

KEF UNI-Q® LOUDSPEAKERS



KEF REFERENCE SERIES



The Reference for a new generation

Funny thing, sound.

As the human voice, as music and in film, it's one of the great joys of being alive.

But the more you enjoy sound, the more demanding you become of how it's reproduced. Anything that distracts you from the purity of the original spoils the pleasure - and with modern recording technologies, the quality you expect gets higher all the time.

So it is with the legendary Reference Series. As audiophiles everywhere know, the Reference Series has always been about setting new standards. Using the most advanced digital techniques to analyse the way sound behaves, we create a new generation of prototypes that push the boundaries of sonic performance further still.

After exhaustive measurements under anechoic conditions and listening tests in many different real rooms, using various electronics with both AV and music signals, these then become the 'Reference' to which every production version must conform, to a tolerance of just 0.5dB.

Our obsession with audio integrity doesn't stop there, though - because however meticulously manufactured, individual audio



components always perform slightly differently. So as well as carefully matching each set of speakers, we make sure every single driver is partnered by units whose output is as near identical as possible.

As the first Reference Series speakers designed specifically for modern extended bandwidth digital formats, the new models deliver a more complete experience of sound than ever before. At their heart are completely new Uni-Q® drivers - the ultimate refinement of KEF's trademark technology - with a sophisticated elliptical dome tweeter of astonishing lucidity and a patented 'Uni-Form' flat surround midrange driver. A new titanium dome hypertweeter that easily outperforms any conventional supertweeter. Ultra low distortion bass drivers. Radical new curved cabinet designs.

The technical sections in this brochure explain some of the reasons for these speakers' phenomenal clarity and accuracy. But no words can explain how they sound.

So having read, please do go and listen. In every sense, you'll find it's a revelation.





New Uni-Q® array

The new Reference Series embodies an approach to pure sound using technologies found nowhere else.

Although the single point source performance and wide dispersion characteristics of KEF Uni-Q are well known, the new range is based on a radically new design: the first ever Uni-Q driver array dedicated solely to the midrange.



The limited movement required at these frequencies allows a perfectly flat new surround that dramatically reduces diffraction and intermodulation effects. The filled polypropylene cone and its thermoplastic rubber surround are produced as one entity

by a patented co-moulding process, while the cone profile is optimised by Finite Element Analysis (FEA) to ensure that wavefronts from the tweeter exit the cavity cleanly.

Another KEF 'first' is the small, superlight compound neodymium magnet assembly that ensures optimum flux profiles for both MF and HF coils. Its low mass allows effective decoupling from the cabinet to prevent box colouration, and the open chassis design (in die-cast aluminium alloy for stiffness) minimises acoustic reflections behind the cone.

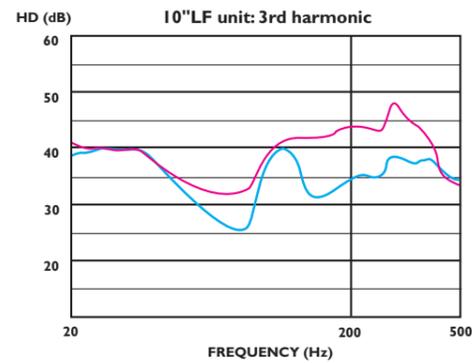
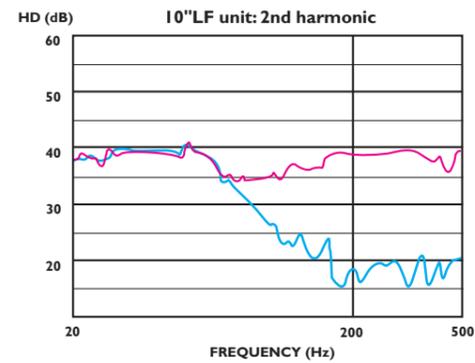
Determined to set a new standard of mechanical integrity for metal dome tweeters, KEF engineers also used FEA to develop a unit whose resonance threshold exceeded 30kHz. The result is a deep drawn 25mm titanium dome with elliptical profile and optimised surround that substantially outperforms conventional high-end units.

The imaging therefore becomes even sharper, with virtually no colouration. Integration is flawless; the off-axis response, unrivalled anywhere.

Less distortion at lower frequencies

A lightweight neodymium magnet 'pot' and relatively small cone movements allow the lower midrange driver in the Model 207 to be fitted with KEF's short coil/long gap motor system. Although this has an inherently linear flux profile anyway, the design incorporates a single aluminium Faraday ring around the pole

software, the system incorporates twin balanced Faraday rings above and below the coil to maintain a perfectly symmetrical flux profile (both in and out of the gap) that minimises flux modulation. Together with the use of an 'undercut' T-pole, this configuration has the effect of reducing second harmonic



to eliminate any residual distortion. The configuration also allows the diaphragm to be thinner and lighter for increased sensitivity, with a phase plug shaped to optimise smooth response.

distortion by as much as 20dB (for 1W input), and third harmonic distortion by 10dB.

