GREEN MOUNTAIN AUDIO

time-coherent speakers designed by advanced physics

Eos
Ownership Guide

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GreenMountainAudio.com

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Receiving and Unpacking

Inspect Your Speakers

Check for shipping damage as you unpack the speakers. Look and listen for any rattles, cracks, and chips. If damage is discovered, immediately contact either your Retailer or GMA. We will manage the process for any damage claim.

3 easy steps

1. You will receive one shipping carton on a wood pallet. Inspect the carton for signs of impact damage and punctures. If none are present, cut the black banding and open the carton.

2. Remove the two black EarStick sections and then the two top sections of gray packing foam. Remove the four blocks of gray foam next to the tweeters.

3. Tilt each speaker to the side to reach beneath and lift it. **Do not push on the woofer or tweeter grilles.** Leave the foam bases in the carton.

Connecting and Conditioning

1. Set each speaker onto a sturdy surface. We recommend 24" (60cm) speaker stands from www.skylanstands.com. Small felt protective disks are included if the speakers are to reside on a bookshelf or sideboard.

2. Connect your wires to the positive (+) and negative (-) terminals of these 4 Ohm speakers. Use a 7/16" (11mm) nut driver to tighten the binding posts onto your speaker-wire's spade lugs or onto its bare wires (there are holes for bare wire). 'Finger-tight' is not good enough. We do not recommend using banana plugs -- they do not make the best connection.

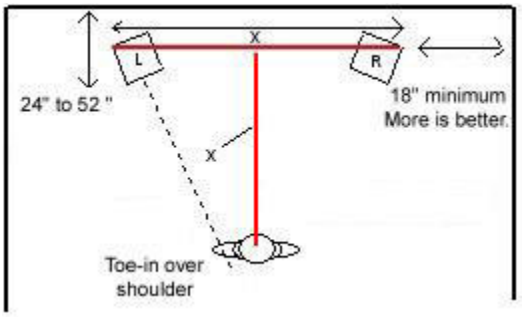
3. Determine if you want to continue to set-up the speakers -- and condition them over time in their final positions -- or condition them over the next couple of weeks before continuing with setup. Whatever your decision, fully condition the drivers before fine-tuning the speakers' positions. The speakers need 200 hours of conditioning to loosen up the drivers. Although they will sound fabulous right out-of-the-box, you will hear improved sound, even at very soft volumes, after conditioning. The bass will most especially sound better. Over time, music will become more graceful and even less-mechanical sounding.

3a. Play music at moderately-loud levels (30 Watts) and above 50 Watts as often and as much as possible. Music chosen should span a wide range of tones and dynamic contrasts. As a guide, at 30 Watts you will have to raise your voice to speak to someone, without having to yell or shout. Remember to slowly increase the volume. The woofer needs music with strong bass; the tweeter requires piano and saxophone. Consider playing a variety of rock, reggae, country, pop, jazz, and R&B.

3b. If loudness during the break-in process is an issue, consider wiring the speakers 'out-of-phase,' also known as inverting one speaker's polarity. Determine which setting on your amplifier's volume creates the moderately-loud volume required for successful conditioning. Mark that position of the volume knob with a piece of tape now. Then turn the speakers face-to-face, not quite touching each other (they may be set on the floor). With the amplifier off, switch the speaker wires on the back of one of the speakers (connect the positive wire to the negative terminal, and the negative wire to the positive terminal). This 'inverted polarity' will cause the speakers to cancel much of their sonic output. Set the amplifier's control knob to that moderately-loud setting that was marked with tape. Play the speakers for 200 hours.

Note: Speakers have been designed for grilles to be left in place.

Positioning and Adjusting



We developed the 'Equal-Legged T' from years of experiments in rooms from 10- to 100' wide. Since visual acuity for the fixed eye "falls off" at the 53-degree span, we believe a link exists between the point at which our peripheral vision "falls off" and our keenest sense of hearing begins. This layout will allow images to develop outside of the speakers' boundaries, if such information is in the recording.

Separate the outboard rear corners of the speakers by a distance, "X." Your chair will be the same distance "X" from the mid-point of that line between the speakers. On your left, the dotted line indicates how the speaker's sound axis must be directed over your shoulder, not into your ear. You will see approximately 1" of the enclosures' sides when sitting in a listening chair.

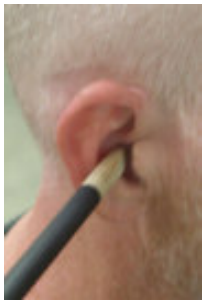
If the loudness of any center reflections is a factor -- for example, from the television, an entertainment center, or bare walls that are close to and in between the speakers -- do not toe-in the speakers as much. In some rooms, it is better to sit back a little farther than the 'Equal-Legged T' configuration, thus making the triangle narrower. Your ears will tell you what is best.

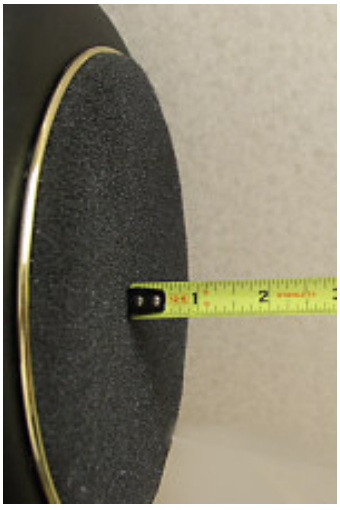
Adjust the tweeter's position by loosening the large thumbnut under the module. Upon sliding the tweeter backwards, the time-coherent sound axis is being directed upwards. When the tweeter is moved forward, that axis tilts downward. See *Using the EarSticks* to set the tweeter's final position for where you spend most of your time. Adjust it for the best seat in the middle, or for guests who are far from the speakers. In this latter case, the sound is certainly better for your entire room, but what is remarkable is how the music can then be played very softly and yet have a much greater effect.

