



DIAMOND 10

The Sparkling Jewel in Wharfedale's Crown

Wharfedale



INTRODUCTION

Following the highly successful and award winning Diamond 9 series was always going to be a difficult task. But Wharfedale engineers were determined to bring the latest Diamond right into line with the standard of performance expected from a stand mount/bookshelf speaker in 2009.

The concept of a curved wall cabinet for strength and reduction of internal standing waves has been maintained and, in Diamond 10, the cabinet walls have been made stronger through a superior method of bonding and curving the panels. This both increases the rigidity of the cabinet structure and, aided by internal bracing, reduces the audible effects of panel resonance.

To make the most of the stronger cabinet the bass unit, with a chassis formed from strong, nylon filled, homopolymer, has been given a massive flange secured to the cabinet with six screws to improve its stability. The front baffle also has a composite panel structure to reduce vibration.

The discerning audiophile will also note the diamond pattern moulded into the surround of the woven Kevlar cone. This is more than just cosmetic as the pattern reduces and damps standing waves in the surround yielding a cleaner high frequency acoustic roll-off.

This enables the relatively simple crossover to yield a phase perfect integration to the treble unit throughout the whole crossover region, creating a soundstage which is free from the speakers and allowing the drive units to work as a cohesive whole.

Over the treble unit is a metal diffusion grid which, as well as protecting the dome when the speaker is being used without its grille, also irons out high frequency perturbations right up to 30kHz giving a super-smooth response and crystal clear treble detailing.

Equally for low frequency analysis twin reflex ports extend bass to below 45 Hz and have been re-positioned on the rear of the cabinet to reduce the effects of audible distortion.

Other Diamond attributes remain, like the sturdy bi-wire terminal block, high quality silicon iron and air cored inductors in the crossover, high purity copper internal wiring and an interference free front grille, now affixed without unsightly pegs in the piano-black finish front baffle.

The overall result of the engineering changes is to deliver a tightly focused and spacious stereo image allied to a clean and clear performance throughout the audible bandwidth. The coherence of the midrange and treble balance provides a highly musical and natural delivery of all types of music that positively encourages exploration of any CD, LP and MP3 collection.

Diamond 10 series loudspeakers draw on the strengths of the award winning 9 series and build even more enthusiastic music making and listener enjoyment. It is, as its name suggests, a Diamond amongst speakers.



DIAMOND 10 ENHANCEMENTS

Following an exhaustive period of research and development, our acoustic design team has enhanced the speaker in the following ways:

Stronger cabinet walls

The concept of curved cabinet walls, for strength and the reduction of internal standing waves, has been retained from the Diamond 9 Series. However, these walls have been made stronger through a superior method of bonding and curving the panels, increasing rigidity and, aided by internal bracing, reducing the audible effects of panel resonance.

Composite front baffle panel

The front baffle features a composite panel structure with a piano-black finish. This contributes to the speaker's smart new look and, more importantly, to its improved sound quality, as it reduces the effects of vibration and provides a stable platform for the drive units.

Improvements to the mid/bass drive unit

To make the most of the stronger cabinet, the main drive unit chassis has been enhanced with a massive flange that is secured using six screws, thus improving its stability. A diamond pattern has also been moulded into the surround of the Kevlar cone; this is more than just cosmetic as the pattern reduces and damps standing waves in the surround, yielding a cleaner high-frequency acoustic roll-off and enhancing the ability of the mid/bass unit and tweeter to work as a cohesive whole.

Rear-firing twin reflex ports

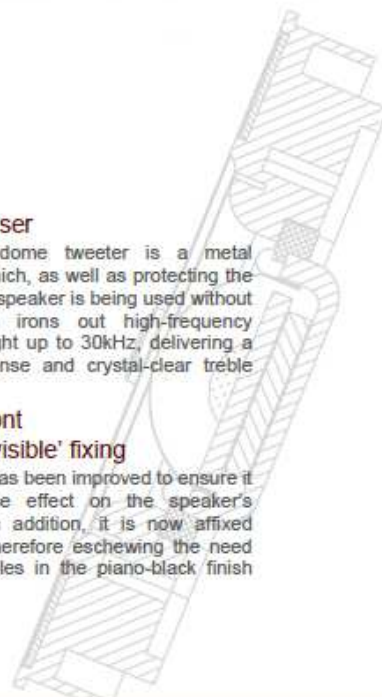
The speaker's twin reflex ports have been moved to the rear of the cabinet, to reduce the effects of audible distortion. These ports extend the bass to below 45Hz, contributing to an impressive sense of sonic scale.

