



LOUDSPEAKER

Three-way hybrid electrostatic floorstanding loudspeaker
Made by: MartinLogan, Lawrence, KS, US
Supplied by: Absolute Sounds Ltd
Telephone: 0208 971 3909
Web: www.martinlogan.com; www.absolutesounds.com
Price: £79,500

AUDIO FILE

MartinLogan Neolith

With its 30th Anniversary to celebrate, MartinLogan has pulled out all the stops to create a new flagship – the Neolith Review: **Ken Kessler** Lab: **Keith Howard**

Forty-five years or so after the first \$500 cartridge – a ton of money in the early 1970s – a speaker like the MartinLogan Neolith, selling for £79,500, will barely raise an eyebrow. If *anything* surprises about the Neolith, it's that the price is so low for such an imposing and musically impressive product.

The Neolith's performance will further ensure that the company's new flagship – a massive electrostatic hybrid with built-in passive woofers – seems, I dare to suggest, something of a bargain. By excluding amplifiers for its woofers and thanks to a single structure rather than separate ESL panels and woofer towers, like the outgoing Statement, the price has been lowered, despite the promise of featuring the gamut of MartinLogan's latest technologies.

As one who has used 'Logans for over a decade in my 5.1 reference system, I'm pleased to note that the evolution continues on an upward trajectory but still with respect for tradition. Even the name pays homage to the speaker that launched the brand, the 'Monolith'. The new speaker employs one of the company's largest-ever radiating systems, with its signature curvilinear, 'see-through' topology. According to the company, it is a staggering 35% larger than the radiating surface of the Statement E2. This is augmented by a 15in rear-firing ported woofer and 12in front-firing sealed mid-bass woofer. It is an impressive package, but the real delight is in the details.

The Neolith's CLS XStat electrostatic panel measures 1220x560mm. (To put that into context, a Quad ESL63's dimensions are 925x660mm.) This panel, operable down to 400Hz, is perched on top of the woofer enclosure, so its overall height is a daunting 1899mm, and the footprint is 769x870mm.

RIGHT: ML's XStat panel offers an effective radiating area of over 1000in². Below 400Hz it is augmented by a front-facing 12in carbon fibre sandwich-coned bass driver and a 15in sub, in its own enclosure, to the rear [see p37]

It would be daunting if it wasn't so gorgeous, thanks to the classic MartinLogan 'see-through' effect.

ANY COLOUR YOU FANCY

And if that's not enough, the colour palette for the non-resonant Phenolic Resin Polymer frame includes gloss red and six metallic hues, all premium automotive coatings. If your pockets are deep enough, any bespoke colour is possible. A nice visual element is the soft

leather upholstery of the woofer cabinet.

Inside the lower enclosure, the front-firing 12inch mid-bass woofer operates from 60Hz to 250-400Hz, depending on jumper settings. Its construction includes a

non-woven carbon fibre cone, set in a cast aluminium alloy frame, and a 3in voice coil that uses a flat, copper-clad aluminium wire. Augmenting this, firing out the back and flanked by ports, is the extended throw 15in woofer to cover the spectrum below 60Hz. This employs a rigid, extra-thick anodised aluminium cone in a cast basket.

As is now the norm for high-end speakers, every single component is finished to the highest standards,

'It's so gorgeous, thanks to the classic ML "see-through" effect'





'STATICS AND SUBS

ESLs augmented by cone woofers are nothing new. Back in 1955, when Arthur Janszen released the JansZen Model 65 electrostatic speaker, its natural partner was Acoustic Research's AR1 with its 12in woofer, the compact '65 perched on top. When the Quad ESL (aka the '57) arrived, it was a full-range design, but its maximum level was restricted, as was bass output. Myriad subwoofers were attached to it, most famously the Mark Levinson HQD system with two Quads, Decca tweeters and Hartley woofers. Gradient would offer models dedicated to both that speaker, the SW-57 (which also acted as a plinth), and the SW-63 for the later ESL-63. Because they were tailored to the Quads, they worked satisfactorily out of the box. Other aftermarket subs, however well-designed, were more hit-or-miss. That said, I've heard Quads used with RELs and others which offer a useful amount of adjustability.

no rough edges, no unsightly surfaces. See one in a shop, and I suggest you look at the back to check out the single-wire or bi-amp connections made with WBT's five-way NextGen binding posts with shock protection and palladium-plated metal caps, clock the adjustable feet and scratch your head at the array of adjustment jumpers.

