datasheet
TQ-315

QLIGHT™ SERIES ENGINEERING INFORMATION

The TQ-315 is a trapezoidal, switchable active/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 15" low frequency driver and a 1.4" high frequency compression driver on a 80°H x 50°V HF waveguide. The TQ-315 may be used either in bi-amped mode, or in fully passive mode by means of a rear panel switch.

The TQ-315 features Turbosound's Converging Elliptical Waveguide™ (CEW™). 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. 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-315 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, allowing it to be used for either front of house applications or as a floor monitor.

The TQ-315 can be fitted to special order with optional RT-767 ring-type fittings, two on the top and bottom and one on the rear, enabling it to be rigged in permanent installations as well as in mobile applications. A pole mount socket is fitted for use with 35mm poles and speaker stands. It is also compatible with Turbosound wall and ceiling brackets and Omnimount™ 300 series brackets. M10 rigging points are provided on the sides for installing in a horizontal orientation.

The cabinet is constructed from 15mm (5/8") birch plywood, screwed and glued together for maximum strength and rigidity, and it is finished as standard in durable semi-matt black textured paint. TurboBlue™ textured paint is optionally available. An acoustically transparent, reticulated foam and perforated steel mesh grille protects the drive units.

A rear panel connector plate carries two Neutrik Speakon NL4MP connectors for loop in and loop out connections to additional enclosures, and a recessed toggle switch for bi-amped/passive mode selection.

The TQ-315 must be used with Turbosound digital Loudspeaker Management Systems providing two inputs and four outputs, with at least five parametric EQ points per output, and output limiting functions.

FEATURES

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

APPLICATIONS

- Front of house
- Floor monitor
- Theatre
- Houses of Worship
- Corporate / industrial

Turbosound®

datasheet
TQ-315

QLIGHT™ SERIES ENGINEERING INFORMATION

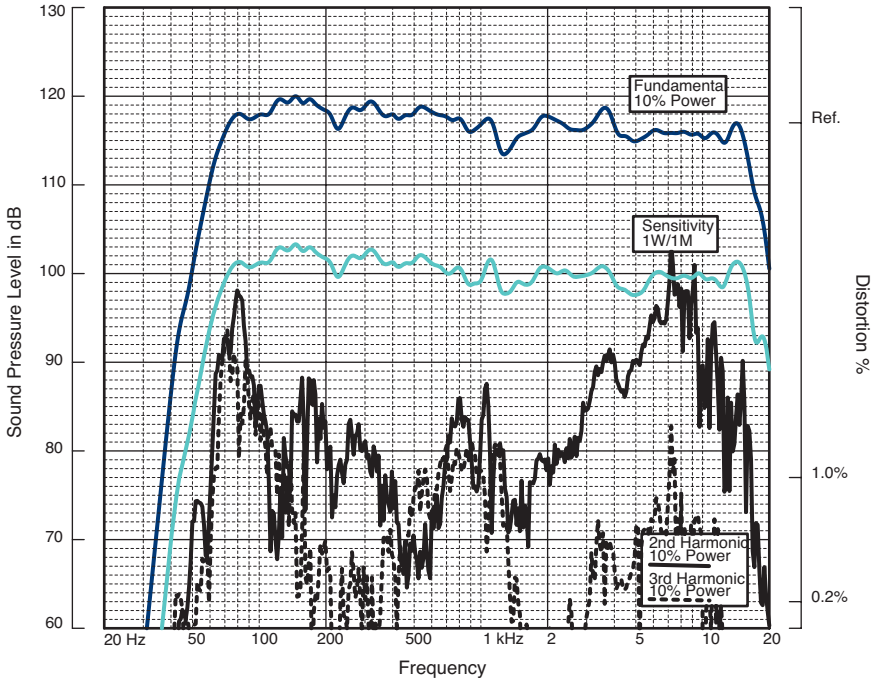
DIMENSIONS (HxWxD)	691mm x 443mm x 381mm (27.2" x 17.4" x 15")
NET WEIGHT	32.5 kg (71.5 lbs)
COMPONENTS	1 x 15" (381mm) LF driver, 1 x 1.4" (35mm) HF driver on a Converging Elliptical Waveguide™
FREQUENCY RESPONSE[1]	55Hz - 20kHz ±4dB
NOMINAL DISPERSION[2]	80°H x 50°V@-6db points. Rotatable waveguide allows swap of horizontal and vertical pattern
POWER HANDLING	Passive: 680 watts r.m.s., 1360 watts program Recommended amplifier 1360 watts @ 8 ohms Bi-amp: LF 600 watts r.m.s., 1200 watts program HF 80 watts r.m.s., 160 watts program
SENSITIVITY[3]	99dB 1 watt @ 1 m
MAXIMUM SPL	130dB continuous[4], 136dB peak[5]
CROSSOVER	Configurable for passive/bi-amp operation with integral rear panel switch. Internal passive crossover at 1k58Hz, 12dB/octave Butterworth
REC. CONTROLLERS	Turbosound LMS-D24, LMS-D6, LMS-D26, BSS Minidrive FDS344
NOMINAL IMPEDANCE	Passive: 8 ohms, Bi-amp LF: 8 ohms, HF: 8 ohms
CONSTRUCTION	15mm (5/8") birch plywood; rebated, screwed and glued. Finished in black semi-matt textured paint. Three recessed carrying handles. Integral pole mount socket
GRILLE	Powder coated perforated steel with acoustically transparent reticulated foam
CONNECTORS	(2) Neutrik Speakon NL4MP, wired (passive mode) pin1+: positive, pin1-: negative (active mode) pin1+: LF positive, pin1-: LF negative, pin2+: HF positive, pin2-: HF negative
FLYING HARDWARE	M8 rigging points for Omnidrive 300 series brackets M10 rigging points for M10 shoulder eyebolts
OPTIONS	Optional colour: TurboBlue™ textured paint Optional RT-767 ring type flypoints on the top (2), bottom (2) and back (1)

