THE REFERENCE

THE REFERENCE

THE STANDARD

BY WHICH OTHERS

ARE JUDGED, AND

TO WHICH

THEY ASPIRE.

03 **OVERVIEW**

"A description was needed to convey the idea that every loudspeaker is subject to scrutiny at all stages of assembly, culminating in a final test comparison with a laboratory maintained reference standard. Hence the method became the name: Reference."

— Laurie Fincham, Engineering Director 1968-1991

The Reference: the standard by which others are judged, and to which they aspire.

The perfect reproduction of recorded sound is what KEF's legendary Reference Series has always stood for. And after forty years of continuous innovation and development, The Reference has lived up to its name as the yardstick of high end acoustic engineering.

Back when Bowie released Life on Mars, KEF was leading the world in the use of computerised 'total system design' to create better loudspeakers. By pioneering the use of these powerful analytics, KEF engineers matched pairs of speakers to within half a decibel -

the audio equivalent of identical twins. Exact pair matching delivers perfect stereo reproduction, so these revolutionary speakers won instant acclaim for their superior acoustic precision. The name 'Reference' was born. now as their predecessors were then.

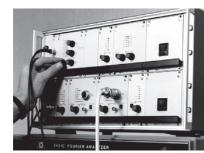
Since then, everything has changed, yet nothing has changed. Today's Reference is enhanced by new technologies and advanced materials that simply didn't exist before, massively extending their performance envelope to exploit the full potential of modern music and moving image formats. But the spirit is the same: to achieve the purest and most accurate reproduction of recorded sound in a way that perfectly captures the full emotional range, depth

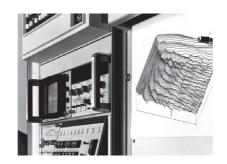
and detail of the original performance.

The obsession with absolute quality remains, as does the immaculate craftsmanship; the styling has evolved so as to be as fresh and contemporary But above all, for the serious audiophile with an ear for uncompromised excellence in the enjoyment of movies or music, there's one name that still towers above the rest.

The Reference. It speaks for itself.

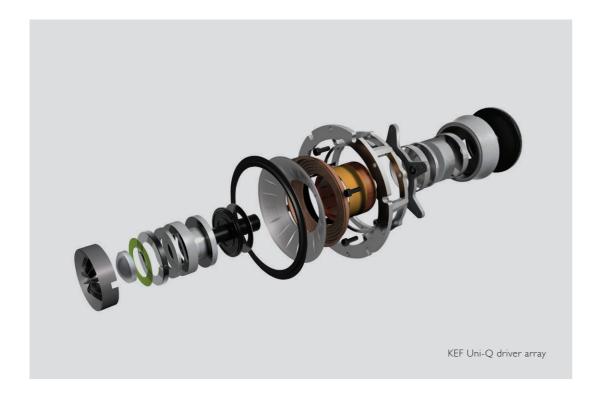








Founder Raymond Cooke's vision holds true today, in a brand driven by original thinking and engineering integrity rather than passing fads.

