

The TQ-310DP is a self-powered full range two-way loudspeaker enclosure incorporating integral amplifiers and control electronics. The use of DSP amplifier technology ensures an exact match between amplifier and speaker for optimum acoustic output, and offers exceptional ease of use by having the entire electro-acoustic system in one convenient, easily transportable physical package. It is designed for use in mobile speech and music sound reinforcement applications as well as in a wide variety of fixed installations.

The TQ-310DP features a new generation of innovative digital power amplifier modules, utilising revolutionary 96kHz DSP technology to give operating efficiency in excess of 90%.

The loudspeaker complement consists of a front loaded 10" low-mid frequency driver and a 1" high frequency compression driver on a rotatable 100°H x 60°V HF waveguide.

The TQ-310DP features Turbosound's Converging Elliptical Waveguide™ (CEW™) technology. The comparatively short flare allows physical alignment of the HF and LF devices, and ensures that the wavefront is shaped smoothly, eliminating reflections in the throat area while giving excellent pattern control. Additionally this design does not suffer from the distortion typical of horns employing diffraction edges. The waveguide can be rotated within the enclosure, making it

possible to swap the horizontal and vertical coverage patterns.

The rear panel carries a fully integrated Class D amplifier and control electronics module, which is field removable for servicing. Providing two independent amplifier channels each capable of delivering 800 watts rms into 8Ω, this module also incorporates high performance limiters set to optimise the continuous power and excursion threshold for the specific loudspeaker model. A Speakon™ Powercon connector provides mains input to the unit – the switch mode power supply is auto-sensing over a range from 100 volts to 250 volts – and 3-pin XLR's are used for input and parallel link signal connections.

The cabinet includes a pole mount socket for use with 35mm poles and speaker stands. M10 rigging points are provided on the top, bottom and sides for use with M10 shoulder eyebolts. It is also compatible with optional Turbosound pole brackets.

The cabinet is constructed from 12mm (1/2") birch plywood, screwed and glued together for maximum strength and rigidity, and includes a reticulated foam and steel mesh grille. It is finished in durable semi-matt black textured paint; TurboBlue™ textured paint is optionally available.



FEATURES

- Self-powered**
- 96kHz DSP technology**
- CEW™ technology**
- Trapezoidal cabinet**
- Rotatable HF waveguide**
- High power handling**
- M10 rigging points**
- Pole mount socket**

APPLICATIONS

- Front of house**
- Dry hire and rental**
- Theatre**
- Audio-visual**
- Houses of Worship**
- Corporate / industrial**

DIMENSIONS (HxWxD)	525mm x 315mm x 300mm (20.7" x 12.4" x 11.8")
NET WEIGHT	25kg (55 lbs)
COMPONENTS	1 x 10" (254mm) LF driver, 1 x 1" (25mm) HF driver on a Converging Elliptical Waveguide™
FREQUENCY RESPONSE¹	65Hz - 20kHz ±4dB
NOMINAL DISPERSION²	100°H x 60°V@-6db points. Rotatable waveguide allows swap of horizontal and vertical pattern
MAXIMUM SPL	124dB continuous ⁴ , 130dB peak ⁵
CONSTRUCTION	12mm (1/2") birch plywood; rebated, screwed and glued. Finished in black semi-matt textured paint. One recessed carrying handle. Integral pole mount socket
GRILLE	Powder coated perforated steel with acoustically transparent reticulated foam
CONNECTORS	Input: (1) XLR female, Link: (1) XLR male, wired pin 2 hot; Neutrik Powercon; RS232 data port
AMPLIFIER	<p>TYPE: Class D</p> <p>POWER OUTPUT: HF: 800 watts continuous @ 8Ω (1kHz, 0.5% THD) LF: 800 watts continuous @ 8Ω (1kHz, 0.5% THD)</p> <p>DYNAMIC RANGE: 110dB</p> <p>INPUT IMPEDANCE: 10kΩ</p> <p>BANDWIDTH: 20Hz - 20kHz ±0.5dB</p> <p>POWER REQUIREMENTS: 100V to 240V AC @50/60Hz</p>
FLYING HARDWARE	M10 internal rigging points for M10 shoulder eyebolts
OPTIONS	Optional colour: TurboBlue™ textured paint
SPARES AND ACCESSORIES	<p>LS-1018 10" (254mm) LF loudspeaker</p> <p>RC-1018 Recone kit for LS-1018</p> <p>CD-110 1" (25mm) HF compression driver</p> <p>RD-110 Replacement diaphragm for CD-110</p> <p>MG-310 Replacement grille</p> <p>SB-310 Swivel bracket</p> <p>PB-55 Wall bracket, pole mount fixing</p> <p>FH-310 Flying frame</p> <p>DPM-001 Replacement power amplifier module</p>

