

QLIGHT™ SERIES ENGINEERING INFORMATION

The TQ-445DP is a three-way self-powered full range 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.

The TQ-445DP features a new generation of innovative digital power amplifier modules, utilising revolutionary 96kHz DSP technology to give operating efficiency in excess of 90%.

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 electronic crossovers, delays and high performance limiters set to give optimal performance from the drive units. A Neutrik Powercon connector provides mains input to the unit – the switch mode power supply is auto-sensing over a range from 100 volts to 240 volts – and 3-pin XLR's are used for input and parallel link signal connections.

The TQ-445DP incorporates a custom-designed co-axial 12"/1" driver in an optimally tuned vented trapezoidal enclosure. The critical mid-range frequencies are handled by a proprietary 6.5" cone transducer on a 60° by 40° horn, loaded with a TurboMid™ device. The remaining high frequencies are effortlessly handled - and divided from mid-high frequencies by an integral passive network - by a 1" compression driver, which is subjected to minimal mechanical stress. When compared to conventional designs, the TQ-445DP is able to offer higher SPL, significantly lower distortion, and unsurpassed vocal projection capabilities in an equivalent sized physical package.

The birch plywood enclosure is fitted with integral rigging points, kelping brackets and a standard 35mm pole mount socket, enabling its use with many different types of flying hardware. It is finished in black semi-matt textured paint, and includes a steel mesh / reticulated foam protective grille. Flush side handles are provided for lifting and carrying.



FEATURES

- Self-powered**
- 96kHz DSP technology**
- Very high output**
- Unsurpassed vocal projection**
- 60° x 40° dispersion**
- Rigging options**

APPLICATIONS

- Corporate / Industrial**
- Theatre**
- Front of House**
- Audio Visual**

DIMENSIONS (HxWxD)	588mm x 409mm x 363mm (23.1" x 16.1" x 14.3")	
NET WEIGHT	32.5kgs (71.5 lbs)	
COMPONENTS	1 x co-axial 12" / 1" driver, 1 x 6.5" MF driver on a TurboMid™ device	
FREQUENCY RESPONSE¹	55Hz - 20kHz±4dB	
NOMINAL DISPERSION²	60°H x 40°V@-6db points	
MAXIMUM SPL	131dB continuous ³ , 137dB peak ⁴	
CONSTRUCTION	18mm (3/4") birch plywood throughout; rebated, screwed and glued. Finished in black semi-matt textured paint. Two recessed carrying handles. Integral 35mm pole mount	
GRILLE	Reticulated foam on expanded steel mesh	
CONNECTORS	Input: (1) XLR female, (1) XLR male wired pin 2 hot; AC mains input: Neutrik Powercon	
OPTIONS	TurboBlue™ semi-matt textured paint	
AMPLIFIER	TYPE:	Class D
	POWER OUTPUT:	HF: 800 watts continuous @ 8Ω (1kHz, 0.01% THD) LF: 800 watts continuous @ 8Ω (1kHz, 0.01% THD)
	DYNAMIC RANGE:	110dB
	INPUT IMPEDANCE:	10kΩ
	BANDWIDTH:	20Hz - 20kHz ±0.5dB
	POWER REQUIREMENTS:	100V to 240V AC @50/60Hz
SPARES AND ACCESSORIES	LS-1214	12" (305mm) LF loudspeaker
	RC-1214	Recone kit for LS-1214
	LS-6505	6.5" (165mm) MF loudspeaker
	RC-6505	Recone kit for LS-6505
	CD-103	1" HF compression driver
	RD-103	Replacement diaphragm for CD-103
	PX-445DP	Internal passive crossover network
	MG-445	Replacement foam / metal grille
	PB-55	Wall bracket, pole mount fixing

