

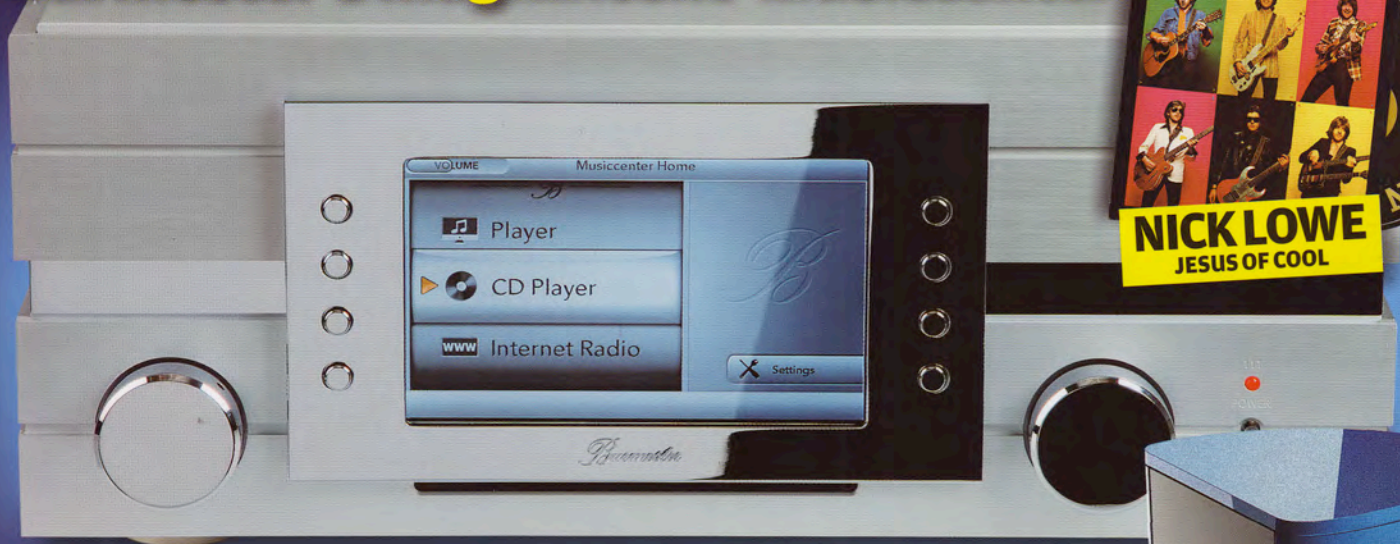
# hi-fi news

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& Record Review

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# Magico S5 (£28,900)

We all want a taste of the ultimate speaker at less than the ultimate price. Does Magico's S-series succeed?  
 Review **Paul Miller** Lab: **Keith Howard**

If there's a sense that some of audio's old guard are more interested in pursuing in-car franchises and iPod docks than defining the state of the loudspeaker art then this mantle will soon be assumed by leaner, hungrier and more passionate brands. And there is none more aggressive in pushing back audio's boundaries than Magico, its novel use of aluminium cabinets with constrained layer damping and bespoke drivers already propelling its Q-series to near-legendary status [see *HFN* Sep '11].

However, while that technology extends to the stratospheric £160k ticket of its 340kg Q7 flagship, Magico has wisely decided to 'trickle-down' its know-how into a new and mildly more affordable series: the £12,900 S1 and £28,900 S5 floorstanders. The latter is a good £11k shy of the similarly-proportioned Q3 and yet it offers almost exactly the same sensitivity, an even flatter response but a measurably, and palpably, superior bass extension.

## SO WHAT'S THE CATCH?

What's the catch? In practice, and possibly even to Magico's own surprise, there isn't one because the S5 turns out to be rather more than a 'Q3-lite'. For starters there's the cabinet. Instead of using multiple flat alloy panels clamped into position, the S5's body comprises three main sections – a thick alloy baffle plus two curved, 0.5in-thick side extrusions that increase stiffness while minimising internal standing waves.

Moreover, this is the first Magico to be offered in a choice of colours, the extrusions finished in a range of six high-gloss automotive paints from the metallic blue seen on this month's front cover to a deep ruby red and the stylish, understated black photographed here. Custom colours are offered along with a fully anodised finish, at extra cost.

Inside, the shell is connected and also braced via four open-section frames, a simplification of the internal scaffold

Magico uses in its bigger designs. The drivers are also directly connected to the S5's baffle, rather than the inner-baffle of the Q3's laminated frontispiece. So the S5's cabinet is inherently lighter, stiffer and suffers minimal energy storage, as our measurements illustrate [see p33].

## DRIVER DEBATE

While this exclusive review marks the worldwide launch of the S5, many web pages have already been exhausted with inaccurate *reportage* over the origins of its drivers. The bottom line is this: all Magico's drivers are either designed and produced in-house or in league with OEM suppliers with whom it has a contractual relationship. Magico retains the IP, but the OEM (original equipment manufacturer) typically has the capacity to execute the technology in volume.

