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Estelon XB Diamond Mk II

All six of Estelon's 'Classic Collection' loudspeakers have been given a Mk II makeover, including the beautiful XB Diamond
 Review: **Andrew Everard & Paul Miller** Lab: **Paul Miller**

The idea of the breakfast meeting is, it seems, nothing new: the legend of the Estelon speaker brand is that engineer Alfred Vassilkov had his lightbulb moment over a Sunday morning meal with his family in 2010. Having previously spent many years designing speakers, he decided that day to make them himself rather than selling his ideas to other companies, and realised 'I already had the best key executives in my family, my daughters Alissa and Kristiina. That same evening we decided to set up the company'.

It's a good origin story, and Alfred Vassilkov still heads Estelon, designing all its products [see PM's sidebar, p43]. The brand name, and the organic shapes of its loudspeakers, derive from the landscapes of Estonia, and the ambition is clear – the company describes itself as 'one of the world's most luxurious' speaker brands, and says its products are 'proudly owned by some of the world's most eminent innovators and global leaders'.

AHEAD OF THE CURVE

But there's more to Estelon's speakers than just an eye-catching design. The XB Diamond Mk II floorstander we have here, sitting at the centre of its 'Classics' range starting with the standmount XC, has plenty of engineering innovation within its swoopy enclosure. The speaker starts at £60k in either black or white 'Liquid Gloss' finishes, with premium colours and finishes adding up to £6500 to the bill.

For that you get a speaker that's decidedly imposing, if not exactly huge, standing 1.26m tall, and designed for use in rooms of 25-50m². But this is no lightweight – the use of a marble-loaded composite for those signature curves means the speakers weigh 69kg apiece, and gives the enclosure an inert feeling of solidity, enhanced by a mirror-like finish created using multiple layers of paint and lacquer in the company's facility in Tallinn.

Indeed, virtually everything here is created in-house, although the drivers are sourced from Accuton in Germany, Estelon pointing out these drivers are also found in Bugatti supercars. The company further links its products to the high-ticket elite by highlighting the automotive finish on the XBs, with up to 12 coats, and hand-polishing.

ABOVE AND BELOW

The drivers themselves, protected by fixed metal grilles, are somewhat unusually deployed, the treble and mid/bass drivers mounted high, and the bass unit as low as possible, taking advantage of floor reinforcement in addition to its rear-venting port tuning. The configuration of these drivers is also somewhat unusual, with no high-pass filtering on the 158mm driver mounted above the 25mm 'diamond'

tweeter from which the speaker derives its name. This means this mid/woofer operates over a very wide frequency range [see PM's boxout, p41] leaving the 220mm low-slung woofer to deliver the really deep stuff.

The XB Diamond Mk II's drivers are mounted within their own enclosures within the cabinet, and the crossover is also acoustically isolated to avoid vibrational interference. Incidentally, the adoption of that inverted dome tweeter, along with a revised crossover and internal cabling from US company Kubala-Sosna, ↗

RIGHT: The exquisitely curved (low diffraction) mineral-loaded resin cabinet is offered in a series of matt and gloss colours [see p43]. The Accuton-sourced drivers are protected by fixed wire grilles

'There's plenty of innovation within its swoopy cabinet'



“The woofer operates within a vented cabinet, with the port tuned to 21Hz”, says Alfred’



STATUESQUE SUB/SAT

For anyone encountering the XB Diamond Mk II for the first time – or any of Estelon’s top-end loudspeakers for that matter – it’s the hourglass proportions of the mineral-loaded resin cabinet that draw the eye. Then comes the question, ‘why is the bass unit on the floor of the cabinet?’ The floor is the key here as Estelon attempts to leverage a further +3dB bass boost from the driver’s proximity to this boundary, in addition to the rear-facing reflex port. In practice this 220mm ceramic-faced sandwich cone operates over such a narrow range [see Lab Report, p45] that it might as well be an ABR. In fact the main 21Hz port output has another peak at 53Hz, mirroring the driver. Either way, the idea is to augment a two-way speaker with a subwoofer, the latter’s sub-100Hz output essentially omni-directional and divorced from the increasingly directional output of the widebandwidth 158mm ceramic-stiffened ‘mid-woofer’.