Notes

¹Measured on axis

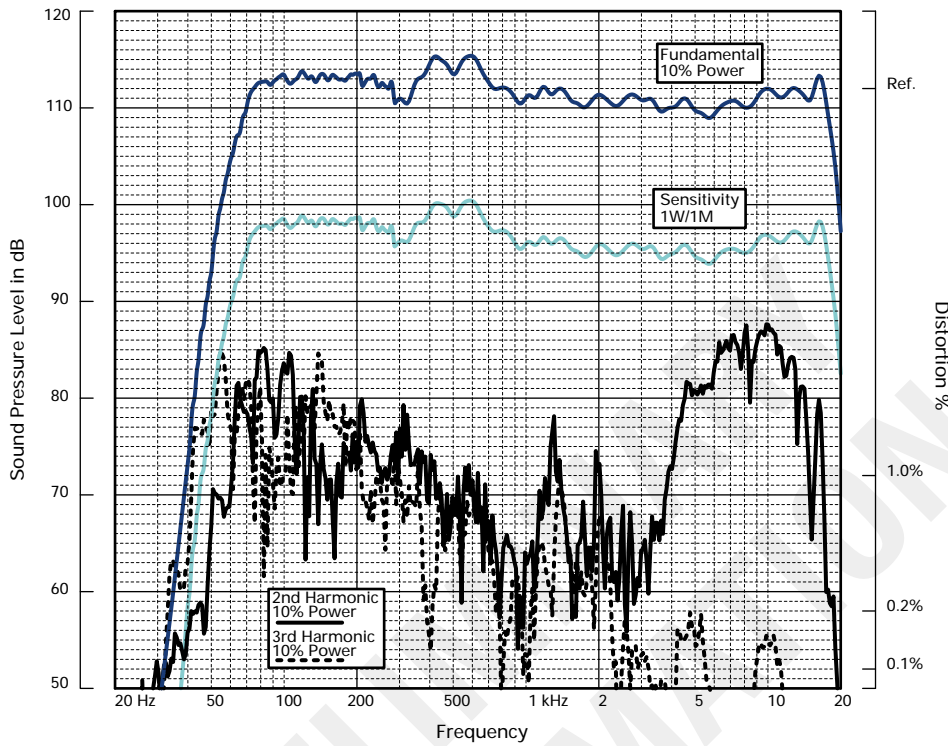
²Average over stated bandwidth

³Average over stated bandwidth

⁴Unweighted diode-clipped pink noise. Measured in a half space environment

⁵Verified by subjective listening tests of familiar program material, before the onset of perceived signal degradation

