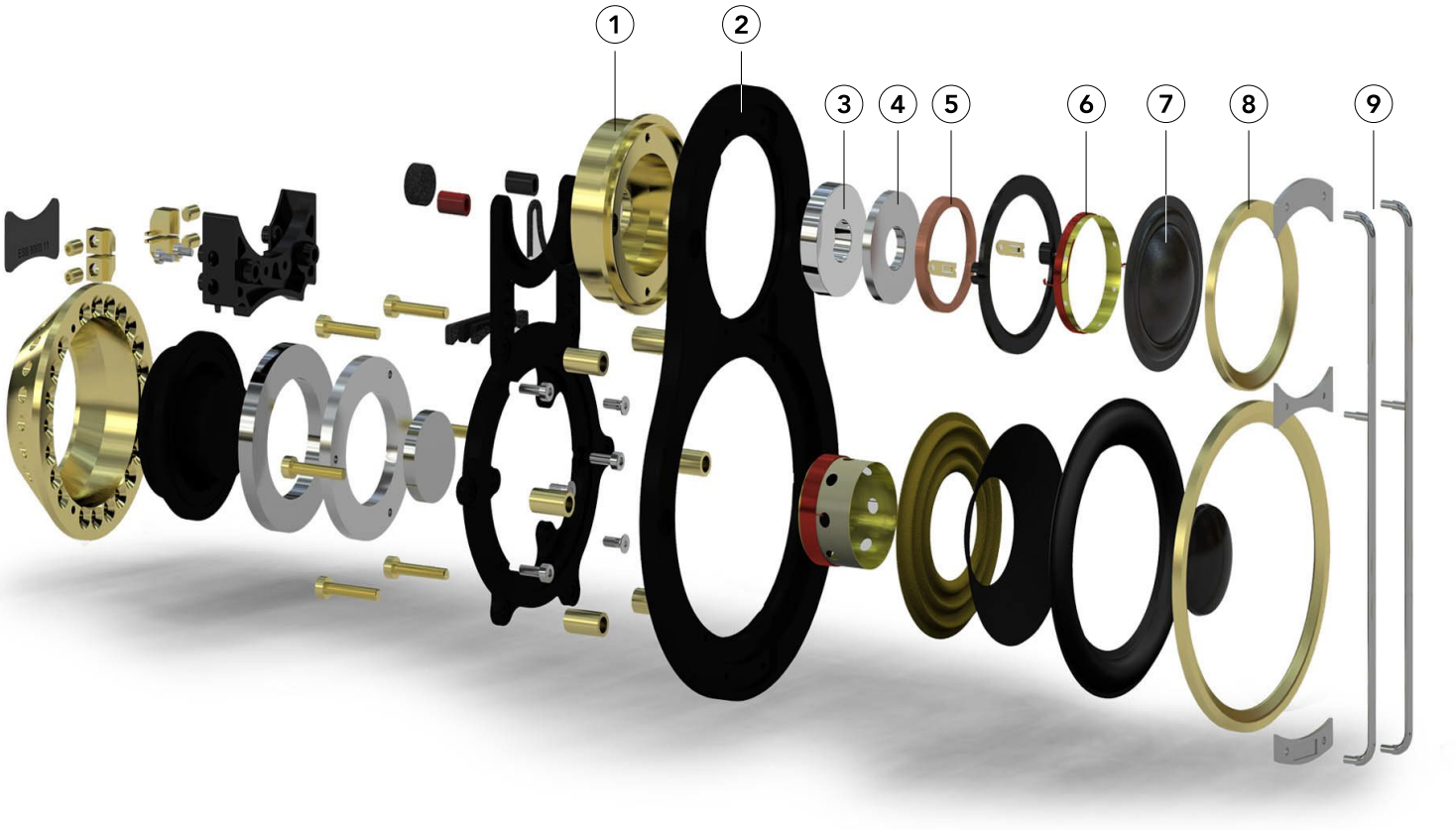
ESB AUDIO

8.003UMA

2-WAY HIGH-END MID-HIGH UNIT



1 This motor magnet cup guarantees a perfectly linear response and constant magnetic flux over the entire working range of the tweeter, assuring an extremely linear and neutral response both at low and high volumes. A careful study supported by FEM analysis allowed us to design the metal parts of the magnet to maximize the flow exactly around the voice coil, and make it linear throughout its entire excursion. Ventilation is ensured by a large opening on the bottom, protected by a filter with calibrated holes. This solution also reduces the peak impedance to the resonance frequency, making the tweeter easier to interface with any passive crossovers.