SPARES AND ACCESSORIES

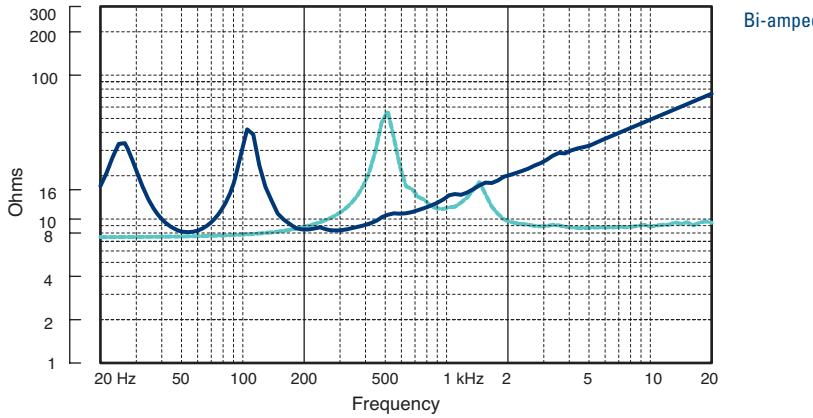
LS-1520	15" (381mm) LF loudspeaker
RC-1520	Recone kit
CD-211	1.4" (35mm) HF compression driver
RD-211	Replacement diaphragm
PX-315	Crossover assembly
MG-315	Replacement grille
RT-767	Ring-type flying points
WB-55A	Wall bracket
CB-55A	Ceiling bracket
PB-55	Wall bracket, pole mount fixing