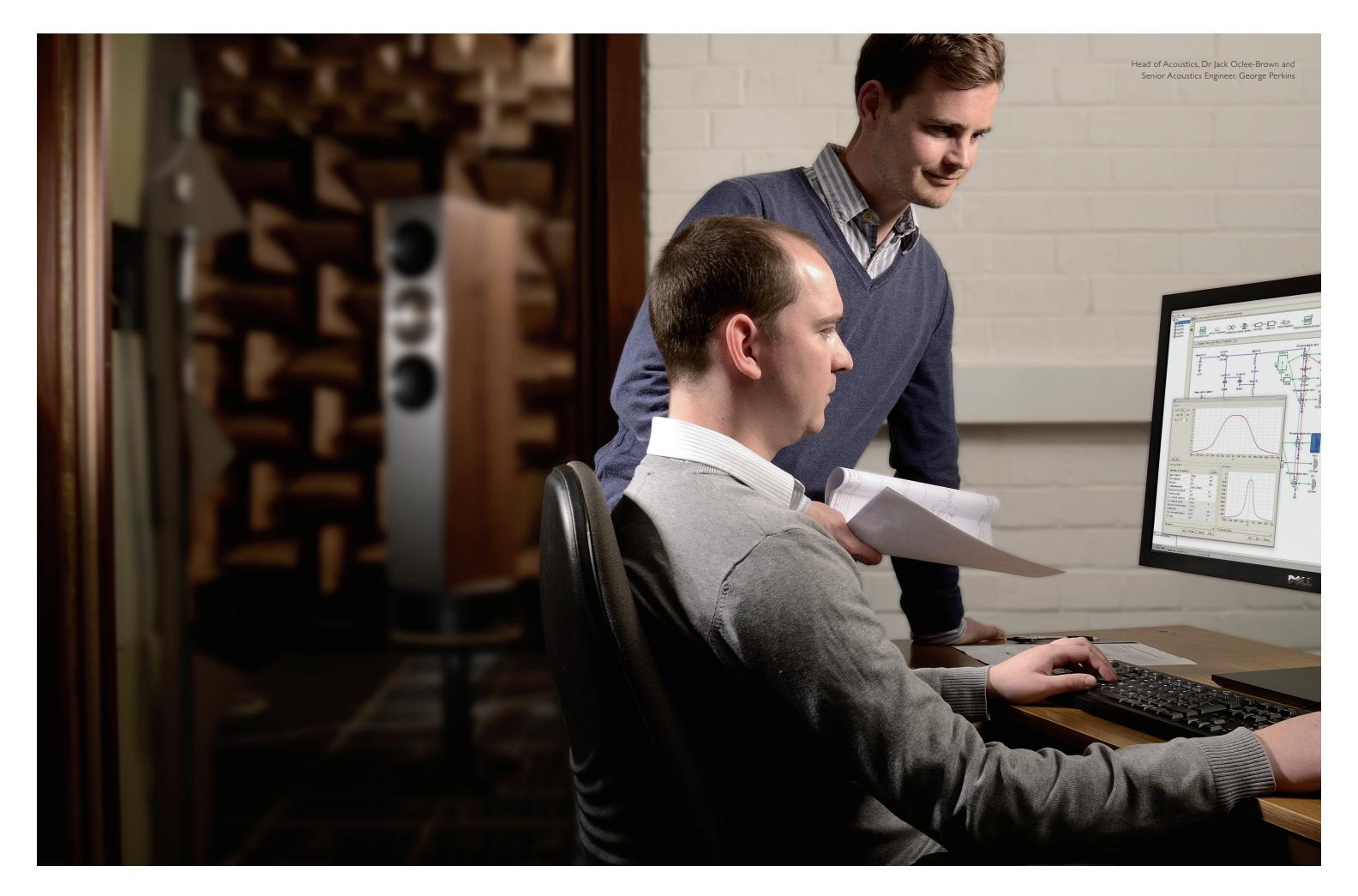


The list of KEF's acoustic design patents alone – KEF's 'tangerine' segmented and innovations is unequalled. The use of sophisticated computer modelling techniques, like finite element analysis and computational fluid dynamics for example, to the point that today KEF engineers even write their own software. Or pioneering new aerospace materials such as neodymium magnet systems, and new processes, such as the ultra-strong laminated aluminium/ resin composite for The Reference front baffle. The Uni-Q driver array remains one of the great breakthroughs in loudspeaker design, but it's far from

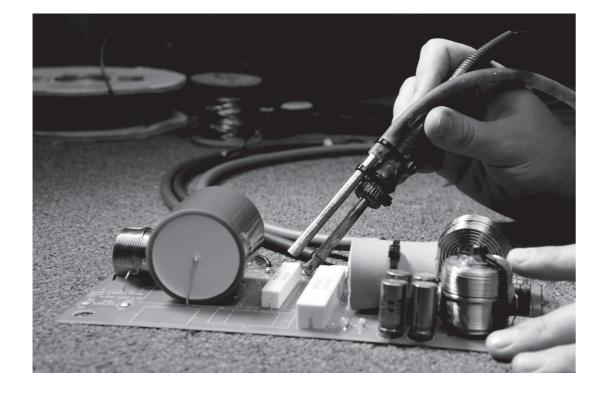
waveguide, stiffened and optimised aluminium domes, motor refinements to increase power handling, sophisticated vented tweeters, constrained layer damping, the Z-flex surround – these and many other unique technologies contribute to the reputation of KEF's multi-award winning drivers.