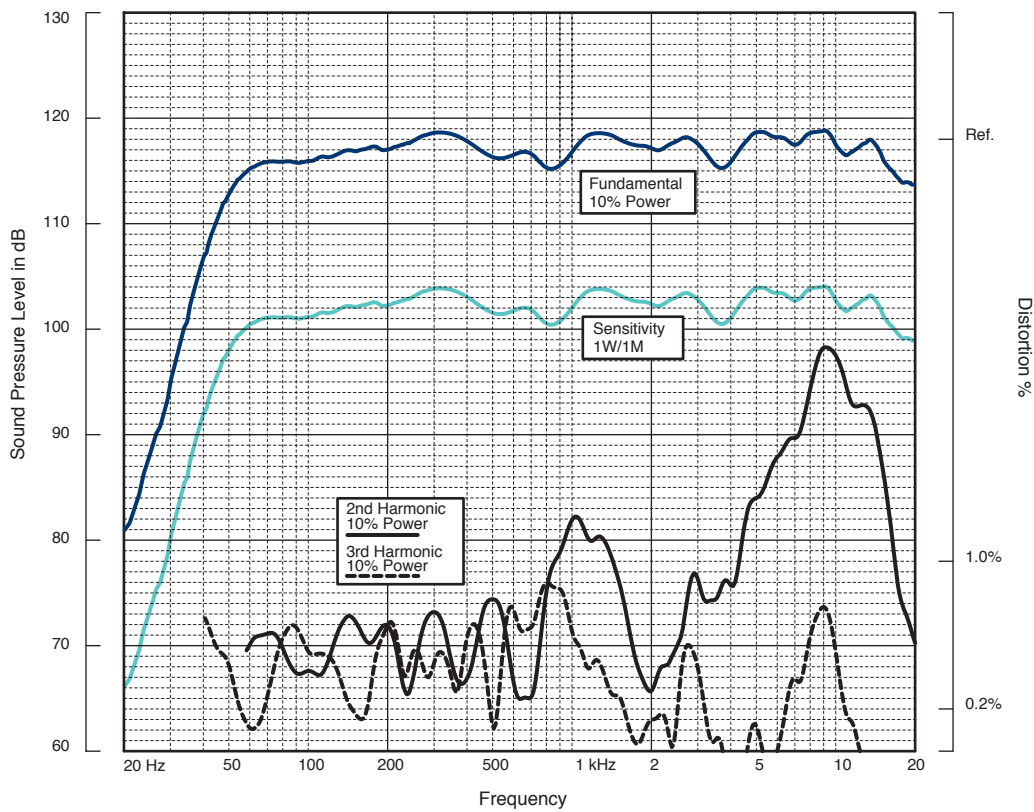
Notes

¹Measured on axis

²Average over stated bandwidth

³Unweighted diode-clipped pink noise. Measured in a half space environment.

⁴Verified by subjective listening tests of familiar program material, before the onset of perceived signal degradation.

