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## MIGHTY MAGICO

A5 flagship floorstanders are stereo spellcasters!

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INVESTIGATION

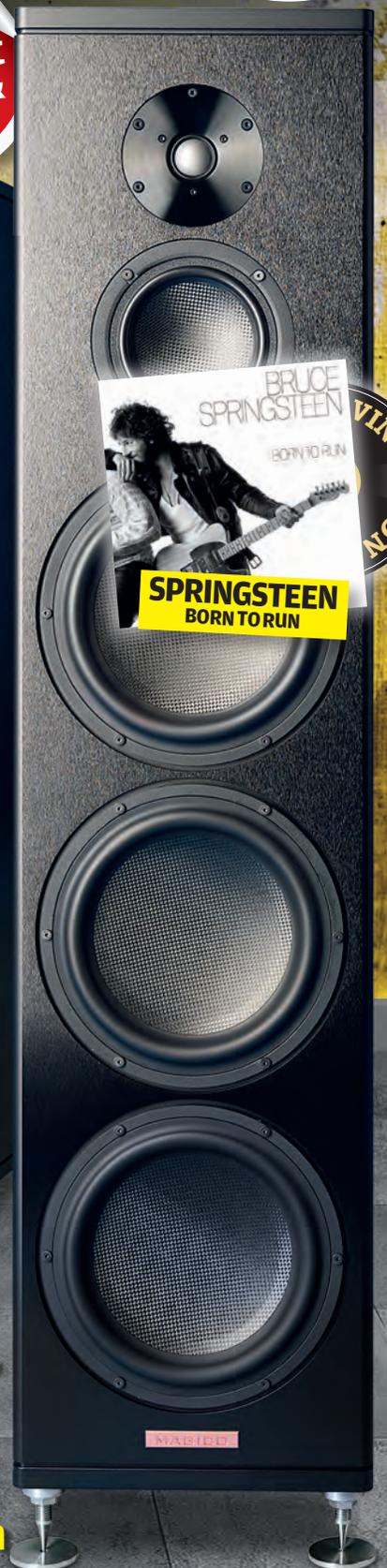
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# Magico A5

Flagship A series model from California's premier speaker brand is its most advanced 'affordable' floorstander yet  
 Review & Lab: **Paul Miller**

**F**inding positives during a time when audiophiles and civilians alike are under the cosh of 'that-which-shall-not-be-named' is important, and celebrating those rays of sunshine when we discover them, doubly so. And Magico's flagship A series floorstander is a particularly golden beam of musical light that, so the story goes, might not have been released so soon if it were not for the coercions of Covid. Oops, I mentioned it...

Back in the old world of 2019, Magico had planned a worldwide tour to showcase numerous of its new performance technologies in the very large and very expensive M9 flagship. That, of course, never happened and, instead, the 'trickle-down' of tech to its more affordable A series happened well before the main event itself. This £28k A5, the 180lb/82kg gorilla of the A range, is the result.

## A SERIES EVOLUTION

While the look and feel of the A5 is very much that of an A1 [HFN Jan '20] writ large, in practice the common ground diverges beyond the shared 28mm beryllium dome tweeter and use of 6061-T6 'aircraft grade' aluminium slabs for the cabinet, braced and reinforced by an internal matrix of square-section alloy tubing. Debuted in the A5, and surely the real star of the show here, is Magico's new 105mm midrange driver – the first 'pure mid' unit from the brand, working within its own sealed enclosure. It's smaller, lighter and more rigid than Magico's previous upper bass/mid units, boasting improved dispersion and a higher 350Hz-2.2kHz bandwidth.

The devil, as always, is in the detail and while there's nothing especially satanic about this diminutive 'Nano-Tec' driver, its composite of modern materials [see Welcome, p21 and boxout, p39] is still devilishly clever. Here we find a cellular alloy honeycomb core that's skinned top and bottom with a layer of carbon-fibre and graphene. The increased stiffness pushes primary breakup resonances out beyond the cone's passband [see Lab Report, p41] so there's less need for (weighty) damping

countermeasures. Magico supports and terminates the cone with a very light and compliant foam surround that's simply less restrictive than a rubber roll.