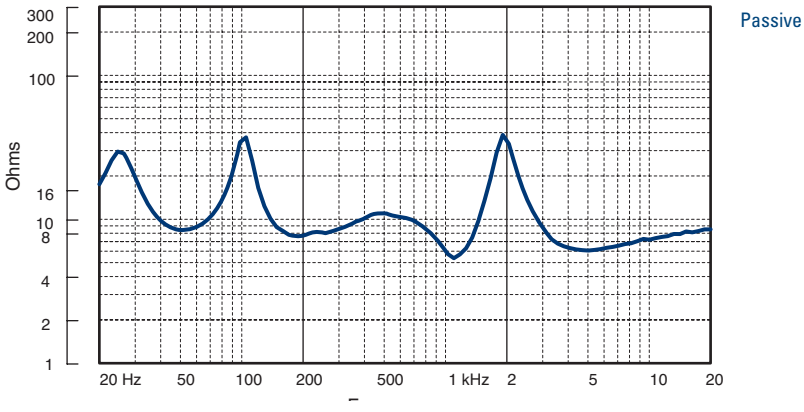
Notes
[1]Measured on axis
[2]Average over stated bandwidth
[3]Average over stated bandwidth
[4]Unweighted diode-clipped pink noise. Measured in a half space environment
[5]Verified by subjective listening tests of familiar program material, before the onset of perceived signal degradation

