

The TQ-310 is a trapezoidal, passive, full range two-way loudspeaker enclosure designed for use in mobile speech and music sound reinforcement applications as well as in a wide range of fixed installations.

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, matched with an internal passive crossover network.

The TQ-310 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, for example when installing the TQ-310 horizontally.

The quasi-trapezoidal enclosure has been designed with a 15° side angle on one side and with a 15° and 45° angle on the other. This shape allows allows the loudspeaker to

be used for either front of house applications or as a floor monitor.

The TQ-310 includes the provision for fitting optional RT-767 ring-type fittings, enabling it to be suspended and angled in permanent installations as well as in mobile applications. A pole mount socket is fitted for use with 35mm poles and speaker stands. M10 rigging points are provided on each side for horizontal orientation. It is also compatible with optional Turbosound and Omnimount™ 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 black semi-matt textured paint; TurboBlue™ textured paint is optionally available.

A rear panel connector plate carries two Neutrik Speakon NL4MP connectors for loop in and loop out connections to additional enclosures.

The TQ-310 must be used with professional quality digital controllers such as the Turbosound Loudspeaker Management Systems, providing at least five parametric EQ points per output, and output limiting functions..



FEATURES

- CEW™ technology
- Trapezoidal cabinet
- Rotatable HF waveguide
- High power handling
- RT-767 flying points
- Pole mount socket
- Omnimount™ compatible

APPLICATIONS

- Front of house
- Floor monitor
- Dry hire and rental
- Theatre
- Houses of Worship
- Corporate / industrial

DIMENSIONS (HxWxD)	525mm x 319mm x 277mm (20.7" x 12.5" x 10.9")	
NET WEIGHT	21kg (46.2lbs)	
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	
POWER HANDLING	350 watts r.m.s., 700 watts program Recommended amplifier power: 700 watts @ 8 ohms	
SENSITIVITY³	96dB, 1 watt @ 1 metre	
CALCULATED MAX SPL	124dB continuous ⁴ , 130dB peak ⁵	
CROSSOVER	Internal passive crossover at 3k5Hz; 12dB/octave Butterworth	
REC. CONTROLLERS	Turbosound LMS-D4, LMS-D24, LMS-D6, LMS-D26, BSS Minidrive FDS344	
NOMINAL IMPEDANCE	8 ohms	
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	(2) Speakon NL4MP, wired pin 1+: positive, pin 1-: negative	
FLYING HARDWARE	(3) RT-767 ring-type flypoints on the top (4) M8 internal rigging points for WB-20A and CB-20A (4) M6 internal rigging points for Omnimount™ brackets (4) M10 internal rigging points for M10 eyebolts	
OPTIONS	Optional colour: TurboBlue™ textured paint	
SPARES AND ACCESSORIES	LS-1018	10" (254mm) LF loudspeaker
	RC-1018	Recone kit for LS-1018
	CD-110	1" (25mm) HF compression driver
	RD-110	Replacement diaphragm for CD-110
	PX-310	Crossover assembly
	MG-310	Replacement grille
	RT-767	Ring-type flying points
	WB-20A	Wall bracket
	CB-20A	Ceiling bracket
	PB-55	Wall bracket, pole mount fixing
	SB-310	Swivel bracket
	FH-310	Flying harness

