionality that cones (and certain planar-magnetics) have, and the ESL-2905s aren't exceptions, although they are better than some in this regard.

Which brings me to two important qualifications to the reservations I've listed above. No, the Quad ESL-2905 could not be called a completely characterless loudspeaker. With its dynamic-range limitations above certain peak levels, its slight softness in the treble, its slight rise in the midbass and precipitous drop in the very low bass, and its slight flattening of three-dimensional body, it has a definite personality that will not suit all music equally well at all playback levels. But—and here is the first qualification—although this particular combination of "weaknesses" is unique to the ESL-2905s, the weaknesses themselves aren't; they are, in fact, inherent in electrostatic loudspeakers, every one of which suffers from them to varying degrees. Indeed, the ESL-2905 will play louder before breaking down, play lower before giving out, and play wider and deeper and with tighter focus and more dimensionality than almost all of its formidable competitors—and all of its Quad predecessors. Plus—and here is the second qualification to my reservations—the ESL-2905's merits (including the improvements I just

mentioned in areas of electrostatic weakness) far outweigh its demerits.

First and foremost, the Quad 2905s (played within its dynamic-range limits) is among the most beautiful-sounding transducers money can buy. Timbres are, if not purely right in the sense of being dead-center audiophile-neutral, as close to right as you can get in a pleasantly forgiving, naturally sweet transducer. Minus a smidge of top-end air, instruments sound almost exactly the way they sound from a middle-row seat in a big, rich, warmish hall like the Berliner Philharmonie. Strings, top to bottom, are, as noted, ravishingly beautiful; piano, also as noted, has the sparkle in the treble and the dark complex density of tone color and dynamic in the middle and bass octaves that it has in life (and simply incredible articulation throughout); winds are sweet and silvery on top, woody and resonant on bottom; brasses are golden (and very powerful on fortissimos—watch those SPL levels!). Voices, from Mario Lanza's powerful tenor on the Cilea aria "Lamento di Federico" on *Mario Lanza Live in London* [RCA]—and, no, when overall volume is set properly, his voice does not break up on crescendos on this, one of the single most consistently powerful and challenging vocal CDs I know of—to Maria Black's sad, dreamy soprano on "I Dream of Columbus" from *Looking Back* [Curb Records] sound as natural in color and texture as stereo systems can make them sound.

Which brings me to the second of the Quad ESL-2905's sterling qualities, and one of the other chief reasons that voices and instruments sound so real, so immediate, so "there"—the speaker's truly phenomenal low-level resolution. Outside the top treble and at the right volume levels, the ESL-

## EQUIPMENT REVIEW - Quad ESL-2905 Electrostatic Loudspeaker

available electrostat in 1953—an add-on tweeter often used in combination with Acoustic Research’s AR-1 acoustic-suspension loudspeaker—it was Quad’s own Peter Walker (founder of that British company) and his colleague David Williamson who developed and marketed the first full-range electrostat, the fabled (and still highly esteemed) Quad Electrostatic Loudspeaker, popularly known as the Quad 57.

For his next speaker, the ESL-63, Walker devised what is arguably the most ingenious modification of electrostatic technology since he virtually invented the full-range electrostat with the Quad 57. To help solve the treble and bass problems of ‘stats, he attempted to turn the electrostat from a line source (with a line source’s beaming and phase cancellation) into a point source. By splitting the stators into concentric rings, each fed by a slightly more time-delayed signal, he made the speakers react to an input signal like a proverbial stone dropped into a pond, rippling their energy out in concentric waves from a theoretical “point” in space just about a foot behind the planes of the diaphragms. The result was a less beamy treble, a wider sweet spot (less of a “head-in-the-vice” effect), more controlled dispersion top-to-bottom, and somewhat better low-frequency response, although the 63’s “annular rings” and delay line didn’t really do much to solve the diaphragm excursion (and, hence, dynamic range) problems endemic to all electrostats.

Quad’s next efforts, the ESL-988/989, were

more evolutionary than the revolutionary ESL-63 and Quad 57. Both speakers added extra “bass” panels (a misnomer, since all ‘stats play full-range) to the ESL-63’s ingenious concentric-ring panels, augmenting output in the low end and improving dynamic range by adding sheer radiating surface-area.

The speaker under review, the Quad ESL-2905, goes even further in the direction that the ESL-988/989 pioneered, as well as taking off in its own directions. Almost five feet tall (with its tiptoes attached) and almost one hundred pounds per side (with weights attached), the ESL-2905 is far and away the largest and brawniest electrostat Quad has yet marketed. At the center of each speaker are two of Walker’s concentric-ring stators, surrounded top and bottom by six flat “bass” panels (three above, three below) that operate linearly (as opposed to the time-delayed concentric panels), adding, as per the ESL-988/989, even more radiating area to further improve bass and dynamics.

Save for the number of panels, none of this is very different than the ESL-988/989. Where the ESL-2905 steps off into the ether is in the sheer solidity of its construction. Influenced apparently by the way SME’s late Alistair Robertson-Aikman had beefed up his Quad ESL-63s by adding mass and rigidity to their frames, Quad decided to do a bit of the same. The ESL-2905s are the most massive and rigid Quads yet, using stainless-steel frames coupled to aluminum extrusions and wooden trim (finished, in the models I auditioned, in

2905 is perhaps the clearest, most finely detailed loudspeaker I’ve ever heard. When you can hear, without straining in the slightest whether the speaker is being played soft or loud, the timbre and dynamic of every string of Galvin Gallagher’s string bass on the aforementioned Mary Black recording, when you can follow the line of that chunky, squawking, mostly-buried-in-the-mix guitar or synth-guitar (equipped with what sounds like a wah-wah pedal), on the Alabama 3’s “Woke Up This Morning” from *Exile on Coldharbour Lane* [One Little Indian], when you are startled by that little mic pop as Dr. John clears this throat at the very start of “On a Roll” or by the utter lucidity of the bass guitar and purling organ on Irma Thomas’ “There Must Be A Better World Somewhere” from *Till The Night Is Gone: A Tribute to Doc Pomus* [Rhino], when you catch the reverb of every instrument on Marc Cohn’s “Ghost Train” from his eponymous album on Rhino, you know you’re in the presence of loudspeaker greatness. Even something as incredibly finely detailed as the Magico Mini II sounds a bit less discerning next to the ESL-2905.

The Mini II also sounds just a bit slower. Up to the limits of its diaphragm’s excursion, the ESL-2905 is among the fastest loudspeakers I’ve heard, with transient speed that makes even the very best cones (and the Mini IIs are the very best) sound a bit sluggish. Of course, with their very low mass and very low inertia drivers, all stats sound “fast,” but they also sometimes sound wildly uncontrolled due to ringing. Thanks in part to the rigidity of their frames and their point-source configuration, the ESL-2905s are both fast and focused, both hard-hitting and under control. No, they don’t have all the lifelike weight and body

of Mini IIs—it’s almost as if ‘stats are so fast that they leave these things behind, like bags forgotten on the platform in a race to catch a train. Still, they will reproduce a timp or bass drum with genuine room-shaking power (and the kind of speed on the mallet-strike that only ‘stats—and the real thing—seem to own). They’ll just reproduce them with a slightly reduced sense of instrumental size and dynamic scale, as they do with instruments or instrumental overtones in the top treble.

The Quad ESL-2905’s soundstaging is also excellent, though, once again, not as panoramic as, say, that of the Magico Mini II. As sound

### SPECS & PRICING

#### Quad ESL-2905 Electrostatic Loudspeaker

Frequency response: 32Hz-21kHz (-6dB)

Impedance: 8 ohm nominal

Maximum continuous input voltage: 10V

Program peak (for undistorted output): 40V

Dimensions: 1430 x 695 x 385mm (add 25-55mm for feet)

Weight: 76.5 lbs.

#### U.S.

Price: \$12,000/pr

#### TAIGA LLC (U.S. DISTRIBUTOR)

310 Tosca Drive  
Stoughton, MA 02072  
(781) 341-1234  
info@taigallc.com

#### U.K.

Price: £7,000/pr

#### QUAD ELECTROACOUSTICS

Huntingdon, Cambs  
PE29 6XU  
+44(0)1480 447700  
quad-hifi.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Quad ESL-2905 Electrostatic Loudspeaker

a glossy piano-black) for “enclosures” and adding, at the back of the panel, a heavy-duty aluminum strut that runs from the top rear of the speaker to the box which houses its transformers and crossovers at its base and acts as a brace. (There is an additional sizable weight that can be attached, with some difficulty as no instructions are included, to the bottom of the transformer box. Intended primarily to satisfy the “anti-tipping” requirements of the British audio industry, these weights serve the further function of adding mass to the entire framework—and I recommend their use.)

For the indubitable sonic improvements these extra drivers and the more rigid and massive and heavily braced “support structure” have made, see the review. **JV**

sources, they don’t (because of their tonal balance, combination of dispersion characteristics, and dynamic strengths and weaknesses) disappear as completely as a Mini II (or, as you will see in a few months, an MBL 101 X-Treme, which simply owns this territory). You don’t exactly hear a “box” with the ESL-2905s; it’s more like hearing a window—as if you’re hearing *through* them to an incredibly detailed soundstage peopled with incredibly realistic, slightly miniaturized instruments and vocalists, rather than as if they’re completely disappearing and leaving a soundstage and its inhabitants behind. In this regard, the Quad ESL-2905’s aren’t as “transparent” as the original MartinLogan CLSes were.

Bottom line. If you understand and can live

with the inevitable limitations of an electrostatic speaker, the ESL-2905 offers virtues that no other kind of speaker does. Given certain significant dynamic limitations, it will carry you closer to the absolute sound in truth of timbre, fineness of texture, clarity of line and detail, transient speed, and lifelike presence than most cone loudspeakers (Mini IIs excepted). It is not the ideal speaker for stadium rock, for electronica, for drum-and-bass, or for power music of any kind played at true concert-hall or rock/jazz-club levels. But for the smaller-scale acoustic music that I favor—for chamber, small combo jazz, folk, blues, and much rock—and even for the larger-scale music that I often listen to (albeit played back short of concert-hall volumes on fortissississimos), it is superb. Nothing else plays more realistically at low-to-moderate volumes, regardless of music.

Though not without character of their own, the Quad ESL-2905s are the best electrostatic loudspeakers I’ve yet heard. They immediately join the very small rank of truly great transducers that I’ve auditioned. They are to electrostatic technology what the Magico Mini IIs are to cone technology, the Symposium Acoustics Panoramas to planar-magnetic technology, and the MBL 101 X-Tremes to omni technology—benchmarks. Much as I’d like to own the \$30k Mini IIs, the \$100k Symposium Pans, or the \$200k 101 X-Tremes, unless I start knocking over gas stations again I’ll never be able to afford either. I *could* afford the \$12k Quad ESL-2905s and can honestly say that, as of this writing, they are the speakers I would buy if I were buying a high-end loudspeaker. For those of you with taste in gear and music like mine, they are must-hears. **tas**





# Raidho Eben C2

Beauty can be more than skin deep

Chris Thomas

**R**aidho's Eben C1, with its quirky, wobbly stand is one of my all time favourite loudspeakers. Its voice is one of musical eloquence, subtlety and cohesion way beyond what its diminutive size would initially suggest. It is a hungry device though and will gobble up and respond to just about all the quality you care to pour into it and this certainly helps in making it, to my ears, a landmark product. Its elegance and economy of design typifies everything a small, high-cost stand-mount should be. But it then goes way beyond that by plugging you straight into the realm of pure musicianship and expression. Hi-Fi-wise, that's where I want to be. But it is very small and although it produces quite surprising extension and clarity at lower frequencies it will never have the scale and bandwidth that some situations and tastes demand and this is where the C2 comes into the equation. It could be thought of as a C1, with an extra driver, in a floor standing cabinet and certainly has Eben DNA running right through it. That much is obvious when you first hear it. The caveat here is that it is another one of those speakers that takes an age to run-in and it can sound quite ordinary straight from the box. So great are the improvements that come as the weeks and months pass, that this warning bears repeating as often as possible.



## EQUIPMENT REVIEW - Raidho Eben C2 Loudspeaker

This is an elegantly proportioned and quite beautifully constructed speaker. It incorporates a pair of 115mm custom-built drivers, like the one found in the C1, in a two and a half way design where the lower unit is employed as a subwoofer. Raidho's approach with this driver was to remove the magnet from its conventional position at the rear of the speaker and replace it with an array of 10 Neodymium rod magnets, isolated from the minimal chassis by soft iron spacers and sited around the circumference, fore and aft of the voice coil in a patented push/pull design. The chassis is replaced by stand-offs that attach the driver to the 20 mm aluminium baffle sections and the entire superstructure of the unit has been greatly minimised with the area behind the cone being left open. Designer Michael Boerresen wanted no clutter here to eliminate both reflection back into the driver and any thermal or mechanical compression. This thinking has been carried through to the cabinet design where each driver section is rear-vented and these holes in the aluminium rear plate should not be thought of as conventional ports but rather as an extension of the breathing-driver design aims. The cones themselves are an ingenious sandwich construction formed by immersing an ultra-lightweight aluminium cone into a bath and subjecting it to a plasma/electrolysis process that converts two thirds of the surface into ceramic. This is a patented procedure that eliminates the associated problems of consistency of cooling that bedevils all-ceramic cone designs. The result is an extremely accurate shape that provides Eben with the true piston driver they envisaged, able to take full advantage of the lack of reflection that the radical rear end shape provides.

Each of these units is mounted on its own baffle/module and slotted into the cabinet. The top driver is essentially a midrange unit while the lower one handles everything below 140Hz, down to about 40 Hz. The large enclosure beneath this is used to load the driver through a series of strategically positioned vents and also contains the crossover. As with other Eben speakers, all internal wiring is Nordost and a single pair of gold-plated WBT terminals provides amplifier connection. The Raidho-built ribbon tweeter is also the same as that found in the C1 and is an edge-constrained sealed unit with an ultra-lightweight membrane weighing only 0.01 gram. This is another exceptional performer with the speed and transparency that typifies good ribbons, but is also notable for a lack of HF beaming that is so endemic in such designs. You will not find yourself locked into a narrow sweet-spot listening position in an effort to hear the speaker's full bandwidth.

Superbly finished in a deep, highly polished burr-walnut veneer for the review pair, the cabinet, sits on the same base as the C1 stand and this means that there is resonance-control technology in the shape of a decoupling bearing system fitted within. The weight of the C2 means that it doesn't sway through the alarming angles that the C1 does when pushed, but there is still compliance in the installation and this is very much a part of the design concept of the Eben C-range. The slim aluminium baffle is 200mm across at the front and the cabinet tapers to the back where it measures a mere 85mm. The manufacturers claim that at 89db efficiency and with impedance curve that does not fall below 4.5 ohms the C2 is technically an easier proposition for amplifiers than its baby brother. When you first install them

they sound more like 87-88 db but it seems that efficiency increases with use and although the impedance may be somewhat benign, this is another one of those speakers that will punish mediocrity in partnering equipment. They reward excellence and the results, when you provide it, are absolutely stunning. But there is a meticulous installation process to be gone through first that involves three phases to be undertaken with music and perhaps supplemented with a good test disc. Rear wall spacing, as they like to operate in free air, distance apart and then toe-in are all critical and should be progressively measured. Don't be surprised if the listening angles take a few days to finalise. A word of advice is to start with them facing directly forward and introduce just a degree or so at a time.

Initially you are struck with both the lack of any cabinet in the sound and the finely etched sonic picture of the soundstage. Michael Boerresen's ambition to free the driver's from reflection and internal energy storage is surely the reason for the way the music has so much vitality and refuses to be constrained within the boxes. Close your eyes and point to where the instruments are located and you will be amazed at how broad, free and full-scaled the view of the music is. Each instrument or voice has a palpable sense of dynamic freedom about it and this gives them a really solid and exciting sense of vitality and movement. But this is not a speaker that adds any superfluous flesh throughout its bandwidth. Overall it shares certain leanness with the C1 and you can feel this, especially in the bass. An upright string bass or cello will never have the full, rich and weighty presence that you would get with the big paper cone of say, a Wilson Duette. The bandwidth is

there but the Eben concentrates its energies on speed, focus and clarity. This makes them one of the few floor-standing speakers I have heard that will sit quite happily in smaller rooms where a high quality stand mount might be the initial and obvious consideration. Having mentioned the word speed in relation to the C2 I think that it is at the heart of much that they do so well. Not only do they gain energy quickly but they lose it just as impressively, leaving no sonic trace. The backgrounds against which the music plays is remarkable for its blackness, bringing an added feeling of dramatic contrast. But there are also the rhythmic benefits that such sensitivity allows and there are few speakers as "to the point" where tempo is concerned, as the Ebens. I was listening to *The New Bossa Nova* by Luciana Souza when I started to think more deeply about the whole flavour and nature of Bossa Nova music. The combination of the swaying rhythms, counterpointed by gently suggested offbeat chord shifts from the guitar were all so subtle and understated that it intrigued me. That distinctive vocal style, free of big dynamic swings and overt expression, sat just above the brushed snare and washing cymbals and the more I listened the more I became aware that the Ebens were superb at revealing an incredibly complex collaboration of elements. Her lyrical approach, which I had heard sound so flat on other systems, now felt full of expression and were sung with a care and precision that I hadn't fully appreciated before. She uses her approach to long and short phrasing as a link in time that spans the tempo and with subtlety and colour changes she pushes gently at the lyric, sitting its emphasis in different places on and around the beat. This *New Bossa Nova* is a sensibility

## EQUIPMENT REVIEW - Raidho Eben C2 Loudspeaker



with a communicative edge that is completely dependent on the brilliance of her performance. With some speakers, you just sit back and watch the music happening in front of you. The Eben, when pumped full of potential, is an open window that lets you walk right into the middle of the mix to have a look around and explore.

Like the C1, their top to bottom coherence is strikingly good and they really have no obvious preference when it comes to musical genre. Those who are looking for serious chest-cavity rattling levels of bass energy will certainly notice the lack of ultimate low frequency weight and power, though personally, I never found it a problem at all. And while I am looking under stones for criticisms, I might also mention that perhaps they could do with a little more air at high frequencies and a touch more obvious presence up here might be nice too. But these are also remarks that I made about the C1 and are more to do with personal taste. At the risk of labouring another point I must also say that the requirements to push the speakers to the heights they can achieve means that the electronics must be of notable quality but, perhaps even more importantly, so must the quality of installation and set-up and this is something I hope to return to in issues to come.

When I get involved in a very fine and explicit recording like *A Remark You Made* by Jerry Douglas from his *The Best Kept Secret* album I can't help but think that the Eben C2 is one of the most engaging small floor-standing designs I have heard. They have a near perfect tonal balance, so the bite and fabulous tonal warmth of the slide guitar alongside the violin, played together in unison over a string bass, feel like voices speaking to you. Three textural, fretless

instruments brimming with harmonics and shimmering overtones, all superbly controlled in space and time by the C2 are just one of one of the joys of this speaker. They have a realisation and resolution of playing technique and ambient instrumental detail that makes the music more meaningful and emotional and for me form such an integral part of the Eben appeal.

Since I have been using the C2 exclusively for 3 or 4 months now, they have improved, as has my appreciation of what they do so well. Their freedom of presentation and extremely fine resolution, coupled with enough bandwidth to give them a real sense of scale and presence mean that, except for very small rooms, they are going to fit in many of the situations that a C1 would. Don't forget that they take up the same amount of floor space. But they are also happy in larger rooms. Their feeling of intimacy, response to micro-dynamic shifts and the explicit nature of their voice brings you close to the performance and the more you use them, the more delighted you will be at how much of the music and what lies behind it, they are showing you. The C2 is an agile conjuror of a speaker, able to keep all the balls the air at the same time. It is often an education to live with and I can do nothing but thoroughly recommend it. +

### SPECS & PRICING

#### Raidho Eben C2 Loudspeakers

**Type:** 2.5-way floor standing.

**Drivers:** 2 x 115mm Raidho aluminium/ceramic driver, 1 x Raidho sealed Ribbon

**Freq Resp:** 40Hz-50KHz

**Sensitivity:** 89dB

**Dimensions:** 1160x200x520mm (HxWxD)

**Weight:** 50.5Kg (2)

**Finishes available:** Piano Black, Walnut Burr and all possible paint colours (to order)

#### U.S.

**Price:** \$24,000/pr

#### SPECIALTY SOUND AND VISION

210 Summit Avenue,  
Suite A16  
Montvale, NJ 07645  
(201) 690-9006

#### U.K.

**Price:** £13,995/pr

#### RAIDHO ACOUSTICS

raidho.dk

**HIGHEND CABLES**  
+44-1775761880  
djenvirogroup@  
btconnect.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)



# Thiel CS3.7

## A New Standard of Musical Accuracy

Anthony H. Cordesman

**T**he more I review speakers, the more cautious I get about calling one a breakthrough. Speaker design has advanced to the point where dramatic qualitative differences are rare, where the personal taste of the audiophile is highly relevant, and where room-interaction problems can do as much to shape the sound as many aspects of engineering.

That said, the Thiel CS3.7 does more than demonstrate how good the current generation of speakers has become. It represents decades of effort by Jim Thiel, who has long been one of the world's top designers, and I do feel it is a breakthrough in sonic accuracy and resolution at its price of \$12,900. At a time when the high end seems to be drifting towards reference-quality speakers that cost as much as a good car, the CS3.7 delivers an extraordinarily advanced set of new driver technologies, integrated into what is about as close to a true "point source" as any full-range dynamic transducer. It is a remarkably coherent speaker in any halfway realistic listening position, and one that offers truly exceptional detail and resolution.

Don't misunderstand what I am saying: The Thiel CS3.7 does have many rivals in overall performance, and it is not a "no-holds-barred"

assault on the state of the art that ignores cost considerations. The race between dynamic, ribbon, planar, and electrostatic loudspeaker technology is still wide open, with excellent examples of each in the running. There is also no one "right" configuration for dynamic loudspeakers in driver type or in the choice between line-source or point-source arrays. You can find outstanding speakers regardless of the mix of technologies involved.

I have, however, found that development of integrated-tweeter-and-midrange drivers that provide coherent dispersion and imaging at a minimal cost in distortion and coloration is leading to major advances in speaker quality. I have heard such advances in KEF and TAD designs, and the Thiel CS3.7 pushes this aspect of the state of the art to new levels of sonic performance—particularly at anything like its price point. It

## EQUIPMENT REVIEW - Thiel CS3.7 Loudspeaker

may well represent the most accurate dynamic speaker now available at anything close to twice its price or more, at least from the lower midrange to beyond the range of human hearing.

### Rethinking Dynamic Driver Technology

I don't want to bore you with too much technobabble, and the Thiel Web site provides far more detail than I can fit into a review. At the same time, you cannot understand this product, how it achieves its sound quality, or why I can use the term "breakthrough" without knowing some key facts about its design.

The Thiel CS3.7 is the result of years of effort by Jim Thiel—one of the world's leading speaker designers—to make a major advance in the coherence of the treble and midrange signal and to reduce levels of distortion. I quote from the Web site:

"Thiel uses two techniques, singly or in combination, to achieve time coherence in all our products. One is to mount the drivers on a sloping baffle and adjust the angle of the slope and the driver spacing to achieve coherence. This can work well for floorstanding speakers, especially at lower frequencies. But it cannot work for non-floorstanding speakers where the location of the speaker is unknown, and in any case the accuracy of the results at high frequencies becomes somewhat dependent on the listener's position.

"For this reason, a better technique for time coherence at higher frequencies is to mount the tweeter coincidentally (both coaxially and coplanarly) with the midrange driver. Such mounting ensures that the sound from both drivers always reaches the listener at exactly the

same time, regardless of where the speaker is placed or where the listener is. Such mounting also completely eliminates any 'lobing' in the speaker's radiation pattern."

The CS3.7 also represents the result of a similar effort to develop a far more rigid midrange driver material that is breakup-free. Thiel states:

"The CS3.7 has a midrange diaphragm that is ten times as stiff per weight as [our] previous extremely stiff composite diaphragm while also being flat rather than cone-shaped. But these requirements work against each other. The flatter the diaphragm's shape the weaker it becomes... [so] an undulating, radially ribbed contour is used for the diaphragm which provides light weight and great stiffness in the radial direction while still maintaining a basically flat shape."

I should stress that the CS3.7 also makes important refinements in bass driver, crossover, and enclosure design. For example, all of the drivers in the CS3.7 use copper-stabilized, short-coil motor systems that Thiel claims produce only one-tenth the distortion of conventional motor systems and have a much larger magnet and much longer magnetic gap.

The crossover is a true first-order type that Thiel claims provides complete accuracy of amplitude, phase, time, and energy and, therefore, does not distort the musical waveform. The cabinet is carefully shaped to minimize standing-wave problem and interference with the radiation of the drivers, and its front baffle is machined from aluminum, which Thiel states is more than thirty times as strong as the usual MDF baffle, reduces unwanted vibrations, and provides a rigid mounting for the drivers so they cannot move, even a miniscule amount, as they recoil from the

forces they generate.

Dynamic loudspeakers may now be older than any living audiophile, but Thiel and other cutting-edge high-end manufacturers are showing that it is still possible to make technical advances that are at least as important as any I have seen in electrostatic, ribbon, and planar design, and to do so without plunging into the costs and problems associated with beryllium and diamond drivers.

### A Speaker You Can Actually Live With

The CS3.7 is also a practical speaker—at least by high-end standards. It does not require exotic amplifiers and a snake pit of expensive speaker cables. It does not require (and cannot use) bi-wiring. It has a relatively smooth impedance curve that does not dip below 2.8 ohms (it carries a 4-ohm nominal rating), and its sensitivity is rated at a relatively high 90dB.

Bass "speed" and detail do improve with amplifiers with high damping factors, and the CS3.7 has the dynamic range to benefit from amplifiers with high power. At the same time, even moderately priced tube amplifiers in the 50-watt-and-above range, such as from Cayin and PrimaLuna, provide enough control and power to produce very high sound quality; thus, choosing between the cost-benefits of tube and solid-state does not require a massive investment in either type of power amp.

No speaker is free of room-interaction effects, but the Thiel CS3.7 proved to be the easiest speaker to place I have encountered in several years for getting the proper balance of bass response and power relative to the rest of the sonic spectrum. If you read the instruction manual, and follow its recommendations—a principle

that Plato once gave the acronym "RTFM"—you can count on getting truly good sound from this speaker in any room large enough to minimize major sidewall reflections and that gives you enough space to produce a decent soundstage and avoid serious standing-wave problems.

The CS3.7's visual profile is curved and sculptured, not just a "big box"; its height is good in terms of vertical dispersion, and moving it does not involve a weight-lifting contest. (I am still waiting for a speaker to be called the "Hernia.") There is a low-profile outrigger that attaches to the bases of the enclosures and ensures excellent stability in spite of the CS3.7's small footprint. This is a speaker that you and your partner can easily live with, although I suspect most wives and design-sensitive roommates will want a finish a little less bland than the normal walnut.

### Sound Quality: The Strengths

The key strength of the Thiel CS3.7, however, is its sound quality. We all listen for different things and we all have our own personal image of what the absolute sound should be in reproduced music. This came through clearly when I started to evaluate the CS3.7.

Having read the technical literature, I initially listened to see if I could hear the level of midrange-to-treble clarity and coherence that Thiel promised. When I asked one of my sons to provide a "blind" comment on the speaker, however, he had no idea of the speaker's design goals or background. He didn't focus on transparency and coherence. Instead, he said that the CS3.7s provided the best soundstage he had ever heard from a stereo setup.

My other son focused on something different.

## EQUIPMENT REVIEW - Thiel CS3.7 Loudspeaker



He praised the quality of bass guitar and deep bass, and the CS3.7's ability to get deep room-exciting bass out of Jennifer Warnes staples like "Way Down Deep" [Private Music] and "The Well" [Musicforce], as well as its exceptional combination of deep bass energy and complex musical detail on the Ray Brown recording *Superbass* [Telarc].

My sons are more rock and pop oriented than I am, but they are also right. The soundstaging is

truly excellent with classical music, with a very realistic mix of imaging size, width, and depth. The illusion of a realistic soundstage is also reinforced by exceptional detail, transparency, and lifelike dynamics. For example, you can clearly hear the differences in both soundstaging and imaging when you compare two versions of Mozart's Clarinet Concerto in A Major—the Martin Frost/Amsterdam Sinfonietta version [BIS] and the Antony Michaelson/Michaelangelo version [MFS]. The CS3.7 reveals all too clearly that Frost is spotlighted in ways which make his clarinet seem incredibly large, while Antony Michaelson's instrument is recorded in ways that are far more realistic, as is the hall in which he plays. At the same time, no instrument on either recording had an unrealistic timbre, and the orchestra was remarkably clean and detailed even in comparison to excellent competing speakers.

This same mixture of excellent detail, dynamics, life, musically natural timbre, and realistic imaging comes through in a very demanding, all-Strad recording of Mendelssohn's Octet for Four Violins, Two Violas, and Two Violincellos [Sony]. Resolving inner detail on music this complex is not easy, and the music can sound slightly hard if the midrange and tweeter are not exceptionally transparent. This same high resolution, incidentally, was audible with the radically different music and mix of instruments on both the LP and CD of the Modern Jazz Quartet's *Blues at Carnegie Hall* [Mobile Fidelity]. I thought I had long listened this recording to death. The CS3.7 provided enough new insight to give it a new life.

The CS3.7 is not the kind of speaker that produces the "big" sound that large column or line-source configurations do, but its point-source

configuration does provide a very convincing rendition of orchestral, large-scale choral, and operatic works. Wagnerians will be more than happy with the imaging, detail, dynamics, and life of the better *Ring* recordings (and the rest of us will find it harder to nod off out of sheer boredom). Telarc's wide range of really good choral music recordings comes through with remarkable detail and realism.

Equally important, the CS3.7's combination of accurate timbre, low- and high-level dynamic contrasts, detail, and extended frequency response makes ordinary recordings more pleasant to listen to. The Eugene Ormandy, Philadelphia Orchestra rendition of Carl Orff's *Carmina Burana* is not a great recording, but it sounds far better when the male and female voices are reproduced in full detail and have more lifelike timbre and image size. You will find the same to be true with any good Mahler disc, particularly in complex orchestral and vocal passages. Close your eyes as you listen, and you may find it difficult to believe that the CS3.7 is not a far larger speaker.

In short, I soon realized from the reactions of other listeners that the CS3.7 does more than make advances in midrange and treble performance. It provides the best overall sound I have ever heard from a Thiel speaker—serious praise for a manufacturer with such an established history of success.

### Paying Attention to the Trade-Offs and Limits

Are there limits to the CS3.7's performance? Of course! This is not a "big" speaker with an enclosure so solid and vibration-free that it takes

ten men to move it into the house. It can play as loudly with rock, jazz, and symphonic music as I care to go, but I'm sure that its distortion rises with listening levels—the laws of physics almost ensure this—although this is not as apparent up to 100dB SPL as it is with other speakers in this price range. Push it to the levels that are likely to damage your hearing, however, and you will find that the bass is not equal to that of much larger and more expensive speakers.

## SPECS & PRICING

### Thiel CS3.7 Loudspeaker

**Driver complement:** One 10" woofer with wave-shaped aluminum diaphragm, one 10" wave-shaped passive diaphragm, one 4.5" midrange with wave-shaped aluminum diaphragm, one 1" aluminum dome tweeter coincidentally mounted with midrange

**Frequency response:** 33Hz-26kHz +/-2dB

**Sensitivity:** 90dB (2.8v/1m, true anechoic)

**Impedance:** 4 ohm (2.8 ohm min)

**Recommended power:** 100-600 watts

**Dimensions:** 45" x 12.5" x 21"

**Weight:** 91 lbs.

### U.S.

**Price:** \$12,900/pr

### THIEL AUDIO

1026 Nandino Boulevard  
Lexington, Kentucky  
40511  
thielaudio.com

### U.K.

**Price:** £9,495/pr

### SYMMETRY LTD

17 Holywell Hill  
St. Albans Herts AL1 1DT  
+44(0)1727 865488  
symmetry-systems.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](http://AVGUIDE.COM)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Thiel CS3.7 Loudspeaker

This is not the ultimate speaker for the audiophile who likes sitting next to the Marshall stacks at rock concerts, whose idea of organ music is a half hour of 32Hz notes at extremely high volumes, or who won't go to a club where the sound levels don't constantly produced physical pain. Don't get me wrong: This is not a bass-shy transducer; it is easier to place than most speakers to get good bass, and it can produce furniture-vibrating deep bass you can clearly feel. *But* it is a speaker for demanding but *rational* listeners.

The "point source" character of the CS3.7 provides all of the soundstage merits that I have described, but its stage is not as big as that of columnar dynamic designs or tall ribbons and electrostatics. Some other speakers can be placed wider apart without centerfill problems, although at a cost in soundstage detail and, usually, depth. Every speaker ever made makes real sonic trade-offs in soundstage performance, and you may prefer a different mix of qualities.

The wide dispersion of the midrange and treble do produce potential reflections from an undamped floor, close-by untreated sidewalls, and a "live" or reflective area around the listening position that are much less problematical with a speaker with more focused dispersion like the Vandersteen 5A. You really do need to read the manual to place this speaker properly, use a carpet to damp the floor, avoid putting reflective objects between you and the CS3.7, and pay attention to room surfaces and reflections.

Most importantly, this speaker is unabashedly designed to meet Jim Thiel's definition of flat frequency response. His definition is scarcely unique, although I do not know of another manufacturer providing more demanding

specifications and frequency-response data. The timbre of the CS3.7, however, is not in any sense romantic or forgiving, and there are no adjustments as to treble and midrange levels. The end result is intensely realistic with good recordings, where there are no tell-tale signs of hardness or excessive upper-midrange energy on female voice, violin, flute, or woodwinds. But if you want forgiving or romantic frequency



response, or a softer or warmer sound, the CS3.7 won't provide it.

Close-miked digital recordings can present problems, particularly classical recordings with a great deal of upper-midrange energy. If you are into rock or jazz, you probably don't need to worry. The most you may hear with a female singer with poor breath control is how she aspirates into the microphone. The same is true for most pop music, although I was struck by how clearly the CS3.7s reproduced the hardness in the voice and sibilants on some poorly mastered Judy Collins recordings.