FREQUENCY RESPONSE



IMPEDANCE

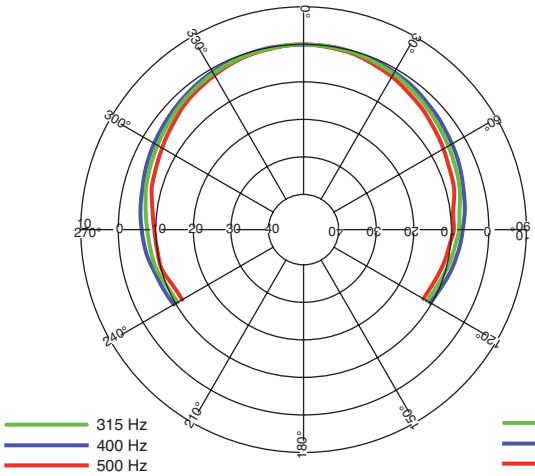


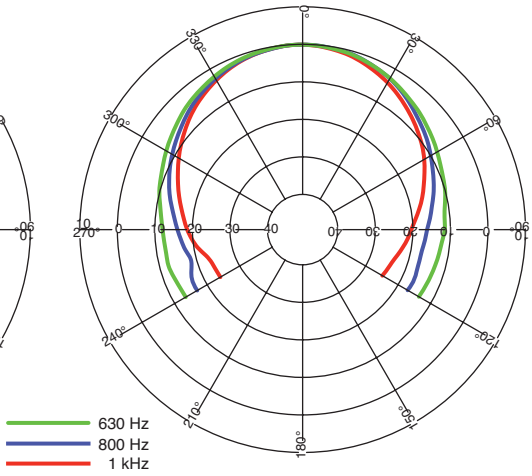


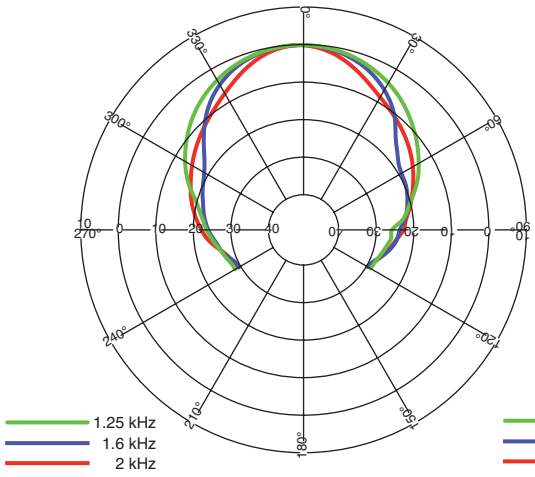
NOTES ON MEASUREMENT CONDITIONS

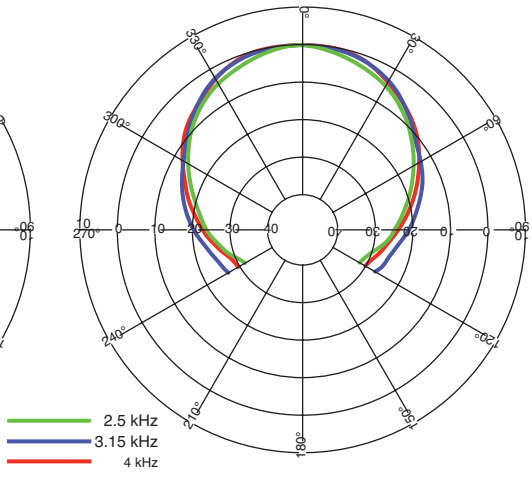
Impedance A constant current circuit was used to measure the impedance. **Frequency response** The frequency response shown was obtained by feeding a swept sine wave through the system in a full space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled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

