

The TQ-445 is a three-way bi-amped full range enclosure that offers unprecedented levels of audio clarity and definition.

It incorporates a custom-designed co-axial 12"/1" driver in an optimally tuned vented trapezoidal enclosure handling low and high frequencies. 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 exclusive use of cone transducers in both the low and mid frequency bands guarantees a seamless transition at the crossover frequency, with the result that all of the critical vocal ranges up to 8kHz are reproduced with significantly lower distortion than compression driver-based designs. In addition the 6.5" driver is a highly efficient device, and is able to handle large amounts of amplifier power.

The remaining high frequencies are effortlessly handled by a 1" compression driver on a specially developed waveguide which is designed to provide even high frequency dispersion to match that of the

The mid and high frequency components are physically aligned within the enclosure, ensuring perfect time arrival at the listener's ear. When compared to conventional two-way designs the TQ-445 is able to offer higher SPL, significantly lower distortion, and unsurpassed vocal projection capabilities in an equivalently sized physical package.

The TQ-445 is designed for use with Turbosound digital loudspeaker management systems, which provide model-specific crossover, delay and limiting functions.

The birch plywood enclosure is supplied with integral rigging points and a standard 35mm pole mount socket, enabling use with many different types of flying hardware in a variety of corporate, theatre and audio visual applications. 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. Two Speakon NL4MP connectors provide input and loop out connections.



FEATURES

Three-way, bi-amp design

Exceptional audio clarity

60° x 40° dispersion

Very high power

Compact enclosure

APPLICATIONS

Corporate / Industrial

Theatre

Concert touring

Broadcast / TV

Audio Visual

DIMENSIONS (HxWxD)	588mm x 409mm x 363mm (23.1" x 16.1" x 14.3")																		
NET WEIGHT	30kgs (66 lbs)																		
COMPONENTS	1 x co-axial 12" / 1" driver, 1 x 6.5" MF driver on a TurboMid™ device																		
FREQUENCY RESPONSE¹	75Hz - 20kHz±4dB (with LMS-D6)																		
NOMINAL DISPERSION²	60°H x 40°V@-6db points																		
POWER HANDLING	LF: 300 watts r.m.s., 600 watts program MF/HF: 150 watts r.m.s., 300 watts program Recommended amplifier power: LF: 600 watts @ 8 ohms; MF/HF: 300 watts @ 12 ohms																		
SENSITIVITY³	LF: 103dB, 1 watt @ 1 metre; MF/HF: 104dB, 1 watt @ 1 metre																		
MAXIMUM SPL	131dB continuous ⁴ , 137dB peak ⁵																		
CROSSOVER	Active LF/MF: 1k3Hz, 24dB octave slope, Butterworth Internal passive crossover at 8kHz, third order high pass																		
NOMINAL IMPEDANCE	LF: 8 ohms, MF/HF: 12 ohms																		
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	(2) Neutrik Speakon NL4MP																		
OPTIONS	TurboBlue™ semi-matt textured paint																		
SPARES AND ACCESSORIES	<table border="0"> <tr> <td>LS-1214</td> <td>12" (305mm) LF loudspeaker</td> </tr> <tr> <td>RC-1214</td> <td>Recone kit for LS-1214</td> </tr> <tr> <td>LS-6505</td> <td>6.5" (165mm) MF loudspeaker</td> </tr> <tr> <td>RC-6505</td> <td>Recone kit for LS-6505</td> </tr> <tr> <td>CD-114</td> <td>1" HF compression driver</td> </tr> <tr> <td>RD-114</td> <td>Replacement HF diaphragm</td> </tr> <tr> <td>PX-440BI</td> <td>Internal passive crossover network</td> </tr> <tr> <td>MG-440</td> <td>Replacement foam / metal grille</td> </tr> <tr> <td>PB-55</td> <td>Wall bracket, pole mount fixing</td> </tr> </table>	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-114	1" HF compression driver	RD-114	Replacement HF diaphragm	PX-440BI	Internal passive crossover network	MG-440	Replacement foam / metal grille	PB-55	Wall bracket, pole mount fixing
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Notes

