

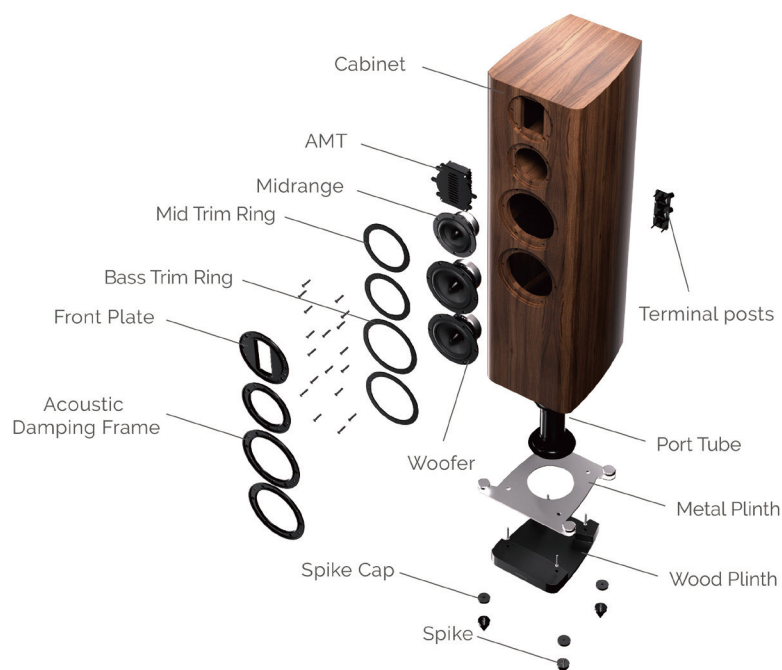
 W H A R F E D A L E

Loudspeaker manufacturer since 1932

Class-leading Innovation. Stunning Realism

AURA continues the Wharfedale tradition of offering exceptional performance and value for money with a range of speakers that offer the home listener and dedicated audiophile a combination of monitor-class audio transparency together with class-leading levels of musical enjoyment.

Borrowing heavily from the advanced technology of the elite Elysian research project, AURA features the Wharfedale AMT high-frequency transducer, glass fibre matrix midrange and bass cones, the SLPP port system and multi-layer cabinets.