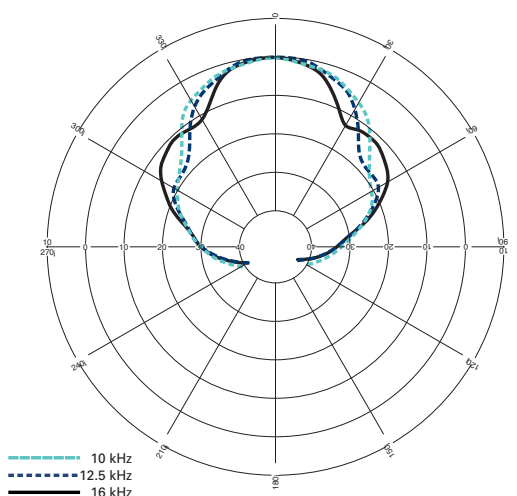
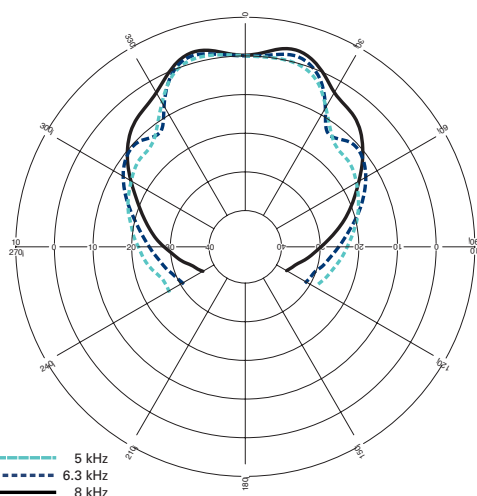
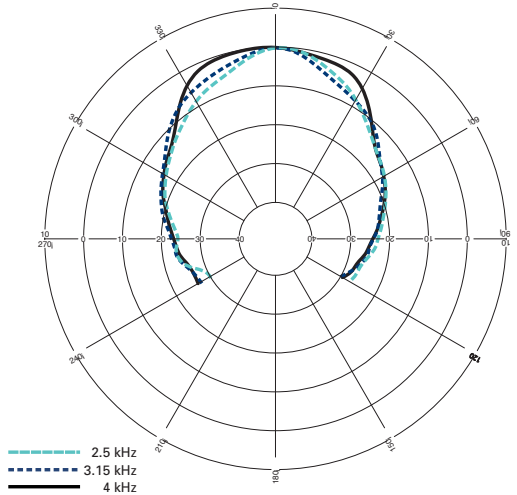
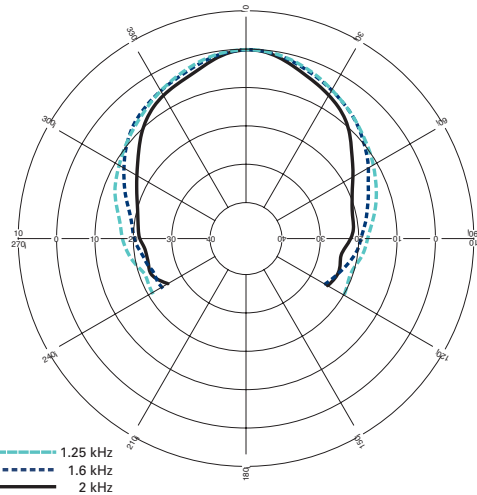
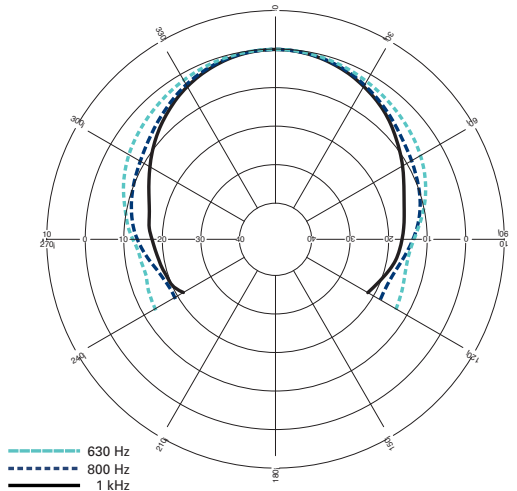
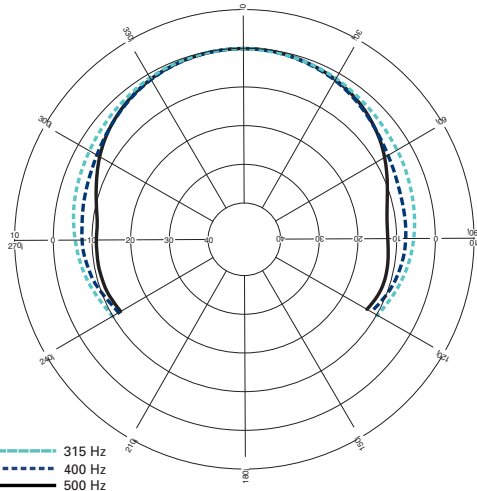