Sure enough, a more substantial rubber surround is deployed for the partnering 175mm woofers, but these are supporting a larger cone with a far longer throw. Otherwise these beefier drivers share the same cone construction as the new mid, again with titanium for the voice-coil former but with a more powerful neodymium-doped magnet instead of the pure ferrite 'engine' of the midrange.

## BLACK HOLE

I've already alluded to the A5's substantial weight, the cabinet supported on equally hefty spikes, but there's more to this brushed black anodised enclosure than its slab alloy sidewalls and internal scaffold of bracing. Rarely reported, but key to the cabinet's 'vibration management', is Magico's application of Blackhole 5 damping sheets to the inside surfaces of the alloy panels. This 25mm laminate of foam and glue is cut around the metal bracing matrix and applied to all the exposed internal surfaces.

Another upgrade due for roll-out in the M9, but issued first in the A5 are Mundorf's new 'M-Resist ultra foil' resistors, offering better power handling and thermal performance in Magico's otherwise familiar three-way 'Elliptical Symmetry' crossover. The passive components are heavy, so the crossover PCB is mounted flat on the base of the cabinet. True to form, it's a Linkwitz-Riley network offering fourth-order combined acoustical/electrical roll-offs, preserving positive phase across all drivers, while doing little to dent the high-ish rated 88dB/2.83V sensitivity. This was largely met in practice, albeit at the expense of a

**RIGHT:** The A5's sealed and heavily-braced aluminium cabinet hosts a 28mm beryllium dome tweeter, a new 105mm graphene/carbon-fibre sandwich mid unit and no fewer than three 175mm sandwiched-coned woofers, all with a continuous, dust-cap-free profile



## GRAPPLING WITH GRAPHENE

Graphene is a one atom-thick lattice of carbon, a two-dimensional structure that not only demonstrates remarkable thermal and electrical properties but also lays claim to be the toughest material on the planet. It was first isolated in 2004 by two researchers at The University of Manchester – the Nobel prize-winning Professors Andre Geim and Konstantin Novoselov – by stripping a one-atom thick layer from a graphite block.

The material takes the form of a carbon 'sheet' with groups of atoms arranged in a hexagonal 'chicken wire' pattern [see inset picture]. This lattice offers a combination of lightness and stiffness that's necessarily brought it to the attention of loudspeaker designers, including Magico, looking to reinforce the substrate of their driver cones (a pure Graphene cone is impractical). Weighing just 0.77mg/m<sup>2</sup>, a single 'sheet' would cover the area of a football pitch and still weigh less than 1g. Moreover, its Young's modulus is higher than titanium (116GPa) or beryllium (285GPa) and comparable with synthetic diamond at ~1100GPa. Without graphene, Magico's 'Nano-Tec' bass and mid cones would not possess the extended bandwidth they currently enjoy.

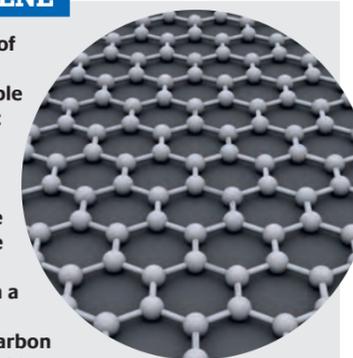


IMAGE COURTESY OF CHONGWU ZHOU AND JIA LIU

tougher-than-average nominal 4ohm load [see Lab Report, p41].

## SOLID AS A ROCK

With both the Classé Delta pre/power amps [HFN Jun '21] still on hand together with my default Constellation Inspiration Monos [HFN Oct '19] sitting alongside, I was rather spoilt for choice when time came to fire-up the A5s and hear what all that graphene, carbon-fibre and beryllium could deliver. And deliver it does, not just 'in spades' but with a breathtaking lightness of touch that finds the midrange as fast and transparent as the treble, underpinned by a bass that's not only quick but as deep as it is slick. There's not one facet of the A5's sound that's out of step with the other, its performance combining the litheness of a marathon runner with the dynamic power of a 100m sprinter.

