

# Neat Acoustics Iota Xplorer

And then there were three: Neat's little Iota range is all grown up with the arrival of the Xplorer model  
 Review: James Parker Lab: Keith Howard

One of the best sounds at Bristol's Sound & Vision Show [HFN Apr '18] came not from a gazillion-pound set-up, but the latest arrivals from Neat Acoustics, driven by modest amplification, in a small room that just made you want to stay and listen some more. The Iota Xplorers are the new model in a range that began with the tiny original Iotas some seven years ago, and while they draw on the same principles, the newcomers are very decidedly grown-up despite standing just 780mm tall on their polished conical spikes.

## A GRANDER SCALE

The price is certainly up there with the big boys, at £3495 a pair, and the speakers come in a choice of finishes – natural or black oak, American walnut or Satin White – with grilles in colours either subtle or bright as an optional extra.

So what to make of the Xplorers? Well just as the Iota Alpha model [HFN Oct '16] built on the success of the original Iotas by tilting their boxes atop

a small floorstanding cabinet containing a downward-firing bass unit, so the new model takes a further step up. It's designed on a grander scale, and has a pair of Neat's P1-R2 170mm bass drivers in isobaric configuration in the floorstanding column. Neat and others that deploy isobaric drivers, here one above the other and moving in parallel, claim it aids control as well as deepening the bass [see KH's boxout on this subject, p57].

Just as the top section, with its ribbon tweeter beside a mid/upper bass driver, is a design tried and tested by Neat in its previous Iota models, so the isobaric principle is a familiar one for the company, having been used in models including the flagship Ultimatum range [HFN Feb '12].

'Folky this set may be, but twee it most certainly isn't'

**RIGHT:** The tilted, sealed upper section of this speaker hosts an AMT tweeter and 170mm mid/bass unit, here on midrange duty. Two separate 170mm bass units form a downward-firing isobaric 'sub'

The upper section is completely partitioned off from the 'bass column', and both enclosures are themselves sealed boxes. The drivers in the 'head' include Neat's familiar 170mm P1-R3 mid/bass unit, which uses a treated paper cone with a flared profile and an aluminium phase plug, and has already seen duty in the company's speakers from the Petite range all the way up to the aforementioned Ultimatum.

It's partnered here with a Heil AMT (Air Motion Transformer)

tweeter, which uses a pleated Mylar diaphragm with aluminium strips, the whole sitting in a strong magnetic field to give extension down into the midrange for

better integration. Add to that the fact the P1-R3 is actually working here as a mid/bass, and not just a midrange, as also is the case in the smaller Iota models, and the two drivers in the lower cabinet are more or less underpinning what's going on in the upper compartment, rather than shouldering all the bass duties.

## FLOATING IN THE AIR

It doesn't take much listening to realise that these are no novelty speakers, even if their looks and stature still take a little getting used to. Forget any thoughts of needing to have the tweeters at ear-level – the speakers still sit below the eye-line, with the midrange and the AMT treble unit firing up at you. But what's remarkable



is that these speakers pull off the same trick as the smaller Iota Alpha in casting a soundstage that seems to float in the air above the speakers – indeed, they create one of the most 'out of the box' images I have encountered, with a fine sense of three-dimensionality and presence that eludes many a more conventional design.

Playing the recent remaster of Jethro Tull's 1978 *Heavy Horses* album [Parlophone 0190295757311; 96kHz/24-bit] allows the Xplorers to show both their light touch and their powerful but tightly-controlled bass. Set up with a bit of breathing space around them – though that downward-firing woofer is less critical in this respect than with most conventional ported speakers – and with a slight toe-in to the listening position, the Iota Xplorer

creates ambience a-plenty while still driving the music with real muscle.

Notable, too, is the fine 'ear' these speakers have for instrumental timbres. Ian Anderson's flute sounds beautifully light and breathy, and his voice gutsy, a bit rough round the edges – as befits the material – and impassioned, while the attack of the rest of the band is never in doubt. Folky this set may be, but twee it definitely isn't.

Again there's that 'tweeters in, or tweeters out' debate, but it really is a matter of taste: having them inboard of the midrange drivers yields the tightest soundstage focus and imaging, while reversing the speakers left to right gives the widest, most impressive soundstage.