FREQUENCY RESPONSE

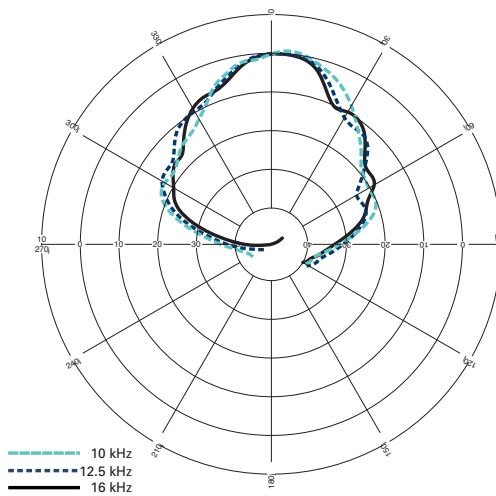
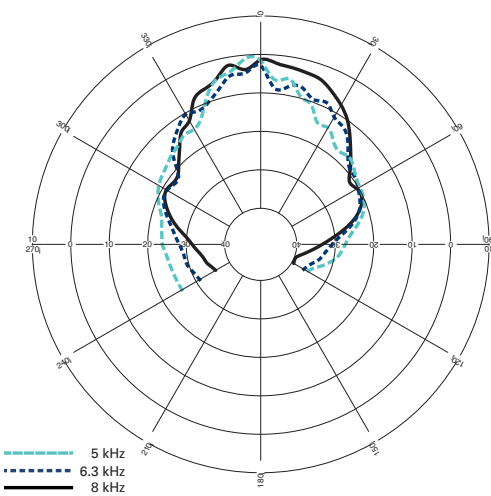
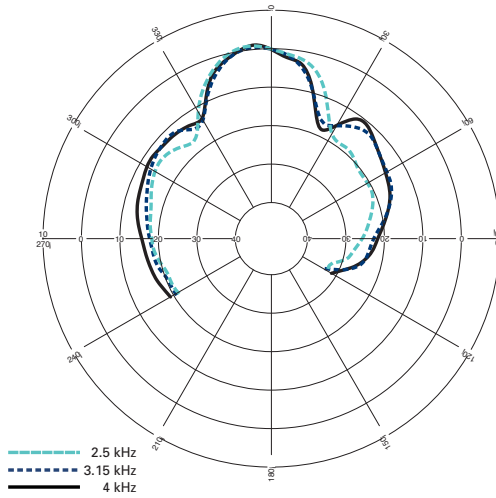
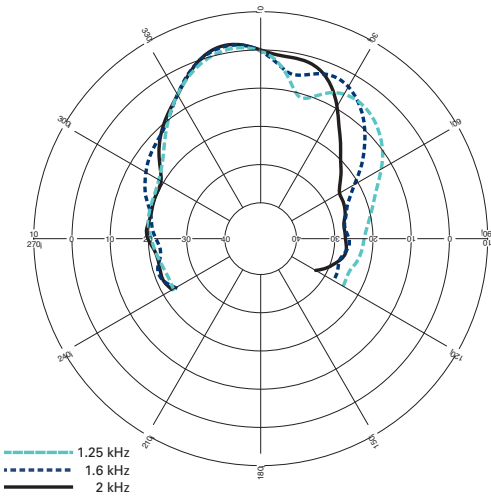
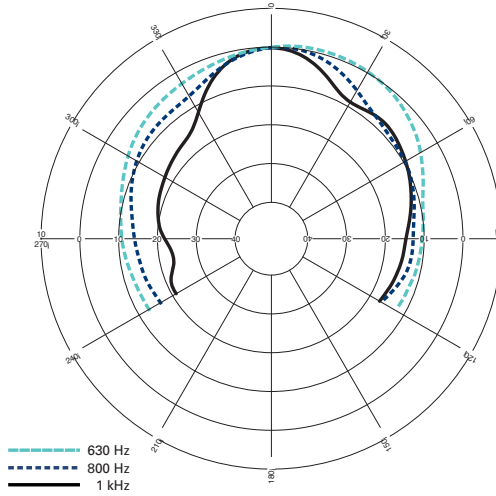
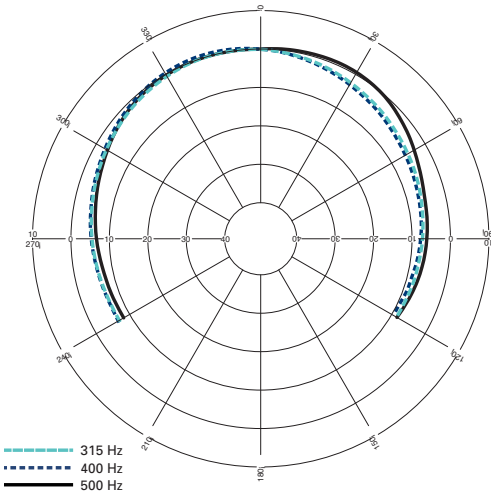
Frequency response The frequency response shown was obtained by feeding a swept sine wave through the system in a half space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled to represent 1 metre. **2nd & 3rd Harmonic Distortion** Distortion measurements 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