Tweeter diffuser

Over the soft-dome tweeter is a metal diffusion grid which, as well as protecting the dome when the speaker is being used without its grille, also irons out high-frequency perturbations right up to 30kHz, delivering a smoother response and crystal-clear treble detailing.

Enhanced front grille with 'invisible' fixing

The front grille has been improved to ensure it has no adverse effect on the speaker's performance. In addition, it is now affixed without pegs, therefore eschewing the need for unsightly holes in the piano-black finish front baffle.

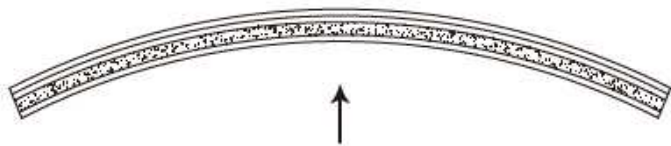


DIAMOND 10

"Smooth and Balanced Frequency Response,
Dynamically Capable and Naturally Precise"



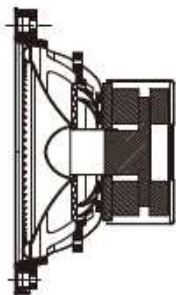
CURVED SIDED PANEL CONSTRUCTION



The elegant curved side panels are more than just for cosmetic appearance. The curves scatter reflected sound from inside the speaker, reducing energy smear and increasing clarity of output.

For Diamond 10 a new system of panel sandwich construction has been devised by our engineers. Sandwiches of our four core materials, including interleaved MDF, are first glued to a precise matrix.

Each panel is then coated with a special adhesive that can be cured to high rigidity by using high intensity RF (Radio Frequency) energy.

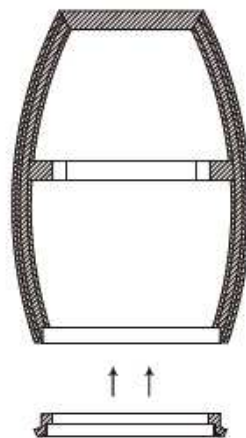


SPEAKER DRIVER with Driver Technical Structure

The bass and mid-range drivers throughout the series were manufactured using a high-grade, woven and impregnated KEVLAR, a significant Diamond component since the release of the Diamond 8 series.

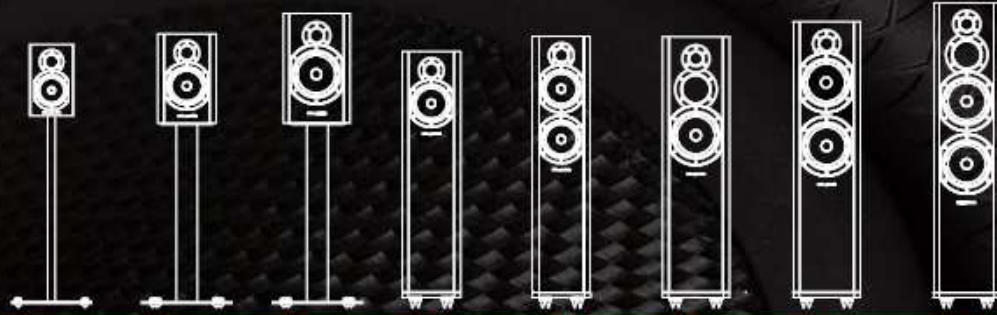
This high modulus KEVLAR has a very high strength and a unique resin that keeps an ideal balance of weight and stiffness that reduces and/or maintains linearity and reduces distortion, and has improved rejection of longitudinal waves. It can track music signals accurately with low inertia and greatly reduces overhang as well.