This last array of hardware, seen under glass in a niche on the top of the woofer cabinet, relates to 'Precision Vojtko System Blending', via the proprietary 'Vojtko Filter' crossover section. It was developed 'to handle massive amounts of power with the utmost precision.' Note that while bi-amping is possible, the crossover cannot be by-passed, so a fully active system is off the table.

The Neolith's set-up regime takes into consideration both position, *ie*, distance from walls and listener to speaker, as well as bass output. Like all ESLs it's mains powered – it can detect an audio signal, and a light shows that it is operating normally, indicating standby, power off, 'safe' and play modes. Most useful

for tailoring such large systems to one's room are the 'Low Bass' and 'Listening Distance' crossover adjustments using dual, gold-plated metal links. The former reduces bass output when adjusting for room gain, with settings of -8dB, -4dB and 0dB. The latter adjusts the front woofer output to optimise the woofer/panel integration at various listening distances, which you measure with a tape from the front of the electrostatic panel, with settings of 3m 'or less', 4m or 5m 'or greater'.

DESIGN GOALS

While the Neoliths are too ungainly to install on one's own, and set-up is intimidating (surely, the dealer should be on hand to do this), the owner's manual is comprehensive, with superb diagrams. Indeed, ML's move to a single enclosure for its new flagship, abandoning the various Statements' separate bass towers, addressed the former's extremely complex set-up and installation.

Says Devin Zell, MartinLogan Product Manager, 'MartinLogan's vision for the Neolith was a product with performance approaching the Statement E2, but with a simple set-up. Designing a system with integrated bass drivers allowed greater control over the crossover network because we were not required to make concessions for dealing with variable distances of subwoofer towers in relation to the mid- and high-frequency drivers – a challenge when attempting to blend various drivers into a seamless sonic presentation.' Chief Audio Technologist Joe Vojtko adds: 'By creating a fully passive design, we left the choice of amplification completely up to the listener. This is a very personal decision for customers dedicated to pushing the envelope of performance with products of the Neolith's calibre.'

With no specific recommendations for partnering amps, beyond suggesting



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LEFT: The frame supporting the curved electrostatic panel and housing the two moving-coil bass units is fashioned from a dense phenolic resin. Exquisitely polished, the Neolith is available in a choice of seven colours

'50-1300W at 4ohm', the review system consisted of Constellation Centaur Monos and Virgo III preamp, fed by the Metronome Kalista Ultimate [HFN Dec '13], wired throughout with Transparent's finest.

SPATIAL MAJESTY

It was obvious that, electrostatic-ness aside, this speaker was going to be about bass, about impact, about everything one *doesn't* expect of ESLs. Having lived with speakers such as MartinLogan's Summits for so long, I wasn't even remotely concerned about the chance of incongruities between 'statics and cone woofers. The company mastered this long ago.

'For What It's Worth' from Keb' Mo's *Peace... Back By Popular Demand* [Okeh/Epic EK92687] and the Willy DeVille CD single 'Assassin Of Love' [Polydor 887 312-2] provided ample test material for impact, bass extension and scale. And I have to admit that I wasn't prepared for the delivery of a speaker that must have, what? six times the radiating surface area of the slim floorstanding Summits?

Those among you who have lived with both dynamic and planar speakers are in for a treat: if you came upon these blindfolded, you'd be hard pressed to guess the nature of their driver technology. This speaker is a perfect example of a hybrid system that simply works. True, the bass is clearly *not* available from any ESL I can name, short of a wall full of Acoustats, so names like 'Magico' and 'ATC' and 'Wilson' might pop into your head. But then the sheer openness, airiness and sense of

freedom tells you that you are not listening to a box, however rigid and well-designed. With 'Assassin Of Love' [Polydor 887 312-2], the images floated so far outside and above the Neoliths that I was reminded in spades of the argument presented by those who insist that two perfectly resolved channels are enough even for material offered in surround. There was so much depth to the Neolith's soundstage that one could clearly discern layers in the song's instrumentation. I have no idea if that's how it's supposed to be; the track is, after all, a studio creation. But heard at this level of resolution such spatial majesty merely seems 'right'.