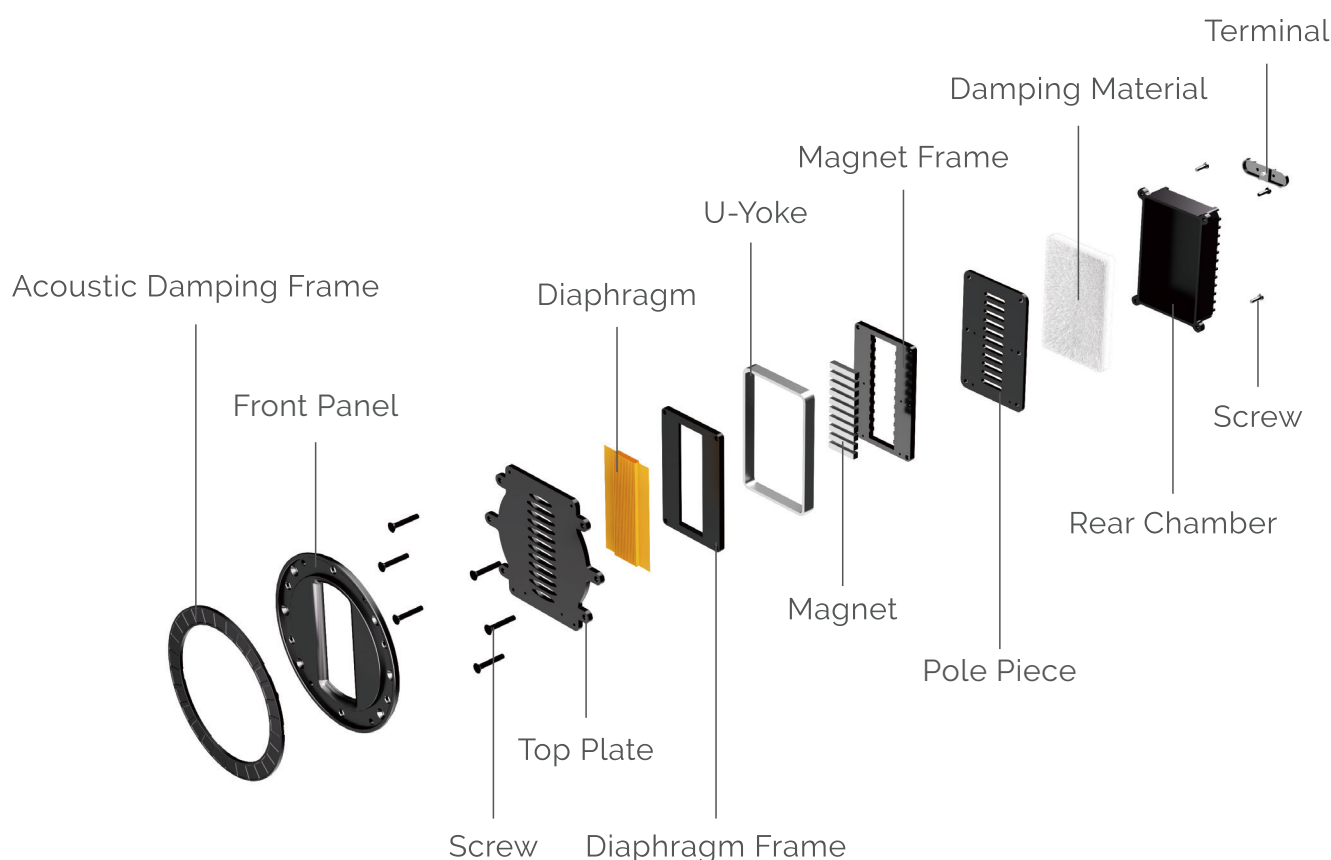


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Wharfedale AMT High Frequency Transducer

Unlike conventional dome or other ribbon and planar diaphragms, the Wharfedale AMT high-frequency transducer does not move forwards and backwards like a piston. It is therefore not constrained by the mass of its diaphragm, with the attendant blurring of transient response. Instead the diaphragm is folded and carries conductive elements immersed in an immensely strong magnetic field. When the music signal from the amplifier traverses the diaphragm, the folds constrict and expand. This has the effect of squeezing the air between the folds, rapidly altering its pressure to accurately transmit the equivalent pressure wave received by the microphone(s) in the recording studio.

The AMT diaphragm is also operating over a large area, for advanced efficiency, and is able to generate transient acoustic power quite easily. Wharfedale's design team have improved the AMT unit in AURA loudspeakers to extend the response to 36kHz (-6dB) allowing a smooth and linear response to 22kHz (+3dB). The result is exceptional clarity of treble detail allied to realistic transient response, smoothly enhancing the harmonic overtones of voices and instruments whilst providing shimmering realism to percussion such as cymbals.



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Glass Fibre Matrix Cones

As Wharfedale engineers found when designing the Elysian series, the transient accuracy and efficiency of the AMT needs to be matched by the midrange and bass drivers for a seamless audio performance. Accordingly, AURA also uses a proprietary woven glass-fibre matrix diaphragm for the midrange and bass cones terminated by high flexibility rubber surrounds. The voice coils driving the cones are immersed in high-flux magnetic fields, with eddy currents and inductance controlled by Copper-clad pole pieces.

These low-distortion motor systems are mounted on die-cast aluminium chassis, each fixed to the cabinet by six high-tensile bolts to maintain the rigidity of structure and provide accurate transient response. The rubber trim rings surrounding each chassis are not just a cosmetic feature but also control any resonance occurring at the junction of the aluminium chassis and wood cabinet.



Multi-layer lacquered cabinet

AURA cabinets are, in many ways, a work of art. Available in Black, White and a feature grained Walnut real wood veneer, each cabinet is lacquered and polished to present a beautiful piece of furniture you will be proud to have in your home. The smooth curves to the cabinet are more than just eye catching. They help to disperse the acoustic output of the drive units smoothly into the room without undesirable reflections from otherwise sharp edges.

Underneath the polished lacquers lie cabinet walls built from multiple layers of differing woods designed to reduce panel resonance below audibility. This multi-layer construction, PROS (Panel Resonance Optimization System) has a further benefit - it inhibits the leakage of unwanted sound energy from inside the cabinet which would otherwise interfere with the forward output of the drive units.

