



Above: Wharfedale DIAMOND 12 Series speakers in walnut, black oak, light oak, and white finish.

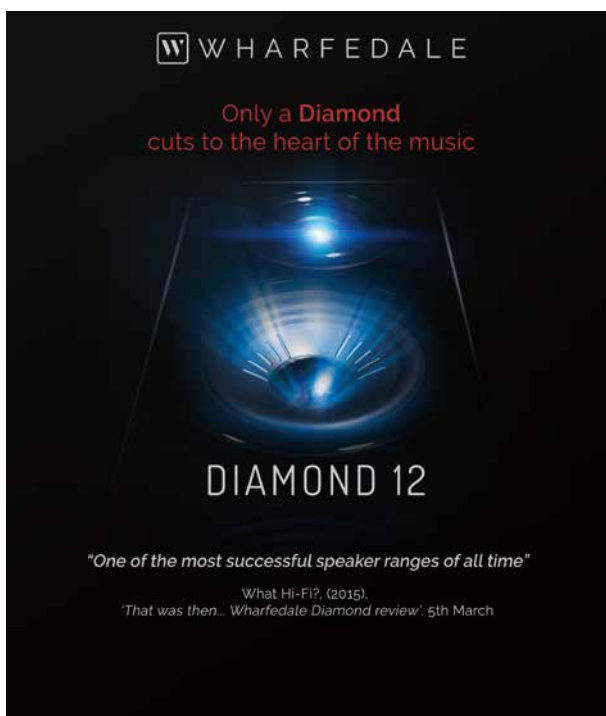
## Only a Diamond cuts to the heart of the music

Wharfedale's iconic DIAMOND lineage of high-performance, high-value speakers sparkles brighter than ever with the all-new DIAMOND 12 Series

Since 1982, Wharfedale's famous DIAMOND speakers have served as the classic entry point to true high-fidelity sound, their exceptional sonic value for money earning numerous 'product of the year' accolades in the UK and around the world. This autumn, with the introduction of the all-new **DIAMOND 12 Series**, Wharfedale once again raises the bar for affordable, high-performance loudspeakers.



Above: Wharfedale DIAMOND has remained the most famous name in budget hi-fi speakers worldwide.



To develop the new range, Wharfedale has collaborated with world-renowned speaker designer Karl-Heinz Fink for the first time. Fink's track record of delivering class-leading sound from modestly priced speakers is exceptional and with the **DIAMOND 12 Series**, he and Wharfedale's team of acoustic engineers have achieved a new entry-level benchmark.

Wharfedale determined that the **DIAMOND 12 Series** should be an opportunity to start afresh. A challenge was issued to Mr Fink: how much sonic performance can you wring from a range of speakers at classic DIAMOND price points? And so, he and Wharfedale's team set to work, delivering clean-sheet designs without a single part in common with the outgoing – and more costly – DIAMOND 11 Series.



Above: *Wharfedale DIAMOND 12.4* floorstanding speakers in walnut finish

### Klarity™ – the difference is clear

Since the DIAMOND 8 Series in 2001, **Wharfedale** has made the mid/bass cones for every DIAMOND generation from Kevlar. 19 years and many award-winning ranges later, **Wharfedale** has developed a new composite called Klarity™.

The chief ingredient of Klarity™ is polypropylene, a material that has been used to make speaker cones since the BBC researched its use for this purpose in the 1970s. Polypropylene cones are renowned for their characteristically low distortion and controlled 'breakup', as well as their resistance to moisture in the air. They also have a reputation in some quarters for sounding a little 'unexciting' – a perception that is largely the result of mediocre engineering. When designed and implemented optimally, polypropylene cones can sound enthralling.

To make Klarity™, **Wharfedale** adds mica to the formulation. This increases stiffness compared to polypropylene alone, reducing flexing and enabling a lightweight cone with high rigidity, low colouration and lightning-fast response – ideal characteristics to deliver both accuracy and excitement.



Above: Exploded Construction Diagram for *DIAMOND 12* Bookshelf Speaker.

