

Magico S3

floorstanding loudspeaker

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There are two things to point out here. First, most companies name the replacements to existing designs with a suffix, such as “Mark II.” Next, Magico isn’t most companies. The company has radically reworked its popular S3 floorstanding loudspeaker and renamed it... S3. Not ‘S3’ or ‘S3.3’ or even ‘S3i’... just S3.

Next, Magico potentially adds confusion to the mix because the S3 replaces... the S3 Mk II. In fact, the two points are related. This latest S3 is the loudspeaker Magico always wanted to build. It’s the entry tower to the S-Series, stepping beyond the already deeply impressive A-Series and drawing technology and inspiration from the top M-Series. There’s no sense in calling it a Mk III version, because it’s the point where Magico starts again. If anything, it’s the S3... rebooted.

From the flagship

It’s not hard to see where the S3 gets its inspiration; Magico’s top M-Series loudspeaker. And in that Series, the S3 aims high, drawing inspiration and design criteria from the M9 flagship. Easier said than done, however. To get even close to that level of performance without the M9’s three-quarters of a million dollar price tag, Magico needed to start from scratch. To most companies, that means a clean piece of paper or ‘CTRL-N’ (new file). Magico went the long way round; starting with new state-of-the-art Research and Development facilities, and a new listening room that pushes the envelope of listening performance.

The combination affords Magico the ability to not only analyse every aspect of enclosure, driver, coupling system, crossover, even down to the screws and feet, each objectively analysed parameter could be backed up by observation and listening test. Arguably, one could say this is nothing new; companies have had both the R&D and the listening suites deliver results. But the difference is few have had the gumption to change up both R&D and listening room at the same time, and even fewer already had state-of-the-art facilities in both and said “let’s spend a few million to make them even better!” That’s the sort of drive and dedication that Magico keeps bringing to the party.

One of the biggest changes to Magico’s measurement process was the use of the Klippel Near-Field-Scanner (NFS). This uses a single microphone that rotates around a loudspeaker enclosure that is suspended in free-air. The microphone analyses the environment space first, and then takes fully automated 3D acoustic measurements (on and off axis) in a minimal amount of time without the need for an anechoic chamber. The 360-degree sphere of measurement points are then calculated with the initial room measurements deducted from the equation. The Klippel Near-Field-Scanner provides Magico with an extraordinarily accurate data set, allowing the company to predict the in-room reflections and response of each loudspeaker in a standard listening room environment. Klippel’s NFS is a substantial investment for any company, but it paid dividends as the new S3 greatly benefitted from the technology.

Magico also invested in a new in-house 3D laser interferometry system, which can measure up to 1,000 points at a stroke. This highly accurate analysis enables Magico to compare an enclosure’s resonance contribution relative to the acoustical output of the transducers. This allows more accurate application of internal bracing and damping to optimise the overall sound performance of the a loudspeaker. The result is that Magico claims the new S3 enclosure is 30% quieter than its predecessor.

At the same time, the continued use of Finite Element Analysis (FEA) allows Magico to assess acoustical, mechanical, electromagnetic and thermal properties of an enclosure or drive unit. Magico claims this testing protocol helps minimise distortions in the frequency and time domains.

Of course, all of this outlay on R&D and a listening suite means nothing if the company simply ‘knocks out’ a few mediocre products. In fairness, when a company makes a big ‘back office’ change like Magico did, you almost expect the first product out of the blocks to have a few teething troubles. This wouldn’t be forgiveable at the high-end, but it might be understandable. However, instead Magico came up with the S3; a loudspeaker that delivered a performance that even out-performed the expectations of a company known for setting itself high standards. >>

EQUIPMENT REVIEW
Magico S3





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» Overnight success

One of the things we on the outside never really understand is just how much time and energy goes into these projects. We only get to see the end result. Like all overnight successes, the Magico S3 took years of effort to get there. In most companies, those 'years of effort' means a re-working and tweaking of existing parameters. This is no easy feat; it's like taking the same handful of ingredients that make up one meal to make a similar - but, hopefully, better - one. This design brief can come up with exceptional products, and is particularly useful in producing lower-end and mid-fi loudspeakers. You have a set of parameters fixed in place by price points, and working in such rigid conditions can produce remarkable results for the money.

Where such developmental practices are less well received is when price is less of a restriction on the design brief. To make a pair of high-end loudspeakers by simply churning what went before is, sadly, still seen even in some extremely high-end loudspeaker designs. But not in Magico's line-up.

In Magico's case, however, it's more a question of "what new methods of manufacture and new materials are coming and how do we fold them into our next product?" The three years of engineering research that went into the new S3 meant developing a new generation of drive unit chassis design that improved on existing mechanical and acoustical parameters. It also meant new chassis profiles developed for the S3's midrange and bass drivers, which result in optimum damping and stiffness while reducing resonant modes and maximising internal air flow. So, no biggie, then... just relearning the mechanical engineering of loudspeakers and the physics of a sealed box enclosure. It makes you wonder what the slackers at Magico did for the rest of the three years!

Trickling down

One of the S3's most obvious 'pulls' from the M9 flagship is the tweeter. The M9 used some exceptionally clever modelling to create an almost-ideal tweeter diaphragm, and the lessons learned in producing that high-frequency platform trickle down to the S3. By sciencing beryllium hard, Magico managed to increase the diamond-coated beryllium dome diameter from 26mm to 28mm without gaining weight in the process. Upping the size of the diaphragm gives it greater power handling and lower distortion, and gets it closer to that Platonic Form of tweeter in the M9. This diaphragm is combined with a neodymium- »



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» based motor system, a new acoustically improved back chamber and customised shape to integrate into the curved front baffle. All of which makes the new tweeter far, far removed from the 'off the shelf' high-frequency drivers used by many of its peers. While the OEM route gets results, it doesn't push the boundaries. Magico deserves praise for taking this longer, harder route, but regardless it justifies its place in the performance.