2 CNC-machined billet aluminum flange allows the midrange and tweeter to be mounted using screws, so the two speakers can also be replaced.

3 N52 oversized, high quality neodymium magnet. This "motor" guarantees a perfectly linear response and constant magnetic flux over the entire working range of the tweeter, assuring an extremely linear and neutral response both at low and high volumes. A careful study supported by FEM analysis allowed us to design the metal parts of the magnet to maximize the flow exactly around the voice coil, and make it linear throughout its entire excursion. Ventilation is ensured by a large opening on the bottom, protected by a filter with calibrated holes. This solution also reduces the peak impedance to the resonance frequency, making the tweeter easier to interface with any passive crossovers.

4 Ultra-low carbon alloy steel machined by numerically controlled machining pole plate, only this type of processing ensures perfect flatness so that it can sit perfectly on top of the magnet and not lose any of the precious magnetic flux.

5 A pure copper ring was added to reduce harmonic distortions.

6 The large 28 mm diameter voice coil is the best compromise between the lightness of the standard 25 mm coil and the great power management of 32 mm coils. This perfect combination of power and lightness is necessary for a tweeter that must reproduce frequencies in a linear and faithful way, even beyond the threshold of audibility.

7 Torcon® soft dome, an exclusive Polyphenylene Sulfide (PPS), with a high-performance fibers, offers superb heat resistance, low weight and excellent self-damping, resulting in a resonance-free frequency response over the audible frequency range.

8 CNC brass polisched ring to match the main tweeter body with aluminum flange.

9 Light stainless still grill for dome protection.

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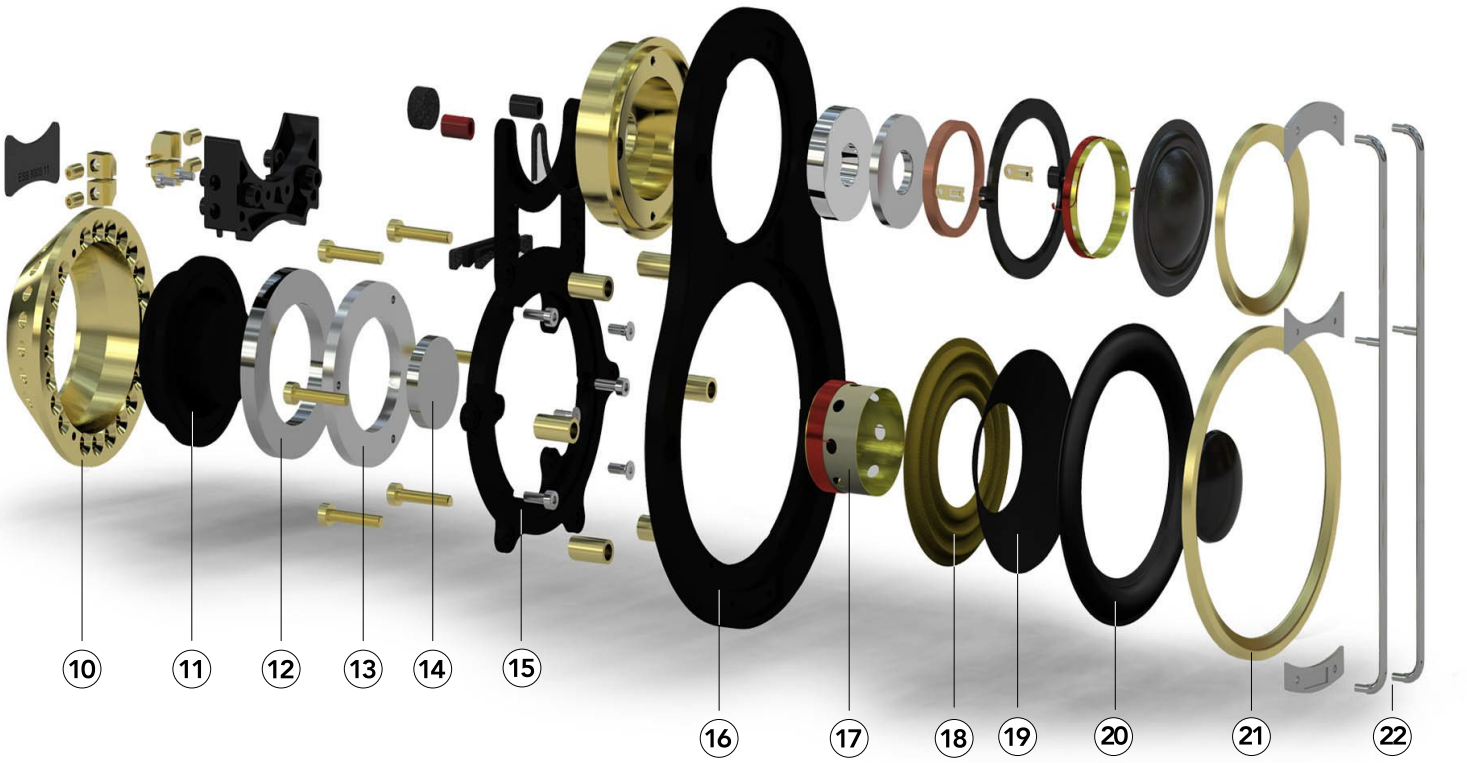