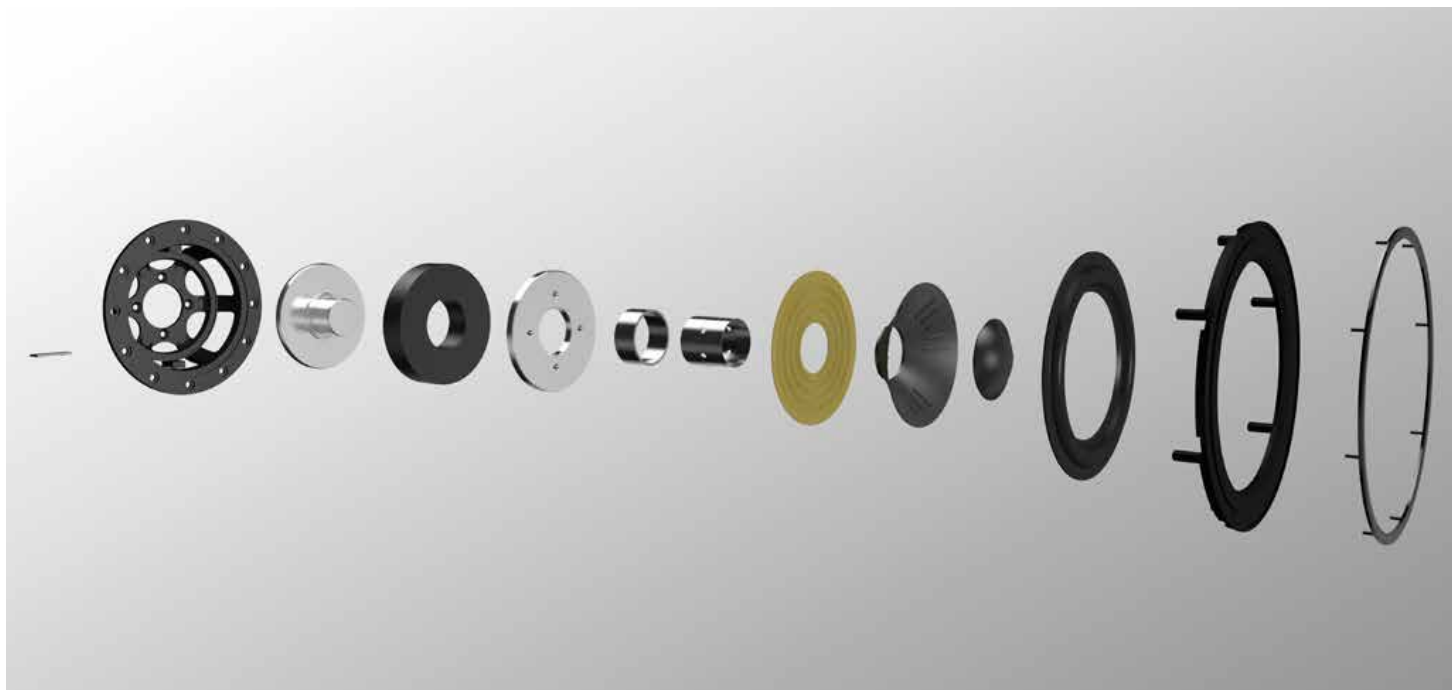
### Mid/bass drivers – cone surround, magnet and voice coil

Polypropylene speaker cones are often combined with high-damping surrounds to achieve a smooth response curve. However, the hysteresis of these surrounds can restrict dynamics and make bass sound somewhat 'soft'.

For the **DIAMOND 12 Series**, the aim was to combine the Klarity™ cone with a low-damping surround, thereby achieving both low colouration and expressive dynamics. This was not a simple task but, by simulating many different cone shapes and adding ribs to provide further stiffening, a flat response curve was achieved without resorting to a high-damping surround, thereby striking the ideal balance.

The Klarity™ diaphragms are driven by a substantial, precision-made magnet system with an aluminium compensation ring to minimise the effect of variations in inductance as the voice coil travels. This contributes to an absence of distortion and intermodulation generated by the motor system.

The voice coil is wound on a high-power epoxy/glass fibre bobbin – highly unusual in speakers at this price level. This has the advantage of not adding eddy currents and delivering greater power handling than an aluminium bobbin, whilst also being much stiffer than the Kapton type.

