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MAGIC TOUCH

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Magico S3 floorstanders

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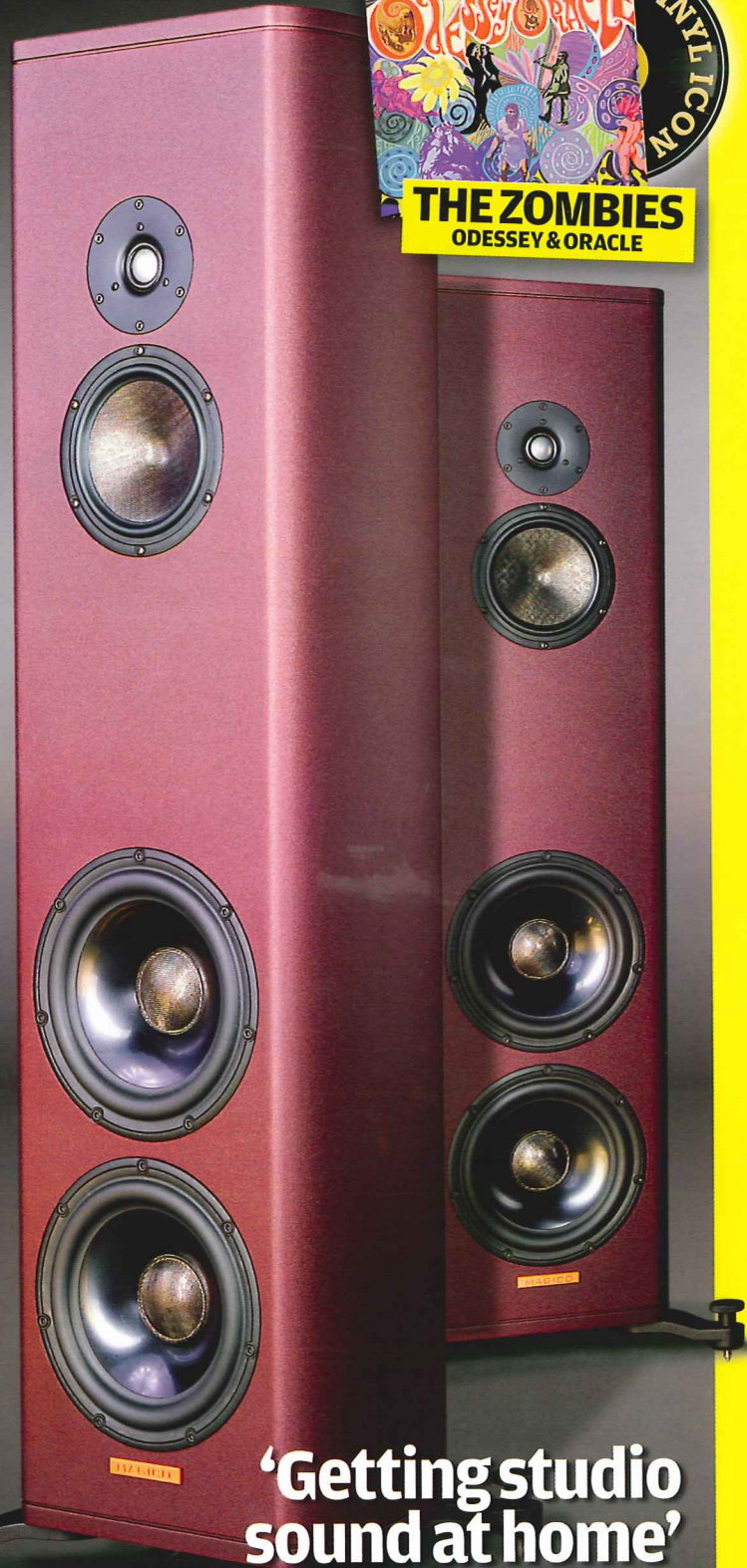
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Magico S3

Among its claims to fame, this new floorstander boasts the world's largest monocoque alloy enclosure

Review: **Paul Miller** Lab: **Keith Howard**

In just one decade, Magico has transformed itself from boutique brand to a dominant force in the high-end loudspeaker scene. This is largely the achievement of one man, Alon Wolf, Magico's indefatigable CEO and designer who's guiding philosophy operates along the lines of 'if you want it done properly...' This extends not only to the drivers which are largely bespoke but in particular to those famously inert cabinets, renowned for employing copious quantities of alloy, innovative scaffold-like internal bracing and constrained-layer damping.