Design challenges are met here by advanced drivers and smart integration. For example, having the mid-woofer cover four to five critical octaves – the laudable aim of a ‘single driver loudspeaker’ – means the directivity trend at crossover to the 25mm inverted dome tweeter must be carefully managed. In practice, the XB Diamond Mk II’s response (at least up to 20kHz) is tolerant of a range of seating positions, so Estelon has clearly worked on this. However, maximum bass output is another issue. Again, on test, the XB Diamond Mk II’s bass distortion proved to be a low 0.5% at our reference 90dB SPL output, but there’s inevitably a limit to the excursion, the ‘throw’, of that industrious mid-bass driver. Push too hard, and not only the bass but also the driver’s midrange output, will be affected. Approach thumping bass lines with caution... PM

are what sets the Mk II version of the speaker apart from the previous version. The other drivers are stiffened with a ceramic skin, the mid-woofer having a sandwich construction, and the bass unit having a purely ceramic diaphragm.

Despite their considerable mass and the slipperiness of their high-gloss finish, the XB Diamond Mk II speakers are relatively simple to set up – they arrive in fitted flight-cases and are on castors to enable them to be trundled out of the packing and into position. Estelon recommends that this is a two-person job and supplies two pairs of gloves to handle the speakers, along with a polishing cloth to remove any marks and maintain the speakers’ finish.

SITTING PRETTY

In its comprehensive manual, the company suggests siting the XB Diamond Mk II a minimum of 0.8m from the rear wall, 1.2m from side walls, with a 2.5-4m separation between the speakers and a seven-degree toe-in from the straight ahead. However, this setup will vary according to the size and acoustics of the listening room [see p37]. Once in position, the castors can be replaced with the substantial spikes supplied, with ‘shoes’ provided for these to protect floors, and convenient locking rings for the speakers to be levelled. Single-wire Furutech combination terminals, able to accept spades or 4mm banana

plugs, are located at the base of the rear of the speaker, avoiding the need to have hanging cables, while the widening of the enclosure toward the bottom of its ‘hourglass’ shape ensures the XB Diamond Mk IIs sit stably in position.

The speaker itself benefits from some serious amplifier power in tow, but the Constellation Pictor/Centaur II 500S [HFN Dec '19] we used was – shall we say? – more than up to the task. Meanwhile the dCS Varèse [HFN Feb '25] source provided impeccable resolution of the range of music sampled,

creating a sound foundation on which to assess these speakers’ capabilities.

The disposition of the drivers, plus the wide-range operation of that mid-woofer, suggest the effect here might be that of a compact design augmented by a subwoofer. That’s certainly the impression they create as the sound has all the focus and imaging of a smaller speaker, and excellent integration of the drivers, but with a healthy dose of extension to underpin the music. ↻

‘It was strange and slightly disturbing, but captivating’

RIGHT: All from ceramic driver specialist, Accuton, the 220mm sandwich-coned bass unit is joined by a 158mm widebandwidth ‘mid-woofer’ and 25mm ‘diamond-deposited’ inverted dome tweeter



LOUDSPEAKER

Playing the most recent of many re-releases of Miles Davis's *Birth Of The Blue* [Columbia/Sony download], the XB Diamond Mk IIs do a great job of the gentle, detailed sound, with fine character in both Miles's trumpet and John Coltrane's saxophone. Yes, this 1958 recording is distinctly 'left and right', especially when played at low levels, but winding the Constellation amps up a bit fills things out more convincingly, and the instrumental timbres are well-resolved.