The story can be different, however, with spotlighted acoustic instruments where the recording engineer did not give a damn about natural timbre. The advantage of the CS3.7 is that its exceptional clean and detailed midrange and treble do not add to the hardness of such recordings or their peculiar "where the hell could the musician be standing if this were a live performance" quality. At the same time, you will hear the hardness and excessive upper-octave energy that is actually present on far too many classical recordings of piano, flute, clarinet, violin, etc. You will hear the bad moments on recordings of tenor and, particularly, soprano voice. Accuracy has its costs, especially in an era where tone controls, equalization, and any form of correction in the preamp can get you publicly burned at the stake by large segments of the high-end cult in the U.S. and Europe.

This is not the speaker for hard front ends, electronics, interconnects, and speaker cables. It works fine with a wide range of equally accurate solid-state electronics—Boulder, Pass Labs, Parasound, Mark Levinson, etc. It also

worked very well with my reference Kimber and Audioquest interconnects and speaker cables, and older Straightwire, Transparent Audio, and Discovery Cable designs. But you do need to show some caution in blending the CS3.7 into a system.

### Summing Up

No speaker is all things to all men and women. The CS3.7 has clear sonic limits, and accuracy sometimes comes at a price, given the problems in far too many modern recordings. This is more than a truly good speaker, however; it is an important one. It makes advances in coherence, transparency, and sonic detail, and in providing the advantages of true point-source soundstaging. I have not heard anything like it at its price.

You may well prefer other sonic qualities in your search for the absolute sound, but you owe it yourself to audition this speaker with your music and learn just what it can do. Highly recommended and a real challenge to other designers and manufacturers. **tas**



# Vienna Acoustics “The Music”

Redefining the art of the loudspeaker

Jim Hannon

Large, full-range, multi-driver loudspeaker systems can be thrilling and a lot of fun, yet in my experience, they frequently suffer from a lack of coherence between at least some of their drivers. My former Infinity Beta and RS1B speaker systems, with their separate woofer towers, generated plenty of goosebumps, yet their lack of coherence ultimately destroyed the illusion of a live performance for me. Modifications to the external crossovers, cabinets, and drivers helped, but not enough to keep me from parting with them. Indeed, getting woofers or subwoofers which plumb the depths to mate seamlessly with smaller quicker drivers is a major design challenge. Full-range electrostatics, as well as some highly regarded two-way dynamic systems, solve the coherence problem at the expense of bottom-end extension and weight, and most limit dynamic output. I've typically accepted these trade-offs and voted in favor of coherence over goosebumps.

However, as subwoofer advocates can attest, that bottom octave not only gives the performance a solid foundation and dynamic impact, but additional spatial cues which help soundstaging and musical realism. When I heard Vienna Acoustics' new “The Music” loudspeaker for the first time at CES 2008, I was mightily impressed that here was a full-range, multi-driver speaker system that provided plenty of goosebumps without sacrificing coherence, plus it also had an extraordinarily expansive and deep soundstage. Having lived with *The Music* for many months, and then again for several more after it returned from

an appearance at a trade show, my appreciation for this brilliant loudspeaker has grown on many levels.

*The Music* occupies the uppermost rung in Vienna Acoustics' new Klimt Series of loudspeakers, named for the Viennese artist, Gustav Klimt. The connection between art and music is intentional, as *The Music* advances the art of loudspeaker design, while also being quite an artistic statement, in both physical appearance and performance, staying true to “the music” and, in many respects, preserving the illusion of attending a live concert. It is a beautifully finished



## EQUIPMENT REVIEW - Vienna Acoustics “The Music” Loudspeaker

### VIENNA ACOUSTICS’ REVOLUTIONARY DRIVER—THE IDEAL REALIZED?

Imagine a dynamic loudspeaker employing a revolutionary flat midrange driver that covers the entire range of the human voice and works seamlessly with a handcrafted, coincident silk dome tweeter without producing any objectionable frequency anomalies. What you’d have is a time-accurate and phase-coherent point source covering the range where most music lives, resulting in a presentation with truth of timbre, an incredibly broad and deep soundstage, and an ultra-wide “sweet zone.” It certainly sounds too good to be true, but Peter Gansterer and his team at Vienna Acoustics have achieved it with their Klimt Series loudspeakers, and the results are stunning!

Driver arrays that replace the dust cap of the midrange cone with a tweeter and align the centers of both units coincidentally have been around for decades. Perhaps the best known is the Uni-Q tweeter/midrange array from KEF, now in its tenth generation, according to the KEF Web site. Two speakers utilizing coincident driver arrays, the KEF Model 207/2 and TAD Reference One, have been highly praised recently in these pages by AHC, and I have been impressed by their respective performances, along with that of the TAD Compact Reference One Monitor, at trade-shows. Along with Vienna Acoustics’ Klimt series, these concentric-array speakers share a lot of compelling sonic attributes, most notably in projecting an

expansive soundstage with subtle spatial cues across a wide listening area, in time alignment, in enhanced coherence, and in better matching of directivity, when compared to their more traditional, “separated” driver counterparts.

The heart of Vienna Acoustics’ remarkable The Music loudspeaker is a patented 7” flat concentric midrange driver that is both an engineering and sonic breakthrough. This is not just marketing speak, but a major achievement, aided by advances in materials science and the skillful application of computerized Finite Element Analysis (a numerical modeling technique using calculus to obtain approximate solutions to vibration systems, and typically used to solve complex elasticity and structural-analysis problems). Combined with its first-order crossover, for greater phase coherency, this flat midrange with coincident tweeter is housed in a separate sealed enclosure, which not only helps to extend the midrange driver’s range but completely decouples it from the bass cabinet to preserve clarity and natural musical timbre. Moreover, it can be swiveled both horizontally and vertically via an ingenious pivoting mechanism, allowing minute adjustments for both rake and toe-in. The ability to aim this top cabinet separately from its lower one, housing three nine-inch bass drivers and a Murata super-tweeter, gives The Music a lot of flexibility, helping to lock-in the

speaker, with a relatively small footprint that does not dominate the listening or living room, but also breaks new ground for Vienna Acoustics, propelling the company with great velocity into the reference loudspeaker ranks. Its remarkable flat, concentric, Spider-Cone midrange driver with a coincident silk dome tweeter is a stunning technical achievement (see sidebar), providing *The Music* (and presumably other speakers in the Klimt Series) with an absolutely breathtaking soundstage and the core of a level of coherence difficult to match by any full-range, multi-driver system. *The Music* is thrilling, dynamic, eminently musical, and truly full-range, with deep-bass extension and weight, as well as highs that go out to the stratosphere.

In my experience, if a transducer can reproduce the human voice coherently over its entire range, from lyric soprano to bass, limitations elsewhere in the frequency spectrum can be more easily tolerated. Full-range electrostatic speakers from SoundLab, Quad, and MartinLogan pass this vocal coherence test with flying colors, and so does *The Music*—it is very close to “being of one cloth.” What makes *The Music* different from most fine multi-driver systems is that voices come from a single point source in a phase-coherent time plane that is devoid of a crossover throughout this critical range. The Vienna Acoustics’ flat, concentric midrange driver alone covers an amazing seven octaves of music, which closely approximates the bandwidth of the human voice. It is skillfully coupled with a handcrafted silk dome tweeter at its center that extends beyond 20kHz. This remarkable coincident planar midrange/tweeter array, housed in a separate, enclosed cabinet that Vienna Acoustics calls the “Music

Center,” is a major sonic breakthrough.

Indeed, these Vienna Acoustics speakers certainly have an engaging, almost irresistible way with both male and female voices. I love to listen to vocal recordings to test loudspeakers, because it’s so easy to detect coherence problems and frequency anomalies. To help aid in this evaluation, I listened to several vocalists, including: Holly Cole on “I Can See Clearly Now,” Peggy Lee on her signature tune “Fever” from *The Best of Peggy Lee* [Capitol], Mirella Freni on *French and Italian Opera* [EMI], Ella Fitzgerald on *Let No Man Write My Epitaph* [Verve/Classic



## EQUIPMENT REVIEW - Vienna Acoustics "The Music" Loudspeaker

soundstage and achieve better tonal balance and coherence.

While mounting a tweeter coincidentally within the midrange driver produces numerous sonic benefits, it does present other design problems that need to be overcome. With the tweeter placed at the throat of the cone, time alignment suffers and horn loading results, which can produce "cupped-hands" highs or squawks. Another problem is that the addition of the tweeter to the midrange driver increases its overall mass, which can affect transient quickness. Over time, designers of coincident arrays have used lighter materials for both the midrange and tweeter drivers; they have also shortened the depth of the midrange cone and flattened its surround. However, unless the midrange driver is completely flat, phase distortion occurs, as the output of the cone pumps the highs unevenly at the listener, resulting in a somewhat ragged on-axis frequency response. While a crossover can correct the irregularities in frequency response, it also alters the character and natural launch of the sound, thus affecting the purity of the midrange.

So why haven't designers of coincident midrange/tweeter arrays just flattened out the midrange driver to eliminate these somewhat deleterious cone effects? The primary reason is that the conical shape of most conventional drivers provides the stiffness needed to generate sufficient output and frequency response; flat drivers are, by comparison, too soft and pliable. The cone also acts as a wave-

guide for the coincident tweeter. However, Peter Gansterer saw the design challenges associated with a flat midrange "cone" as opportunities. Indeed, some would suggest that he has been evolving his reinforced-cone driver technology towards this goal since the introduction of his first Musi speaker in 1991. To stiffen its flat midrange driver, he used FEA to determine where to place its Spider-Cone web—essentially a lightweight net to reinforce the driver and increase its stiffness. He also employed Vienna Acoustics' proprietary X3P "self-quieting" driver material, which provides soft inner damping but adds glass fibers in the molding process, for even more rigidity without increased mass. Adding a "self-quieting" silk dome coincident tweeter ensured that acoustic energy would be effectively dissipated across the entire surface of the array.

Voilà, problems solved! Well, not so fast. Peter and his team spent several years honing at least five successive pre-production models trying to get everything right, even changing seemingly small related materials elements like glues to improve the sound. With such a sophisticated driver, there were also considerable production problems that had to be solved, but eventually these were too overcome, and the flat midrange/tweeter array became a reality.

Because of the extended low-frequency response achieved with the flat midrange unit, Gansterer was able to use a relatively low crossover point (approximately 100Hz) between it and the three new 9" Spider-Cone woofers.

Records], Nick Drake's *Pink Moon* [Universal Japan], James Taylor on the recent *Sweet Baby James* reissue [Warner Bros.], as well as several operas including Verdi's *Aida* [Decca] and Puccini's *La Bohème* [London]. On each and every recording, I noted that the voices were precisely focused and continuous across their respective ranges, without any chestiness or bloat in the upper ranges of male vocals, or excess sibilance on female ones. Better still, voices had a musical realism and natural tonal balance that avoided being either too clinical or too warm. Mirella Freni's and Ella Fitzgerald's voices were "to die for," beautifully portrayed with no stridency even during wide dynamic swings, and both Holly Cole's and Peggy Lee's had an engaging openness, clarity, and sense of life. On the *Aida* recording, both male and female soloists were distinct while still being nicely integrated with the whole, and the layering of massed voices with the full orchestra was stunning.

Yet, making the most of its superb coincident midrange/tweeter array doesn't begin to tell this loudspeaker's whole story. Many promising hybrid designs have been undone by the mating of a 'stat or some exotic wide-bandwidth driver with dynamic woofers that just can't keep up with it, impinging on the purity of the midrange and/or changing the timbre of instruments as the sound moves from one type of driver to another. However, the transition from the deep bass to the midrange in *The Music* was also quite seamless—far better than I have been able to achieve over decades of trying to match subwoofers with either 'stats or mini-monitors. Paul Tortelier's cello on the Brahms Double Concerto [EMI/ Testament], Ray Brown's string bass on *Ben*

*Webster Meets Oscar Peterson* [Verve], and Joe Mondragon's bass fiddle on Peggy Lee's "Fever" were first-rate and eerily realistic, maintaining timbral coherence throughout their ranges (and in the Brahms from the highest notes of the violin to the lowest of the cello) with wonderful transient quickness. Indeed, the overall speed of its bass

### SPECS & PRICING

#### Vienna Acoustics "The Music" Loudspeaker

**Type:** 3-way loudspeaker system employing integrated sub-woofers plus super-tweeter

**Frequency Response:** 22Hz–100kHz

**Sensitivity:** 91 dB

**Impedance:** 4 ohms

**Power Requirement:** 50W minimum, 500W maximum

**Driver Complement:** One midrange/treble coincident driver (7" Vienna Acoustic Flat-Spider-Cone with 1" vented neodymium-magnet silk dome); one Murata 0.5" super-tweeter; three 9" Vienna Acoustics spider-cone bass drivers

**Dimensions:** 10.75" x 50.98" x 24.80"

**Weight:** 180 lbs. each

#### U.S.

**Price:** \$27,000/pr

#### SUMIKO

2431 Fifth Street  
Berkeley, California  
94710  
(510) 234-0182  
sumikoaudio.net

#### U.K.

**Price:** £19,750/pr

#### AUDYUS LTD

Unit 5, Ermine Business  
Park, Huntingdon,  
Cambridge PE29 6XY  
+44(0)1480 270550  
audyus.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Vienna Acoustics “The Music” Loudspeaker

Thus, he was also able to avoid a crossover throughout the entire practical range of the human voice. Like the flat midrange driver (sans some glass), these low mass, but incredibly stiff, bass drivers are composed of a similar, yet stronger, X3P material, and benefit from a similar lightweight reinforcing web, developed and positioned on the underside of the drivers using FEA. While all three woofers work in parallel, the first has its own chamber within the bass cabinet, and its primary job is to match the performance of the flat midrange driver. The other two woofers, which are ported out the back of the speaker, add bass weight and reach down below the 20Hz range.

This design approach—utilizing a wide bandwidth, flat midrange/coincident tweeter array, first-order crossovers, Spider-Cone technology, and very similar low-mass, self-quieting driver materials—helps give *The Music* its outstanding coherence, soundstaging, clarity, transient quickness, and timbral accuracy. Add to this a Murata super-tweeter, and *The Music* enjoys seemingly unlimited high-frequency extension and a more life-like presence. **JH**



was matched by the amazing transient speed of *The Music* throughout its entire range, giving the speaker tremendous rhythmic drive and a sense of “aliveness.” Reaching down even further, the low bass notes on Hans Zimmer’s scores on the soundtrack recordings for *Black Hawk Down* and *Gladiator* [Decca], had weight, dynamic punch,

and control, producing a spaciousness that was awe-inspiring, while also validating the speaker’s rated 22Hz low-frequency extension.

Even more stunning than *The Music*’s remarkable coherence was its enormous, focused, deep, and layered soundstage with well recorded source material like Miklós Rózsa’s score to *Ben Hur*

[Decca Phase Four], Gil Evans’ *Out of the Blue* [Impulse/Alto], and Mozart’s *Requiem* [Deutsche Grammophon/Speakers Corner]. Performers were precisely arrayed across the stage, giving the music a wonderful sense of spaciousness. Instruments like woodwinds floated in space and were stable as they descended the scale and moved back up again. Mass voices had an engaging layered depth that one experiences in a live performance and were literally wall-to-wall on the Rózsa. With *The Music*, I was able to “see” the entire stage, from left-to-right and front-to-back.

This level of soundstaging and imaging performance is what one would predict with a coincident driver array approximating a perfect point source, and *The Music*’s soundstaging is as good as it gets from the plane of the speakers to the back wall. In contrast to many fine

Another outstanding sonic attribute of *The Music* was its ability to realistically reproduce the leading edge of transients. Rim-shots, cymbal crashes, strummed guitars, plucked stringed instruments, and double-and-triple tongued brass had lightning quickness without overhang. I felt as if some tympani strikes on power orchestral music might have knocked me down had I been standing and certainly provided plenty of goosebumps. On the Gill Evans recording, the three trombones had that initial “ping,” “blat,” and “spit” that made them feel as if they were in the room.

In addition to its reference-quality soundstaging and superb coherence and transient quickness, *The Music* delivered the sonic goods in many other areas. It extracted micro-fine layers of inner detail, like Martha Argerich’s fingernails clicking on

### The Music is priced in an increasingly competitive segment of the market, yet it also compares favorably with reference speakers costing far more

loudspeakers, the soundstage is not truncated at the back of the stage, nor is there a narrow sweet spot where only one person can experience this spectacular imaging. Like other top models featuring coincident driver arrays, most notably from TAD and KEF, *The Music* accommodates and encourages a broad range of listening positions, like a great concert hall. Soundstaging is even quite respectable while one is standing, which you’re likely to do, as the rhythmic drive and snap of *The Music* often make listeners want to get up and dance.

the ivories, Oscar Peterson talking to himself and singing along while playing, audience whispers on live recordings, and Xuefei Yang’s finger movements on the neck of her classical guitar. Its ability to accurately replicate the natural timbre of instruments and voices was also uncanny. This Vienna Acoustics flagship was equally at home with all types of music, from small-scale, intimate works to power orchestral, big band jazz music, and electronica. It convincingly conveyed the weight, dynamic range, tonal balance and power of the piano, as well as its ability to seduce with a

## EQUIPMENT REVIEW - Vienna Acoustics “The Music” Loudspeaker

gorgeous singing tone.

The formidable strengths of this remarkable speaker were even more evident when compared to a live performance. During the review period, I had the considerable good fortune to be given tickets to the best seats in the house at a San Francisco Symphony performance of Mahler’s Eighth Symphony conducted by Michael Tilson Thomas, arguably this country’s greatest conductor today. I listened to the famous Solti Decca recording on *The Music*, both prior to and right after the concert, and subsequently using more powerful electronics in an even larger listening room. Whereas the live performance was a musical “peak experience,” the speakers were able to replicate so many of the attributes of the live performance that I was shocked—most notably the natural timbre of instruments and voices, along with the width, depth, and height of the entire soundstage. *The Music* accurately reproduced the top end shimmer of the violins, along with their “feathery” delicacy and bite. It handled all the complex interactions among choruses, orchestra, and soloists without getting confused. The mallet strikes against the tympani were well preserved and nearly as thrilling as in life. The soprano soloist and the piccolo cut through the mass of performers in the recording, much as they did in the live performance. While the speakers could hardly be expected to move the amount of air these hundreds of voices and instruments generated during the live performance, particularly the pressure one feels against the breastbone on *fortissimos*, *The Music* conveyed the large dynamic swings of the *Symphony of a Thousand* (well, in this case, about 400) much better than I expected. In the larger

listening room, with far beefier amplifiers, the gap between the recorded and live performance was closed still further, most notably improving the sense of scale, drama, and ease, as well as adding a cushion of air behind the massed strings. As in the live performance, the sound

through *The Music* was big, bold, dynamic, and supremely musical, with plenty of goosebump moments, as when the sudden chime-strikes sent shivers down my spine.

Given its superlative performance across the board, it was difficult to find fault with *The Music*.



This speaker was like a chameleon—minor flaws I thought were in *The Music* were ameliorated by changes in electronics, listening room, or recordings. Although it was quite revealing, and did not mask problems elsewhere in the system, *The Music* sounded marvelous with a wide variety of recordings, not just a treasured few. Admittedly, I was aware of more surface noise on some of my more well-worn analog recordings, but I also heard a lot more of what was buried deep in their grooves. With its Murata super-tweeter, *The Music* has seemingly unlimited upper-end extension and air but also more lifelike presence. It is less warm than what might be characterized as Vienna Acoustics’ house sound, but its neutral tonal balance is more like the real thing. Lastly, while the speakers seemed to just disappear, I was occasionally reminded I was listening to a box enclosure.

A few caveats are also in order. With *The Music*’s ingenious dual-pivoting mechanism for its top enclosure, you can really lock in the soundstage and achieve a neutral tonal balance. However, don’t think you can plop this loudspeaker down where you’ve placed others in your listening room and extract all the performance this loudspeaker is capable of producing. A dealer trained in Sumiko’s technique of loudspeaker placement, where the bass from the left speaker is optimized first, is invaluable here. In my listening room, the speakers were pulled farther forward and apart than what one would expect using the “rule of thirds.” The top modules were pointed right at my ears, whereas the bottom cabinet, housing the woofers and Murata super-tweeter, were directed at my shoulders.

Also, don’t judge these speakers until the flat

## EQUIPMENT REVIEW - Vienna Acoustics “The Music” Loudspeaker

midrange driver with its coincident soft dome tweeter has had considerable time to break in. Until then it will sound a bit too thin with a slight plastic coloration in the upper midrange, but given time to settle down, *The Music* begins to bloom. With its relatively high sensitivity (91dB) and 4-ohm impedance, the system can be powered to great effect by lower-powered amplifiers. I used the stellar 45-watt per channel Pathos Inpol2 integrated amplifier for most of my listening, and it was a wonderful match. Certainly, in a room larger than my 22’ by 16’ space, I’d go for more amplifier power. Driven by the Pass Labs X600 amplifiers in a big room, the speakers were really able to breathe, the soundstage was even more expansive, and the sense of scale and dynamic range increased.

*The Music* is priced in an increasingly competitive segment of the market, yet it also compares favorably with reference speakers costing far more. If you feel you should have to spend more on a reference speaker, I might suggest adding a REL Studio III subwoofer (with a cross-over point at 22Hz so you don’t impinge on *The Music*’s coherence) for even more concussive impact and a greater sense of the hall from the plane of the speakers to the listening position. Given how musically satisfying *The Music* is by itself, this might appear to be wretched excess, but the overall performance of this Vienna Acoustics/REL combo is even more amazing.

Vienna Acoustics’ *The Music* loudspeaker system is aptly named, because it is so true to the music. With its extended, flat midrange driver with coincident tweeter, it pushes the performance envelope on multiple fronts. Here’s a thrilling

full-range loudspeaker of reference quality that supplies plenty of goosebumps, but also has ‘stat-like coherence, superb time and phase accuracy, and breathtaking soundstaging. It is an accurate, yet musical speaker with fast transients, precise layered imaging, and articulate, extended bass. You may have noted that I frequently used the phrase, “just like in a live performance,” when describing the sonic prowess of this Vienna Acoustics flagship loudspeaker. And that’s just it. *The Music* compares surprisingly well to a live performance, and that’s very high praise. **tas**





# Von Schweikert UniField Three

## First-Class One-Way Ticket

Jonathan Valin

**A**s I said in my review of the Magico M5s (in Issue 196), the first obligation of a loudspeaker—or, for that matter, any piece of audio gear—is to vanish as a sound source. Thanks to its heroic aluminum-and-birch enclosures, its ultra-low-distortion NanoTec carbon-fiber-sandwich drivers, and its extraordinary (and extraordinarily expensive) elliptical symmetry crossovers, the \$89k M5 does just that better than any large multiway dynamic loudspeaker I've heard.

Of course, there are all sorts of ways to make a loudspeaker disappear. For instance, rather than trying to force five or six cones and five or six crossovers housed in a large expensive cabinet to pull a Houdini, why not greatly reduce the number of drivers and crossovers and shrink the size of the cabinet? Magico did this very thing with its two-way stand-mount Mini and Mini II—the speakers that made the company's reputation. With the UniField Model Three, venerable speaker designer Albert von Schweikert has (quite literally) tried to go Magico and his other two-way competition one better.

Although each Model Three looks like a miniaturized WATT/Puppy-style three-way, the UniField is what Von Schweikert calls an “augmented” one-way loudspeaker—“augmented” below 100Hz by a 7” woofer housed in its own compact, tapered, quasi-transmission-line enclosure and above 8kHz by a 3” ribbon that shares a tiny, separate, tapered cabinet with the UniField's midrange cone. To reproduce everything between woofer and tweeter, from 100Hz through 8kHz—a

range of 6+ octaves that encompasses the fundamentals and most of the harmonics from nearly the lowest note of a basso (G2) to well above the highest note of a piccolo (D8)—the Model Three depends entirely on a “hand-built” 5” driver, an impregnated paper cone coated with a layer of salt-crystal-sized ceramic spheres and synthetic dampeners. As fans of planar and electrostatic loudspeakers can attest, one of the chief ways of making a loudspeaker disappear is *not* to cut the audio bandwidth up into little slices reproduced by different cones but to reproduce the entire gamut via a single, extremely low-distortion, extremely high-resolution, crossoverless driver. Throughout most of the musical spectrum, the UniField Three does precisely that.

Of course, the trouble with any single-driver dynamic speaker, even one as extraordinarily full-range as the UniField Three's marvelous 5” cone, has always been the low bass and top treble. Generally, with a one-way there isn't enough of either. Without the bottom octaves, larger-scale

## EQUIPMENT REVIEW - Von Schweikert Audio UniField Model Three Loudspeaker

### SETTING UP THE UNIFIELD MODEL THREES

The Model Three isn't particularly difficult to set up. The tiny midrange/tweeter cabinet sits on top of the woofer cabinet at a distance from the woofer's front baffle that ensures correct time and phase alignment. (The instruction pamphlet explains how to determine this distance.) The woofer cabinet rests on a supplied, short, spiked, T-shaped stand. There is no attachment between the woofer enclosure and this stand, and the stand itself is a bit flimsy, IMO (especially for a \$15k speaker). Be sure that the crossbar of the T is facing toward the listening seat when you mount the woofers, or the whole thing can be tipped over. Depending on your room and your seating distance from the speakers, the Model Threes may need a little toe-in. The Threes must be

bi-wired. Von Schweikert Audio makes two very good sets of dedicated bi-wire cables for the UniField, although their price (\$2.5k and \$5k) is steep. The speaker comes with extra stuffing for the transmission line, which you can use (or remove) to tailor the bass to room size and speaker placement. I tried the Model Threes with a variety of amps in two different listening spaces and at various distances from backwalls. At shows, Von Schweikert demonstrates the Model Threes with tubes, perhaps because their slightly brighter, livelier treble complements the Model Threes slightly recessive upper-midrange/lower treble. I liked the treble marginally better with tubes, and I liked the bass marginally better with solid-state. **JV**

music unquestionably lacks foundation; without treble, music lacks sparkle and life. This is where Von Schweikert's "augmentation" comes in. In the mid-to-low bass, the UniField's transmission-line-loaded, long-throw, magnesium-coned woofer gives the speaker low end that no one-way I know of, and few two- or three-ways, can rival. (The UniField's 7" transmission-line woofer is claimed to achieve 20Hz extension, down 6dB at 25Hz in free-field measurements. My own measurements—which we will come to—show it to be down about 12dB at 20Hz referenced to 1kHz, which is quite a bit better than respectable bottom-octave performance for a 7" driver in a 22" high, 10" wide, 14" deep enclosure!) On top,

the UniField's 3" aluminum-foil ribbon extends treble performance well past 50kHz.

Playing music back primarily through a single driver augmented by a deep-reaching woofer and high-flying tweeter at crossover points so low and high they are virtually "inaudible" isn't the only disappearing trick that the Model Three has up its sleeve. Von Schweikert claims that his UniField design also has a carefully controlled dispersion pattern, said to be restricted to +/-30 degrees horizontally in the midband and treble. Achieved by "driver selection, crossover topology, and other proprietary methods," the UniField's narrower dispersion reduces the boundary effects of typical wide-dispersion loudspeakers, making the

Model Three ideal for smaller rooms in which wall reflections tend to color timbres and play havoc with imaging. (The UniField's controlled dispersion does not make it suitable for smaller rooms only, BTW; it does just swell in medium-sized ones like mine and, according to Von S, in larger ones too, although its smallish drivers may ultimately limit its ability to "fill" really large spaces at loud levels.) With its front-ported transmission-line bass driver (the damping of which is user-adjustable), the Three can also be placed much closer to back walls than conventional wide-dispersion speakers, including most stand-mounted monitors.

All right. We've got a virtual single driver speaker, and we've made provisions to take the imaging-and-timbre-degrading early reflections of that driver out of the question; now how about the enclosure it is housed in? As you may recall from my M5 review, building a neutral enclosure involves artfully juggling three parameters: stiffness (to push the box's resonant frequency as high as possible), mass (to damp this high-frequency resonance and reduce its Q), and damping (to further reduce the amplitude of the resonance and kill or, in the case of a transmission line, filter the backwave of the drivers). Wolf chose to build a sealed system with an aluminum baffle (which boasts extremely high stiffness) coupled to an airtight birch-ply box (which boasts extremely high mass and damping). But Von Schweikert feels that aluminum or Corian or other "hard" materials are precisely the wrong stuff to use for speaker baffles and boxes because, says he, the drivers will ring against such hard surfaces. Instead, he builds the walls of his boxes using a tri-laminate constrained-layer sandwich of molded resin-impregnated MDF (for stiffness),

artificial stone (for mass), and sheets of viscous material (for damping), bracing them internally with a "honeycomb" of MDF and more viscous damping, and stuffing them with three different kinds of absorptive materials to eliminate cavity resonances (what Von S calls Gradient Density Damping). Where Magico uses an ingenious tension-coupling mechanism to ensure that the cones are the only parts of the drivers that vibrate, Von Schweikert employs a gasket of the same synthetic clay used to damp the hulls of nuclear submarines to keep his driver frames from rattling against baffles and resonating against cabinet walls. He claims that his constrained layer, honeycomb-braced, gradient-density-damped boxes with clay-damped driver-frames reduce enclosure vibration by 300% in comparison to "conventional" enclosures, while the cabinets' small size and tapered shape ensure low levels of diffraction and reflection.

Before we discuss the UniField's sound, let's look at one other direct challenge to Magico and Wilson—the Three's hybrid transmission-line bass. According to Von Schweikert (and he's certainly not alone in saying this), acoustic-suspension bass sounds "strangled" due to the high, energy-robbing pressures and huge impedance peaks of sealed enclosures, while ported bass sounds "slow," "chesty," and "one-note" due to the resonances of their hollow ported boxes, the ringing of their under-damped cones, and the mistuning of the ports themselves. His solution is a transmission line—a tunnel of four, stuffed (with Dacron), interconnected chambers, each tuned to a different frequency, which, together, spread and smooth out the bass-range resonances of the woofer's backwave. There is nothing new

## EQUIPMENT REVIEW - Von Schweikert Audio UniField Model Three Loudspeaker

about transmission-line bass—IMF and KEF were using it back in the sixties and seventies. But Von Schweikert has spiffed it up with Chebychev alignment and that nifty magnesium driver.

So...how does Albert Von Schweikert's challenge to the Magico Mini II and Wilson Sophia 2 and YG Acoustics Kipod Studio sound? Well, the short answer is "lovely," just as it did at the RMAF and CES shows where Robert Harley and I initially heard it. Indeed, on the very first cuts I played through the UniField Three—Alison Krauss and Union Station's live recording of "Forget About It" (on MoFi vinyl) I was immediately struck by how realistically the Model Three reproduced Krauss' lead soprano and Dan Tyminski's baritone backup. Both voices were wonderfully well focused (though not at all miniaturized), completely "freed-up" from the little midrange driver and its tiny enclosure, extremely well resolved in color and texture (Krauss's slight characteristic tremolo was as audible through the UniFields as it was through the Magico M5s or those paragons of low-level resolution, the MartinLogan CLXes), and quite persuasively "there" in the room with me. Violin, guitar, and dobro were also extraordinarily free from driver/enclosure coloration as if, like the two voices, they weren't being projected from a loudspeaker but hanging mobile-like in open air, although each was hanging a little further back in the soundfield than what I was used to hearing through other transducers and, while sweet as sugar in timbre, each was a bit less present and brilliant than it usually sounds. It wasn't until the electric bass came in midway through the number that I began to feel like I was hearing a driver in a box. Though deep-reaching and shockingly well-defined in the bottom octave, the

UniField's transmission line was adding a bit of woolliness to the midbass, making certain notes of the Fender sound slightly louder, less crisply defined, and more forward in the mix. The effect wasn't unpleasant or unnatural—the bass still sounded like a bass, but the instrument was a tad louder and plummier than it sounded through the M5s or the CLXes or other systems on which I've auditioned this LP. On the tiptop, cymbals were every bit as clear and sweet and delicately detailed as guitars and dobro but, like both, a little recessed in perspective, softened in dynamic, and less scintillant in texture.

After listening to several other cuts—like Reiner Bredemeyer's cantata for voice and percussion *Synchronisiert:Asynchron* [Nova], the Prokofiev First Violin Sonata with Nadia Salerno-Sonnenberg and Sondra Rivers [Music Masters], and a variety of larger-scale music—I began to form a clear picture of the UniField's sound, which stayed remarkably consistent on every LP or CD: A little

dark in overall balance (rather like the beautiful, liquid-sounding BAlabo electronics), with a gorgeous, boxless, natural midrange, superb midrange transient response, great soundstaging and imaging (as good as it gets, in fact), excellent very deep bass (at moderate to moderately loud playback levels), but a little thicker, louder, and boxier in the midbass than in the midband, and a little softer, less brilliant, and more laidback in the upper mids and treble than in either the midband or the bass. Where it was playing, that single 5" driver in Von Schweikert's enclosure was superb. The trouble (if you want to call it that) was that I could clearly hear where it stopped playing—in the midbass and the upper mids/lower treble—and where the "augmenting" drivers were picking up the baton.

At this point I decided to do an RTA (a series of them, actually) and, sure enough, the speakers measured exactly the way they sounded—very slightly humped up in the midbass and very

slightly sucked out in the presence/brilliance range (see above).