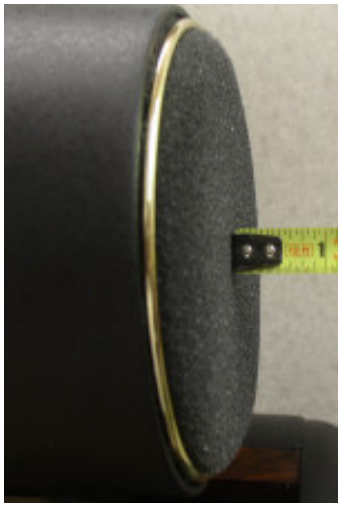
Speaker care

Liberally spray the speakers using only the aerosol-version of Lemon Pledge, made by Johnson Wax. Rub with a paper towel or lint-free cloth. Polish using a second clean and dry paper towel or cloth. Gently vacuum the grilles. If needed, replacement grilles are available at no charge (pay only for shipping and handling). The brass trim rings are secured by friction.

Using the EarSticks







Needed: Camera tripod, Tape measure, Helper, Paper, Pen or pencil

1. Insert the long rod of the EarStick to the mounting block, and then attach the extension block and the short rod, as shown. With the EarStick attached to the tripod, sit with your ear in its relaxed, natural location. Place the short end of the rod so that it almost touches that ear. Slide away from it and stand up.

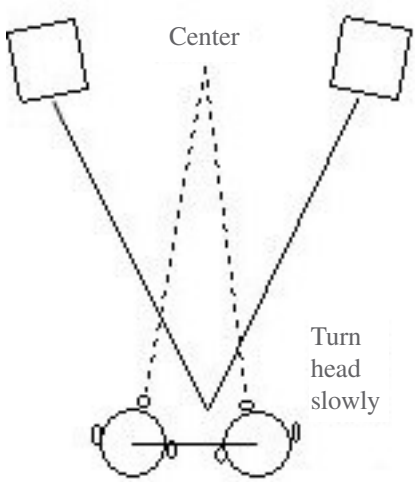
2. Ask a helper to hold a tape measure at the end of the short stick (where you were just sitting) as you walk across to the speaker with the hook-end of the tape. Place it at center of the woofer grille. Have the helper tightly pull the tape to eliminate any slack. The helper should read the measurement (by holding the tape underneath the tip of the stick and leaning over it to look straight down onto the tape) and write it down.

3. The helper will then add 3" (7.5cm) to the woofer distance and locate this new number on the tape while you hold the hook-end to the tweeter's grille and slide the tweeter to match this new number.

4. With the hook-end of the tape against the thumb-nut, measure and note the amount of Cocobolo trim exposed in front of it. Set the other tweeter to match this number.

5. Measure 15' (5m) away and add the tweeter's 3" (7.5cm) offset to provide better sound at lower volumes while entertaining. Record these numbers for reference.

Fine-tuning the Sound



1. Setting the Center Image. With the speakers an equal distance from the wall behind, locate your chair on the exact center line between them. Houses aren't perfectly square…use a tape measure if needed. Sit in your center seat and listen to the center image of a not-too-complex recording. Close your eyes and locate its origin. Once you can literally point to the center image, check BY EAR for equal acoustic distance to the speakers. Move your shoulders left and right -- as if you were sliding on the sofa -- while your nose is pointed to the geometric center. Close your eyes (no eyeglasses), and slowly move sideways while rotating your head. The center point of your head will not move much at all. The correct angle has the most 'depth of center image.' If you are looking at the right speaker, rotate your chair very slightly to the left.

2. Fine-tuning the Tweeter's Position. This stage of fine-tuning will depend upon your ears and can only occur once the speakers are completely at home in your environment and your ears have been re-trained to our acoustically-correct sound quality. Those driver distances -- as determined by the EarSticks -- may vary a little for your particular system. We think it is because of the phase shift and resonances in your cables, CD player, preamplifier, and amplifier, in that order. Check for the 'best' tweeter position by either slumping down a little or sitting up higher in your chair. These changes in posture will help you listen for the desired result of a pinpoint image, located at the height of the woofer's center. You will also hear the most 'depth' to the image and the clearest enuciation of words. You do not want to hear the treble from the tweeter's height. While all those are 'audiophile' attributes, this step is really about you hearing the most muscianship.

Speakers will sound best when...

You are not wearing eyeglasses; you are seated in a low-backed sofa or chair; there is carpet on the floor; there is no coffee table or ottoman between you and the speakers; there is no TV screen or equipment rack between them (unless far behind and/or speakers are more than 15' {5m} apart); the control center and CD/DVD player are always on; a power amplifier is warmed-up for a half-hour; and all cable connections are regularly cleaned with isopropyl alcohol.

Setting up a Home Theater

A believable surround-sound experience means that the five speakers around you blend to create a realistic acoustic world. Studios place surround monitors 90 to 120 degrees to the left and right -- at ear level or slightly above -- but then, the studios have no walls near their monitors. You do, and they add reflections. That same span allows your sidewall reflections to create 'holes in the side images,' just as moving the front speakers too far apart creates a hole in the middle. For a smooth blend between the surround and front channels, we suggest you try the following technique for identifying and closing up any holes in your room's sonic image. This setup will close any gaps to create a continuous, sonic arc that encompasses your visual field.

1. Ordinarily, this step would be the point at which you would want to position your speakers using our 'Equal-Legged T.' For a home theater, a strong center reflection may be a factor -- for example, the television. You would then not toe-in the speakers as much, or widen their separation (to get them away from the television screen). You would also then sit a little farther away to preserve your same triangle. The 'Equal-Legged T' layout is as wide apart as you would ever want to place the speakers.

2. Use a music DVD, such as the Eagles' Hell Freezes Over (in DTS), as it is panned evenly to all five speakers, and try the surround speakers along the side walls, where they are slightly in front of you by 5-10 degrees. Place them below your ear height, tilted up. When the surround speakers are properly placed, your room will disappear in every direction because you will be hearing the sounds from the recording instead of the reflections from side walls.