The S5's tweeter, for example, is based on the Scan-Speak Illuminator platform with beryllium diaphragm, although Magico has specified its own magnet system, voice coil and suspension to improve low-range performance and reduce distortion. Magico is keen to stress that this is 'not a modified tweeter, but rather a new design from the ground up'.

The midrange is Magico's familiar 6in 'Nano-Tec' unit, an asymmetrical three-layer sandwich of carbon skins with a Rohacell centre, embedded in a nanotube thermoplastic resin. It's culled directly from the Q-series, complete with underhung motor system and neodymium magnet. The S5's bass drivers are very different from those used in the Q-series, however; these a hybrid of Magico's carbon 'Nano tubes' for the dust cap and aluminium for the cone. There's a custom-made magnet system tailored to the S5's sealed box

**RIGHT:** Magico's custom-made drivers include a beryllium-domed tweeter, 'Nano-Tec' midrange and two aluminium/Nano composite bass units with substantial throw



## MAGICO MYSTERY TOUR

In point of fact there's nothing particularly mysterious about Magico or its success since its chief architect and driving force, Alon Wolf, switched from a part-time career as bespoke loudspeaker artisan to full-time, consumer-facing speaker designer. The seeds of Magico's DNA were sown with Wolf's early extruded aluminium cabinets but only really germinated once his 'Mini', an internally-braced birch-ply/alloy hybrid monitor with integral stand, made waves across the wider audiophile world. Fast forward just ten years and the company is now spread across two sites in Northern California, totalling 9000sq ft, and employing 30 staff; Magico now has its own machine shop. The same core determination to re-define the practical possibilities of loudspeaker design and performance, at both ends of the high-end spectrum, has evidently been ramped up a gear.

alignment and a suspension that offers a huge 1in linear excursion. Moreover these are overhung designs using ferrite magnets, heavy shorting rings to reduce distortion and inductance but with a mere – by Magico standards – 2in voice coil. By contrast, the Q-series bass drivers have underhung neodymium magnets and much larger 5in voice coils.

More importantly, perhaps, the S5 does share Magico's 'elliptical crossover technology', employing superior Mundorf film capacitors and air-cored copper foil inductors. It also features the same precision-tooled spikes and floor protectors, three per side ensuring easy and rigid levelling of the cabinets. I'm also bound to say that the S5s proved much easier to

position for best performance, in the same room, as the Q3s had last year [see Opinion, *HFN* Sept '11 and p98].

### ULTRA RESOLUTION

If I had to sum up the S5s in a single phrase then that would be 'hi-res' such is their ultra-vivid and ultra-clean sound. And by this I don't mean the kind of squeaky, acerbically clean intonation that'll have you rushing for a lush tube amp to temper a cool, unsympathetic dose of reality. No, the S5 is simply exquisitely revealing of everything in your system – your separates, your cables and quality of the recordings wending their way through the chain.

Keep it simple – and a direct digital connection to a pair of Devialet D-Premier amplifiers is about as

uncomplex and as elegant as modern hi-fi gets [*HFN* Jul '12] – and the S5s reward with stunning high definition from the roots of the deepest bass to the most brilliant of highs.

Now, I say this with full knowledge of the Q3 and a morning already spent with a well-run-in pair of the phenomenal Q7s. The S5s do not possess the astonishing reach and 'dead' neutrality of the Q7 but they do offer an insight, a clarity and freedom from cabinet-induced colour that marks them apart from conventional MDF peers.

Driving the Devialet's via an AES

link from dCS's Vivaldi upsampler [exclusive review to follow], the low pipe notes from Bach's *Tocatta & Fugue* [Mattias Wager, *Organ Treasures*, Opus

'Ultra-vivid and ultra-clean, the S5 is exquisitely revealing'

3 SACD 22031] were possessed of a gloriously rich resonance, but this was a clean reverberation informed by the ambience of the venue and not the contribution of a poorly damped cabinet. In much the same way, vocals *speak* to you – you'll hear Kate Bush's crushed highlights on the 'hi-res' 24-bit/96kHz download of *50 Words For Snow* and, by contrast, the gloriously well-recorded timbre of Eric Bibb and guitar through *Blues, Ballads & Work Songs* [Opus 3, SACD 22111]. Here the rich gruffness of his voice is joined by the instrumental tails of 12-string and slide guitar, creating a musical mirage of compelling intensity.

Whenever I've heard this disc before, it's sounded a little too rich or lush but it took the S5 to draw out the detail in such explicit – but ↪



## LOUDSPEAKER



**LEFT:** The narrow aluminium back panel is held, and holds, the front aluminium baffle under tension. Single 4mm speaker terminals connect to a 3-way 'elliptical' crossover

S5 lacked some top-end pizzazz, the indefinable ultrasonic 'air' that's sensed as much as heard. But the forward response [see Lab Report, opposite] proves the S5 has as flat and extended a response as the best of 'em and one that's near-indistinguishable from the Q3.

What I was not hearing, of course, was the extra fizz provided by the premature break-up of a treble dome near the audio band. Beryllium pushes this out to 30kHz+ so if you are listening to CD you'll never exacerbate this resonance. As a result the S5 sounds very, very smooth. Naturally smooth.