This is actually excellent frequency response for a quasi-"one-way" loudspeaker—exceptionally flat in the heart of the midrange, from 100Hz to

### SPECS & PRICING

#### Von Schweikert Audio UniField Model Three Loudspeaker

**Frequency Range:** 32Hz to 40kHz (-3dB down points are 25Hz and 50kHz)

**Sensitivity:** 88dB @ one watt/one meter in anechoic conditions, 91dB in-room

**Distortion:** Less than 0.8% at normal listening level (5 watts)

**Impedance:** 8 ohms nominal (4 ohms minimum)

**Power Rating:** 300 watts peak, 100 watts RMS (minimum of 20 watts)

**Weight:** 190 lbs./pr. (including stands)

**Dimension:** 10" x 40" x 14"

#### U.S.

**Price:** \$15,000/pr (including stands)

#### VON SCHWEIKERT AUDIO

41110 Sandalwood Circle,  
Unit #122  
Murrieta, California,  
92562  
(951) 696-3662  
vonschweikert.com

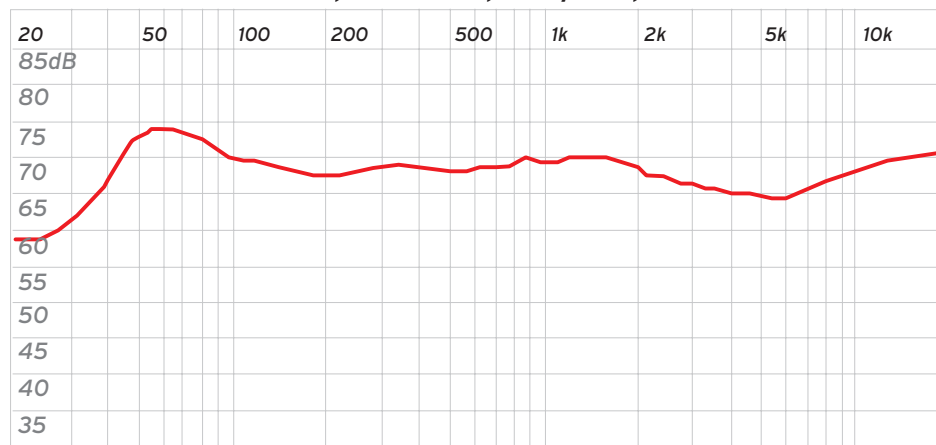
#### U.K.

**Price:** Price on application

#### AUDIOPLAY

Highbury New Park  
London N5  
+44(0) 207 359 6962  
audioplay.co.uk

Loudspeaker Frequency Response





## EQUIPMENT REVIEW - Von Schweikert Audio UniField Model Three

2kHz where it appears as if the 5" driver begins to slowly roll off. I imagine that Von Schweikert could have brought the tweeter in at a slightly lower frequency to fill up this slight dip in the presence and brilliance range, but didn't want to risk drawing attention to the ribbon, as so many ribbon/cone hybrid speakers do, by ladling excess top-end energy onto his smooth-as-silk "one-way" sound. So he settled quite sensibly on this highly musical compromise. It isn't much of a compromise in the listening. Instruments that reach up this high are just a little more laid-back in the soundstage, totally devoid of sibilance or aggressiveness (even when they are sibilant or aggressive), and a bit less naturally brilliant, airy, and harmonically complex. Oh, their harmonics are still there, but they're being resolved at a slightly lower volume level that makes the overtones of high-pitched instruments sound very sweet but a little concentrated, like the taste of condensed milk.

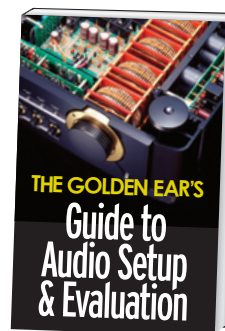
The smallish hump in the midbass, where the woofer takes over from the 5" driver, is also relatively benign. As noted, you hear it as a bit more loudness and prominence on kettle or bass drum (where it very attractively accentuates the resonant bodies of the instruments) or on certain notes in ostinatos of piano, doublebass, and bass guitar—like the effects of a minor room resonance. It doesn't greatly change the pitches or colors of the notes themselves, just amplifies and thickens them a little, slightly reducing their crispness of definition. Until you play the UniField Threes very loud—and the whole soundfield begins to compress and congest—this little midbass hump certainly doesn't obscure the upper bass or the bottom bass, which, as noted, is shockingly deep and articulate for such a tiny driver in such

a tiny enclosure, adding genuinely lifelike "finish" to truly deep bass notes. (The uncanny clarity the UniField Threes bring to the deep bullroarer rumble of the bowed bass drums in Cage's *Third Construction* [New World], not to mention the phenomenally large, wide, freed-up-from-drivers-and-enclosures soundstage they throw on this cut and so many others, has to be heard to be believed from such a small transducer and cabinet.)

Albert Von Schweikert set out to produce a tiny, full-range, single-voiced speaker for small rooms that, unlike so many speakers for small rooms, would not rob you of the deep bass, imaging precision, and dynamic scale of big speakers. The design he settled on is very nearly unique—an "augmented" one-way. That you can occasionally hear the augmentation (or its effects) doesn't change the fact that throughout most of its range the UniField really does speak with one beautiful and persuasively lifelike voice. Though the Three is not a speaker for really big spaces or for rock concerts played back at stadium levels and at \$15k the pair has a good deal of serious competition, it certainly fills a niche for apartment and condo dwellers who hanker for full-range sound in a small svelte package. Though I wouldn't call the UniField a completely neutral loudspeaker—it has, by design, a voice of its own that is robust but meltingly beautiful, superbly focused but never edgy, supremely quick but never aggressive, highly detailed but highly forgiving—it is a constant pleasure to listen to and never less than musically convincing. **tas**

# the absolute sound's GOLDEN EAR CLUB

A CLUB FOR THE MOST PASSIONATE  
AUDIOPHILES IN THE WORLD



GET THE GUIDE:

## The Golden Ear's Guide to Audio Set-Up and Evaluation

THIS NEW EXCLUSIVE GUIDE WILL HELP YOU  
GET THE MOST OUT OF YOUR SYSTEM!

- Preview Select TAS & HiFi+ reviews weeks before they're published
- Tele-briefings with TAS editors
- Receive Hand-Picked Club Goodies
- Exclusive content, cool accessories, great CDs & downloads, etc.
- Get the inside scoop
- Special events & demonstrations at elite dealers...and more!

JOIN TODAY [WWW.GOLDEN-EAR-CLUB.COM](http://WWW.GOLDEN-EAR-CLUB.COM)

# Wilson Audio Specialties Sasha W/P loudspeaker

It's Good to be King

Alan Sircom

**T**he king is dead, long live the king! Wilson Audio's introductory tag-line to its new Sasha (technically, Sasha W/P) loudspeaker could be viewed as supreme arrogance or high hubris. One problem though, it happens to be true.

The Sasha is the replacement to the Wilson WATT/Puppy, a product that — above all others — has earned the right to be called 'king' among audiophile loudspeakers. First sold back in 1986, the Wilson Audio Tiny Tot (soon joined by its woofin' Puppy partner) went on to become the most successful \$10,000+ loudspeaker in history, and became a fixed point in the audiophile firmament. It set the tone for other Wilson designs, bigger and smaller. Recently though, the direction-finder in Wilson Audio sound came from elsewhere in the range. Each successive change made the W/P sound more integrated and lively and brought it more in line with the sort of sound made by other Wilsons, but the bright star of the Wilson line cannot spend its life playing catch-up to products like the Sophia or the MAXX.

In the Sasha, what could have been just another iteration of the WATT/Puppy concept (it would have been 'System 9') has undergone a root-and-

branch reworking. The human brain's ability to form associations and patterns is a remarkable thing, but it can be prone to failure (optical illusions are a perfect example of this). A quick glance at the Sasha in isolation will see similarities between this new speaker and the WATT/Puppy products it replaces and we will naturally make associations between the two that simply aren't there. Because there are so many changes between the Sasha and what went before, it's almost easier to point out the bits that aren't changed rather than list what's been swapped: the cones in the bass drivers, the range of 'Wilson gloss' finishes (our ones were finished in an almost black midnight blue) and — I think — the rear port and spikes are held over from what went before. Pretty much everything else is a new speaker.

A fair chunk of Sasha — the 25.4mm inverted titanium-foil dome tweeter and the proprietary 178mm paper/carbon-fibre composite cone

midrange driver, for example — are a direct 'lift' from Wilson's MAXX 3. These new units were chosen after a moment of audio epiphany at the Musikverein Concert Hall in Vienna by David Wilson. Other parts are total newcomers, such as the cabinet. Not only is it made from a new kind of material, developed out of the X (cellulose/phenolic composite) and M (wood fibres in phenolic resin) materials found in previous Wilson speakers. The new cabinet material doesn't have a capital letter name, but features as yet undefined natural fibres set in a phenolic resin laminate. This is suggested to make for a low coloration cabinet material with a particularly good midrange.

The new material has allowed Wilson to completely redesign the chassis, making for increased volume in both cabinets and a head unit with more nonparallel lines. Inside, there's a new bracing design. All of which helps aid rigidity and minimise resonance and standing waves. Those



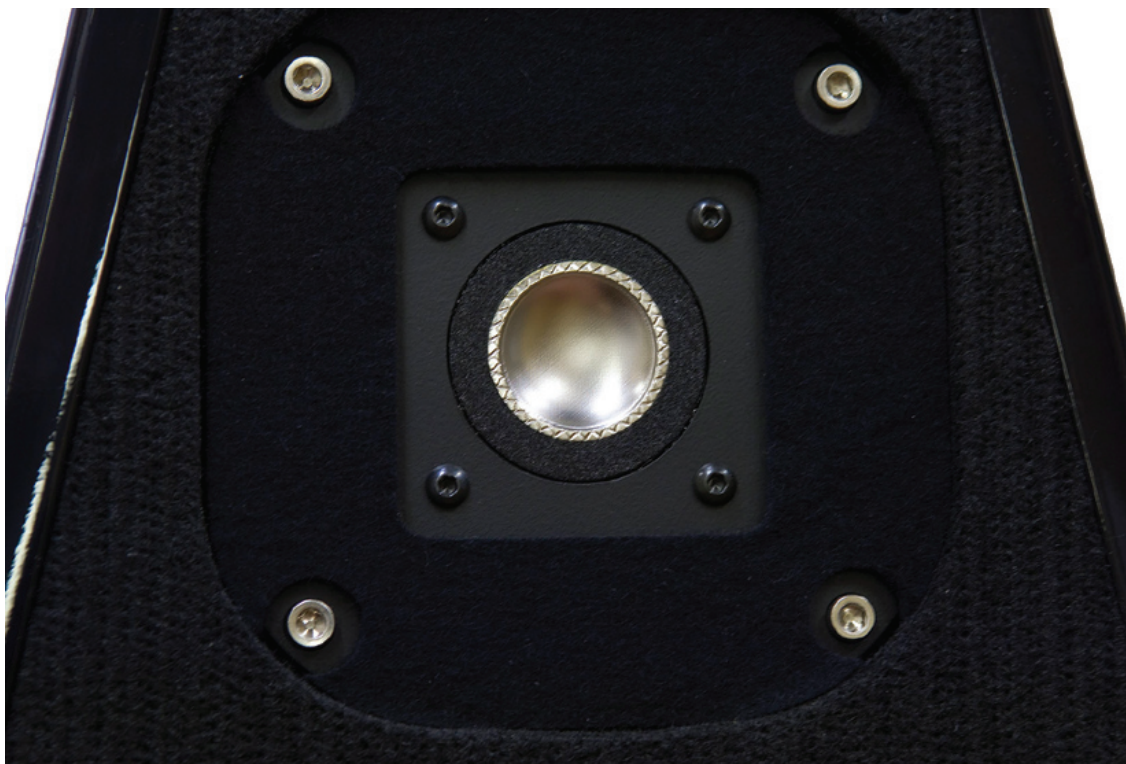
## EQUIPMENT REVIEW - Wilson Audio Specialties Sasha W/P loudspeaker

surviving woofer cones are backed up by a new motor and magnet arrangement, which basically means more magnet for the same cone mass.

The crossover has been moved from inside the mid/treble head unit to a rear panel at the top of the bass unit. The panel allows components in the crossover to be altered to suit specific rooms, and also gives the midrange driver more legroom,

and supposedly more midrange clarity. One legacy point that is missing from both the Sasha is the grab-handle at the back of the WATT. This marks the end of the WATT's vestigial standalone monitor role; the new head unit is adjustable to better integrate the speaker with the room and the listening position, but it's got nothing to do with being used as a solo speaker.

Because your attention is focused elsewhere, like on the dynamic range, the solidity, or the sheer exuberance of the sound, that reference-class imaging passes almost unnoticed.



On paper at least, the end result of all this change is just 2Hz more in the bass. The relatively high sensitivity (91dB/W/m) is tempered somewhat by the impedance plot. Although nominally a four-ohm load, the Sasha is claimed to dip to 1.8ohm minimum impedance at 92Hz. In practice, this means the Sasha is not a friend of the Single-Ended Triode brigade and does place a limit on the choice of amplifiers used with this speaker, but the sort of amplifier one would normally consider a comfy partner for a speaker costing nigh on £28,000 will have no problems handling the Sasha. And when used with a pair of Krell Evolution 900 monoblocs, which deliver upwards of 900W per channel, you have nothing to worry about, except losing hearing. The rest of the system in this case was a four-box Krell Evolution Two twin mono preamp and a Metronome Kallista CD transport and C2A digital converter. Heady, bank account draining stuff indeed. It was playing into a room about 18x24x9, with the main listening position about 10' into the room. The speakers were about four feet from the rear wall, but only two-and-a-half feet from the sides and had about a 20° toe-in.

The Evo 900s demonstrated one of the joys of the Sasha; no limits imposed. With nigh on a Krellowatt being pushed up its speaker terminals, the Sasha has the throat needed to roar, but does so with subtlety as well as gusto. you can play at the sort of levels that cause rimshots and massed choirs to leave your hearing relaxing between notes and yet allows you to hear the springs beneath the snare resonating and lets you pick out individual singers in the mix. Normally, this is an either/or situation; either you get the full-blast sound, or you get the subtlety.

Here, you get both.

It's also a bigger speaker squeezed into a Sasha-sized box. Those who know their way around the Wilson portfolio are in for a surprise here. "Hey, where did you hide the MAXX'es?" will likely be the stock question. It's got most of the bass dynamics, bass depth, almost physical

### SPECS & PRICING

#### The Wilson Audio Sasha loudspeaker

**Type:** Three-way, two cabinet floorstanding loudspeaker

**Drivers:** 2.54mm titanium-foil inverted dome tweeter; 178mm paper/carbon-fibre composite cone midrange 2x 203mm poly-coated woofers

**Frequency Response:** 20Hz-22kHz +3dB

**Sensitivity:** 91 dB/w/m at 1kHz

**Impedance:** 4 ohms nominal, 1.8 ohms minimum at 92 Hz

**Minimum Amplifier Power:** 20 watts per channel

**Dimensions (WxHxD):** 356 x 1118 x 539mm

**System Weight:** 89.36 kg

#### U.S.

**Price:** \$26,900/pr

#### WILSON AUDIO SPECIALTIES

2233 Mountain Vista Ln,  
Provo, Utah 84606  
(801) 377-2233  
wilsonaudio.com

#### U.K.

**Price:** £28,046/pr

#### ABSOLUTE SOUNDS

58 Durham Road,  
London, SW20 0TW  
+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Wilson Audio Specialties Sasha W/P loudspeaker

*You are here*

solidity and power of the MAXX models — as well as its utterly transparent midrange and soaring top end — but in a smaller package. You get more from the MAXX, but the gap has closed considerably with the launch of the Sasha. In fairness, much of this is based on exposure to the MAXX 2; I'm pretty far from instrument rated on the new model.

Recently, I highlighted a step-change in audio, that I called the difference between 'Hummers' (big and bling) and 'Humblers' (forget the speakers, the music impresses first and foremost). The Sasha is very much on the Humbler side of the equation. It scales beautifully — swap a Big Band sound for a fey girl-with-guitar and the soundstage accommodates accordingly. Now move from breathy songstress to full-on dub reggae then to large-scale orchestral work, a jazz trio, live rock at full tilt and all points in between and the Sasha adapts beautifully. You don't get eight-foot tall singers or an inch-high second violin... everything played has an appropriate sense of scale. Wilson has been moving the W/P design further from the enlarged sound of the footie score models (WATT 3/Puppy 2, Caledonians vs Queen of the South...match abandoned due to catastrophic pie failure) for some time.

A lot of this comes from the work done (both in the cabinet and the use of that MAXX driver) to improve the midrange. The W/P always had a good, clean and extended treble (it's got better, cleaner and possibly more extended in the Sasha, but the improvement is more like a developmental progression than a jump) and has been well-respected for its big, powerful bass (once again, a developmental improvement), but the midrange was always a big part of the Wilson character. And the move to the Sasha brings the Wilson midrange in line with the MAXX above and the Sophia below. It gives the Sasha something of an electrostatic-like transparency to the midrange.

That beacon for audiophiles — imaging — is excellent, but curiously it will take you some time to notice this. Because your attention is focused elsewhere, like on the dynamic

range, the solidity, or even the sheer exuberance of the sound, that reference-class imaging passes almost unnoticed. Part of this is because the overall performance is so very, very natural — the 'holographic' cliché doesn't apply here, because the sounds are too controlled and solid for that.

We've supposedly been ticking off all the boxes for superlative loudspeakers for some years now, and the Wilson WATT/Puppy ticked them all a long time ago. What's left on offer and what makes this one so much better than what went before? Along with the bigger speaker in a smaller box and the more open than ever midrange, the Sasha does something very, very few loudspeakers can do, irrespective of price. It manages to reconcile the world of the audiophile with that of real people. Audiophiles choose — and design — products in adherence to Harry Pearson's benchmark of the sound of live, unamplified music occurring in real space. However, there are people (a lot of people) who do not possess a single piece of live, unamplified music and typically find systems designed for audiophiles to sound 'boring'. Products — especially loudspeakers — that reconcile the two are extremely rare. The Sasha is one of the very few exceptions.

The reconciliation process is not perfect — play a compressed or badly-mastered recording and the Sasha keeps it distinctly in the sow's ear region. But what it does well is exactly what the predecessor was praised for, only more so. The studio sound that Wilson tried for with the WATT/Puppy is here in full effect. Play the Sashas and you are in the control room, listening to the sort of sound the producer and engineer always wanted you to hear.

Although the Sasha changes are not necessarily driven by increased competition, the days of Wilson Audio having this market more or less to itself are long gone. And the new speaker gives us a perfect opportunity to remap the high-end landscape, to see just where products like the Sasha fit in. Of course, there's no easy way to compare large, top-grade loudspeakers. This is because it's almost impossible to compare them side-by-side; it can take as much as five



## EQUIPMENT REVIEW - Wilson Audio Specialties Sasha W/P loudspeaker

days just to install, set-up, fine-tune, bed in and repackage a pair of speakers like these, and often the best place in the room for one pair of speakers is the same place for another. But, we can draw parallels and this reasserts Wilson's place at the acme of speaker design at this price. It was never really in doubt.

Broadly speaking, there are four equally valid 'sounds' at this price level; there's 'music as art', 'music as magic', 'music as science project' and 'music free from influence' loudspeakers. Wilson has always been firmly in the last camp, and with the Sasha it digs its heels in still further. The Sasha is not a magical window on the composer's soul, a talisman to make all music wonderful or a product that lays music bare. It does all these things, but it's principally the studio monitor we all wish every studio used, because they'd make better music in the process. It will expose weaknesses in the recording, in the performance and in the audio system with stark clarity, but curiously these don't detract from the enjoyment, any more than the surface noise on a good LP played through a top turntable stops you from enjoying the music.

Sasha highlights a difficult admission for reviewers. We are apt to look at incremental changes in designs as dirty great changes in sound. It comes from many of us getting our degree in Reviewology from the Centre for the Easily Impressed. The problem arises when we actually happen across a genuine large-scale change in sound and we end up like the (middle-aged, beer gutted) boy who cried wolf. And Sasha is a dirty great big change in the right direction for the W/P system. In fairness, previous W/P designs did offer distinct improvements over earlier models; however some — like System 6

— were bigger and more significant than others. Sasha is the biggest change of them all.

So, should you turn in your WATT/Puppy system for the Sasha? Not necessarily; the W/P remains one of the few legends in high-end and that reputation is still richly deserved. Just one thing though; if you aren't planning to upgrade soon, you might want to steer clear of hearing the Sasha. Even the briefest exposure may make you change your mind about upgrading.

*Le Roi est mort, vive le Roi!* +

# ABSOLUTE ANALOG.



## THIS FREE BUYER'S GUIDE INCLUDES:

- 29 EXPERT REVIEWS OF TURNTABLES, PHONO CARTRIDGES, AND VINYL ACCESSORIES
- HIGHLIGHTS OF PROMISING ANALOG PRODUCTS ABOUT TO BE INTRODUCED
- 22 TOP PICKS OF PHONOSTAGES AND TONEARMS
- THE 100 BEST SOUNDING LPS...AND MORE!

# YG Acoustics Kipod Studio Loudspeaker

The Best Loudspeaker on Earth?

Robert Harley

**Y**G Acoustics is a relatively young company (founded in 2002) that has made quite a splash in the upper end of the loudspeaker market. The firm has attracted some fervent supporters along with much controversy surrounding its key marketing slogan, "The Best Loudspeaker on Earth. Period." This statement, along with the products' pricing and unusual build, tends to polarize audiophiles.

The Kipod Studio reviewed here is YG's least expensive full-range loudspeaker, priced at \$38,000 per pair. The Kipod Studio's design brief was to bring the same level of performance found in YG's \$107,000 Anat Professional to a more compact design, with the only trade-offs being bass extension and maximum playback volume.

The Kipod Studio is a two-piece system: The Kipod Main Module is coupled to a woofer enclosure that also serves as a stand for the Main Module. The Main Module is a small two-way speaker in a sealed enclosure that is available on its own for \$17,000 per pair. The Kipod Main Module is transformed into the Kipod Studio with the addition of the \$21,000-per-pair woofer, which can be ordered with or without integral power amplifiers (the price is the same). In my mind, the Kipod Studio is a single loudspeaker system that

happens to be housed in two enclosures. Indeed, the Kipod Main Module bolts to the woofer enclosure to form a single structure. Nonetheless, one can buy the Kipod Main Module and later add the woofer for the same price as purchasing both together.

The sealed woofer module has a truncated pyramid shape that houses a 9" ScanSpeak woofer in the front and an amplifier panel in the rear. This panel has a variety of controls for tuning the system to a room. These include woofer level, crossover frequency, equalization frequency, and equalization level. Single-ended and balanced line-level inputs are provided. The line-level input is fed from a second output from your preamplifier. Note that your preamp needs two main stereo outputs, one to drive the woofer modules and one to drive your main power amplifiers. The integral



## EQUIPMENT REVIEW - YG Acoustics Kipod Studio Loudspeaker

### INSIDE THE YG ACOUSTICS FACTORY

I visited YG Acoustics' factory in the Denver suburb of Arvada, Colorado, last year for a firsthand look at how these loudspeakers are made. I learned that Yoav Geva, YG Acoustics' founder, based the loudspeakers' design on an analog application of a digital-signal-processing algorithm he developed that allowed simultaneous optimization of signals in the amplitude and time domains. When used in loudspeakers, this technique reportedly results in flat frequency response and nearly perfect phase response. The "Best Loudspeaker on Earth" claim stems from what YG claims is the flattest frequency response and best phase response of any loudspeaker.

YG builds the loudspeakers from scratch inside its 6000-square-foot, seven-employee factory. The enclosures are all made from solid sheets of aircraft-grade aluminum. (The baffles of the Anat Main Module and the tweeter ring of the Kipod are ballistic-grade aluminum,

which has some titanium in it.) YG owns the very expensive (and reportedly top-of-the-line) milling and grinding machines for working the metal. Raw aluminum sheets, some of them weighing three-quarters of a ton, are moved via an overhead crane system. The panels that make up the enclosure are cut and drilled, and then ground to create the finish you see on the final product. The panels are then anodized by an outside facility.

One model loudspeaker is built at a time with drivers that have been individually tested and measured. The data on each driver are archived so that if a customer needs a replacement driver, one of nearly identical characteristics can be substituted. Each speaker's crossover is tuned to match the set of drivers going into the enclosure. The crossovers use the huge (and extraordinarily expensive) Mundorf capacitors and inductors. The Kipod's two cone drivers are sourced from ScanSpeak and are

either custom-made for YG or re-built by YG to its specifications. The tweeter in the Anat, for example, uses a diaphragm from Germany and ScanSpeak's motor structure, with final assembly performed in YG's factory.

The facility felt more like a craft shop than an industrial factory. There was a perfectionist attitude toward every aspect of production, and the pace was slow and deliberate. The metalwork was exquisite.

In addition to the Kipod reviewed here, YG makes the Anat Reference II line that begins with the \$33k Anat Main Module. As with the Kipod, the Anat Main Module can be used on its own or mounted on a woofer. This configuration is the \$70k Anat Reference II Studio, and can be ordered with a passive or actively powered woofer (the price is the same). The top-of-the-line is the Anat Reference II Professional, which adds a second woofer enclosure and is priced at \$107k.

power amplifiers, designed specifically for this particular woofer, are rated at 400W.

The enclosures are made entirely of aluminum panels, machined and finished in YG's Colorado factory (see sidebar). The Main Module's ScanSpeak-sourced 6" midrange driver is crossed over to the tweeter at 1.75kHz with a fourth-order slope. The crossover components are as good as they get—the ultra-expensive Raimund Mundorf capacitors and inductors. Each driver is measured and the crossover hand-tuned to a specific set of drivers. YG keeps these measurements on file so that if you need a replacement driver it can supply one of identical characteristics.

The crossovers are designed using a program YG founder Yoav Geva wrote that is based on an algorithm he developed for another field that reportedly allows simultaneous optimization of the frequency and time domains. That is, the loudspeaker's amplitude response is flat and its phase response is uniform. YG claims that the Kipod Studio has a phase uniformity of  $\pm 5^\circ$ . This means that the disparate drivers move in unison in response to a musical signal.

A machined-aluminum waveguide around the Vifa ring-radiator tweeter controls the tweeter's dispersion. The Main Module can be ordered with single-wire or bi-wire connection. The review samples were supplied with bi-wire connections. Incidentally, I replaced the stock jumpers with a pair from Kimber (Kimber Select KF9033 jumpers) and heard a reduction in grain and a small increase in transparency.

Although the woofer module is available in passive or active configurations, virtually every customer opts for the active version—and for good reason, in my view. An active woofer has many



## EQUIPMENT REVIEW - YG Acoustics Kipod Studio Loudspeaker

advantages, the main one being the removal of passive crossover parts from the high-level signal path between an amplifier and the woofer's voice coil. A crossover's low-pass section that feeds the woofer typically uses a large series inductor; its removal allows the amplifier to better drive and control the woofer. Second, an active woofer relieves your main power amplifier of the burden of driving the woofer. Third, a powered woofer can be equalized to deliver deeper extension than would be possible from a passively driven woofer. That's the case with the Kipod Studio; the system is flat to 20Hz despite the small footprint and compact dimensions. Fourth, a powered woofer offers the ability to control the woofer level to best match your room. Finally, the integral amplifier can be designed specifically for the impedance curve it will be asked to drive.

Interestingly, the Main Module is run full-range. That is, there's no high-pass filter to keep bass out of the Main Module's 6" driver. The idea is to achieve the purity of a two-way mini-monitor with the bass extension of a floorstanding three-way. Nonetheless, the 6" driver's excursion will be the limiting factor in the system's macro-dynamic capabilities. It is, however, loaded in a rather small sealed enclosure which helps limit its excursion. For those who want higher sound-pressure levels, YG makes a Main Module Subsonic Filter that keeps low bass out of the Main Module, but presumably at the expense of ultimate transparency.

The Kipod Studio doesn't carry a specified frequency response—the literature states that it delivers “useable output from 20Hz to above 40kHz” and that frequency-response deviations are limited to +/-0.7dB “in the audible band.”

Note that the upper-midrange and treble balance is somewhat dependent on the speaker's rake angle—it can be tilted back to varying degrees by how far the front or rear spikes are inserted. Sensitivity is a moderate 87dB and the impedance is 8 ohms nominal, 5 ohms minimum, suggesting that the system should not present a difficult load to a power amplifier. The 100-watt Pass Labs XA100.5 monoblocks were plenty of power for the Kipod Studio.

### LISTENING

Dick Diamond of YG Acoustics set up the Kipod Studio in my listening room, as he does for many YG customers. Setup, placement, and tuning were surprisingly quick and easy, partly because of the ability to adjust the bass from the rear-panel controls. There wasn't the usual struggle between the loudspeaker and the room; the Kipod Studio's low bass and midbass integrated easily and perfectly. The loudspeakers ended up very close to where I've positioned the last few speakers I've auditioned, the Revel Salon2, Magico V3, and Wilson X-2.

I had heard the Kipod Studio at the 2008 Rocky Mountain Audio Fest and thought it was one of the show's highlights. In fact, the Kipod Studio in a small hotel room showed better than YG's Anat Professional in the cavernous acoustic nightmares that are the ballrooms at The Venetian hotel. The Kipod Studio struck me as having tremendous clarity and dynamics, with an almost horn-like presence and “jump-factor” dynamics, but without typical horn colorations.

That initial impression was consistent with my observations after living with this loudspeaker for the past two months. The Kipod Studio's sound

## YG ACOUSTICS FOUNDER YOAV GEVA TALKS WITH ROBERT HARLEY

### How did you get into loudspeaker design?

I was 15 or 16, and bought my first stereo system—a Sony CD player, Sony integrated amp, and a pair of Bose speakers. I wasn't too happy with the speakers, so I asked my father what I should do. He told me I had two options: One was to work more, save more money, and buy better speakers; the other one was to build my own speakers. He knew that I liked to tinker with stuff and said that if I were to build my own speakers, he would be happy to supply me with the books and materials necessary to do it. So, of course, I chose that option and started to build speakers as a hobby.

### Did you make speakers continuously from that time until you started YG Acoustics?

Yes, it was always a hobby.

### When you started YG, why did you decide to make the enclosures from aluminum panels?

The first-generation speaker actually had an MDF cabinet. I ended up using aluminum for the insert around the tweeter because there was just no way to machine that complex shape out of wood. I really liked what it did in terms of preventing the front baffle from vibrating. The second-generation speaker already had the entire front baffle made of aluminum, and the body was still a combination



of MDF and plywood. That sounded much better—the images started to float better in space. I decided to go full-bore and do everything out of aluminum, and haven't looked back since. It allows you to machine things more accurately than you would with a soft material, such as wood. So you have a speaker that has a better production tolerance and also allows you to achieve more complex geometries inside the speaker.



## EQUIPMENT REVIEW - YG Acoustics Kipod Studio Loudspeaker

was extraordinarily quick, clean, detailed, and “alive.” It was also an extremely transparent and revealing loudspeaker that laid bare changes in electronics, cabling, setup, AC quality, and source deficiencies. The Kipod Studio walked a fine line between resolution of musical detail and sounding analytical. Consequently, it should be matched with high-quality associated components, preferably those that favor warmth and ease.

With the right electronics, the Kipod was capable of an enormously appealing and captivating sound. It disappeared in the sense that it was a transparent window on the music, with extremely low coloration. I heard an immediacy and presence, yet the overall presentation wasn’t forward, spotlighted in the midrange, or colored in other ways that foster a sense of life but quickly become fatiguing. Rather, the Kipod Studio achieved its lifelike vitality by imposing so little of itself on the music.

This quality was, I concluded, not just the result of the Kipod’s lack of tonal colorations in the midband, but of its transient quickness and coherence. Leading edges of notes seemed to jump out of the presentation with startling speed, much the way horn loudspeakers reproduce music’s dynamic structure. Transient information had a coherence that was world-class; although highly resolving of dynamic shadings, transients never degenerated into mere noise. Instead, I heard percussion instruments, acoustic guitar, and other transient-rich instruments rendered with a completely natural and organic quality that was the antithesis of “hi-fi.” This quality is the Kipod Studio’s greatest strength—the ability to sound highly resolving and alive without a trace of fatigue-inducing etch. Many loudspeakers sound

“detailed” during a brief listen and then become fatiguing. The tell-tale sign of such a speaker is a sense of relief when the music is turned down or off. Not the Kipod; its resolution was musically authentic, not an artifact, which allowed very long listening sessions.

I was greatly taken by the Kipod Studio’s reproduction of brass and woodwinds, particularly trumpet and saxophone. The speaker was able to convey the “blat” and bite of these instruments’ timbres (they are rich in upper harmonics) but without glare or shrillness. Check out the superb (and superbly recorded) DVD-Audio title *XXL* from Gordon Goodwin’s Big Phat Band for a great example of this quality. Much of what we find unpleasant in a trumpet reproduced at realistic levels is not the instrument itself, but rather the distortion components that make it seem louder than it actually is. The Kipod Studio rendered these instruments with a full measure of upper-midrange energy that gave them a lifelike immediacy with no trace of hardness.

This performance was realized, however, only with very clean-sounding sources, electronics, and cables. The Pass Labs XA100.5 amplifiers were an ideal match, with their gorgeous rendering of timbre and lack of solid-state artifacts. Similarly, the Kipod much preferred the Air Tight PC-1 Supreme phono cartridge over the “hotter” Dynavector XV-1s. Note that I’m not suggesting that the Kipod needed “soft” electronics and sources to compensate for an overly bright presentation (it wasn’t bright), but rather that this loudspeaker was so revealing that it uncovered any flaws in source or electronics. (This is probably why show demonstrations of YG products have been so variable.) Indeed, the

### Can you talk about the crossover and your technique that result in optimized performance in the frequency and time domains?

This is really what sets us apart from other manufacturers. Most manufacturers use a piece of software called “LEAP,” Loudspeaker Enclosure Analysis Program; it’s a very, very good piece of software. It controls about 80% of the market. That’s what nearly all manufacturers use to optimize their cabinets and crossovers. The problem with LEAP is that it allows you to optimize either frequency response or phase, but not both. What we have that’s unique is software I developed that allows you to optimize both at the same time. That’s why our speakers are currently the only ones on the market that offer zero relative phase (actually, plus or minus five degrees relative phase) and flat frequency response. You’ll find a lot of speakers that offer one or the other. Those that offer a flat frequency response tend to sound very neutral, but sometimes a bit lifeless. Those that offer good phase have great dynamics and soundstaging, but are usually a bit colored. We’re proud to be able to offer both.

### So, you actually developed this algorithm and wrote the software?

Exactly.