3. When all five speakers have been placed, including the center channel, it is important to make them all the same 'acoustic distance' from your ears. If the center speaker must be closer, then time-delay it to 'move it back' (one millisecond per 13.5" {34cm} of distance). Studios place their surround monitors at the same distance from the ear as the left, center, and right, and thus do not add any time delay to any particular speaker. If your speakers must also be closer to your ears than the distance to your main left and right speakers, then time-delay them to move them 'back' to the same 'listening distance' as to the front left and right speakers. On top of that delay, add another 5msec delay to the surround speakers for reproducing the older Dolby Pro-Logic and Dolby Surround movies. Some control centers automatically add this extra delay when decoding those movies.

Any of our floorstanding and bookshelf/compact speakers can be used in a surround-sound application. For the center channel, one would use Aperture. If you are using our Hammer Lite subwoofer, try to assign it just the full range of the Low Frequency Effects channel (LFE), or the '0.1' channel. For bass augmentation of Eos for two-channel music, the preferred crossover slopes are 24dB per octave for the Hammer Lite, and 12dB per octave for the Eos at a crossover point of 80Hz. These are also the usual settings for a 'THX' crossover circuit found in some control centers.

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Happy Ears for Life™

RETAIN YOUR RECEIPT AS PROOF OF PURCHASE.

Place / Date of Purchase

Serial Numbers

Warranty assistance

Contact your Retailer, or GMA:
help AT GreenMountainAudio.com
(719) 636-2500

Secondary owners

As of July 1, 2007, this warranty is unavailable for speakers purchased on the secondary market unless they are re-certified by either GMA Factory Service or a GMA Authorized Service Center. Contact us for details.

We are passionate about our speakers and warrant their workmanship and sonic performance for life to the original owner only after we receive the warranty registration card and a copy of the original bill of sale. The warranty registration card and receipt copy must be mailed to GMA within 30 days of the original purchase. What this means: 1. You will pay nothing for labor and parts for defects in our workmanship. 2. Perfect speakers are shipped, ready to perform to their specifications for life.

The warranty described on this page shall be in lieu of any other warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. There are no warranties which exceed beyond those described in this document.

Because of factors beyond our control, our warranty only covers use for and in a home environment. It does not cover damage that occurs in any shipment; failures caused by accident, misuse, abuse, neglect, mishandling, misapplication, alteration, or modification; commercial use or service by anyone other than a GMA Authorized Service Center or GMA Factory Service; or any damage to either the speakers or custom packing and shipping materials that is attributable to Mother Nature, either to the speakers or to the custom packing and shipping materials. We determine and manage these incidents on a case-by-case basis. We reserve the right to either replace or upgrade the affected speaker(s) at our discretion. Serial Number labels that are defaced, altered or removed will automatically void this warranty, as does any disassembly or modification of the speakers.

If you choose not to retain and store the original custom shipping materials and your speakers need service under this warranty, we will sell and ship to you any missing custom packing materials so that you can re-pack and ship the speakers to us. Depending upon the model, the materials may cost up to several hundred dollars to replace. Only speakers shipped in original custom packing materials and according to delivery parameters will be serviced. The customer is responsible for all shipping costs to and from GMA. You are responsible for filing claims for shipping damages during transit to and from GMA.

There are no implied warranties and there are no express warranties except as described. Neither Green Mountain Audio nor any of its successors shall not be liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty, which is valid only for products sold in North America. Speakers purchased for use outside North America are warranted for five years or as determined by GMA Authorized Agents.

Return this Warranty Registration within 30 days of purchase

To receive the Happy Ears for Life™ send this form and a copy of the bill of sale within 30 days of purchase to:
GMA-Warranty, 310 South 25th Street, Colorado Springs, CO 80904-3007

REQUIRED FOR PRODUCT REGISTRATION

The information below will be treated according to our strict Privacy Policy. We will never sell your name or compile a mailing list for sale.

1. Speaker Serial Numbers:

2. Place of purchase:

3. Name:

4. Address:

5. City:

6. State/Province:

7. Zip/Postal Code:

8. Country:

9. Telephone (area code first):

10. Primary email:

11. May we send occasional email? Y N

12. Age group: 18-25 26-34 35-44 45-54 55+

13. Gender: M F

14. Highest education: High school Some college College/university degree Master's degree Ph.D. Other

VOLUNTARY

Answer as many of the following questions as you wish. Use additional paper if needed. All information will be treated according to our strict Privacy Policy.

