

# Orpheus

## AURORA 2 LOUDSPEAKERS



Regular readers of Australian HI-FI who have very long memories may recall that I have previously reviewed the Orpheus Aurora 2 speakers (the review was published in Volume 30 Number 10), and will probably be questioning the reason for publishing this second review. The reason is quite simple: The Aurora 2 that's currently on sale in stores right around Australia (and overseas!) is completely different to the model reviewed six years ago. And when I say 'completely different', I mean it: The size of the cabinet is different, the cabinet itself uses a substantially different bass reflex alignment, the drivers are completely different and there's a new crossover network. In fact, the only two things these two identically named models have in common is the Aurora 2 name and the fact they were designed by the same person: Brad Serhan, at Orpheus.

I have to say that I am less than happy with manufacturers altering (or in this

case, completely changing!) models while retaining exactly the same name, because I think it confuses consumers—and I have made this clear to Orpheus on several previous occasions—both in person and in print. Indeed now, given the rise in popularity of the Internet, there's even more potential for confusion. Because reviews posted on the 'Net can live 'forever', how is a consumer to know that a review on a site is six years old and bears no relation to the product he or she may be considering purchasing at a local store? What is so difficult about identifying different versions of models that have the same name or identifier by using designations such as Mk I, Mk II etc?

### The Equipment

When I first unpacked the Aurora 2s, I thought for a moment that Orpheus had accidentally shipped me the Aurora 3 by mistake, because it looked almost identical. In fact, if you look at

photographs, you'd be hard pressed to tell the difference, because the cabinets are almost exactly the same size. In fact, the Aurora 2s measure 890×190×280mm (HWD) against the Aurora 3s at 950×220×325mm (HWD) but you can see that at a mere 60mm higher, 30mm wider and 45mm deeper, there's not much in it.

The fact that the driver layout is identical adds to the impression of similarity, particularly since the Aurora 2 appears to use exactly the same drivers as the Aurora 3. In point of fact it does use the same tweeter (a sturdy 25mm fabric-domed tweeter with a conventional magnet and a dual-chamber rear-loading system), but the two bass/midrange drivers are very slightly smaller in diameter (156mm overall, but with a Theile/Small diameter of 110mm). The construction of these smaller-diameter drivers is, however, exactly the same as for the larger versions, with the cones being woven from the same Kevlar, the

# Orpheus

Brand: Orpheus  
Model: Aurora 2  
Category: Floorstanding Loudspeakers  
RRP: \$1,500  
Warranty: Five Years  
Distributor: Orpheus Audio  
Address: 12A Lime Kiln Road  
Lugarno  
NSW 2210  
T: (02) 9584 1822  
F: (02) 9584 1708  
E: orpaudio@ozemail.com.au  
W: www.orpheusaudio.com.au

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chassis moulded from the same ABS plastic and the roll surrounds moulded from the same durable, environmentally-friendly rubber compound.

Around the back of each driver, hidden from sight, is a new motor system that sees high-temperature voice-coils vented through holes in both the voice-coil former and in the driver frame itself, underneath the pleated suspension. This clever twist enables the suspension pleats to pump hot air away from the voice-coil very quickly, for higher power-handling, greater efficiency and increased dynamics.

possible and it's a theme that Orpheus has used before with great success but without much advertising fanfare. That's all changed, because Orpheus has given it a trendy new name: Differential Bass Loading (DBL).

The reason the two bass reflex ports exit through the rear of the cabinet, rather than through the front baffle, is partly cosmetic and partly mechanical, but mostly to ensure that any midrange frequencies leaking through the port opening will be absorbed or scattered behind the speaker, a trick that seems to have escaped a fair few speaker designers

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Although there are two bass/midrange drivers, they aren't just hard-wire paralleled. Instead, Orpheus has configured the 12-element crossover so that both drivers handle all the bass frequencies, but the lower of the two is rolled off early, so the upper driver delivers the midrange *solus*—an approach generally known as a '2.5-way' system.

Unlike the original Aurora 2, which had a single bass reflex port exiting through the front baffle, the new version has two ports, both of which vent through the rear panel. The reason for the two ports is that the internal volume of the cabinet is split into two, with one driver in each volume, and each volume ported separately. The two systems are tuned differently, so that instead of all the vents' energy being restricted to a narrow range as in a conventional bass reflex cabinet, it's staggered to spread the energy over a wider bandwidth. The idea is to squeeze the most bass possible from the smallest driver/cabinet combination

who have leapt on the DBL bandwagon without properly investigating the full ramifications of this very effective method of alignment.

## Listening Sessions

Having lived for several months with a pair of Aurora 3s quite recently, I was more than familiar with their sound (not to mention being mightily impressed by it) and I was pleased to hear that the Aurora 2s sounded eerily similar right across the board—so eerily similar, indeed, that were it not for the slightly more impressive deep bass presentation of the larger Aurora 3s, I think I'd be hard-pressed to differentiate between the two in a double-blind listening session (unfortunately, I'd sent the Aurora 3s back to Orpheus before the Aurora 2s arrived, so I didn't have a chance to make this comparison).