### And how does that manifest itself in the loudspeaker’s sound?

The speaker is, first of all, very neutral

because of the flat frequency response. Instruments have the same timbre that they would have in real life. And, because of the phase, the soundstage is very accurate. It’s not overly big, not overly small—it is exactly as recorded. And maybe the most important thing is the dynamic pop of instruments, the absence of which to me is the number one thing that tells you immediately that you’re listening to hi-fi rather than to live music. With my speakers, I have to say the dynamic pop is there as it would be in live music, since all drivers move exactly at the same time.

### What’s the thinking behind the Kipod Studio, a compact \$38,000 loudspeaker?

Most speaker manufacturers create a huge, big, sophisticated flagship. But as you go lower in their price line, even if it’s very expensive, you’ll find products that are very big, but they might not have the same technology as the flagship. What I did was compromise on maximum volume, or size in this case, which obviously affects maximum volume. The Kipod is a speaker that is scaled down in size, but it has the same level of technology that I offer with my Anat, my flagship line. The result is a speaker that is compact and intended only for medium-sized rooms, but one that offers technology that you would otherwise have to spend \$107,000 to get.

### So, the Kipod Studio features the same degree of execution as the \$107,000 Anat Professional, just scaled-down in size?

## EQUIPMENT REVIEW - YG Acoustics Kipod Studio Loudspeaker

Kipod Studio thrived on a very clean and resolved source, such as high-resolution files played back on my fan-less, drive-less PC-based music server feeding a Berkeley Alpha DAC. This loudspeaker reached down to the lowest signal levels and to the farthest reaches of the soundstage to bring that information to the listener's attention. My caveat earlier about the Kipod Studio walking a fine line between resolution and sounding analytical applies not to highly detailed sources, but rather to etch or brightness in the associated electronics. In short, if you feed the Kipod Studio a clean and detailed signal, you'll be rewarded by a presentation that is richly filigreed and immensely involving.

The Kipod Studio's bass was notable for its tuneful quality in the midbass along with extremely deep extension, the latter thanks to the integral amplifier and equalization circuit that pushes the woofer harder below its natural roll-off frequency. Even organ pedal tones were well served by the Kipod Studio, provided that the playback level was kept moderate. The bass had a consistent character throughout the entire range, and mated seamlessly to the midrange. The texture of acoustic bass was beautifully rendered, with a satisfying combination of warmth and agility. On bass-heavy recordings the Main Module's midrange driver limited the playback level because of excessive excursion; the upper-bass became loose and uncontrolled. Keep the playback level moderate, however, and all is well.

Just as the midrange had tremendous clarity without sounding forward, the Kipod Studio's treble was alive, open, and present yet never overbearing. The top end was musically vivid without being sonically vivid. In addition, the

treble was exquisitely detailed, with fine resolution of nuances and inner detail. Delicate brush work on a drum kit, for example, had real detail that conveyed the mechanism by which the sound was made rather than merely sounding like a high-frequency noise. Cymbals were notable for the sense of delicacy, and of being surrounded by air.

The Kipod Studio's soundstaging was commensurate with the rest of its performance—tight, precisely defined, and tangible. Images floated independently of the loudspeakers just as one would expect from a mini-monitor. The loudspeaker's tremendous midrange and treble transparency helped in creating the impression of a “see-through” quality that allowed very low-level sounds at the back of the hall (including spatial cues) to be rendered with great resolution. The overall presentation was highly revealing of the hall's size and characteristics, but not hugely expansive. The soundstage was wide, deep, and transparent, but had less height and sense of envelopment than I'm used to hearing. I had, however, been listening to the Wilson X-2 for the previous 18 months. No doubt this impression is the result of the Kipod Studio's much smaller physical size that puts the drivers at ear level rather than considerably above ear level.

As much as I enjoyed the Kipod Studio, I have one serious reservation about its performance, particularly relative to its considerable price—it is limited in playback level and macro-dynamics. Timpani and other high-level, low-frequency transients caused the 6” midrange to produce a “popping” sound (the back of the voice-coil former hitting the magnet) when its excursion limits were exceeded. A related phenomenon was

It's scaled-down in size, but not compromised in technology.

**You use powered woofers in all your designs, which is unusual in high-end audio. What do you see as the advantages of driving the woofer with an integral amplifier?**

It offers two advantages. First of all, it's room adjustable. That would be, by far, the biggest advantage. We can achieve uniform sound in pretty much any room. It's important to note, by the way, that we don't expect the customer to know how to adjust the woofer. Using a diagram of a customer's room, we can optimize the settings. The second advantage is that the main amplifier doesn't have to work as hard. The load gets shared between the woofer amplifier and your main amplifier.

There's traditionally been resistance by audiophiles to powered loudspeakers.

Some audiophiles prefer not to have it. That's why I also offer a fully-passive version of the Kipod Studio and the Anat Studio. But I think once they see the quality of the amplifier that we put in it and how the amplifier was designed specifically for our bass driver's impedance curve, that reluctance tends to go away.

**Your literature and Web site stress the measured performance of your loudspeakers. How much can measurements tell us about speaker performance?**

Measurements can tell us everything, as long as we measure everything. It's important to

note that measurements that we do at the factory, or that any designer does, are not just the six or seven graphs that you see in some magazines. We have a book containing hundreds of tests we've performed. These can describe the performance of the speaker start-to-finish—without anything missing.

**But what role does listening play in loudspeaker development?**

Listening tells you whether you have measured everything or not. Your ears will not tell you specifically what's wrong and how to fix it. That's what measurements are used for. They are the development tool, but the ears are the best verification, because if you didn't measure something, you will still be able to hear it, and this will tell you that something is wrong. Whereas with measurements, if you didn't measure something, how would you even see that it's wrong?

**Or how to fix it?**

We need to listen to see if something is problematic and then find the measurement that shows you how to fix it. I doubt that from just listening, you'd know how to fix it. At least I don't. But, it tells me that I need to measure more until I find something that explains the phenomenon that I could hear.

**Over the years I've heard your loudspeakers many times at shows, sometimes sounding wonderful and other times not so good. Is there something about your designs that**

## EQUIPMENT REVIEW - YG Acoustics Kipod Studio Loudspeaker

a tendency for the upper-bass to lose definition and sound flabby with a combination of high-ish playback levels and the presence of low-bass in the music. The low-bass caused high midrange-driver excursion that colored the midbass. All loudspeakers have such limitations, and typically the higher the price, the louder the system will play without strain. Judged from one perspective, the Kipod Studio is quite expensive considering its inability to reproduce orchestral climaxes with ease at realistic levels.

### CONCLUSION

The YG Acoustics Kipod Studio is an extraordinary loudspeaker, but one that won't satisfy all listeners. In a moderately sized room, fed by high-quality electronics, and played at reasonable levels, it is world-class. Its ability to vividly bring music to life through dynamic expression without becoming analytical is extraordinarily compelling. This is a vital aspect of music reproduction, and one at which the Kipod Studio excels.

If, however, you want to play orchestral music at full-tilt, or have a large room, or cannot invest in high-quality electronics and sources, the Kipod Studio probably isn't your best choice. YG's solution for larger rooms and for higher playback levels is the Anat Reference II series. The Kipod Studio is a specialized loudspeaker that maximizes transparency, transient accuracy, soundstaging, resolution, and tonal purity within certain limitations of room size and playback level. But when playing within those parameters, the Kipod Studio is utterly magical. **tas**

### SPECS & PRICING

#### YG Acoustics Kipod Studio Loudspeaker

**Type:** Three-way dynamic loudspeaker

**Driver complement:** 6" midrange, ring-radiator tweeter (main module); 9" woofer (woofer module)

**Woofer module amplifier power:** 400W RMS

**Impedance:** 8 ohms nominal, 5 ohms minimum

**Sensitivity:** 87dB

**Cabinet:** Aircraft-grade aluminum; tweeter ring is ballistic-grade aluminum

**Dimension:** 7" x 16" x 13" (main module); 12" x 41" x 17" (woofer)

**Weight:** 40 lbs. each (main module); 64 lbs. each (woofer)

#### U.S.

**Price:** \$38,000/pr

#### YG ACOUSTICS LLC

4941 Allison, St., Unit 10  
Arvada, CO 80002  
yg-acoustics.com

#### U.K.

**Price:** £28,700/pr

#### METROPOLIS MUSIC

+44(0)1435 867438  
metropolis-music.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](https://www.avguide.com)

### make them more sensitive to the room, or associated equipment, or setup?

Our speakers are very critical. When you have a speaker that exposes all of the nuances in a performance, you will hear very clearly any change that you do upstream. Think of it this way: If a speaker has a response deviation of plus/minus 4dB and you put in front of the speaker a cable that rolls off highs by 1dB you probably won't be able to hear it. Do the same with a speaker that's plus/minus 1dB and it will be much more apparent. Our speakers are very, very critical. With a speaker of this quality the whole system would be of very high quality and assembled quite carefully.

### You chose not to high-pass filter the Kipod Main Module's 6" driver to keep low bass out of it. Is that because the Kipod Main Module is available separately as a stand-alone system or because you felt that the additional crossover parts would compromise the sound quality?

It's actually both. I really like the transparency of a two-way design. It's a simple design and a lot less can go wrong when you do a simple design. That's why both the Anat and the Kipod lines are essentially two-way monitors, and then you add to them bass modules. The driver relies on mechanical filtration, meaning a sealed enclosure to protect the mid/woofer from very high excursions.

### Doesn't that limit the system's dynamics?

It limits the system's overall maximum sound. When you say dynamics, you could refer to two things. One is just maximum volume level, which definitely it will limit. That's why the Kipod is designed for medium-sized rooms or smaller. The Anat can handle far, far greater volumes because it has two mid/woofers. And, I would have to say with the Anat, I've never encountered the volume limits of this design approach. But when you refer to dynamics in terms of the sense of immediacy in the music, I would claim that it's very helpful to have a mid/woofer that is not blocked by a big capacitor with its own problems.

### Tell us about your advertising slogan, "The Best Loudspeakers on Earth. Period."

Of course, I believe it, otherwise, I wouldn't write it. But, I don't expect anyone else to believe it just because I said so. In fact, I would claim that a customer who chooses to purchase my speakers just because I claim that they are very good is not a careful enough customer. But I would expect these customers to be curious enough to decide to test my slogan for themselves to see if they agree with me. My hope would be that the customers read the slogan and say, "Yoav believes it. He tries to give scientific evidence for it in his ads. I would like to try to schedule a demo and see if I agree with him or not."

EQUIPMENT REVIEWS

# Loudspeakers over \$40k



# Avalon Time Loudspeaker

Watch this space!

Roy Gregory

**A**valon's has long held a reputation for delivering astonishingly low levels of distortion with commensurate neutrality, but the emergence of the flagship Isis (and the budget NP 2.0) signaled a new mastery of the time domain. The Isis was a stunning achievement, but it was simply too big or too expensive for many homes. The new Time, on the other hand, fits right in...

The Time inhabits a cabinet that is a few inches taller but otherwise virtually identical to the company's various Eidolon models. But remove that grille and you'll reveal yet another familiar view, a large diameter diamond tweeter being paired with a 120mm ceramic bowl midrange driver and a pair of the 275mm Nomex/Kevlar bass units, although in this case it's a case of hybrid DNA, the 25mm concave tweeter and twin bass driver configuration being drawn from the Isis, while the bass and mid drivers themselves come from the Eidolon Diamond. The bass drivers are reflex loaded by a downward firing port that is enclosed by the U-shaped plinth with its rear-facing opening — again, an Avalon trademark. The whole configuration that hints at the Time's dynamic potential and bandwidth.

The Time was happy with anything from a good 100 Watts up. Amps used for the review included the Gamut M250i monos, the Bernings and even the Hovland RADIA, whose modest rated output underlined the fact that in this instance it is subtlety and quality that count. Audiofreaks supplied Cardas Clear interconnects and Clear Beyond speaker cables along with the Times and these proved a good match, delivering a coherent and holistic sound, big on acoustic space and presence.

The alacrity with which the Time tells you all about early reflections and asymmetries in the listening room (and its acoustics), coupled to its bass power and resulting ability to excite a room's low frequency resonances, make this a speaker that's easy to set up (in the sense that you clearly hear the benefit — or otherwise — of every shift in position) but also one that will dictate its placement literally to a matter of millimeters, along with most of the things around it.

That set up process is also going to tell you an awful lot about these speakers, simply because it goes straight to the question of low-frequency performance, fluidity and communication — which in turn goes straight to the heart of music itself, everything resting as it does on those lower registers. Yes, the bulk of the usable information is in the mid-band, but it's the bottom end that tells you where it should all go, when it should get there and whether or not it's right. I've never heard a speaker yet in which that relationship is quite so obviously apparent. Indeed, bigger speakers — like the Isis or Focal Grande EM, that exceed the Time in overall achievement, seem to make this close coupling less obvious; or to put it another way, you can hear that it's not quite right — you just can't necessarily say why. The Time on the other hand, once you start adjusting



## EQUIPMENT REVIEW - Avalon Time Loudspeaker



it, leaves you in doubt at all about both the what and the why of optimum set up. In the process it also demonstrates just what an uncannily natural and evocative performer it can be.

“And so the odyssey began - and along the way, quite an education as to just why this album has proved so invaluable over the years.”

An example: one of my key set up discs is the Analogue Productions re-issue of Duke Ellington and Ray Brown’s *This One’s For Blanton*. Sparse to the point of asceticism, the upright bass/piano combination is incredibly demanding, both instruments individually presenting any hi-fi system with a stern test, in combination they are ruinously critical. Not only does the system have to deal with the depth, power and independence of the bass, it has to let that instrument breathe, which means dealing with its almost contradictory sense of attack and decay, along with its physical volume and layered harmonics. Then throw in the sheer range and complexity of the piano, the need to reproduce its percussive quality without it becoming harsh or strident and you can begin to see the problem. Add the fact that there’s no rhythm section per se, filling in the background and mapping out the steps, that the two instruments operate for so much of the time at opposite ends

of the frequency range, and that with so little inherent structure, reproduction of the time domain is absolutely crucial if you are to avoid the whole thing collapsing into meaningless (and frankly,

irritating) noise, and this recording’s value as an almost instant litmus test for bass alignment, linearity and rhythmic integrity soon becomes apparent.

With the Times, roughly positioned and happily playing away to bed them in, I’d been really rather enjoying the results. But when the time came to go to work and really dial them in I was in for a shock. Sure enough, cueing up track one of the *Blanton*, the problems with the set up were all too starkly highlighted, Ray Brown’s bass sounding small, woolly and muffled — as well as limp and well off the pace. At the same time, Ellington’s right hand sounded horribly glassy and exposed — a bit like a poorly tuned pub upright. This was definitely not correct! And so the odyssey began — and along the way, quite an education as to just why this album has proved so invaluable over the years.

Painstaking adjustments, fore and aft (with a little sideways thrown in for good measure) and then again with

the cones in place, wrought dramatic changes in the musical integrity and sense of performance\*. In comparison, the minimal degree of toe in required to snap the image into focus was simplicity itself. But the educational aspect of the process is all to do with the way the music’s presentation changes and evolves. From that unpromising start, a half-centimeter grid movement quickly established a position that was forward and wider, the speaker clearly telling you when you were moving in the right direction — and when you weren’t. Final placement ended up about 40mm further apart and 60mm further forward than my original speculative positioning — along with considerable care taken ensuring symmetry relative to rear and side walls and the positioning of the first reflection pads. It might not sound like much, but when you are working in 5mm steps to start with, and as small a step as you can manage to finalize things, that’s quite a trip, and each step of the way was marked by progressive changes in the integration and projection of the music and instruments.

From its diminished and detached beginnings, Ray Brown’s bass grew in stature and physical volume. First you heard the body, gradually growing in front of you, then the strings, their length developing as the speaker zeroed in. This isn’t about imaging as such — although that clearly benefits — but the scale and sense of the instrument, the particular

## EQUIPMENT REVIEW - Avalon Time Loudspeaker

and instantly recognizable way it shapes notes and drives energy into the room. Listen to live jazz (or classical music) and you never have any problem hearing what the bass is playing, or the way it's being played. Listen to jazz on most hi-fi systems and the same instrument is often indistinct and barely audible. Here, the Times deliver the poise and shape of Brown's intricate lines with effortless clarity. The contrast between pluck and release, the physical difficulty of some of his runs, are beautifully captured and projected, the notes floating clear of the floor as he picks and places them.

Meanwhile, Ellington's piano has fallen into tune. No more cracked upper register or thuddy left hand: as the speakers approach their sweet spot the harmonic complexity and percussive clarity allow Ellington's delicacy and touch to open like a flower, the precisely placed chords blooming in the body of the instrument, anchored by a new authority and sonority that has come to the instrument.

But the emergence of instrumental character is only a part of the story. The really impressive think is the developing relationship between the instruments — and with the space they occupy. As the positioning locks in, so does the music, the performance drawing you in, the almost telepathic relationship between these two master musicians reflected in the way they pass the initiative back and forth. Suddenly you are listening to instruments and people, in space,

to what the musicians are doing and saying — their conversation on a note-by-note, phrase-by-phrase basis. The speakers, the driving system — they've effectively disappeared, leaving just the music. Yes — it is a small and undemanding recording (at least in terms of absolute dynamics and scale) but the two instruments involved are far from easy to reproduce, placing deeply

conflicting leading-edge and timing demands on a loudspeaker, while the stark simplicity exposes any shortcomings in timing or tonality with ruthless efficiency. I've heard two speakers do a better job than the Time with this disc: the Isis

and the Focal Grande. One costs three times as much and the other needs at least three times the power. And I'm not sure that either gets quite as deeply into the groove as the Time...

It's all about chemistry, that strange fusion reaction that turns noise into music and musicians into a band. Let's talk about bass of a different kind and a bit of Elvis — Costello that is, *Live At The El Mocambo* and in his pomp on the *My Aim Is True* tour: Set closer 'Pump It Up' depends on the deep, deep, driving patterns played by Pete Thomas's bass, and even given the space of a slow build up and Elvis toying with the crowd, the propulsive energy in the playing is both present and correct. Even under the combined assault of keyboards, drums and guitar, you never lose track of the track, and the track never loses its sense of purpose and direction. Switch back from this murky live recording to the de luxe Edition

re-issue of the album and it's a case of "Wow!" The comparison tells you just what a great job the speaker did of sorting out the densely packed and dirty bottom-end of the live disc, it also tells you just what an awesomely driven and energetic recording the original is, the re-mastered CD finally capturing the sheer life and intensity of the analogue original. But playing the live disc also reveals two other things about the Time: it has that ability to reach out and include the listener in the soundfield of the recording, making for a much more immersive and involving listening experience. Ohhh... and it likes to play loud. In fact, it positively invites it. Whereas older Avalon models would certainly play loud, it was hard to escape the feeling that they did so with a slight frown of disapproval. The Aspect tore up that particular set of rules — the Time stomps on the shreds; "enthusiastic" barely covers the willingness with which it embraces the more energetic musical offerings... and no — we're not talking Bach here.

One night — long, long ago — and in a club — far, far away — I saw, heard and felt the power of Steve Earle in overdrive. Recorded for a BBC live session the tape has finally seen a CD release — and playing it on the Times carries me right back to the overheated, sweaty, smoky fug of the Town and Country, effortlessly capturing the excitement, the sticky floor underfoot, of a band (and an audience) that knows it's on a roll. From Earle's nasal drawl, rough round the edges from too much abuse and too many loud nights, to the sheer enthusiasm of a band feeding on crowd frenzy, the Avalons put you there — right in the middle of the whole, heaving, hyper event. You see, it's not just about the bass (although that's

critical to the whole question) but the way the low frequencies are integrated with the rest of the range — and the overall coherence that results.

In this respect it is just like a Symphony Orchestra; it is not enough for all the bass

**“It has the ability to reach out and include the listener in the soundfield of the recording, making for a much more immersive and involving experience.”**

### SPECS & PRICING

#### The Avalon Time Loudspeaker

**Type:** Three-way loudspeaker

**Driver Complement:**

1x 25mm concave diamond tweeter

1x 120 ceramic bowl midrange

2x 275mm Kevlar/Nomex bass drivers

**Bandwidth:** 20Hz - 20kHz +3dB

**Sensitivity:** 89dB

**Impedance:** 4 Ohms

**Dimensions (WxHxD):** 30 x 117 x 48cm

**Weight:** 75kg

**Finishes:** Quilted Cherry, Curly Maple and Figured Walnut Optional wood finish (at extra cost): Birdseye Maple, Walnut Cluster Burl, Myrtle Cluster Burl

#### U.S.

**Price:** \$47,995/pr

#### AVALON ACOUSTICS

2800 Wilderness Place  
Boulder, CO 80301  
(303) 440-0422  
avalonacoustics.com

#### U.K.

**Price:** £47,995/pr  
(standard finish)

#### AVALON ACOUSTICS

avalonacoustics.com  
  
Distributed by:  
**AUDIOFREAKS UK**  
audiofreaks.co.uk  
+44(0)20 8948 4153

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](#)

## EQUIPMENT REVIEW - Avalon Time Loudspeaker

instruments to play at once — that’s just loud. Real impact and drama comes from them all playing at exactly the same moment and just the right moment as defined by the rest of the instruments. That way a massive, monumental work like Shostokovich’s 11th Symphony (from the fabulous new Vasily Petrenko cycle on Naxos) can build tension and drama, contrast light and shade by the measured application of instrumental force, the long, reflective passages of the first movement never meandering but building with wonderful inevitability towards the shattering crescendo. It’s a masterfully controlled and directed performance, with the Times retaining and delivering every last ounce of that musical intent, right up to the sonorous chimes of the cataclysmic finale.

It is this connected quality, the directness with which they present the musical event that makes the Time such a special speaker. The way it delivers musical energy, the immediacy and suddenness of instrumental transients has something of the best horns about it, but coupled to the uncannily even and extended bandwidth, the tonal and spatial honesty that’s always been an Avalon hallmark. It certainly invests the speaker with the ability to excite, but it also opens the palette of intimacy and delicacy too. Back to the Blanton, let’s appreciate the deftness with which Ellington balances and weights his playing to build off of or in support of Brown’s bass. Shawn Colvin’s ‘Shotgun Down The Avalanche’ has all its familiar intimacy and “she is here” immediacy, but it also has a more solid, rooted quality than I’m used to, a bigger sound without losing any of that fragile detail and intricacy.

Which sums up the Time’s achievement

quite nicely. It manages to present its musical information in the right place and at the right time, irrespective of pitch or power required. This temporal accuracy is no coincidence (it’s not called the Time for nothing) and the result is an almost preternatural quality that makes recordings astonishingly accessible and engaging. This inner balance, built from the heart of the performance outwards, extends across enough of the range to produce remarkably convincing results, almost irrespective of recording quality. They dredge the music, whole and intact, from the murk of the worst discs you own, while the best will be simply breathtaking. The Time can’t match the really big speakers I’ve already mentioned, or a speaker like the GamuT S9, for sheer scale or ultimate loudness, but it does more than enough in this regard that most of us will never feel the lack (either quantitatively or qualitatively). It doesn’t float the massed basses of a well recorded orchestra, or establish the acoustic space quite as well as the Isis, but it gets awfully close and brings its own special qualities to the party instead. It’s easier to accommodate and much easier to drive, which means that more listeners are going to actually realize more of its performance potential out there in the real world. Musically forgiving it also brings the best from partnering equipment. Don’t think that makes it unfussy; you’ll still need stellar equipment to extract all of the performance this speaker is capable of, but the range of options that embraces is now wider than ever before.

Which brings us, finally, to a parting shot. We’ve just enjoyed a purple patch when it comes to advances in speaker performance. Not so much when it comes to technology, you’ll note, which has merely evolved or been refined, with

new materials rather than revolutionary new approaches, but more what we do with it. It has resulted in new levels of musical coherence, less intrusive transducers and greater access to recordings. It has also started to realign the focus of audio attention, away from front-end heavy approaches to a more system-orientated understanding, built back from the speaker. The Avalon Time represents the pinnacle of that progress, embodying the musically communicative sensibilities that have finally, significantly advanced the state of the art in loudspeakers — and doing it in a manageable and deliverable package.

What the Time stands for is more music for more people. Undeniably expensive it may be, but it is still cheap at the price, simply because musical performance like this was almost unattainable at any price before it arrived. By mixing a distinctly real world practicality with superb musical performance, the Time establishes a significant new benchmark for competitors (and customers) to aim for. Of course, some will already be closer than others, but pole position has to rest with all those Eidolon owners out there: you’ve got the system; you’ve got the space; all you need now is the cash. +

\*Just to put this in perspective, the final position on the cones was around 20mm further forward than without – and with this speaker that’s a BIG difference.





# Focal Grande Utopia EM

Standing tall...

Roy Gregory

**T**he third family of products to carry Focal's flagship Utopia designation, this latest iteration represents not just an evolution of the technology and thinking behind these speakers, but a ground-up reassessment of its implementation. So, while there are clear common factors that bind these new Utopia models to their predecessors (driver technology, complement and materials), there isn't a single element that hasn't been modified or changed, wholly or in part. In fact, the developments are so comprehensive and their implications so far reaching that they are beyond the scope of a single review. Which is why we started by looking at the simplest speaker in the range, the two-way stand-mounted Diablo, a model that incorporates the advances made to the established Beryllium tweeter and W Cone driver technologies, as well as touching on the sophisticated cabinet mapping technique that has been applied to the design and construction of the enclosure.

The Grande Utopia EM embodies all those advances and adds a few twists to the mix that only become possible when development budgets and product pricing become truly elastic.

As such, this review constitutes Part II, a second installment of the story that started with CT's Diablo review in Issue 63, in which he notes the significant advances made by Focal in the areas of driver performance and cabinet design. Refinements in the diameter of the Beryllium tweeter and the development of a new spaced motor assembly, shaped to maximize venting and minimize reflections have resulted in a lower resonant frequency, a 1.5 dB increase in efficiency and a 40 per cent

reduction in distortion, increased thermal efficiency, greater dynamics and reduced compression. Laser cutting of the W sandwich cones used in the mid and bass drivers has improved sonic consistency and pair matching, while the sophisticated new cabinet mapping technology has allowed the creation of more efficient and rigid cabinet structures, shorn of the excess weight that stores mechanical energy, smearing musical information and anchoring the sound to the speakers, identifying them as its source.

The Grande Utopia EM matches those advances in midrange and highfrequency driver performance and enclosure design, with equivalent advances at low frequencies, in extending



## EQUIPMENT REVIEW - Focal Grande Utopia EM Loudspeaker

the Focus Time concept that governs the larger Utopia's curved baffle arrangement and in crossover developments to actually deliver the increased musical potential. Confronted with a structure as strikingly different as the latest Grande, it's easy to assume that it's an exercise in ostentatious aesthetics (at the possible expense of performance) – especially when it's this big and this red! Well, the speaker comes in black and a subtle pale grey too – while anything, as they say, is possible. What's more, by presenting such a striking and well rounded form, the speakers make a statement, rather than trying to hide or slip into the background – never a possibility with something this large! Besides the superb standard of finish, the key factor in this success is the Bauhaus discipline to the design, its form absolutely dictated by function. But its revolutionary appearance pales into insignificance against the mechanical and technological developments that lurk beneath its skin, so let's examine each developmental aspect in turn.

### ADJUSTABLE CABINET GEOMETRY...

Separate, stacked enclosure modules are nothing new in loudspeaker design, with many companies relying on the approach to fine tune arrival times and driver placement relative to the listening position – often in conjunction with a complex set of tables or formulae to calculate proper placement. Indeed, the first and second series Utopias used both separate cabinets and a curved displacement of the drivers to arrange them relative to the listening position.

However, despite a fair degree of cleverness in the actual placement and alignment of the

drivers there was no escaping the inherent compromise of a one size fits all approach. With the latest Grande, the speaker with the longest baffle and most drivers, Focal was determined to overcome that limitation. The problem, clearly, was how to make the individual modules movable relative to the listening position; the solution is both mechanically impressive and wonderfully elegant.



The Grande Utopia EM actually consists of a plinth and five cabinets, but is physically divided into three separate elements: the tweeter enclosure, the two boxes above it and the two boxes below that sit on the plinth. The top and bottom pairs are actually fixed assemblies, their boxes physically fixed together. The clever bit is that the tweeter cabinet moves relative to the bass and midrange below it, as does the midrange and mid-bass unit pairing above it, thus allowing the listener to tighten or loosen the baffle curve depending on listening distance. But with a speaker system that weighs around 260kg, the notion of adjusting these elements and then holding them stable while fixing them

was clearly out of the question. Instead, Focal have implemented a mechanical arrangement of moving wedges that is simple, precise and repeatable. A drop down flap on the rear of the lower midrange cabinet contains (amongst other things) a beautifully machined crank handle. Fit it into the socket in the back of the tweeter cabinet and each turn raises or lowers the upper elements, the top two cabinets by exactly twice as much as the tweeter enclosure, thus preserving the correct arc. A mechanical/numerical counter allows you to set the angles precisely and the whole exercise will take one person a matter of moments.



The end result contributes not only to the striking appearance of the Grande EM, but also to the easy optimization of its sound, with quite small adjustments in tilt having a profound effect on the presentation and balance of the sound.

### ELECTROMAGNETIC BASS DRIVER...

Virtually all loudspeakers employ what are now considered conventional bass units, employing permanent magnets in their motor systems. These are generally driven passively, but increasingly, in search of greater level, extension and control, designers are resorting to active drive at low frequencies. It's an undeniably attractive option, offering far greater extension and weight from smaller cabinet volumes, as well as a degree of tuning adjustment to match room conditions.

However, it is not without its own set of compromises, with complexity, cost, amplifier quality and system integration all posing significant issues. After all, the inside of a speaker cabinet can best be described as a hostile environment for vibration sensitive electronics, and active crossovers need to match the quality of the preamp used in the system, not too much of a challenge in an AV set up, but really hard to achieve in a high-end rig. And that's before we even get to the question of amplifier quality and top to bottom continuity.

For a speaker like the Grande, where size and cost were largely irrelevant and quality of performance is everything, another solution needed to be found. Perhaps typically, it came from combining forward thinking and new technology with a concept that, in hi-fi terms at least, could be described as positively ancient;

## EQUIPMENT REVIEW - Focal Grande Utopia EM Loudspeaker

### ELECTROMAGNETIC DRIVE UNITS

The “EM” in the Grande Utopia EM’s name stands for “electromagnetic,” the drive principle employed in the woofer.

In a conventional drive unit, the power amplifier drives alternating current (the audio signal) through the voice coil, generating a varying magnetic field around the coil that is an analog of the audio signal.

The varying magnetic field changes its orientation at the audio signal frequency because the audio signal is alternating current – the current flow reverses direction at the frequency of the audio signal. Send 1000Hz to the driver and the current flow through the voice coil reverses direction 1000 times per second. The voice coil then alternately pushes and pulls against the fixed magnetic field generated by the driver’s permanent magnet, causing the voice coil to be pulled back and forth, and with it, the cone.

This approach, used in virtually all moving-coil loudspeaker drivers, runs up against the laws of physics. The magnetic field strength generated by fixed magnets is limited, which in turn places restrictions on the cone weight, how low in frequency the driver will play, and how sensitive the driver is. A heavy cone goes lower in frequency (all other factors being equal), but requires greater magnetic field strength surrounding the voice coil to drive it.

Focal’s solution to this physics problem is to replace the driver’s fixed magnets with a large



coil that functions as an electromagnet. The coil is driven with direct current from an outboard power supply that plugs into an AC outlet. The current flow through the coil creates the magnetic field, against which the voice-coil-generated magnetic field pushes and pulls. The electromagnet produces a magnetic field strength in the gap (the area in which the voice coil sits) double that of a conventionally driven woofer. Consequently, the EM’s woofer

can be heavier (giving it a lower resonant frequency) yet simultaneously more efficient. Moreover, the woofer’s bass output can be adjusted by varying the current through the electromagnetic coil. This is accomplished in the EM via a rotary switch on the outboard supply that drives current through the electromagnetic coil. One can thus adjust the EM’s bass output to better integrate the system into a variety of listening rooms.

The result of electromagnetic drive is a woofer with very high sensitivity (97dB for 1W) but very low resonance (24Hz). So, the woofer delivers lots of very low bass with very little input power. The price of this performance is the need for the outboard supply that has to be plugged into an AC outlet, along with the sheer weight of the woofer. The EM’s 400mm woofer weighs 63 pounds, 48 of which is the electromagnetic coil. –**Robert Harley**

the electromagnetic drive-unit. In the days before powerful amps and high-quality, high power permanent magnets, speaker manufacturers resorted to electromagnets to energize their drivers. You want more bass, more efficiency? Just turn up the power fed to the coil. Of course, it’s not quite that simple, especially when applied to a driver and system with the power demands and bandwidth of the big Utopia, as RH explains in his sidebar. But the attraction of a driver with not just significantly greater power, but also an inbuilt level of adjustability was just too attractive to pass over, and Focal poured massive effort and resources into achieving their goal. The results are impressive, even from a purely numerical standpoint.

Compared to the driver in the previous Grande, the 400mm EM driver offers an 80 per cent increase in available magnetic field (from 0.93 Tesla to 1.75 Tesla), an 88 per cent increase in the force applied to accelerate the cone, increased efficiency (92.7dB to 98.6dB), a lower resonant frequency and an overall reduction in distortion by a factor of almost four; and all down to the nearly 7kg of copper wire used in place of the magnets. Add in an adjustable output power supply, housed in a small separate enclosure and with six discrete steps from 1W to 75W, and you have the equivalent of 6dB in level adjustment, as well as an ‘overdrive’ setting!

The other big change in bass implementation is the move to a flow port arrangement, which feeds the output of the downward facing port through a wide, forward facing slot between the bottom of the cabinet and the plinth. This improves the port’s interface with the room and also keeps it more consistent when it comes to boundary

conditions.

#### ADJUSTABLE CROSSOVER...

Like everything else in loudspeaker design, making the most of the advances made with the bass unit was a question of balance, weighing up how much of the benefit to spend on overall system efficiency, how much on adjustability. Setting the range of adjustment at  $\pm 3$ dB allows an overall system efficiency of 94dB. As well as significant level compensation at low frequencies, this allows the elimination of subtractive components in the mid and treble crossovers, components that limit transparency and dynamic response.