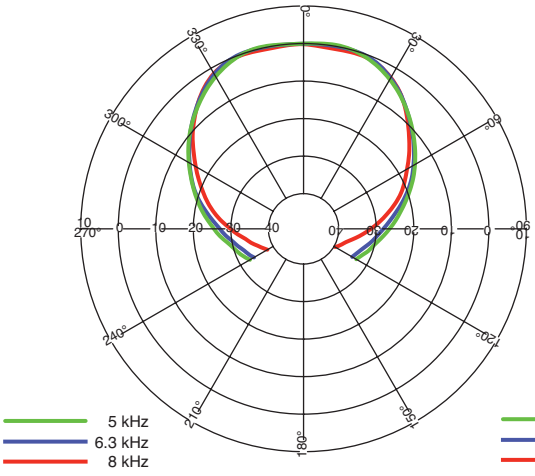
HORIZONTAL THIRD OCTAVE POLARS

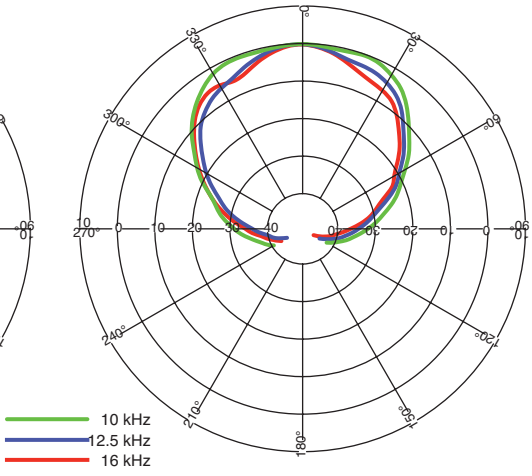




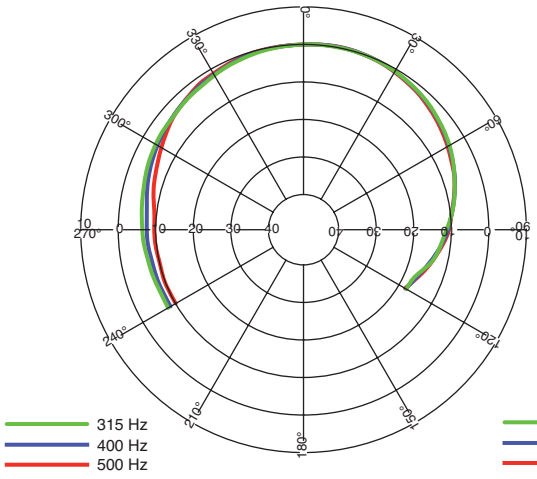


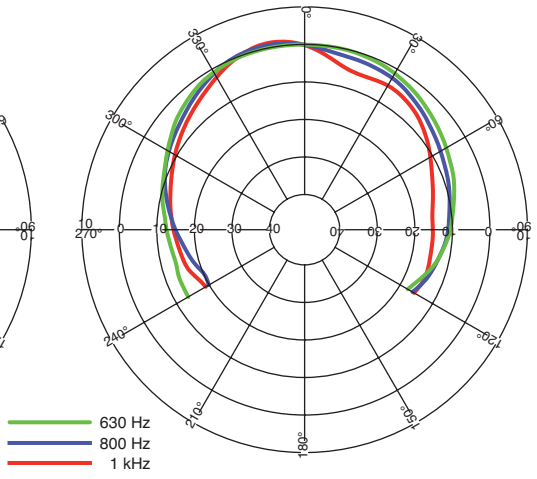


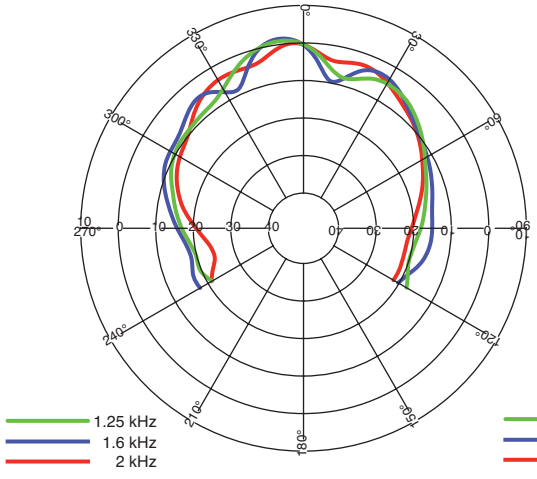


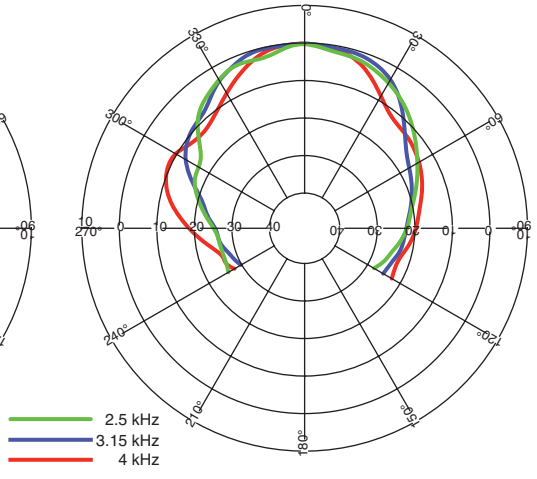


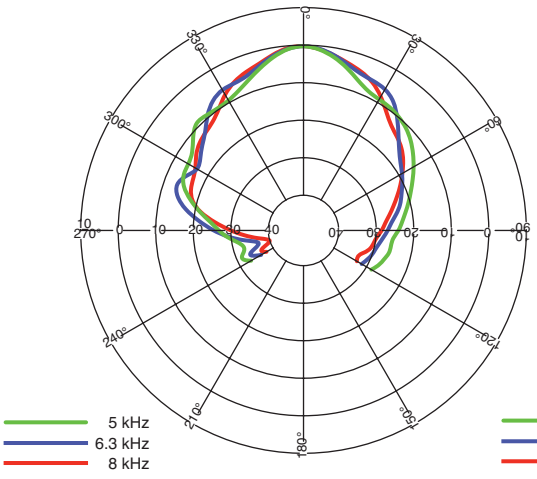
VERTICAL THIRD OCTAVE POLARS

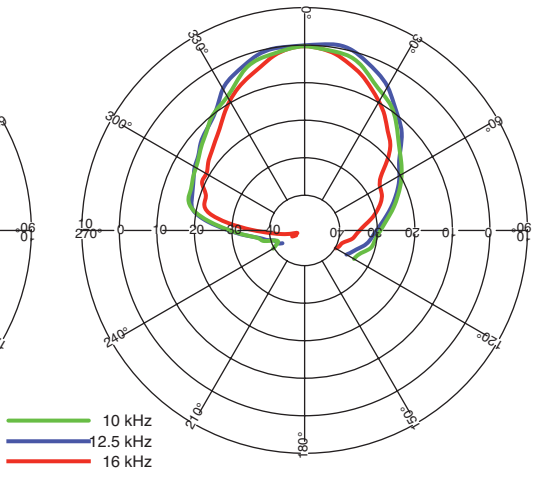




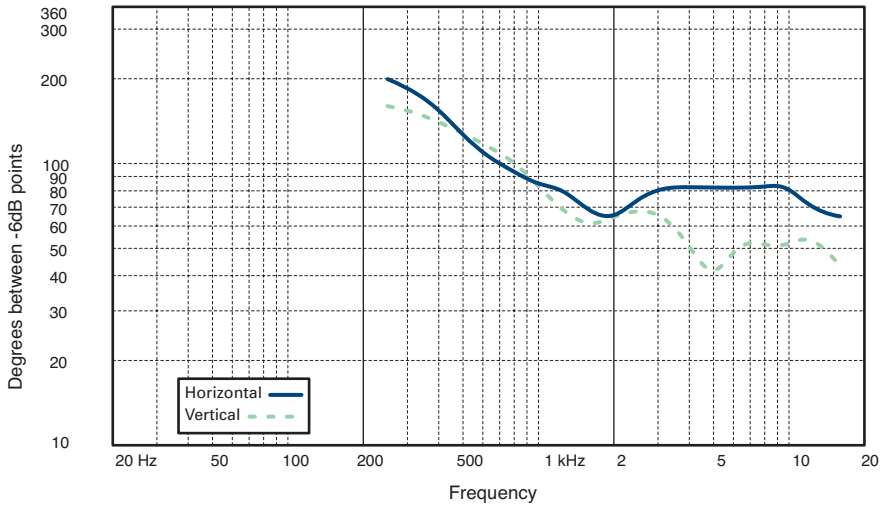








BEAMWIDTH

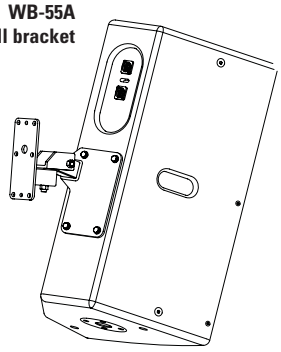

360
300
200
100
90
80
70
60
50
40
30
20
10
Degrees between -6dB points
Horizontal
Vertical
20 Hz
50
100
200
500
1 kHz
2
5
10
20
Frequency

INSTALLATION AND FLYING HARDWARE

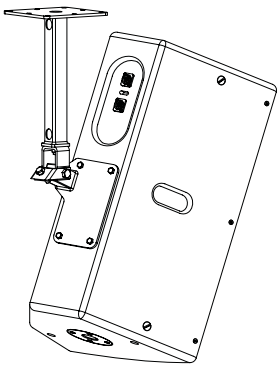
M10 rigging points are provided on each side to allow the enclosure to be flown horizontally using the rear rigging point as a pull-back. M8 rigging points are provided on the rear of the cabinet for use with Omnidrive 300 series brackets.