As it's all too easy to be both impressed and distracted by a soundstage of such precise image placement and acreage,

'It's a perfect example of a hybrid system that works'

I had to revert to mono in order to focus more on the tonal balance, neutrality and other qualities unrelated to spatial concerns. Tennessee Ernie Ford's 'Sixteen Tons' may be mono, but it was recorded on Capitol in the 1950s, which means that the sound is so realistic as to defy the 61 years since it was released... and its single channel status.

Oh, mama! Within a bar or two, any thoughts of 'missing stereo' simply vanished. It was big and room-filling and, thanks to the vocals, resonant, rich and unfettered by artifice. Here we have a recording that tested the Neolith's neutrality, the inimitable clarinet and Ford's relentless finger-snapping enjoyed in-the-room palpability recalling Apogee's Scintilla [HFN Sep '85], while the forcefulness and

JOE VOJTKO

Joe Vojtko, Chief Audio Technologist, and Devin Zell, MartinLogan Product Manager, explained the Neolith's role in the evolution of MartinLogan's high-end models, and its likely trickle-down benefits.

'The Neolith is the flagship for our next generation of electrostatic speakers, called the Masterpiece Series. Elements and philosophies from the Neolith that will be seen in future models include crossover and mounting technologies, bass and mid-bass level controls and the resulting ability to tweak voicing. Better understanding the speakers' relationship to the room allows us to adjust for the unique characteristics of different listening environments and seating positions.'

They also cite as benefits, regarding both the electrostatic component and the totally revised approach to the woofer section, 'massively improved bass dynamics, output and blending. Not to mention a return to extremely large planar transducers and their unique ability to create richly detailed and expansive soundstages.'

Ultimately, such research is costly, but, they add, 'Regardless of whether or not specific technologies trickle down to other models in the line, the Neolith's performance philosophy establishes a sonic performance benchmark. The Neolith is a *tour-de-force* of the sonic qualities we sought to bring to our new Masterpiece Series. Without pushing the envelope of performance, there's was no way to know how far we could take everything that will follow.'



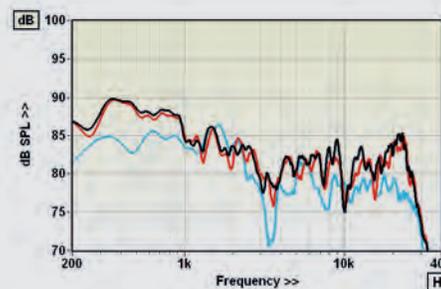
LAB REPORT

MARTINLOGAN NEOLITH

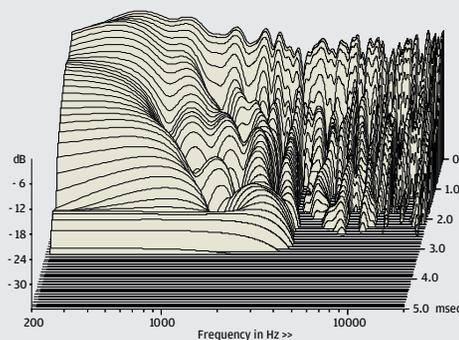
MartinLogan claims 90dB sensitivity for the Neolith but our measurements showed this to be approached only below 1kHz, the pink noise and 'music' figures suggesting that 84/85dB is more realistic. MartinLogan also rates the Neolith at 4ohm nominal but says the impedance drops to a scary 0.43ohm at 20kHz. We measured a minimum of 1.8ohm at 11.7kHz but the combination of low modulus and high phase angle in the upper treble drops the minimum EPDR (equivalent peak dissipation resistance) to 0.6ohm at 10.3kHz, although the dips to 1.1ohm at 113Hz and 1.3ohm at 50Hz are arguably more significant.

