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PERFECT HARMONY

AMBIENCE AND ART

KEF Blade: Holographic
staging, organic design

TUBES AND DIGITAL

Ayon: Puristic Triode
brings analog euphony
for CD and USB



Perfect Curves



A loudspeaker that is no longer in any way a 'box'. The new KEF Blade is practically made up of no more than a point source coax driver and one curved acoustic baffle. It looks like an abstract sculpture, yet is the result of no-frills engineering skill. The ultimate combination of form and function.





by Malte Ruhnke

There are actually no fundamentally superior design principles – even in the case of loudspeaker construction many different methods can achieve the desired result. Yet the point source concept is an approach that many developers rightly pursue, as it does after all promise the most homogenous dispersion and the most natural reproduction. Some hi-fi enthusiasts yield there to the temptation of a radical solution: full-range drivers! That does indeed solve the point source problem – but creates many others. I must confess that I do not get on with this species of high-end speaker at all well. Perhaps precisely because you sense such a speaker's potential in the form of often holographically exact staging and a deceptively realistic ambience, you are irritated all the more by tonal colorations, lacking transparency or sub-optimal bass.

With 2-way speakers the problem can be solved. Coaxial is the name of the principle, or to make the link to KEF: UniQ. The tweeter takes up position in the middle of the LF/MF driver and the advantages of a wide-bandwidth speaker are combined with those of a 2-way speaker ... theoretically, for in practice the disadvantages from both worlds are retained. Now there are some manufacturers in the world who are working on perfecting the coaxial principle and their achievements to date are astonishing. KEF, of all manufacturers, one of the coaxial pioneers, remained incredibly inconsistent with its top models: years ago the company was with its Reference 207 in-

roducing a 5-way speaker that somehow thwarted the point source principle not only with additional subwoofers, but also with kick bass drivers and super tweeters.

But in 2009 they dared to perfect their own principle in the form of a concept speaker that was never intended for the market. "Too expensive" was the reply from a leading KEF representative to my question as to why they hadn't initially wanted to make the Blade. At its center was a small coaxial mid-range driver on a completely rounded, organic acoustic baffle, which keeps the sound dispersion constant but allows no edge-reflections at all. In fact, it was no longer a loudspeaker box, but rather just an organically curved acoustic baffle. The little, just five-inch mid-range driver made of a lithium, magnesium and aluminium alloy fulfils a dual role here: with its large voice coil and ring-shaped diaphragm stiffened in the form of a star, it produces all of the oscillations in the important vocal and formant range, namely from 350 to 3,000Hz. It also serves the tweeter as an extended baffle and thus adjusts the drivers' dispersion angle gently among themselves without any abrupt transitions. The dome, a one-inch system with an aluminium diaphragm, works within special crown-shaped housing, which KEF calls the Tangerine Waveguide. It stops the shares of sound from mid- and high-range driver from having a mutually negative influence on each other and also prevents any resonances or standing waves within the tweeter structure, which

Black and white – the colours of the Blade. Both available only in a high gloss finish.

Complex: An inner framework and connecting rods make the cabinet as solid as a rock. The UniQ works on a closed chamber.