But Focal wanted to further increase user optimization, and settled on a set of high-quality jumpers to give three-step settings that enable users to tweak crossover slopes between mid and treble, as well as tweeter and mid-bass levels and sub-bass Q. Add in the level control on the bass PSU and that’s 1458 permutations. Thankfully, the discrete and repeatable nature of each step makes the process simple to execute and easy to navigate. The upper range adjustments give a tilt and ‘smoothness’ function to compensate for the live-ness or balance of the room, but it’s the ability to balance mid-bass and sub-bass levels against low-bass Q that is critical to achieving the scale, presence and coherent dynamic range of which the Grande is capable, and which represents one of the key breakthrough developments. However, one unforeseen effect of the elimination of subtractive elements as well as the increase in bass transparency and lower levels of lowfrequency distortion was increased audibility of crossover component quality, necessitating in turn, a complete

## EQUIPMENT REVIEW - Focal Grande Utopia EM Loudspeaker

overhaul of crossover components (including the development of dedicated designs) and the selection (by blind listening) of new internal wiring. Only with these developments in place was it possible to fully realize the potential of all the other advances, finally delivering the kind of step-change in low-frequency performance that characterized the impact of the Beryllium tweeter on the upper reaches of the second generation Utopia Bes.

### FEEDING THE BEAST

Installing any speaker that weighs 260kg is always going to be an issue, but the Grandes proved easier than most. The fact that the top cabinet element is removable helps reduce the weight a little and the height to manageable proportions, while the integral casters allow you to roll the speaker straight out of its crate and into place – as well as helping with fine tuning once they’re up and running and before installation of the (necessarily) substantial spikes. Once the speakers are in situ, the top box needs to be lifted into place (a two person job) and the power supplies connected. Then, you can finally start thinking about all those adjustments. I opted to position the speakers for optimum performance with the controls set flat before any further refinement, finally settling on a combination of 1.5dB mid and sub-bass cut with a notch increase in Q.

Two other points need to be made about the feeding of the Grandes: despite a 94dB sensitivity, small amps are out; and it matters how you feed the power supplies. On the latter point, don’t skimp on the mains leads – you will hear the difference. And on the former, even the impressively linear, tactile and well-controlled 20 Watt output of the



Vacuum State monoblocs didn’t do justice to this speaker’s frequency extremes. Around ten times that is a more sensible target, with the Levinson 383 and both the Ayre and Berning monoblocks all putting in sterling service. Power and load tolerance is definitely the order of the day.

### AND, FINALLY... THE SOUND!

The latest generation of speaker designs, notably the Avalons and Spondors among others, exhibit a level of sonic invisibility, an ability to stand aside from the music without leaving their mark on it that is quite unprecedented. But nor is it a coincidence. Advances in driver design have in turn placed considerably greater demands on crossover configuration and component quality, revealing previously unsuspected levels of damage to the overall performance (and the root of the somewhat simplistic notion that the simpler a crossover the better – well yes, but not quite for the reasons we thought).

It’s a development that Focal has matched with the Diablo, and even more impressively, with the Grande EM. To make a speaker that is this large, this complex and this adjustable – but is also the nearest thing to sonically invisible, is impressive indeed. That the Grande can do the small things so brilliantly and intimately, do poise and delicacy with a natural independence to the sound that mini monitors can only dream about is even more so. And while it’s difficult to ignore anything this large and visually striking, shut your eyes or better still, turn out the lights, and the music will hang in its own acoustic, free of the speakers and their location, the scale matched to the venue and musical forces involved – small when it should be, effortlessly huge when it’s called for.

Even early stereo mixes with their hard left/right placement don’t betray the position of the Grandes, the instruments placed separate from and just behind the speakers themselves. Soundstages grow and shrink or simply evaporate

## SPECS & PRICING

### The Focal Grande Utopia EM Loudspeaker

**Type:** 4-way floorstanding reflex loaded loudspeaker

**Driver Complement:**

1x IAL2 25mm inverted beryllium dome

2x 165mm W cone midrange

1x 270mm W cone mid-bass

1x 400mm W cone electro magnetic sub-bass

**Bandwidth:** 18Hz - 40kHz +3dB

**Sensitivity:** 94dB

**Nominal Impedance:** 8 Ohms (3 Ohms minimum)

**Crossover Frequencies:** 80 / 220 / 2200Hz

**Dimensions (WxHxD):** 654 x 2012 x 880mm

**Weight:** 260kg ea.

**Finishes:** Black, red, grey; Others to order.

### U.S.

**Price:** \$180,000/pr

### U.K.

**Price:** £110,000/pr

### AUDIO PLUS SERVICES

156 Lawrence Paquette  
Industrial Drive  
Champlain, NY 12919  
(800) 663-9352  
audioplusservices.com

### FOCAL JMLAB (UK) LTD

0845 660 2680  
focal-utopia.co.uk  
Manufacturer:  
**FOCAL - JMLAB**  
focal-fr.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Focal Grande Utopia EM Loudspeaker



according to the recordings themselves, but the signal and the picture it paints is always separate from the speakers holding the brush.

This ability to allow the music to exist independently of the system producing it speaks volumes about the quality of the speakers involved. It's a feat impossible to achieve without exceptional linearity from lowest bass to highest treble, without dynamic coherence that projects energy equally across that entire spectrum. Finally, you need tonal consistency too, a quality made easier to achieve with consistent driver materials across the range. Ironic then, that so much of the performance achievable from this boldly charismatic design is delivered by its least visible element, the crossover that hones and actually delivers the potential benefits of all those technological advances in driver and cabinet design.

It's hard to overstate just how crucial the configurable nature of both the cabinet and crossover are to the final results achieved. Sit and listen as a knowledgeable practitioner goes about the fine-tuning and you'll be astounded at the degree of difference even tiny changes make to the presentation and arrival of the music. This isn't a case of bending it into the shape you want; more a case of arriving at the shape it needs, because what happens is that the music becomes more and more integrated, moves further and further from the plane and influence of the speakers, deeper and deeper into the realm of the natural and believable. It's almost trite to suggest that you'll know when it's right, but use acoustic music, especially with players or voices that you know and it really is that simple.

Time then, for an example of the Grande

speaking in anger. Having composers conduct their own works is seldom a recipe for success, but Polski Radio's live concert SACD of Gorecki leading the National Polish Rado S.O. in his own *Third Symphony* is a stunning exception to that rule. It's a vast and stentorian work of three slow movements that might easily become sprawling and ponderous. Indeed, on many a system and despite the perfectly poised performance with its incredibly control of tension through tempo, the sheer weight of low frequency information simply overloads the speakers' ability to resolve and differentiate pitch, pace and texture. Never on the Grandes! Even the slow and low bowed entry is picked out perfectly, the individual bars and phrases distinct, the measured increase in intensity and tension, the resulting anticipation of the Cello entry, the inevitable arrival of the rest of the orchestra, building and building to the shattering climax built around the solo soprano part: it lives, it pulses, it breathes, drawing you into, immersing you in the sheer majesty of the music and he playing. But a 33-minute slow movement, even if you can't tear yourself away, is a long way round when it comes to making the point. That's made before a single note is played. Just listen to the opening, the eruption of applause, first from the choir stalls and then spreading around and across the auditorium as the conductor comes into view. Feel its warmth, its length, the explosive enthusiasm of a home crowd greeting a home-town hero, the way it reaches out and includes you. And as it settles, hear the sounds of the orchestra taking their seats, the shuffling of feet and setting of instruments and music stands. No random events these; instead you can hear the height and

## EQUIPMENT REVIEW - Focal Grande Utopia EM Loudspeaker

breadth of the stage, the gently terraced risers on which the orchestra is arranged, each incidental noise a part of a single organic whole. And as the hush descends with those deep, opening notes, the sense of presence, of human activity and attention is heightened by a sudden, stifled cough, just in front and to the left of you.

Never have I had such a sense of palpable presence, of attendance at a musical event. The Isis set new standards in this regard, but the Grande EM matches it and adds an effortless scale and genuinely unfettered dynamics to proceedings.

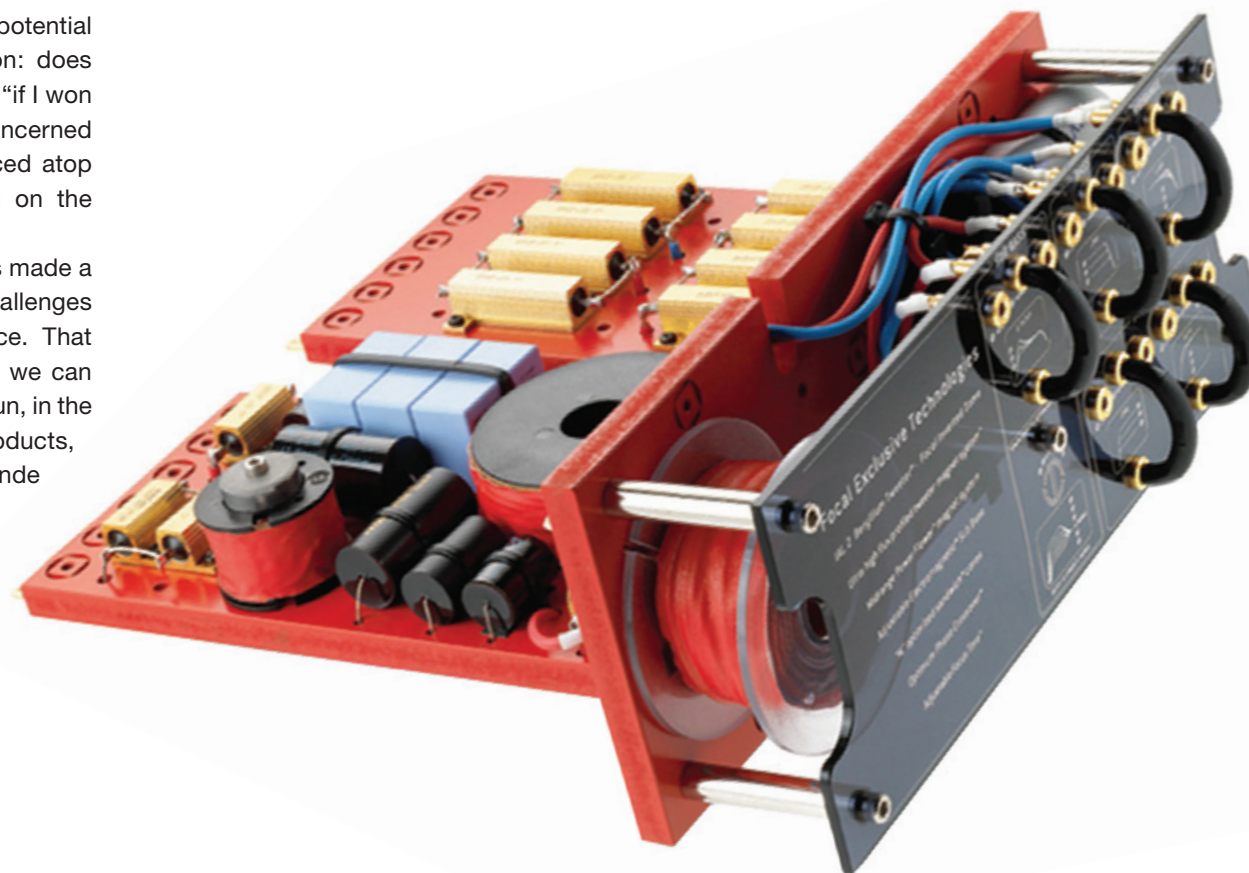
It's also a chameleon, the same ease with which it reveals changes in its own state of tune effortlessly exposing shortcomings in system set up and partnering equipment. The contrasting virtues of different front-ends, their behaviour under warm up and the importance of carefully considered support have all rarely been clearer. A speaker like this attracts audiophiles like bees round a honey pot. I've been beating them off with a stick, but none of those who have slipped under the guard have gone away anything other than bowled over: Something else this Grande shares with the Isis – the ability to readjust a listener's notions of what is possible. Seldom has a speaker looked so striking and sounded so unlike it looks.

For many (most?), the cost of the Grandes and the space required to accommodate them will mean they remain a pipe-dream, but their tonal, spatial and temporal coherence, their extended bandwidth and truly astonishing dynamic capabilities (at both ends of the spectrum) puts them in a very select category indeed. They rub

shoulders with the Isis – and probably Wilson's X2, although that's one speaker that I haven't had at home. This select group really are do it all speakers, whose weaknesses and shortcomings are more to do with practicality and matching than gross failings in performance. Indeed, they do less damage to the signal than a lot of matching electronics, which is food for thought...

From a company's point of view there are many different reasons to build a flagship speaker, from attention seeking to trickle down. But confronted by a £110,000 product, reviewers and potential purchasers need ask only one question: does this speaker go straight to the top of my "if I won the lottery" list? Well, as far as I'm concerned the Grand Utopia EM is firmly ensconced atop that pile, waiting to be shot at. Bring on the competition.

With the Grande Utopia EM, Focal has made a serious statement of intent, one that challenges the boundaries of speaker performance. That makes it worthy of more attention than we can give it here. This is one that will run and run, in the sense of other views and also other products, as much for what they say about the Grande as *vice versa*...+



# Magico M5

## Redefining a Genre

Jonathan Valin

**F**irst, a confession: I generally don't like big dynamic loudspeakers. To me their chief raisons d'être are loudness and bass. And since I gravitate toward small-scale acoustic music where neither is a necessity, I don't see the point of giving up all that you stand to lose with one of these behemoths for (to my way of thinking) the little that you stand to gain.

Yes, Virginia, you do give up a few items with a big multiway dynamic loudspeaker. First of all, where do you put it? If you live in a penthouse this may not be the issue that it is in my smallish listening room, although the corollary to "Where do you put it?"—to wit, "Where do you put it *without exciting all sorts of room resonances?*"—can remain a problem even in a penthouse. Second, how do you make that menagerie of drivers—all those paper or silk or metal or ribbon tweeters, upper-midrange cones, lower-midrange cones, mid/woofers, and woofers, with different on- and off-axis dispersion patterns, power-handling capabilities, and break-up modes—cohere? It's hard enough to make a two-way sound like a single thing, but a four- or five-way? Third, those giant enclosures aren't just hard to place; they're hard to erase. To me, the first essential duty of any loudspeaker (of any piece of hi-fi gear) is to disappear as a sound source. A "disappearing act" is a lot harder to achieve when you have a cabinet with the surface area of a picnic blanket, every square inch a potential source of diffraction

or reflection. Fourth, lots of drivers mean lots of crossovers—those heal-alls that are supposed to compensate for all the other problems I've mentioned (like different dispersion patterns, power-handling capabilities, and break-up modes). Crossovers may be necessary, but lots of them with lots of different parts, slopes, and hinge points aren't necessarily good things. (Just consider how hard it is to get the simple high-pass crossover in a subwoofer to work right.)

So what happens to that Holy Grail "disappearing act" when you house half-a-dozen different drivers, with half-a-dozen different high-pass and low-pass filters, in a gigantic singing box? Don't ask. Not only do you usually hear the box, you sometimes hear the individual drivers, the crossovers, everything. Now I'll grant that materials, technology, and engineering have come a long way in the past decade—and that big speakers are considerably better than they used to be. (The Rockport Hyperion was a high point for me, as were the Kharma Grand Exquisite and the Wilson MAXX Series 3 I heard at CES.)



## EQUIPMENT REVIEW - Magico M5 Loudspeaker



Nonetheless, as a group they still evince many of the driver-coherency and enclosure problems I've mentioned, and in worst cases, can still carry you about as far from the "single-driver" ideal as any kind of loudspeaker can take you. Is it any wonder, then, that I prefer (bass-limited) 'stats, planars, and mini-monitors?

*But...what about the fifth string of that five-string Fender Deluxe American Jazz bass guitar, I hear some of you asking? What about rock-concert power handling? How can you listen to the latest Slayer album at "lifelike" (or would that be "death-like," because you're surely killing your ears) levels on a Quad 2905, a MartinLogan CLX, a Maggie 1.6QR, or a Magico Mini II? Well... you can't. There—I've said it. But let me also say something about so-called deep bass in many typical large ported dynamic loudspeakers.*

### So. Does Magico's big multiway speaker cure the traditional woes that have turned me off to many big multiway speakers?

First of all, more often than not the bass isn't really that deep. There is more than one gigantic loudspeaker out there with a steep roll-off below 35–40Hz. What keeps you from noticing this is its greatly elevated midbass and upper bass—a plateau in the 40–125Hz region that can make standard four-string bass guitars or Hammond organs or jazz/rock drumkits sound astonishingly powerful and "authoritative," giving the impression

of a really deep-reaching low end although none of these instruments really goes that deep (the lowest E of a four-string bass is 41.2Hz). Many audiophiles tend to like speakers that accentuate the mid-to-upper bass in this way. They think the sound is more exciting and visceral—and it is. It can also be annoying.

Second, there is the huge problem of coherence. I don't know how many times I've talked in these pages about the troubles I've seen trying to make cone subwoofers blend seamlessly with 'stats or ribbons or mini-monitors. I grant that some people are less sensitive to timbral, dynamic, and textural discontinuities among drivers than I am, but (outside of the MBL 101 X-Treme subs and a brief flirtation with the Wilson-Benesch Torus) I have never been able to come close to mating a cone sub to a "satellite" speaker of any kind without losing much of what I prized the satellite for in the first place. Not only do I always hear that sub playing faintly up into the midrange (no matter how low I cross it over), overlaying timbres, transients, and textures with its own greasy thumbprint; I also hear the enclosure of the sub singing up there, causing bass-range (and sometimes lower-midrange) instruments to sound more "localized" and "boxy." Hearing drivers and enclosures as the source of the music—or any register of the music—is the exact opposite of a "disappearing act."

Now, here's the kicker. Though I haven't made this point explicitly before, I generally feel that cone woofers present many of the same issues as cone subwoofers. Yes, they are housed in the same box as the midrange and the tweeter—and given proper time and phase alignment there are well-known advantages to projecting all the

sound from the same point or plane (although there are also disadvantages). Nonetheless, to me cone-bass-in-a-ported-box-in-an-average-sized-listening-room almost always sounds like, uh, cone-bass-in-a-ported-box-in-an-average-sized-listening room. Putting aside the inevitable (and often incurable) room modes—those huge, maw-like 60–80Hz peaks that swallow up everything below (and sometimes above) them—cones-in-a-box bass more often than not sounds louder, darker, lumpier, noisier, and less articulate than cone midrange and cone treble. The consequent audible discontinuity in timbre, transient speed, distortion, and resolution between bass-range and midrange and treble-range instruments instantly makes me more aware that I'm listening to a loudspeaker—just as it does with a subwoofer.

Given all that I've just said, why then am I reviewing a multiway dynamic loudspeaker in a relatively large enclosure (though, to give the M5 its due, at a mere 18" wide, 53" tall, and 21" deep, it is demure in comparison to most of its competitors)? The answer is that in complaining about the things I think typically get traded away, wholly or in part, in large multiway dynamic loudspeakers I am also pointing to the challenges that faced Magico's Alon Wolf and Yair Tammam in designing the M5.

Let's talk about how they went about tackling them.

First, consider the enclosure problem. How do you keep a box from singing along with the drivers it houses? Well, what is the box doing when it "sings"? It is being excited by the energy of the front and backwaves of the driver, adding its own resonant note to each, and then radiating



## EQUIPMENT REVIEW - Magico M5 Loudspeaker

that resonance back into the room for all the world to hear as the opacity, coloration, dulling, and smearing we call “boxy sound.” How do you prevent this? According to Wolf (see my interview with him on p. 96), to create a relatively resonance-free enclosure you have to balance three different, somewhat conflicting elements: stiffness (to push the enclosure’s resonant frequency as high as possible), mass (to dampen this higher-frequency resonance and reduce its Q), and damping (to further reduce the amplitude of the resonance and kill the sound of the backwave). Finding the right combination of materials to perform this complex bit of resonance-control is a somewhat controversial topic. For Wolf, adding the high stiffness of a 6061-T aircraft-aluminum baffle to the high mass and high damping of an airtight Baltic Birch box is the right formula (although it isn’t the only right formula). I can’t speak to the physics of Wolf’s box, but I can say this: The M5 is the first and *only* large multiway loudspeaker I’ve heard whose enclosure disappears into the soundfield like that of a mini-monitor. Indeed, the similarity between it and the Magico Mini II in this regard is striking. For all sonic intents and purposes, the M5s’ boxes just aren’t there.

However, Wolf had to address a couple of other matters in order to make his heroic enclosure work the way it was intended to. To begin with, he had to ensure that the only moving parts in his speakers were the drivers’ cones. If those drivers weren’t securely fastened to his inert enclosures, their frames would rattle against the aluminum baffles, inciting resonances and destroying the “seal” of his sealed boxes (more on this in a moment or two). To achieve this resonance-free seal, Wolf uses an ingenious tension-coupling

system that clamps the drivers at very high torque against their aluminum baffles and then “pulls” those baffles against the birch-ply boxes via thick stainless-steel tensioning rods that run between knobs at the back of the cabinet and the backs of the baffles (into which the rods are screwed by applying very high torque to the adjustable knobs).

O.K. We’ve got a box that doesn’t sing, a system of attaching drivers to that box that ensures that their cones are the only moving parts in the speaker, now what about the drivers themselves?

Those of you who remember my Magico Mini II review (in Issue 179) will recall how astonished I was at the magnitude of the improvement that a single pair of Magico’s proprietary “Nano-Tec” mid/woofers made to a sound that I didn’t think could be further improved. Designed by Wolf’s partner Yair Tammam, these Nano-Tec cones combine front-and-back multi-walled carbon skins embedded with carbon-Nano-tubes and an inner core of Rohacell foam to make exceedingly strong, light, stiff drivers. The Nano-Tec cones are then attached to 75mm titanium voice coils and a special neodymium magnetic system that is said to reduce distortion to new lows. (This is not an idle claim, BTW. I have seen independent laboratory measurements of the Nano-Tec drivers that show THD is 60+dB down even at *very* loud levels—results that would’ve been respectable in a phonostage not too many years ago.)

With the Mini II only one pair of drivers was changed to a Magico in-house design and the improvement was astounding. In the M5, *every* driver (including the MR-1 ring-radiator tweeter) is Magico-designed and all of the midranges and

woofers are Nano-Tec cones. Indeed, the M5s are the first speakers Wolf and Tammam have engineered with all-Magico drivers. The results... well, we’ll get to that in another moment. First, let’s consider one more piece of the multiway-speaker puzzle—the crossover.

In my Mini II review, I attributed the improvement in the sound in large part to the Nano-Tec driver (with its much higher-in-frequency breakup modes and much lower distortion) and in part to Magico’s superb CAD-designed crossovers. Wolf is a bit secretive about the slopes and hinge points he uses in all of his speakers, but he’s proud as punch of the quality of the parts he uses—gold and gold/silver caps, precision coils, and low-inductance resistors from Raimund Mundorf of Cologne, Germany. Once again, this divine excess isn’t just window dressing. To make a crossover work *precisely* the way it is intended to work, you have to use *precisely* the right-value parts, and those values can’t change with time or use. That the break-up modes (the frequencies at which any driver stops behaving in a linear fashion and starts to distort) of Magico’s 6” Nano-Tec midrange cones have been moved out to nearly two octaves above its passband is a remarkable accomplishment, but it would go for naught if Magico’s in-house-designed crossovers didn’t ensure that the output of that midrange driver was completely removed from the passband well before those breakup modes start to matter. With the Mini II, I can remember being shocked not just by how much better the new Nano-Tec mid/woof sounded in its own right but also by how much better it made *the tweeter*—no longer roughed up by the residual break-up-mode distortions of the midrange driver—sound. Once again, this is a

testament to both driver and crossover.

Finally, before turning to the sound itself, let’s consider the M5’s bass—as its, I dare say, unique quality will be the very first thing you notice when you listen to M5s, although you will also notice the newfound buttery smoothness of the speaker’s treble. How come the low end of the M5 sounds so flat, so seamless, so completely integrated with the other drivers, so *non-big-speaker-like*? True, the bass is still coming from a cone-in-a-box—two 9” cones, in fact—but these are highly linear, very-low-distortion Nano-Tec cones in a superbly engineered box with the highest-precision crossover that the mind of man (or, at least, of a man named Alon Wolf) can design. In addition to this, Wolf’s box is sealed—

The M5 is the most neutral and coherent, lowest-in-distortion, fullest-range big multiway dynamic speaker I’ve heard in my home.

not ported.

Sealed-box (or acoustic-suspension) bass has, and has always had, certain distinct advantages over ported bass (and vice versa). Although a sealed box is *much* harder to make because of the enormous pressures generated inside it by the backwaves of the woofers, it is also inherently more linear, as the air trapped inside the enclosure acts as a spring that returns the woofers’ cones to their zero point above and *below* resonance, allowing the cones to remain flatter in response

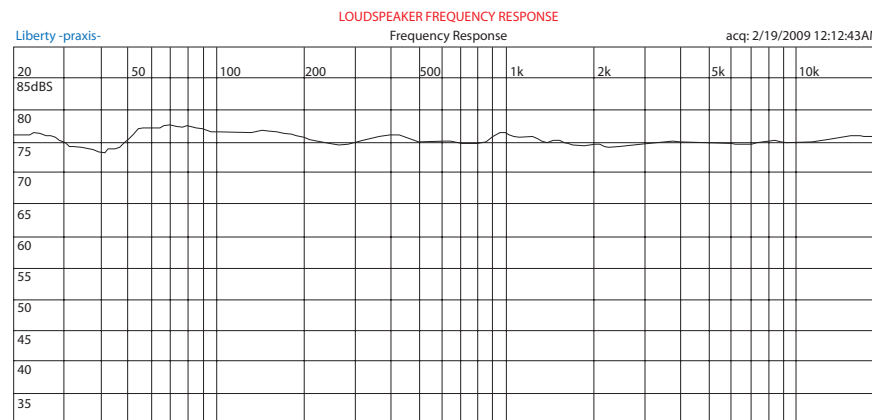
## EQUIPMENT REVIEW - Magico M5 Loudspeaker

and lower in distortion longer (which is to say, to play deeper into the bass without breaking up or petering off) than the woofer of a ported design. The trade-off in an acoustic-suspension design (other than the greater difficulty of building the sealed enclosure) is sensitivity. It takes more power to drive the woofers in a sealed box than those in a ported box. You also lose that often-*gemütlich* resonant peak in the low-to-mid bass, which can add energy and excitement to the sound.

So. Does Magico's big multiway speaker cure the traditional woes that have turned me off to many big multiway speakers? If you read my CES report (in Issue 192), you already know that the answer is pretty close to an unqualified "Yes!" The M5 is, quite simply, the finest big multiway cone loudspeaker I've heard in my home (or, for that matter, in someone else's home or at a show), largely because it is the most neutral and coherent and delicately detailed, lowest-in-enclosure-and-driver-coloration, fullest-range multiway cone loudspeaker I've heard in my home or someone else's home or at a show. Indeed, as I said in my CES report, I have never auditioned a multiway dynamic speaker that comes this close to the "single-driver" ideal or disappears this completely as a sound source.

You can get a sense of why the M5 sounds so octave-to-octave seamless—so much like a single-driver transducer—by looking at the following RTA, taken from the listening position in my room.

This is *standard-settingly flat* on-axis response, testifying to the superb integration and linearity of all five of the M5's drivers, from woofers through midranges to tweet. But it isn't just flat frequency



response that makes the M5 so special; after all, I've tested other very-flat-measuring speakers (the MBL 101 X-Tremes, for instance) that didn't sound like the M5s. There is something else going on here—a marked overall reduction in driver/enclosure/crossover distortion and coloration—that makes the M5 the first (and thus far only) big cone multiway loudspeaker I've heard that has much of the coherence, resolution, and lack of distortion of an electrostat.

This comparison to electrostats has, I'm afraid, been worked to death in the audio press (sometimes by me). But the clarity, freedom from distortion, and octave-to-octave coherence of 'stats remain a benchmark, and each time a speaker comes closer to this ideal we trot out the analogy. Here it applies more appropriately and completely than ever before in my experience. If you can imagine a MartinLogan CLX—the most neutral and transparent electrostat I've tested—with greatly increased extension and linearity in the low-to-mid bass, a sweeter, more effortless, more extended treble, slightly less low-level

resolution and (hence) transparency-to-sources, *slightly* less sterling dynamic range and scale on *pppp*-to-*mp* passages or at very low listening levels (where the CLXes remain champs), but considerably fuller and more lifelike reproduction of tone color and instrumental "body" at any volume and considerably better dynamic range and scale on *mf*-to-*ffff* passages and at medium-to-loud listening levels, equally great transient response top to bottom, and much wider, deeper, taller soundstaging, then you have an accurate idea of how the M5s sound.

No, cones aren't quite as high in resolution and low in grain as 'stats; even the Nano-Tec drivers add just the slightest overlay of texture to foregrounds and backgrounds, making the difference between listening to M5s and CLXes rather like the difference between viewing a slide enlarged and projected on a screen by a Leitz projector and viewing the same slide on a light table with a loupe. The CLXes will tell you a bit more about how a record or CD has been recorded and engineered. But its peerless transparency-

to-sources comes at a price that you don't pay with the M5s, which, unlike CLXes, never make lousy recordings sound barely listenable and do anything but roll off the bass.

Let's talk about the M5's bass. A friend of mine—Andre Jennings, a first-class listener with a superb ear (and a gifted audio engineer, to boot)—said rightly about the M5s that it is the first big box loudspeaker he's ever heard in which the enclosure didn't seem to be playing along with the music. I myself have never heard anything quite like it from a cone speaker. The bass octaves here are so much flatter, better integrated with the midrange, and lower in distortion and coloration than they usually are with cones-in-a-box that it is rather like listening to the planar bass of a Maggie I-U (which remains, after all these years, my ideal). Bass-range instruments from the deep-reaching plucked doublebasses (faintly doubled by the glistening timbre of plucked harps) in the Passacaglia of Lutoslawski's great Concerto for Orchestra [EMI]—where the notes of the bass line (which, after all, are what a passacaglia is based on) are clearer and more lifelike than I've heard them sound before—to the thrilling entrance of the electric bass on Alison Krauss' "Forget About It" [MoFi]—which seems to rise straight up from the floor as if lifted on pneumatic tubes, an almost literally solid foundation perfectly in tune, time, and tempo with the rest of the band (rather than a flooded basement of ill-defined pitches, timbres, and rhythms)—are so "freed-up" from the drivers and the enclosure, so quick and finely detailed and naturally imaged (rather than artificially spotlighted), so close to the absolute in pitch, color, texture, and dynamic that it is kind of mind-boggling. Cone bass just hasn't sounded

## EQUIPMENT REVIEW - Magico M5 Loudspeaker

like this in my past experience—ever. Yeah, the M5s will shake the floors with the best of them (just put on the third track of *The Thin Red Line* soundtrack and strap on your seatbelt), but rattling floors, windows, and walls is (thank God) in many ways the least of what these speakers do. (I've just never heard a better blend of low, mid, and high from a dynamic multiway. I've never heard a smoother presentation of low-, mid-, and upper-bass, either—from anything.)

Speaking of highs, if you're familiar with the ScanSpeak Revelator that Magico uses in its Mini and Mini II, you're going to be in for a surprise. I don't know exactly what Wolf and Co. have done with that in-house ring-radiator tweeter (although I do know Wolf is using a powerful neodymium magnet of Magico's own design), but whatever it is it makes the treble octaves blend as seamlessly with the midrange as the bass octaves do. There just isn't a note that you can point to and say, "Oh, yeah, *now* I hear the tweeter!" Frankly, this is not something I could have said about the original Mini or even the Mini II, as improved as it was in this regard. The tweet in both iterations of this great mini-monitor did have an audible rising response and a bit of residual roughness. Not here, with Magico's own MR-1 tweeter. Indeed, if you are used to the sound of the Mini, you may at first feel cheated of top end—the treble is that smooth, flat, and low in customary distortions. But put on any record with considerable midrange and treble energy, like the youthful Nadia Salerno-Sonnenberg's fiery rendition of the Prokofiev First Violin Sonata [MusicMasters], and marvel at the lifelike timbre and dynamics of the fleet, eerie, muted runs of scales (which cover almost the entire range of the instrument

and which Prokofiev himself said should sound like "wind in a graveyard") at the finish of the first movement *Andante assai*, or at the in-the-room-with-you realism of the whistling harmonics that close the second movement *Allegro brusco*, or at the rhythmic clarity of the tricky cycle of eighth notes (which alternate 5/8, 7/8, 7/8, 8/8) that starts the final movement *Allegroissimo*. (Those folks who claim that there is no way to tell how a piece of music should sound on a recording ought to look at a score every now and then.)

As for the midrange...Magico has long had a lock on that. The Mini II was the most lifelike dynamic speaker I'd heard on voice, guitar, sax, trumpet, viola, piano (above the bottommost octaves), you name it. I don't know that the M5 is *better* (save that its mids blend with the bass and treble more seamlessly), but it sure is every bit as good. Just listen to Miloslav Klaus' phenomenal rendition of Britten's *Nocturnal after John Dowland* (on a great-sounding Panton LP)—eight variations for classical guitar so famously difficult that Julian Bream, who was Britten's dedicatee, declared them unplayable. Eventually, Bream mastered the piece, and so, God knows, has Klaus. The Czech virtuoso wrings colors and textures from these toss-and-turn restless, drowsy, dreamlike variations (the Dowland theme was written to accompany a song on sleep and death) that will astound you, especially through the M5s. I've simply never heard a more realistic facsimile of a classical guitar or of a classical guitarist on a hi-fi system. When you hear piece, performer, and performance reproduced this fully—when a speaker lets you understand not just how beautiful music sounds but also how much craft and skill and intelligence it took to compose and

to play it—it is an almost irresistible invitation to keep listening. That's what a great loudspeaker and a great stereo system really buy you.