No other manufacturer has done more to advance the state of the art and no other range personifies KEF's passion for perfection more than The Reference.





A CLASS APART



With six models encompassing two elegant three-way floorstanders, a formidable three-way bookshelf speaker, two three-way centre channels and an awesome I 000-watt subwoofer, The Reference range combines phenomenal high-fidelity performance with complete multi-channel versatility. And as you'd expect, they all exude the sense of sheer quality that comes from being hand-built by KEF's master technicians in Maidstone, Kent.

Whether for a traditional speaker system or multi-channel home theatre set-up, you'll experience performances

of such startling realism, you feel like you're there. Mind-blowing special effects, from the opening credits onwards. Breathtaking dynamics.

Consummate musicality, from overture to coda. And the level of accuracy that reveals details you'd never noticed before, even in favourite tracks. They're easy to live with too – undemanding in terms of position, and easy to fine tune for your listening area.

If loudspeaker design is an art as well as a science, The Reference sets the standard for both.



At the heart of The Reference is a stunning new iteration of what is arguably the greatest innovation in the history of modern loudspeaker design: KEF's 'point source' Uni-Q MF/HF driver array.

With a state-of-the-art 25mm (I inch) vented aluminium dome tweeter at the exact acoustic centre of a highly sophisticated I25mm (5 inch) midrange driver, both act as a single source that floods the listening space evenly with a flawless natural soundfield, no matter where you sit. For capturing all the subtleties of the human voice, whether whispered, spoken or sung, the effect is magical – as if the person were right there with you in the room.

Based on the design developed for the KEF Blade & Blade Two, the vented tweeter combines a powerful motor system with a unique computeroptimised two-part aluminium dome so rigid that it operates pistonically over its entire working range. Its response is exceptionally fluid, with no trace of resonance or interference, and the sensitivity is much higher in the critical 2kHz region than a conventional tweeter. KEF's visually striking 'tangerine' waveguide propagates the upper registers evenly across the midrange cone and its Z-flex surround, the shadow flare and the baffle - all acting as a single continuous surface, with no discontinuity or distortion to muddy the output.

Similarly, the new midrange driver has exemplary dynamics, thanks to a superlight aluminium alloy cone, designed for maximum rigidity to make the most of its fast, clean response. Mounted to a rigid die-cast aluminium chassis, it keeps the motor-system free from resonances.

Together, these two remarkable drivers operate in perfect sonic harmony, with almost ideal dispersion characteristics, free from off-axis nulls and with a perfectly smooth waveguide to prevent any distracting diffraction effects. You're simply immersed in a clear, all-enveloping soundscape covering the entire upper six octaves with the clarity, accuracy and emotional truth to make your hair stand on end.





Clean, rich and precisely articulated bass adds enormously to the enjoyment of stereo or multi-channel sound. The new 165mm (6.5 inch) LF driver is in a class of its own and, like every other aspect of The Reference, is designed to complement KEF's latest Uni-Q point source array. With a massive vented magnet assembly and a large aluminium wire voice coil driving an exceptionally light, stiff and strong aluminium diaphragm rather than a conventional cone, the dynamics and power handling are outstanding. The distortion performance is also superb. Played loud or soft, in delicate passages or for fullon bass effects, the combination of advanced materials, clever engineering and meticulous attention to design detail delivers a deeply rewarding experience that blends seamlessly with Uni-Q's immaculate midrange and treble response.



