

TCS SERIES ENGINEERING INFORMATION

The TCS-40 is a passive full range two-way loudspeaker enclosure designed for use as an under balcony theatre speaker or as a downfill enclosure when used with flown arrays of TCS-59 and TCS-56 series enclosures.

TCS-40 consists of two front-loaded 8" low frequency drivers and a 1" high frequency compression driver on a 100°H x 40°V horn, matched with a third order / second order passive crossover network in a vented enclosure.

The special enclosure shape, incorporating a shallow 15° angle on the top of the cabinet, makes the TCS-40 ideal for use as a downfill enclosure for the front rows of an

auditorium, or where a close fit to a limited ceiling height is required. The horizontal cabinet symmetry also enables the TCS-40 to be inverted if required.

Nine M10 rigging points are provided on the top, bottom and sides of the cabinet, and are designed to accept standard eyebolts for simple, easy flying.

The cabinet is constructed from 5/8" (15mm) birch plywood with internal steel bracing brackets, and is finished in black semi-matt textured paint.

Recommended complementary products:

TCS-56, TCS-59 enclosures

TCS-108, TCS-215, TCS-118 subwoofer enclosures

LMS-D6, LMS-D4 loudspeaker management systems

**FEATURES**

Dual 8" LF drivers

Wide dispersion

High power rating

APPLICATIONS

Down-fill enclosure

Under-balcony delay speaker

DIMENSIONS (HxWxD)	296mm x 806mm x 260mm (11.6" x 31.8" x 10.2")
NET WEIGHT	19kgs (41.8 lbs)
COMPONENTS	2 x 8" (203mm) LF driver, 1 x 1" (25mm) HF driver on a custom flare
FREQUENCY RESPONSE¹	75Hz - 20kHz ±4dB
NOMINAL DISPERSION²	100°H x 40°V@-6db points
POWER HANDLING	240 watts r.m.s., 480 watts program, 600 watts peak Recommended amplifier 480 watts @ 8 ohms
SENSITIVITY³	96dB 1W @ 1m
MAXIMUM SPL	122dB continuous ⁴ , 128 dB peak ⁵
CROSSOVER	Internal passive crossover network at 3kHz; 18dB/octave high pass, 12dB/octave low pass
NOMINAL IMPEDANCE	8 ohms
CONSTRUCTION	15mm (5/8") birch plywood; rebated, screwed and glued. Finished in black semi-matt textured paint
GRILLE	Black powder coated perforated steel
CONNECTORS	Neutrik Speakon NL4MP, wired pin1+: positive, pin1-: negative Four way terminal strip for loop in/loop out connection
FLYING HARDWARE	(9) M10 internal steel rigging points
OPTIONS	Optional colours: blue, white, raw birch plywood
SPARES AND ACCESSORIES	LS-8050 8" (203mm) LF loudspeaker RC-8050 Recone kit for LS-8050 CD-107 1" (25mm) HF compression driver RD-107 Replacement diaphragm for CD-107 PX-40 Crossover assembly MG-40 Replacement perforated metal grille CB-100 Ceiling bracket WB-100 Wall bracket