A continuous, unbroken shell is arguably the ultimate expression of this ideal – and one which is realised in the new S3 floorstander whose carcass is one continuous, massive alloy extrusion some 16in in diameter.

Prices for the 68kg S3 depend on the level of finish. The M-Cast is Magico's standard offering, an attractive, satin-style powder-coat available in a set range of colours for a £25,000 ticket. M-Coat, by contrast, is Magico's premium-level finish, achieved using glossy automotive paints for a visually striking appearance. These command figures closer to £29,000 so you've *really* got to want a custom paint job [see front cover]!

THE BIG DEAL

The S3 also plugs the gap between Magico's smaller extruded-cabinet S1 and the larger the S5, which is built from four different alloy panels [see *HFN* Dec '12]. It's a three-way, sealed-box design combining the same advanced MB30 beryllium tweeter and 6in M380 midrange unit that Magico uses in the S5. But it's the implementation of the M380 that Alon Wolf describes as 'the biggest deal of these loudspeakers' – the driver working into its own specially shaped sub-enclosure fashioned from a polycarbonate resin.

Conceived as the 'ultimate sound pressure absorption device', this internal enclosure takes the form of an elongated bubble, providing the ideal acoustic termination for the M380 and reducing

distortion over a decade-wide bandwidth (200Hz-2kHz) by around 5dB, according to Magico's online graph [http://magico.net/Product/S3/S3_04.php]. The chamber also isolates the midrange unit from changes in pressure caused by the pair of newly-developed 8in woofers. These employ a hybrid 'Nano-Tec'/aluminium cone material [for more on carbon nanotubes see Opinion p102, *HFN* Sep '14] combined with the huge voice coil and underhung motor system we've come to expect from the brand's in-house bass drivers.

THE BIGGER DEAL

Personally, I consider the S3's extruded contoured aluminum cabinet – claimed to be the world's largest monocoque enclosure with ½in walls and having the potential to minimise diffraction effects, internal resonances and damping requirements – to represent the far 'bigger deal' [see boxout, adjacent].

In Magico's premier Q Series [*HFN* Sep '11] the lack of bending stiffness which afflicts the flat panels of box-shaped speaker cabinets, and particularly large box-shaped cabinets, is addressed by the complex process of incorporating numerous CNC-machined braces within the interior space. Something less extravagant was obviously required for the S series, so Magico did the sensible thing and increased the inherent stiffness of the cabinet walls by curving them.

In the S5 two curved side panels are attached to U-shaped internal braces to which the flat front baffle and small rear panel also attach but for the S3 Magico has developed this one-piece extruded cabinet, closed off with top and bottom plates. The tall structure (1.22m from head to toe) is stabilised by matching alloy outriggers fitted with exquisitely-machined adjustable spikes. Cable connection is as simple as it

RIGHT: The star of the show is the S3's 6in M380 midrange unit with its own moulded sub-enclosure. The perforated grilles are magnetically attached but should be removed before listening



EXTRUSION EXPLAINED

Extrusion is often likened to squeezing toothpaste from a tube. In the case of the S3, however, the toothpaste is aluminium alloy heated to softening point. The outlet of the tube contains a die that forces the extruded aluminium into the required shape, and a hydraulic ram is needed to do the squeezing. It's simple enough in principle but it requires enormous force to extrude a section the size of the S3's cabinet, and ensuring tight dimensional tolerances is no simple matter. The process is not limited to the height of the S3 as multiple cabinets will be cut from one very long extrusion. Furthermore the S3 still employs U-shaped internal braces but here they are wedged into position by using bolts to force them away from the back of the flat front baffle area. KH



gets with a single set of 4mm lock-tight bananas sufficing for each cabinet.