1. Previously owned GMA speakers? Y N

2. Reason(s) for choosing GMA speakers?

3. Other brand(s)/models that were considered?

4. Brand(s) the new GMAspeakers will replace?

5. Intended use for the new GMAspeakers (two-channel, multi-channel home theater, TV, etc.)?

6. One aspect you would improve about GMA speakers:

7. Married? Single?

7a. If married, was "wife acceptance factor" an issue? Y N

8. Own home? Rent?

9. Room size where the speakers will be used?

10. First learned of GMA (friend, audio forums, Google, etc.)?

11. List five favorite websites, newspapers, TV and radio stations:

12. List upstream system components:

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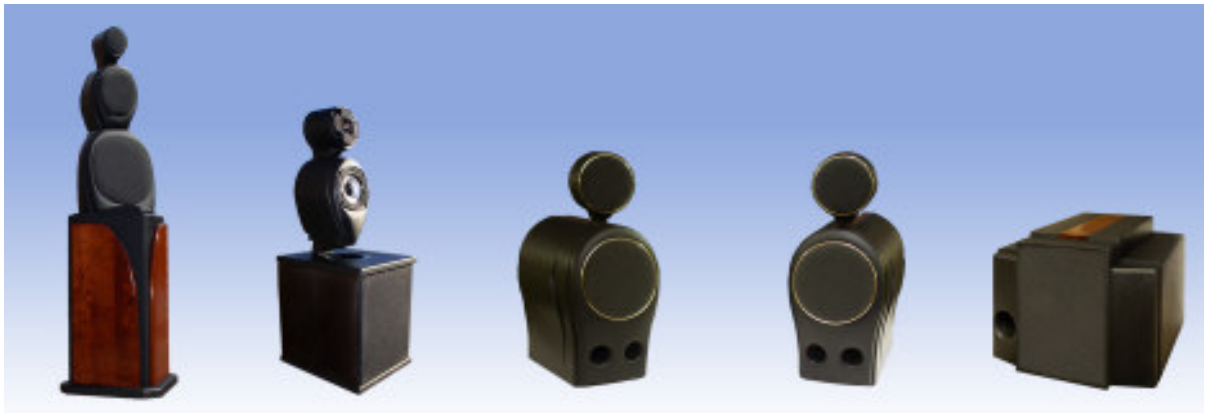
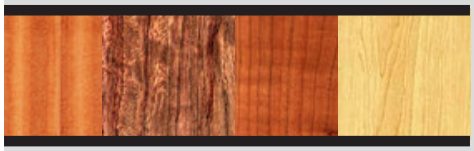
Specifications



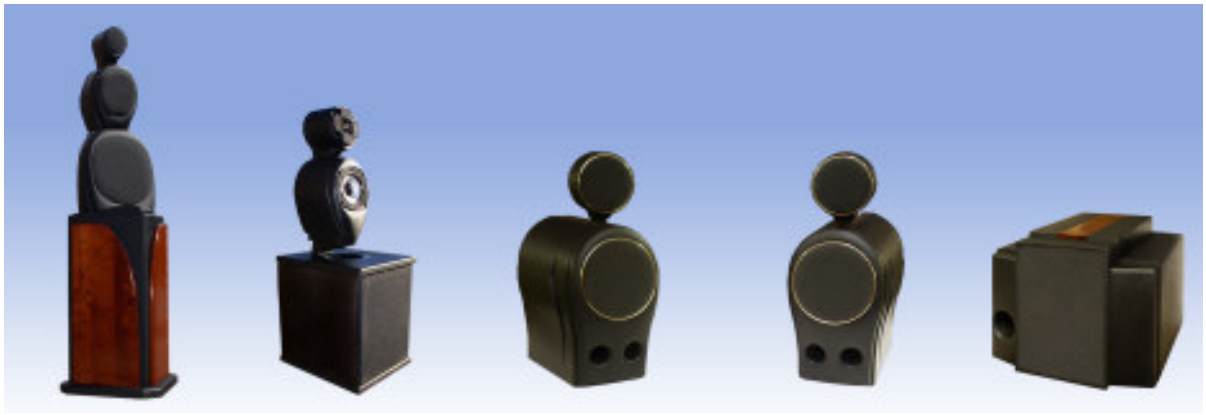
	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Application(s)	Time-coherent 3-way floorstander for use in all but the largest of rooms.	Time-coherent 3-way sounds best on the floor, a credenza, or bookshelf.	Time-coherent 2-way sounds best on stands or a bookshelf.		Time-coherent 2-way sounds best in tight places (bookshelf or center channel).
User adjustability (Soundfield Convergence™)	Midrange and tweeter adjust front-to-rear independently and together as one unit.	Midrange and tweeter adjust front-to-rear independently and together as one unit.	Tweeter adjusts front-to-rear in its channel via easy-to-use thumb-nut.		Tweeter adjusts front-to-rear under removable top cover.
Room size	Medium to large, 200-1,000sf	Small to medium, 150-600sf	Small to medium, 100-600sf		Small to medium, 100-600sf
Power (amplifier's 8 ohm rating)	7 to 170 Watts	7 to 170 Watts	7 to 150 Watts		7 to 170 Watts
Response +/- 0.75dB - 3dB frequencies	45Hz to 20kHz 40Hz, 22kHz in room	55Hz to 20kHz 45Hz, 24kHz in room	55Hz to 20kHz 47Hz, 26kHz in room		55Hz to 20kHz 47Hz, 23kHz in room
Size and **Weight**	51"H; 13.5"Square at base. 100lbs. (45kg) each; may vary depending on side panels chosen.	30.625"H; 10.5"W; 12.75"D. 45lbs. (20kg) each; may vary depending on side panels chosen.	19.875"H; 8.8"W 12.625"D. For speaker stand, base: 7"W, 10.875"D. 45lbs. (20.5kg) each.		10.875"H; 13.875"W 13.5"D. 29lbs. (13.2kg) each.
Finish Choices	Solid wood side panels of (from left) African Ribbon Mahogany, Bubinga, Cherry, or Maple. Other wood, granite or stone installed for extra charge.	Side panels in black leather, standard; choose other color or send 4 (12x12") stone or marble tiles for us to install.	Cocobolo trims the top channel. No other finish choices available.		Cherry trims the top of the speaker. No other finish choices available.



Notes

- All speakers are clad in black Texture-Kote™ for the look and feel of pin-grained leather.
- Original owner receives Happy Ears for Life™ warranty after forwarding Product Registration and copy of original bill of sale (within North America). Warranty may vary in other countries; check with GMA import agents for details.