¹Measured on axis

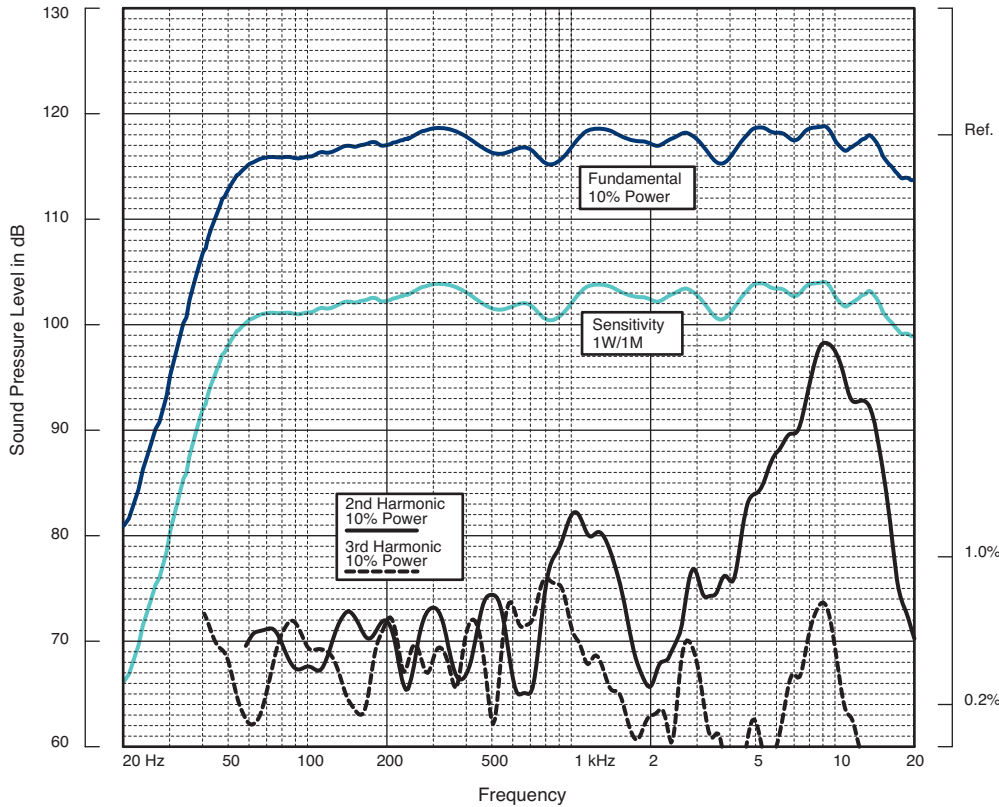
²Average over stated bandwidth

³Average over stated bandwidth

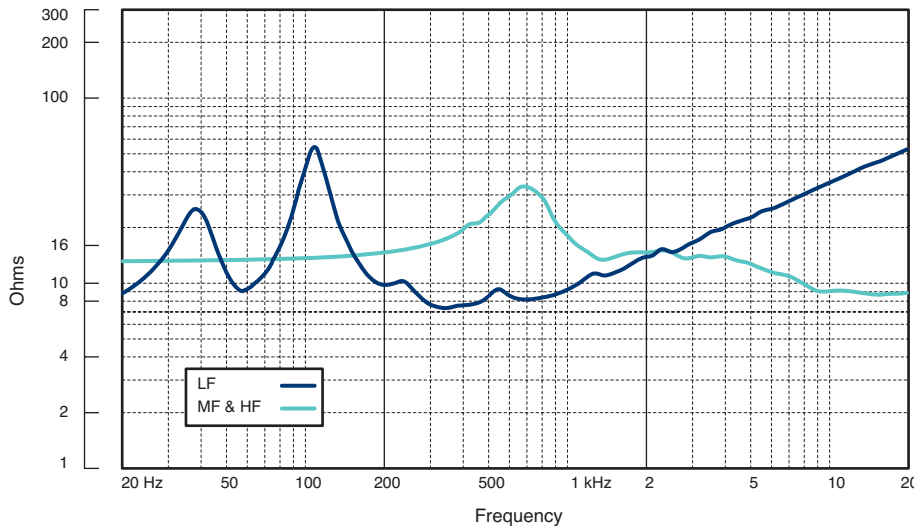
⁴Unweighted diode-clipped pink noise. Measured in a half space environment.

