

KEF Reference 5 Meta

The 'Blade' models fly the flag for KEF's speaker tech, but its Reference 5 offers a more accessible route to 'high-end Uni-Q'
 Review: **Andrew Everard & Paul Miller** Lab: **Paul Miller**

Fortunately, the Reference 5 Meta is the £17,500 flagship of KEF's 'conventional' speaker range, bettered only by the striking-looking Blade designs [HFN May '22]. Fortunately? Well, yes, because this is an imposingly huge design, standing just over 1.4m tall, even if some of that impression of scale is minimised by the slenderness of the cabinets. Indeed, if the enclosures were any narrower than their 205mm, there wouldn't be room on the front baffle for the quartet of 165mm aluminium-coned bass drivers, arranged in pairs above and below the company's 12th-generation Uni-Q treble/midrange unit.

KEF's Reference 5 Meta looks strikingly clean in its all-white high-gloss finish seen here, with bass drivers anodised to match the immaculately finished cabinet and champagne coloured Uni-Q. There's a wide range of other colourways on offer – you can have white with a blue Uni-Q, satin walnut with a silver baffle and driver array, and high-gloss black with the Uni-Q in either grey or a lustrous copper.

META PHYSICAL

The white was well suited to the light wood floor and general décor of PM's listening room, but I must admit to a real hankering for that gloss black/copper finish. And while a set of ten magnetically attached grilles, finished in black and with one for each driver, is available at £250, frankly it would be a shame to cover up KEF's beautifully finished drive-units.

In fact the whole of the Reference 5 Meta exudes precision engineering: the coincident Uni-Q driver, with its 25mm aluminium dome tweeter in the 'throat' of the 125mm midrange cone, also made from aluminium, will be a familiar concept to HFN readers. So too will KEF's Metamaterial Absorption Technology (MAT) used to absorb a claimed 99% of the unwanted output from the rear of the tweeter [HFN Jun '21].

The absorber is a compact maze-like structure, comprising channels that 'soak away' specific frequencies, the MAT disc itself sitting in a redesigned space behind

the driver, with two porous rings further damping resonances. The midrange motor has a new copper ring to reduce inductance, thus lowering distortion and compression, while the company's tangerine waveguide is used to control dispersion, and response, over a wider listening area. Importantly, KEF has decoupled the Uni-Q array from the main cabinet to prevent direct interference from that powerful quartet of bass units, which take over from below about 450Hz.

BUILT FOR BASS

A full four of these 165mm drivers amounts to a substantial radiating area, their light, stiff and dished diaphragms driven by hefty,

vented magnet systems with large aluminium voice coils. And there's as much 'devil in the detail' when it comes to the cabinets themselves, and the design of the skeletal stabilising plinth in particular. Rather than going for a large rectangular slab to extend the footprint,

here the assembly bolts into place to form four spiked outriggers, adding just under 12cm to the width of the cabinet, and a mere 5mm to the depth, the better to locate the 60kg enclosure. Tall it may be, but the Reference 5 Meta feels rock-solid.

Neat, too, is what goes on around the back of the speaker [see p59]. The flexible bass-reflex arrangement affords some DSP-free room-tuning [see PM's boxout, right] while the design of the terminal panel is also worthy of mention, as this usually prosaic part of a speaker's build shows KEF's customary attention to detail. High-quality terminals, able to take 4mm plugs, spades or bare wire, are provided for bi-wiring or bi-amping, but selecting between these and single-wire operation is merely a matter of turning a pair of well-finished knobs. Styled to match the

RIGHT: Two pairs of 165mm aluminium-coned bass units flank a 12th-generation Uni-Q array (with MAT). The tall, slim cabinet is stabilised by spiked outriggers and available in numerous contrasting cabinet/driver colourways, including High Gloss Black/Copper and High Gloss White/Blue

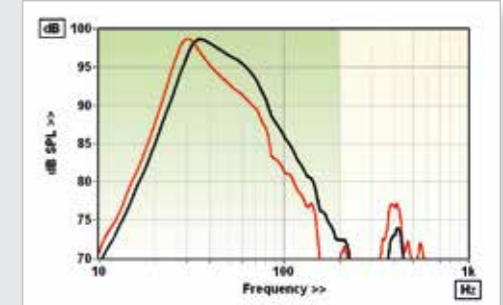


PORT TUNING

KEF's 'Flexible Port Technology' is aptly named because not only is the flare and soft polymer compound of the tubes designed to minimise air turbulence but a choice of two tube lengths are offered to better help 'tune' the speaker's bass to suit different room locations. The soft port tubes are held in position by a circular collar that can be unlocked to provide access, the long tube being nearly twice the length of the short option. As the internal cabinet volume is largely unchanged by the different tubes, and the bass drivers/crossovers remain entirely consistent, the extra mass of air in the long tube delivers a slightly lower Helmholtz resonance of 30Hz [red trace], some 3.5dB lower in amplitude than the 36Hz tuning of the short tube option [black trace]. The port responses are normalised in the inset Graph to better compare their respective bandwidths – note also that KEF has successfully minimised any port or other modes at ~400Hz associated with that tall and narrow cabinet.