Notes

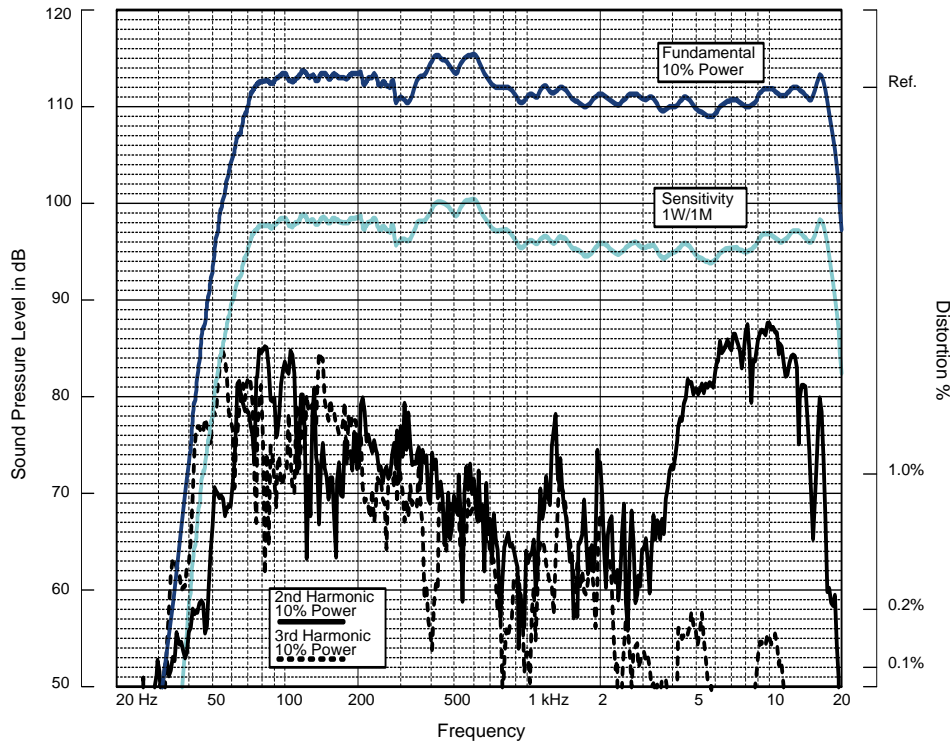
¹Measured on axis

²Average over stated bandwidth

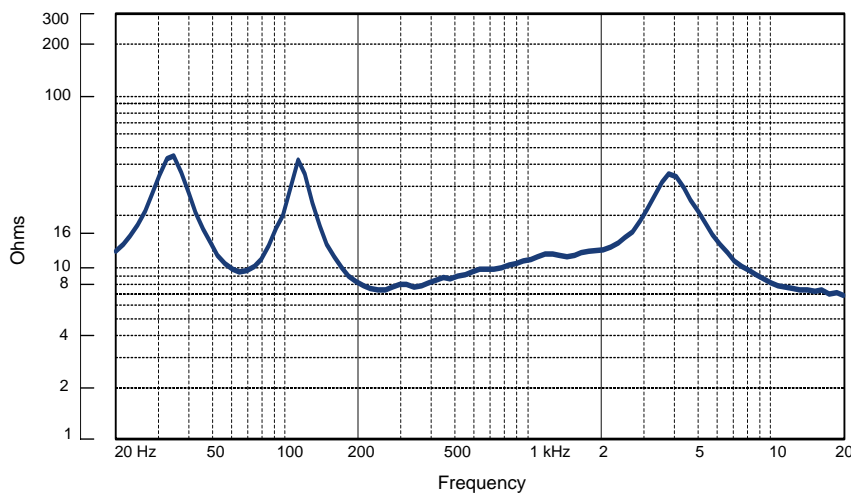
³Characteristic sensitivity as measured to IEC 268-5