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

FREQUENCY RESPONSE



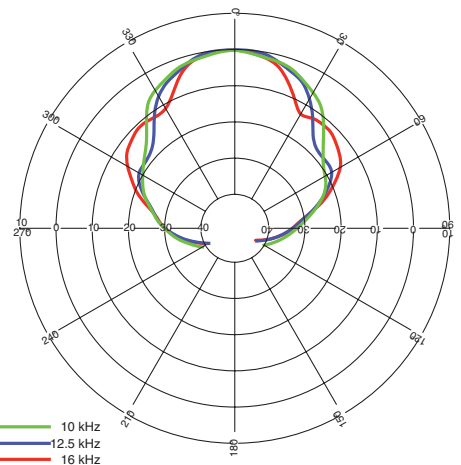
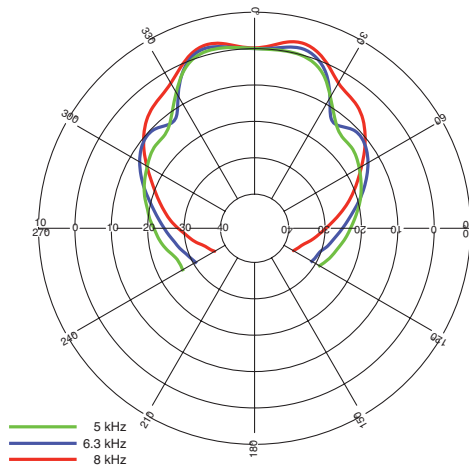
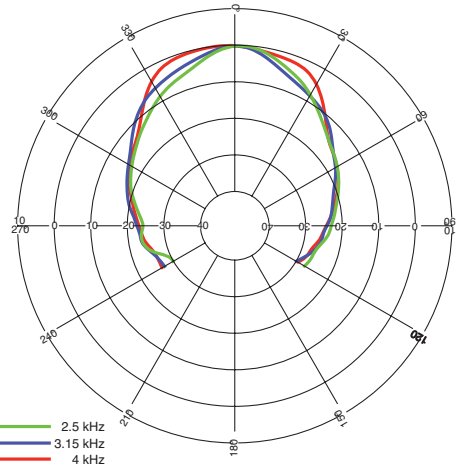
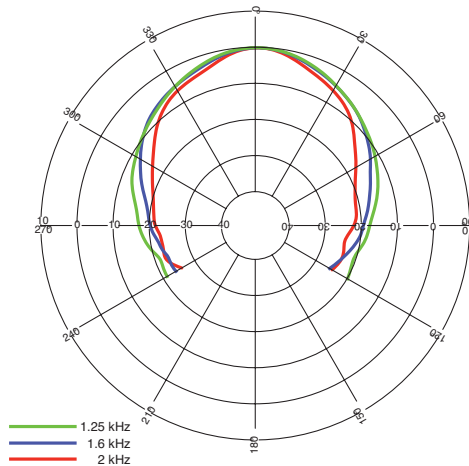
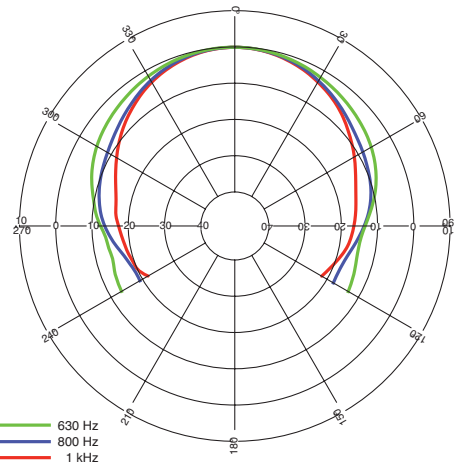
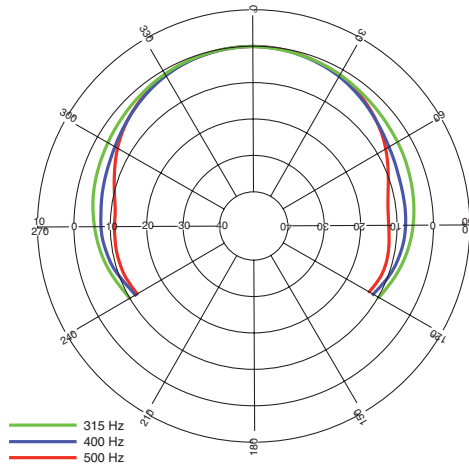
IMPEDANCE