The Reference drivers are set in a smooth, strikingly distinctive front baffle. Made from an exceptionally strong laminated aluminium and resin composite, formed in a press under extreme temperatures, it adds tremendous rigidity to the cabinet structure. The baffle also has an acoustic damping function, being connected resiliently to the cabinet via high-loss pads and secured by high tensile bolts.



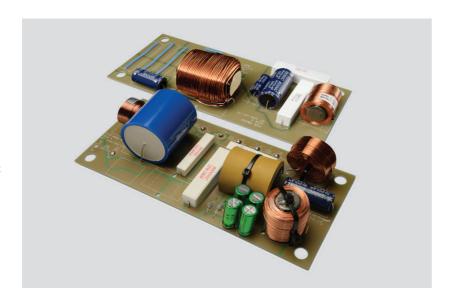
First seen on the multi-award winning LS50, the innovative flexible port technology that so magnificently extends the bass of The Reference also allows you to fine-tune low frequency output to suit your personal taste and the listening room characteristics. Using computational fluid dynamics, the flare and profile of each port is calculated to delay the onset of turbulence, while the flexible port walls prevent longitudinal resonances from colouring the midrange. The difference is especially noticeable in the 30-80Hz region, where the high energy content of modern music typically lies. All models except the Reference 8b and Reference 2c feature two different lengths of port, which can be configured to roll off the upper bass gently to compensate for the natural augmentation from any nearby



Two port tubes of different lengths are supplied to allow fine-tuning for versatile placement, and the unique bi-wire bind posts with internal linking control offer simple connectivity and exceptional signal transfer.

Imperceptible. That's how the acoustic transition between each driver should be for perfect sound reproduction. Nothing less – and it takes enormous skill and experience to achieve.

Having analysed each driver's phase and frequency response, KEF engineers designed and computer-modelled the ideal crossover networks for The Reference before exhaustively testing and auditioning every high grade component, individually and in concert, to select those with the lowest distortion and the smoothest response. Because the human ear hears things that computers don't, months of subjective tests followed to correlate the data with the listening experience. It takes time and perfectionism, but the difference is plain to hear. Nothing is overlooked - The Reference crossovers are even mounted on separate boards and decoupled from the cabinet walls to minimise vibration and crosstalk.

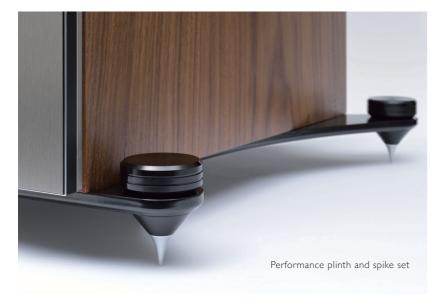


Finished by hand in pair-matched wood veneers or lustrous piano gloss to complement the sleek composite front baffle, the beauty of The Reference cabinets lies deeper than their purposeful architectural looks. Expertly engineered using numerical computer analysis to determine the ideal shape and bracing geometry, the structure is carefully designed to minimise the effect of standing waves, which can otherwise cause irregularity and resonance in driver output. By using constrained layer damping techniques to absorb unwanted vibrations and massive internal bracing to strengthen the entire structure, The Reference enclosures are virtually inert. And with no panel resonance, stray reflections or box colouration effects to muddy the sound, the midrange and bass you hear is exceptionally smooth, clean and pure.



16

PLINTHS AND STANDS 17



To prevent any vestigial cabinet vibrations from being transmitted through the floor of the listening area, the Reference 3 and 5 are solidly grounded on a Performance plinth and spike set developed with characteristic KEF attention to detail. The precision-engineered plinth has a built-in spirit level, and the spike sets are cleverly designed for ease of adjustment, with the screws neatly concealed by a smart machined cap.

These refinements are also found on the bespoke Performance stands available for the Reference I, with the addition of a discreet cable management channel at the rear to keep the cabling neatly out of sight. Provision is made for bolting the speaker to the stand for maximum rigidity, and the upright has a vertical compartment that you can fill with your choice of inert material for greater stability and acoustic damping.

