

HiFiMan Arya

With their unusually extended ovoid cups – pear-shaped, you might say – these new planar magnetics, once auditioned, could easily become the apple of your eye
 Review: **Keith Howard & Christopher Breunig** Lab: **Keith Howard**

With 16 current models in its Reference range, HiFiMan's product offering many not be as extensive or potentially confusing as Audio-Technica's but still it's a lot to get your head around. I classify them, informally, into round capsule and ovoid capsule models, the £1500 Arya being one of the latter. It's an apt classification in that once you've worn the Arya – or any other headphone whose capsules better reflect the shape of the external ear – you wonder why headphones aren't all designed this way. You wouldn't wear rectangular shoes, so why are these shapes so widely used for headphone capsules and earpads? It flies in the face of anatomical logic.

Earpad squish and squash isn't the only factor determining headphone comfort, of course – headset weight and head clamping force are important issues too. In both respects the Arya enhances the comfort advantage of its ovoid capsules. At 400g it's all of 109g heavier than the exceptional MrSpeakers Ether 2 model [HFN Jul '19] but as planar magnetic headphones go – some of which exceed 500g – it classifies as light. And its 5.9N head clamping force is on the low side too.

CABLE CONUNDRUM

So wearing the Arya for long periods is a joy. Or it would be but for this being another HiFiMan headphone with an inconveniently short cable (1.5m specified; I measured it at 1.55m). I don't get this at all: the Arya, like the previously reviewed Sundara [HFN Jun '19], is plainly not intended for use on the hoof – it's large, has no carrying case and is incompatible with mini-jack source connectors – and yet it's equipped with a cable too short for many domestic audio installations where a 3m lead is nearer the norm. The one upside of the Arya's cable

RIGHT: The Aryas seem much lighter than their measured 400g weight might suggest while the yokes are swivelled, which assists in fitting the headphones to the head

is that, despite it having a woven sheath, it doesn't generate excess capsule noise when it rubs against clothing – in marked contrast to the aforementioned Ether 2, in which the noise level was disturbingly high.

Connection to the two capsules is via TRS mini-jack connectors. At the source end the ¼in jack connector is moulded on and, as already mentioned, is not a sleeve adapter hiding a mini-jack plug within. No 3.5mm adapter cable is provided either – in fact there are no standard accessories in the box, just the headset and cable – so if you want to use the Arya with a mini-jack source then you'll have to make alternative arrangements; and there appears to be no HiFiMan accessory for the job. This perhaps reflects the Arya's low

sensitivity, which doesn't best suit it for use with handheld music sources.

PUZZLE RING

The Arya's undamped metal construction means that you can clearly hear it ring if you tap the headset when wearing it [see boxout, p69]. This is particularly true when it comes to the headband, which elicits a surprisingly long 'ting'. Pink noise played through just one capsule reveals nothing worse than some low-level carry-over of sound to the inactive capsule (there's no obvious coloration of the sound as in headphones with major headband resonance issues), and there were no obvious resonance peaks visible in our acoustic crosstalk test. Still, I'd feel happier were the Arya's structure more resolutely inert.

A distinct asset of the Arya is that it's largely insensitive to compromised earpad sealing [see p28]. Closed-back headphones in general, and some open-back designs as well, lose bass if the earpad seal is rendered leaky by the listener wearing spectacles or by the headphone pressing against hair rather than skin (or metal in the case of the artificial ear used for our main frequency response measurements). The Arya is barely affected by either which bodes well for it achieving consistent bass extension and tonal balance.

Within the capsules, HiFiMan's proprietary planar magnetic drive units claim to be unique in three respects. First, the diaphragm combines what's described as a nanometre thickness substrate plus a 'sub-micron thickness' planar conductor, the two making for an unusually light diaphragm. Nevertheless, none of these claims is backed by hard figures regarding thickness or weight.

Second, it's increasingly common for the makers of planar magnetic headphones to include design features intended to

'The bassoon was fruity and the drums had real "wham"'



LEFT: Each capsule houses a planar magnetic driver with a 'nanometer thickness' diaphragm while the horizontal bars over a woven metal grid is HiFiMan's 'Window Shade' system

much like a set of horizontal structural bars with a woven metal grid behind, which is pretty standard fare.

FRUIT CUPS

I began the listening [writes CB] with my spoken voice/orchestral standby, Prokofiev's *Peter And The Wolf* with the Lyon Opera Orchestra under Kent Nagano and Patrick Stewart narrating [Erato 4509-97418-2]. With the Aryas driven by a Beyerdynamic A2 headphone amp [HFN Sep '17], stage positioning was clear while the timbres of the instruments representing the characters in the tale were vividly accurate. The bassoon was fruity and there was real 'wham' from the drums. What's more, the story-telling was full of expressive nuances, with just a hint of realistic sibilance.

