

Cambridge Audio Aero 2 Speaker System

SOUND & VISION

By Mark Fleischmann • Posted: Apr 18, 2014



Aero 2 Speaker System

AT A GLANCE

Plus

- Flat BMR in lieu of tweeter
- Clear sonic window into the midrange
- Unusual dual-mono/bipole surrounds
- Affordable price

Minus

- Boxy vinyl-wrap enclosures

THE VERDICT

Cambridge Audio's Aero reinvents the two-way loudspeaker in midrange-friendly fashion with excellent performance and value.

What if you needed two throats to speak? Sounds a bit cumbersome, right? But that's how a two-way loudspeaker usually treats the human voice. Its drivers divide the midrange frequencies where the voice resides into two parts, sending higher frequencies to the tweeter and lower frequencies to the woofer. While the crossover varies from speaker to speaker, the frequencies that handle the voice usually get split right in the region where human ears are most sensitive to vocal timbre.

Of course, good speaker designers routinely surmount this obstacle to natural vocal sound, either by

★★★★★ 

Aero 2 Speaker System

Performance	★★★★★
Build Quality	★★★★☆
Value	★★★★★

★★★★★ 

Aero 9 Subwoofer

Performance	★★★★☆
Features	★★★★☆
Build Quality	★★★★☆
Value	★★★★☆

carefully tweaking their two-way designs or by going to three-way designs that dedicate a separate driver to midrange reproduction. But the three-way approach adds two more crossover sections, potentially leading to other troubled areas of reproduction.

The folks at Cambridge Audio have come up with a different workaround. The Aero 2 monitor still uses two drivers and a crossover. But there the resemblance to conventional two-way loudspeakers ends. Aero uses a different kind of driver array to avoid the unnatural division of the midrange frequencies, and it moves the crossover from the upper midrange (2 to 4 kilohertz in most speakers) to the midbass (250 hertz), well away from the presence region. The result is a provocative new speaker design that has a sound of its own and is remarkably good at vocal reproduction.

Go Flat, Young Man

The key to the Cambridge approach is a driver with a flat diaphragm called the BMR, or balanced mode radiator. In the Aero series, it's used in lieu of a tweeter. It also takes on part of the woofer's workload, making the woofer (to

use Cambridge terminology) a subwoofer. The system reviewed here also adds a standalone sub, so I'm going to use the term woofer to refer to the larger cone drivers in the five non-sub speakers.



The BMR diaphragm is a composite sandwich with paper skins covering a honeycomb paper core. The material was chosen for its high strength-to-weight ratio, not primarily for cost, and is used for all Aero drivers. The BMR handles both high and mid frequencies and uses a different kind of motion for each. Conventional drivers move like pistons, with the entire diaphragm moving back and forth in unison. Instead, a BMR driver creates controlled ripples in the diaphragm like a bunch of stones tossed into a pond, bending the diaphragm to generate high frequencies. In engineer speak (with a nod here to S&V audio tech editor Mark Peterson), the higher frequencies are effectively being produced with the diaphragm in a controlled version of what is often called "breakup mode." At lower frequencies, the BMR operates more like a piston, as conventional drivers do. Above a certain frequency, areas of the diaphragm move in different directions relative to one another, resulting in phase behavior that leads to a sonic character that many would describe as spacious.

Meet the Aeros:

The Aero 2, here serving the front left/right channels, has a 2-inch BMR and a 6.5-inch woofer in a ported enclosure. The Aero 5 horizontal center has the same-sized BMR and a pair of 5.25-inch woofers in a smaller, sealed enclosure. In the Aero 3 surround are two 4-inch



BMRs (and no other drivers) in what amounts to two fully sealed enclosures in the same cabinet. It can operate as either a bipole, for diffusive surround effects, or in what Cambridge describes as dual-mono mode for more localizable surround effects. The two sets of binding posts can also be connected in such a way as to discretely reproduce both side and back surround channels from a seven-channel AVR. All three models have nominal impedance vaguely stated as "8 Ohms compatible"—see our lab results for a realistic measurement. The Aero 2 and Aero 5 have rated sensitivity of 90 decibels; the Aero 3's is listed as 88 dB.