Sharing the same handsome design aesthetic, the wider Performance stand developed for the Reference 4c features a matching plinth and spike set and cable management system. All stands are finished in Satin Black.





The Reference precision-engineered Perfomance stands not only aesthetically complement the products themselves but are designed for optimum audio performance.





If you're serious about experiencing the ultimate in sound reproduction, the magnificently authoritative Reference 5 exemplifies the passion for innovation that underpins The Reference design philosophy. A tall three-way floorstander, it aligns four powerful, extremely linear 165mm (6.5 inch) bass drivers – two above and two below KEF's latest Uni-Q point source driver array, with the sweetly natural-sounding new 25mm (I inch) vented aluminium dome tweeter at the acoustic centre of the sophisticated new 125mm (5 inch) midrange cone. With KEF's 'tangerine' segmented waveguide acting like an acoustic lens to optimise the wave front, the dispersion is wider and more even than is possible with any conventional speaker - and with no surface discontinuities to muddy the sound, the clarity is exceptional. The bass extension of four potent LF drivers with a combined radiating area equal to a 12-inch subwoofer is as lavish as you would expect, but with far lower distortion. Low frequencies are reproduced with agility and total control, seamlessly integrating with the Uni-Q output to create an all-enveloping soundfield of spine-tingling accuracy and depth. For music or film, it's quite literally a revelation.

REFERENCE 3



Sharing the design DNA of Reference 5, Reference 3 has the same uncanny ability to generate an intricate, emotionally compelling three-dimensional soundstage inclusive dispersion characteristics, this that places you right at the heart of the original performance. A three-way design, the two 165mm (6.5 inch) bass drivers are perfectly positioned above and below KEF's latest Uni-Q point source driver array in what's known as a when required, it intensifies the D'Appolito configuration. Fidelity across the midrange and treble is outstanding,

with a smooth, flat on-axis frequency response and balanced response in other directions. Together with Uni-Q's broad, allows everyone in the room to enjoy the same rich, spatially precise acoustic imagery without being restricted to a conventional 'sweet spot'. Lyrical, finely nuanced and astonishingly powerful experience of music or dra ma like few other speakers can.



REFERENCE I



As KEF's iconic LS50 demonstrates, the clever application of innovative technology means that you don't need a big cabinet to enjoy expansive, premium quality sound. Reference I extends this principle even further. A three-way design of jaw-dropping performance capabilities, it incorporates all the groundbreaking innovations pioneered for the remarkable little LS50, and then some. Pairing the latest and most sophisticated incarnation of KEF's 125mm (5 inch) Uni-Q MF/HF driver array with the sensational new 165mm (6.5 inch) aluminium cone bass driver, it creates a compellingly realistic soundstage out of all proportion to its relatively modest size. Mounted on shelves or stands, the inherently wide, even dispersion characteristics that famously distinguish the Uni-Q array also makes Reference I an ideal rear channel home theatre speaker in a system with the power to touch your heart as well as your mind.



REFERENCE 4c



As the main source of dialogue and vocals, the centre channel is critical to the with a dynamic range that takes rapid realism of the home theatre experience and your emotional engagement with what's on screen. By placing KEF's superlative new 125mm (5 inch) Uni-Q ability to articulate these subtleties with point source driver array between no less than four 165mm (6.5 inch) bass drivers, the Reference 4c reproduces every last detail of what the director or the artist intended with total fidelity

- spatially precise, stunningly clear and transitions effortlessly in its stride. Given the enormous amount of information encoded in modern soundtracks, the confidence can make the difference between a good film and a great one. For movie lovers looking for total immersion, Reference 4c is the paradigm.



REFERENCE 2c



With the same 125mm (5 inch) Uni-Q point source driver array flanked by two powerful 165mm (6.5 inch) bass drivers, in a closed-box design. Reference 2c reveals all the subtleties embedded in movie soundtracks and music recordings with the same astonishing realism and clarity as the larger Reference 4c. The dynamics, spatial precision and dispersion characteristics are just as outstanding, with the innovative configuration of advanced drivers flawlessly integrating LF, MF and HF response to reproduce every detail of the recorded signal with total fidelity.