While the paired bass drivers certainly benefit from boundary effect with the floor, the lack of output from the cabinets themselves assists in the neutrality of their positioning. Like other Magicos hosted at 'chez Ed' [see www.hifinews.co.uk/news/article/meet-the-team;-paul-miller/9952] the S3s slotted into the room with minimum fuss and bother, finding their sweet-spot slightly toed-in and set a couple of feet from rear and side walls.

JUST RELAX

While the S3s may give lesser solid-state and some tube amps pause, my pair of Devialet 800 monoblocks drove these loudspeakers with the kind of unruffled security I've come to expect. Digital sources included both my Sony VAIO laptop (in battery mode running XP and proprietary media software), in addition to an Oppo BDP-105D universal player for disc and files on USB stick.

Anyone tempted by the prospect of the Magico magic should also ensure the S3, like the S5, gets a chance to bed-in before any critical decisions are made. Those extruded alloy cabinets and 8in bass drivers took around two weeks to warm up and 'relax' before the music really flowed. Ah, but when it does, the S3s sound astonishingly quick, the bass utterly free of bloom or overhang, securing the musical rhythm with the deadly authority of a nail gun. I can think of a few other high-end floorstanders that, by contrast, seem to deliver their bass with the blunt precision of a wooden mallet. Furthermore the segue to Magico's topmost drivers is subjectively seamless, its

mid deliciously detailed, the treble sweet but so obviously extended beyond the grasp of the listener's ear.

VINTAGE VALUES

The S3 is analytical by design but sympathetic, musically, in its approach. As a consequence it revealed the layering of The Beatles' 'Back In The USSR' [*White Album*; 2009, 24-bit re-master] without tearing this vintage masterpiece to shreds. The drone of aircraft in the background remained as clear as day, setting the scene for McCartney's slightly nasal vocals and enthusiastic percussion (all three remaining band members recorded drum parts after Starr quit, albeit temporarily, but McCartney's efforts made the final cut). The value of refreshing this vintage recording was especially clear as the S3s rolled out the red carpet for the Fab Four, the boys performing with a clarity and energy that, over 45 years on, belied the tape's humble origins.

Moreover, the S3s create a capacious and very transparent soundfield without the

'Bass rhythms are secured with the deadly authority of a nail gun'

conspicuous presence of an archetypal 'big box'. Like the very best floorstanders, and all Magicos I've heard, the S3 vanishes from the picture, its form merely a gossamer-like vehicle for the music. But make no mistake, the power and energy with which its music is delivered belies the modest size of its drivers and can sorely test the headroom of the partnering amplifier. If you hear a pair of S3s sounding anything less than vibrantly clean, look first to the accompanying electronics.

I hankered to hit the 'SAM' button on the Devialet's remote [*HFN Jun '14*] but, at the time of writing, while the Q3 and S1 have bass performance profiles ready →



MAGICO S3

LEFT: The curved profile of the S3's extruded alloy cabinet is easier to appreciate from behind. Note also the single set of speaker terminals. Substantial, spiked outriggers ensure the tall S3 remains stable on all floor types

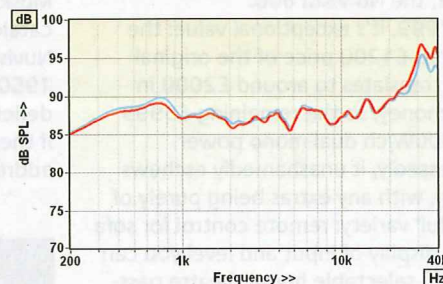
of Neil Young's *Harvest* [96kHz/24-bit rip from DVD-A] was not suddenly filled with an inappropriate urgency. However, the drums sounded refreshingly cleaner than is typical, as did the A-list guest backing vocals and LSO on 'There's A World', the lack of clutter and fuzz elevating the performance from doldrums to a state of drama where Young's voice – miked at a distance – enjoyed real space to breathe. The music was relaxing, informative and yet invigorating, all at once.

Switching to Donald Fagen's *Morph The Cat* [96kHz/24-bit download from www.hdtracks.com] certainly shows the S3s can rock with the best of 'em even if there's not the bass mass enjoyed with the bigger S5. And yet the S3 still palpably drives the music, the impact of drums supplemented by Fagen's signature Fender Rhodes, the robust bass guitar and baritone sax.