10 Gold-plated aluminium finish housing. Incorporates channels for voice coil cooling.

11 Pole cup designed with the help of magnetic flux analysis software. It helped to achieve perfect and homogeneous saturation of the magnetic gap for the benefit of the voice coil stroke always immersed in constant magnetic flux, this reduces distortion and increases dynamics.

12 The neodymium magnet motor is optimized with FEA simulation to ensure perfectly symmetrical magnetic flux in both directions of the cone's run. Motor metal parts are CNC machined from solid, refined material for maximum magnetic flux linearity and minimum magnetic loss. This reduces distortion at high power levels.

13 Magnet plate in ultra-low-carbon steel.

14 Secondary high grade neodymium magnet. This works together with the main magnet, and in addition to significantly increasing the magnetic force, increasing the efficiency of the loudspeaker while simultaneously reducing distortion, it controls the magnetic flux lines, helping to concentrate them only in the voice coil area.

15 CNC-machined billet aluminum flange.

16 The front face-plate is manufactured entirely by numerical control (CNC)7000 aluminum alloy. This makes the structure very rigid with practically zero tolerances, yielding consistency of performance and maximum linearity of reproduction.

17 The 25.5 mm CCAW (Copper Clad Aluminum Wire) double layer voice coil is wound on an aluminum former for exceptional power handling and compression-free reproduction, even for the most demanding musical passages.

18 The large Conex™ spider allows a smooth and gentle run at low excursions and gently holds the cone at high excursions, thus increasing its useful range of use.

19 Non pressed cellulose pulp exponential cone with a vinylester resin coating ensures a perfect balance between rigidity, weight, and self-damping. The cellulose pulp guarantees an extremely natural and linear reproduction in all musical passages with an excellent extension at high frequencies without audible break-up.