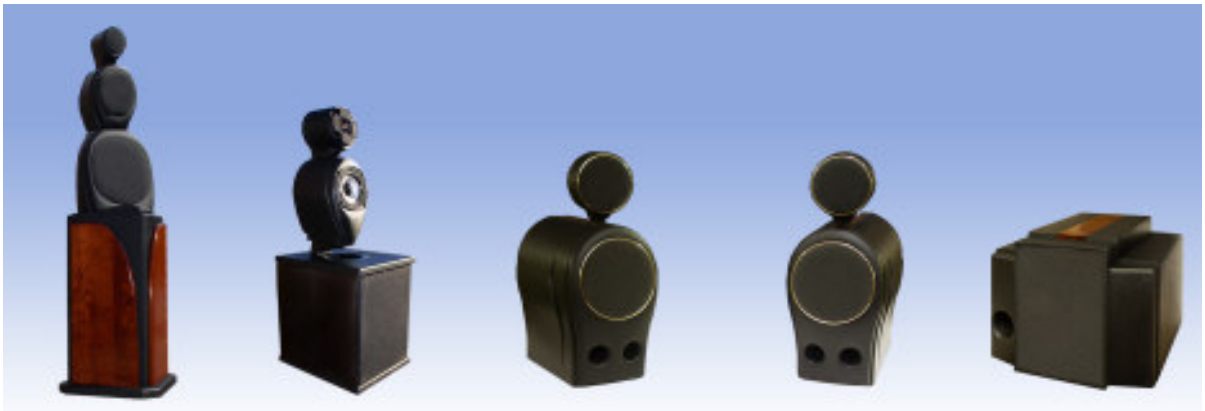
Specifications



	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Woofer diameter	8" (21cm)	6" (17cm)	6" (17cm)		6" (17cm)
Woofer construction	Low-mass Nomex fiber rigid cone. Very low resonant frequency from highly-compliant ultra-linear suspension of synthetic rubber and fully-vented flat spider; high-power, 4-layer 1.25" (32mm) voice coil. Alloy chassis; 22.5oz. (640g) magnet; 0.35" (9mm) p-p linear excursion; 30.6g moving mass. Shorting rings around voice coil for low distortion.	Single-pressed paper/carbon fiber cone with ultra-linear suspension, vented under-hung 2-layer, 1" (25mm) voice coil wound on Kapton former. Mechanically damped chassis. Shielded, radially-magnetized, neodymium-iron-boron magnet structure with heat dissipating black coating; 0.32" (8mm) p-p linear excursion; 9.85g moving mass.	Single-pressed paper/carbon fiber cone with ultra-linear suspension, vented under-hung 2-layer, 1" (25mm) voice coil wound on Kapton former. Mechanically damped chassis. Shielded, radially-magnetized, neodymium-iron-boron magnet structure with heat dissipating black coating; 0.32" (8mm) p-p linear excursion; 9.85g moving mass.		Single-pressed paper/carbon fiber cone with ultra-linear suspension, vented under-hung 2-layer, 1" (25mm) voice coil wound on Kapton former. Mechanically damped chassis. Shielded, radially-magnetized, neodymium-iron-boron magnet structure with heat dissipating black coating; 0.32" (8mm) p-p linear excursion; 9.85g moving mass.

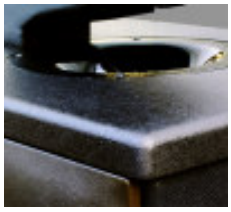
Speakers have been designed for grilles to be left in place.

Specifications



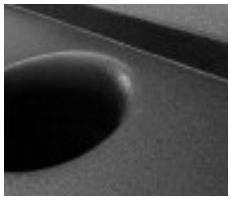
	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Woofer cabinet	Woofer mounted in Q-Stone™ chamber atop slender wood column, twisted 45 degrees to reduce reflections. Internal Golden-Ratio Baffle™, 4th-order Butterworth ported with nearly zero box loss.	Woofer mounted in 2-layer wood cabinet of 13-layer Baltic Birch plywood and MDF. 4th-order Butterworth ported.	Woofer mounted in Q-Stone™ cabinet. 4th-order Butterworth ported with nearly zero box loss.		Woofer mounted on Q-Stone™ faceplate attached to cabinet of multiple-layer MDF with Golden-Ratio Baffle™, 4th-order Butterworth ported. Attachedvibration-absorbing rubber feet.
Woofer Port	3" (7.5cm) aerodynamic port on rear side tuned to 42Hz.	3" (7.5cm) aerodynamic top port tuned to 54Hz.	Twin 1.625" (41mm) aerodynamic ports tuned to 54Hz merge to become one port inside (Bi-Port™).		2" (50mm) aerodynamic port on front tuned to 54Hz.

Its angled location on each speaker prevents the Calypso's port from resonating with the space to the wall behind. Working with the internal Golden-Ratio Baffle™, the port transmits pressures most efficiently. No tones other than the lowest bass will emerge. Mirror-imaging allows proper operation in all rooms.



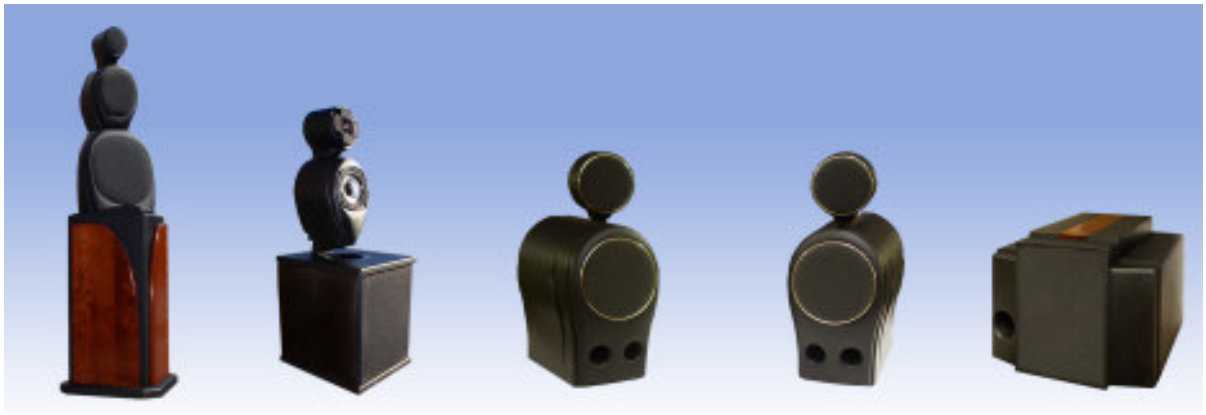
The Pico Executive's port is large for its woofer size. Its top location keeps it close to the floor while allowing bass pressures to fully expand into the room. All this produces maximum bass from a small enclosure.