I briefly mentioned Onyx's Vaughan Williams *Sinfonia Antartica* last month [ONX 4190] and with the Aryas I could better appreciate the spatial separation between soprano soloist Rowan Pierce and the wordless women's chorus. Timothy West's beautifully spoken prefaces were done at Henry Wood Hall, London, with a lovely ambience around the voice, and wedded to Liverpool's Philharmonic Hall for the music. The opening movement, with the composer's adroit use of contrasting percussion colours, had a slightly recessed soundstage but you could hear deep into the acoustic and low registers were weighty. The Aryas held my attention more than with other 'phones.

When Pink Floyd's *The Dark Side Of The Moon* was issued in 1973 the distant left/right conversation in the intro was a talking point. Did your system allow you to make out the words? The novelty has now worn thin on me, but this time round [SACD: EMI 582136 2], from the deadened 'heart beats' and circling 'helicopter' that lead on to 'Breathe' my attention was piqued by the Aryas and the sound had never seemed so invitingly smooth while the lyrics were all consistently clear.

Curious to see how these 'phones could reproduce chamber music strings I sampled a new Ssens Trio CD of Mozart's Divertimento K563 [Lawo LWC1122]. The cello made a rich, deep sound while the violin lead never became screechy. This is a fine modern production, in contrast with the next track I chose...

Karl Münchinger was an old Decca stalwart. He led three sets of the Bach

improve airflow through the array of bar magnets. In the Ether 2 we saw this being tackled by a combination of single-sided driver design (with magnets arrayed across one face of the diaphragm only) and flared holes in the magnet stator. In the Arya, HiFiMan takes a different approach, retaining double-sided driver design (with its push-pull operation) but enhancing flow

by having one set of magnets – the ones arrayed on the ear side of the diaphragm – of smaller size. HiFiMan calls this its 'Advanced Asymmetric Magnetic Circuit'.

Third, although this is a bit obscure, what HiFiMan calls its 'Window Shade' system behind the drive unit claims to combine driver protection with optimised open-back design. However, it looks very

KEEPING QUIET

Although the Arya is far from being the worst offender we've encountered, it is yet another headphone reassuringly constructed mostly from metal but having, as a result, a resonant structure that 'pings' in response to fingernail taps when wearing it. It has to be acknowledged, first off, that the impact of such resonances on sound quality is not something which appears to have been meticulously investigated – although what research might have been conducted behind closed doors in some of the larger headphone manufacturers is unknown. In the worst cases headphone structural resonance – particularly headband resonance – can be severe enough to cause obvious ripples in the frequency response, in which case it's hard to suppose the resonances have no effect on sound quality when playing music. The situation with less prominent resonances is unclear but the precautionary principle suggests they should be eliminated, either by means of damping or by compliant isolation of the capsules. KH

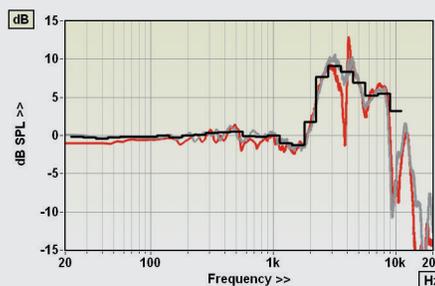
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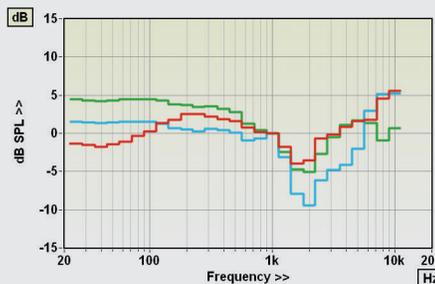
Having remarked the low sensitivity of the HiFiMan Sundara [HFN Jun '19], the same has also to be said of its costlier stablemate, the Arya. At an average for the two capsules of 103.5dB SPL for 1V input, the Arya is actually slightly *less* sensitive (105.7dB for the Sundara), despite having a lower impedance (29ohm as opposed to 38ohm). So it's possible that some (portable) signal sources might struggle to deliver sufficient peak output capability from the Arya, although its lack of mini-jack compatibility makes this less likely.

