

## TCS COMPACT SERIES ENGINEERING INFORMATION

**The TCS-081C is a compact trapezoidal passive two-way loudspeaker enclosure designed for use in a wide range of fixed installations.**

It consists of an 8" reflex-loaded low frequency driver and a 1" high frequency compression driver on a 100°H x 60°V Converging Elliptical Waveguide™ in an optimally tuned trapezoidal enclosure. These high grade components are matched with an internal passive crossover to ensure a seamless transition between the HF and LF drivers.

The crossover incorporates a two-stage thermal overload protection system which prevents damage to the high frequency driver, reacting instantly to large transient peaks while still allowing wide dynamic range to be maintained. Although the protection system is transparent at normal operating levels, as the level increases the signal is gradually and imperceptibly compressed once the critical threshold has been reached.

The cabinet is constructed from 12mm (1/2") birch plywood, screwed and glued together for maximum rigidity. A powder-coated

perforated steel mesh grille, backed with reticulated foam, protects the drive units from damage.

Rigging points are provided on the top, bottom, sides and rear of the cabinet to enable the TCS-081C to be suspended and angled in permanent installations using M10 shoulder eyebolts. The enclosure is also fitted with internal rigging points for use with Turbosound and Omnimount™ wall and ceiling brackets.

A Neutrik Speakon NL4MP speaker connector and a four-way barrier strip are located on the rear panel, providing input and parallel connections to additional TCS Compact series cabinets.

The TCS-081C is finished as standard in durable black or white semi-matt textured paint; raw wood and custom colour options are also available for decor matching. A weather-resistant version is optionally available with an IP rating of 54, enabling use outdoors and in humid conditions. Line transformers are optionally available for use with 70v or 100v line distributed systems.



### FEATURES

- Compact enclosure**
- Trapezoidal shape**
- Multiple rigging points**
- Passive crossover**
- HF protection system**
- Line transformer option**
- Custom colour option**
- IP54 option**

### APPLICATIONS

- Fixed installations**
- Pubs, clubs and bars**
- Houses of Worship**

<b>DIMENSIONS (HxWxD)</b>	415mm x 308mm x 270mm (16.3" x 12.1" x 10.6")	
<b>NET WEIGHT</b>	12kg (26.4lbs); 13kg (28.6lbs) with optional line transformer (TCS-081CT)	
<b>COMPONENTS</b>	1 x 8" (203mm) LF driver, 1 x 1" (25mm) HF driver on a Converging Elliptical Waveguide™	
<b>FREQUENCY RESPONSE<sup>1</sup></b>	70Hz - 20kHz ±4dB; 75Hz - 17kHz ±4dB with line transformer (TCS-081CT)	
<b>NOMINAL DISPERSION<sup>2</sup></b>	100°H x 60°V @ -6dB points	
<b>POWER HANDLING</b>	200 watts r.m.s., 400 watts program Recommended amplifier power 400 watts @ 8 ohms	
<b>SENSITIVITY<sup>3</sup></b>	93dB, 1 watt @ 1 metre	
<b>MAXIMUM SPL</b>	116dB continuous <sup>4</sup> , 122dB peak <sup>5</sup>	
<b>NOMINAL IMPEDANCE</b>	8 ohms	
<b>CROSSOVER</b>	Internal passive network at 3kHz; 12dB/octave high-pass, 12dB/octave low-pass	
<b>CONSTRUCTION</b>	12mm (1/2") birch plywood. Finished in black semi-matt textured paint.	
<b>GRILLE</b>	Powder-coated perforated steel mesh backed with black reticulated foam on black cabinets; backed with white acoustically transparent cloth on white cabinets	
<b>CONNECTORS</b>	(1) Neutrik Speakon NL4MP, wired pin1+: positive, pin 1-: negative, pins 2+ and 2- N/C (1) 4-way barrier strip connector	
<b>OPTIONS</b>	Optional finishes: white, raw wood, and custom colours 70v / 100v line transformer tapped at 60 watts, 30 watts and 15 watts (TCS-081CT) IP54 weather-resistant version (TCS-081CW)	
<b>FLYING HARDWARE</b>	(9) M10 internal rigging points (4) M8 internal rigging points for WB-20 and CB-55 brackets (4) M6 internal rigging points for OmniMount™ series 30 brackets	
<b>SPARES AND ACCESSORIES</b>	LS-8010	8" (203mm) LF loudspeaker
	RC-8010	Recone kit
	CD-111	1" (25mm) HF compression driver
	RD-111	Replacement HF diaphragm
	TXD-TCS-081-PX-A	Passive crossover
	WB-20	Wall bracket
	CB-55	Ceiling bracket