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

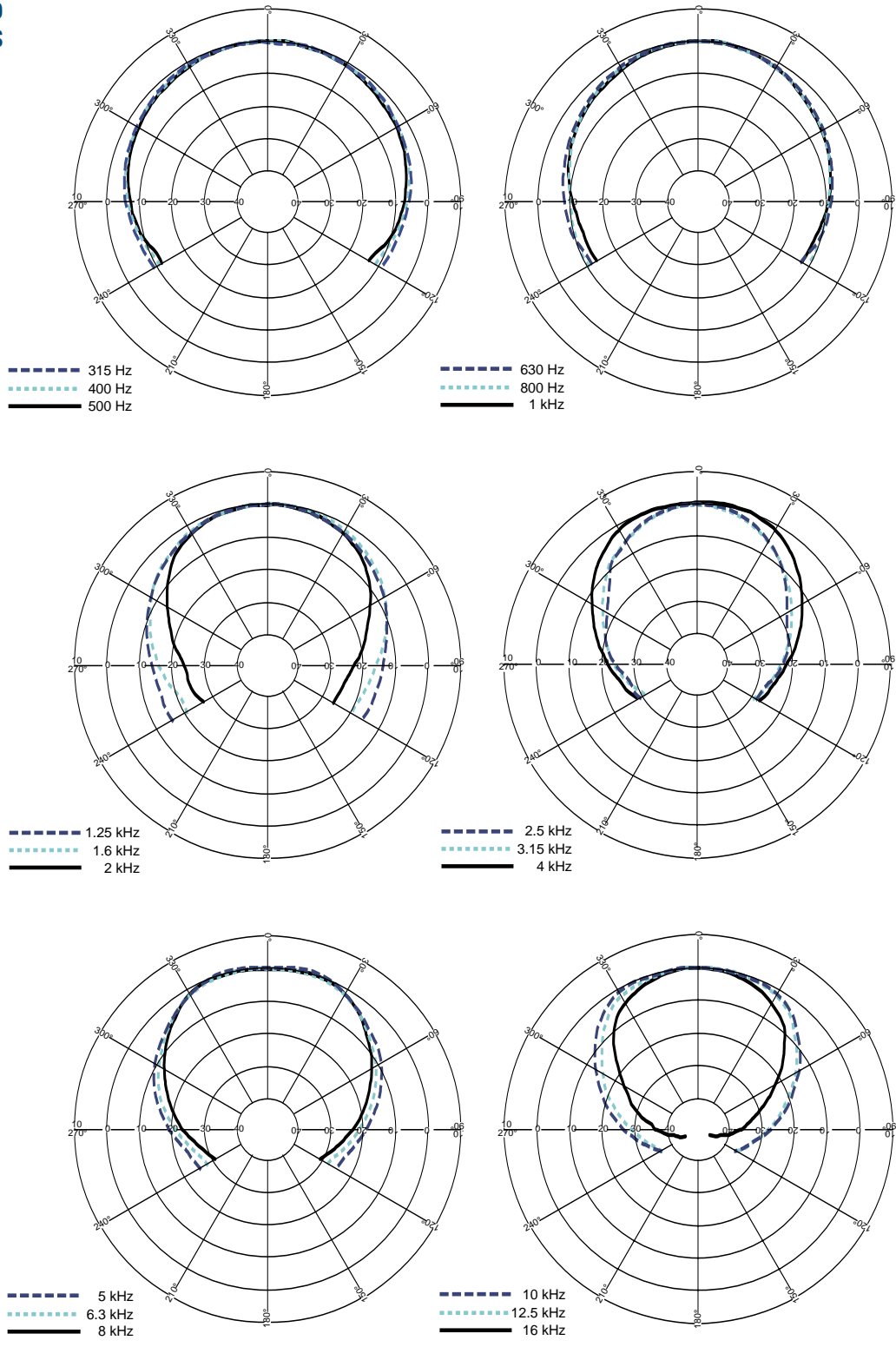


IMPEDANCE

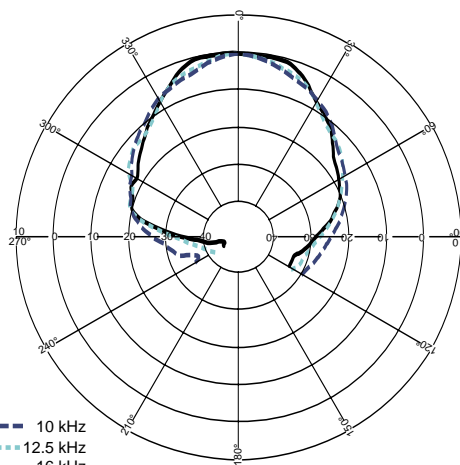
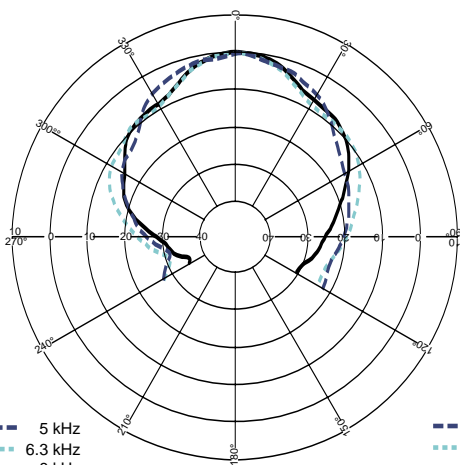
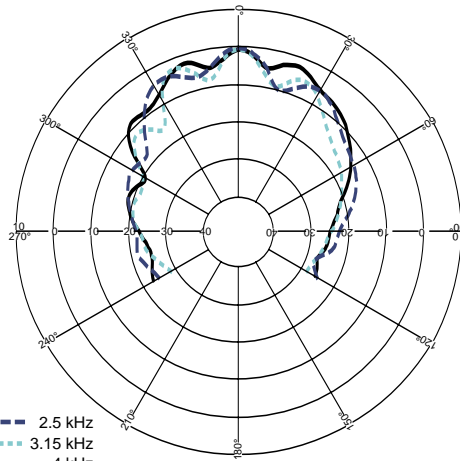
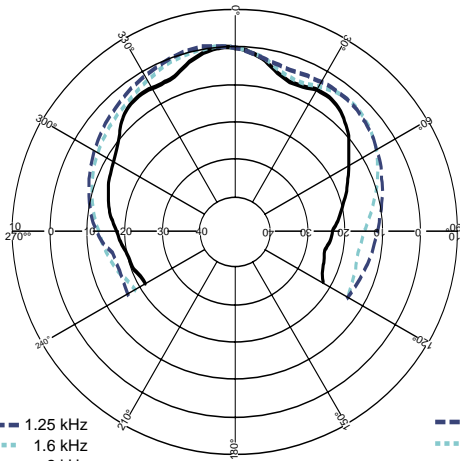
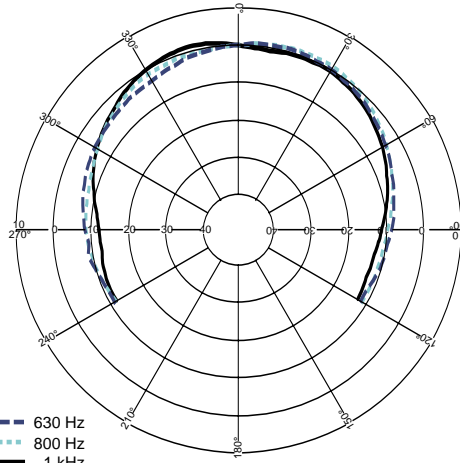
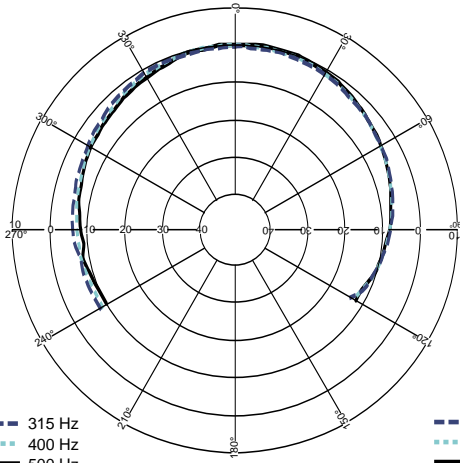
Impedance A constant current circuit was used to measure the impedance. **Frequency response** The frequency response shown was obtained by feeding a swept sine wave through the system in a half space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled 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

