

STRICTLY SPEAKING

When three of Britain's most technically capable speaker manufacturers launch competing models the fur is bound to fly, to your advantage

There was a buzz about KEF's new affordable C Series loudspeakers several months before they were finally rolled out. The word on the street was that KEF were cooking up something really special. This they have duly done in the shape of novel 'Uni-Q' drive unit technology, which is explained below. Uni-Q is destined to cause real excitement, not least in the design labs of KEF's major competitors.

Perhaps their most important single competitors are Bowers & Wilkins. Purely by coincidence, they also have a completely new range, in direct competition with the KEF's C Series models. These B&W speakers are to be known as the 500 Series, and are similarly hi-tech designs. They are supplied with metal dome tweeters and highly rigid enclosures, and have smart designer exteriors to suit.

Finally, we have a new model from the prestigious Linn stable, called the Helix LS150 (Linn Helix for short). In contrast to the other two, it makes no special claims to technical novelty. Linn's forte, at least in this case, is thorough refinement based on well informed and extensive listening. However, their loudspeaker hardware is very much of the tried and tested variety. Can Linn's purist stance rival the technology of market leaders like KEF and B&W? We shall see.



units' output 'dovetail' together near the crossover frequency.

This is because the drive units have different directional characteristics at different frequencies. Except near the cross-over frequency, the extent to which sound 'spreads' around the front of the cabinet will be different for the two units. If you stood directly in front of the speaker and walked around to either side, the frequency spectrum would change because of this effect.

There are other more subtle interactions. For example, the sound that reflects off the walls, floor and ceiling has a quite different frequency balance to

the sound coming directly from the speaker. While this may not seem very important, a lot of psycho-acoustic evidence exists to show that it is.

KEF's Uni-Q drive unit design addresses such problems, and in doing so attains a long standing holy grail: the 'point source' loudspeaker. This has been achieved by mounting the tweeter at the apex of the bass cone so that their acoustic centres coincide. This is a much more strict criterion than merely building loudspeakers with the tweeter just in front of or behind the cone. Both of these techniques have been tried before. However, in this case the secret

lies in using new ultra-strong rare earth magnets so that the tweeter actually fits inside the bass unit voice coil.

The C55 does look a little odd. For a start, there appears to be no tweeter — unless you know exactly what you're looking for. All that meets the eye are two big bass units. The second unit is passive, a so-called auxiliary bass radiator (ABR), driven by back pressure from the main driver. It increases low bass output in a manner analogous to the port on a ported loudspeaker.

The KEF speakers have some neat constructional details, such as the expensive looking gold plated 4mm binding posts and the neat, clip-on baffle covers. They have a modern, engineered look, though the wood vinyl wrap looks no better here than it does on the other two subjects of this review.

Construction

B&W	■ ■ ■ ■ □
KEF	■ ■ □ □ □
Linn	■ ■ ■ ■ □

To achieve good bass performance from a loudspeaker, it is necessary to move large quantities of air at low frequencies. This is often achieved by using a large loudspeaker cone for the bass, but as soon as this is placed alongside a small, light high frequency driver, compromises are inevitable.

Assuming a typical two-way configuration, the two drive units have to be placed adjacent to each other. This is okay for listening to the speakers from the designer's intended position — on 'axis', as it were. But from any other position, sound will vary due to the way the two drive

B&W DM570

KEF C55

Linn Helix LS150

typically £249

typically £199

typically £259

This B&W formula includes a hi-tech 26mm aluminium dome tweeter (which is made in-house) and also a superbly built 200mm bass unit. This device has a lightweight pulp cone, an enormous drive magnet and a strong, diecast chassis.

The crossover is fairly complex and well made, and the system is highly efficient. However, the

B&W DM570: detailed but quite unforgiving performer



main feature of its construction is the ultra-rigid, well damped double thickness baffle. The baffle's external surface is carefully styled and finished in grey Nextel paint.