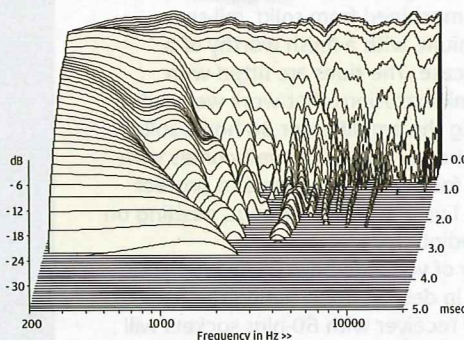
The fact that all these elements are delineated with near-surgical efficiency without being rendered with the passion of an autopsy is testament to the skill of the S3's design. I've never heard this 2006 release, rendered here in hi-res guise, delivered with such composed energy, such precision and toe-tapping insight. For this I could live without the last ounce of rib-tickling bass wallop. And if not, well there's always the fabulous S5. ☺

Magico claims 88dB sensitivity for the S3 which is very close to the 87.8dB pink noise figure we measured over the frequency range 300Hz-20kHz. In a reflex-loaded loudspeaker of this size that would be a modest figure today and would not require low impedance to achieve but the S3 has closed box bass loading, which substantially curtails the achievable sensitivity, and so it does require low impedance to manage this. Magico claims a nominal figure of 4ohm but we measured a minimum modulus of 1.6ohm, more in keeping with a 2ohm nominal rating. Moreover, at high frequencies low modulus is combined with high impedance phase angle, the figures at 20kHz being 1.6ohm and -54° respectively, sufficient to drop the EDPR (equivalent peak dissipation resistance) to a scary 0.5ohm. Only at around 3kHz does the EPDR drop below the low frequency peak of 1.7ohm at 67Hz.

The forward frequency response trend, measured on the tweeter axis, is distinctly concave through the presence band but the response ripples are so well controlled that despite this the response error is just $\pm 2.0\text{dB}$ for both channels (300Hz-20kHz). This is a fine result for a passive speaker [see Graph 1, below]. Pair matching over the same frequency range was out of the top drawer too at just $\pm 0.7\text{dB}$. Ultrasonic response reaches out to above 40kHz, while according to our diffraction-corrected near-field measurement bass extension is 43Hz (-6dB re. 200Hz), although this will be improved in-room by the twin woofers being near the floor. The cumulative spectral decay waterfall [Graph 2] shows fast initial energy decay but there is evidence of some low-level breakup modes in the treble. KH



ABOVE: The S3's forward response shows some loss in presence output but pair matching is excellent



ABOVE: Cabinet resonances are quickly damped but there are some mild driver modes at 3kHz and above

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m)/2.83Vrms – Mean/IEC/Music)	87.9dB/87.8dB/87.6dB
Impedance modulus min/max (20Hz–20kHz)	1.6ohm @ 20kHz 18.5ohm @ 37Hz
Impedance phase min/max (20Hz–20kHz)	-54° @ 48Hz 38° @ 26Hz
Pair matching (300Hz–20kHz)	$\pm 0.7\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	43Hz $>40\text{kHz}$ / $>40\text{kHz}$
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.2% / 0.1% / 0.1%
Dimensions (HWD)	1225x303x305mm

HI-FI NEWS VERDICT

A 'technological tour de force' is not an uncommon cry in the promotion of high-end audio, but this promise is not only realised in the materials and manufacture of Magico's S3 but also in the exquisite delivery of its music. As with other Magicos, however, the spell is ideally woven in tandem with amplifiers of equivalent calibre, including those from Constellation Audio, D'Agostino and the Devialets used here.

Sound Quality: 88%

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for download [<http://voteforsam.devialet.com/category/magico/?vfilter=popular>], the S5 and S3 are still accumulating votes.

Even without SAM's guiding influence the Magico S3 has an exceedingly 'fast' bass and with Devialet 800s at the helm, fast, tight and dynamic never meant hard or relentless. No sir.

A FRESH HARVEST

In practice it'll lift the gentlest, least energetic of recordings like a wolf handles its pups – with razor sharp teeth never bared for a fight. So the casual stroll of Kenny Buttrey's drumbeat that sets the relaxed pace