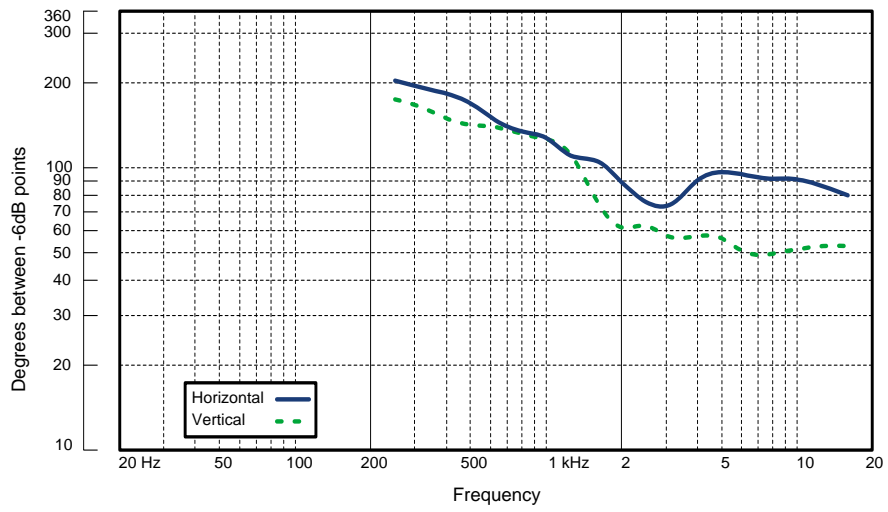
**HORIZONTAL THIRD
OCTAVE POLARS**



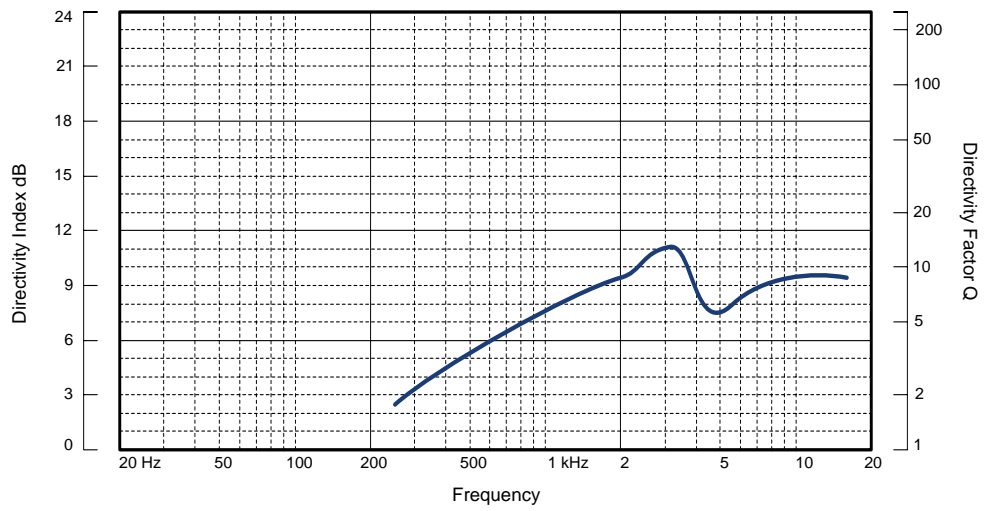
**VERTICAL THIRD
OCTAVE POLARS**



BEAMWIDTH



DIRECTIVITY



QLIGHT™ SERIES ENGINEERING INFORMATION

INSTALLATION AND RIGGING HARDWARE

The enclosure is fitted with rigging points on the top and rear of the cabinet for use with optional RT-767 ring type flying points, enabling it to be rigged in permanent or mobile applications. The rear RT-767 rigging point provides a means of adjusting the downward angle of the cabinet.