## ISOBARIC LOADING

When 'isobaric' bass loading was rediscovered in the Linn Isobarik loudspeaker, many fanciful claims were made for it. Putting one bass driver immediately behind another – with just a small, sealed enclosure between them – does not eliminate the speaker's bass resonance and subsequent roll-off, nor does it lower the front driver's resonance frequency to its free-air value. Connecting two identical drivers acoustically in series/electrically in parallel produces a composite driver with twice the moving mass and half the suspension compliance. So the combined driver has the same free-air resonance but, because of the halving of compliance, greater bass extension can be achieved from a given cabinet volume. The downside is that the second driver halves the overall impedance and contributes nothing to the radiating area, as it would if used acoustically in parallel. In practice, isobaric loading does little, if anything, to improve bass output capability. KH

Yes, the differences are marginal, and more apparent at shorter listening distances, but they are there to be had, and some experimentation is worthwhile.

## GUITAR SHOWCASE

And that grip of instrumental timbres is much in evidence with *Twang!*, an all-star compilation from a couple of decades back in tribute to Hank And The Shads [PANGEA 7243 8 527 10 2 1]. This is a showcase of guitar styles from Ritchie Blackmore and Tony Iommi, the latter with a sledgehammer cover of 'Wonderful Land', to

Brian May (whose cover of 'FBI' suddenly breaks into the unmistakable higher registers of a Red Special), and from Mark Knopfler to the banjo picking of Béla Fleck.

Yes, the whole project sounds potentially cheesy, especially for those who just consider The Shadows as the easy-listening act they arguably later became. And yet these reinterpretations are fascinating in their own right especially with the insight on offer here, as the Xplorer conveys the individual instruments and techniques with great clarity.

I tried the Iota Xplorers with a variety of amplifiers from my usual reference Naims to the slimline Micromega M-150 and the heavyweight Mark Levinson N°534 power amp [both HFN June '18]. On each occasion it was noticeable that, while the speakers always worked well, they were

also highly revealing of the character of the electronics driving them – oh, and they relished a good dollop of clean power!

So while the Iota Xplorers certainly sound both wide-open and sweet, they can also deliver plenty of low-end thunder when driven well, and have a tight, clear bass, not to mention being able to turn on the snarl when the music requires it. Play Avicii's *Wake Me Up* [PRMD/Universal 00602537477319] and they can pound out the bass-lines with precision and speed while still keeping the vocals and instrumentation clear in the clean mix.

The same is true with the fascinating jazz/dub/electro fusion of Nils Petter Molvaer and Sly & Robbie on their recent *Nordub* set [Okeh G010003651866L; 96kHz/24-bit]. This album has a limited dynamic range, but the combination of a slinky rhythm section, the silky trumpet and all kinds of electronica could be designed to keep a pair of speakers on its toes. That's just how the Iota Xplorers play it, with a deep, immersive soundstage, gutsy bass and those tripping rhythms crisply rendered – all to remarkable effect.

## HILARIOUS FUN

They're just as impressive with some good old vintage rock as they are with clean, plaintive singer/songwriter stuff, and I had a blast picking my way through the 3CD Deep Purple *Platinum Collection* [EMI 7243 578591 2 7] in all its slightly grimy glory – the 1997 remaster of 'Highway Star' with the Mark Levinson power amp driving the speakers was nothing short of hilarious fun.

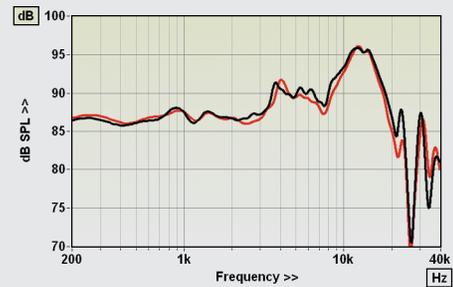
Regaining my composure with the wonderfully atmospheric Billy Bragg/Joey Henry *Shine A Light* album [Cooking Vinyl COOKCD623, 96kHz/24-bit] showed just how well the Iota Xplorers can convey the atmosphere of a recording, thanks to ☞

## LAB REPORT

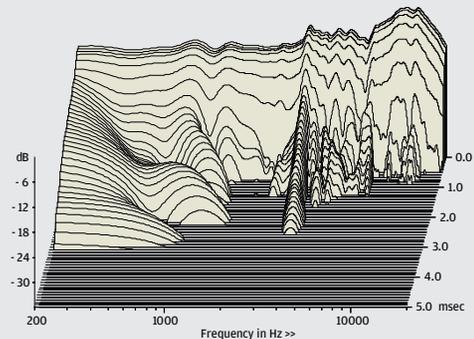
### NEAT ACOUSTICS IOTA XPLORESR

Measuring a speaker like the Iota Xplorer poses the difficulty of which axis to use. With its upper bass-midrange driver and tweeter angled upwards from the horizontal, this unusual speaker has a variable listening axis according to how far away from it you sit. I performed our measurements, as usual, 1m away on the tweeter axis but we have to take account of the fact that it will rarely if ever be listened to in this way [see Graph 1, below]. Below this axis we can expect the prominent treble output to fall away but so will the upper end of the bass-mid output, so integration of the two will never be the smoothest. The shelved-up then peaked, then precipitous, treble results in rather high response errors of  $\pm 5.1$ dB and  $\pm 5.6$ dB for the pair (200Hz-20kHz), and also raises the pink noise sensitivity to 89.6dB, 2.6dB above Neat's specification. But you can see from Graph 1 that 87dB is about the sensitivity of the bass-mid driver, and for that reason it is a justifiable figure.