The Bi-Port ™ intake opening more efficiently transmits bass pressures from its ideal placement inside the enclosure. It also optimizes delivery of bass pressures into the room with its larger-than-usual twin openings on the outside.



The Aperture's port is tuned to maximize low bass from a shelf-mount position. It is angled to transmit bass pressures most efficiently from inside the cabinet.

Specifications

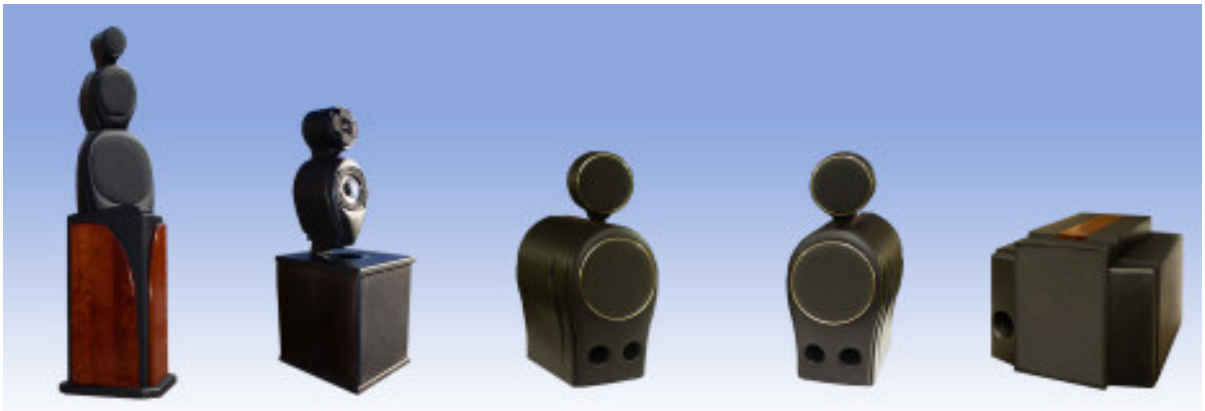


	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Midrange diameter	4" (10cm)	5.25" (13cm)	N/A	N/A	N/A
Midrange construction	Low-mass rigid cone of Kevlar skins laminated over Nomex honeycomb core. 6.2g moving mass. Very low resonant frequency from high-compliance suspension. Coated foam surround and large spider. 1" (25mm) hex-wound copper voice coil on Kapton former, vented at rear. Carbon fiber reinforced ABS non-magnetic chassis; 20oz. (567g) magnet. 0.25" (6mm) p-p linear excursion. Response -3dB at 350Hz and 3,150Hz.	Ultra-low-mass rigid cone of graphite and wood fiber. 3.13g moving mass. Low resonant frequency from high-compliance suspension. Coated multi-fold cloth surround and large spider. 1" (25mm) voice coil, alloy phase plug. Alloy chassis; 20oz. magnet. 0.25" (6mm) p-p linear excursion. Response -3dB at 350Hz and 3,150Hz.			
Midrange enclosure	Resistively vented in alliptic, non-diffractive Q-Stone™ enclosure containing damped acoustic line.	Resistively vented in alliptic, non-diffractive Q-Stone™ enclosure containing damped acoustic line.			

Speakers have been designed for grilles to be left in place.

A resistive vent loads the rear of both Calypso and Pico Executive midrange cones, supressing each one's natural low-frequency resonance. The Calypso's midrange enclosure adds a second-stage muffler over the rear of this vent.