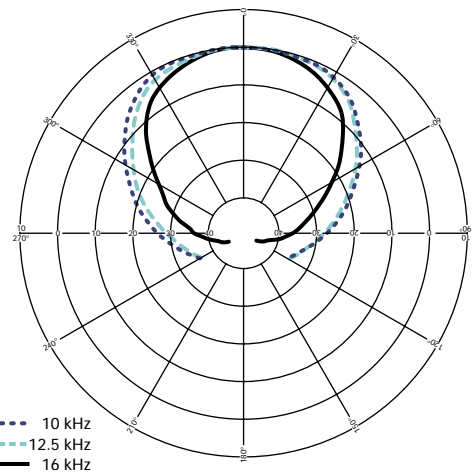
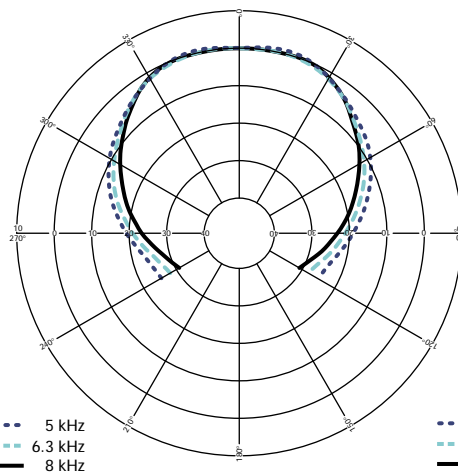
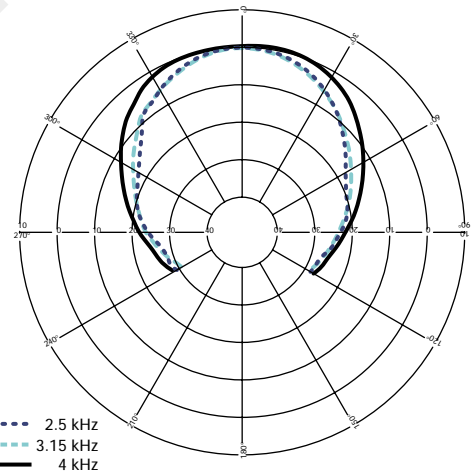
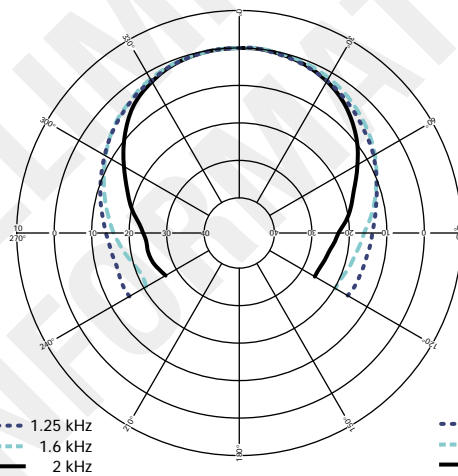
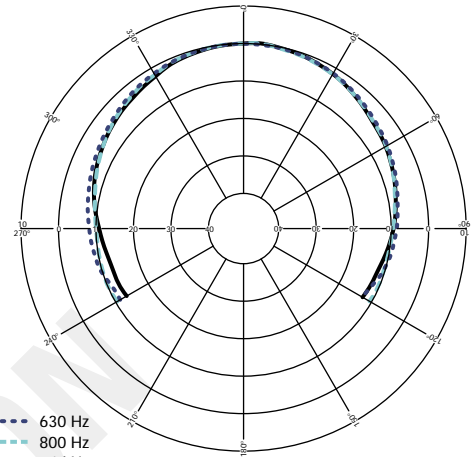
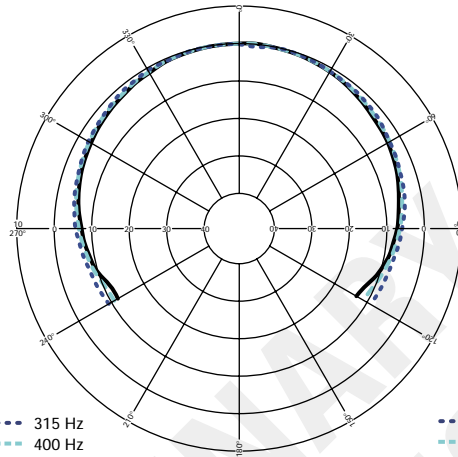
FREQUENCY RESPONSE