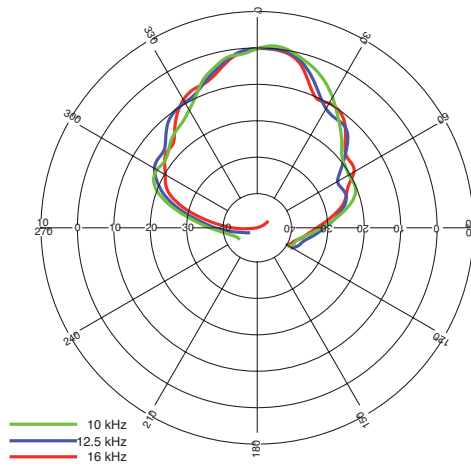
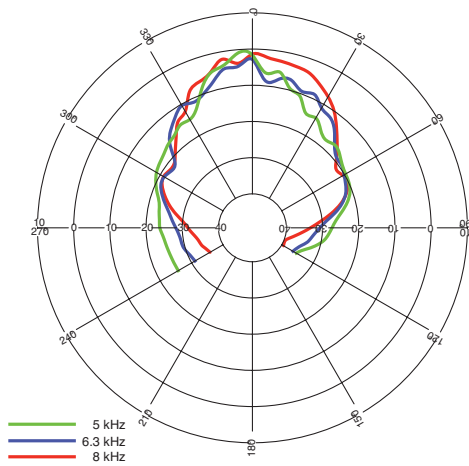
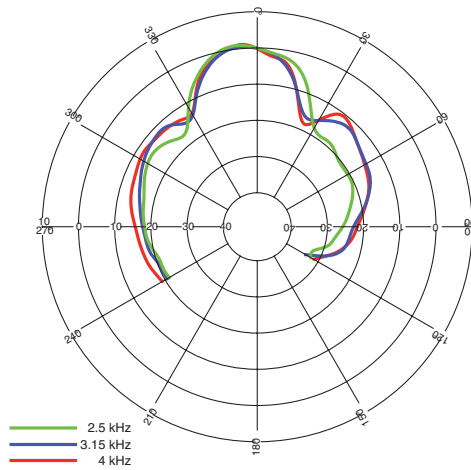
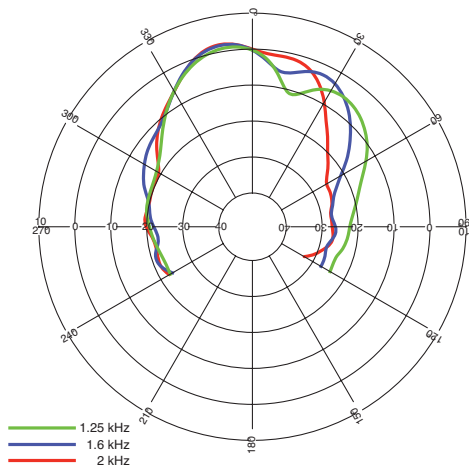
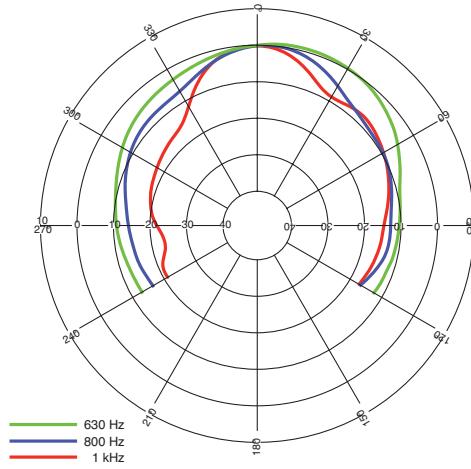
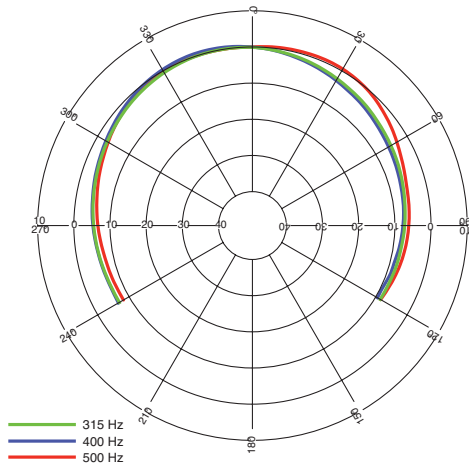
Impedance A constant current circuit was used to measure the impedance. **Frequency response** The frequency response shown was obtained by feeding a swept sine wave through the system in a half space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled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