**Notes**

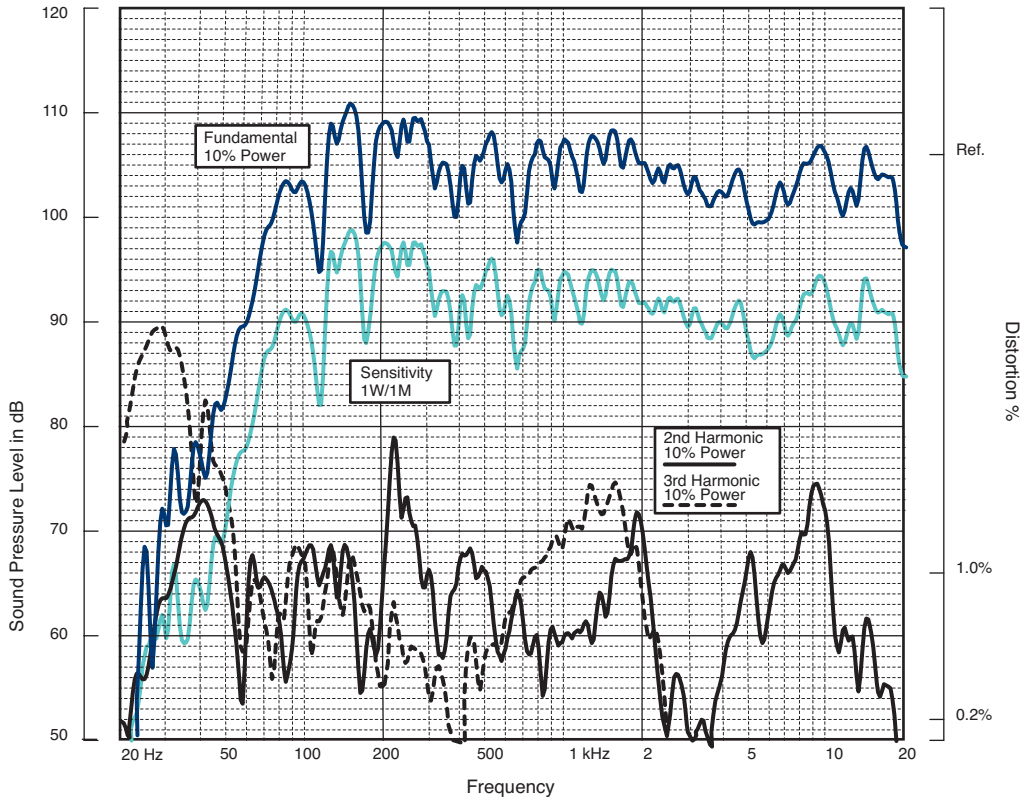
1 Measured on axis

2 Average over stated bandwidth

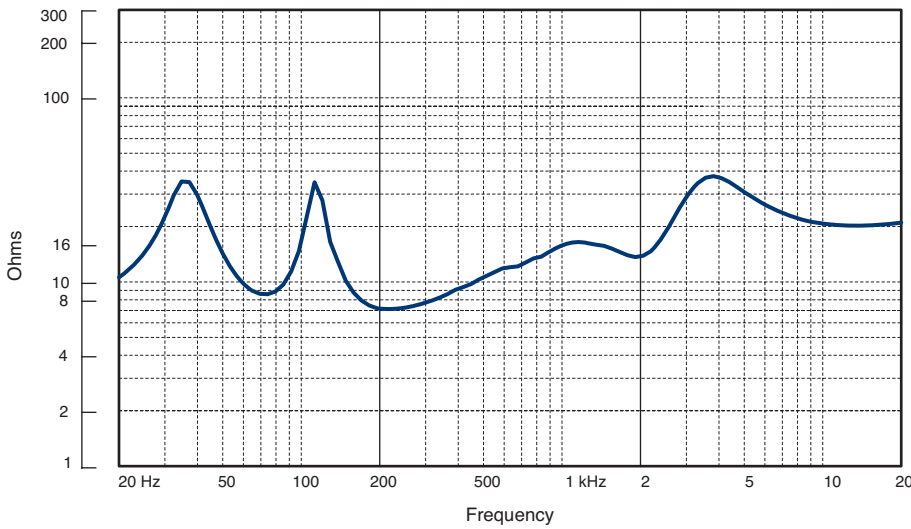
3 Average over stated bandwidth

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