20 The exclusive rubber surround offers maximum linearity of travel and high reliability in extreme conditions.

21 Finishing brass polished ring.

22 Light stainless still grill for dome protection.

8.003UMA

2-WAY HIGH-END MID-HIGH UNIT

8.003UMA - TWEETER

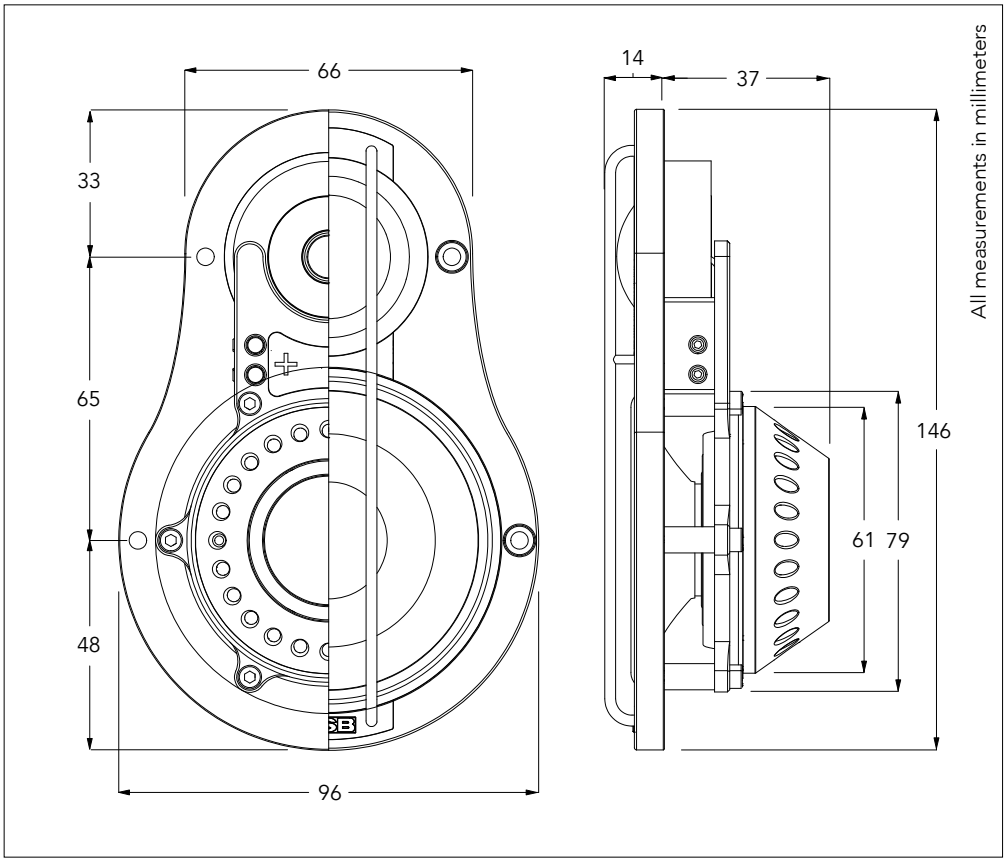
Speaker Type: Component Tweeter
Nominal Diameter: 1.1"/28 mm
Nominal Impedance (Znom): 4 Ohms
Continuous Power Handling: 110 W
Peak Power Handling: 220 W
Rec. Amplifier Power: 40 - 150W (RMS)