I found this similarity in sound highly reassuring, because it means that Orpheus is aiming to get exactly the

same tonal quality (or 'sound' if you prefer) from every pair of speakers it builds, even if this means that its models end up sounding similar to each other. This is at odds with quite a few speaker manufacturers who deliberately build particular sonic 'quirks' into each of their models in order to make every one sound different, simply with the intention trying to have a model to suit whatever type of 'sound' a particular customer might find most appealing, based on what they're used to hearing, irrespective of whether or not that sound's accurate.

The simple fact is that if a speaker has been designed to have as flat a frequency and phase response as possible, and to radiate this equally in all directions, it should be very difficult to pick its 'sound' from any other speaker that's been built with the same aim in mind. In other words, if you're comparing three or four models in the same range from the same manufacturer and you find the speakers sound completely different, don't even think about buying any of them—just head for a completely different brand!

The problem with all this, of course, is that there's nothing in particular about the sound of the Aurora 2s that 'stands out' because everything is in such perfect balance, from the deepest bass to the highest treble, that there is nothing to stand out. At least this is true as far as it concerns tonal balance and acoustic flavour. What stood out for me were the unfettered dynamics, which meant increases (and decreases) in volume sounded free and unrestrained when they were of a high magnitude, and easy to discriminate between when they involved

micro-dynamics. I also loved the sound of the tweeter, which has a true and precise crystalline tone that remains sweet and pure even when pushed hard, which is not something I can say I've experienced when listening to tweeters powered by neodymium magnets. The bass is tight and extended, with a feeling of depth and power rarely found at this price-point, though I can tell you (because I use the same test tracks whenever I evaluate bass and always take notes) that the Aurora 2s do not go as deep as the Aurora 3s, nor are they capable of playing quite as loudly at very low frequencies. That said, there's not a lot in it: so little in fact, that unless you regularly play music that has substantial content below 40Hz (and remember that an electric bass's lowest note is 41.2Hz, as it is for most jazz double-basses), I think you would be hard-pressed to hear the difference even in a direct A-B comparison unless you were playing a full orchestral work.


The first piece I auditioned with the Aurora 2s was the gorgeous *Giants in the Land*, by Brenton Broadstock, played on piano by Ian Holtham (it was originally commissioned for organ). It works so well for piano that I still can't imagine it as an organ work, and the limpid, flowing sounds Holtham extracts from the Steinway D flowed from the speakers like water. The sustained pedal notes remain tonally distinct at all times, and the Aurora 2s maintained the sense of acoustic space, even during the 'giant steps' moments when Holtham hammers the keys with a vengeance. This work is on a Move CD of the same title (Move MD3239) that I'd recommend to anyone who loves music, but particularly piano music. Holtham's playing is masterful, the recording exquisite, and all the works are not only wonderfully conceived, but also thought-provoking. All the tracks are great, but I'm particularly enamoured of Stuart Greenbaum's *New Roads, Old Destinations*. (It was only after I'd played this CD that I thought how appropriate it was to start auditioning an Australian-made speaker using a CD recorded in Australia, by an Australian pianist, playing the works of Australian composers.)

From there it was a long way musically to my next CD, Van Morrison's 'Down the Road', but from the first plaintive

harmonica notes it was like visiting an old friend, an experience the Aurora 2s helped along, by staying in the background and letting the 'Man' do his stuff. Listen to the tinsel guitar sound on *Steal My Heart Away* and the contrast between this sound and that of the drum kit in the background, and the way the Aurora 2s deliver both with the same purity as if they were being reproduced individually. Magic!

To hear how well the Aurora 2s handle microdynamics, feast your ears on Cezary Skubiszewski's *The Day at the Office* (from the soundtrack to the film *Black and White*): the delicate sounds played by the percussionists of the Victorian Philharmonic Orchestra are stunning. Just as stunning is the way the Aurora 2s cope with massed voices, in this case the Gondwana Voices singing John Rutter's *For the Beauty of the Earth* (from *New Light, New Hope*). I had to metaphorically pinch myself to remind myself that I was listening to a pair of speakers that retail for \$1,500.

## Conclusion

Orpheus Audio's long-running Aurora Series has been enormously popular with Australian consumers, and I know of several Australian reviewers who have purchased Aurora 3s for their own use. I'd imagine Orpheus couldn't want for a better endorsement! 

greg borrowman

## LAB REPORT

Readers interested in a full technical appraisal of the performance of the Orpheus Audio Aurora 2 Loudspeakers should continue on and read the LABORATORY REPORT published on the following pages. All readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

*Australian HI-FI Test Laboratories'* tests of the Aurora 2 showed excellent performance in all areas. *Figure 1* is a composite graph, where the low-frequency section of the trace up to 700Hz was measured using pink noise (smoothed in post), and the high-frequency section using a gated sine wave (presented unsmoothed). Overall, the measured response extends from 50Hz to 18kHz  $\pm 3$ dB, which is excellent, but you can see that the low- and high-frequency sections are the limiting factor, and these are the most exposed to measurement error. Across the region between 80Hz and 16kHz, the response is within  $\pm 2$ dB, which is fabulous. It's worth noting, also, that the response is not skewed in any way, with large sections of the trace being higher or lower than any other. If you're picky, you could say the region between 120Hz and 500Hz was a little elevated, but the effect is quite minor.