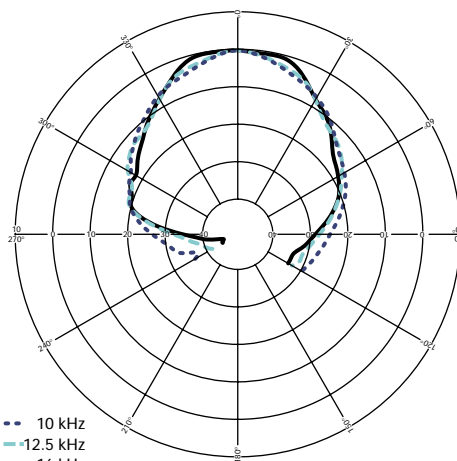
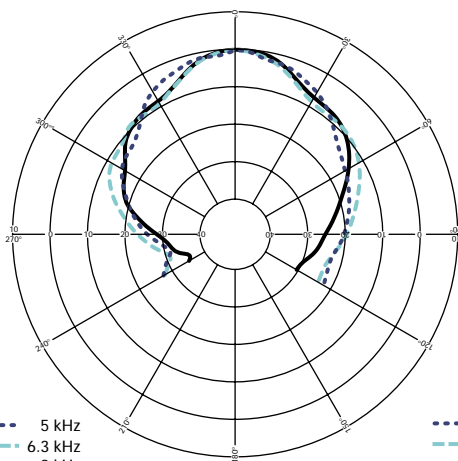
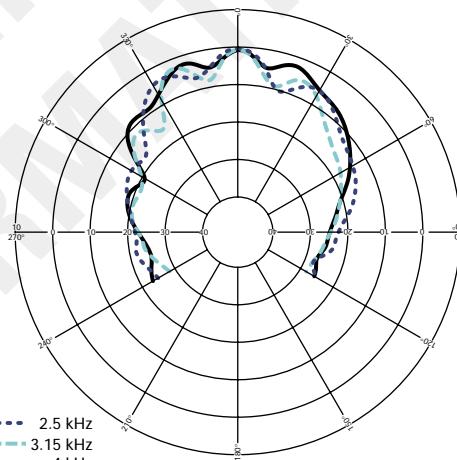
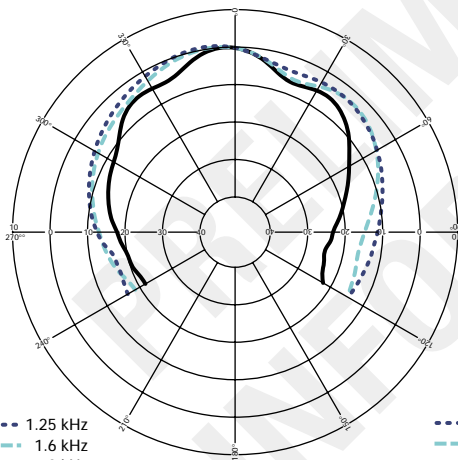
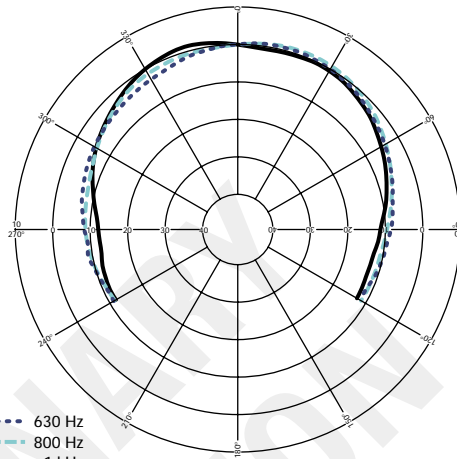
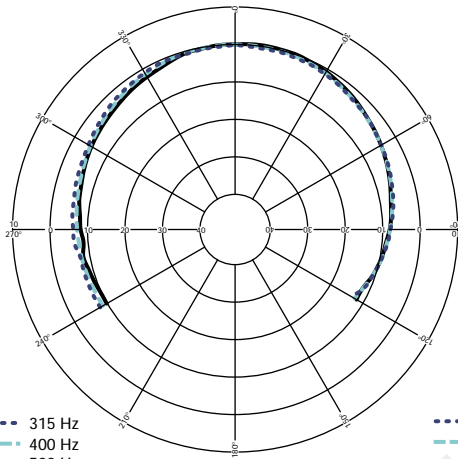
Impedance A constant current circuit was used to measure the impedance. **Frequency response** The frequency response shown was obtained by feeding a swept sine wave through the system in a full space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled to represent 1 metre. **2nd & 3rd Harmonic Distortion** Distortion measurements were obtained using an Audio Precision harmonic distortion analysis system and comply with AES recommendations for enclosure measurement (AES paper ANSI S4-26-1984). **Data Conversion** All graphs were digitally generated using the APEX custom software system, designed to translate data derived from Audio Precision 'System One' test equipment into AutoCAD™. This program enables graphical information to be plotted to a high degree of accuracy.