In smaller environments, Reference 2c has the power to immerse you in your music or the action on screen as much as its larger sibling. For clarity, detail and emotional depth, it's a revelation.



REFERENCE 8b



To experience the full impact of dramatic on-screen effects in a home theatre system, bass precision and control are as important as its extension. You want powerful and articulate, not vague or smudged. That's why the Reference 8b boasts two 500W Class D amplifiers, each driving a 228mm (9 inch) longthrow, ultra-low distortion driver. Using KEF's ingenious force-cancelling technology, these formidably powerful drive units are connected back-to-back in the heavily braced, acoustically inert cabinet. By cancelling out the forces they generate, this configuration allows both drive units to operate more effectively, giving noticeably greater definition to low frequency effects. If you haven't experienced a truly great subwoofer, you'll be amazed what a difference it makes to your viewing and listening pleasure.



KENT ENGINEERING AND FOUNDRY EDITIONS

31

When the visionary electrical engineer Raymond Cooke set out to perfect the reproduction of recorded sound in 1961, he set up his first research lab on the banks of the River Medway in the Garden of England in a wartime Nissen hut formerly occupied by Kent Engineering and Foundry. Hence the name: KEF.

To celebrate KEF's unrivalled heritage of continuous innovation in the half century since, and the part that the legendary Reference Series has played over the last forty years in consolidating KEF's reputation among serious audiophiles, we've commissioned two bespoke editions of the latest range.

With two striking special finishes – Blue Ice White, hinting at the blue of the original KEF logo, and Copper Black Aluminium – the Kent Engineering and Foundry Editions combine the latest Reference technology with an aesthetic that subtly evokes this rich pedigree.



THE REFERENCE



PERFECTION NEVER ENDS 35

Today's models are even better. Purer. Closer to the acoustic ideal, subjectively as well as objectively. How perfect is perfect?

The quest for perfect sound reproduction goes on, of course. As new materials and technologies emerge, KEF research engineers are constantly pioneering new ways of achieving the ultimate in acoustic response. Compromise is not a KEF word – and given the freedom to ignore the limitations that others accept, they create loudspeakers acknowledged to be among the best anywhere, at any price.

The Ross Lovegrove-designed Muon, for example, whose staggering performance is matched only by its extraordinary sculptural form. Blade and Blade Two, the world's first single apparent source loudspeakers, combining groundbreaking performance technologies with another equally innovative design vocabulary. Bold, clever ideas, executed with passion and obsessive attention to detail.

This is the spirit that first inspired the original Reference forty years ago, which is why so many of the originals are still prized. Today's models are even better. Purer. Closer to the acoustic ideal, subjectively as well as objectively. How perfect is perfect?

MUON

Few projects in this world dare to aim for the ultimate. But this was precisely the goal when KEF combined its state-of-the-art acoustic engineering capabilities with the genius of visionary designer Ross Lovegrove. Lovegrove sculpted the sound by sheathing KEF's most advanced technologies in a sensual, organic form that evolved naturally from a radical rethink of what a 21st century speaker could be. The result is one of the most extraordinary audio speakers ever made – an art object in its own right, and a celebration of functional excellence and aesthetic delight in flawless harmony.



BLADE & BLADE TWO

When our engineers came up with the revolutionary Concept Blade prototype the world's first single apparent source loudspeaker – its sonic capabilities were so impressive that we created an edition that serious audiophiles could actually own. Just as KEF's philosophy has always been to innovate in pursuit of the most accurate and realistic sound, Blade speakers are about refining a ground-breaking concept to enrich the pleasures of people who really love music. Whatever your taste, Blade and Blade Two are supreme expressions of a simple idea: to make the enjoyment of sound as good as it can possibly be.