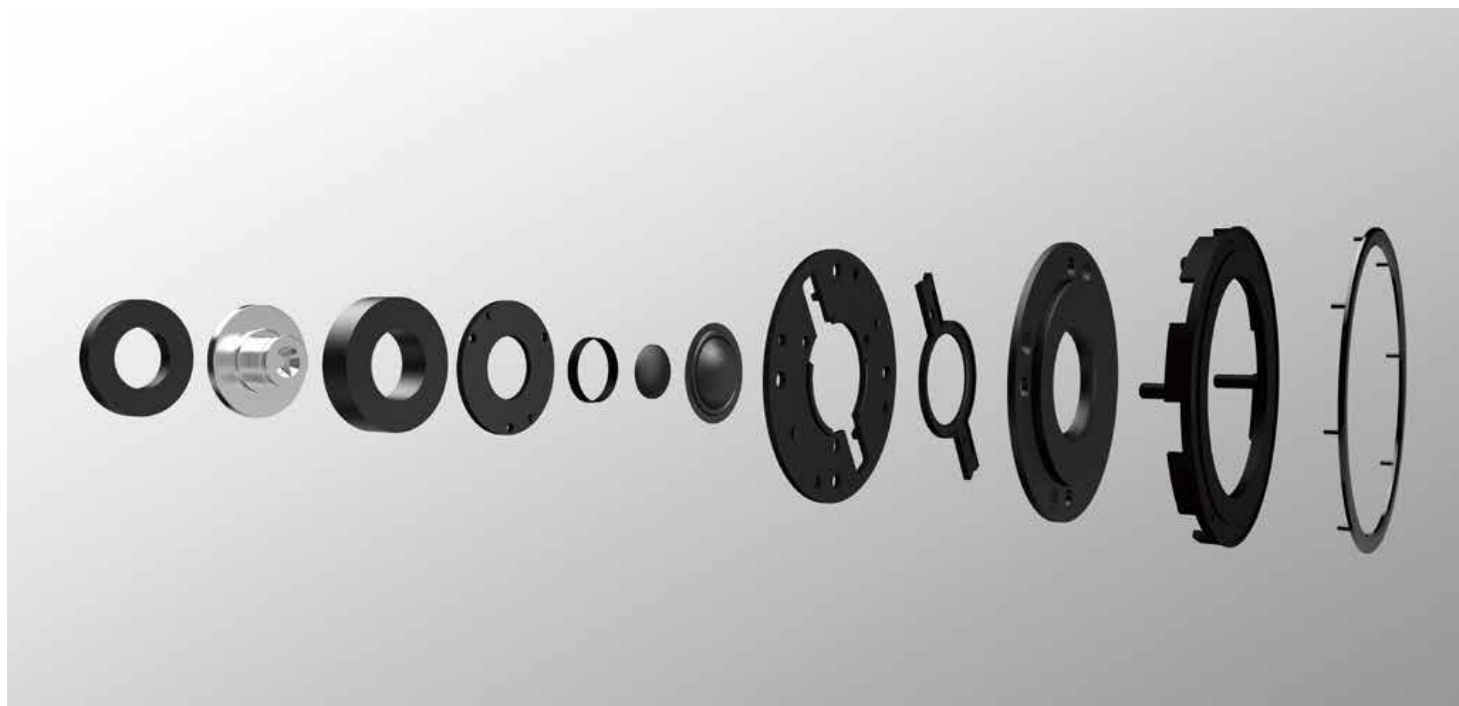


Above: **DIAMOND 12** bass/mid driver assembly, featuring a Klarity™ cone with low-damping surround

### Treble unit and crossover

The **DIAMOND 12 Series**' treble unit sports a 25mm dome made from a woven polyester film with a high-loss coating to deliver open and smoothly extended high frequencies. The magnet system and the front plate have been optimised for wide dispersion and uncompressed behaviour. The front plate is flat and exposes the dome as much as possible, with a short duct to balance the acoustic load and improve the SPL (sound pressure level) measurement.

The treble unit combines seamlessly with the mid/bass driver via a crossover network using an acoustic LKR 24dB topology. This includes air core inductors of the type more commonly found in high-end speakers, selected because they produce the lowest distortion of all inductor types. As the resistance of the coil is higher than a standard laminated steel or ferrite core inductor, the magnetic structure of the mid/bass driver has been modified to compensate, resulting in fast, clean bass with no distortion from the inductor.



