



DIAMOND 100  
SERIES

*Wharfedale*





# FOREWORD

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Britain has long been recognised throughout the world as being the home of loudspeaker technology in terms of innovation and quality. This reputation has been built up over many years by some of the world's most famous loudspeaker manufacturers. Wharfedale, established over eighty years ago, has always been at the forefront of maintaining this reputation.

It was in 1932 that Gilbert Briggs built his first loudspeaker in the cellar of his home in Ilkley, Yorkshire. This sleepy little market town was located in the valley of the river 'Wharfe' - an area known to this day as 'Wharfedale'. This unlikely location would see the birth of a brand that was to become recognised all over the world.

Briggs interest in quality sound reproduction stemmed from his great love of music; he was himself an adept pianist, and had a keen ear for the makings of a good loudspeaker. Indeed two of the first drive units he assembled in the cellar of his home won first and second prize in a loudspeaker test run by the Bradford Radio Society.

Gilbert Briggs is still much admired and respected throughout the world for his pioneering work in hi-fi reproduction and his endless pursuit of better sound quality - driven by his love of live music.

# Introduction

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Wharfedale's Diamond series has a long history of achievement. The first Diamond was born in 1982 - in a rear-ported cabinet of just over 5 litres were fitted a 19mm dome tweeter and 120mm long throw, polypropylene bass/mid driver. The crossover was simple but highly effective. This product

took the industry by storm. The small cabinet and impeccable stereo image meant the Diamond quickly became a best-seller and a permanent fixture in the Wharfedale product range. Since then every new range of Wharfedale Diamond Series has been a best seller.







# Driver Performance

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As you would expect from a series of this stature, the Diamond 100 is bang up to date in terms of technology and performance. Foremost in the design criteria for Diamond 100 is the ongoing research into loudspeaker driver sound quality. To that end the famous Wharfedale Woven Kevlar cone was put under the technology spotlight and given a new profile based on the research originally carried out for the high-end Jade range. Incorporated in the low frequency and midrange cones are semi-elliptical 'break-up' areas which smooth the response throughout the audible range.

In addition each surround is treated to match the cone edge with a unique 'Diamond Pattern' moulding. Finally the dust cap is blended and treated to provide a smooth transition and perfect acoustic match to the treble unit.

The treble unit chosen for Diamond 100 came under equal scrutiny during development. As well as selecting a sheer fabric dome and advanced ferrite magnet system, the dome is surrounded by a carefully crafted wave guide that encourages outstanding midrange performance.



# Crossover

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Combining the drivers is a crossover developed using Wharfedale's latest 'Virtual Speaker' software. Techniques developed in-house allow the final loudspeaker to be simulated and fully analysed even before a prototype is played for the

first time. This simulation accommodates driver performance and cabinet construction, as well as room placement, to make sure that both on-axis and off-axis performance over a wide listening area is fully optimized.









# Cabinet Design

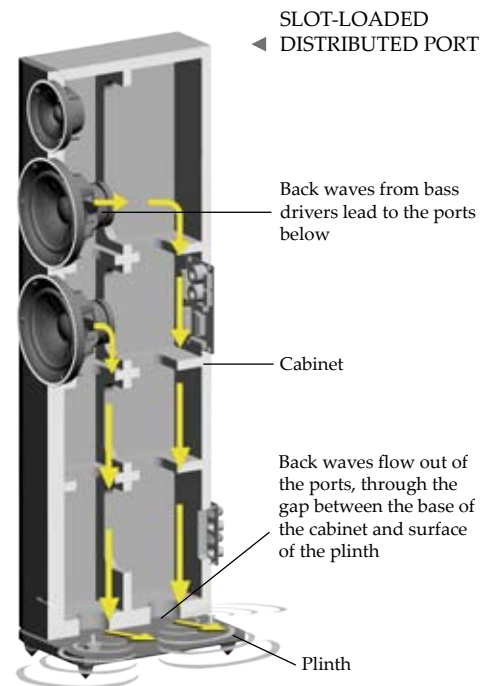
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Naturally cabinet design was not forgotten in amongst all the other technology. Rectilinear cabinet shapes were chosen to maximize the internal volume and provide the deepest, most extended bass response. Again the research from the high-end Jade series was incorporated to elicit the latest advance in loudspeaker reflex loading – the Slot-Loaded Distributed Port.

Exiting at the base of the speaker cabinet, the reflex port is loaded by a slot created by the plinth. This equalises the air pressure to mimic that inside the cabinet allowing smooth transition between the pressure variation in the cabinet and the low frequency sound developed in the room.

Cabinet walls and internal bracing were also incorporated in the 'Virtual Speaker' model, with the help of Delayed Cumulative Spectral Analysis that ruthlessly reveals panel coloration in all its

forms. Using this technique Wharfedale engineers formulated a cabinet panel construction of multi-grain faceted boards bonded together to damp annoying High-Q resonances and block internal sound leakage. The effect is that the 'noise' from cabinet walls is buried more than 35dB below the driver output. In Diamond 100 all you hear is crystal clear music from the drive units without any attendant coloration from the cabinet. Again computer analysis helped refine this novel technique, but the result is an audibly superior bass performance of great articulation and clarity.



# The Real Test

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That doesn't mean that Diamond 100 is purely a computer design, clever though that might be. This 'Virtual Speaker' is simply a tool that allows the Wharfedale engineers to explore all facets of the loudspeaker's performance before starting listening tests. In the final evaluation weeks are spent fine tuning the acoustic performance using a wide variety of music in Wharfedale's five listening rooms, each of which mimics the kind of domestic

environments the Diamond Series are likely to be used in.