Notes

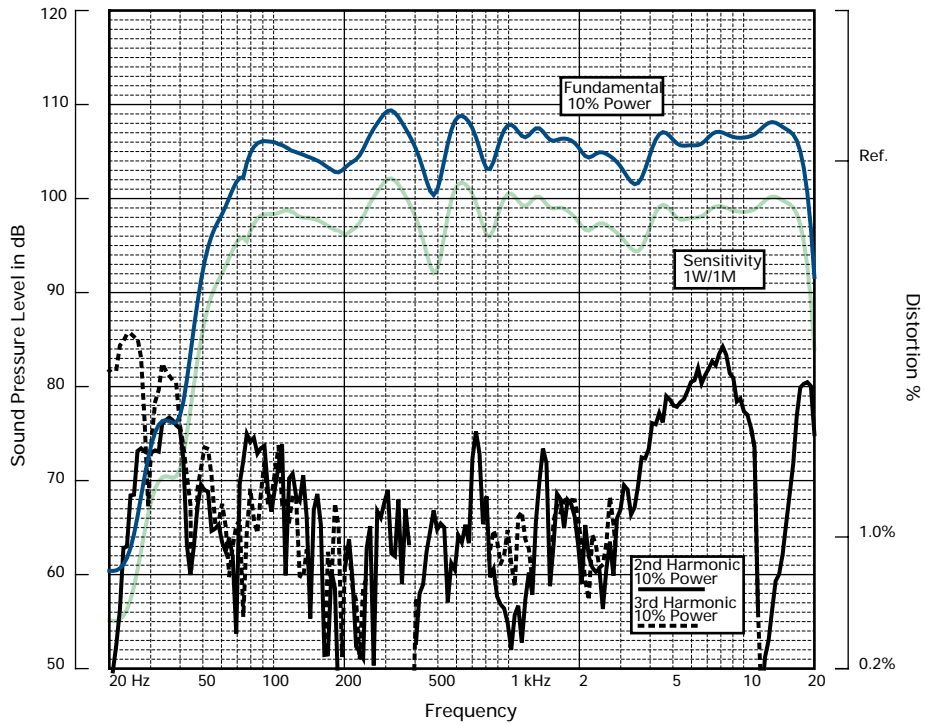
¹Measured on axis

²Average over stated bandwidth

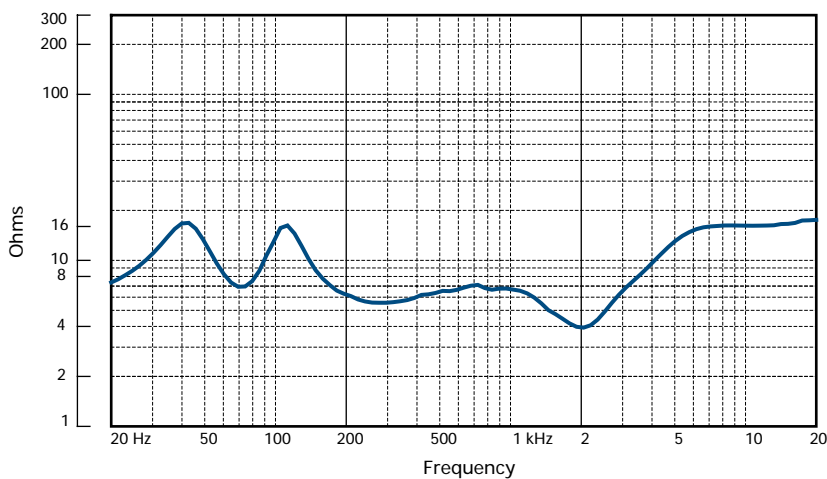
³Average over stated bandwidth

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

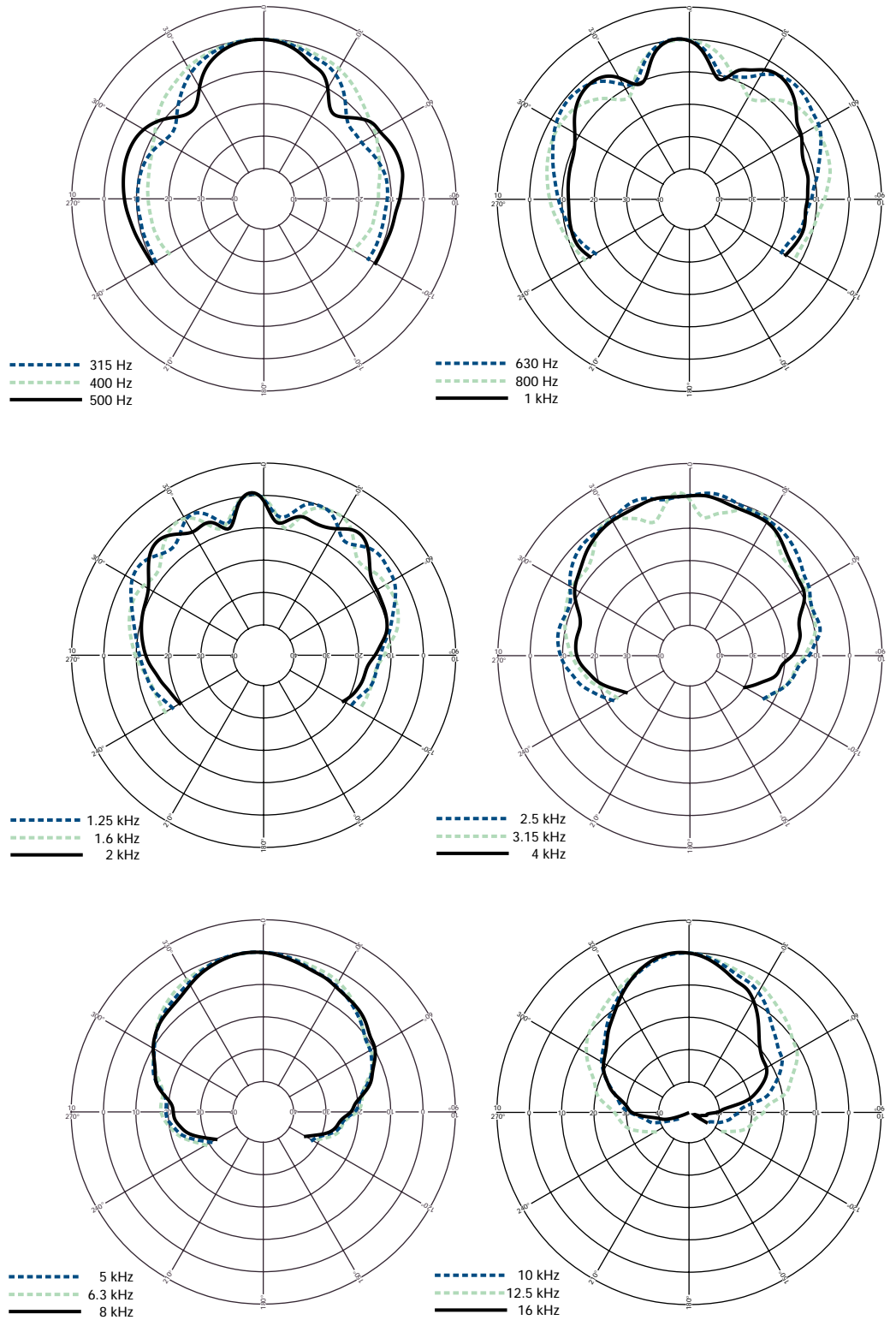


IMPEDANCE

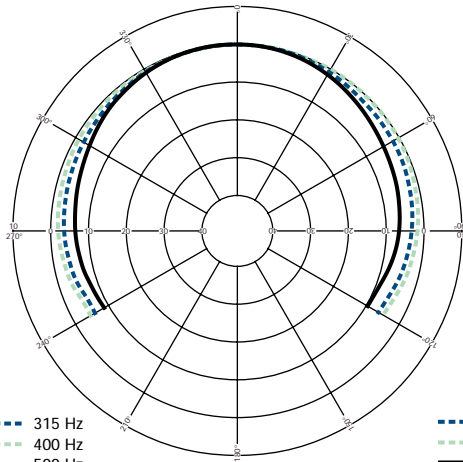
Impedance A constant current circuit was used to measure the impedance. **Frequency Response** The frequency response shown was obtained by feeding a swept sine wave through the system in a half space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then scaled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