A pair of stands were included with the speakers, but as they were cosmetic samples, they were not assessed. Final production stands may sound quite different.

Linn's bass driver has a polypropylene cone and magnet of more modest proportions than the B&W models, though still large by accepted standards. It is fitted to a simple, pressed steel chassis, damped to inhibit ringing and loaded by a deep slot-shaped port. The practical effect of this shape is to spread the tuning range of the port, theoretically making for a more even bass response. Treble is pro-

B&W

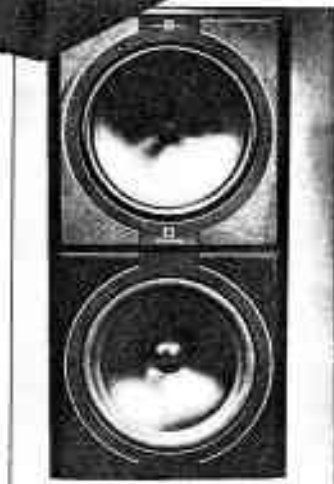
- ✓ Well built; lots of bass; detailed; ultrasensitive
- ✗ Obvious treble; some upper bass muddle



KEF C55: smooth, relaxed sound does lack dynamics

KEF

- ✓ Easy, relaxed and neutral performer
- ✗ Lack of dynamics and fine detail



KEF C55 tweeter: concentric with mid/bass above ABR

duced by Linn's usual soft dome tweeter, and the two units are coupled by a crossover network of greater complexity than the B&W arrangement.

The enclosure is internally braced and therefore very stiff. There are some attractive detail points too, including high standards of electrical interconnection and a bi-wiring option. The latter does mean running two lengths of wire back to the amp, but it sounds better.

The Linn speakers, like the B&Ws, were supplied complete with stands — but this time they were fully functioning units. They were spiked pedestal types, internally damped and bolted to the loudspeaker base. The cabinet is canted slightly backwards, a ruse which points the tweeter at the listener in a small to normal size room.

Compatibility

B&W	■	■	■	□	□
KEF	■	■	□	□	□
Linn	■	■	■	■	□

The Linn has one advantage over the other two, and for many people this will tip the balance in its favour. It is the only one designed for use with its back to a wall. The others need to be

pulled well clear of walls, and this means that they tend to encroach much more on available floor space.

The B&W also has an important plus feature. It is extremely sensitive, and is capable of very high volumes even with low power amplifiers. The Linn is no slouch here either, but the KEF loses grip at high volumes and doesn't have the sensitivity to stretch less powerful amplifiers.

These two points apart, all three systems are equally intolerant (or tolerant) of a partnered system — they're as fussy as you want them to be. The only weighting is their musical worth.

Having said all this, I identified a number of distinct weaknesses in the KEF's construction which in retrospect cast a degree of light on its behaviour.

One such weakness is that the enclosure isn't very well made. Even by budget standards it is lightweight and distinctly 'lively'. When playing music, the larger

sidepanels in particular could be distinctly felt vibrating along with the music.

It turns out that the box is unbraced and minimally lagged. The front baffle — probably the most critical problem area for structural problems — has two sizeable cut-outs to accommodate the large driver units. The latter are bolted onto square alloy trim plates and screwed down onto the baffle itself. However, this design does seem structurally suspect.

Another potentially serious problem that could arise results from KEF's decision to fasten the crossover directly to the back of the drive unit magnet. Using a steel screwdriver, I established

that the whole crossover was bathed in a strong alternating magnetic field. This must mean that unwanted, music-related currents will be induced in the crossover coils and wiring, causing compression and loss of data. This is all so unnecessary; simply reversing the crossover board would cut out much of the interference, and cost nothing in production and material terms. Fixing the crossover to the inside of the rear panel would be a better solution still.

The B&W and Linn speakers are much simpler to describe, and indeed share much in common. They're both medium sized, two-way models, essentially conventional in design and both with port loading. However, these important similarities conceal some equally important differences.