The four 165mm alloy-coned bass units operate over a 50-350Hz (-6dB) bandwidth, delivering a diffraction-corrected bass extension of 33Hz (short port) and 29Hz (long port, see Graph

1, p59), all re. -6dB/200Hz. The short port offers a slightly 'peakier' bass response with more mid-bass punch in a freestanding location while the long port will better suit a near-wall location where it achieves a smoother and fuller low bass. Audiophiles might also care to experiment with a long port for the lower bass drivers and a short port for the upper pair. PM



terminal clamps, these levers move an internal link that connects, or disconnects, the two halves of the split crossover.

SITTING PRETTY

If the industrial design of the Reference 5 Meta seems better suited to those who want all that 'KEF engineering' without the radical styling of the Blade One Meta, not to mention the £30,000 price tag, then the sound is not held hostage. Despite my initial fears that the Uni-Q driver might be set a little low in the baffle, at less than a metre from the floor, when I settled into the listening seat it was clearly perfectly placed. There was no change in tonality whether I sat upright or slumped, and I experienced an even balance and excellent imaging at every position along PM's big four-seat sofa.

In fact, and at the risk of damning with faint praise, the Reference 5 Meta does that impressive thing of being a big speaker, with all the bass power and extension that brings, while having the speed and agility of a much smaller design. Listening to the Bill Charlap Trio's version of 'Sunny Side Of The Street', from *Notes From New York* [Impulse! 4778388], there's excellent intimacy and lightness of touch, plus convincing weight in the piano, bass

and drums. Even with the height of the speakers and all those drivers, the musical presentation enjoyed excellent focus.

Excellent, too, is the way the sound hangs free of those enclosures, creating an entirely credible soundstage in the room. In the Steven Isserlis reading of Elgar's Cello Concerto [Hyperion CDA68077], the playing of the cello is more about fluidity than the sheer attack of, say, the du Pré recording, but the dynamics are fabulous, the orchestra has realistic weight, and there's a fine sense of soloist and band working together, rather than the cello being spotlighted. Driven by the remarkable Halcro Eclipse Stereo power amp [HFN May '23], the Reference 5 Metas delivered fine detail when required, but were always ready to turn on the drama.

Their grand but focused balance was well suited to the sizzling brass opening of Mahler's 5th Symphony [Czech Phil./Bychkov; Pentatone PTC5187021]. These KEF speakers delivered a great, stately weight to those opening chords, and a fine impression of the orchestra before the listener. Nothing seems to be trying too hard, which is no bad thing given the sparkling quality of the performances here.

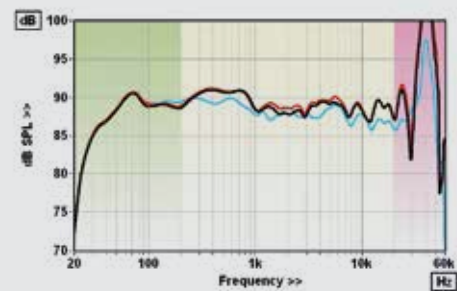
With more intimate recordings, the ability of the towering Reference 5 Meta to sound small and precise, yet with plenty

LAB REPORT

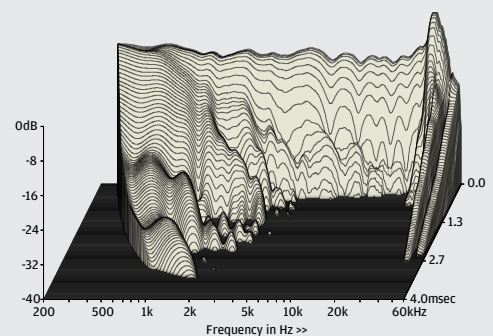
KEF REFERENCE 5 META

In practice this 'Meta' version of the original Reference 5 [HFN Oct '14] has evolved from tip-to-toe. KEF's specs reflect this too – bass extension is unchanged [see boxout, p57], but sensitivity is down from 89.5dB to 88dB and the Uni-Q crossover adjusted from 2.8kHz to 2.1kHz, etc, in this latest model. Once again, the typical listening axis will lie a little above the (now) 12th-gen Uni-Q mid/treble driver where its 39.6kHz dome resonance is reduced in severity from ~17dB to ~6dB above the mean midband level [blue trace, Graph 1]. Otherwise, the effect of the 'labyrinthine' Meta disc in quelling mid-treble resonances above the 2.1kHz crossover is evident in the CSD waterfall [Graph 2, below] just as conventional harmonic distortions are also a creditably low 0.25% (re. 90dB SPL).