Obviously, the M5 is every bit as marvelous with the human voice as it is with guitar (or anything else). Alison Krauss' soprano, Holly Cole's contralto, Frank Sinatra's baritone, Tom Waits' bass pop up in your room with breathtaking realism. Better still, as with Miloslav Klaus' guitar, you not only hear the timbre and texture of each of these voices with astonishingly high fidelity; you hear precisely the way these vocalists are *using* their voices—the way they're thinking and feeling about the words they sing. As I pointed out in the last issue in my Odyssey Khartago review, great singers are inevitably also great actors, and the M5 gives you their entire performance as if it were reading from their scripts. It sends a literal chill up my spine to hear Frank Sinatra sing and act the lyrics of "What's New" from *Only the Lonely* [MoFi] and, minus a bit of whiskey-colored wear-and-tear on the vocal cords, bring virtually the same sophisticated mix of lyricism and *weltschmerz*, the same *life experience* to the song played back through the M5s that he did when I heard him sing it live many years ago.

As for soundstaging...that depends on the LP or CD, for the M5 goes as wide or as narrow, as shallow or as deep, as tall or as short as the engineering and mastering allow. Though I wouldn't say its stage is quite as encompassing or uncannily three-dimensional as that of the MBL 101 X-treme (which, because of their omni design, simply own that aspect of high fidelity), it is *at least* as good as any other kind of speaker I've heard, including the Mini IIs. Better still, like the great MBLs, it utterly disappears into the

stage, leaving behind nothing but the panorama of instrumentalists and the music they are making.

The words "the best" have been bandied about quite a bit in this magazine and on our Web site (avguide.com)—and there is legitimate concern that they are being overused. Unfortunately, no other words will do to describe how I feel about the Magico M5. Not only has it redefined an entire genre of speakers for me, it has carried me substantially closer to the absolute sound. So close, in fact, that, for the first time, I can imagine the possibility of someday achieving a genuine

### SPECS & PRICING

#### Magico M5 Loudspeaker

**Type:** Five-driver, four-way, floorstanding dynamic loudspeaker

**Driver complement:** One MR-1 ring-radiator tweeter, two 6" Nano-Tec midrange, two 9" Nano-Tec woofers

**Bandwidth:** 22Hz-40kHz

**Impedance:** 4 ohms

**Sensitivity:** 89dB

**Recommended power:** 50-1000 watts

**Dimensions:** 18" x 53" x 21"

**Weight:** 360 lbs. each

#### U.S.

**Price:** \$89,000/pr

#### MAGICO

Berkeley, CA  
(510) 649-9700  
magico.net

#### U.K.

**Price:** On agreement

#### ABSOLUTE SOUNDS

+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

## EQUIPMENT REVIEW - Magico M5 Loudspeaker

### Setting Up and Driving the Magico M5s

The M5s are a handful. Although I've had other speakers that weigh a good deal more than these Magicos do, they've broken down into semi-manageable parts. The M5s do not. You are going to be dealing with two four-and-a-half-foot tall, nearly two-foot deep, 360-pound objects, so...get some help.

Happily the speakers arrive with wheels on them, allowing you to roll them out of their crates and freely maneuver them around your listening room. Once you've settled on a spot for the speakers, the wheels must be removed—a process that involves tipping the enclosures fore and aft (Magico supplies an illustrated instruction booklet that shows you how to uncrate the speakers and remove the wheels safely). After the wheels are off, gliders on the bottoms of the baseplates allow you to move the speakers for fine adjustments without marring floors. (You will need a strong friend to help you do this and be sure to avoid touching the drivers as you push the speakers about.) Like most big speakers the M5s thrive on room, so keep them as far from sidewalls and backwalls as is feasible and at least as far apart as the distance between

your listening seat and their front baffles.

Unlike the Mini IIs, which liked to be listened to slightly off-axis, the M5s fare best when the centers of their drivers are pointed *directly* at your ears. (Use the nipple of the ring-radiator tweeter as a guide.) In a smaller room, this makes for a “narrower” sweet spot. It's not as if the M5s don't sound great well off-axis; they just don't sound as great as they do when you're sitting directly in their tractor beams.

Be aware that the M5s are very full-range loudspeakers that will put an amount of energy into your room. In a less-than-palatial estate this can be problematical, and you may have to consider adding corner traps and diffusors to reduce room resonances in the midbass. As with any kind of room treatment, be careful not to overdamp.

Although they are rated at 89dB sensitivity, the M5s are actually closer to 86dB sensitive. On top of this they are acoustic-suspension speakers. All of which means you're going to need some power to drive them. I have tried them with both great solid-state amps (Soulution 700s) and great tube amps (ARC 610Ts), and

they sound fabulous with each, though fabulous in different ways. For the most “accurate” sound (particularly in the bottom octaves), I would lean toward transistors—and especially toward the Soulution amps, which are a match made in audio heaven with the M5s. For a more bloomy, three-dimensional sound and higher ultimate SPLs, I would tend toward the 610Ts (also a match made in audio heaven). In any event, if you're going to spend \$89k on a pair of the world's best loudspeakers, you would be foolish not to drive them with the best electronics you can afford and harness them up with the best cables and interconnects.

Speaking of cables, the M5s are designed to be bi-wired or bi-amped. Each speaker has two sets of binding posts and both sets must be used. Although Magico supplies two pairs of (very good) MIT jumpers if you choose to single-wire, the speakers sound better bi-wired with two identical sets of cables and best bi-amped (which is something you can do with the Soulution 700 but not the ARC 610T). **JV**

facsimile of the real thing—not merely parts of it, not merely midrange or treble, voices and violins, but the *whole* thing from the lowest notes to the highest, from the least dynamic utterance to the most. *That* is how natural—how complete—the M5 sounds to my ears. It is, in fact, the most complete loudspeaker I've ever heard.

Remember that when I say “the best,” I mean “the sound, overall, that comes closest to the real thing to my ears”—with the kind of music I listen to most often, at the levels I typically choose, and in the room where I listen. What I *don't* mean, which may be as important as what I do mean, is “the best in every way” or “the best for

every listener.” As good as it is, the M5 has sonic competition in several areas: The \$250k MBL 101 X-Treme omni is more immersive, dimensional, and outright exciting; the \$23k MartinLogan CLX electrostat is more transparent-to-sources, more finely detailed, and better scaled dynamically on pianissimos and at lower levels; the \$115k

Symposium Acoustics Panorama hybrid ribbon/planar is every bit as realistic in timbre and texture in the midrange and lower treble and better at softer volumes; the \$68k Wilson Audio MAXX 3 has more lifelike wallop in the mid-to-upper bass and much the same beauty of timbre; the \$32k Magico Mini II mini-monitor has just as remarkable a “disappearing act” and a similar midband; even the \$1.7k Magnepan 1.6QR quasi-ribbon planar is as top-to-bottom seamless and “of a piece,” where it plays. On top of this, the M5 is very expensive, sounds its very best played loud (or louder), and may not suit some musical tastes or some rooms or some ancillaries as well as it does mine (although, frankly, I can't imagine anyone being disappointed with it).

There may be other speakers on the market or on the horizon that outperform the M5s overall—the absolute sound is, after all, a rapidly moving target. If there are such speakers, I simply haven't heard them yet. If you have, I have no argument with you. For all the observations and evidence I've presented in support of my opinion, there is, finally, no arguing taste. I freely concede that there is room out there for more than one nominee as “*the best loudspeaker.*” You've just read about mine. **tas**

# Marten Coltrane Soprano

## Jazz for the Smaller Room

Roy Gregory

**M**ore often than not, a high profile, high-priced and technologically advanced design is followed by simplified versions at lower prices, models that dilute the performance while slashing the purchase price. Not so with Marten: Their first model, the flagship Coltrane was followed by an even more ambitious project, the massive, four-cabinet Coltrane Supreme. Now comes the smaller and outwardly simpler Coltrane Soprano (although personally I think that 'Favorite' would have been a nicer name and maintained a greater sense of Coltrane continuity) and again, Marten have defied expectations. After all, the new model has all the outward indicators of a cost cutting, cash in design: fewer drivers, a smaller cabinet, less bandwidth. That is until you notice that the Coltrane Soprano still tips the scales at a far from inconsequential €40,000. Not much cost cut there then...

In fact, the rationale for this new Coltrane model is quite distinct and rather than offering a slice of Coltrane performance at a lower price, has more to do with delivering as much of the larger, three-way Coltrane's performance as possible in the confines of a smaller room and a smaller cabinet.\*

So, far from cutting costs, it employs the same carbon fibre/honeycomb sandwich for its boat-backed cabinet, the same stainless steel outriggers and Black Diamond Racing cones as the larger Coltrane. It also uses a diamond tweeter (in this case the new 26mm model from Jantzen), ceramic drivers for the mid and bass

frequencies and a laminated MDF baffle. Indeed, in most important respects this is, quite literally, a chopped down Coltrane — and that's no way to create a bargain, believe me. Despite the smaller size, most of the material costs are going to approach those of the larger model with only the driver complement pegged back. Meanwhile, building the beast and finishing it, packing it and guaranteeing it will also all cost pretty much the same as the larger Coltrane design. What savings there are come from the reduced driver complement and some detail changes. So why build a smaller version of the same thing, with less bandwidth to match the slightly lower price?



## EQUIPMENT REVIEW - Marten Coltrane Soprano Loudspeaker



Because it's going to do a different job — one for a different listener with a smaller room.

As impressive as the original Coltrane is, there's no escaping the fact that it's a large loudspeaker that, while it's capable of impressive performance in smaller rooms (largely due to its tightly controlled low frequencies), really blossoms once it's given space to breathe. That sonically unobtrusive cabinet allows the speakers to disappear while the driver area delivers enough bandwidth for a real sense of scale. In contrast, listen to the Coltrane Soprano and while it shares the same lightness of touch and precise transparency that characterizes the Marten sound, the fact that this characteristic extends much lower in the smaller cabinet makes it even more tolerant of smaller spaces and closer boundaries.

But there's other things going on beneath that familiar exterior that bear closer examination and point quite clearly to a subtly different blend of

high gloss lacquered) rather than the layered, solid wood employed in the larger design. Two slabs of differing thickness are used, with a damping glue in between to create a constrained layer and a baffle 56mm thick. The stainless steel outriggers and BDR cones are for more than just leveling and stability; they also optimize the distance of the port from the floor boundary. So far so similar: the real differences lie in the driver complement and crossover configuration — and in turn, the specific strengths and weaknesses that go with them.

Rather than the three-way, twin bass driver configuration of the Coltrane, the Soprano is a straight two-way design, both of the 7" ceramic-coned bass-mid drivers working across their entire range. The two circular cutouts in their diaphragms suppress the first break-up mode, helping their midrange performance and ensuring a clean transition to the high-frequency driver.

“[The Soprano delivers] as much of the larger, three-way Coltrane's performance as possible in the confines of a smaller room and a smaller cabinet.”

virtues in this design, virtues that also clearly separate the Coltrane Soprano from its larger namesake.

Let's look at the detail. As mentioned above, the boat-backed, one-piece composite cabinet with its large, downward firing reflex port closely echoes the construction of the original Coltrane. Likewise the carefully shaped and beveled front baffle is unmistakable, although in this instance it's formed from laminated MDF (veneered or

This is a new design from Jantzen and while it can't boast the 100kHz extension of the Accuton design used in the larger speaker, 55kHz is far from shabby. Tying this together is a hybrid first/second order crossover consisting of just three, extremely high-quality parts and hard wired throughout with Jorma cable.

The end result of combining a smaller cabinet with the two-way configuration is a speaker that delivers the same 89dB sensitivity as the Coltrane

and gives up 7dB of low-frequency extension (along with the cut at high-frequencies). But the news is a long way from all bad: smaller and easier to accommodate, the two-way configuration with its simpler crossover is also significantly easier to drive. In comparison to the larger Coltrane, the rated impedance rises from four to five ohms,

### SPECS & PRICING

#### The Marten Coltrane Soprano Loudspeaker

**Type:** Two-way reflex loaded loudspeaker

**Driver Complement:** 1x 26mm Jantzen diamond dome  
2x 180mm ceramic cone bass/mid

**Crossover:** 1st/2nd order

**Bandwidth:** 27Hz - 55kHz +2dB

**Impedance:** 5 Ohms nominal

**Sensitivity:** 89dB

**Dimensions (WxHxD):** 310 x 1120 x 400mm

**Weight:** 36kg ea.

**Finishes:** Gloss black with baffle in Oak, Cherry, Maple, Walnut or Piano Black

#### U.S.

**Price:** \$50,000/pr

#### E.A.R. USA/SOUND ADVICE

1087 East Ridgewood  
Street  
Long Beach, CA 90807  
(562) 422-4747  
marten.se

#### U.K.

**Price:** £36,495/pr

#### ANGELSOUND AUDIO

+44 (0)1923 352479  
angelsoundaudio.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

## EQUIPMENT REVIEW - Marten Coltrane Soprano Loudspeaker

which may not sound like much, but an increase in the minimum value from 2.7 Ohms to 3.6 Ohms is definitely significant when it comes to drive time. The other big difference is in the bottom-end voicing, which while leaner and less obviously powerful than the Coltrane, is wonderfully transparent and surefooted. Combine that with a little welcome room reinforcement and the result offers surprising musical scale and stability from such a compact cabinet.

Use the Sopranos in a large room and they don't sound authoritative or commanding. Detailed, precise, focused and incredibly quick to be sure; just a little on the cool and lean side to offer the sort of substance and wallop that comes with from a real musical foundation. The orchestral fireworks that enliven the Enigma Variations are certainly impressively sudden, but the full-on tuttis don't have that grounded feel, that reach right down to the floor feel, that massed brass and heavily bowed strings should really deliver.

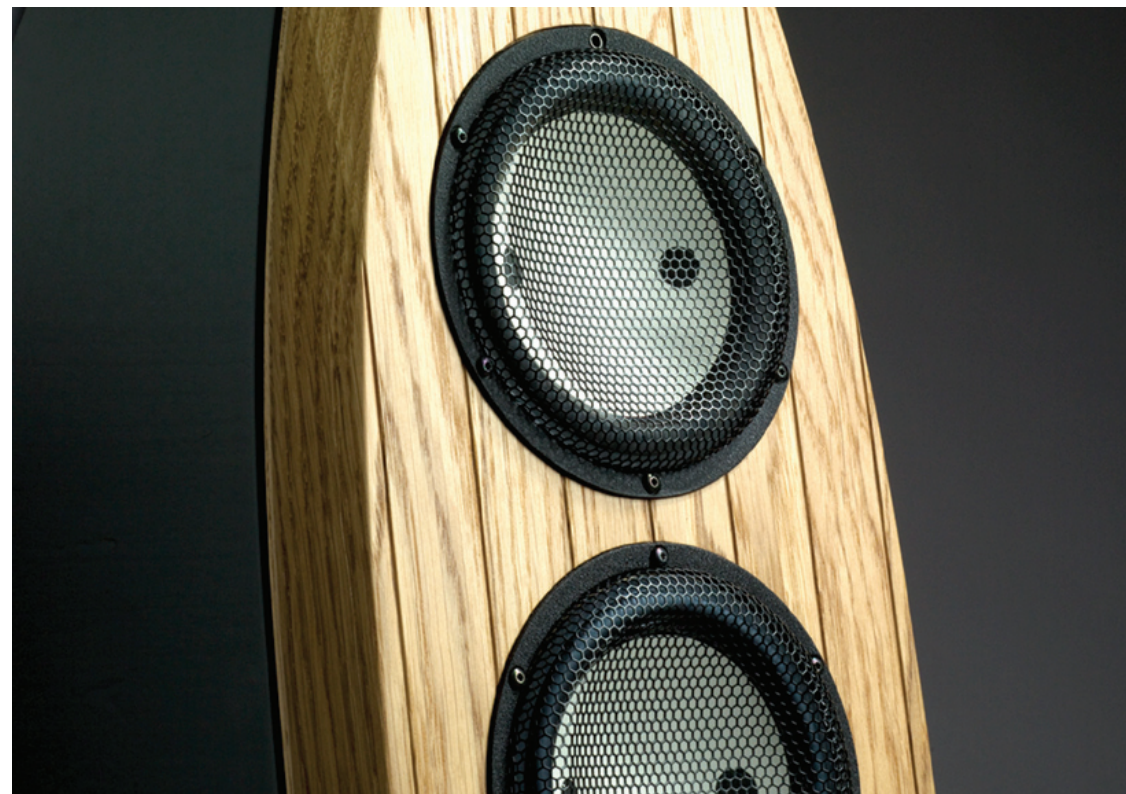
Now move them to a medium to small space and hear them blossom. They are the complete opposite of the Coltrane in that regard. The extra reinforcement from the room fills out the body and bottom end, Nimrod really gets to puff out his chest now, the seamless soundstage and cavernous acoustic making the far end of the listening room simply disappear. Of course, it's an acoustic trick, and comparison with larger, more fulsome designs will quickly reveal a lack of absolute bottom end texture and transparency, a vague rumble where the surface of the stage should be, but that doesn't stop it being immensely impressive and enjoyable.

And you know what? I won't tell anyone if you don't, because the vast majority of listeners will

never notice. They'll be too busy marveling at the scale and dynamic range emanating from such unassuming boxes — and given a smaller listening space I'd be among them.

But there's more to the secret of the Soprano's success than a carefully weighted low-end balance. It's not just a case of what it gives you, but how it gives it to you too. One of the problems with any speaker this clean and this revealing is that those strengths can quickly become a double-edged sword if there's news you'd rather not hear. The Soprano's greatest strength is the way it manages to keep those attributes firmly on the positive side of the balance sheet, a feat it achieves largely I suspect, as a result of its incredibly simple crossover design. There's a genuine lack of restraint or intrusion in the sense of musical flow, with voices and instruments easily able to traverse the crossover region without fracturing or stumbling in the process. It's this that gives the speaker its lucid agility and, while I don't have the virtue of having the two side by side, I also suspect that this is one regard in which the soprano actually betters the larger Coltrane, despite that speaker's dedicated midrange driver. It's not a question of continuity per se; more one of musical freedom and expressive range, aspects at which the Soprano excels.

Reaching for "the man" to make the point could be considered a bit of a cliché, so how about a bit of Miles instead, and *Sketches Of Spain*. Just listen to the fluidity and freedom of Miles' lines, the plaintive, stretched out, sinuous melodies that he places, note by unforced note over the muted instrumental backing. Listen too, to the detail and crisp attack of the percussion,



“Smaller and easier to accommodate, the two-way configuration with its simpler crossover is also significantly easier to drive.”

but more importantly, the way all those taps and clacks and rattles lock into the music, adding to the atmosphere rather than distracting from it. This level of integration and dynamic nuance are actually harder to achieve, their absence easier to expose, with the measured sparseness of a track like this than with some up-beat frenzy.

Just listen and marvel to the way the track grows in density and complexity while Miles' horn grows almost imperceptibly to keep pace and proportion, always centre-stage, always riveting your attention.

Voices too, are handled with assured and easy grace. Sinatra's familiar tones and phrasing are

## EQUIPMENT REVIEW - Marten Coltrane Soprano Loudspeaker

unmistakable, Nice And Easy summing up the Soprano's delivery perfectly — and exceedingly enjoyably, the balance between Francis and the perfectly poised arrangements effortlessly captured and projected into the room. From the careful muting of the brass to the absolute clarity with which you can hear the percussive quality of the piano, the layout of the band, Sinatra's relationship to the mic and the way he moves for emphasis in his phrasing, the Sopranos deliver exactly the kind of natural intimacy and focused stability that make performances so much more convincing. You can hear the way that the instruments are being played, the way that Sinatra works both his voice and the mic — but rather than screaming, “Look, look at me — look at all the detail I'm revealing”, the Martens integrate that information into a more real whole. This isn't detail for detail's sake in the style of some, super-etched speakers; this is simply allowing more of the signal through and making more sense as a result.

Time then to step back a little and take stock. What we have here is a two-way speaker of compact dimensions that works in smaller rooms and delivers a sound of tremendous precision and insight; sounds like a classic mini-monitor. It even suffers from the classic mini-monitor trade-off of dynamic against harmonic resolution; the laws of physics pretty much dictate that you can have one, the other but not both, with the Marten sacrificing warmth and richness for transparency and micro-dynamic definition. But to less of an extent than you might think, especially if you really dial in the set-up and sit a little closer than you might expect — on the points of an equilateral triangle is about right. And that's an

important point because in many ways it sums up this speaker.

Yes, appearances can be deceptive; the Soprano looks like the bigger Coltrane but isn't. Nor does it look like what it is, which is one of the best (and most expensive) mini-monitors in the world. Actually, let's make that mini-ish — because the beauty of the Coltrane Soprano is that it delivers all the strengths of the best mini-monitors with significantly less compromise. It images with the best of them — but delivers a significantly larger and more defined acoustic space. That's because it's got more bandwidth and tons more dynamic range — a performance that it delivers with gusto, resulting in real musical impact, drama and dynamic contrast, without needing a direct connection to the National Grid. It takes up no more space than the high-zoot stand-mounts and leaves them all — without exception from what I've heard — comfortably in its wake; Transparency AND scale, rather than one at the expense of the other.

The rub — and there's always a rub — is the price. That's ameliorated to some extent by the Soprano's more modest power demands. 100 really good Watts will do it — 200 and they fly! A quality integrated and a decent, well weighted front-end and you'll be away. I had a high old time with the VPI Classic running into the Burmester 032 amplifier, while the fluid grace of the Crystal Dreamline was the icing on the cake. That's not exactly a heavy bill given the ticket on the speakers but it is a system that sings — and goes staggeringly load with considerable grace in a smaller to medium sized room; should circumstances and the Devil demand, of course.

At this price, with a little more space you could

run the Avalon Indra. A little more again and you might get away with the Crystal Arabesque, both speakers which can do the bandwidth, dynamics and harmonics thing better and bigger (or at least with even greater subtlety) than the Coltrane Soprano. But both need more system as well as more room and I don't know anything that comes close in performance terms to the Marten once the walls close in. Expensive yes, but for the listener who demands and will cherish its unique blend of strengths then I suspect that price will become secondary. Despite appearances, is this the best mini-monitor in the world? Probably...

+

\*Those wanting Coltrane bandwidth and dynamics in a more affordable package should look at the Bird, which while it might not seem to deliver much more on paper than the Soprano, is an easier load with a greater sense of scale and more expansive dynamics.





# MBL 101 X-Treme

Zowie!

Jonathan Valin

Over the years I've reviewed my share of big, expensive loudspeakers, but none as big or as expensive as the six-and-a-half-foot tall, three-thousand-five-hundred pound, four-chassis, \$200,000 MBL 101 X-Tremes. And none, I am relieved to say, as good.

Why relieved? Well, if you were at the last two CESes you wouldn't have to ask. Even driven by MBL's own superb, ultra-pricey, near-dedicated electronics, the Xes sounded—how shall I put this?—not very good. *Real* not very good. Indeed, when I went to Germany to visit MBL's offices and manufacturing facility this past spring, I had no intention of reviewing MBL's flagships. I'd come for the debut of the 101 E MkII, a revised version of the speaker that has won more TAS Best Sound of Show awards than any other competitor.

What made and makes the 101 Es such showstoppers is their uncanny ability to get the first step in enjoying music right. Before it does anything else (and it does many things else), music works on us physically. It excites us. Gets us moving. Starts our toes tapping and our butts wiggling and our arms waving like air-guitar players (or air conductors). When a performer or a hi-fi really allows us "into" the music and the music "into" us, we are always and only a half-step away from dancing and singing and sheer

self-abandon. It's one of the chief reasons why we listen.

The 101 Es own this first step in musical enjoyment. They are the thrill rides—the rollercoasters—of the high-end audio amusement park. Though they have any number of things going for them, it is primarily their sensational dynamic range, speed, and impact, their huge enveloping soundstage, their uncanny three-dimensional presence, their through-the-floor bass, and, of course, their ability to play very loud without compression or confusion that make them so electrifying. Sheer sonic excitement may not mean much to those joyless souls who want to hear a vocalist or a Mahler symphony sound precisely as good or as bad as she or it did in the engineering booth on the day of a recording session; as for me, I still thrill to the thrill of getting goosebumps on my arms or feeling a chill run up my back when a stereo—a mere contraption playing back another mere contraption—captures the excitement of the real thing.

## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker

So...given my intention to review a greatly revised version of a speaker I knew was great, how did I end up with a speaker that I thought I knew wasn't? This, my friends, was serendipity—combined with a touch of lunacy on my part and on Wolfgang Meletzky's (inventor of the Radialstrahler driver and the "M" in "Meletzky Berlin Loudspeakers").

As fate would have it, before visiting MBL's Berlin offices and its factory in Eberswalde (a picturesque town outside of Berlin), I made the mistake of stopping at the Munich High-End Show for a few hours, where I heard the 101 X-Tremes properly set up and playing in a much better room than the echo chambers of The Venetian at CES. What a difference! I literally didn't recognize the sound—it was that improved. Though still a little dark in balance and perhaps a little too lively in the upper mids and lower treble (the Munich room was enclosed in glass), this was a far cry from the shrieking harridan I'd heard at CES. Sweet in timbre, incredibly wide and deep in soundstage, huge in dynamics, with sensational bass and top treble and the kind of three-dimensionality in the midrange that only Radialstrahlers seem to own, the X-Tremes sounded like giant 101 Es but with a timbral and dynamic suavity, a focus and refinement that the wilder, woollier 101 Es never quite managed.

By the time I got to Berlin, my schnitzel was cooked. Hell, I'd already reviewed the 101 Es; I wanted a crack at the Big Boys.

Of course, there were the little problems of the Xes' sheer size and mass to deal with.

What we have here, on *each* speaker-side, is essentially two 101 Es without their subwoofers and subwoofer cabinets—one trio of Radialstrahler

(Deutsch for "omnidirectional") drivers facing upward and another, immediately above it, down, in a mirror-image array. The bottom trio of Radialstrahlers is mounted on a massive (over 500 pounds) base constructed of birchwood, brass, and aluminum in a constrained-layer sandwich; the upper set is bolted to a similarly massive top piece, also made of a constrained-layer sandwich of birch, brass, and aluminum, with a high-quality dynamic "ambience tweeter" nestled out of sight on its roof. Thick struts of stainless steel and cross members of powder-coated brass provide top-to-bottom and side-to-side structure and support. Each speaker-side weighs half-a-ton.

In addition to the gigantic Radialstrahler "towers," the 101 X-Tremes come with two six-and-a-half-foot-tall subwoofer towers that weigh better than half-a-ton all by themselves. Each sub array comprises three ported, lacquered-birch and aluminum boxes, fitted on top of each other via heavy-duty aluminum pegs and sockets, with the sub crossover controls and the MBL amplifier that drives the entire array housed in the middle box. Two 12" aluminum-cone drivers with very wide and flexible surrounds are mounted in a push-push configuration inside each of the three boxes—one woofer on the right side of the enclosure, one on the left, both stabilized and cross-braced by a massive aluminum rod running between them to prevent the drivers from passing resonant energy to each other and to the box itself. That makes a total of six 12" woofers per speaker-side, twelve 12" woofers altogether. *That*, my friends, is a lot of bass.

Although the 101 X-Tremes break down into pieces, the pieces themselves are massive (roughly 300 to over 500 pounds each). With the

invaluable help of three of the strongest human beings on earth (piano movers from the Cincinnati company of Elam and Sons), Jeurgem Reis (the X-Treme's designer, who had come over from Germany to assist in setup), David Alexander (MBL's U.S. importer), and I managed to haul the 101 Xes upstairs to my listening room. (Those of you interested in how this Herculean feat was accomplished, go to the forum on AVguide.com and look at the thread "MBL 101-Xtreme Radialstrahler" in the "Speakers" category.)

After assembling the speakers, Reis positioned the Xes and dialed them in—a two-day process that involved many large and small adjustments in the physical location of the Radialstrahler towers and their woofer stacks, as well as adjustments of the controls for each of the twelve Radialstrahler drivers and the two ambient tweeters on top of the Radialstrahler towers, plus tweaking of the gain, group delay (phase), and Q of the woofer stacks. (The crossover point between the woofers and the Radialstrahlers is fixed at around 100Hz with a slope of 18dB/octave and cannot be adjusted.) This is a very large, extraordinarily heavy, exceedingly complex speaker

system that absolutely requires professional assistance in setup. In other words: Kids, don't try this at home without adult (German) supervision (and, of course, the Elam brothers).

If the 101 Es looked, as I once wrote in TAS, like R2D2 in a hot tub, the assembled 101 X-Tremes



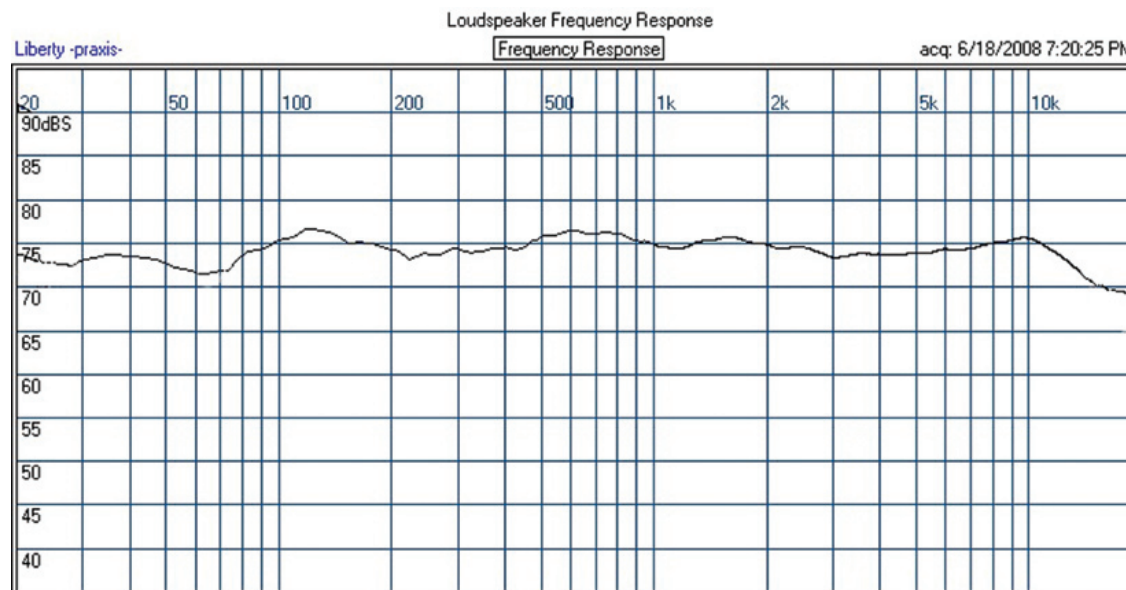
## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker

looked like the jungle-gym in Nikolai Tesla's house. As a visiting wag remarked, like 'em or hate 'em, they certainly make a design statement. What I expected to hear from these ultra-cool high-tech giants was more or less what I'd heard in Munich—a bigger, better 101 E. But from go, that's not the sound I got.

Let me be honest here: Forget everything you may have heard from the 101 Xes at CES—I had to. Forget everything you've read, including everything I've written about the 101 Xes (counting what I just wrote about its poor-to-mixed performance at CES and its excellent performance in Munich)—I had to. In all candor, this was the most surprising first listen I've had with *any* loudspeakers. They simply didn't sound at all like what I expected based on my show experience, good or bad.

First of all, the 101 Xes were so much more neutral in balance than I anticipated that I was shocked (and still am). They didn't seem to have any of the of the frequency-response lumpiness—the darkness or over-ripeness or hard aggressiveness or searing treble or bloated bass—that I had (secretly) expected to hear from them on the basis of CES auditions. Indeed, if the 101 Xes sounded like any other speaker, it was the Magico Mini IIs, which is to say that they were solidly and impressively and, again, totally unexpectedly (at least to me) uncolored, undistorted, and “flat.”

Of course, Radialstrahlers have always sounded boxless (they have none) and incomparably big, open, and spacious. But 101 Es were never what I would call truly neutral in balance. The 101 Xes *were*, and even bigger, more open, more spacious than the Es—and not by a little bit. Plus, they had simply sensational dynamic range and



scaling—truly lifelike speed, pace, and impact even on instruments (like huge drums or plucked bass guitar) that are nearly impossible to scale realistically in a home. At the same time they had the same “in the room with you” presence on voice and guitars and pianos and strings that makes listening to the 101 Es like looking into a diorama.

Pleased but mystified, I did an RTA on the 101 X-Tremes after Reis and Alexander departed—just to find out if I was fooling myself about their neutrality. I wasn't. At the top of this page you'll find the RTA, taken in my listening room with a calibrated microphone and Liberty Instruments' Praxis software.

For what it's worth, from 20Hz to about 14kHz this is the flattest frequency response I've measured in my listening room with *any* loudspeaker, including

the Magico Mini IIs! The Xes' waterfall and impulse plots were also superb.

Though these plots were a reassuring confirmation of some of what I was hearing, they scarcely accounted for all that impressed me about the 101 X-Tremes, which, like any Radialstrahler, have a unique sonic presentation that no measurements can describe.

To explain the uniqueness of the 101 Xes (or the 101 Es) you have to consider how they generate sound. Radialstrahler drivers are omnidirectional. They are, literally, pulsating spheres—point sources that radiate equal amounts of energy at all frequencies through a 360-degree soundfield. Unlike conventional wide-dispersion dynamic drivers, they do not sound or measure substantially differently “off-axis,” which is to say, they don't change in frequency response or

introduce higher amounts of distortion and phase/time incoherence as you move away from the central axes of their drivers (in fact, their drivers don't have central axes). They produce precisely the same signal whether you are sitting in front of them, to the sides of them, or behind them. Necessarily, this means that they bring the entire listening room into play in a way that no other kind of loudspeakers (including dipoles and bipoles) does.