Sound quality

B&W	■ ■ ■ □ □
KEF	■ □ □ □ □
Linn	■ ■ ■ ■ □

The KEF and the B&W speakers were both flawed on audition,

Linn	
✓	Polished, articulate, space saving design
✗	Slightly dry and bright sounding

Linn Helix: a fundamentally musical loudspeaker design



Linn Helix baffle: features unusual 'slot' loading for bass reflex

in quite separate ways. The KEF had dynamic limitations which meant that when presented with complex, powerful, organic music it tended to sound messy and confused, and when it was asked to reproduce subtleties it was at best uneven. The upper bass area sounded seriously muddled in my view, and there was a lack of bite and a certain woodiness. Ultimately, this left the system sounding rather opaque.

Imagery was good, with plenty of depth, even on recordings that I had imagined as being intrinsically very deep. It held its ground well off axis too. However, the system's lack of real precision prevented it achieving the holographic stereo quality I was looking for given the sonic promises of Uni-Q technology.

There was a good side to this, though. The KEF could sometimes sound engaging, almost seductive, especially with female voices and orchestral strings. These are often problem areas for other loudspeakers. If nothing else the C55 is civilised and tonally sweet, but I sense that KEF's ambitions ran wider than merely this.

The B&W also displayed a touch of upper bass 'waffle', but on the whole it had surprisingly lively and informative sound. There was plentiful detail, very well defined stereo image positioning and excellent dynamics. The metal dome tweeter certainly added an extra touch of resolution, with no trace of the bland hardness of many soft dome units. Finally, the bass was deep and true, albeit with some mild, 'papery' colourations.

The B&W speaker is undoubtedly good, but in many systems it could sound somewhat ungracious, for want of a better word. The way detail was presented was a little too deliberate, and the tonal balance always on the cold side.

Make no mistake: this is a fine loudspeaker, but some will find it a little too emphatic. It won't suit systems that are balanced in a similar direction.

Finally, we turn to the Linn Helix speaker. To paraphrase one of Linn's advertising slogans, it is simply better. I say this with the authority that comes from not being a conspicuous fan of some of their other loudspeakers. I have no hesitation in this case.

In many ways the Helix sounded like the B&W. It was clear and sharp, and veered on the edge of brightness. However, even though it lacked the B&W's diamond-like treble, it also avoided the B&W's slight loss of low frequency focus. Recorded dynamics were followed faithfully without exaggeration, and the Linn's constant cohesiveness marked it out from the crowd. The Helix speaker was

unique among this group in its ability to 'unhook' the music from itself, allowing the sound to acquire an existence all its own.

Tonally, the Linn was a little cool, yet bass quality was firm and true, and pitch and timing were beyond reproach. Sensitivity was a little better than average; the Helix should not make any special demands on a partnering system. It would obviously benefit from a clean and musical system.

Value for money

B&W	■ ■ ■ ■ □
KEF	■ ■ ■ □ □
Linn	■ ■ ■ ■ ■

The Linn and B&W cost around £250, and the KEF is £50 cheaper, which gives it something of an edge on paper. The problem, of course, is that we don't listen to paper loudspeakers. If the KEF had sounded as good as the Linn, say, even with more limited bass, it would be much better value for money.

A similar argument applies to the B&W, though in this case it could be said to achieve close to comparability. In purely material terms, it offered more than any of the others. It also gave the deepest bass by a useful but not overwhelming margin. However, the Linn remains the best sounding loudspeaker, and at just £10 more than the B&W it must represent better value.

Fundamentally articulate and musical, the Linn Helix was easily the most satisfying of the three models tested here, and can be recommended with enthusiasm. The B&W DM570 was even more detailed and capable of a very fine standard of music making. But its unyielding quality could make it hard to live with. The KEF C55 was smooth and relaxed, though it suffered a range of dynamic shortcomings which were obvious with complex material.

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