The Aero 9 sub uses a pair of 10-inch woofers, one active, one passive, backed with a 500-watt Class D amplifier. Cambridge refers to the passive radiator as an auxiliary bass radiator (ABR).

The Aero series also includes a floorstanding model



not reviewed here, the Aero 6 (\$1,099/pair), with a 2-inch BMR and dual 6.5-inch woofers. All Aero models come in rectangular-shaped enclosures except for the dual-baffle Aero 3 surround. All are vinyl-wrapped in faux walnut or black. At these prices, you're not getting wood veneer, but the walnut finish of our review samples was light and pleasant, not dark and dingy, and quite presentable.

Associated equipment included a Pioneer Elite VSX-53 A/V receiver, Oppo BDP-83SE universal disc player, Micro Seiki BL-21 turntable, Shure V15MxVR/N97XE cartridge, and Onix OA 21s integrated amp serving as phono preamp. All movie demos were Blu-ray Discs with DTS-HD Master Audio soundtracks.

Your first impression of the BMR in action may be misleading. It took about a dozen hours of play for these speakers to settle in, and the mutation over that period of time was more noticeable than I typically find with conventional drivers, with the top end steadily gaining in refinement. But it was worth the wait. A clear, uncolored

midrange is the Aero's chief strength. No, the midrange is not disproportionate or exaggerated at the expense of the top end—but it is transparent and even, like looking at your garden through a freshly cleaned window. Bass from the monitor's and center's "subwoofers" is firm and tuneful, and if you think you're getting too much of a good thing, Cambridge provides a foam bung to block the monitor's front port. This option might be helpful if the only practical placement in your room is near the wall, which tends to boost bass.

I got to *The Amazing Spider-Man*—the reboot with Andrew Garfield & Dasha; late in the listening demos when the speakers had completely broken in and the mid and upper frequencies were at their most pristine. The Aero 2 monitors and Aero 5 center stood up to high-volume blasting and were commendably free of the harshness that plagues some tweeters in loud passages. Midrange was loaded with detail, but it was the kind of detail that fills in objects within the soundfield, as opposed to merely outlining them. The Aero 9 subwoofer handled the bottom end with aplomb, delivering loads of output, and its combination of active and passive drivers crossed over to the speakers (at my usual 80-Hz crossover) so holistically that the system's bass response often seemed to come from a single large speaker, as opposed to a 5.1 configuration.



In *Dredd*, lurid ultraviolet in a futuristic urban jungle is accompanied by a relentless score with electric guitars ripping through the soundfield like avenging furies. Normally I would find this kind of material as enticing as fingernails scraping a chalkboard, but the clarifying power of the BMR drivers made it a more palatable, if not edifying, experience. The sub made the synth bass of doom an omnipresent, suspense-building pleasure. With the Aero system's clean output and even balance of frequencies, I felt as if I were sitting in the mixing suite, alongside the engineers, deciding just how much of a

sonic barrage the audience could take.

Flight stars Denzel Washington in his always compelling low-key-but-intense mode. An extended plane crash front-loads the story with high-decibel action, and here the Aero BMRs, woofers, and sub combined to step up the excitement with wide, confident dynamics. The result was almost unbearably intense, and it set the stage for the less bombastic, character-based drama that forms the rest of the plot, making a good movie even better.

A Seasoned Witch

Close to the Edge, the Yes masterpiece, has always struck me as unfinished business. Although the album never fails to deliver a shot of prog-rock stimulation, especially in the frantic sidelong title track, lots of intriguing ingredients get buried in the too-dense original mix. The new 5.1-channel 96/24 mix by Steven Wilson (available on both Blu-ray and DVD-Audio) moves many of the keyboard and backing-vocal parts to the surrounds, not only liberating those elements but leaving more space in the front soundstage for the lead vocals and especially for the drums. The Aero system dynamically accelerated an already powerful engine to exhilarating levels. Even elements that weren't disserved in the original mix—like the growling bass—became more of a good thing. This classic has never sounded better.