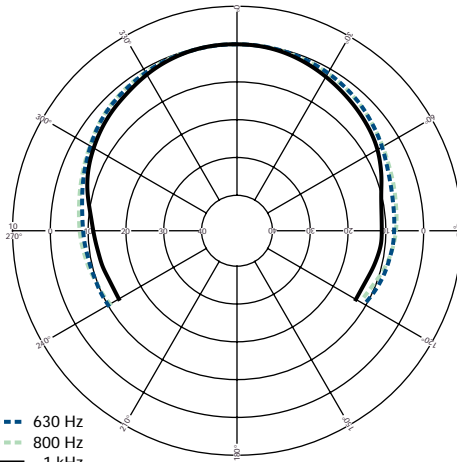
HORIZONTAL THIRD
OCTAVE POLARS



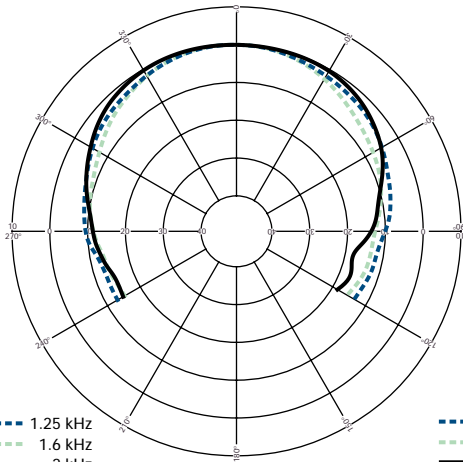
VERTICAL THIRD
OCTAVE POLARS



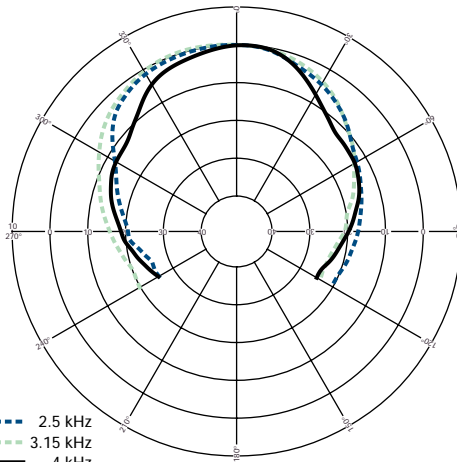
--- 315 Hz
--- 400 Hz
— 500 Hz



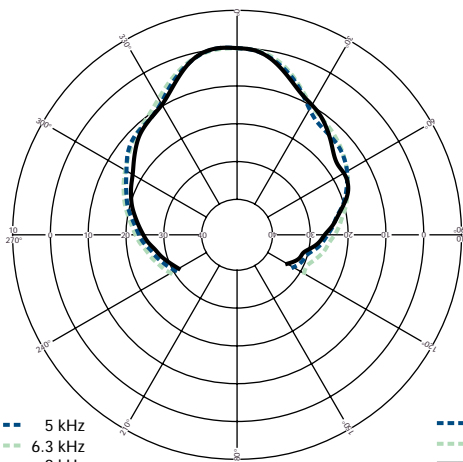
--- 630 Hz
--- 800 Hz
— 1 kHz



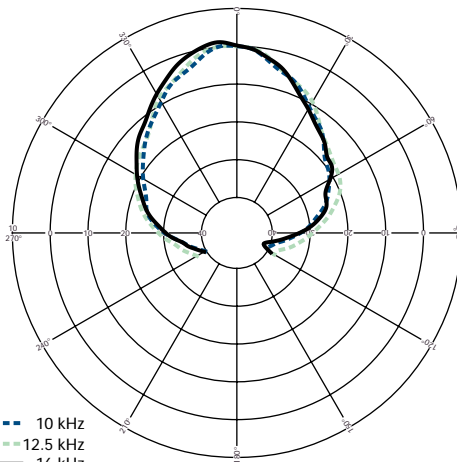
--- 1.25 kHz
--- 1.6 kHz
— 2 kHz



--- 2.5 kHz
--- 3.15 kHz
— 4 kHz

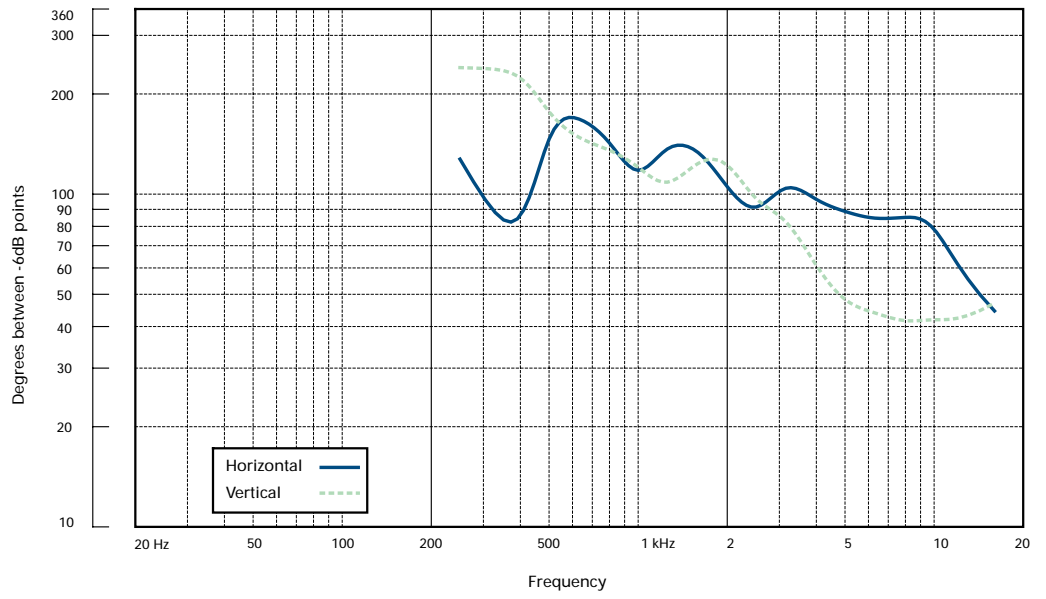


--- 5 kHz
--- 6.3 kHz
— 8 kHz



--- 10 kHz
--- 12.5 kHz
— 16 kHz

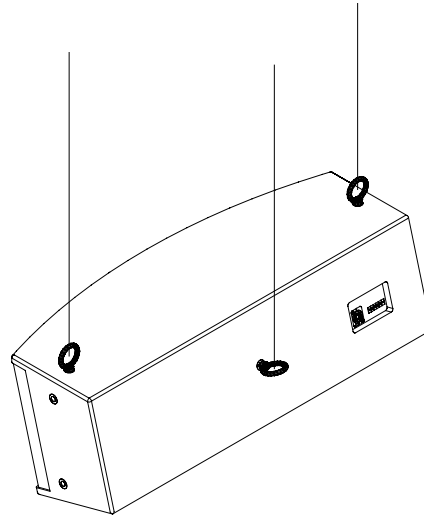
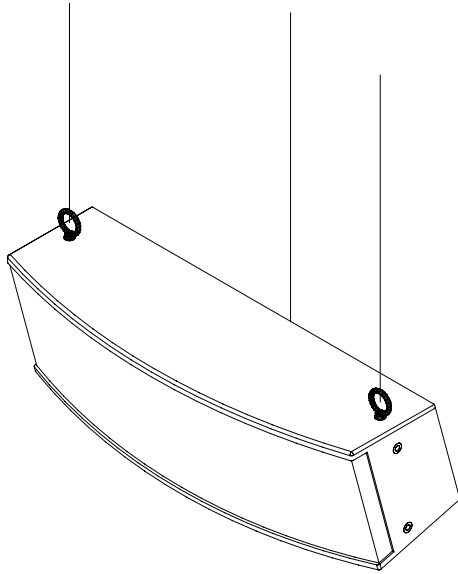
BEAMWIDTH



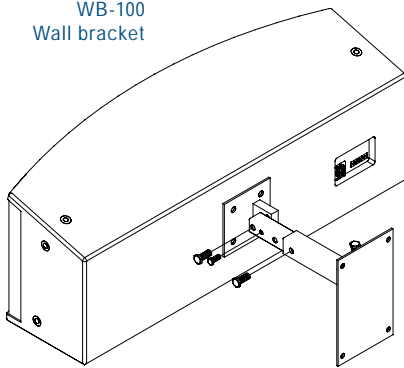
The TCS-40 is fitted with M10 internal fittings on the top, bottom and rear of the cabinet which enable it to be permanently suspended from ceilings using standard eyebolts. Downward inclination is achieved by means of the rear fixing point.

INSTALLATION HARDWARE

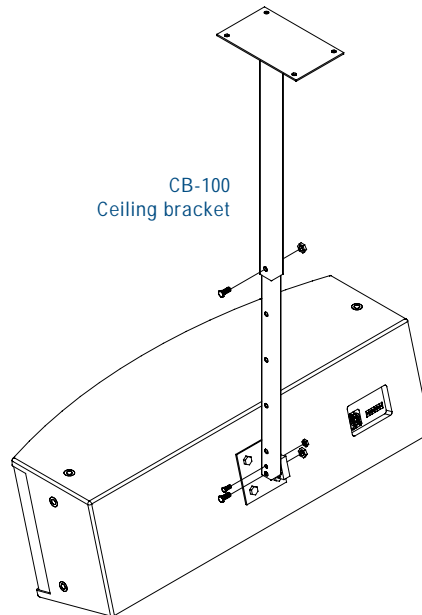
Optional Turbosound mounting hardware is also available for wall mounting (WB-100) and ceiling mounting (CB-100) the cabinet as shown. The enclosure can be angled and tilted to suit the exact requirements of sound coverage within the venue.



WB-100
Wall bracket



CB-100
Ceiling bracket



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The system shall be of the two-way passive type consisting of two 8" (203mm) low frequency loudspeakers and one 1" (25mm) high frequency driver. 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 75Hz - 20kHz ± 4 dB. Nominal dispersion, at -6dB points, shall average 100°H x 40°V. Nominal impedance shall be 8 ohms. Power handling shall be 240 watts r.m.s., 480 watts program, 600 watts peak. 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 128dB. Dimensions: 296mmH x 806mmW x 260mmD (11.6"H x 31.8"W x 10.2"D). The loudspeaker system shall be the Turbosound TCS-40. 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