The forward response shows the same slightly downtilted trend we saw in the Reference 5 but with tighter errors of just ± 2.0 dB and ± 2.1 dB, respectively, caused as much by the general uplift in low mid/bass below 600Hz. Pair matching is a superb 0.6dB. The 88.4dB/1kHz axial sensitivity (or 89.2dB from 500Hz-8kHz) is reduced by about 1.5dB if you listen ~20cm above the Uni-Q axis, but these figures are still within the compass of KEF's latest 88dB specification. Otherwise, this good sensitivity and 33Hz (re. 200Hz) bass extension has, in part, been bought at the expense of a slightly tougher amplifier load than we encountered with the original Reference 5 – KEF's 4ohm (3.2ohm min) impedance rating being closer to 2.7ohm/73Hz and sub-4ohm from 29-280Hz in the '5 Meta. The minimum EPDR is 1.3ohm/30Hz (and 1.5ohm/895Hz). PM



ABOVE: Response inc. nearfield summed driver/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; off-axis, blue



ABOVE: Minor breakup modes associated with the alloy bass drivers but Meta scrubs the treble clean

LEFT: Port rim mouldings can be rotated and unlocked to interchange long and short internal 'tubes' [see boxout, p57]. Split crossover and dual 4mm cable posts, with an internal link, allow for bi-wiring/bi-amping

Thibault Cauvin's acoustic guitar arrangement of the Bach 'Tocatta and Fugue', from his *Bach* album [Sony Classical 19658784622], the Reference Meta's superb resolution did a magnificent job of placing the solo instrument in an atmospheric, reverberant space, with laser-like focus and every touch of finger on string clear to hear.

READY TO ROCK

Succumbing to the temptation to hear the speaker's quartet of bass drivers in real action, I steered my listening towards the 'Cowboy Song'/'The Boys Are Back In Town'/'Don't Believe A Word' sequence from the 1977 Philadelphia set on Thin Lizzy's remastered *Live And Dangerous* boxset [UMC 0819035]. Here I was instantly rewarded with Brian Downey's powering drums, Phil Lynott's voice and thundering bass focused dead centre, and the soaring interlocked guitars of Brian Robertson and Scott Gorham.

This is no-frills power rock done proper, and thrilling, as the band wraps one track and slams straight into the next. Sleek and elegant these big speakers may be, but they'll take – and deliver – some serious level, too, making them just as adept when rocking out as they are portraying the most elegant of 'audiophile' recordings. ☺

HI-FI NEWS VERDICT

Maybe they lack the last word of detail delivered by the innovative Blade Meta design, but these top-of-the-range Reference floorstanders are speakers with a sound as refined and measured as their stylish looks, along with an ability to deliver a massive, room-filling sound when required – even in the largest space. Go for the all-white cabinets for elegance, or black and copper for a more menacing presence!

Sound Quality: 87%



HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	88.4dB / 89.2dB / 87.6dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	2.7ohm @ 73Hz 15ohm @ 2.2kHz
Impedance phase: minimum & maximum (20Hz–20kHz)	-42° @ 28Hz +48° @ 1.28kHz
Pair matching/Resp. error (200Hz–20kHz)	0.6dB / ± 2.0 dB/ ± 2.1 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	33Hz / 53.9kHz/53.6kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.35% / 0.25% / 0.45%
Dimensions (HWD) / Weight (each)	1350x205x462mm/60kg



of weight, is again in evidence. Erin Bode's cover of 'In My Life', from her *YourSong Volume 1* album [Bandcamp download], was given a rock-solid stereo image, every breath clearly delineated, as was her version of 'Happy Together', where the presentation was like a high-definition version of something wonderfully old-fashioned, with every word crystal-clear. Rachael Price's voice on 'Join Me In A Dream', from the Rachael and Vilray *I Love A Love Song* set [Nonesuch 075597909746], was equally lucid, bringing great vivacity to a piece with a deceptively simple – but gorgeous – arrangement. And with