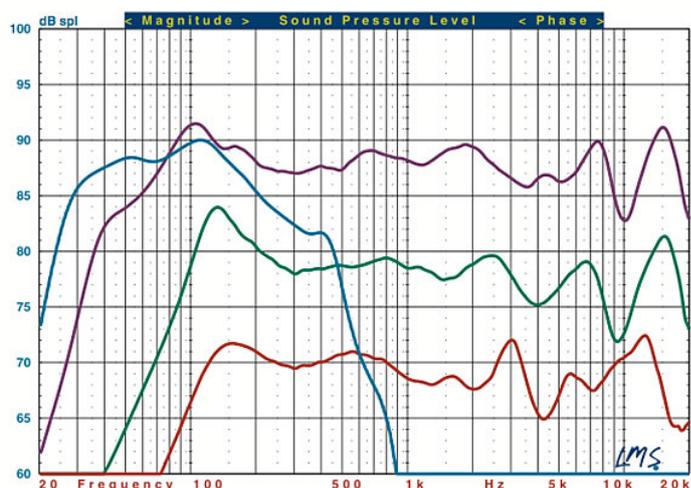


For classical listeners, new surround mixes aren't thick on the ground, so I've been backtracking into my library's large supply of multichannel SACDs. A great specimen is the PentaTone release of symphonies by Haydn (Nos. 88 and 89) and Beethoven (the first) with Sir Colin Davis conducting the Royal Concertgebouw and BBC Symphony orchestras. The Aeros were the perfect vehicle for these 1975 golden-age-of-quad recordings by Philips Classics, especially in the Haydn symphonies, taped in the Amsterdam Concertgebouw. The BMRs lavished their clarity and detail on the concert hall's distinctive acoustics, making its long, luxurious decay perfectly continuous. String textures in all recordings were reasonably refined (after break-in). In the more propulsive Beethoven First, kettledrums got best-case treatment from the speakers and sub, with a gratifying combination of weight and pitch control. I must confess, I didn't expect much from this small, prosaic-looking sub, but the more time I spent with it, the more respect I had for it.

Hearing Billie Holiday's vulnerable late-career voice, with its noticeable rasp and brittle vibrato, is always a highly emotional experience for me. The Aero 2 was the perfect vehicle for this delicate and extraordinary instrument, delivering it whole, in one piece, undivided by

crossover circuitry, and opening that window I referred to earlier. The record was Stormy Blues, the first of three double-LP sets showcasing the singer's Verve catalog. The beautifully recorded mono signal imaged perfectly between the two speakers. Lateral head moves hardly budged it. Even when I sat at my desk—to the right of the right speaker—the vocal frequencies remained balanced.

There are experiments. And then there are experiments that work, thanks to relentless fine-tuning. Cambridge Audio's Aero speakers are the latter. Having already heard the BMR technology in the company's excellent Minx satellites, I suspected it would work well when Cambridge elevated it to larger speakers—but it worked even better than I'd expected. Demo after demo, the Aeros got better and better, and I gradually pushed up the performance rating till I could push no further. What makes these unusual speakers even more remarkable is that they're so affordable. You needn't be a big spender to buy into a cool new technology that sounds fabulous. That's a story I'm always happy to tell.



Aero 2 (purple)

+1.36/−5.71 dB from 200 Hz to 10 kHz;
 −3 dB @ 62 Hz,
 −6 dB @ 41 Hz;
 impedance minimum 4.44 ohms @ 126 Hz,
 phase angle −56.23° @ 86 Hz;
 sensitivity 88.5 dB from 500 Hz to 2 kHz.

Aero 5 (green)

+1.90/−6.64 dB from 200 Hz to 10 kHz;
 −3 dB @ 89 Hz,
 −6 dB @ 77 Hz;
 impedance minimum 4.06 ohms @ 141 Hz,
 phase angle −47.80° @ 108 Hz;
 sensitivity 88.5 dB from 500 Hz to 2 kHz.

Aero 3 (red)

+2.03/−5.06 dB from 200 Hz to 10 kHz;
 −3 dB @ 102 Hz,
 −6 dB @ 89 Hz;
 impedance minimum 5.79 ohms @ 347 Hz;
 phase angle −31.9° @ 158 Hz;
 sensitivity 88 dB from 500 Hz to 2 kHz.

Aero 9 (blue)

Close-miked response, normalized to the level @ 80 Hz:
 lower −3 dB @ 29 Hz,
 −6 dB @ 25 Hz,
 upper −3 dB @ 198 Hz using the LFE input.
 — MJP