A quick burst of improvised jazz with Nasheet Waits opening 'Untitled' [Shift, Blue Note 00600406671585; 96kHz/24-bit, FLAC] perfectly illustrates the A5's

ability to deliver the punchy rhythm of a firmly-struck drum while maintaining the delicacy and air of accompanying cymbal strikes. Described as a 'dream band', the headline pairing of saxophonist/composer Logan Richardson with legend Pat Metheny does not disappoint here, especially with the atmospheric 'Locked Out Of Heaven' where that gorgeously brassy sax sound just spills into the room illuminated by flashes of percussion. The precision of the attack and poise of the decay is fabulous and just so... believable.

**'The music was simple, elegant and ravishing'**

Neither does the A5 lose its composure as Richardson and Metheny start trading blows in the deceptively unassuming 'Slow', building in a crescendo of strings, piano and brass that would challenge the most confident of amplifier/loudspeaker combinations. Frankly, the Constellation Inspiration/Magico duo breezed it.

## A SENSITIVE SIDE

These are big speakers, but they'll take on diddy LS3/5As when it comes to creating 'intimate'. The exquisitely close-mic'd soprano Barbara Hannigan, joined here by a marginally more distant Reinbert de Leeuw on piano, brings a hushed immediacy to Erik Satie's three-part avant-garde symphonic drama [Socrate; Winter & Winter 9102342, 192kHz/24-bit ↗]

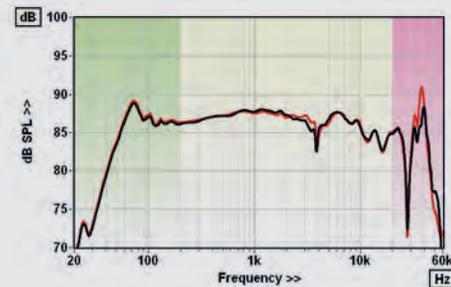
## LAB REPORT

### MAGICO A5

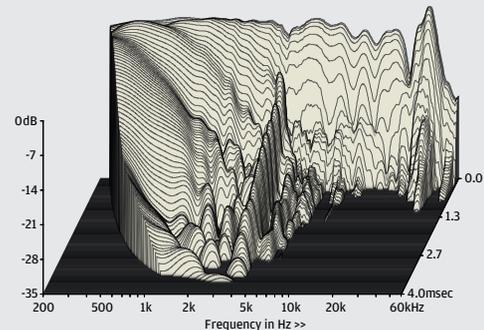
The A5 offers up a smooth but slightly convex response profile while its bass [green shaded area, Graph 1], aided by the three 175mm graphene/carbon-fibre woofers with their 48Hz-215Hz bandpass (-6dB), extends to a diffraction-corrected 41Hz (-6dB re. 200Hz). The alignment is still slightly 'peaky', however, emphasised at 73Hz but both this, and the ultimate extension, may be fine-tuned by in-room boundary reinforcement. The main response shows two notches – at 3.9kHz and 28kHz – the former possibly a diffraction cancellation at the seam between the baffle and top, or a misterrmination, while the latter is a local null prior to the primary breakup of the 28mm beryllium dome at 37.9kHz.

The 3.9kHz notch is too narrow to be directly audible, and can be made to 'disappear' with coarse response smoothing! Moreover, the very low 0.06% midband THD (re. 90dB SPL) barely increases to 0.09% here, but the notch has 'ripples' caught on the CSD waterfall [see Graph 2] that, arguably, are more 'visually' than audibly exciting. It's also the cause of the  $\pm 2.7\text{dB}/\pm 2.8\text{dB}$  response errors, just as pair matching deviates by 1.1dB here but is otherwise a magnificently tight 0.3dB from 200Hz-20kHz.