Pair matching over the same frequency range was a little disappointing at  $\pm 1.7$ dB but the responsibility for that lies not with Neat's own P1-R3 bass/midrange driver – below 3kHz the pair matching is  $\pm 0.8$ dB – but with the rather wayward AMT tweeter. Our measured bass extension of 75Hz ( $-6$ dB re. 200Hz) may seem disappointing too, for a speaker using isobaric bass loading [see boxout, p57], but in practice boundary gain from the floor and wall behind will add significantly to the LF capability. Impedance is quite amplifier-friendly with a minimum modulus of 4.3ohm and minimum EPDR of 2.4ohm at 54Hz. The CSD waterfall [Graph 2] shows a clump of treble resonances between about 3kHz and 9kHz. KH



ABOVE: The axial response shows a peaked presence/treble, heard when standing but softened below axis



ABOVE: Cabinet is well damped but there's a driver resonance at 4kHz, within modes from 3kHz-10kHz

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	92.1dB/89.6dB/89.0dB
Impedance modulus min/max (20Hz–20kHz)	4.3ohm @ 20Hz 39.3ohm @ 1.9kHz
Impedance phase min/max (20Hz–20kHz)	$-55^\circ$ @ 3.8kHz $45^\circ$ @ 814Hz
Pair matching/Response Error (300Hz–20kHz)	$\pm 1.7$ dB/ $\pm 5.1$ dB/ $\pm 5.6$ dB
LF/HF extension ( $-6$ dB ref 200Hz/10kHz)	75Hz / 19.5kHz/19.1kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	1.3% / 0.2% / 0.1%
Dimensions (HWD) / Weight	740x299x220mm / 18kg

**LEFT:** Two isobaric bass units are lifted clear of the floor by spikes on the cabinet's base while a reflex port tunes their output. Single 4mm cable terminals are fitted

by the PaTRAM Institute Male Voice Choir [FR-727; 192kHz/24-bit] sees the Russian Orthodox religious music recorded in a suitably lush and reverberant church acoustic, the voices filling the space with a rich, rounded sound that shows well the ability of the speakers to float an image in front of the listener, while creating a broad, deep but focused soundstage.

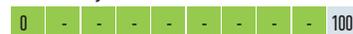
#### A FINE CHOICE

For a range that started with a £700 speaker not much bigger than a housebrick, the pitching of the Iota Xplorer at £3495 looks pretty ambitious, not to mention bringing the unusual looking design closer to more conventional looking rivals, including the EISA Award-winning £4000 Q Acoustics Concept 500 [HFN Jul '17]. Yet the really impressive thing is that this loudspeaker needs no allowances to be made for its still-compact dimensions, which could just make it a fine choice in these times of high property prices and tight living spaces. ☺

#### HI-FI NEWS VERDICT

They may be unusual-looking, but the Xplorers are no novelty speaker: instead, they're a continuation of both the Iota line and thinking found elsewhere in the Neat Acoustics range. And very successful they are too, with both plenty of welly and control in the bass and an almost magical ability to cast a soundstage image well outside their compact boxes, doing so with focus and sympathy for the timbres of instruments.

Sound Quality: 82%



their clarity and imaging. This set is subtitled 'Field Recordings From The Great American Railroad', and that's just what it is: tracks themed around riding the rails, recorded on location on platforms, in waiting rooms, etc, during a train trip from Chicago to Los Angeles. It's simply dripping with ambience, all of which is very much on display via these Neat speakers.

Train whistles howl in the distance, voices babble behind the two performers, and every detail is there in the soundstage. In fact only one track is recorded indoors: 'Waiting For A Train' was captured in Room 414 of the Gunter Hotel in San Antonio, where Robert Johnson had his first recording session. Unlike the more obvious 'location' tracks here it sounds warm, close-up and intimate, but with an obvious room acoustic via the Iota Xplorers.

If you want even more atmosphere, you need look no further than a recent release on the Fresh! label. *Teach Me Thy Statutes*,