The same goes for Jonathan Ferrucci's *Bach Toccatas* set [Audite 97.826]. Here the piano is well-weighted with fast, dynamic detailing, and the open ambience is delivered with no sense of hardness in the treble, even though the speakers

BELOW: Estelon offers a range of colourways beginning with Gloss Black or White (£60k), Gloss Cobalt (£61,500), Gloss Violet and Matt White (£62,500), Gloss/Matt 'Pure Silver' (£64k, pic below) and Gloss 'Red Rocket' (£66,500)



don't quite pull off that trick of creating an impression of the instrument floating free of the loudspeakers.

WHEN HARRY MET GLASS

The XB Diamond Mk IIs hit hard with the dramatic opening of Poulenc's Violin Sonata on Paul Huang's *Mirrors* recital [Naïve V8617], the speakers making explicit the bite of the solo instrument without any brightness, and skilfully balancing the violin with the piano accompaniment of sibling Helen Huang. This ability to discriminate between the elements of a recording is also apparent with the ethereal combination of Deborah Harry's vocals and Philip Glass's orchestrations on the Jonas Crabtree remix of Blondie's 'Heart Of Glass' [Capitol single], where the effect is both strange and slightly disturbing – but entirely captivating.

Where the XB Diamond Mk IIs do sound rather brittle and bright is with 'Black Eyelashes', from Franz Ferdinand's ↻