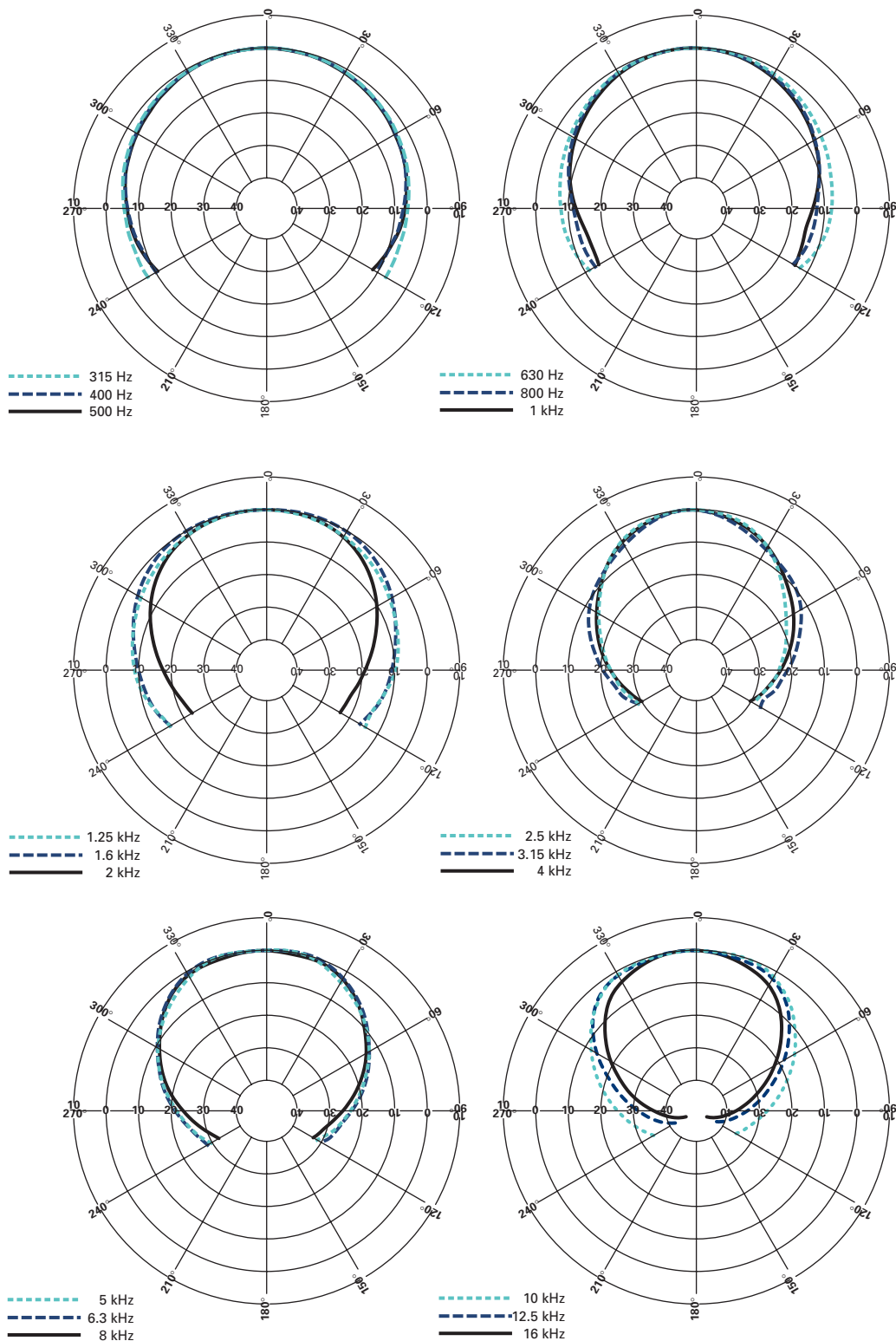
**IMPEDANCE**



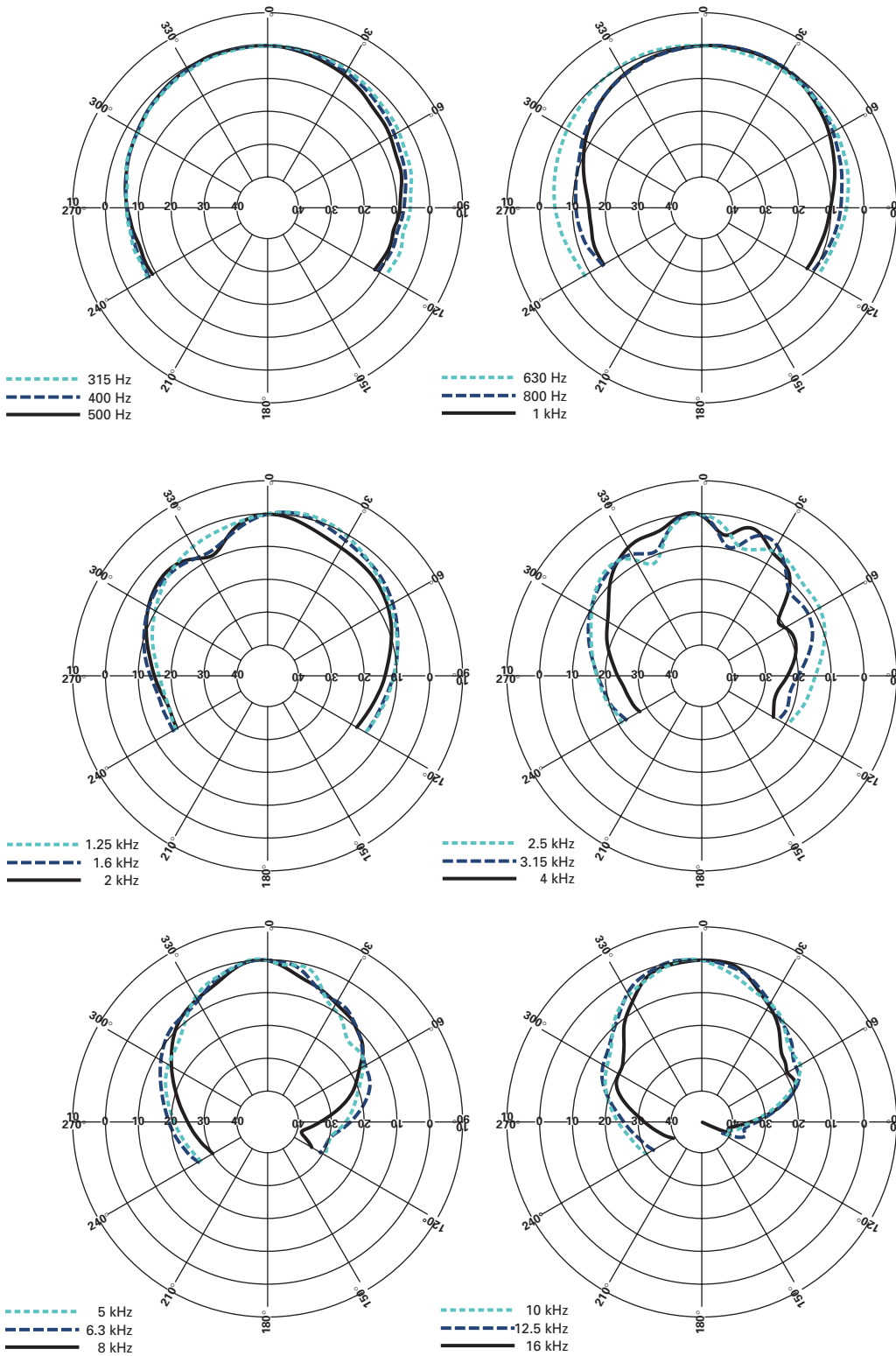
**Impedance** A constant current circuit was used to measure the impedance. **Frequency response** The frequency response shown was obtained by feeding a swept sine wave through the system in a half space environment. The position of the microphone was vertically on-axis at a distance of 2 metres, then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