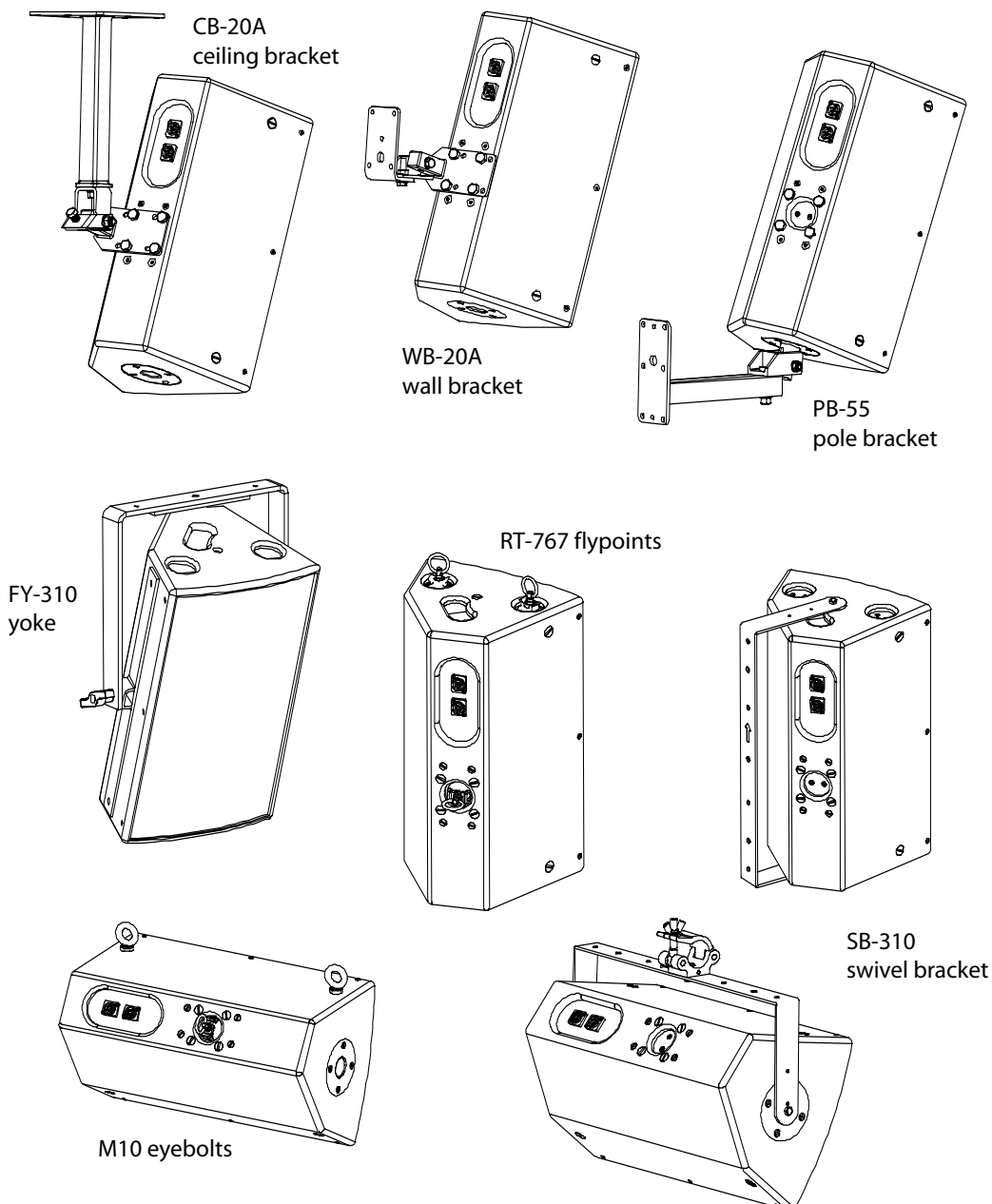
It can be installed horizontally using M10 shoulder eyebolts attached to the internal rigging points on the sides of the cabinet, using the rear RT-767 point as a pull-back.

M8 rigging points are provided to allow permanent installation using the WB-20A wall bracket or CB-55A ceiling bracket.

The SB-310 swivel bracket provides a means of wall mounting the TQ-310 in either a horizontal or vertical orientation, or in rental applications using an additional scaffold clamp assembly. The swivel bracket is attached to the box using the integral pole mount fitting at the bottom and the M8 internal rigging point on the top of the cabinet.

M6 rigging points are also provided on the rear to suit Omnimount™ wall and ceiling brackets.

The FY-310 enables the cabinet to be suspended and angled. It also allows the TQ-310 to be used with the optional pole adapter on top of speaker stands and poles.



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The system shall be of the full range, two-way type consisting of one 10" (254mm) LF driver and one 1" (25mm) HF driver on a rotatable Converging Elliptical Waveguide™. 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 $\pm 4\text{dB}$ from 60Hz to 20kHz. Nominal dispersion, at -6dB points, shall average 100°H x 60°V. Nominal impedance shall be 8 ohms. Power handling shall be 350 watts r.m.s., 700 watts program. Sensitivity, measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth, shall be 96dB. Maximum SPL (peak) measured with music program at stated amplifier input shall be 130dB. Dimensions: 525mmH x 319mmW x 277mmD (20.7"H x 12.6"W x 10.9"D). Weight: 21kg (46.2lbs). The loudspeaker system shall be the Turbosound TQ-310. 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