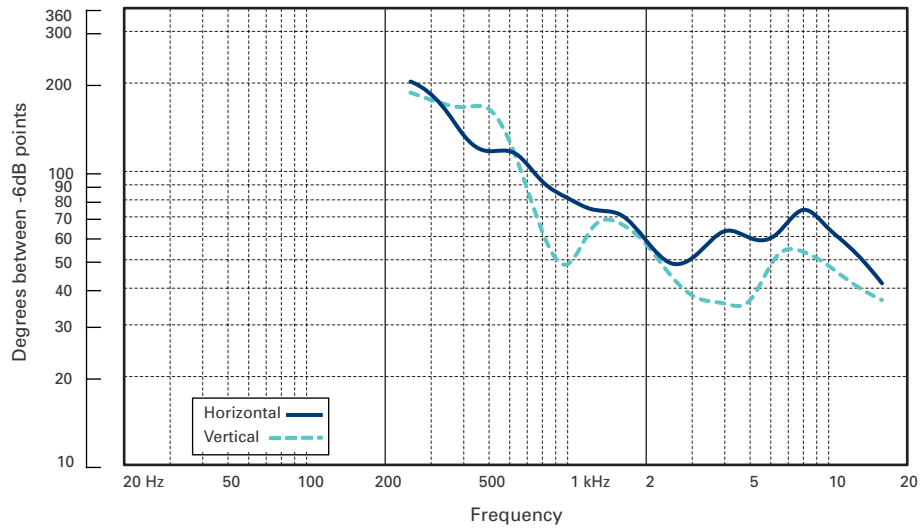
**HORIZONTAL THIRD
OCTAVE POLARS**



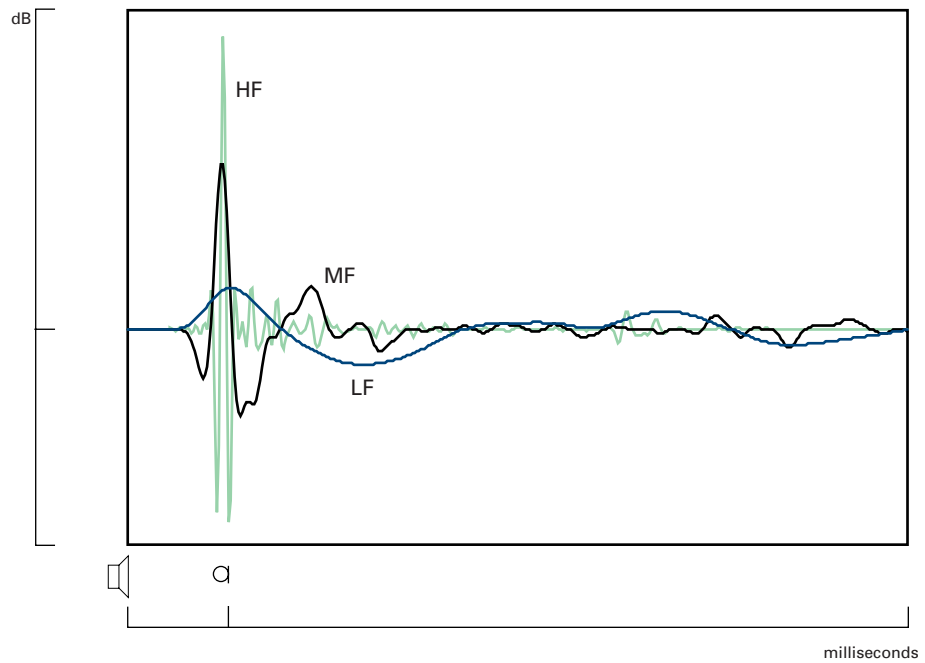
**VERTICAL THIRD
OCTAVE POLARS**



BEAMWIDTH



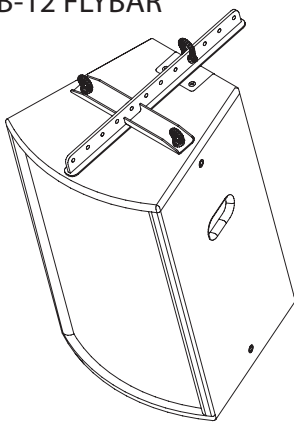
IMPULSE RESPONSE



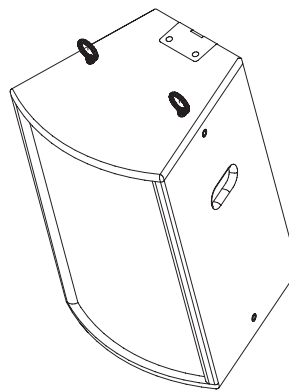
The diagrams below illustrate several different methods of rigging TQ-445DP enclosures. In most cases the lower keeping bracket is used to set the desired downward inclination of the cabinet. When using the T-bar, the enclosure may be rigged either using two points or only a single pick up point. The downward angle will be determined by which attachment hole is chosen on the crossbow.

**INSTALLATION
HARDWARE**

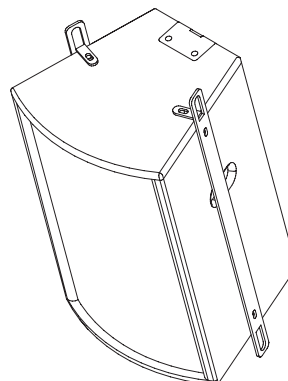
FB-12 FLYBAR



M10 EYEBOLTS



FF-445 FLYING STRIPS



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The loudspeaker shall be of the self-powered, three way, bi-amplified type, consisting of one reflex loaded 12" (305mm) low frequency loudspeaker in a vented trapezoidal enclosure, one 6.5" (165mm) mid frequency loudspeaker loaded with a TurboMid™ device and a 1" (25mm) high frequency compression driver mounted co-axially to the low frequency loudspeaker. The integral power amplifier module shall provide two channels of Class D amplification, crossover, delays, output limiting and equalisation incorporating frequency responses optimised for speech and music. Performance specifications of a typical production unit shall be: Frequency response, measured with swept sine wave input, shall be flat within $\pm 4\text{dB}$ from 55Hz to 20kHz. Nominal dispersion, at -6dB points, shall average 60°H x 40°V. Maximum SPL (peak) measured with music program at stated amplifier power shall be 137dB. Dimensions: 588mm x 409mm x 363mm (23.1" x 16.1" x 14.3"). Weight: 32.5kgs (71.5lbs). The loudspeaker shall be the Turbosound TQ-445DP. 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. A range of flying and lifting hardware shall be available.

DIMENSIONS

