



GEOMETRY SERIES  
THE FUTURE IS CARBON





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// The Cardinal represents the tip of a long and perfectly mapped development path. It is a genuine step change in both ambition and performance. It is by some considerable margin and on any terms, the best speaker that Wilson Benesch has ever made  
- Roy Gregory, *HIFI+*, Issue 96



At the heart of Wilson Benesch's mission statement is the goal to produce loudspeakers that celebrate the joy of music and its value in our lives. With this aim in sight, backed by a firm commitment to manufacturing, material innovation and an adherence to the highest standards of craftsmanship, comes the flagship of the Geometry Series; The Cardinal.

## DRIVER TECHNOLOGY

Each Cardinal is equipped with the pinnacle of Wilson Benesch's drive unit technologies, to deliver wide bandwidth sound from 25Hz to 30KHz. In total, the Cardinal features eighteen Tactic II drivers and two Semisphere tweeters per pair.

## TROIKA SYSTEM

Key to the Cardinal's mid-range and high frequency performance is the physical alignment of its upper range drivers. The Semisphere tweeter is flanked at close proximity by a lower-mid-range Tactic II driver above and an upper-mid-range Tactic II driver below. This places the highest frequencies at the centre of the mid-range band.

The mid-range presentation has been a key area of advanced in the design of the Geometry Series. In addition to the Troika System, the Cardinal benefits from a highly optimised crossover design, with both mid-range Tactic II drive units being wired direct to the amplifier and a minimal crossover for the Semisphere Tweeter to filter frequencies sub 5kHz. As a result, impeccable temporal coherence is achieved, with impressive soundstaging and lifelike presentation. These characteristics extend throughout the Geometry Series to create a family sound. The optimisation of the crossover to this degree has been afforded by the Wilson Benesch's complete control over the drive unit design, affording the company 25+ iterations of its Tactic drive technology which are optimised according to function.

## ISOBARIC DRIVE

A key objective in the design of the Cardinal was to deliver extended low frequencies, with additional impact in the upper bass register and no loss of integration with the mid-range drive units. To fulfil this requirement, the Cardinal uses two Isobaric Drive Systems; each consisting of two Tactic II bass drivers mounted one behind the other onto a 35kg aluminium sub-baffle, which provides a precision reference point. The Isobaric Drive System results in two lightning fast, highly dynamic bass woofers which create

the full range of bass notes to 25Hz. Although the Isobaric Drive System operates at a much higher load than the midrange units, the load is shared by two drive units working together, allowing the Isobaric Drive System to remain perfectly integrated with the midrange units. This degree of speed and dynamics cannot be achieved with conventional large woofer designs.

## MATERIAL'S SCIENCE R&D

Since its foundation, Wilson Benesch has invested heavily in the ambitious R&D in the fields of advanced materials science and manufacturing technology to find the optimal material and fabrication method for each component.

In no instance is this perhaps more evident than in the Advanced Composite Technology (A.C.T.) Monocoque, which forms the principal component of the Cardinal's cabinet. The A.C.T. Monocoque is the result of more than twenty-five years' research into emerging carbon fibre composite materials and the complex manufacturing methods required to integrate them within product design.

Although carbon fibre is renowned for its high strength-to-weight ratio, the material property of primary concern in the Cardinal cabinet is its damping coefficient; its ability to dissipate energy in a controlled manner. Employing this material property of carbon fibre in an optimised U-shaped geometry, the damping capacity of the A.C.T. Monocoque significantly surpasses that of a cabinet constructed using conventional materials. The Cardinal loudspeaker cabinet is the most advanced, most highly optimised loudspeaker cabinet in the world.

## GEOMETRY AND FORM

The Cardinal is the most advanced loudspeaker produced by Wilson Benesch to date. Its elegant, slim lines and sculptural form take their cues from both geometry and nature.

Combining these organic forms with silk black alloys, high-gloss carbon fibre and a range of bespoke wood veneers or high gloss finishes and the Cardinal becomes a formidable achievement in product design. Complete with Wilson Benesch's most advanced drive technologies and the Cardinal represents one of the world's finest loudspeakers.

The Cardinal; British high-end audio engineering without compromise.

## CARDINAL LOUDSPEAKER SPECIFICATIONS & AWARDS

### Drivers

1 x 25mm (1") Wilson Benesch Semisphere Tweeter  
1 x 170mm (7") Wilson Benesch Upper Mid-Range  
Tactic II Drive Unit  
1 x 170mm (7") Wilson Benesch Lower Mid-Range  
Tactic II Drive Unit  
4 x 170mm (7") Wilson Benesch Isobaric Tactic II  
Drive Unit  
2 x 170mm (7") Wilson Benesch Tactic Drive Unit  
(Passive ABRs)

### Cabinet Construction

Lower Midrange: High Performance Carbon  
Composite Monocoque  
(Infinite Baffle Sealed Enclosure)

Upper Midrange: High Performance Carbon  
Composite Monocoque  
(Tactic ABR Enclosure)

Isobaric Chamber: High Performance Carbon  
Composite Monocoque  
(Tactic ABR Enclosure)

35-kg Precision Machined Isobaric Sub-baffle

### Measurements

2-way Electrically  
4-way Acoustically  
Nominal Impedance: 6 Ohms Nominal / 3 Ohms  
Minimal  
Sensitivity: 90dB @ 1-Meter on axis, 2.83V Input  
Frequency Response: 25Hz - 30KHz +/- 3dB  
Minimum Amplification Power Recommended: 100  
Watts/ channel

### Dimensions

// Height: 1735mm (68.3 inches)  
// Width: 620mm (24.4 inches)  
// Depth: 640mm (25.2 inches)  
// Weight per Channel: 180-kg (265 lbs)

### Finishes

Silk Black Baffle, Spine and Foot, Carbon Fibre  
Cabinet.



OUTSTANDING PRESTIGE  
OVERALL PERFORMANCE AWARDS 2013  
SUPER AV

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