Perfect reproduction of recorded sound is what KEF's legendary Reference Series has always stood for. After forty years of continuous development, it has earned its name as the benchmark of audiophile loudspeaker performance. The Reference exemplifies the relentless attention to detail of KEF's 'Total System Design' approach. Some details you can see, some you can't – but because apparently minor details can otherwise be a limiting factor, every one has to be of the same impeccable standard. That's why, if you're a perfectionist when it comes to movies or music, one name towers above the rest: The Reference. It speaks for itself.





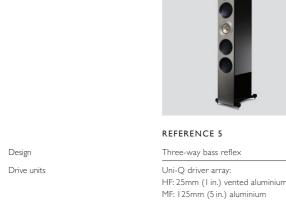


SPECIFICATIONS 39









Frequency range free field (-6dB)

in room bass response (-6dB) Frequency response (±3dB)

Frequency range typical

Crossover frequency

Harmonic distortion

Impedance

Weight

2nd & 3rd harmonics (90dB, Im)

level at 1m with pink noise)

Dimensions ($H \times W \times D$)

(with grille and terminal)

Dimensions ($H \times W \times D$)

dimensions (H \times W \times D) Cabinet finish

Performance stand

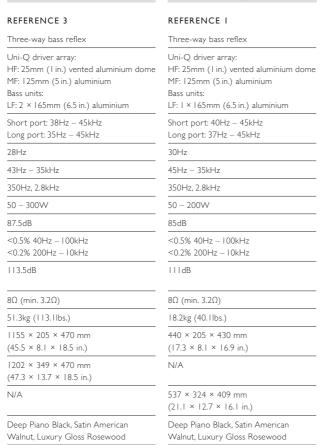
(with grille, terminal & plinth)

Kent Engineering and Foundry Edition

Maximum output (peak sound pressure

Amplifier requirements Sensitivity (2.83V/Im)

REFERENCE 5	REFERENCE 3
Three-way bass reflex	Three-way bass reflex
Uni-Q driver array: HF: 25mm (1 in.) vented aluminium dome MF: 125mm (5 in.) aluminium Bass units: LF: 4 × 165mm (6.5 in.) aluminium	Uni-Q driver array: HF: 25mm (1 in.) vented MF: 125mm (5 in.) alumi Bass units: LF: 2 × 165mm (6.5 in.)
Short port: 35Hz – 45kHz Long port: 32Hz – 45kHz	Short port: 38Hz – 45k Long port: 35Hz – 45k
25Hz	28Hz
40Hz – 35kHz	43Hz – 35kHz
350Hz, 2.8kHz	350Hz, 2.8kHz
50 – 400W	50 – 300W
90dB	87.5dB
<0.5% 40Hz – I 00kHz <0.2% 200Hz – I 0kHz	<0.5% 40Hz – 100kHz <0.2% 200Hz – 10kHz
I I 6dB	113.5dB
8Ω (min. 3.2Ω)	8Ω (min. 3.2Ω)
60.2kg (132.7lbs.)	51.3kg (113.1lbs.)
1350 × 205 × 470 mm (53.1 × 8.0 × 18.5 in.)	1155 × 205 × 470 mm (45.5 × 8.1 × 18.5 in.)
1397 × 349 × 470 mm (55 × 13.7 × 18.5 in.)	1202 × 349 × 470 mm (47.3 × 13.7 × 18.5 in.)
N/A	N/A
Deep Piano Black, Satin American Walnut, Luxury Gloss Rosewood	Deep Piano Black, Satin Walnut, Luxury Gloss R