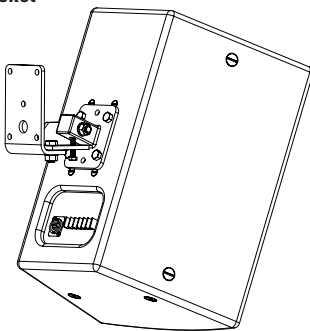


The cabinet is fitted with M8 internal rigging points on the rear panel which enable it to be permanently installed using the Turbosound WB-20 wall bracket, or CB-55 ceiling bracket. Four M6 internal rigging points are also provided for use with OmniMount™ series 30 brackets.

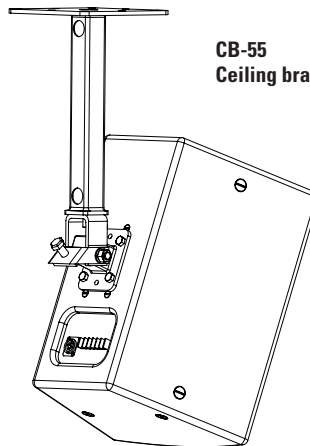
M10 internal rigging points are provided on the top, bottom, sides and rear of the cabinet for use with M10 shoulder eyebolts with a minimum thread length of 20mm.

**INSTALLATION AND RIGGING HARDWARE**

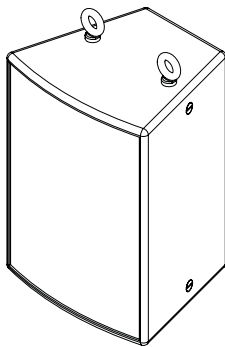
**WB-20  
Wall bracket**



**CB-55  
Ceiling bracket**



**M10 eyebolts**



**ARCHITECTURAL  
& ENGINEER'S  
SPECIFICATIONS**

The speaker shall be of the full range, two-way passive type consisting of one 8" (203mm) LF driver and one 1" (25mm) HF driver on a 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 70Hz - 20kHz. Nominal dispersion, at -6dB points, shall average 100°H x 60°V. Nominal impedance shall be 8 ohms. Power handling shall be 200 watts r.m.s., 400 watts program. Sensitivity, measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth, shall be 93dB. Maximum SPL (peak) measured with music program at stated amplifier input shall be 122dB. Dimensions: 415mmH x 308mmW x 270mmD (16.3"H x 12.1"W x 10.6"D). Weight: 12kg (26.4lbs). The loudspeaker system shall be the Turbosound TCS-081C. 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**