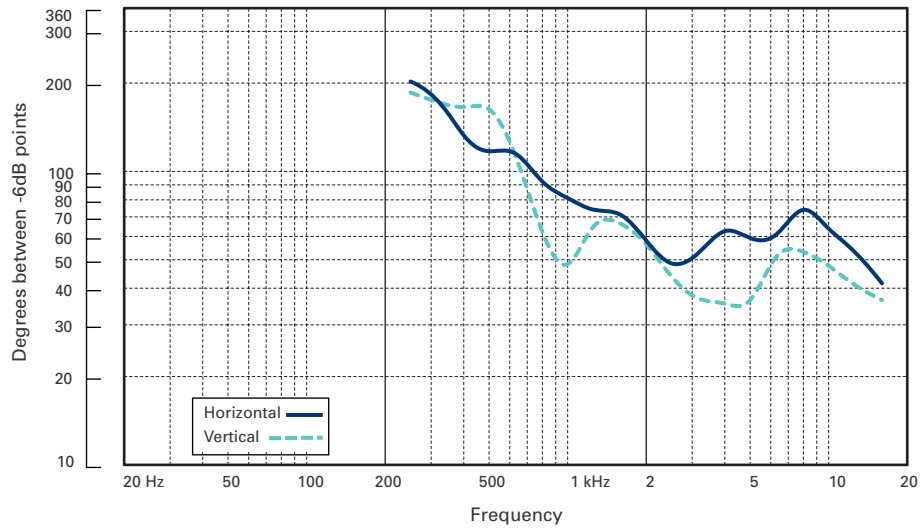
HORIZONTAL THIRD OCTAVE POLARS



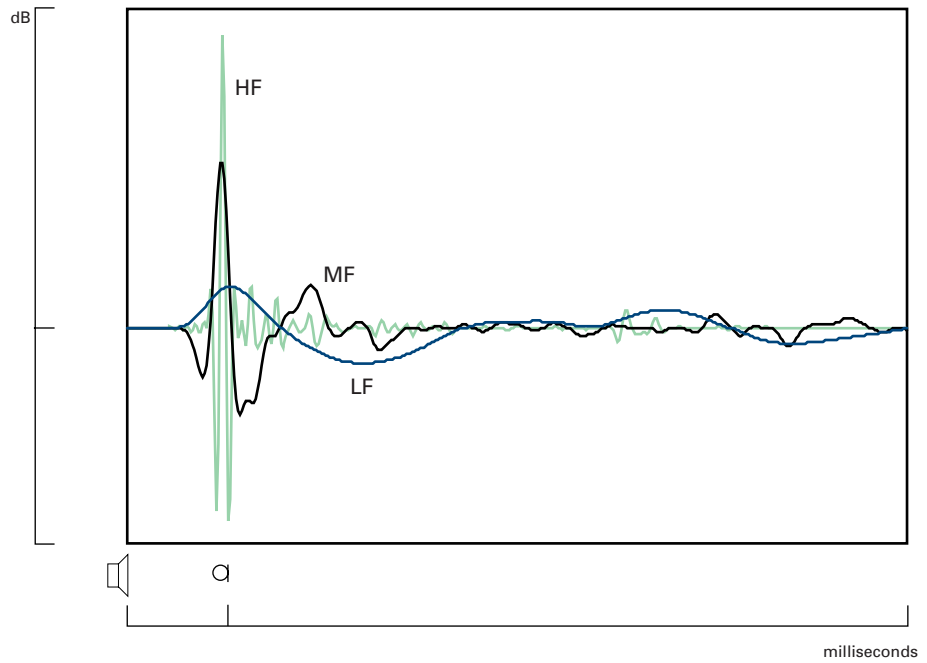
**VERTICAL THIRD
OCTAVE POLARS**



BEAMWIDTH



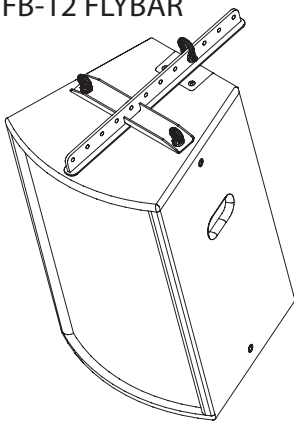
IMPULSE RESPONSE



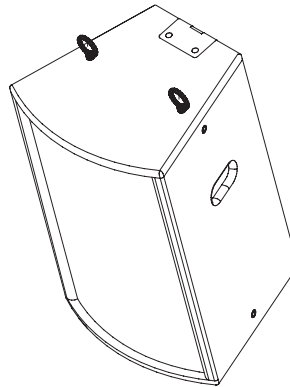
The diagrams below illustrate several different methods of rigging TQ-445 enclosures. In most cases the lower keeping bracket is used to set the desired downward inclination of the cabinet. When using the FB-12 flybar, the enclosure may be rigged either using two points or only a single pick up point. The downward angle will be determined by which attachment hole is chosen on the crossbow.

**INSTALLATION
HARDWARE**

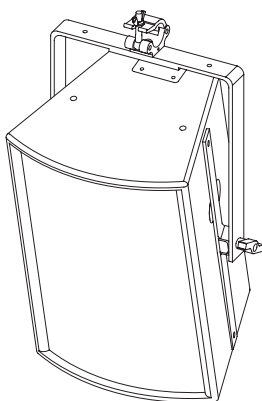
FB-12 FLYBAR



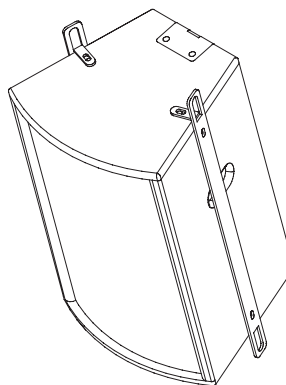
M10 EYEBOLTS



FY-445 FLYING YOKE



FF-445 FLYING STRIPS



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The loudspeaker shall be of the bi-amped, three way type, consisting of one reflex loaded 12" (305mm) low frequency loudspeaker, 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 loudspeaker shall be designed for use with a dedicated digital loudspeaker management system providing crossover, output limiting, and delay functions. Performance specifications of a typical production unit when used with the LMS-D6 loudspeaker management system shall be: frequency response, measured with swept sine wave input, shall be flat within ± 4 dB from 75Hz to 20kHz. Nominal dispersion, at -6dB points, shall average 60°H x 40°V. Nominal impedance shall be LF: 8 ohms; MF/HF: 12 ohms. Power handling shall be LF: 300 watts r.m.s., 600 watts program; MF/HF: 150 watts r.m.s., 300 watts program. Sensitivity, measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth, shall be LF: 103dB, MF/HF: 104dB. 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: 30kgs (66lbs). The loudspeaker shall be the Turbosound TQ-445. 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