Only when the acoustic tests are deemed truly satisfying are the loudspeaker designs signed-off for production, ensuring that each speaker model fulfils its eventual owner's dreams of musically enjoyable reproduction from Britain's Most Famous Loudspeakers.





## Finishes



Mahogany



Walnut Pearl



Wenge



Rosewood Quilt



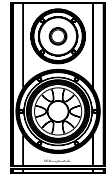
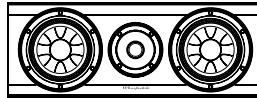
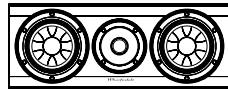
Cinnamon Cherry



Black Wood



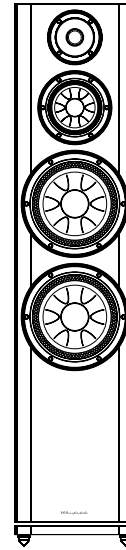
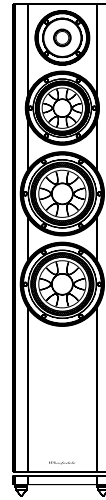
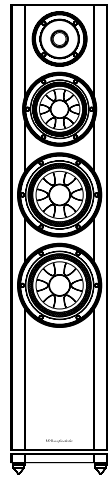
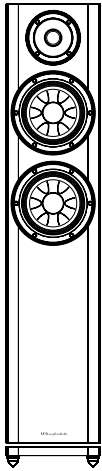
Winter Maple



## Specifications:

	DIAMOND 101C	DIAMOND 102C	DIAMOND 121	DIAMOND 122
General Description	2-way Centre Speaker	2-way Centre Speaker	2-way Bookshelf Speaker	2-way Bookshelf Speaker
Enclosure Type	Bass Reflex	Bass Reflex	Bass Reflex	Bass Reflex
Transducer Complement	2-way	2-way	2-way	2-way
Bass Driver	2 × 130mm Woven Kevlar Cone	2 × 165mm Woven Kevlar Cone	130mm Woven Kevlar Cone	165mm Woven Kevlar Cone
Midrange Driver	-	-	-	-
Treble Driver	25mm Soft Dome	25mm Soft Dome	25mm Soft Dome	25mm Soft Dome
AV Shield	Yes	Yes	No	No
Sensitivity (2.83V @ 1m)	89dB	90dB	86dB	87dB
Recommended Amplifier Power	25-150W	25-200W	25-100W	25-120W
Peak SPL	95dB	96dB	95dB	96dB
Nominal Impedance	8 Ohms Compatible	8 Ohms Compatible	8 Ohms Compatible	8 Ohms Compatible
Minimum Impedance	4Ω	3.8Ω	4.1Ω	4.2Ω
Frequency Response (+/-3dB)	60Hz ~ 20kHz	55Hz ~ 20kHz	50Hz ~ 20kHz	45Hz ~ 20kHz
Bass Extension (-6dB)	65Hz	55Hz	45Hz	40Hz
Crossover Frequency	2.8kHz	2.4kHz	2kHz	2.3kHz
Cabinet Volume (in litres)	11.8L	17.6L	7L	10.3L
Dimensions (H × W × D)	174 × 470 × 264 (mm)	196 × 530 × 304 (mm)	315 × 174 × 225 (mm)	354 × 196 × 295 (mm)
Net Weight	8.2kg/pcs	10.8kg/pcs	5.3kg/pcs	7.4kg/pcs

# DIAMOND 100 S E R I E S



DIAMOND 155

DIAMOND 156

DIAMOND 157

DIAMOND 159

DIAMOND 155	DIAMOND 156	DIAMOND 157	DIAMOND 159
2.5-way Floorstanding Speaker	3-way Floorstanding Speaker	3-way Floorstanding Speaker	3-way Floorstanding Speaker
Bass Reflex	Bass Reflex	Bass Reflex	Bass Reflex
2.5-way	3-way	3-way	3-way
165mm Woven Kevlar Cone	2 × 165mm Woven Kevlar Cone	2 × 165mm Woven Kevlar Cone	2 × 200mm Woven Kevlar Cone
165mm Woven Kevlar Cone	130mm Woven Kevlar Cone	130mm Woven Kevlar Cone	130mm Woven Kevlar Cone
25mm Soft Dome	25mm Soft Dome	25mm Soft Dome	25mm Soft Dome
No	No	No	No
89dB	89dB	90dB	89dB
25-150W	25-150W	25-150W	25-200W
102dB	102dB	102dB	110dB
8 Ohms Compatible	8 Ohms Compatible	8 Ohms Compatible	8 Ohms Compatible
3.7Ω	3.0Ω	3.0Ω	3.1Ω
40Hz ~ 20kHz	40Hz ~ 20kHz	40Hz ~ 20kHz	35Hz ~ 20kHz
37Hz	35Hz	35Hz	32Hz
2.2kHz	400Hz & 2.4kHz	400Hz & 2.4kHz	400Hz & 2.8kHz
35L	Mid Internal 8.8L	Mid Internal 10.6L	Mid Internal 8L
-	Bass Internal 30L	Bass Internal 37.2L	Bass Internal 66.3L
963 × 196 × 334 (mm)	975 × 204 × 348 (mm)	1023 × 204 × 394 (mm)	1128 × 250 × 424 (mm)
19.3kg/pcs	20.4kg/pcs	24.4kg/pcs	30.4kg/pcs



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