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

WB-55A
wall bracket



CB-55A
ceiling bracket



datasheet

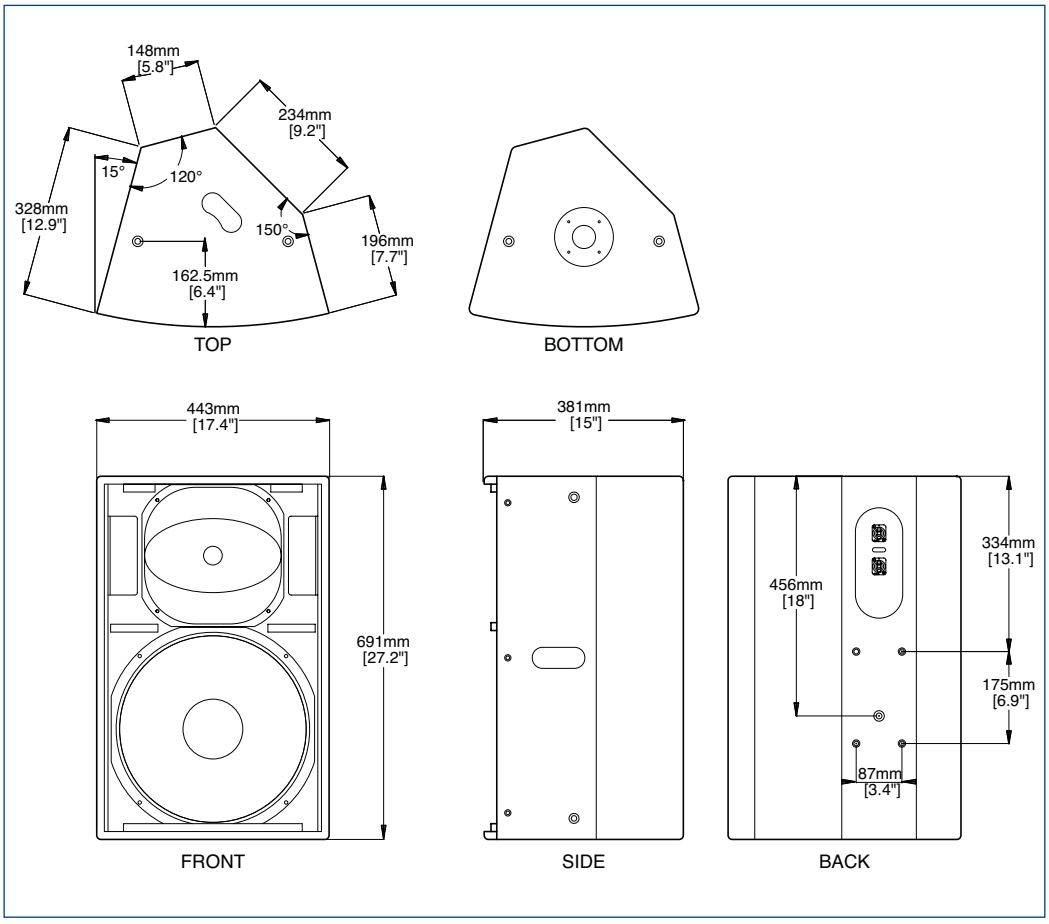
TQ-315

QLIGHT™ SERIES ENGINEERING INFORMATION

ARCHITECTURAL & ENGINEER'S SPECIFICATIONS

The system shall be of the two-way switchable active/passive trapezoidal type consisting of one 15" (381mm) low frequency loudspeaker and one 1.4" (35mm) high frequency driver on a rotatable 80° x 50° Converging Elliptical Waveguide™. Performance specifications of a typical production unit when used with a recommended digital crossover shall meet or exceed the following: frequency response, measured with swept sine wave input, shall be flat within ±4dB from 55Hz to 20kHz. Nominal dispersion, at –6dB points, shall average 80°H x 50°V. Nominal impedance shall be passive: 8 ohms; bi-amp LF: 8 ohms, HF: 8 ohms. Power handling shall be passive: 680 watts r.m.s., 1360 watts program, 1700 watts peak; bi-amp LF: 600 watts r.m.s., 1200 watts program, 1500 watts peak, HF: 80 watts r.m.s., 160 watts program, 200 watts peak. Sensitivity, measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth, shall be 99dB. Maximum SPL (peak) measured with music program at stated amplifier input shall be 136dB. Dimensions: 691mmH x 443mmW x 381mmD (27.2"H x 17.4"W x 15"D). Weight: 32.5 kg (71.5lbs). The loudspeaker system shall be the Turbosound TQ-315. 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



TURBOSOUND Ltd Star Road Partridge Green West Sussex RH13 8RY UK
tel: +44 (0) 1403 711447 fax: +44 (0) 1403 710155 • www.turbosound.com