Already, much of this internal sound energy is absorbed by multiple layers of matted long hair fibre - its damping factor specifically calculated to avoid rear reflection back out through the drive unit cones whilst still allowing unrestricted airflow to the SLPP reflex port system.



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SLPP Reflex Design

Wharfedale's SLPP (Slot Loaded Profiled Port) bass reflex design was developed from an original idea of Gilbert Briggs, the entrepreneur who set up and ran Wharfedale from 1932 to 1964. In AURA loudspeakers, the high-pressure, high-velocity airflow from a downward-facing port is better matched to the low air pressure in the room by distributing the airflow through a series of slot ports in the plinth. This both reduces unwanted turbulence from the port and also improves the efficiency of the bass reflex system.

In conjunction with the low resonance of the bass units, the SLPP system provides bass extension to well down into and below the 30Hz region for AURA 2, 3 and 4, revealing the fundamentals of most musical instruments with excellent articulation, clarity and power. You can feel as well as hear the true acoustic power of the musical performance.



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AURA Crossover

In many ways the crossover is the 'heart' of every loudspeaker. Wharfedale were one of the first domestic speaker manufacturers to utilise a crossover to divide the frequency band between drive units that were optimised for bass, midrange and treble.

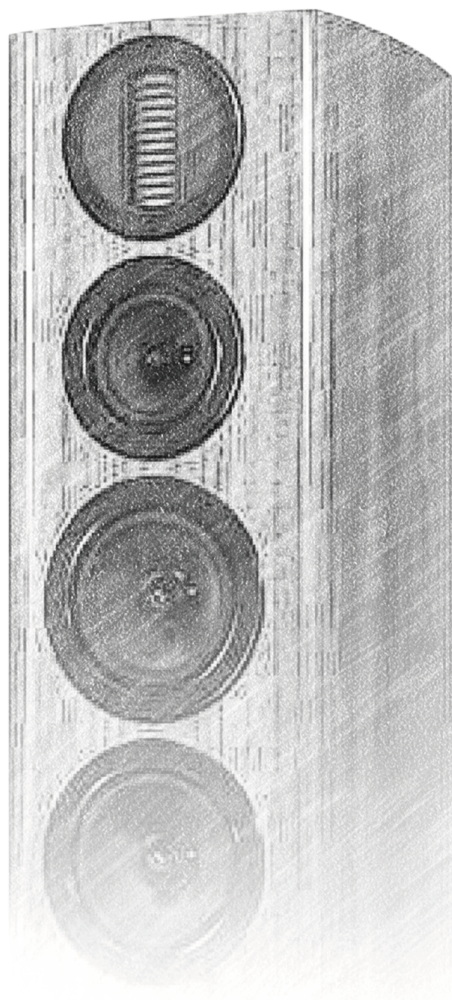
But today's crossovers have to do more than just divide up the musical input to the loudspeaker and distribute it to the relevant drive units. The crossover also has to be matched accurately to the acoustic performance of each drive unit to achieve a blend between the drivers that is acoustically seamless. Although this process is aided by the sophisticated computer analysis available from measurements made by Wharfedale's engineers, the fine-tuning has to be done by ear using a variety of musical sources and styles.

In addition each crossover component has to be tested and evaluated for its acoustic transparency. Bass and midrange/treble crossovers are laid out on separate PCBs in order to reduce electromagnetic interference and coupled to their respective terminals to allow bi-wiring if required.

In fact this crossover fine-tuning can take hundreds of hours of listening and testing in order not only to provide a seamless blend but also to balance the fundamental and harmonic overtones of voices and instruments so that they sound stunningly realistic when replayed in the home. The result is that, when you close your eyes, the AURA speakers seem to disappear and you are simply enfolded in the musical experience.



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In 1979, Peter Comeau co-founded Heybrook Hi-Fi to design and manufacture the multi-award-winning HB1 and classic HB2 loudspeakers. In 2009, after leading IAG speaker development since the acquisition of Mission, Peter assumed overall acoustic design responsibility for all of the brands within the Group, including Wharfedale. With a deep respect for the history of these brands and the necessity to maintain each individual brand's design integrity, Peter continues to design award-winning speakers at IAG's research centres in Huntingdon, England, and Shenzhen, China.

PETER COMEAU
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