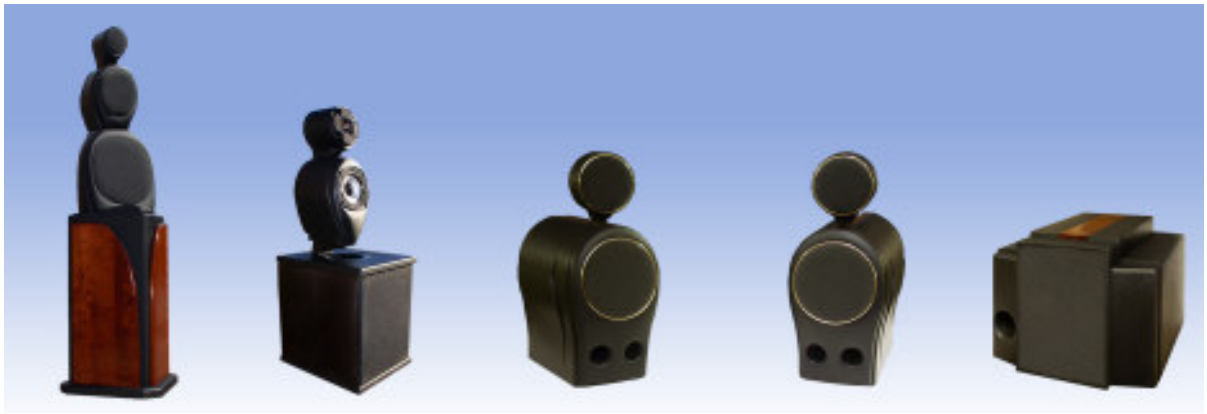
Specifications



	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Tweeter diameter	1.1" (28mm)	1" (25mm)	1.06" (27mm)		1.1" (28mm)
Tweeter construction	Lightweight linen dome, hand-coated with polymer. High-compliance, inverse-roll contiguous suspension. Hex-wound copper-clad aluminum voice coil wire, Ferrofluid cooled, high-strength aluminum alloy former, vented into large, damped rear chamber. 0.46g moving mass. Double neodymium magnets, fully shielded.	Lightweight, treated-fabric dome. High-compliance polymer suspension. Ferrofluid cooled voice coil with highly-flexible lead-in wires. Fully vented into large, damped alloy rear chamber. 0.35g moving mass. Six radially-magnetized neodymium magnets.	Lightweight, impregnated fabric dome with high-compliance polymer suspension. Ferrofluid-cooled voice coil with highly-flexible lead-in wires. Fully vented into large, damped rear chamber, with extruded heat sinks. 0.31g moving mass. Neodymium ring magnet.		Lightweight linen dome, hand-coated with polymer. High-compliance, inverse-roll contiguous suspension. Hex-wound copper-clad aluminum voice coil wire, Ferrofluid cooled, high-strength aluminum alloy former, vented into large, damped rear chamber. 0.46g moving mass. Double neodymium magnets, fully shielded.
Tweeter enclosure	In alliptic, non-defractive, Q-Stone™ enclosure with integrated tweeter chassis damping.	In non-defractive, Q-Stone™ enclosure with integrated tweeter chassis damping.	In non-defractive, Q-Stone™ enclosure with integrated tweeter chassis damping.		In Q-Stone™ enclosure, surrounded by inverse acoustic-foam and -felt horn. Integrated tweeter chassis damping.

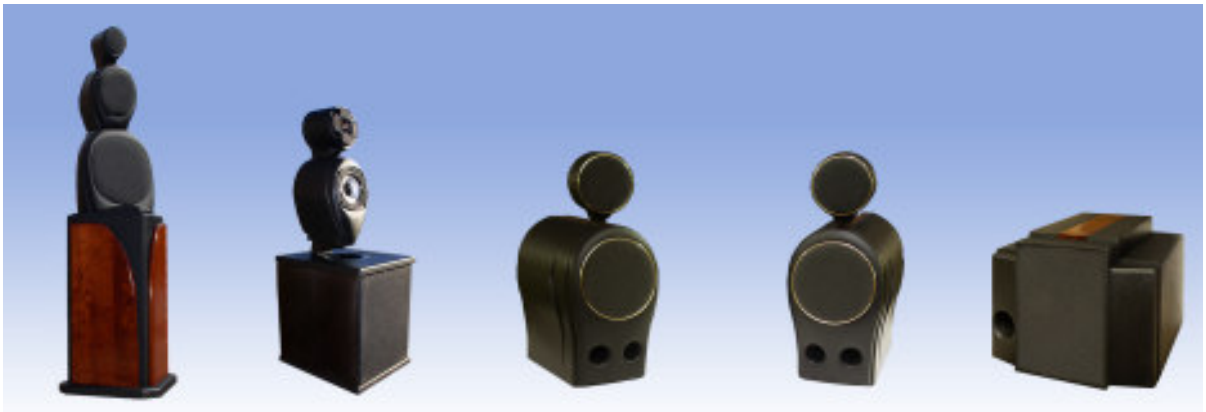
Speakers have been designed for grilles to be left in place.

Specifications



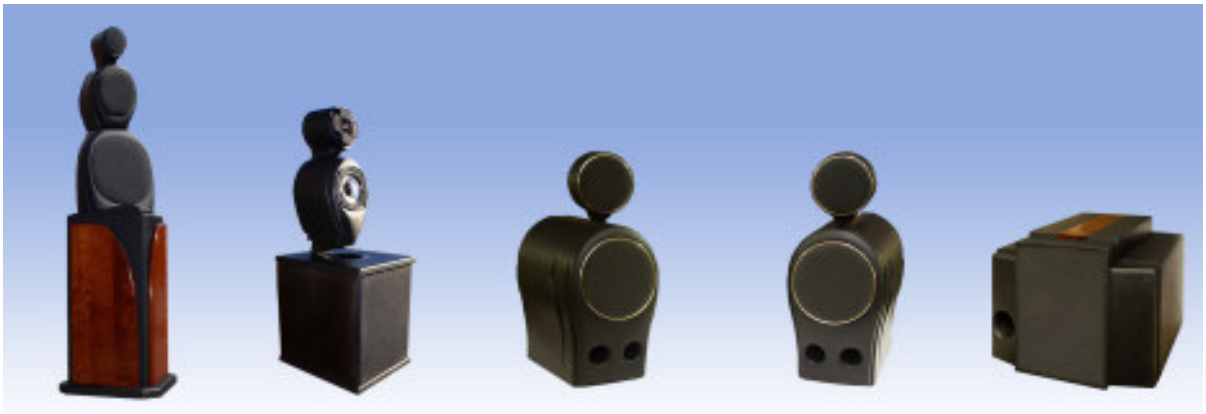
	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Wiring	**Woofer, Midrange, Tweeter** Exclusive High Definition Copper-Matrix™ wire by Marigo Audio: 18-gauge, 500+ strand Litz wires of six-nines purity, single crystal, oxygen-free copper with proprietary winding geometry; double cryo-genically-treated, organic dielectric insulation; proprietary internal vib-ration damping system.	**Woofer, Midrange, Tweeter** Exclusive High Definition Copper-Matrix™ wire by Marigo Audio: 18-gauge, 500+ strand Litz wires of six-nines purity, single crystal, oxygen-free copper with proprietary winding geometry; double cryo-genically-treated, organic dielectric insulation; proprietary internal vib-ration damping system.	**Woofer, Tweeter** Exclusive High Definition Copper-Matrix™ wire by Marigo Audio: 18-gauge, 500+ strand Litz wires of six-nines purity, single crystal, oxygen-free copper with proprietary winding geometry; double cryo-genically-treated, organic dielectric insulation; proprietary internal vib-ration damping system.	**Woofer** Double run of 14-gauge, heavily silver-plated and polished oxygen-free copper strands cryogenically treated, Teflon insulated; by Audio Magic. **Tweeter** 22-gauge fine-stranded pure oxygen-free copper, cryogenically treated, polyethylene insulated; supplied by Jena Labs.	**Woofer, Tweeter** Exclusive High Definition Copper-Matrix™ wire by Marigo Audio: 18-gauge, 500+ strand Litz wires of six-nines purity, single crystal, oxygen-free copper with proprietary winding geometry; double cryo-genically-treated, organic dielectric insulation; proprietary internal vib-ration damping system.
Crossover	Balanced-Phase™ first-order circuit.	Balanced-Phase™ first-order circuit.	Balanced-Phase™ first-order circuit.		Balanced-Phase™ first-order circuit.
Zobel circuit's capacitor					
Woofer	Ultra-premium quality.	Ultra-premium quality.	Ultra-premium quality.	Premium quality.	Ultra-premium quality.
Midrange	Ultra-premium quality.	Ultra-premium quality.	Ultra-premium quality.		
Tweeter	Ultra-premium quality.	Ultra-premium quality.			Ultra-premium quality.
Crossover principal capacitor					
Woofer	N/A	N/A	N/A		N/A
Midrange	Ultra-premium quality.	Ultra-premium quality.			
Tweeter	Ultra-premium quality.	Ultra-premium quality.	Ultra-premium quality.		Ultra-premium quality.
Crossover bypass capacitor					
Woofer	N/A	N/A	N/A		N/A
Midrange	Ultra-premium quality.	Ultra-premium quality.			
Tweeter	Ultra-premium quality.	Ultra-premium quality.	Ultra-premium quality.	N/A	Ultra-premium quality.
Binding posts	Pure oxygen-free copper, directly gold plated. Mounted on bottom.	Pure oxygen-free copper, directly gold plated. Mounted on back.	Pure oxygen-free copper, directly gold plated. Mounted on back.		Pure oxygen-free copper, directly gold plated. Mounted on back.