The single 127mm midrange driver and two 227mm bass units are both Generation 8 versions of the company's Graphene Nano-Tec cone; a honeycomb aluminium core sandwiched between inner and outer layers of graphene and carbon fibre. This enables wider dispersion characteristics and results in greater midrange transparency. In the midrange, the advanced cone is supported by a custom basket assembly and foam surround, with an all-new underhung neodymium-based motor system featuring two extra-large magnets a pure copper pole cap. The new bass unit meanwhile incorporates oversized components including a 127mm pure Titanium voice coil and copper cap with 13mm of linear excursion.

Strong and stable

The new S3 enclosure is assembled from four separate extruded aluminium panels ranging in thickness from 13mm to 50mm. Each panel, including the front baffle, is carefully machined to make the enclosure practically edgeless. A massive machined curved top plate has an upward pitch to limit enclosure diffraction and break up vertical standing waves. Then, a stronger and more substantial baseplate with a new three-point outrigger system and a new foot design helps lower the centre of gravity of the speaker and increases its overall stability.

These last few pages are a long-winded way of saying in the new S3, Magico has gone back to its sources. It draws inspiration and technology from the flagship loudspeaker in the line-up, but the core of what has always defined Magico in the first place; a core of solid engineering. The years since Magico was the *enfant terrible* of the high-end audio world have been well spent and the technology used in developing not only its loudspeakers but the research tools to better investigate that technology has helped create loudspeakers like the new S3.

The S3 is a remarkably low-distortion loudspeaker. That single sentence should be all you need because every loudspeaker produces orders of magnitude more





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» distortion than amplifiers or sources. So, a loudspeaker like the S3 that strips away a great deal of the resonance of an enclosure or the distortion of a drive unit is automatically on the side of the angels. And in listening to the S3, you can hear that lower distortion and absence of cabinet resonance in every note you play. The S3 images like a point source, but has the midrange clarity of a three-way and the bass of a gut-puncher. All the while, you are listening ever deeper into the music because you are unfettered by the limitations of box, cone, and dome.

It doesn't matter what piece of music you play, you get the best from it. A midrange so open and articulate, you'll know if the singer changed toothpaste brands between tracks. A loudspeaker that starts and stops so quickly, even the most delicate brush-work on a hi-hat is easy to define. And a sense of grip and authority when driven well that instills a sense of wonder to the listener.

Look, we're all trying for that elusive dopamine hit that happened the first time we listened to a good system. We buy something new, we recreate that 'first time' audio feeling again, then it fades all too quickly. But with the S3 it doesn't fade. It moves from album to album, from track to track. Out come the standard test recordings, followed by the ones that you retired over the years. Each one acquits itself well, and shows you why you chose them. The S3 also shows you why they are academic, because it's already eclipsed what they try to expose.

So, out come the music you like to play for you, not for assessment purposes. And it satisfies just as much as it ever did. Once again, the time machine effect of good audio is strong here, as you willingly wind the clock back to your earlier listening tastes. I wound the clock back to ABC's *Lexicon of Love* and *Quiet Life* by Japan. They were some of the first records I bought thinking in terms of how they sounded as well on pure music quality, and again they were as new. Sure, the over-produced early-80s mix is harsh and jangly by today's standards, but the S3 reproduced them with such effortless clarity, dynamic range, staging and just sheer 'rightness', I couldn't help but smile.

Where the S3 improves upon the, er, S3 is in its incredible sonic disappearing act. The music is vibrant, dynamic and very out of the boxes. Voices – both human and instrument – are articulate and rooted within a three-dimensional soundstage that sits around, behind and yet also slightly forward of the speaker boxes. And its power handling is improved enough to play louder with a higher margin of safety and a lower overall distortion.

The S3 does 'mellow' but it's an informative 'mellow'. And those who like a relaxed 'pipe and slippers' sound will probably take their dinner jazz elsewhere. While the Magico S3 resolves this music well, it draws you into the music, it doesn't help you slip into a coma.

I kept trying to find fault with the S3 but it eluded me. But it's part of the gig. So, to satisfy those who think no review is complete without criticism... the S3 has too many ampersands per metric parking space. Happy now?

Simply the best

I've found we don't have the vocabulary to describe the best loudspeakers. Because we listen to all our equipment through loudspeakers, our terminology is constrained by their limitations. Reduce or remove those limitations and the vocabulary follows. We don't talk about observational parameters about the sound of the system, we describe the music played on that system. The S3 is such a loudspeaker. It's low levels of distortion, coloration, enclosure resonance and improved power handling all combine to make something extremely special. You can get 'different' but to get 'more' of the same is difficult... and extremely expensive!

The Magico S3 is an awesome loudspeaker. It moves the needle of performance, not simply at the price point. It represents a significant step change over the previous models to such an extent, it's no wonder this isn't a S3 Mk III. It's a full reboot of the S3. And it's fantastic! +

Technical specifications

Type Three way sealed box floorstanding loudspeaker

Driver Complement 1.1" MB5FP Diamond Coated Beryllium Dome (x1), 5" Gen 8 Midrange driver (x1), 9" Gen 8 Bass driver (x2)

Sensitivity 88dB

Impedance 4 Ohms

Frequency Response 24 Hz–50 kHz

Recommended Minimum Power 50 watts

Dimensions (HxWxD) 112 x 43 x 30cm

Weight 101kg per loudspeaker

Price £56,998, \$52,000 per pair

Manufacturer Magico LLC

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