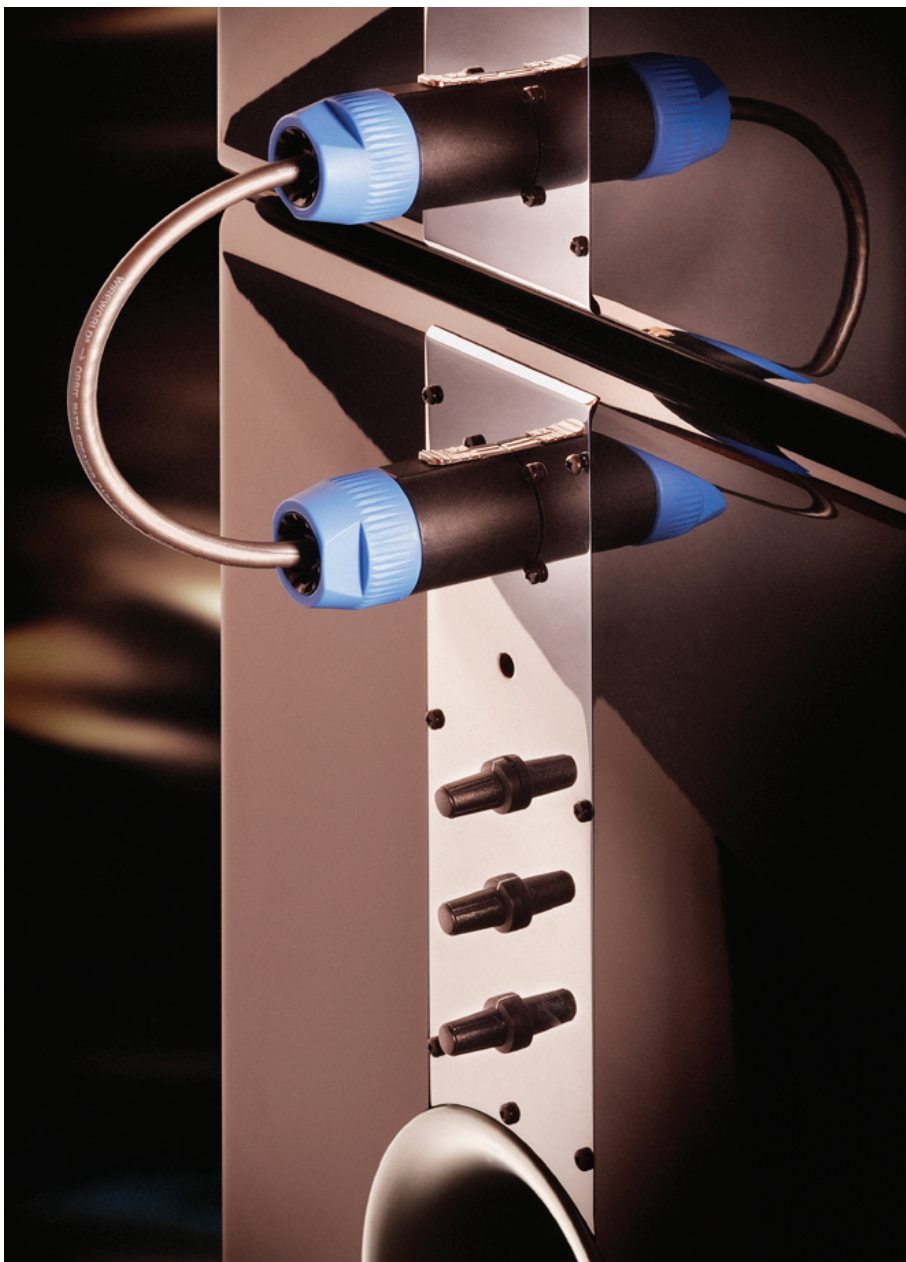
You might think that energy being broadcast in equal amounts at all frequencies toward literally every surface of your room would make the sound you end up hearing a confusing, echo-chamber-like mess. That it doesn't has to do with two interrelated phenomena: the 101 Xes' frequency-independent, constant-directionality dispersion, and the Precedence Effect.

First, unlike conventional loudspeaker drivers (particularly tweeters) that tend to send spotlight-like beams of inherently-more-distorted off-axis sound toward sidewalls—where, delayed only slightly in time, they bounce back to your ears alongside the direct output of the loudspeaker, screwing up timbres, dynamics, and durations at certain frequencies—an omni doesn't “selectively” energize specific spots on your walls. It doesn't work like a specular flashlight. It works like a diffuse glowing ball. It energizes your room *uniformly* at all frequencies, so that any reflected early arrivals will comprise the entire signal and not a small distorted piece of it.

Of course, an omni is still creating broadband room reflections, but we don't hear them as colorations because of the Precedence Effect.

The Precedence Effect is a psychoacoustic phenomenon whereby an acoustic signal arriving

## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker



first at our ears suppresses our ability to hear any other signals, including echoes and reverberations that arrive up to about 40ms after the initial signal (provided that the delayed signals are not significantly louder than the initial signal). As Dr. Siegfried Linkwitz says on his fascinating Web site at [www.linkwitzlab.com](http://www.linkwitzlab.com): “The ear/brain automatically relegates [these late-arriving signals] to the earlier learned acoustic behavior of the room and readily blankets that information and thereby the [sound of the] room itself.” Far from being more colored by room reflections, drivers, and enclosures, boxless omnis are in principle much *less* colored by all of these things and potentially much more faithful to sources because they essentially take the room sound *out* of the equation, thanks to the Precedence Effect and the fact that they are lighting up reflective surfaces *uniformly* at all frequencies rather than selectively at specific frequencies.

Omnis not only light up every surface of your room evenly; they light them up with *tremendous* energy, greatly reinforcing uniform power response through the passband (albeit at a price in loudspeaker sensitivity). Part of the reason that MBL Radialstrahlers are so famously lifelike in dynamics (particularly when they are played at moderate to loud levels) is the sheer amount of energy they are generating thanks to the unusually large surface area of their drivers. Consider a Radialstrahler woofer (the big silver pumpkin-like driver at the bottoms and tops of the Radialstrahler towers in the photos of the MBL 101 X-Tremes). Every square inch of these giant spheres is producing sound with the same intensity as the central portion of a conventional dynamic woofer (and without any of the center-to-edge drop-off in power or increase in distortion of a conventional woofer). In radiating area a Radialstrahler woofer is the equivalent of something like twelve 12” cones! (And each side of the 101 X-Treme has two of them!). The exact same thing is true of the Radialstrahler midrange and tweeter (and what a tweeter!).

You might think that drivers this large would be slowed

down by their mass and would ring like bells being struck when hit with an electrical signal, but their size actually works to their advantage. Since they’re driven over the entire surfaces (they expand and contract, accordion-like, when playing), they have to move only very small amounts to make very loud sounds. These small excursions also mean that they don’t have to move very much to *stop* making sounds. Plus for all their size they are made of lightweight materials (the midranges and tweeters are formed from petals of carbon-fiber, the woofers’ from an aluminum-magnesium alloy) and, because of the volume of air inside them, are virtually self-damping. No, Radialstrahler drivers aren’t as lightweight as, oh, Quad ESL-2905 or MartinLogan CLX membrane drivers. (And, at *really* low listening levels, not as quick on transients or as high in resolution, either—though the difference in speed of attack and resolution of detail is surprisingly small and is completely gone at moderate to loud volumes, while the difference in sheer lifelike power delivery on big dynamic swings is hugely in the 101 Xes’ favor. ‘Stats and ribbons are fast but relatively “weightless,” like hummingbirds. Radialstrahlers are fast and strong, like bulls.)

Putting all of this energy into your room is going to mean that—omni theory notwithstanding—you will need to selectively damp certain surfaces of your room, particularly the walls between the speakers and behind the listening position. But then you have to selectively damp walls with any speaker. What you will get for your trouble is, I promise you, something extraordinary.

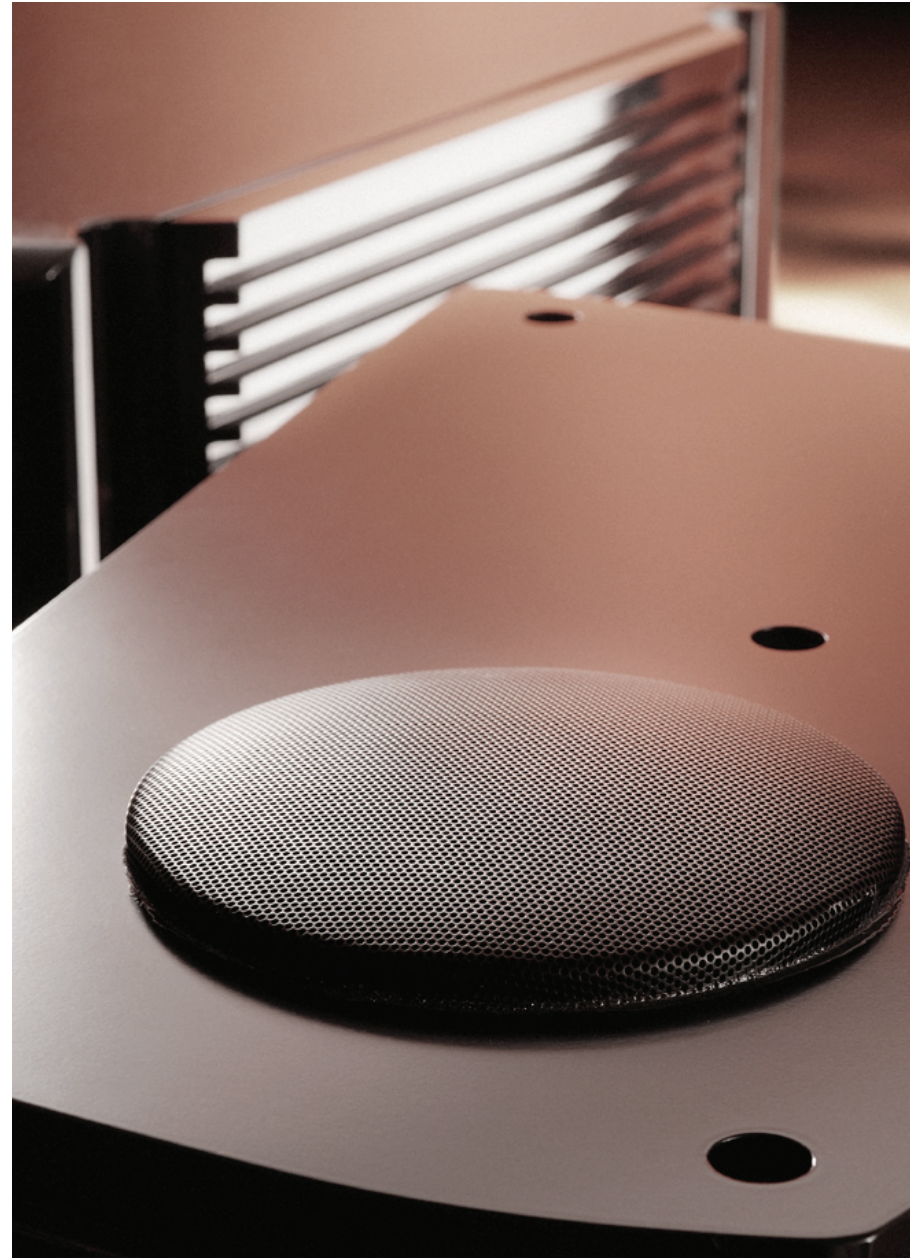
*Everyone* who’s heard the MBL 101 X-Tremes—from my usual listening panel of friends and colleagues (many of whom have auditioned every piece of gear that has come through my room) to visiting manufacturers (some of competing loudspeakers)—has had the exact same reaction, expressed in almost exactly the same words: “Where are the speakers?” Despite any shortcomings (and I will come to these), the MBL 101 Xes (properly situated and adjusted)

## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker

sound less like loudspeakers than any other speaker system I've heard. All of the various ways in which speakers betray that their sound is being projected in narrower or broader dispersion patterns by individual drivers in resonant enclosures simply aren't present (lending considerable credence to Dr. Linkwitz's argument about the superiority of frequency-independent, constant-directionality transducers). What you hear, instead, is a soundfield that seems, magically, to have been imported *in toto* from some other place—from a concert hall or a recording studio—and plopped down in your listening room. There's simply little to no vestige of "speaker" in the traditional sense. To put this differently, where other transducers sound the way movies look—like a two-dimensional medium imitating a three-dimensional one—the 101 X-Tremes sound the way a *theatrical play* looks—no ersatz third dimension, but actual people on an actual stage right there in front of you (albeit reduced in size).

I've heard speakers with great "disappearing acts" before (the Magico Mini IIs, *par excellence*), but none like this one, which doesn't so much disappear as not show up in the first place. It's really a bit bizarre that a system that calls so much attention to itself when the music isn't playing, because of its huge size and ultra-cool high-tech looks, vanishes so utterly when the music is on. It is, perhaps, the most astonishing bit of acoustic legerdemain I (or any of my friends) have ever witnessed.

When the recording allows, the Xes' magical three-dimensional soundfield extends far beyond the boundaries of the speakers (including their woofer towers) and far beyond the backwall. When the recording doesn't, the stage shrinks accordingly. The notion, advanced by some, that the "soundstage control" of omnis is always set to "11," to borrow from Nigel Tufnel of Spinal Tap, just isn't true. Yes, they add an attractive bit of air and spaciousness to most recordings, but like any great transducer they reproduce what they are handed with high fidelity.



Where omni detractors used to have an indisputable point was imaging. For all their many virtues, something like the 101 Es had trouble focusing vocalists and instrumentalists at center stage (though not at the sides of the stage); there was always a vagueness, a swimminess to their central images, which lacked the specificity of other high-end speakers. However, I am happy and astonished to report that imaging is no longer an issue with the 101 X-Tremes, which focus voices or instruments at center stage with all the precision of Magico Minis (and with more lifelike size, to boot).

What's changed? Well, there are two Radialstrahler arrays now per speaker side, in a mirror image (or quasi D'Appolito) configuration; the midrange and tweeter Radialstrahlers have been greatly improved with new formers and voice coils; the crossovers have been upgraded with new caps from Mundorf and Intertec; the 101 E's vibration-producing subwoofers have been moved to their own constrained-layer enclosures; and the entire Radialstrahler tower is now heavily damped and braced by massive applications of constrained-layer materials. In other words, all of the drivers and crossovers have not just been audibly improved, made higher in sensitivity, and less subject to exciting room nodes (thanks to the D'Appolito configuration), but they are also seeing orders of magnitude less vibration than they did in the 101 E, which, I have to think, was a large part of why they didn't image very well.

Not only have these changes in drivers, crossover, and support system wrought big improvements in imaging, they have, to my ear, also improved overall smoothness of frequency response, resolution at low volume levels, and bass response.

Let's start with the last first. Putting twelve 12" woofers in two towers might seem like a recipe for overloading a room. But I'm here to tell you that the effect is just the opposite. While the 101 Es low bass was one of its glories, because it went so incredibly deep and sounded so incredibly fast and

## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker

dynamic for a single driver in a small, dual-ported enclosure, it was also (or occasionally could be) one of its shortcomings. As great as it was to hear bass drum strikes detonating like sonic booms, or doublebass choirs growling like semis pulling away from a curb, or organ notes rattling the floor and walls like a subway passing outside the window, the 101 E's bandpass sub was a little wild and woolly. It was fast and powerful all right and tremendously exciting, but it was adding vibration to itself and the Radialstrahlers ensconced above it and it was more likely to excite room nodes (since it was fixed in one spot facing downward toward the floor).

In my room the 101 E subs tended to lump up around 60–80Hz, to the extent that with the right recording (or should I say the wrong one), like, say, just about any LP or CD with good solid Fender bass, you could be wowed and annoyed simultaneously—wowed by the sheer extension and floor-shuddering, pantsleg-shaking power of the MBL's bottom end, annoyed by the sub's room-induced boominess at select frequencies. Don't get me wrong. I still think that the 101 E's bass is astounding. The best I've heard. I just think that the 101 X-Tremes' bass is better. By adding more and better woofers and locating them at different heights from the floor, walls, and ceiling (both in the bass towers and in the Radialstrahler towers), the Xes are *much* less likely to reinforce room nodes—and so they sound. They may be a little less purely astounding now, but that is because they are calling less attention to themselves. They are audibly and measurably flatter, smoother, better controlled, lower in distortion, and much better integrated with the Radialstrahler drivers than the 101 E's bandpass subs. At the

same time, they are every bit as impressive in extension, speed, and power delivery as the 101 E's subs, and more impressive in resolution. If you think you've heard all there is to hear in the way of timbre, texture, and dynamics in low-pitched instruments (like bottom-octave piano, double bassoon, doublebass, bass drum) think again. In the bass, these things sound the way 'stats would sound if they went down flat to 20Hz and had the weight, body, and density of tone color of great cones. The Xes' sheer resolving power coupled with their speed, neutrality of timbre, lifelike cushioning of air, and astonishing three-dimensionality make things like forcefully bowed cello or bass (or forcefully struck timp) come alive in a way that very few other speakers I've heard can match—and none that I've heard in my home exceeds. It may be that the Wilson Alexandria X-2 Series 2 that Robert Harley recently reviewed or the Magico M6 would outdo them in the bass; even so, this is phenomenal low end.

As those of you familiar with my writing know, I'm generally no fan of outboard subwoofers. Not to put too fine a point on it, I almost always hear them as separate and separable drivers. With the 101 X-Tremes, for once, I don't. This is the most seamless blending of subwoofer and main speakers I've heard. Indeed, I would dare anyone, who didn't already know where they crossed over, to tell me by ear alone where the 101 X-Treme sub towers were starting and the Radialstrahler towers stopping. They are as much of a piece as the Radialstrahlers themselves.

Of course, it probably doesn't hurt that they are being driven by built-in MBL amplifiers. And I *know* that it doesn't hurt that they have been painstakingly tweaked in by Juergen Reis.

(Before he worked his magic, you *could* hear the sub towers quite plainly. Indeed, I believe that the proper dialing in of the sub towers has been the chief problem at shows—that and playing these things at jet-airplane-engine levels.)

Lowering the amount of resonant energy and improving the drivers and crossovers of the Radialstrahlers and their subs has also improved another area of 101 E weakness—realistic playback at lower volume levels. Like dipole Maggies, the 101 Es tended to lose a little dynamic scale at both the *piano* and the *forte* end of the spectrum when played softly. You needed to turn up the juice to make them come to life (which was why the MBL gang has always played them loud at shows). Though still not the match of a Magico Mini II, a Quad ESL-2905, a MartinLogan CLX, or a Symposium Acoustics Panaroma in timbre, texture, and dynamic nuance when played at low volumes (under 80dB average SPLs), the 101 X-Tremes are *considerably* improved in all three areas over the 101 Es—to the extent that you can now listen through them to chamber or acoustic rock or folk music with the same pleasure (and with very nearly the same sense of verisimilitude) that you'll get through them from any and all kinds of music played at louder levels (80dB+ average SPLs). It used to be said that MBLs were a rock 'n' roller's loudspeaker. Not anymore. Low-level resolution, top-to-bottom neutrality, and dynamic scale at all volumes have been greatly improved. And at lifelike SPLs, the Xes are very nearly unmatchable in every area save for top-treble extension, where the ribbons in the Symposium Panoramas and the ring-radiator tweeter in the Mini IIs outdo them. (While not as extended on top as these two other great speakers, let me

### SPECS & PRICING

#### MBL 101 X-Treme Omnidirectional Loudspeaker

**Type:** Four-way omnidirectional loudspeaker with separate subwoofer towers and ambience tweeter in four chassis

**Drivers (per speaker side):** Two Radial TT100 woofers, two Radial MT50/E midrange, two HT37/E Radial tweeters, one "ambience" dome tweeter, six 12" aluminum cone subwoofers

**Frequency response:** 20Hz-40kHz

**Sensitivity:** 88dB/2.8V/2pi

**SPL:** 109dB

**Power handling:** 500W (continuous), 2200W (peak)

**Weight:** 3600 lbs.

#### U.S.

**Price:** \$199,000/pr

#### MBL OF AMERICA

20381 Lake Forest Drive, Suite B-1  
Lake Forest, CA 92630  
(949) 331-3147  
mbl-usa.com

#### U.K.

**Price:** £195,000/pr

#### SOUND VENTURE LTD

Unit 2  
Banbeath Court  
Banbeath, Leven  
KY8 5HD  
0844 811 1258  
soundventure.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker

assure you that neither the Pans nor the Minis can reproduce a cymbal as realistically as the Xes' Radialstrahler tweeter.)

As noted earlier *in re* electrostats, the 101 X-Tremes don't just deliver the goods with superior speed and startling neutrality; they deliver them with a power and a lifelike duration that reminds me of the TW Acoustic Raven AC-3 turntable. Through the 101 X-Tremes, instruments like struck cymbals aren't just wispy, floaty little things expressed with exquisite delicacy that then die away like a sigh—half color, half air, like aural half-tones. They are the big, powerful, solid bell-bronze instruments they are in life, whose sound is reproduced with the power and lingering, shimmering sustain that describes their physical presence—their three-dimensional shape and material composition—in addition to their timbre and texture. All instruments are so described by the 101 X-Tremes, not just in richly colored outline but in *solid*, richly colored shape. To hear the Xes—well, not really the Xes because they aren't there as sound sources—but to hear the way they conjure up something like Mark Cohn's terrific cover of Willie Dixon's "29 Ways" is to hear something much closer to musicians in a club or hall or recording studio than to mere hi-fi. Cohn's centered voice, his voice doubled for backup and panned hard right and left (sometimes well "outside" the physical bounds of the speakers), the hard spikes and soft-palmed strokes of percussion distributed throughout the stage, that wonderful purling Hammond organ that comes flooding across (and beneath) the floor like a dark, burbling tide...once again, it is like watching a play to hear these things conjured up in three dimensions before eye *and* ear. While we all

listen, perforce, blind to stereo, the 101 X-Tremes go further toward compensating for our hunger to see what we hear—to fulfilling the definition of the word "stereo" (which literally means "three-dimensional" or "solid")—than anything else I've yet auditioned.

The 101 X-Tremes are not the only great loudspeakers I've heard—merely the best. They aren't quite as transparent as MartinLogan CLXes. They aren't quite as lifelike in timbre as Magico Mini IIs. They aren't quite as fast in transient response as Quad ESL-2905s. They aren't as colorless in the midband and treble as Symposium Acoustics Panoramas or as microscopically finely detailed (at least at low-to-moderate volume levels). They are ungodly expensive. They are huge. They require extensive setup and fine-tuning, and in spite of the fact that they are 6dB more sensitive than 101 Es they still do best biamped with *four* of MBL's own nearly \$100k/pair 9011 monoblocks and fed by MBL's own superb 6010 D preamp (although the ARC Reference 3 preamp is, IMO, every bit as good as the MBL 6010 D with MBL's powerhouses, and a pair or two of ARC's 610Ts represents much-less-expensive and equally impressive alternative amplification). They need the best sources and cabling that money can buy. They are handmade to order and take at least 90 days to build. In short, a system built around them represents an insanely complex and expensive investment of time, space, and upwards of half-a-million dollars, which, in this economy, is a stretch even for the ultra-rich and ultra-loony. Although they did exceedingly well in my smaller room (so well that even saturnine Juergen Reis pronounced himself greatly pleased), they will probably do better in medium-sized-to-large rooms, although

I would be wary of rooms that are too large (since Radialstrahlers need to see walls at some distance to function the way they are designed to function).

There may be other speakers—in fact, there are other speakers (some of which I've mentioned)—that *marginally* outdo the 101 X-Tremes in this area or that, and there are some on the horizon (two in particular from Magico and Kharma) that will doubtlessly prove competitive. That's OK. There's room for more than one great transducer, even at this level of excellence. This said, I rather doubt that the 101 X-Tremes will be beaten out by any other kind of loudspeaker when it comes to their uncannily realistic recreation of space, their three-dimensionality, their dynamic range and scaling from top to bottom (above 80dB SPLs), and their "you-are-there" presence.

Frankly, the other reaction that every single listener who's heard the 101 X-Tremes has had, once he gets past the Xes' disappearing act, is: "This is the most realistic stereo system I've ever heard." It hurts me to say so, since I will never be able to afford them, but I have to agree. **tas**

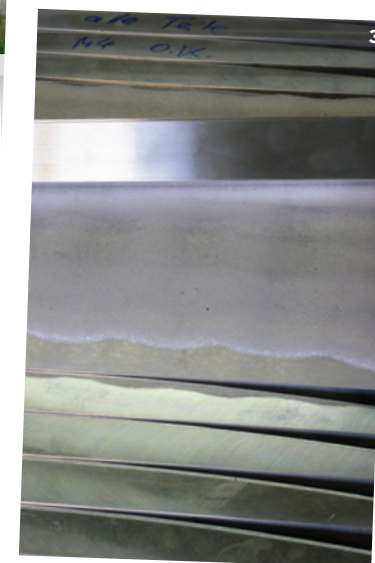
# How To Make A Radialstrahler

Jonathan Valin

In April of this year, I traveled to Berlin by way of Munich to visit Wolfgang Meletzky, a most amiable, sophisticated, and cultured man, the founder and CEO of MBL (Meletzky Berlin Loudspeaker) and the inventor (in 1979) of the Radialstrahler loudspeaker. Meletzky's company has been in business for almost 30 years and, as I could tell from the two letters on his desk in MBL's Einemstrasse offices from pleased customers (one in Scotland and one in the U.S.), he still gets a kick out of bringing the joy of music into other people's lives. Part scientist, part businessman, part music lover (Wolfgang goes to concerts at least twice a week—and in fact took me and my wife to Alfred Brendel's memorable farewell concert at the Berlin Philharmonie and to a fantastic chamber-music recital at the gorgeous old Konzerthaus), Meletzky has arranged his offices to reflect his personality, with one section devoted to business affairs, one (filled with computers and eager young research assistants) to R&D, and one to auditioning MBL's loudspeakers and electronics.

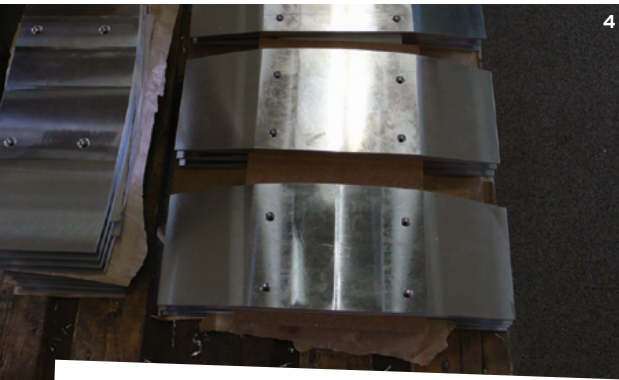
MBL differs from other audio manufacturers in two important ways. First, it makes entire stereo systems from front end to back—not just loudspeakers—and its electronics are just as beautifully designed and highly regarded as its Radialstrahlers. Such com-prehensiveness and uniformly high quality is in itself unusual in this industry. Second, outside loudspeaker enclosures, MBL manufactures virtually everything in house. MBL is not one of those domestic-design/overseas-manufacture companies. Its products are entirely German-engineered, German-fabricated, and German-assembled.

Although most of the design work is currently done by the able and talented Juergen Reis (and an assemblage of gifted young college graduates at MBL's Berlin offices), the execution of these designs is carried out at MBL's manufacturing-and-assembly plant in the little town of Eberswalde (Boar's Wood), outside of Berlin. The factory was designed by Wolfgang himself; like a scientific lab, it is air- and temperature-controlled, sealed against contaminants, and linked by computer to MBL's Berlin offices and other design facilities (see Illustration 1). The entire facility is systematically organized, beginning with Wolfgang's offices





## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker



in the front of the building and preceding to a computerized parts department (run by Thomas Peter) where every nut, bolt, and fitting for MBL's extensive line of speakers and electronics can be called up via a computer server that keeps track of parts inventory, to the large manufacturing floor where speaker/electronics parts are made and assembled (Illustration 2).

The manufacturing floor houses four large computer-controlled CNC machines that convert raw materials to parts for electronics and speakers. To give you an example of how this works, consider the milling and machining of one of the massive faceplates for one of MBL's superb components. In Illustration 3 you can see the thick aluminum slabs that will form the massive front plates of an MBL faceplate after an initial CNC-milling; in Illustration 4 you see these same billets after the second stage of CNC-milling; and in Illustration 5 you can the third stage

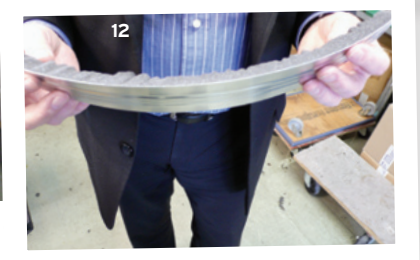
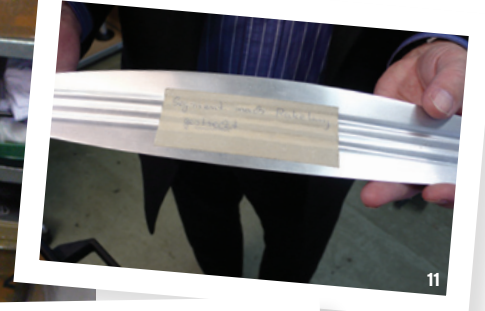
of cutting with the "MBL" logo embossed on the faceplates. The faceplates are then painted and beautifully finished in brass (Illustration 6)—the entire process is done in MBL's machine shops. Lest you think that everything in the MBL factory is computer-generation high-tech, in Illustration 7 you see a pressing machine built in 1886 that is still functioning and used in the construction of MBL electronics, and in Illustration 8 you see a skilled craftsman machining the top plates of a 6010 D preamp by hand.

Every product that MBL makes is tested at the factory at various stage of assembly. In Illustration 9 you see a partly assembled 9007 amp being bench-checked using computer programs and test gear.

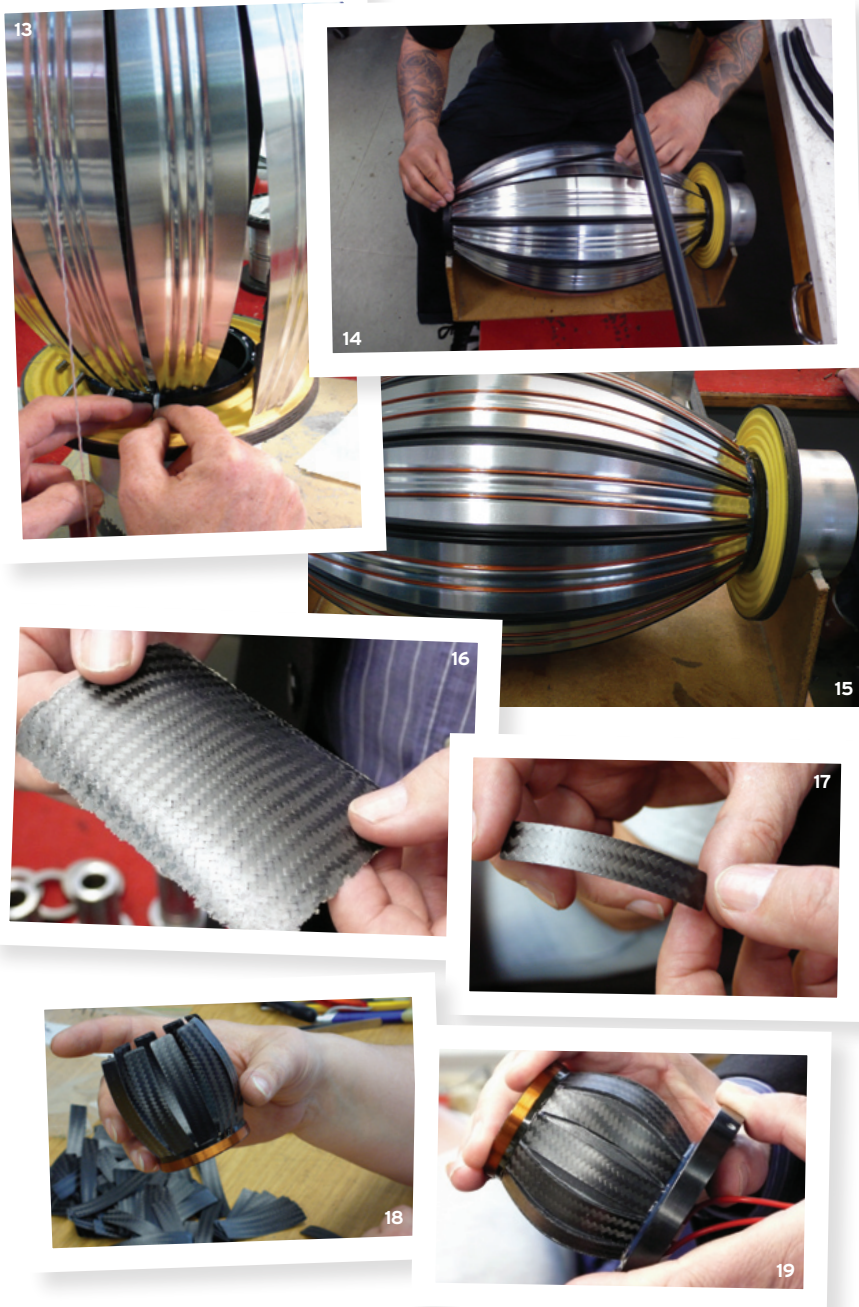
Let's turn to the manufacture of MBL loudspeakers, which takes place in a different section of the factory. The first step in building a Radialstrahler woofer is the milling of "petal"-

shaped slices of magnesium-aluminum alloy (Illustration 10). In the next production step that petal is corrugated—the corrugations are rolled on (not pressed) to make the petals stiffer (Illustration 11). Materials are added to the corrugated petal—to dampen it (Illustration 12). After this, the petals are glued by hand to a thrust plate at the end of a pole piece and wired (delicately) and affixed to a voice coil and magnet (Illustration 13) at the opposite end of the pole. Strips of elastic material are hand-inserted between the petals and external damping materials are hand-applied to their surfaces (Illustration 14). In a finished Radialstrahler woofer, the voice coil drives one end of the petals; the other end is held stationary. The moving voice coil causes the petals to flex in and out in response to the musical signal (Illustration 15).