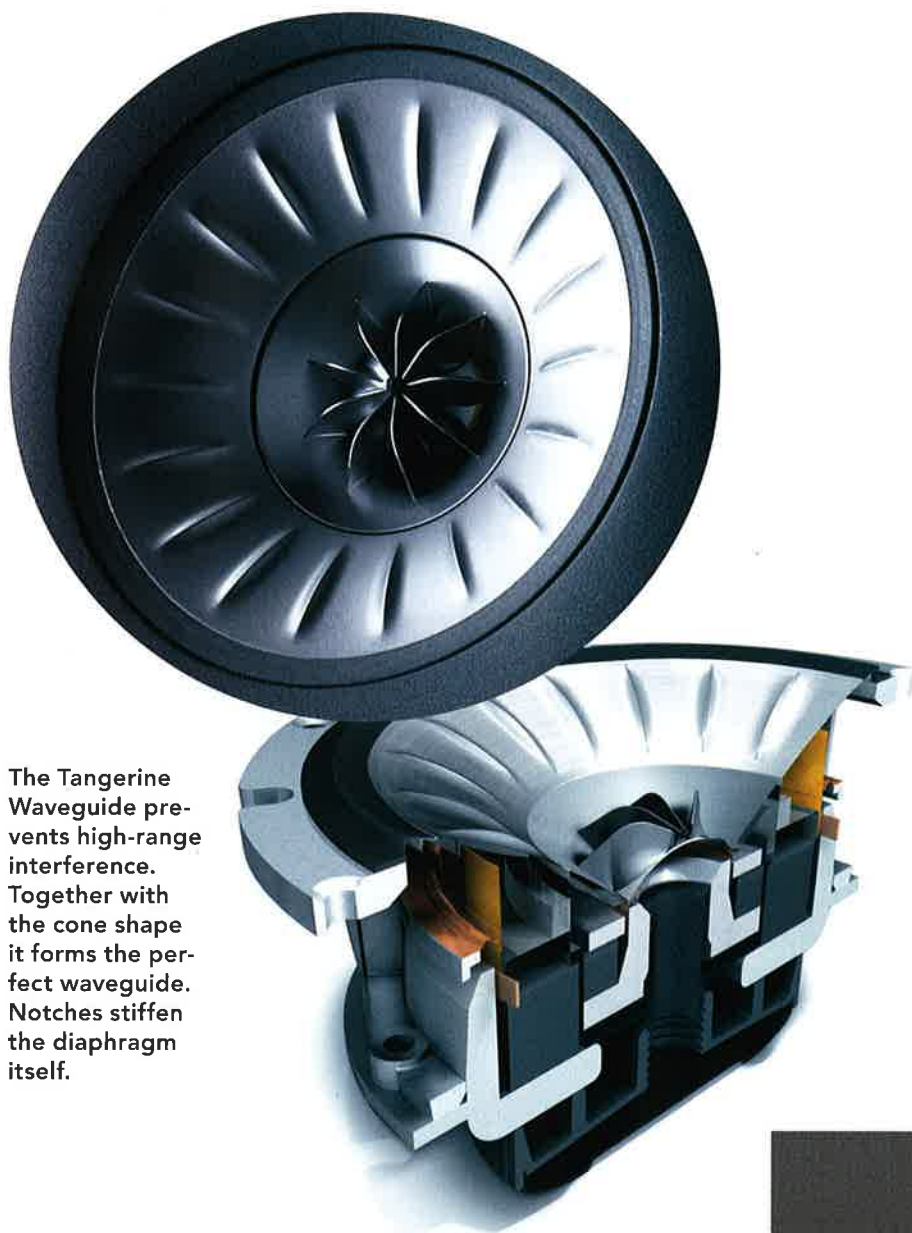
gave earlier generations a somewhat bad reputation.

The difficulty for the Blade concept lay in the bass: to position a large woofer behind the mid-range tweeters would, due to the required enclosure, have led to an adventurous design, which would also have ended up very wide. That in turn would have run contrary to KEF's declared aim of making the acoustic baffle for the mid-range tweeter as slim as possible and providing no surfaces for edge reflections to attack.

The solution to the problem: a virtual point source. That means nothing other than arranging four identical bass drivers around the coax so that all of the acoustic centres perceived by the listener are on one axis. So far, so difficult – as this arrangement too wants to be built into as wide an acoustic wall as possible. So that the cabinet itself can remain slim, the KEF engineers came up with the ingenious idea of making the acoustic baffle completely round and to bend it around the front and side sections, whereby the entire loudspeaker then consists practically of just the acoustic baffle and the woofers can sit at the side. Even at this early stage of development the designers were already brought in on the job and they gave the structure the sweeping shape of a blade, which also helped make it more rigid.

Voilà: the casing slim and the diaphragm surface, with a quartet of bass drivers, sufficiently large – and the 'Blade' project name was born. However, the shape demanded a new type of dri- >





The Tangerine Waveguide prevents high-range interference. Together with the cone shape it forms the perfect waveguide. Notches stiffen the diaphragm itself.

Thanks to a very big voice coil and dual centring, the shallow woofer gains the required rigidity with no wobble.



vers. The aim was to get the woofers close to the ideal of a flat panel with no edges to diffract the sound.

The result was an eight-inch driver with a metal diaphragm, which has a very large voice coil and dual centring that effectively suppress any wobble. So that its great excursion does not make the entire Blade housing vibrate, the woofers were linked in pairs back to back, which almost completely cancels out the baskets' kinetic energy and leaves the cabinet totally free of resonance even when the beefiest bass work is being done. The quad array also enabled the crossover frequency to the coax to be set fairly high at 350Hz and made relatively low filter steepness of just 6dB per octave possible in the crossover point.

Before the Blade even gets to play a note, it astounds the listener with its shape: its front is so softly rounded and so slim that optically the speaker seems to disappear. You see only a narrow line with a small metal driver – and anticipate a correspondingly thin performance.