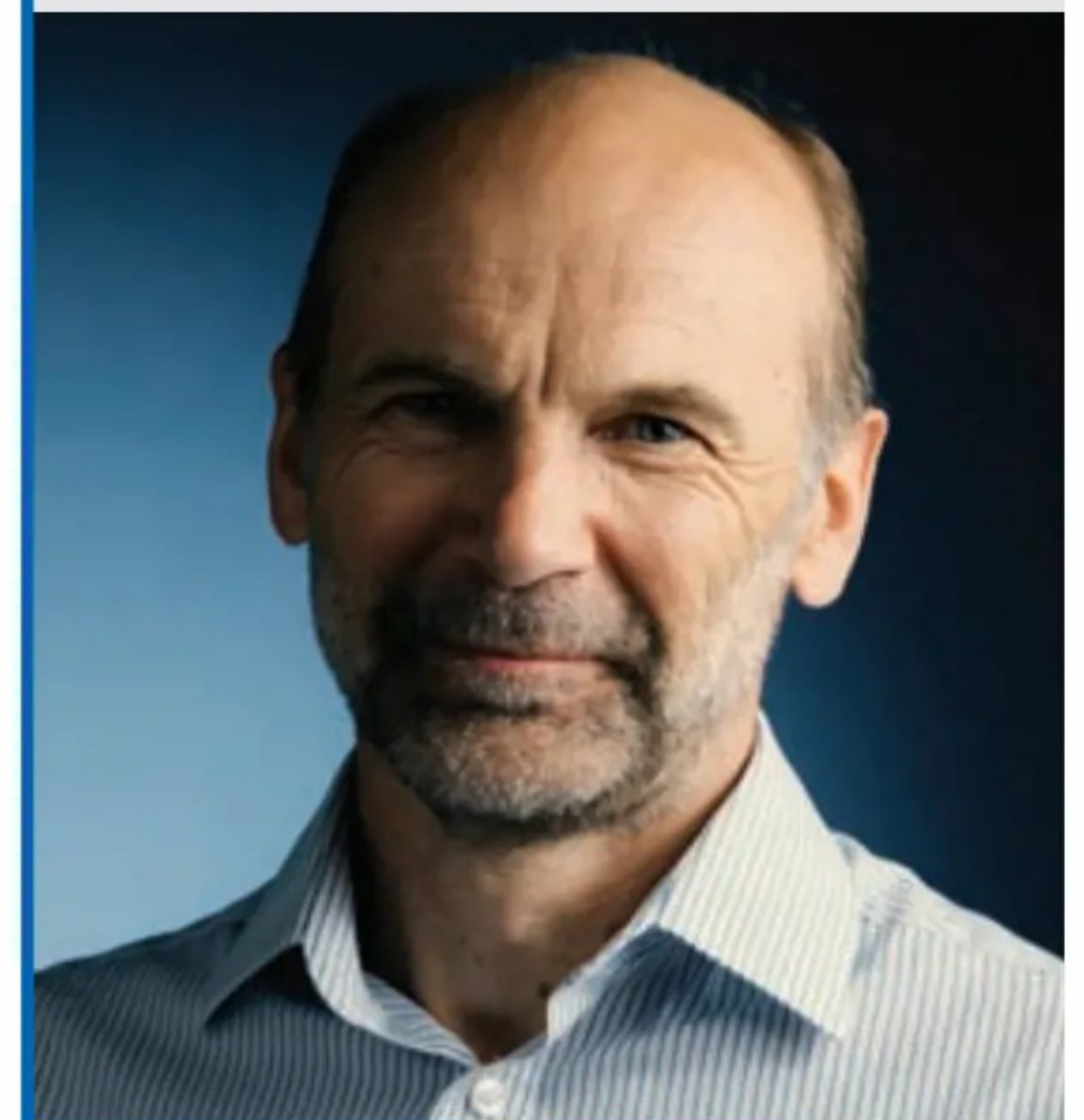
ALFRED VASSILKOV

While our reviewer, Andrew Everard, was listening to the XB Diamond Mk IIs, I asked designer/CEO Alfred Vassilkov for his insights on the technical issues raised in our boxout [p41]. 'The woofer operates within a vented cabinet, with the port tuned to 21Hz', says Alfred, 'while the peak at 53Hz is the result of a combination of acoustic suspension, driver excursion, and filter inductance.'

'In a conventional design such a peak might be addressed through a compensation network, but we opted against this to preserve the speaker's liveliness and dynamic capabilities. Beyond the peak, our acoustic filter follows a standard second-order Butterworth alignment, seamlessly integrating with the roll-off of the mid-woofer driver.'

'This mid-woofer is indeed the limiting factor for overall loudness. Working within a compact, sealed enclosure, it's responsible for the full range of the human voice and the fundamentals of most acoustic instruments, and does not feature an electrical high-pass filter'.

Estelon's mineral-loaded resin cabinet offers impressive resonance control, the brand being an early adopter of this technique. 'Our X Series and YB models utilise a proprietary material that's distinct from anything known to be used by other manufacturers', confirms Alfred. 'This is a crushed marble-filled composite, moulded from a liquid state. The result is a cabinet that not only minimises unwanted resonances but also contributes to the speaker's signature aesthetic and performance.' PM