In the new bass drivers, KEF's ultra-low distortion motor system dramatically reduces low frequency distortions. After extensive research using the latest magnetics simulation

An open chassis and vented poles minimise any noise from air trapped internally, and each bass driver radiates directly from its own subdivided internal enclosure to avoid the standing wave distortions that usually afflict tall cabinets. With less damping required, you get more sensitivity - and the result is the clearest, most open bass you've ever heard.

Hypertweeter™

Time aligned with the main array and mounted in its own chrome-plated steel pod, KEF's new 19mm titanium dome hypertweeter is essentially a scaled down version of the new Uni-Q® tweeter, with the same low distortion characteristics at 'super audio' frequencies.



With flat response to 50kHz and useful energy up to 80kHz, this massively extended performance envelope delivers every last sonic detail encoded in the latest wideband formats like SACD, SACD multi-channel and DVD Audio. What you actually hear is simply a sweeter, more natural sound with crystal clear highs.





Reference Model 205



IDL - independent driver (bass) loading

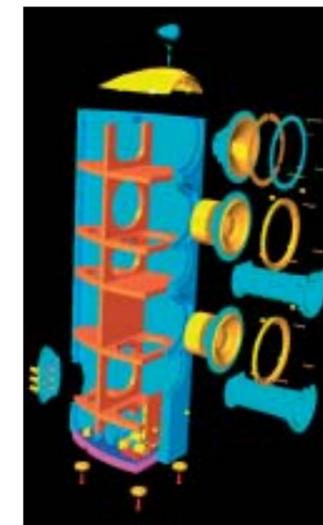
Inert enclosures

The distinctive design of the new cabinets is a logical extension of KEF's longstanding commitment to enclosures that minimise both internal acoustic radiation and mechanical vibrations directly transmitted from the drive units.

The theoretical sonic advantages of curved enclosures have been known since we introduced the first pod system on the Reference 105 back in the '70s - but now, modern production technologies allow these to be precision cast in thick section aluminium, which is exceptionally inert. The pod on the Model 207 is mechanically damped by a viscoelastic lining and acoustically damped by a sandwich of melamine foam and light wadding -

measures that both contribute to a more natural sounding upper frequency response.

The inherently stiff curved panels of the main cabinets are engineered from thick MDF and extensively braced internally, with the optimum position of each brace determined by laser interferometry. Add independent driver loading and KEF's proven decoupling techniques, and you get an enclosure that allows the quality of the components within to shine through unimpaired.



Total attention to detail

The componentry is of the highest standards, as you would expect. Polypropylene capacitors, carefully chosen in comparative listening tests. Metal oxide film resistors. Iron powder inductor cores - selected for their superior performance where large values and low DC resistance are involved.

And for the best possible signal transmission, the WBT® tri-wire terminals are plated in gold, and KEF's own oxygen-free copper cable is meticulously graded and soldered by hand.



Naturally, performance can be fine-tuned for the acoustics of the room. A boundary control device allows you to reduce LF radiation to compensate for bass gain from energy reflected by a wall close to the speaker. This device now has a third setting, which boosts LF radiation for rooms that are subjectively bass light. Electromagnetic shielding is provided for home theatre use.

Each new Reference Series Model is always a landmark in speaker design, and the new range is no exception. By objective measurement and in subjective tests, every single technical innovation advances the state of the art.

Meet the Reference for a new generation.
Created by KEF because only KEF can.





MODEL 207

Awe. Tenderness. Lyricism. Joy.

The spellbinding Reference Model 207 has the power to create heightened emotional states. Not by magic, but through technology.

A true five-way design with crossover frequencies at 120, 400, 3000 and 15000Hz, it exemplifies everything you'd expect from a no-holds-barred extended bandwidth speaker for the 21st century: fabulous imaging over a commanding sound stage, and the kind of realism that gives you goose bumps.



Beneath the FEA-developed elliptical dome titanium hypertweeter, the distinctive cast aluminium pod houses the new generation Uni-Q® HF/upper midrange array that gives the range its stunningly clear voice.

The dedicated 250mm (10") lower midrange driver features KEF's superlight neodymium magnet assembly, which minimises colouration by allowing the unit to be effectively decoupled from the cabinet.

The paired long-throw 250mm (10") bass drivers operate in parallel at low frequencies where throw is critical, but the lower unit is rolled off early to allow the upper driver to dominate at the crossover to the Uni-Q for near-perfect integration. Separately loaded into individual direct radiator sub-enclosures, they deliver staggering bass extension of exceptional purity.

Profoundly musical and virtually distortion-free, the Model 207 is capable of taking you to the further reaches of the art of sound.





MODEL 205

Whether for music or auditorium quality home theatre, Model 205 is one of the finest full bandwidth floorstanders you can buy at any price.

With KEF's wide dispersion new Uni-Q®/hypertweeter pod faired into the cabinet, it

looks as majestic as it sounds. As the wave fronts from the 25mm (1") elliptical dome titanium tweeter are optimised by the computer-modelled profile of the Uni-Form cone/surround, the upper frequency response is incredibly lucid - especially the human voice.