The same comment could be made regarding the flatness of the gated high-frequency response, shown in high detail in *Figure 2*. Except for a small 'bump' between 6.3kHz and 9.5kHz, this response is largely within  $\pm 1.25$ dB right out to 17kHz, after which there's a gentle roll-off. Don't fuss yourself about this: few people over the age of 20 can hear anything higher than 16kHz. (If you can't hear the high-pitched sound your TV makes when the sound is turned down, you definitely can't hear 17kHz.)

*Figure 3* super-imposes the near-field responses of the upper bass/midrange driver and upper port. You can see this port is tuned a little lower than usual, and the Q is also low. The other trace (not shown) shows the lower port is tuned a little higher, with a higher Q. The bass driver's response is beautifully smooth and controlled, rolling off at about 12dB/octave below 90Hz.

*Figure 4* shows the impedance of both speakers superimposed, which we've requested *Australian HI-FI Test Laboratories* do as a quick check on quality control. The Orpheus 2s pass this test with flying colours: the correlation is outstanding, particularly at low frequencies, where the result can be affected even by careless placement of acoustic fill. The traces show the typical double-hump in the bass, with the lower of the two at 34Hz and the higher at

83Hz, after which the impedance drops to a minima of around  $2.8\Omega$  at 220Hz (A below middle C), which puts the nominal impedance (according to IEC 268-5) lower than the claimed  $4\Omega$ . The phase angle (not shown) is benign at this point (as correctly noted in Orpheus's specifications), but I'd suggest using an amplifier that's happy driving  $2\Omega$  loads, even though this is really overkill.

Sensitivity was measured at 90dB SPL at one metre, for an equivalent 2.83V input, under *Australian HI-FI Test Laboratories'* usual test conditions, which means you won't need a lot of power to get these speakers really firing.

Steve Holding

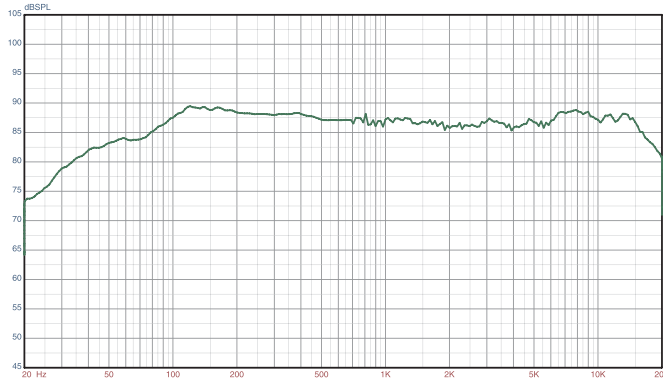


Figure 1. Composite frequency response comprised LF pink noise frequency response (third-octave smoothed) spliced to gated HF sine response (unsmoothed) at 700Hz. (See copy.)

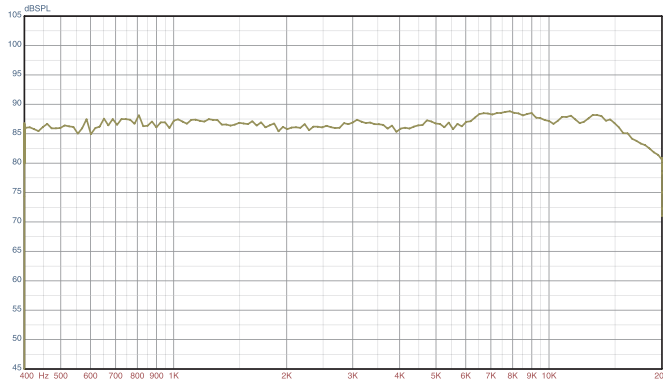


Figure 2. Gated sine frequency response (unsmoothed) at one watt, at 2.5 metres.



Figure 3. Nearfield frequency response of upper bass driver and upper reflex port. (Note data for port has not been re-scaled to compensate for differences in radiating area.)

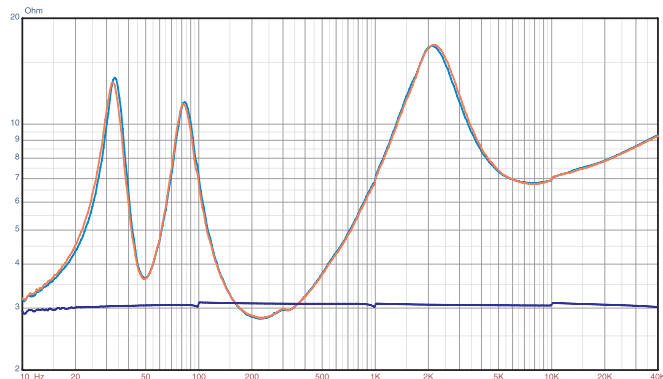


Figure 4. Impedance vs frequency, with both left and right speakers graphed (see copy). Trace under is that of a reference  $3\Omega$  precision resistor, measured at the same time for calibration purposes.