As with the Sundara, variation in impedance across the audio band is so small – 28.9 to 29.2ohm – that no significant modification of frequency response will occur with the normal range of headphone amplifier output impedances. Uncorrected frequency responses [Graph 1, below] are typical for a planar magnetic design. Output below 1kHz is largely flat down to low bass frequencies, rolling off below 20Hz (-6dB re. 200Hz). And while there is some response peaking around 3kHz, it isn't sufficient to achieve a neutral tonal balance through the presence band. As a result of these features, the diffuse-field corrected response [green trace, Graph 2 below] suggests that the perceived tonal balance will be perceived as 'warm', and possibly with a lack of lower treble.

On the plus side, the Arya is largely insensitive to poor earpad sealing due to leakage past spectacles or through hair [see Investigation, p28] but, as with all open-back headphones, isolation of external sounds is only significant at high frequencies. As noted in the main text the structure of the Arya is resonant, which manifests itself as peaking in the acoustical crosstalk test at around 3kHz. The CSD waterfall also displays resonance in this range, and there are matching irregularities in the impedance vs. frequency trace [not shown here]. Both also indicate resonances at about 350Hz and 550Hz. KH



ABOVE: The Arya's unequalised responses (L/R, grey/red; ave. 3rd-octave, black) show a neutral bass but insufficient presence band reinforcement [see below]



ABOVE: Third-octave freq. resp. (red = Harman corrected; cyan = FF corrected; green = DF corrected)

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	103.5dB
Impedance modulus min/max (20Hz-20kHz)	28.9ohm @ 15.2kHz 29.2ohm @ 24.2kHz
Capsule matching (40Hz-10kHz)	±7.2dB
LF extension (-6dB ref. 200Hz)	<20Hz
Distortion 100Hz/1kHz (for 90dB SPL)	<0.1% / <0.1%
Weight (headset only)	400g



LEFT: The deep, ovoid cups allow plenty of space for the ears, and less chance of heat buildup. There's ample adjustment for the leatherette headband too

Brandenburg Concertos, the 1959 stereo versions of Nos 4-6 I have on a 'Weekend Classics' CD [421 028-2]. The upper strings can become piercingly edgy here and everything is closely balanced. What would the Aryas make of it all? Well, it was extremely listenable. In particular, the thoughtful harpsichord playing by Irmgard Lechner, with her subtle timing, registered engagingly and her general continuo work you could always focus on too.

HOT STUFF

Turning the clock back far more I switched to jazz, and a Sony Duke Ellington compilation taken from 78s [Columbia Legacy 516 425-2]. It's labelled 'Hot' and hot it certainly was here, with Ivie Anderson in 'It Don't Mean A Thing' (1932) and tenor sax Ben Webster in 'Cotton Tail' (1943), its punchy rhythms revealing another facet of these headphones' abilities.

A later jazz classic, 1959's *Time Out* [Columbia Legacy CH 65122; SACD], had the flow of Paul Desmond's opening alto sax in 'Take Five' sounding vibrant, then ceding to drums (Joe Morello), with Dave Brubeck's regular piano pulse underlying the track. With even lovelier sax playing on 'Three To Get Ready' I felt with the Aryas that I could go on listening indefinitely.

For two contrasting solo piano recordings I switched to downloads (using a Mytek Brooklyn DAC/amp [HFN Aug '17] with Audirvana Plus software), and composers Schubert and Rachmaninov. Boris Giltburg has recorded the latter's 24 *Preludes* for Naxos [8574025; 192kHz/24-bit] on a Fazioli grand, while Barry Douglas's Schubert series has the amenable Sonata in A, D664 [Chandos CHAN

20086 96kHz/24-bit], where he plays a Steinway. The recording here smoothly reproduced Douglas's clean, straightforward playing, and replayed repeated listenings.

For the Rachmaninov I chose the C-sharp minor Prelude. The sensitivity of Giltburg's playing was given full measure by the Aryas, the sound filling out widely in the agitated section from 1m 57s. There's wider dynamic range here than with the Chandos, the Aryas taking it in their stride, the perspective of the instrument never shifting back and forth.

But the icing on the listening cake was Richard Strauss's *Four Last Songs* from Norwegian singer Lise Davidsen's debut CD [Decca 483 4883] where videos show she stands within the Philharmonia Orchestra (conductor Esa-Pekka Salonen) at Henry Wood Hall rather than out front, facing. I like the way she's balanced as the accompaniments really do reflect that positioning, rewardingly integrating voice and orchestra, with a pleasing suggestion of overall depth. ☺

HI-FI NEWS VERDICT

With their generous ovoid cups the Aryas allow ample space for the ears, while swivelling yokes ensure a comfortable but evenly spread pressure to the head. These are non-fatiguing to use over extended listening periods, being neither bright nor bass-heavy. Indeed, their excellent tonal and spatial presentation make for a strong commendation for critical listening over a wide range of music genres.

Sound Quality: 87%