The first bass drum beat of Jeff Beck's 'Hip-Notica' then brings even the most

KEF

Blade

List price: €25,000

Guarantee period: 5 years

Weight: 57.5 kg

Size (W x H x D): 19.5/36.5 (without/with base) x 159 x 54cm

Surfaces: Brilliant gloss black, brilliant gloss white. Other colours on request

Sales:

GP Acoustics GmbH
Am Brambusch 22
D-44536 Lünen
Germany

Telephone: +49 (0)231 9860320
Internet: www.kef-audio.de

hardened tester out of any undeserved daydream: a crack, not a thump. This loudspeaker mobilises air masses as if out of nothing. However, it is not a pliant, non-committal bass that develops in the listening room, but rather a crisply formed rhythm with the richest of depth, playing tightly at the point.

Accompanied by wonderfully transparent, inconspicuously precise mid- and high-range that deliver details totally naturally. That called for some classical music with a fun factor: Nezet-Seguin's vivid, dynamic recording of Berlioz' 'Symphonie Fantastique'. The Blade presented the orchestra in a strikingly silky and extremely finely graduated manner with transparent atmosphere, acoustically hiding the listening room's reverb pattern almost completely. Built up between the speakers was an incredibly realistic concert hall, which, however, was neither exaggerated in depth nor to the side of the listener. The first three movements long: a perfectly balanced performance, silkily transparent with no artificial effects.

Up to this point, dynamism and bass

junkies would probably regard the Blade as too shy and safe.

Yet when the music really gets going, the Blade too can crank things up: in the 4th movement came a sforzato drum beat and I was constantly amazed by the power and speed that the Blade was able to mobilise without tiring my ears. That tempted me to listen to some older recordings, as well: Pink Floyd's 'Shine On You Crazy Diamond' sounded smoothly dry and the original studio atmosphere seemed to build up in front of me: every guitar note where it belongs, every drumbeat precise and never overdone. It was as if I was personally sitting as the sound engineer at the mixing desk, right there at the recording of this legendary disc.

The same again two decades earlier: never before have I heard Miles Davis' 'Someday My Prince Will Come', with its craggy rhythm section and sometimes harsh trumpet elements, so harmoniously transparent and nevertheless with plenty of clout. A loudspeaker that is addictive, precisely because it plays its music with such a lack of fuss. <



Test LP

Queen: A Night At The Opera

In terms of style, rock music can't get any more varied. My tip: the powerfully produced 'Prophet's Song'. But which version sounds best? I fluctuate between the MFSL-LP and the DVD audio...

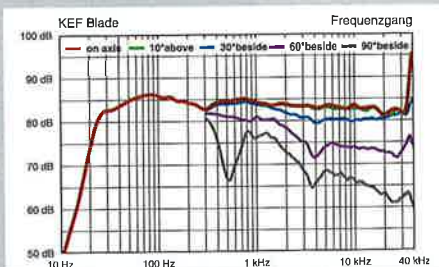


The writer

Malte Ruhnke

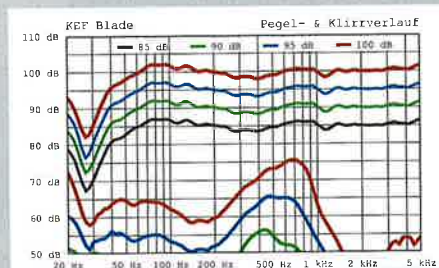
Malte demands of a speaker that it master classical music just as well as it does rock, jazz and pop. His record collection includes Mozart and Marillion, U2 and Wagner. He places particular importance on tonal neutrality and plausible staging.

Frequency response



The path is perfectly neutral with powerful bass. An impressive point is the constant pattern away from the axis, without any trace of interference or waviness. Also surprising for the size of speaker is the deep bass, reaching as low as 23Hz. The tweeter resonance is inaudible at beyond 45kHz.

Distortion

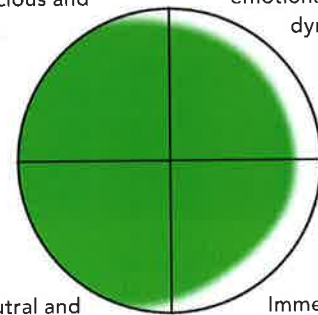


In the bass range the Blade delivers high reserves. Not until 107 decibels does it show any tendencies to compress or distort. In the midrange THD is slightly increased, but does not jump up as the SPL increases. That holds back the very highest volume level somewhat, but plays no role in practical listening.

AUDIophile character

Effortlessly spacious and soft

Grippingly emotional and dynamic



Neutral and authentic

Immediacy high resolution

AUDIophile potential



Recommendation

Plays superbly in any room even without any particular care taken in setting up. You should, however, have a relatively stable amplifier.