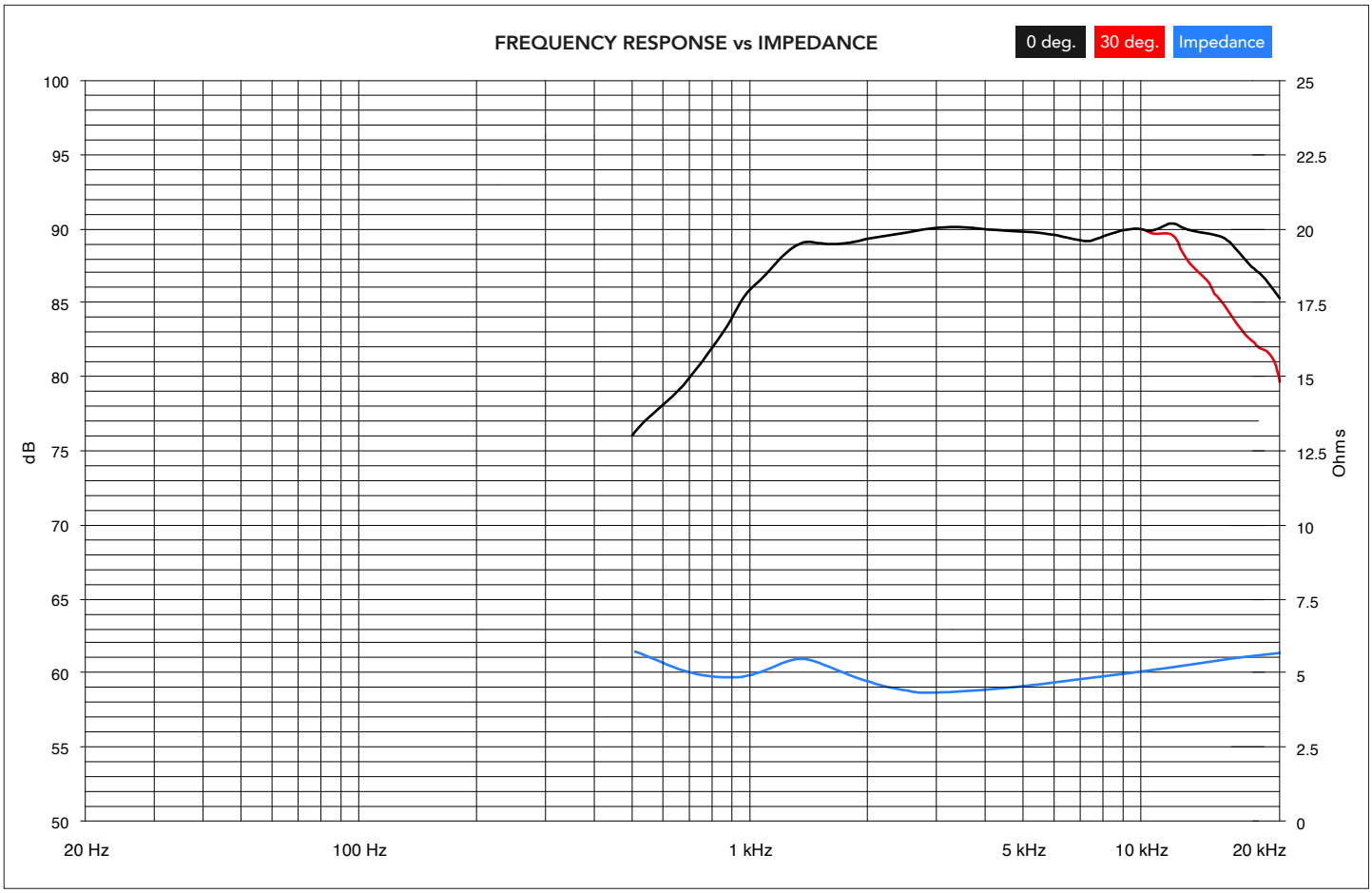
PARAMETERS

Voice Coil Resistance (Re): 3.4 Ohms
Voice Coil Diameter: 28 mm
Free Air Resonance (Fs): 540 Hz
Sensitivity: 91.0 dB @ 1W/1m
94.0 dB @ 2.83V/1m
Electrical "Q" (Qes): 0.928
Mechanical "Q" (Qms): 0.744
Total Speaker "Q" (Qts): 0.413

DESIGN BANDWIDTH

With 48 dB/oct. HP filters: 1.2 KHz - 25 KHz
With 24 dB/oct. HP filters: 1.6 KHz - 25 KHz
With 12 dB/oct. HP filters: 2 KHz - 25 KHz





8.003UMA

2-WAY HIGH-END MID-HIGH UNIT

8.003UMA - MIDRANGE

Speaker Type: Component Midrange
Nominal Diameter: 3"/75 mm
Nominal Impedance (Znom): 4 Ohms
Continuous Power Handling: 120 W
Peak Power Handling: 240 W
Rec. Amplifier Power: 50 - 160W (RMS)

PARAMETERS

Voice Coil Resistance (Re): 3.3 Ohms
Voice Coil Diameter: 25.5 mm
Free Air Resonance (Fs): 113 Hz
Reference Efficiency (no): 0,25 %
Sensitivity: 91 dB @ 1W/1m
94 dB @ 2.83V/1m
Electrical "Q" (Qes): 0.42
Mechanical "Q" (Qms): 4.76
Total Speaker "Q" (Qts): 0.39
Equivalent Compliance (Vas): 0.95 lt
Moving Mass (Mms): 2.45 g
Mech. Compliance (Cms): 0.8 mm/N
Magnetic Strength (BL): 3.83 N/A
Effective Piston Area (Sd): 29 sq. cm
One-Way Linear Excursion (Xmax): 5.7 mm

DESIGN BANDWIDTH

With 48 dB/oct. HP filters: 114 Hz - 14 KHz
With 24 dB/oct. HP filters: 140 Hz - 14 KHz
With 12 dB/oct. HP filters: 160 Hz - 14 KHz