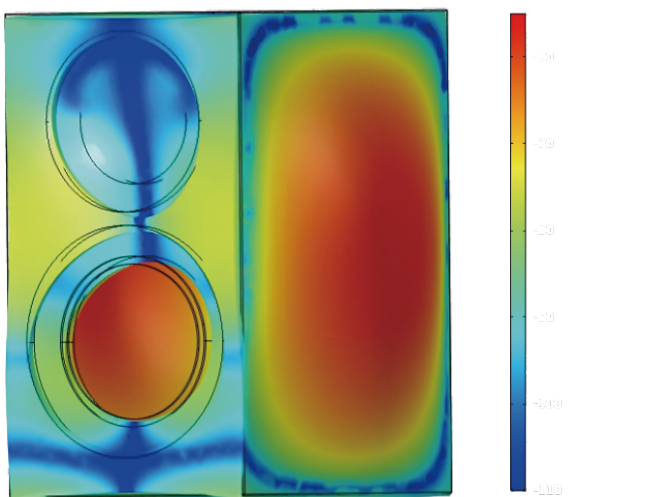
Above: **DIAMOND 12** treble driver assembly, featuring woven polyester film dome

### Cabinet construction

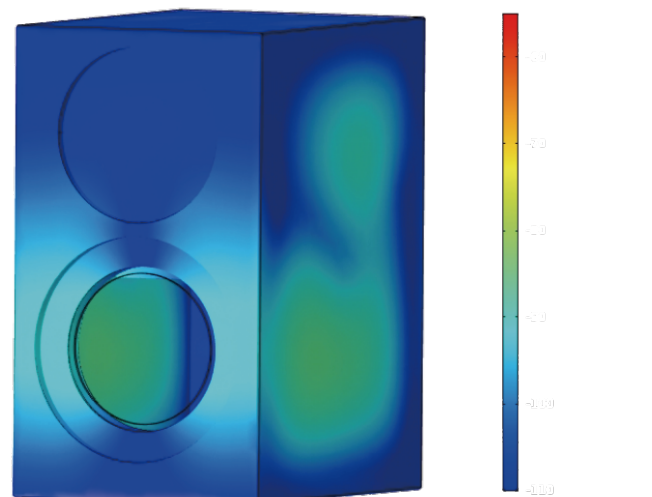
The cabinet is a critical part of any high-performance loudspeaker. At entry-level price points, corners are often cut to constrain cost, but this is a mistake; no matter how good the drive units, their performance will be wasted if the cabinet's construction is suboptimal. For this reason, **DIAMOND 12 Series** speakers feature cabinets constructed with a level of sophistication usually reserved for much more expensive designs.

The rear-ported enclosure of each model is precisely sized so that the internal volume works in harmony with the drive unit system to deliver the desired sonic result. The cabinet walls are made from sections of wood fibre boards of varying thickness, constructed in such a way as to subdue the identifiable characteristics of the cabinet's 'sound' and ensure the drivers' output remains unsullied. The resonant properties of each element - even the glue - were considered to determine the ideal combination of materials and placement.

Inside the cabinet, Intelligent Spot Bracing connects opposing walls with a specific form of wood brace to achieve optimal reduction of cabinet resonance. These braces are precisely modelled by computer simulation to improve upon the commonplace 'figure of eight' brace, which can have the effect of transferring resonance from one wall to another.



Before bracing technology implemented



After bracing technology implemented

*Above: Thermograms of the **Diamond 12.1**'s cabinet before and after Intelligent Spot Bracing is applied – the 'hotter' the colour, the greater the resonance*

### DIAMOND 12: a music lover's best friend – available from October



*Above: Wharfedale DIAMOND 12.1 bookshelf speakers in black finish*

A bestseller in every **Wharfedale** DIAMOND line-up from the last two decades is the '.1' model – a classically sized 'bookshelf' speaker evolved over many generations from the original DIAMOND blueprint. The **DIAMOND 12.1** continues this tradition and is the first **DIAMOND 12** model to arrive – available from 1 October.

For many decades, **Wharfedale** has been famous for fusing even-handed neutrality and transparency with captivating clarity and expression, and the **Wharfedale DIAMOND 12.1** embodies that sonic goal. This is a 'budget' loudspeaker that captures the spirit of the music, whatever you play – from rock to classical, jazz to electronica – whilst accurately conveying the recording as all great 'hi-fi' should.

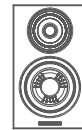
The other five **DIAMOND 12** models are set to join the 12.1 in November, each one delivering the same adroit balance of subtlety and expression, with increasing levels of sonic power and scale as one moves up the range. All models are available in a choice of black, white, walnut or light oak.