Sensitivity is only a little lower than Magico's rated 88dB at 87.7dB/1kHz and 87.1dB, averaged 500Hz-8kHz, but the rated 1kW power handling will still permit very high sound levels. You will need a very capable amplifier, however, as the A5's load drops to a minimum of 2.65ohm/93Hz-23° and has a maximum swing in phase angle of -72°/56Hz/7.8ohm. The load is sub-8ohm from 55Hz-1.7kHz (sub-4ohm from 65Hz-275Hz) and 2.4kHz upwards, dropping to sub-4ohm from 4.8kHz-45kHz. PM



ABOVE: Response including nearfield summed driver output [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red



ABOVE: Cabinet resonances are quickly suppressed. The main 'feature' is associated with the 3.9kHz notch

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V - 1kHz/Mean/IEC)	87.7dB / 87.1dB / 84.3dB
Impedance modulus: minimum & maximum (20Hz-20kHz)	2.65ohm @ 93Hz 21.6ohm @ 46Hz
Impedance phase: minimum & maximum (20Hz-20kHz)	-72° @ 56Hz +29° @ 35Hz
Pair matching/Resp. error (200Hz-20kHz)	1.1dB/ $\pm 2.7\text{dB}/\pm 2.8\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	41Hz / 26.9kHz/26.4kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.2% / 0.06% / 0.25%
Dimensions (HWD) / Weight (each)	1140x267x376mm / 82kg

**LEFT: Magico's proprietary 'Elliptical Symmetry' crossover is connected via WBT nextgen 4mm terminals. Neither bi-wiring nor bi-amping is supported**

Konzerthaus. The soundscape is truly massive, the scene set by the thundering score from *The Dark Knight* as the distant roar of tympani and bass roll out to the strain of strings, building an almost unbearable tension into what seems an improbably vast field of sound.

Switching scale entirely, the likes of 'Madagascar: Best Friends' sounds positively breezy by way of comparison but, once again, the A5s got right behind the uplifting mood of the music with high winds, piano, strings and bells combining in perfect harmony to deliver a truly joyous, happy sound. I defy you not to crack a smile...

### LISTEN TILL YOU DROP

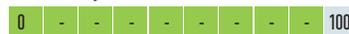
The A5s will soar stupendously high, descend into the black depths and expand to encompass the ambience of the grandest venue – a trick they pulled off again with the monumental 'Time' from *Inception*, the sound swelling without a hint of compression or boundary only to reveal yet another layer of 'performance' as the audience breaks into unexpected applause.

I spent a full day exploring this set with Magico's A5, discovering and delighting in the finesse of musical detail that had otherwise lain hidden in the nooks and crannies of Zimmer's tour de force. Then again, perhaps it truly takes a masterpiece of engineering to realise a masterwork of composition. ☺

### HI-FI NEWS VERDICT

A unicorn among equines, the A5 is one of a very rare breed – the 'impossible' moving-coil speaker that gets very close to the lightness and transparency of the best 'statics'/ribbons while harbouring a bass kick that eludes them all. Walk into a room with a pair of A5s on demonstration and it will take mere seconds to realise you are in the presence of something very special indeed. Yes, they are *that* compelling.

Sound Quality: 89%



FLAC]. Again, there's that sense of weightless drivers imprinting every lisp, sibilant and vocal inflection on the air, whispering in your ear while the firm tone of piano retains a stoic but undemanding presence, both participant in and voyeur to the sensuality of the piece. The music is simple, elegant, ravishing and the A5s reveal every lyrical note and breath of air without artifice. They are confident but invisible.

These speakers are capable of so much more, of course, and there's no bigger stage upon which the A5s might stretch their legs than with *The World Of Hans Zimmer – A Symphonic Celebration* [Sony Classical 190758990521; 48kHz/24-bit FLAC] recorded with the Vienna Radio Symphony Orchestra in the gloriously ambient Vienna