CABINET CONSTRUCTION



DIAMOND 10 SERIES

Specifications



Loudspeakers

Model	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7
Format	Stand mount	Stand mount	Stand mount	Floorspeaker	Floorspeaker	Floorspeaker	Floorspeaker	Floorspeaker
Bass Driver	-	-	-	-	125mm	165mm	165mm	2 X 165mm
Bass/mid driver	100mm	125mm	165mm	125mm	125mm	-	165mm	-
Midrange Driver	-	-	-	-	-	50mm Dome	-	50mm Dome
Tweeter	25mm	25mm	25mm	25mm	25mm	25mm	25mm	25mm
Suitable Amplifier Power	15 - 75 w	20 - 100 w	20 - 100 w	20 - 100 w	20 - 120w	20 - 120w	20 - 150 w	30 - 200w
Impedance (Nominal)	6 Ω	6 Ω	6 Ω	6 Ω	6 Ω	6 Ω	6 Ω	6 Ω
A/V shielded	yes	yes	yes	no	no	no	no	no
Sensitivity (1W@1M)	86 dB	86 dB	86 dB	86 dB	88 dB	86 dB	88dB	90dB
Nominal Frequency Range	55 - 24 kHz	48 - 24 kHz	40 - 24 kHz	40 - 24 kHz	38 - 24 kHz	35 - 24 kHz	35 - 24 K	30 - 24K
HF Limit (-10dB)	44 kHz	44 kHz	44 kHz	44 kHz	44 kHz	44 kHz	44 kHz	44 kHz
Freq. Fb	55 Hz	50 Hz	42 Hz	42 Hz	40 Hz	40 Hz	38 Hz	35 Hz
Crossover Frequency	2.5 kHz	1.8 kHz	1.8 kHz	1.8 kHz	140Hz / 3.8k	600Hz / 3.8 kHz	100Hz / 2.5kHz	150Hz/850Hz
Crossover Freq (3-Way)	-	-	-	-	-	-	-	4.5kHz
Dimensions (HxWxD) (mm)	236 x 145 x 165	296 x 194 x 278	364 x 223 x 301	800 x 194 x 278	850 x 194 x 278	850 x 223 x 301	900 x 223 x 301	965 x 223 x 301
Height on feet/spikes (mm)	-	-	-	855	905	880	955	1020

*10.0,10.1,10.2 models shown with optional floor stands

Loudspeakers



Model	10.CC	10.CS	10.CM	10.SR	10.DFS
Format	Centre	Centre	Centre	Surround	Surround
Bass Driver	-	-	2X 165mm	-	-
Bass/mid driver	2 X 100mm	2 X 125mm	-	100mm	2 X 100mm
Midrange Driver	-	-	50mm dome	-	-
Tweeter	25mm	25mm	25mm	25mm	2 X 25mm
Suitable Amplifier Power	15 - 120 w	20 - 150 w	30 - 200 w	10 - 60 w	15 - 120W
Impedance (Nominal)	6Ω	6Ω	6 Ω	6 Ω	6 Ω
A/V shielded	yes	yes	yes	no	no
Sensitivity (1W@1M)	88dB	89dB	90dB	88dB	86dB
Nominal Frequency Range	75 - 24 kHz	70 - 24kHz	55 - 24 kHz	70 - 24 kHz	70 - 24 kHz
HF Limit (-10dB)	44 kHz	44 kHz	44 kHz	44 kHz	44 kHz
Freq. Fb	70 Hz	55kHz	70 Hz	70 Hz	80 Hz
Crossover Frequency	2.5kHz	2.8kHz	1 / 6kHz	2.2kHz	3.5kHz
Crossover Freq (3-Way)	-	-	-	-	-
Dimensions (HxWxD) (mm)	120 x 330 x 130	189 x 400 x 233	223 x 515 x 265	236 x 185 x 117	280 x 290 x 132
Height on feet/spikes (mm)	128	197	231	-	-

Subwoofers



	10.SX-SUB	10.MX-SU	10.GX-SUB
Bass Driver	1 x 200mm SUB	1 x 250mm SUB	1 x 250mm SUB
USB SV Output	no	yes	no
Amplifier power	100 W	250 W	250 W
Line Input Sensitivity	200mv for 75W	200mv for 75W	325mv for 150W
Avg. Max output at 1 metre	107dB	110dB	113 dB
Boundary response	40 - 110 Hz	35 - 110 Hz	30 - 100 Hz
Crossover Range	35 - 85Hz (6x10dB steps)	35 - 85Hz (6x10dB steps)	35 - 85Hz (6x10dB steps)
Dimensions (HxWxD) (mm)	290 x 290 x 320	330 x 330 x 370	420 x 420 x 375
Height on feet/spikes (mm)	333	360	478



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