For high-performance sound at entry-level prices, only a DIAMOND cuts to the heart of the music - and **Wharfedale's DIAMOND 12 Series** speakers are the best 'budget' gems yet.

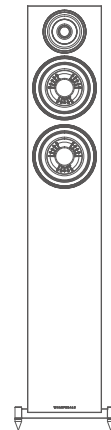
*More marketing assets for **Wharfedale DIAMOND 12 Series** can be found at IAG cloud:*

<https://iaggroup.jianguoyun.com/p/DY095roQ2qS1BhjPqakD>

## SPECIFICATIONS



Model	DIAMOND 12.0	DIAMOND 12.1	DIAMOND 12.2
General description	2-way bookshelf speaker	2-way bookshelf speaker	2-way bookshelf speaker
Design philosophy and core technology			
Enclosure type	bass reflex	bass reflex	bass reflex
Transducer complement	2-way	2-way	2-way
ABR			
Bass driver	4"(100mm) Klarity™ Composite	5"(130mm) Klarity™ Composite	6.5"(150mm) Klarity™ Composite
Midrange driver			
Treble driver	1"(25mm) Textile Dome	1"(25mm) Textile Dome	1"(25mm) Textile Dome
Full-range driver			
AV shield	No	No	No
Sensitivity(2.83V @ 1m)	87dB	88dB	88dB
Recommended amplifier power	20-60W	20-100W	20-120W
Peak power handling			
Peak SPL	95dB	96dB	96dB
Nominal impedance	8Ω Compatible	8Ω Compatible	8Ω Compatible
Minimum impedance	4.0Ω	4.0Ω	4.0Ω
Frequency response(+/-3dB)	70Hz - 20kHz	65Hz - 20kHz	50Hz - 20kHz
Bass extension(-6dB)	65Hz	60Hz	43Hz
Crossover frequency	2.7kHz	2.6kHz	2.0kHz
Cabinet Volume (in litres)	4.4L	8.2L	11.8L
Dimensions (H x W x D)	265 x 160 x (200+28) mm	312 x 180mm x (250+28) mm	335 x 200 x (285+28) mm
Net weight	5.1kg/pcs	6.8kg/pcs	8.2kg/pcs



Model	DIAMOND 12.C	DIAMOND 12.3	DIAMOND 12.4
General description	2-way centre speaker	2.5-way floorstanding speaker	2.5-way floorstanding speaker
Design philosophy and core technology			
Enclosure type	closed-box system	bass reflex	bass reflex
Transducer complement	2-way		
ABR			
Bass driver	5"(130mm) Klarity™ Composite (x2)	5"(130mm) Klarity™ Composite	6.5"(150mm) Klarity™ Composite
Midrange driver		5"(130mm) Klarity™ Composite	6.5"(150mm) Klarity™ Composite
Treble driver	1"(25mm) Textile Dome	1"(25mm) Textile Dome	1"(25mm) Textile Dome
Full-range driver			
AV shield	No	No	No
Sensitivity(2.83V @ 1m)	90dB	89dB	89dB
Recommended amplifier power	20-120W	30-150W	30-200W
Peak power handling			
Peak SPL	96dB	102dB	102dB
Nominal impedance	8Ω Compatible	8Ω Compatible	8Ω Compatible
Minimum impedance	4.0Ω	5.0Ω	5.0Ω
Frequency response(+/-3dB)	90Hz - 20kHz	45Hz - 20kHz	40Hz - 20kHz
Bass extension(-6dB)	80Hz	40Hz	35Hz
Crossover frequency	2.2kHz	2.2kHz	2.1kHz
Cabinet Volume (in litres)	8.7L	26.6L	40.8L
Dimensions (H x W x D)	180 x 480 x (180+28) mm	(925+50) x 180 x (320+28) mm	(1100+50) x 200 x (350+28) mm
Net weight	8.5kg/pcs	19.5kg/pcs	22.4kg/pcs



Above: *Wharfedale DIAMOND 12.1* in black oak finishes.



Above: *Wharfedale DIAMOND 12.1* in light oak finishes.





Above: Wharfedale DIAMOND 12.3, paired with 12.C in walnut finishes.



Above: Wharfedale DIAMOND 12.3, paired with 12.C in white finishes.



Above: Wharfedale DIAMOND 12.3, paired with 12.1 and 12.C in walnut finishes.



Above: Wharfedale DIAMOND 12.3, paired with 12.1 and 12.C in light oak finishes.