The Radialstrahler midrange and tweeter function in the same way but their petals are



## EQUIPMENT REVIEW - MBL 101 X-Treme Omnidirectional Loudspeaker



made of different material—carbon fiber. Here is a piece of “baked” carbon fiber (Illustration 16), fresh from MBL’s oven. Smaller slices of this sheet are computer-cut from the larger piece to make the “petals” of the midrange Radialstrahler driver (Illustration 17). As with the MBL woofer, the petals are wired and attached to the midrange’s voice coil on bottom and glued to a thrust plate on top (Illustration 18). Here we see a partly assembled midrange, with thrust plate held in place on top

(Illustration 19).

As I hope you can tell from this brief photographic tour of MBL’s factory, MBL electronics and speakers combine extraordinarily high-tech computer technology with the most delicate hand-craftsmanship. They are ongoing testaments to the determination and imagination of MBL’s founder, Wolfgang Meletzky, for whom, even after 30 years of enterprise, anything less than exceptional just isn’t good enough. **tas**

### MBL ELECTRONICS AND THE 101 X-TREMES

It is no secret that I think that MBL electronics are among the finest solid-state components that money can buy. Gorgeously made and beautifully finished, they not only look cool but sound fantastic. Which is a good thing because the 101 E MkIIs and the 101 X-Tremes were designed with them in mind. Though there are undoubtedly other combinations that would work effectively with the 101 Xes, the Radialstrahlers are a peculiar case. Though they aren’t anything like a difficult load, they simply thrive on power. There are obvious reasons for this: They have no enclosures and radiate omnidirectionally, so much of the energy they produce isn’t being heard directly—or, depending on the size of your room, even indirectly. Though MBL rates the 101 E MkIIs as 82dB sensitive and the 101 X-Tremes as 88dB sensitive, I think both numbers are misleading. Both speakers are 4-ohm loads, which means that you cut 3dB off those sensitivity numbers to start with. Second, Radialstrahler drivers are unusually large in surface area, more like ‘stats than cones, and like ‘stats take power to drive. This is where the MBL 9011 monoblock amps come in—beautifully. I’ve talked before, at length, about these 275-pound monsters. They are, IMO, the most liquid, gorgeous sounding, inexhaustibly powerful (capable of 5000W peaks!) solid-state on the market. Being a little bit darker and richer in balance (more like Class A amps

than Class AB), they aren’t as dead-neutral as, oh, a Soudation 710 or an ARC 610T, but they are every bit as lovely to listen to, extremely finely detailed, and simply standard-settingly good for solid-state at reproducing the full duration of notes (including their decays). Add to this, iron grip in the bass and tremendous speed and articulation in the treble.

Long my own personal favorite solid-state preamp, the MBL 6010 D has all of these same virtues. Also a little dark and sweet (a little Class A sounding), it is, like the amplifiers, robust and hard-hitting, with tremendous grip in the bass and treble but also, like all MBL electronics, gorgeous in timbre and liquid in textures. It’s almost a paradoxical combination of virtues—this Teutonic control and authority, Burgundy-like color and sweetness, and all-American resolution and dynamic excitement.

The MBL 1621 A and 1611 F transport and DAC—merely the second-best CD player I’ve ever heard, after the much-more-expensive dCS Scarlatti—have all of these same characteristics and more. The combo may be the most finely detailed and hardest-hitting CD player I’ve heard, and yet it isn’t a bit “analytical” or aggressive. Once again the combination of power delivery and control with melting sweetness and liquidity and extraordinary resolution and excitement make it sound purely gorgeous. **JV**



# Verity Lohengrin II

## The Cutting Edge

Jacob Heilbrunn

**W**ith its quaint shops and fine restaurants, Quebec City is a seductive place. But this city, which was first settled in 1608, also has a majestic side that helps to explain why the Quebecois are so stubbornly independent. Visit the old town, walk up the ramparts, which once served as the city's defense, and you have a towering view of the St. Lawrence river, where ships lazily make their way up and down the legendary seaway. Meanwhile, looming over the former military citadel is the massive hotel, Fairmont le Chateau Frontenac, where Franklin Roosevelt, Winston Churchill, and MacKenzie King met in 1943 to confer about World War II.

Perhaps it should not be altogether surprising, then, that these two sides of Quebec are also faithfully reflected in the Canadian manufacturer Verity Audio's sizzling Lohengrin II loudspeaker. A powerhouse of a loudspeaker, the Lohengrin II also possesses the ability to woo listeners with its extremely coherent and fluid sound.

Verity Audio's factory is based just outside of Quebec City and it would be hard to think of a more dissimilar pair than its two designers Bruno Bouchard and Julien Pelchat. Of these terrible twins, one, Bruno, is taciturn, contemplative, brooding; the other, Julien, is exuberant and full of *joie de vivre*. Somehow these disparate qualities have been fused to produce the elegantly fastidious and exciting line of Verity loudspeakers. The signs of the care with which Bouchard and Pelchat approach their calling—and it is a calling, not just a job—are immediately evident at the

factory, which I had the good fortune to visit for several days. For one thing, Verity has a sizable listening room with 11' ceilings that allows it to let its loudspeakers cut loose. It also boasts a considerable array of equipment, including Nagra preamplifiers and amplification. But perhaps the most unusual piece of equipment on hand was a rare and quite delectable Matisse tubed amplifier that sounded quite beautiful on a variety of music. Vinyl was in abundance as well. To gain a greater familiarity with the Verity sound, I also had the chance to listen to each speaker in the line, leaving me feeling a bit like a potentate ordering around his subjects as various speakers were hefted in and out.

As enjoyable as the others may have been, the big Daddy—the Lohengrin II—was clearly nonpareil. What made it so special? To grasp the basic character of the Lohengrin II, it helps

## EQUIPMENT REVIEW - Verity Lohengrin II Loudspeaker

to be familiar with its technical features. The first and most obvious of these is that it is a very high sensitivity (95dB) loudspeaker, which makes life cushy indeed for any amplifier (though the Lohengrin is bi-amplifiable as well as bi-wirable). It simply takes a lot less power to produce sound once you get into that lofty zone of sensitivity. As Pelchat cogently explains, Verity, at bottom, seeks to unite the qualities of a horn design (high efficiency, jump factor) with the refulgent sound of moving-coil drivers. My own verdict: With high efficiency music becomes more tuneful, snappier, since the loudspeaker and amplifier don't have to strain to reproduce a recording. Verity's simple but carefully thought out crossover helps account for the sensitivity of the Lohengrin.

The four-way Lohengrin II features an upper-midrange driver that reproduces an extremely wide spectrum—from 300Hz to 6kHz. A ribbon takes over at 6kHz. The lower midrange (80Hz–300Hz) is handled by a 9½" cone driver, which crosses over to a 15" rear-firing ported woofer housed in a separate enclosure. The lower midrange driver is not high-pass filtered; rather, it rolls off naturally. The drivers were custom designed for wide bandwidth and minimal break up to allow the use of a minimalist crossover.

The woofer is low-pass filtered at 80Hz with a first-order filter. The woofer is thus conceived of acting as a subwoofer. The rear-firing woofer didn't seem to present any problems—I felt a goodly amount of bass kick. Furthermore, in contrast to some other manufacturers, Verity does not go to extreme lengths to dampen the cabinet. Instead, it believes that the cabinet should be rigid without being weighted down. Bruno Bouchard says that excessive damping kills the sound. The goal,



he says, should be to “control vibration through cabinet design that achieves a proper balance of energy dampening and transmission.”

What's more, Verity, it should be said, has also gone to considerable lengths to improve the Lohengrin II over its Mk. I version (older versions are fully upgradable). The new lower midrange driver is 9½" in contrast to the older version's 8" driver. The aluminum foil ribbon tweeter has also been completely reworked. I picked up the old and the new tweeter, and the old one was much heavier. This weight reduction results from the use of powerful neodymium magnets arranged in tight stacks to focus the magnetic field over the ribbon. The previous design used a single large magnet block with heavy pole pieces on either side of the magnetic gap. The new ribbon is lighter, more sensitive, has higher power handling, and delivers greater consistency in output across its bandwidth. Verity also developed an entirely new custom impedance-matching transformer specifically for this ribbon driver. Finally, the internal wiring has been upgraded to Nordost, which may help to account for the Lohengrin's sheer velocity.

My interest in the Lohengrin had been piqued when I heard it at the Nagra factory in Lausanne, Switzerland, where the estimable John Quick, who represents both Nagra and Verity, had arranged for a tour, complete with a trip to Nagra's listening room, which had some woeful deficiencies, most notably a glass wall. A second listen at Maier Shadi's spacious Audio Salon in Los Angeles convinced me that the Lohengrin would be well worth auditioning. Quick spent a day adjusting the loudspeaker and was also kind enough to lend me a pair of Nagra 845 tube amplifiers so

that I could listen to the Lohengrin with a lowered-powered amplifier than either the hefty Classé Omega or the VTL Wotan monoblocks.

Regardless of the amplifier I used on the Lohengrin II, it had several basic sonic characteristics. The Lohengrin produces an extremely—for lack of a better word—acoustic bass by which I mean to suggest that it has a

### SPECS & PRICING

#### Verity Lohengrin II Loudspeaker

Type: Four-way loudspeaker

Driver Complement: One ribbon tweeter, one 5" mid, one 9½" lower mid, one 15" woofer

Frequency response: 15Hz to 60kHz

Sensitivity: 95dB

Weight: 250 lbs.

Dimension: 59.9" x 19" x 23"

#### U.S.

Price: \$89,995/pr to \$100,000/pr, depending on type of finish

#### VERITY AUDIO

1005 Saint-Jean-Baptiste Avenue, Suite 150  
Quebec, Quebec G2E 5L1  
Canada  
(418) 682-9940  
verityaudio.com

#### U.K.

Price: £64,999/pr to £78,995/pr, depending on type of finish

#### SELECT AUDIO

10 School Drive, Flimby  
Maryport, Cumbria, CA15 8PL  
United Kingdom  
+44 (1) 900 813 064  
selectaudio.co.uk

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Verity Lohengrin II Loudspeaker

remarkably woody, resonant characteristic. On Kenny Burrell's album *Handcrafted* [32 jazz], the plucked bass line on the cut "You and the Night and the Music" is often difficult for loudspeakers to clearly articulate, especially as it heads for the nether regions. The Lohengrin II supplied both the note as well as the ambience. The Lohengrin's bass also goes deep. On Claudio Abbado's recording of Mahler's Third Symphony with the Vienna Philharmonic, you can fairly hear the tympani mallet whistling through the air before it lands. The impact itself sounds like a depth charge going off. Sheer grins on my face. Childish? I suppose. But a lot of fun and, hey, that happens to be what it sounds like in the concert hall.

Part of this sonic spectacular, I suspect, can be ascribed to the sheer speed of the Lohengrin coupled with extreme dynamic reproduction. A somewhat similar effect could be discerned on a Roy Haynes, Phineas Newborn, and Paul Chambers LP on the New Jazz label called *We Three*. The Verity had the best reproduction of the snare drum and cymbals that I have heard. There is a sort of "rat-a-tat" quality to it. The Verity came closer than anything I've auditioned so far to the real thing in capturing the concussive hit of the drumstick and the rattle of the drum itself.

Another aspect of the dynamic power of the Lohengrin is its ability to ramp from pianissimo to fortissimo in a heartbeat. This was perhaps most obvious on the Abbado recording. There is a passage in the first movement where the trombone repeatedly plays a plangent passage. The Lohengrin captured both burnished sonority of the trombone and the air around it with great fidelity. Sudden, even grotesquely overblown,

orchestral crashes, which Mahler delights in, left the Lohengrin completely unfazed. The Lohengrin will also rock on out if you wish, but I don't really think of it as that kind of a loudspeaker. What all that dynamic power will do is allow the music to billow into your room, which some listeners may perceive as a "forward" orientation. But it's not. The front-to-back layering is superb. But the Lohengrin does provide an unusual amount of push, for lack of a better word, to the instruments. There is a lot of body and texture, to put it another way, behind each note.

What that speed and dynamic power also favor, however, is an extreme kind of attentiveness to each note. Each note is, in a sense, caressed. It's as though a good deal of forethought went into the reproduction of each note before it is actually enunciated, which, come to think of it, is precisely what a performer aims to accomplish in a concert. Take Andras Schiff and Yuuko Shiokawa's performance of Schubert's *Fantasie in C major* for violin and piano [ECM Records]. After a gentle piano introduction, the violin makes a whisper-quiet entrance, stretching out its initial note before soaring into the empyrean. Variation after variation follows and the Lohengrin carefully recapitulates each and every nuance. Similarly, on a Wynton Marsalis SACD recording of Haydn's trumpet concert [Sony], the Lohengrin simply nails the timbre of the E-flat trumpet he uses, capturing not simply the note but the shimmer around it. The tonal purity and accuracy of the Lohengrin is simply astounding. The Lohengrin does a marvelous job of conveying the silky sheen of strings and the bravura sound of brass instruments. As Marsalis performs double and triple octave jumps, I'm reminded of a fascinating



passage in Terry Teachout's new biography of Louis Armstrong. Armstrong's sideman, Charlie Holmes, is quoted as remarking: "Other trumpet players would hit them [high] notes, just like they do nowadays. They'd be hitting high notes, but they sound like a flute up there or something. But Louis wasn't playing them like that. Louis was hittin' them notes right on the head, and *expanding*. They would be notes... He wasn't squeain'. They wasn't no squeaks. They were notes. Big, broad notes.... The higher he went, the *broader* his tone got—and it was beautiful."

That's exactly what an instrument is supposed to sound like, whether it's jazz or classical music. So one of the aspects that I find most bothersome with some loudspeakers is that the tonality or depth of sound shifts depending on what part of the frequency spectrum they're reproducing. It ain't supposed to be so. The truth is that, given the frightening technical proficiency of musicians in this day and age, high notes simply don't thin out in a live concert; they don't sound any different—that is, sharper or thinner—than notes in the midrange. Wynton Marsalis sounds exactly the same, no matter what musical register he is playing in, and that happens to be the way the Lohengrin portrays it as well. This is an aspect concerning the issue of the overall coherency of loudspeakers that is, I think, sometimes underestimated.

Apart from a single-driver loudspeaker, no moving-coiling design is going to achieve complete coherence. But I didn't hear any gaping holes in the Lohengrin II. Instead, I was most impressed by the ribbon tweeter, which endowed the Lohengrin II with its most special characteristic. The amount of air and the cavernous size of the

## EQUIPMENT REVIEW - Verity Lohengrin II Loudspeaker

soundstage really are quite impressive and can be ascribed, I suspect, to the ease with which the ribbon is working at 6kHz and above. No doubt those listeners who don't like ribbons in general will likely not be persuaded by the Lohengrin's treble reproduction, which is very neutral and may even be ever so slightly pitched toward the mids and treble. I myself may be partial to this sound because I'm accustomed to the Magnepan ribbon, which may extend even a little higher than the Lohengrin's. It's also the case, I feel obliged to note, that the Magnepan 20.1 produces a taller soundstage and even more air around the instruments. But the planar design, almost by definition, lacks the dynamics and palpability of a moving-coil design, not to mention the superbly precise imaging of the Lohengrin. The Lohengrin will reproduce pretty much every last jot and tittle on a recording, which, in some ways, is a kind of scary experience. Some listeners will find this kind of verisimilitude addictive; others may find it to be too much to handle.

I didn't. And I'm scarcely the only listener who is taken aback by the Lohengrin's performance. The composer Keith Murphy, who teaches at the University of Illinois, recently visited me together with his father Declan, a former archivist at the Library of Congress. Murphy *filis* was, to put it bluntly, wowed by the incredible power of the Lohengrin. His only regret, he said, was that most professional musicians could never afford such a system. Which raises the nettlesome issue of cost, which I usually don't really touch on in reviews, figuring that it is not my job to decide what is and isn't an appropriate expenditure for someone else. All I can say is that what is expensive for one person may be chump change

for another. If you're temerarious enough to take the plunge, then I suspect that you'll find that the Lohengrin II isn't cause for buyer's remorse but prolonged elation. **tas**



# Lohengrin II

We designed Lohengrin in 2001 as a reference from which all other product development at Verity would flow. It became our benchmark for the creation and revision of all loudspeakers in our product family.

Today Lohengrin II represents our finest effort to date. From Finn to Sarastro II, every member of our current lineup is crafted with the same careful attention to detail, each loudspeaker benefitting from Lohengrin II's unique DNA.

We invite you to listen for yourself, and we warmly welcome you to the Verity Audio family.



# Wilson Audio Specialties MAXX 3 Loudspeaker

## A Trickle-Down Alexandria X-2?

Jacob Heilbrunn

**T**he great conductor Bruno Walter loved to recount the tale of an orchestra player's first chance to conduct a concert. "How did it go?" the musician was asked the next day by the orchestra's regular conductor. "Very well indeed," he replied. "And do you know, Maestro, this business of conducting is really very simple." After pretending to look alarmed, the conductor raised an admonishing finger and whispered, "I beg you: Don't give us away."

It's often hard to avoid the sense that this anecdote applies with equal force to sophisticated audio equipment. Why does company X's amplifier, the skeptics like to ask, have to cost so much? Put aside the hocus-pocus, and the business of making one is really very simple; an amplifier only consists of wires, transistors or tubes, and a transformer or two. When it comes to loudspeakers, these doubts can multiply. In the end, loudspeakers usually consist of a box, some capacitors, maybe a vent at the bottom, and a few holes cut in front for mounting several drivers. Why, then, is company Y charging such steep tariffs for its loudspeakers?

Enter David Wilson. When I recently met Wilson at his factory in Provo, Utah, he himself raised the issue of expensive wares in a sagging economy without any prompting from me. Sitting at his desk and peering at me excitedly through his spectacles, he began reading aloud from an essay by the editor of *Fortune*. The essay made a fundamental distinction between luxury, on

the one hand, and opulence, on the other. As Wilson explained it, luxury, unlike opulence, offers both elegance and real value, but it doesn't come cheap.

Certainly Wilson's factory epitomizes his commitment to both his products and music. With its lined walls of photographs of eminences such as Ricardo Muti praising Wilson, to its CNC router and its special automotive paint shop with downdraft chambers, this sophisticated operation is apt to leave even the most jaded audiophile quivering with admiration. No outsourcing to China here; everything in a Wilson loudspeaker is fashioned specially for it in America, down to the binding posts. Crossovers are hand-soldered at the factory—no boards with traces. Fit 'n' finish, as usual with a Wilson, is impeccable. Even the ports are specially machined. Wilson attaches great importance to achieving as much uniformity as possible with a pair of loudspeakers. I expected to stumble upon a team of seamstresses sewing the speaker grilles.



## EQUIPMENT REVIEW - Wilson Audio Specialties MAXX 3 Loudspeaker

Wilson's own office, which is filled with model airplanes and rockets as well as an original manual for the Saturn V, is emblematic of his fascination with technical issues. The factory also contains several auditioning chambers, one with panels that can be pulled into the room so as to simulate an acoustically treacherous environment. At bottom, Wilson simply can't help himself: Upon meeting me, he started quizzing me about my room—reviewing the reviewer, so to speak. After I told him the dimensions, he disappeared and a few hours later handed me a paper sketching out my room and where any nodes might be. He suggested that there might be a bit more bass in the right hand rear corner. He was dead-on right.

But all of this attention to detail and fussing over the dimensions and appearance of his loudspeakers would be superfluous if they were unable to deliver the musical goods. As a longtime Magnepan fan, I've had a bit of a hankering to go over and experience the other side of the sound spectrum. Moving-coil designs almost always provide more slam and dynamics than planar ones, and none more so than Wilson. What it would be like, then, to experience the company's spanking new—and second from the top-of-the-line—MAXX 3 loudspeaker? The Alexandria, which retails for \$158,000, is a cost no-object design. Its younger sibling, by contrast, lists for \$68,000. But is the MAXX 3 a pale shadow of its big brother? Or does it deliver even more relative value and listening pleasure?

The MAXX 3 represents an attempt to trickle-down in somewhat more compact form many of the features that Wilson introduced in the new version of the Alexandria, which, among other things, features a redesigned, more efficient

midrange driver which I had the opportunity to hear at length a year ago at the Brooks Berdan store outside of Los Angeles. Powered by VTL Siegfried amplifiers, the Alexandria delivered gobsmackingly thunderous dynamics coupled with startling speed in the bass region, which is quite a feat, one that TAS editor Robert Harley has explored in his review of the Alexandria. Wilson himself has said that he decided to alter the Alexandria after extensive listening sessions at Vienna's Musikverein, where he was able to listen to the Vienna Philharmonic rehearsing, among other things, Mahler's glorious Second Symphony ("Resurrection"), conducted by Seiji Ozawa. They had no fewer than eight bass players playing that day (and one of them, says Wilson, actually owns a pair of Sophias). The Musikverein has the best acoustics of any hall I have ever heard. In fact, it contains two halls, one in the form of a large shoebox for orchestral and other large-scale performances as well as a more intimate one for chamber music.

As it happens, my listening room is in the form of a shoebox. It also has a concrete floor, which improves bass response. To help position the loudspeakers, Wilson's National Sales Director Peter McGrath came out to my house for several days. (Wilson rigorously trains its dealers in its special methodology for speaker setup.) Assembling the MAXX 3 is a snap. As part of its redesign of the MAXX 3, Wilson has separate cabinets for the tweeter and midrange drivers that can be angled separately. The tweeter is a Focal that has been modified and the midrange is a proprietary driver.

Once you've got the bass cabinet with its Focal 11" and 13" woofers set up, you then stack the

tweeter and midrange modules on top. Wilson has its own set-up regimen for fine-tuning the position of the speakers that involves calculating the distance from the listener to the speaker. It relies upon a system that it devised and calls Aspherical Group Delay. In theory, it allows Wilson to time-align the mid and tweeter drivers perfectly, whose modules, as with the Alexandria, can be shifted fore and aft as well as rotated. In addition, Wilson has gone to heroic lengths to isolate and pot the internal crossovers to increase their immunity to the distortions induced by the effects of speaker vibration. It took McGrath, who played me a number of his recordings of Miami's New World Symphony, a day before he was satisfied with their position. I have never moved them from the spot we both agreed upon was best, about six feet from the back wall, and three feet from the sidewalls. The distance from the inner edge of each speaker to the other was almost eleven feet.

Even in their unbroken-in state the MAXX 3s were notable in several respects. First, they set up a wide and deep soundstage, closer to the scale of a large orchestra or a full organ than any other loudspeaker I've had the chance to hear. Second, the midrange driver's sensitivity allows the MAXX 3 to deliver a more relaxed and refined sound than its predecessor, the MAXX 2. Third, it possesses whiplash speed in the bass that suggests that port designs, which are often accused of being a poor man's way of achieving deep bass at the cost of exactitude, don't always have to represent a sonic compromise. Fourth, it has a remarkable purity of timbre; it unfurls different tonal colors like a peacock's tail. Finally, for all the emphasis on the dynamic sizzle of Wilson loudspeakers,

perhaps their most outstanding characteristic is their ability to breathe—to play with true fidelity at low volume. But it did take *hundreds* of hours for the speaker to break in—the treble sometimes had a horrendous shrillness that took a long time to disappear. However, once it did, the one remark that visitors to my home made with almost metronomic regularity was that this was a Wilson that sounded nothing like Wilsons of yore.

Take the Brazilian Guitar Quartet. Their recording of the Bach suites for orchestra ranks high among my favorite transcriptions. The MAXX situated each guitar in its own space, which a lot of speakers can do, but what was particularly fetching was its ability to render the delicacy and nuance of each instrument. The MAXX 3 had an unbelievable ability not simply to enunciate each note crisply but to allow decays to linger on and die into silence. You hear each crepitation with uncanny precision, perhaps more than the performers themselves ever imagined would be reproduced. (Part of this reproduction was also due to the superlative Playback Designs CD player, which impressed Peter McGrath so much that upon returning home to Florida he immediately ordered two of them, one for recording purposes.)

Furthermore, the imaging was simply rock-solid. Part of this may be attributable to Wilson's decision to measure each capacitor in his crossover individually and then use bypass capacitors to achieve even tighter tolerances than those specified by their manufacturer. In so doing, Wilson helps to ensure that each loudspeaker measures identically. This, I'm convinced, helps improve image solidity to a great degree. That solidity, in turn, creates a heightened sense of



## EQUIPMENT REVIEW - Wilson Audio Specialties MAXX 3 Loudspeaker

emancipation among instruments and of rhythmic security.

The MAXXs, you could say, got rhythm. This is no small point. While listening to the MAXXs, I perused pianist Gerald Moore's penetrating autobiography *Am I Too Loud?* in which he explains that he regards Dietrich Fischer-Dieskau as the singer nonpareil. Why? According to Moore, "If I had to put my finger on the key to Fischer-Dieskau's supremacy, setting him apart from every other singer, I would say, in one word: Rhythm. This is the life-blood of music and he is the master of it."

Instead of smearing or blurring, the MAXX 3 thus provides a great, much greater, sense of individual performers playing together simultaneously as opposed to a congealed blob. On one of my precious Fitzwilliam Quartet LPs of the Shostakovich String quartets, it sounded as though six feet separated the first violinist from the violist. The MAXX simply grounds instruments to a degree unprecedented in my experience. Similarly, the Beaux Arts trio sounded more transcendent, more unified than I had ever heard before on LP. In this regard, I should also mention that thanks to the generosity of Nagra distributor John Quick, I enjoyed the chance to try the elegant Nagra VPS phonostage, which renders tone colors beautifully and has a liquid sound.

The MAXX's higher sensitivity allows it to convey the elastic sense of music. Nuances and colors that make the music come alive—such as previously almost imperceptible rubatos and vibratos—are simplicity itself to discern. This isn't a matter of listening for irrelevant squeaks, rumbling subway cars, and the like, but vital musical cues that help create the illusion that the

real thing is transpiring in front of you. In short, the MAXX constantly astonished me with heretofore obscured details that the phenomenal Continuum Caliburn turntable was extracting from the black grooves; in many ways, it was as though I was hearing the turntable in an entirely new light.

If the precision and delicacy and finesse of the MAXX 3 came as something of a surprise, it is also fuller and more relaxed sounding than its predecessor, the MAXX 2 (the MAXX 3 is notably easier to drive than MAXX 2 as it features an easier load, even though its 4-ohm impedance means that its sensitivity is closer to 89dB than the specified 91dB). A comparison of the two loudspeakers at Wilson's home in Provo first alerted me to the contrast, but it became even more apparent as I continued to listen to my pair. On a CD of Thomas Hampson singing Schubert lieder, the MAXX reproduced the sound emanating from his chest, not simply the leading edge of the note. (Hampson, by the way, is a devout Wilson fan and owner—Wilson told me in a tone of some incredulity that he met him in the library of the Musikverein, where Hampson said, "You're David Wilson? *The David Wilson?*")

Nor is the MAXX at a loss when it comes to coherence. No, the three-way crossover isn't quite as seamless as that of a planar design. How could it be? I found it very difficult, though, to descry where the sonic handoffs were taking place, which seemed to occur with the velvety smoothness of a star track team passing the baton without sacrificing a millisecond. Its seamlessness is particularly notable on the big stuff—on Mahler's Third, conducted by Claudio Abbado, I was bowled over by the lack of congestion. Tympanis may be pounding away center stage, but the

violins, flutes, and trumpets are all there in full glory, unflappably playing away.

And those tympanis, my word! You can crank this speaker to crushing sound pressure levels and it will never lose its composure. Quite the contrary. So blinding is the speed in the nether regions that you almost hear the mallet descending an instant before it whacks the tympani. And you hear not only initial impact on the skin but also the reverberation in the tympani itself and then the hall. No doubt about it: Bass is not in short supply with the MAXX. On the CD *Count Basie Meets Oscar Peterson: The Timekeepers* [Pablo] John Heard's groovy bass simply oozes out of the MAXXs on the cut "I'm Confessin' (That I Love You)." One thing's for sure: I can't imagine anyone not loving the bass reproduction, which has a telluric quality. My sense, however, was that for the speaker to produce a towering soundstage and stygian bass it really required a high-powered tube or solid-state amplifier. Or maybe I'm just a sucker for grip and control!

Despite their reputation for boom and sizzle, the MAXXs never seemed splashy or to have a hebephrenic quality. Instead, they are almost conservatively voiced. No single part of the frequency spectrum seems to dominate another or become obtrusive. Some of this can probably be chalked up to the amazing inertness of Wilson cabinets. Yes, when really pushed on rap music it was possible to feel some vibration, but it wasn't as though the speaker were trembling. And the port would expel puffs of air that you could feel with your hand, but there was no auditory evidence of chuffing, which is pretty unusual in my experience. The MAXX's sense of command also may explain its notably pristine micro-dynamics.

TAS editor Neil Gader perceptively noted that the MAXX is so precise it appears to put a kind of miniature halo around each note.

Though the speaker is notably smoother than the MAXX 2 in the treble region, it is a tad drier in the mid-to-treble region than some other distinguished competitors such as the JM Lab. Here Neil complained that he felt that cymbals were consistently located too high, perhaps because of the driver configuration. For me, however, this wasn't an issue. More generally, on the spectrum between lush and analytical,

### SPECS & PRICING

#### Wilson Audio Specialties MAXX 3 Loudspeaker

**Drivers:** 11" and 13" woofers, 6" midrange, 1" inverted dome tweeter

**Frequency response:** 19.5Hz-22.5 kHz

**Impedance:** 4 ohms

**Sensitivity:** 91dB

**Dimensions:** 68" x 16" x 24"

**Weight:** 450 lbs./speaker

#### U.S.

**Price:** \$68,000/pr

#### WILSON AUDIO SPECIALTIES

2233 Mountain Vista Ln,  
Provo, Utah 84606  
(801) 377-2233  
wilsonaudio.com

#### U.K.

**Price:** On agreement

#### ABSOLUTE SOUNDS

58 Durham Road,  
London, SW20 0TW  
+44 (0)20 8971 3909  
absolutesounds.com

CLICK HERE TO COMMENT IN THE FORUM AT [AVGUIDE.COM](#)

[www.theabsolutesound.com](http://www.theabsolutesound.com)

## EQUIPMENT REVIEW - Wilson Audio Specialties MAXX 3 Loudspeaker

the MAXX does lean toward the latter—a quality that, I’m convinced, helps create a tremendous percussive effect on piano recordings. What’s more, the Wilson opens up the recording studio to a degree I’ve never heard before—you’ll hear the drummer to the far left, stuck in his booth, while the piano plays centerstage. With choirs, each voice is almost distinctly identifiable, such is the accuracy of the MAXX. But no one will mistake it for a forgiving loudspeaker.

If I had my druthers, I’d flesh out the mids and highs just a tad. The slight leanness that I heard on some recordings may be a function of the resistors that Wilson uses to prevent its drivers from being blown out by excessive current or a crossover point. Or it might just be that the inverted titanium dome tweeter is the culprit. Ultimately, I felt that the Wilsons sounded their best with the tubed Wotan amplifiers. But make no mistake: The neutrality of the MAXX is what Wilson is striving for—a conscious design decision, I suspect, not to sugarcoat the sound but to allow dreadful recordings to remain just that.

It’s also the case that the MAXX has a highly evolved passive crossover network of capacitors and inductors, which have their pluses and minuses. (I’ve found my Magnepan 20.1 to pass the most information when run actively and using the crossover’s volume controls, which allows me to dispense with a preamplifier.) But running the MAXX in an active configuration would require several amplifiers and is probably a nonstarter as far as the factory is concerned. As Paul Seydor has observed in his thorough review of the Wilson Duette [Issue 176], an outboard crossover offers the chance to experiment with equalization to compensate for room effects. But this is an audio

arena that many manufacturers are loath to enter as it presents a new set of difficulties. When I made bold to mention active crossovers to Wilson himself, he simply raised his eyebrows. Forbidden fruit.

But these are nits I’m picking. Now that I’ve picked them, it’s time to assay the more forbidding question of whether the MAXX matches up to the Alexandria. Let’s say it covers a good deal of the distance, but doesn’t quite get to the finish line. The blunt fact is that the Alexandria is in its own stratosphere. There are several areas in which the Alexandria surpasses the MAXX.

First, the Alexandria has an array of dynamic gradations that the MAXX does not possess. The Alexandria has an amazing ability to ramp up from *pianissimo* to *forte*, then double *forte*, then triple *forte* in the space of a few seconds. It simply seems to possess no dynamic boundaries. Then there’s the issue of bass. For all its precision and power, the MAXX does not have the extension of the Alexandria. Finally, the Alexandria, to my little ears, has a more expansive midrange.

None of this should come as a surprise. If you have the passion, the space, and the green stuff, the Alexandria will be the ticket, should you covet a Wilson. But for almost another \$90,000, this verdict shouldn’t come as a surprise. The startling thing, I would say, isn’t where the MAXX falls short but how close it really does come to the Alexandria. The truth is that the Wilson MAXX 3 is superior, overall, to the original Alexandria. It represents a laudable effort to adapt the advances in the new Alexandria to improve the MAXX line. This isn’t trickle-down technology, but a cascading waterfall of improvements.

I can’t resist ending as I began with an

anecdote: When the delivery man from a shipping company caught a glimpse of the Wilson MAXX 3 loudspeaker through the door leading to my garage, he asked, “Remember the movie *The Italian Job*?” In it, a gang of thieves fantasizes about how they would like to spend their ill-gotten gold bullion; Left Ear indicates that he covets a villa in Spain that boasts a special room just for his shoes, while Lyle makes it clear that he pines for a cutting-edge stereo system with some rather unique abilities. As the shipper put it, “Can those speakers blow a woman’s clothes off?” Well, I couldn’t honestly answer that query affirmatively. But I can say that there doesn’t seem to be much else that the stupendous MAXX 3 is incapable of accomplishing. An aristocrat among loudspeakers, it offers the promise of a lifetime of enjoyment.

But it won’t, of course, come cheap. As Count Basie says on one of his recordings, “One more time, once more,” by which I wish to plead indulgence for what is truly the final anecdote: When my father, who has a modest system, listened to a classical cut on the MAXX 3, he quietly asked after it ended, “How much do these speakers cost?” I answered, “\$68,000.” Without missing a beat, he responded, “I guess that’s what it takes to get this kind of sound.”

Yes, it does. *tas*