Specifications



	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Distortion (*I.M.D. is for any two frequencies separated by a 10:1 ratio.)	<0.5% harmonic 100Hz-12kHz, <1% intermodulation, both at 100dB at 1m*.	<0.5% harmonic 100Hz-12kHz, <1% intermodulation, both at 98dB at 1m*.	<0.5% harmonic 100Hz-12kHz, <1% intermodulation, both at 98dB at 1m*.		<0.5% harmonic 100Hz-12kHz, <1% intermodulation, both at 98dB at 1m*.
Phase Shift	+/- 3 degrees acoustically, from 220Hz to 8kHz. Does not vary with loudness.	+/- 2 degrees acoustically, from 220Hz to 8kHz. Does not vary with loudness.	+/- 2 degrees acoustically, from 200Hz to 8.5kHz. Does not vary with loudness.		+/- 2 degrees acoustically, from 200Hz to 8kHz. Does not vary with loudness.
Rise time	<10 microseconds, positive or negative input. Does not vary with loudness.	<10 microseconds, positive or negative input. Does not vary with loudness.	<10 microseconds, positive or negative input. Does not vary with loudness.		<10 microseconds, positive or negative input. Does not vary with loudness.
Polarity	Positive, over full bandwidth.	Positive, over full bandwidth.	Positive, over full bandwidth.		Positive, over full bandwidth.
Dispersion	Omni at 40Hz, smoothly decreasing to cardioid at 10kHz.	Omni at 45Hz, smoothly decreasing to cardioid at 10kHz.	Omni at 47Hz, smoothly decreasing to cardioid at 12kHz.		Omni at 47Hz, smoothly decreasing to cardioid at 10kHz.
Impedance	4.75 Ohms, +/- 0.75 Ohms 150Hz to 20kHz. Does not vary with loudness.	5.25 Ohms, +/- 0.75 Ohms 150Hz to 20kHz. Does not vary with loudness.	4.8 Ohms, +/- 0.75 Ohms 100Hz to 20kHz. Does not vary with loudness.		4.8 Ohms, +/- 0.75 Ohms 100Hz to 20kHz. Does not vary with loudness.
Sensitivity	88dB for 2.83V at 1m, at sea level. Dynamically linear within 0.5dB to 100dB.	90dB for 2.83V at 1m, at sea level. Dynamically linear within 0.5dB to 100dB.	90dB for 2.83V at 1m, at sea level. Dynamically linear within 0.5dB to 100dB.		90dB for 2.83V at 1m, at sea level. Dynamically linear within 0.5dB to 100dB.
Max SPL	105dB peak at 3m from a stereo pair, first-arrival (without room gain).	105dB peak at 3m from stereo pair, first-arrival (without room gain).	105dB peak at 3m from stereo pair, first-arrival (without room gain).		105dB peak at 3m from stereo pair, first-arrival (without room gain).
Pair matching	Amplitude +/- 0.25dB; impedance +/- 0.15 Ohms, 160Hz-8kHz; crossover parts +/- .15%.	Amplitude +/- 0.25dB; impedance +/- 0.15 Ohms, 160Hz-8kHz; crossover parts +/- .15%.	Amplitude +/- 0.25dB; impedance +/- 0.15 Ohms, 160Hz-8kHz; crossover parts +/- .15%.		Amplitude +/- 0.25dB; impedance +/- 0.15 Ohms, 160Hz-8kHz; crossover parts +/- .15%.

Specifications



	Calypso HD	Pico Executive HD	Eos HD	Eos	Aperture HD
Accessories	EarSticks; nut driver; T-handle Allen wrench; adjustable cone feet with hardwood floor protectors, Ownership Guide.	EarSticks; nut driver; T-handle Allen wrench; adjustable cone feet with hardwood floor protectors; brush for dusting tweeter and midrange drivers; bottle of leather polish, Ownership Guide.	EarSticks; stick-on felt disks to protect furniture and bookshelves, Ownership Guide.		EarSticks; Allen wrench, Ownership Guide.

Note

The Ownership Guide will lead the owner through the steps of Receiving and Unpacking, Connecting and Conditioning, Positioning and Adjusting, Using the EarSticks, Fine-tuning the Sound, and Setting up a Home Theater. It will also include a copy of these Specifications; our Happy Ears for Life™ warranty, and the Product Registration card.