50 Years of Reference

Hardly any hi-fi company can look back on such a long and successful history as KEF. For many years, their speakers were designed based strictly on technical aspects. More recently, however, the disciplines of harmonious form and aesthetics were added: with sometimes spectacular results...

by Malte Ruhnke

The company's origins are reflected in the name: Kent Engineering & Foundry was founded in the county of the same name in 1961, however the acronym KEF has become the accepted name everywhere. Company founder Raymond Cooke had previously worked for the BBC and as an engineer for the Royal Navy. For five years, he was also Head of Development at Wharfedale.

His early research work was into the behaviour of materials used for loudspeakers and also into driver construction and on the development of computer-aided analysis and testing procedures for speakers. In the 1960s and 70s, KEF was well known both as a manufacturer of loudspeakers and of kits and OEM chassis. The driver developments for the legendary BBC LS 3/5 monitor went down in

early hi-fi history. The compact monitor was originally planned as a simulation sound source for small rooms. However, it proved to be so acoustically superb that radio stations all over the world used it as a near-field monitor. Using the KEF drivers, numerous companies were allowed to build the monitor under licence and several years later high-end enthusiasts also discovered the acoustic merits of this purist concept. Meanwhile, in the 1970s, KEF attempted to use their own know-how for uncompromising, larger speakers as well. With the 104 and 105 they began the tradition of the 'Reference' series.

Mid-range driver and tweeter were still separated, but housed in their own,



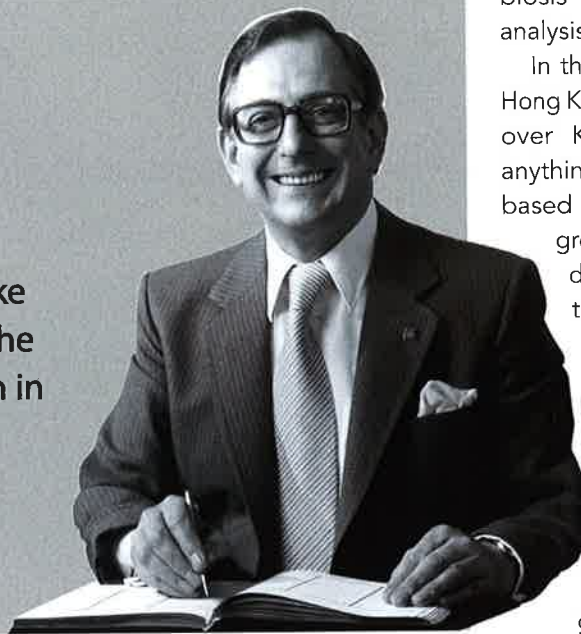
The modern production building in Hong Kong. R&D continues to be based on England.

Centre: KEF provided the drivers for the BBC LS3/5a monitor and also made complete speakers.

Right: The first 105 was the 1977 reference model, still without UniQ. You can see the slim form around mid-range driver and tweeter.



KEF founder Raymond Cooke was awarded the Order of the British Empire by the Queen in 1979. He died in 1995.



biosis with modern computer-aided analysis and simulation possibilities.

In the mid-90s, Cooke died and the Hong Kong-based Gold Peak Group took over KEF, albeit without changing anything of the philosophy or the UK-based development department. The greatest evidence of this was a product named after KEF's hometown, the Maidstone: a loudspeaker even superior to the normal Reference models, which was intended to show what was technically and acoustically achievable. Design here was a secondary issue and thus the appearance of the speaker, also called the 109, turned out rather bulky. The greatest KEF project to date, a megaspeaker beyond all powers of imagination, was begun in 2006 under the working title 'Austin' and climaxed in 2007 in the Muon, organically formed out of aluminium. The experiment of producing a perfectly rounded baffle around the UniQ led to a shape tapered in at the 'waist'. The next logical step was a completely slim one: the Blade. It too initially an uncompromising experiment – and now reality. <

extremely small enclosures. It was not until 1988 that KEF invented the UniQ driver, the coaxial connection made up of mid-range driver and tweeter, that defines the company image to this day. Only the modern neodymium magnets made it possible to make tweeters so small that they could be placed in the middle of mid-range driver and woofer.

From them on, all Reference models were equipped with the new UniQ unit, which received further dramatic improvements over the years, as the placement of the tweeter proved to be technically extremely demanding. Here the fundamental research work of company founder Ray Cooke fused into an unexpectedly fruitful sym-



Left: In 1999, the Maidstone 109 was the first Reference-topping speaker, still with a bulky design.

Centre: Used in the Reference 105/3 as well as UniQ was a special bass system, the coupled cavity.

Right: The Muon was formed from aluminium in 2007 – at over €100,000, KEF's most expensive yet.