### PIQUANT PERFECTION

An experienced audiophile visitor was transfixed by the S5s for several hours. As he turned to leave, he remarked 'these are probably the most fabulous speakers I've ever heard'. He paused, 'but I don't think I could ever fall in love with them.'

A piquant observation, for the S5 is as much an audio perfectionist's tool as purveyor of musical pleasure. Experienced listeners would not confuse a Stratocaster with a Les Paul of the same era or the classic violins crafted by Stradivari, Guarneri or Amati, and neither will the S5. In our hi-fi realm it's the difference between a clear pane of glass overlooking a sunset and an impressionist oil painting. And I think we all know where I'd turn my gaze. ☺

### HI-FI NEWS VERDICT

This is an exceptional speaker, one that leverages technology from the costlier Q-series but ends up as a potent foil for its mentors. Unprecedented neutrality and bass extension for the cabinet size is wrought at the expense of a challenging load, so the S5 should never be partnered with anything less than an equally exceptional amplifier. D'Agostino and Devialet spring to mind – combinations that will surely conquer.

Sound Quality: 89%



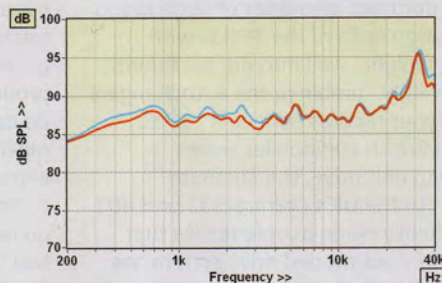
deeply enjoyable – fashion. *Far More Drums* by the Hohner Percussion Ensemble [DMP SADC-10] is another tricky customer, but the percussion sounded so detailed through the S5 that I could almost envisage the colour of the wooden staves that punctuate the album. They sounded hard, just as they do in real life, but they didn't sound oppressive.

While the S5 undoubtedly has a fuller, deeper and simply more meaningful bass presence than the costlier Q3, it also has a very smooth treble. On occasion I suspected the

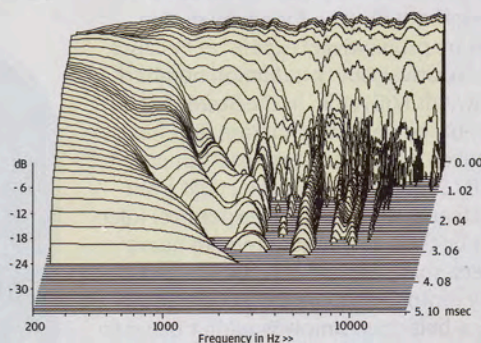
### MAGICO S5 (£28,900)

Magico claims 90dB sensitivity for the S5 but our pink noise result of 87.4dB suggests that this is getting on for 3dB optimistic. Even this requires a low impedance to achieve, the S5 presenting an unusually challenging load to its partnering amplifier. A minimum modulus of 2.5ohm at 62Hz was accompanied by high impedance phase angles at low frequencies, resulting in a minimum EPDR (equivalent peak dissipation resistance) of just 1.0ohm. On-axis frequency response [Graph 1, below] is about as flat as you could ever expect to see from a passive loudspeaker, with errors of only  $\pm 1.6$ dB and  $\pm 1.3$ dB respectively for the review pair. Pair matching over the same frequency range was good, although not so exceptional, at  $\pm 1.1$ dB, the principal disparity appearing to be a small mismatch of midrange driver sensitivities.

Payback for the moderate sensitivity comes in the form of bass extension down to 33Hz (-6dB re. 300Hz), a fine result for a closed box design which will be further improved in practice by interaction with room boundaries. Ultrasonic extension reaches out to beyond 40kHz with the beryllium tweeter dome's first breakup mode at about 32kHz: a little disappointing given that this performance is now challenged by the best aluminium dome tweeters. Total harmonic distortion of 0.1% for 90dB SPL at 100Hz, 1kHz and 10kHz bears witness to meticulous motor and suspension design, particularly in the twin bass drivers. The cumulative spectral decay waterfall [Graph 2] was very similar for each of the review pair, showing fast initial decay but a surprising amount of low-level treble 'hash', presumably due to breakup in the midrange cone. KH



ABOVE: As flat a response as is possible from a passive loudspeaker. Treble dome breakup deferred to 32kHz



ABOVE: Cabinet resonances are well controlled but note breakup modes from 4-10kHz missing in the Q3

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.6dB/87.4dB/87.3dB
Impedance modulus min/max (20Hz–20kHz)	2.5ohm @ 62Hz 33.7ohm @ 28Hz
Impedance phase min/max (20Hz–20kHz)	-80° @ 34Hz 38° @ 22Hz
Pair matching (300Hz–20kHz)	$\pm 1.1$ dB
LF/HF extension (-6dB ref 300Hz/10kHz)	33Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.1% / 0.1% / 0.1%
Dimensions (HWD)	1220x350x380mm