Both MF and HF coils in the Uni-Q array have compound twin neodymium magnet assemblies, and the two ultra-low distortion 200mm (8") bass drivers have balanced Faraday loops above and below the coil to ensure even flux profiles - and therefore minimum distortion and maximum smoothness.

But however complex the technologies, their combined effect is very simple indeed: you hear more. Your soundscape is more alive. Your enjoyment is more complete, wherever you sit in the room. You feel more. And that's what entertainment should be about.





MODEL 203

Model 203 has all the ingredients that make the larger floorstanders great, but on a slightly smaller scale - the same new generation KEF technologies, the same carefully chosen high order components and the same unrivalled build quality.

Computer optimised audiophile grade four-way crossovers ensure that transitions are imperceptible between the five drivers:

KEF's patented hypertweeter, the radical new Uni-Q® midrange/HF array with elliptical dome titanium tweeter and the two high performance 165mm (6 1/2") LF drivers. And

with the latest motor systems and lightweight reinforced diaphragms, bass response is unusually open, with negligible distortion even at high volume.

Acoustically inert, the curved section cabinets are heavily braced to eliminate box colourations, and finished in a choice of hand-matched wood veneers. Magnetically shielded like the rest of the range, Model 203 combines intense musicality with real power - and the sonic imaging is never less than immaculate, right down to the tiniest detail. A purist's loudspeaker.



MODEL 201

Whether you're into music or moving image, Model 201 packs all the benefits of latest Reference Series technology into the definitive extended bandwidth bookshelf speaker. The same elliptical titanium dome hypertweeter. The same die-cast aluminium frame for the new Uni-Q® array, with its lightweight neodymium compound magnet assembly and computer modelled Uni-Form waveguide. The same ultra-low distortion LF motors for hefty bass extension with uncompromised accuracy.

No compromise anywhere, in fact. Graded OFC wiring, soldered by hand. Audiophile crossovers with iron powder core inductors and high order polypropylene capacitors. Gold

plated WBT® terminals. Like all of the range, Model 201 can be tri-wired and comes with a boundary control device to fine tune response to your room. And with magnetic shielding and Uni-Q's inherently wide dispersion characteristics, you can place them more or less wherever you like.

Smooth. Sweet. Spine-tingling clarity, off-axis as well as on. Not big - but most definitely beautiful.





MODEL 204c

The extended bandwidth technology of the new Reference Series really comes into its own for home theatre use - especially in the centre channel, which carries around two-thirds of the audio information encoded in the average movie soundtrack.

With KEF's titanium dome hypertweeter in addition to the most sophisticated Uni-Q® point source array we've ever built, Model 204c (shown opposite) has the extra dynamic range to do justice to the latest digital formats. It's the ideal combination for

reproducing dialogue and vocals - eerily natural sounding, and sensitive enough to hear the slightest intake of breath. Flanked on either side by pairs of audiophile quality 165mm (6 1/2") LF drivers with ultra-low distortion motors and reinforced lightweight diaphragms, you enjoy pin-sharp frontal effects with gloriously extended, open bass. Naturally, the timbre match with the other speakers in the range is perfect.

The ultimate centre speaker - an investment in pure pleasure.

MODEL 202c

As with the 204c, the enhanced single point source effect of KEF's radically new Uni-Q® design delivers massive listening benefits in the Model 202c.

With the same hypertweeter and an identical Uni-Q array incorporating KEF's latest elliptical dome titanium tweeter and seamless

Uni-Form cone/surround, vocals acquire an immediacy and presence that you've never experienced before. 165mm (6 1/2") low distortion bass drivers on either side have the power to deliver the full slam of frontal effects without sacrificing accuracy. Like the rest of the range, it also sets new standards of smoothness - transitions between units are literally imperceptible.

The recommended centre speaker for Models 203 and 201, 202c projects a dynamic, involving and minutely detailed sound stage with startling realism, wherever you sit. Immerse yourself.





PSW5000

The ultimate powered subwoofer - as it would have to be in order to match the awesome performance standards set by the new Reference Series for which it was designed. How does a 1kW Class D amplifier with a 15" long throw woofer sound? Simply

devastating is the answer. From the furniture quality real wood enclosure in Black Ash, Maple or Cherry to the tips of its gold-plated terminal block, PSW5000 exudes performance without compromise.

PSW4000

Serious stuff. No less than 500 watts of high efficiency Class D amplifier power, with a 12" long throw driver in a hand finished wood cabinet. As you would expect, bass extension is more than generous - but what's really impressive is the way LF response is

immaculately controlled. Output level, phase (infinitely variable) and the low pass filter frequency can be adjusted via radio remote control from anywhere in the home, so the unit can be concealed wherever you please.





REFERENCE SERIES



Dealer Stamp



KEF and Uni-Q are registered trademarks. Uni-Q is protected under GB patent 2 236929. US patent 5,548,657. Worldwide patents pending.

KEF Audio reserve the right, in line with continuing research and development, to amend or change specifications. Part No. PLI370EN.

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