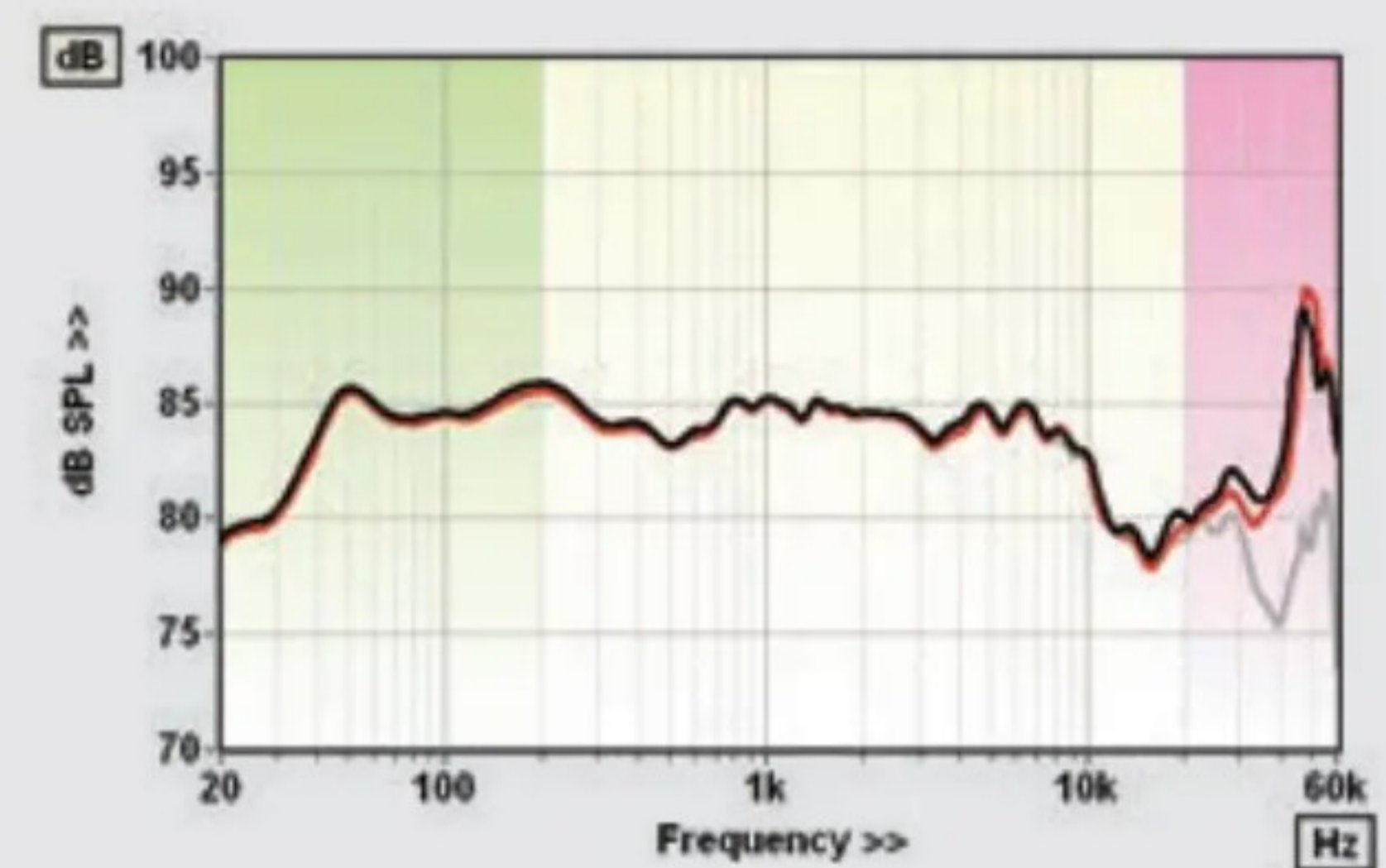


LAB REPORT

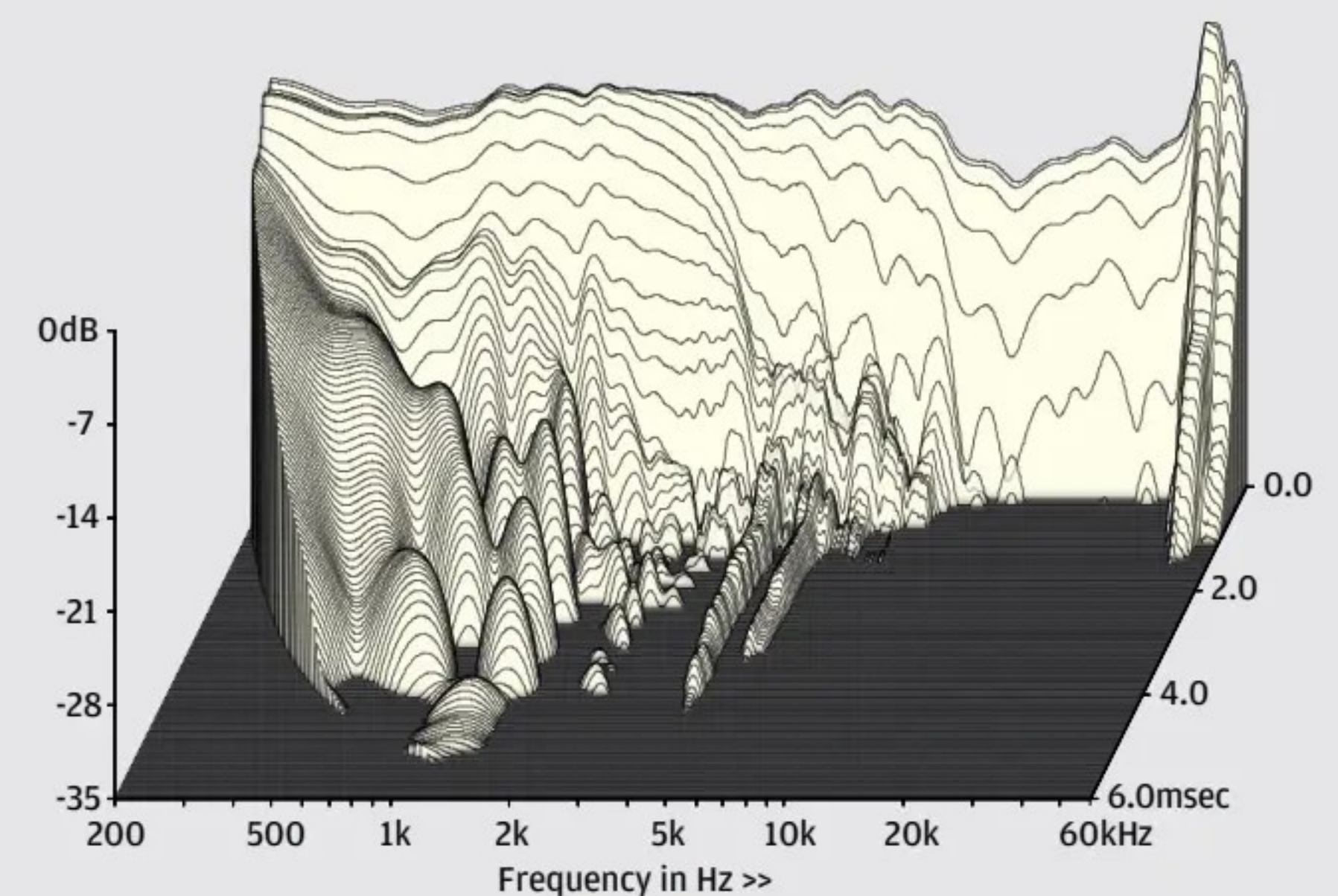
ESTELON XB DIAMOND MK II

The average seated position will, in all likelihood, place the listener at or slightly below the axis of the Accuton mid-woofer although, even if seated lower, in line with the tweeter, the XB Diamond Mk II's excellent vertical dispersion results in very little change to the forward response [see Graph 1]. The mid-woofer has a wide 90Hz-1.5kHz bandpass (-6dB) which, aside from a mild 2dB dish around 400-500Hz, is essentially flat in trend. The 6dB dip in output from 8kHz-40kHz is a feature of the treble dome, prior to two resonant modes at 47kHz and a very high 67kHz [pink shaded area, Graph 1]. These breakups are also visible on the CSD waterfall [Graph 2] which otherwise illustrates the well-controlled behaviour of the curved cabinet and minor driver modes at 1.5kHz and 6.5kHz. That treble dip, meanwhile, is largely responsible for the ± 3.9 dB response errors (re. 200Hz-20kHz) but holds its own if the speakers are toed in or out [$\pm 15^\circ$, grey trace, Graph 1]. Pair matching is excellent at 0.45dB (re. 200Hz-10kHz) spreading out to 0.8dB from 10kHz-20kHz.