NOTES ON MEASUREMENT CONDITIONS

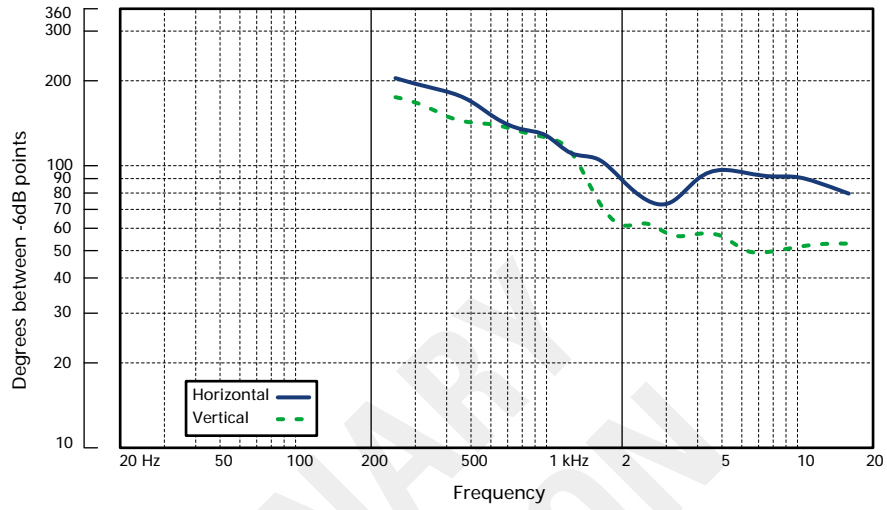
**HORIZONTAL THIRD
OCTAVE POLARS**



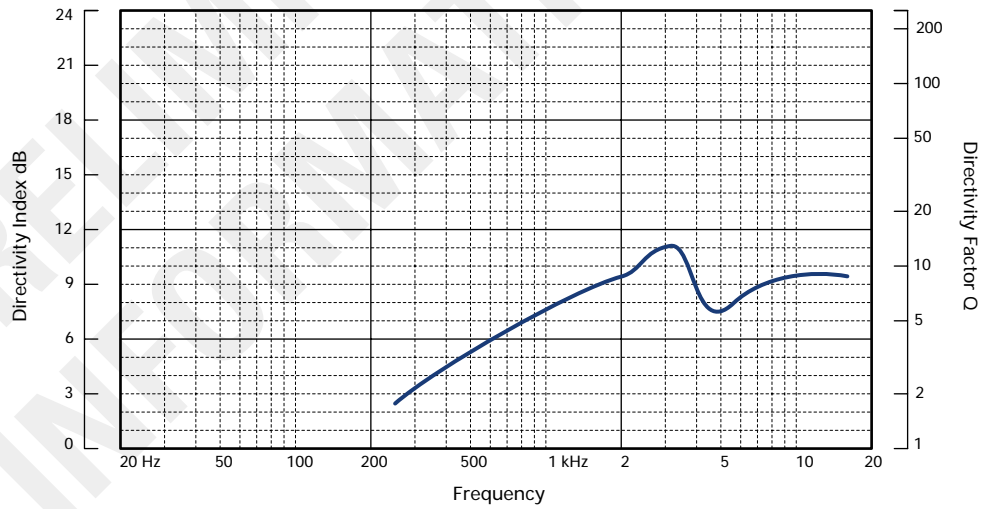
**VERTICAL THIRD
OCTAVE POLARS**



BEAMWIDTH



DIRECTIVITY



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The system shall be of the self-powered, two-way trapezoidal type consisting of one reflex loaded 10" (254mm) low frequency loudspeaker and one 1" (25mm) high frequency driver on a rotatable 100° x 60° Converging Elliptical Waveguide™. The integral power amplifier shall provide two channels of Class D amplification, output limiting and equalisation incorporating frequency responses optimised for speech and music applications. Performance specifications of a typical production unit shall meet or exceed the following: frequency response, measured with swept sine wave input, shall be flat within ±4dB from 65Hz to 20kHz. Nominal dispersion, at -6dB points, shall average 100°H x 60°V. Maximum SPL (peak) measured with music program at stated amplifier input shall be 130dB. Dimensions: 525mmH x 315mmW x 300mmD (20.7"H x 12.4"W x 11.8"D). Weight: 25kg (55lbs). The loudspeaker system shall be the Turbosound TQ-310DP. No other loudspeaker shall be acceptable unless submitted data from an independent test laboratory verify that the above combined performance / size specifications are equalled or exceeded.

DIMENSIONS