As usual, on-axis response measurements – taken on the central axis of the panel and with the 'distance control' set to 3m – were made at 1m distance [black/red traces, Graph 1] but another was made at 2m with the second speaker [blue trace], to see how the response changes out towards more realistic listening distances. With the 'bass setting' at 0dB, all three traces indicate that treble output is significantly shelved down, resulting in high response errors of ± 7.4 dB and ± 7.0 dB respectively (1m, 200Hz–20kHz). The pair matching error of ± 2.9 dB is also high, although the severest disparities occur over narrow frequency bands.

Nearfield measurement of bass response was stymied by not being able to place the microphone sufficiently close to the front-firing bass driver due to its fixed grille. But the measured port tuning frequency of 25Hz suggests the specified 23Hz for ± 3 dB response limits is realistic. Nearfield measurement of THD at 1kHz and 10kHz from the Neolith's large electrostatic panel also gave unrepresentative results. KH



ABOVE: Forward response is notably shelved-down below 1kHz, even at 2m distance [blue trace]



ABOVE: Highly complex panel modes are indicated in this cumulative decay and the response plots [above]

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m)/2.83Vrms – Mean/IEC/Music)	82.0dB/85.1dB/84.0dB
Impedance modulus min/max (20Hz–20kHz)	1.8ohm @ 11.7kHz 16.7ohm @ 2.1kHz
Impedance phase min/max (20Hz–20kHz)	-76° @ 6.7kHz 44° @ 1.5kHz
Pair matching/Response Error (200Hz–20kHz)	± 2.9 dB / ± 7.4 dB/ ± 7.0 dB
LF/HF extension (-6dB re. 200Hz/10kHz)	see text/30.7kHz/31.1kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.2% / see text
Dimensions (HWD)	1899x769x870mm

LEFT: A 15in aluminium-coned, reflex-loaded subwoofer operates below 60Hz with a '0dB, -4dB and -8dB bass control'. The five-way bi-wire terminals are silver/palladium types from WBT

offer, intimate and subtle and perfect for the massed-but-delicate backing vocals. At the same time, however, it established a 'wall of sound' of such grandeur that I could only think of an analogy by citing its opposite: watching an epic film on an iPad.

Having come to grips with this blessed contradiction, vocal tracks followed in quick succession.

Howard Tate's 'How Blue Can You Get' and 'Everyday I Have The Blues' stretched the Neoliths

because of both his range and the funk factor of his arrangements.

A classic 1960s-sounding stereo effort [Verve], it was a case of an open window into a recording that excels for the performance rather than the sonic merit. The Neolith forces the listener to ignore rather than fret about any failings.

By the time I reached Dean Martin's 'That's Amore' [Disky BM 871522], his delivery as relaxed as Tate's was intense, I realised that the Neolith isn't merely the best speaker yet to issue from MartinLogan: it's one of the most satisfying large systems I've heard since experiencing the Alexandria prototypes in Dave Wilson's listening room. ☺

HI-FI NEWS VERDICT

Allowing for my bias as a long-term 'Logan user, and lover of ESLs in general, the Neolith changes one paradigm completely: it is the first ESL – hybrid or otherwise – I have heard that gives away nothing in terms of dynamics and power to box-type systems. It does this while retaining all the glories of electrostatics including clarity, transparency, openness, speed and delicacy. Its stunning looks? A welcome bonus.

Sound Quality: 90%



solidity approached that of Wilson's XLF [HFN Oct '12].

I cannot imagine how many times I have heard Lou Rawls' 'At Last' [At Last; Blue Note CDP 7 91937 2], and yet here I was uncovering some low-level information that had previously eluded me – subtle harmonics, a vocal tic, the hint of a quiver from Ms Reeves' impressive pipes.

A WALL OF SOUND

Apart from the seamless matching between panel and woofers, this level of detail and surgical precision from so large a system seemed at odds with the need to be a room filler. It's not that the two are incompatible, but something Pavlovian suggests that one uses large systems for scale, impact and majesty, and small speakers like LS3/5As for forensic listening.

With Big Daddy's 'With A Little Help From My Friends' [Rhino OGL83001-2], for example, the system portrayed this Johnny Mathis pastiche with all the silkiness it can