Estelon's 87dB sensitivity rating is a little optimistic - 85.2dB/1kHz and 84.4dB/500Hz-8kHz is more realistic - while the 6ohm nominal impedance should really be 4ohm bearing in mind the 3.0ohm/55Hz minimum. Unusually, the impedance phase remains positive from 20Hz-1kHz (max. $+42^\circ/75$ Hz) where the EPDR hits a tough minimum of 1.35ohm/63Hz. The woofer has a very tight 38Hz-78Hz bandpass [see boxout, p41], peaking at 53Hz, and while the port is tuned to a far lower 21Hz it has sufficient bandwidth to meet the woofer at -4dB/43Hz - the corrected bass extension estimated at 32Hz (-6dB/200Hz). PM



ABOVE: Response inc. nearfield summed drivers/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. L, black; R, red; $\pm 15^\circ$ off-axis, grey



ABOVE: Cabinet modes are quelled, leaving residual resonances from the ceramic mid at ~ 1 kHz and 6kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V - 1kHz/Mean/IEC)	85.2dB / 84.4dB / 81.9dB
Impedance modulus: minimum & maximum (20Hz-20kHz)	3.0ohm @ 55Hz 18.8ohm @ 1.3kHz
Impedance phase: minimum & maximum (20Hz-20kHz)	-40° @ 2.2kHz $+42^\circ$ @ 75Hz
Pair matching/Resp. error (200Hz-20kHz)	0.80dB / ± 3.8 dB/ ± 3.9 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	32Hz / 74.3kHz/74.5kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.06% / 0.55% / 0.5%
Dimensions (HWD) / Weight (each)	1260x420x590mm / 69kg

LEFT: Rugged Furutech 4mm plug/spade binding posts sit close to the floor to prevent dangling cables. Rear port serves the adjacent 220mm bass unit

two-disc version of their *Gary* album [ODD SK ODDSK001CD2C]. The opening take on 'I Wanna Dance With Somebody' sounds clean, rich and oh-so middle of the road, but the same can't be said of Lucinda Williams' version of 'While My Guitar Gently Weeps', from her *Sings The Beatles From Abbey Road* album [Highway 20 Records H20014CD]. This is dense and hard-driving, and the XB Diamond Mk IIs give it a real live feel, with superb clarity to the singer's voice despite everything else going on in the track.

SWEET SOUNDS

Some rival designs, especially at this elevated price, might do a better job of unravelling the mix, but it's hard not to like the involvement the XB Diamond Mk IIs deliver, as indeed they also manage with the *Welcome To Shepherd's Bush* live Rolling Stones set [Rolling Stones/Mercury/Universal 00602465764017]. If you're expecting note-perfect renditions of the classics with a bit of audience ambience, think again - these 1999 recordings from the famous Empire venue are raucously chaotic, with the brass and backing vocals often overly prominent. But they're also hugely enjoyable, and the XB Diamond Mk IIs deliver them with real conviction, the Keith Richards growl and snarl on the opening riff of 'Brown Sugar' being almost worth the price of admission in itself. ⚡

HI-FI NEWS VERDICT

Flawed geniuses? Perhaps that's the best way to consider Estelon's XB Diamond Mk II loudspeakers. Chances are, you'll be buying them as much for the looks and that luxury appeal as the audio engineering, and the good news is that they deliver on both fronts. For all the claims of purity, these are still speakers with a character of their own - but if you like them, you'll probably love them. And we'll not argue with that.

Sound Quality: 87%



The Human Fear album [Domino WIGCD495]. Of course, here the effect is entirely intentional, this klezmer-inspired oddity typifying the somewhat madcap approach of the band. And while 'Hooked' isn't exactly the most accomplished track on this amusing, intriguing album, its deep bass does give those woofers a workout, revealing that these speakers have real low-frequency clout, if not quite the tightest control down there.

They're on safer ground with the cruise-liner house-band vibe of Blossoms' *Covers* set, part of the