REFERENCE 4c	REFERENCE 2c		REFER
Three-way bass reflex	Three-way closed box	Design	Force of
Uni-Q driver array:	Uni-Q driver array:	LF Drive unit	2 × 22
HF: 25mm (1 in.) vented aluminium dome MF: 125mm (5 in.) aluminium Bass units:	HF: 25mm (1 in.) vented aluminium dome MF: 125mm (5 in.) aluminium Bass units:	Frequency range at 90dB output in free-space mode (-6dB)	I 8Hz
LF: 4 × I 65mm (6.5 in.) aluminium	LF: 2 × 165mm (6.5 in.) aluminium	Frequency response at 90dB output in	24Hz
Short port: 43Hz – 45kHz	65Hz – 45kHz	free-space mode (±3dB)	
Long port: 40Hz – 45kHz		Amplifier	2 × 50
33Hz	46Hz		power section
48Hz – 35kHz	80Hz – 35kHz	Maximum output	I I OdB
350Hz, 2.8kHz	350Hz, 2.8kHz	(peak sound pressure level at 1m 50Hz)	
50 - 400W	50 – 300W	Low pass filter variable	Variable
90dB	87.5dB		Variable 24dB/c
<0.5% 40Hz – I 00kHz <0.2% 200Hz – I 0kHz	<0.5% 40Hz – 100kHz <0.2% 200Hz – 10kHz		LFE mo
I I 6dB	113.5dB	Inputs	RCA p Analog Speake
8Ω (min. 3.2Ω)	8Ω (min. 3.2Ω)	Link out	RCA p
45.2kg (99.6lbs.)	22.8kg (50.3lbs.)	Net internal volume	23L
205 × 1090 × 470 mm	205 × 630 × 325 mm	Weight	34kg (7
(8.1 × 42.9 × 18.5 in.)	(8.1 × 24.8 × 12.8 in.)	Dimensions (H \times W \times D)	398 ×
N/A	N/A		(15.7 ×
107 110 100		Power requirements	100V -
487 × 669 × 409 mm (19.2 × 26.3 × 16.1 in.)	N/A	Power consumption	1000W
Deep Piano Black, Satin American Walnut, Luxury Gloss Rosewood	Deep Piano Black, Satin American Walnut, Luxury Gloss Rosewood	Cabinet finish Kent Engineering and Foundry Edition	Deep F N/A
		J J ,	



40

mode rol
60Hz

KEF reserves the right, in line with continuing research and development, to amend or change specifications. E&OE

41 42 **FINISHES**

The clean, contemporary lines of The Reference cabinets are finished to the standard you'd expect from speakers that aspire to perfection through obsessive attention to detail.

Selected to complement any style of traditional or modern interior, you have the choice of a sleek, ultra-high gloss Piano Black and two perfectly pair-matched (and sustainably sourced) hardwood veneers: a sumptuous classic rosewood enriched by a mirrorlike gloss lacquer finish, and the soft satin sheen of a subtle fine-grained American walnut.

For those who prefer an even more distinctive visual statement, we're also producing two special Kent Engineering and Foundry Editions, which in different ways celebrate the colours associated with over five decades of KEF innovation.

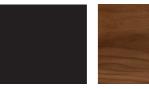
When perfection comes in many forms, the only problem is which to choose...

THE REFERENCE

Cabinet colours Deep Piano Black

Satin American Walnut

Luxury Gloss Rosewood







Aluminium composite front baffle and Uni-Q driver



Performance plinth and spike set



FINISHES 43 44

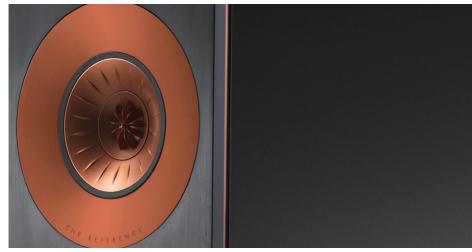
THE REFERENCE Copper Black Aluminium – Kent Engineering and Foundry Edition

Cabinet colours Piano Black



The distinctive copper finish acknowledges KEF's 50th anniversary colour combination, in honour of the now iconic KEF LS50 model.

Solid black aluminium front baffle and Uni-Q driver



A black gloss and matt Style plinth and spike set feature as standard.

Style plinth and spike set

THE REFERENCE Blue Ice White -

Kent Engineering and Foundry Edition



Cabinet colours



Striking Blue highlights complement the Ice White to evoke the colours of the original KEF logo.

A striking chrome and matt Style plinth and spike

set feature as standard.

White composite front baffle and Uni-Q driver





Style plinth and spike set



LISTEN

AND IT ALL BECOMES

PERFECTLY CLEAR.

