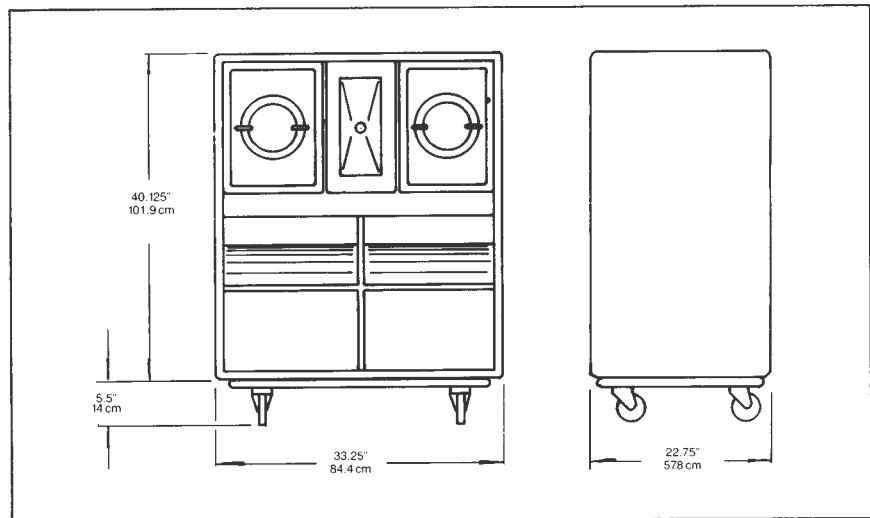


TMS-3



The TMS-3 is the top-of-the-line model in the TMS Series of full range enclosures. It incorporates the patented Turbosound features in a tri-amped enclosure designed specifically for the most demanding professional sound reinforcement applications.

The heart of this system is the TurboMid™ device. This uses a unique design, covered worldwide by Principle Patents, which allows it to be used over four octaves (250Hz to 4,000Hz) – a system designer's dream.

Due to the geometry of the inner workings of the device, the overall directivity response is much higher than a "normal" horn of the same frontal area. This is a very powerful characteristic, as it allows for highly non-interactive arraying in multiple unit systems (see Figs. 1-4).

In all TMS Series enclosures, the TurboMid device is combined with a TurboBass™ device, also covered by Principle

Patents. The design uses high-velocity partial horn-loading techniques, giving greatly enhanced cone control and providing remarkable levels of bass projection from such a compact enclosure (see Fig. 5).

All TMS Series enclosures are easy to fly; thus, an installed TMS-3 system will be unobtrusive and will obstruct sightlines less than conventional multi-way or larger full-range enclosures.

These unique developments in audio design have enabled Turbosound engineers to construct a system which produces very low distortion (see Fig. 7) and a naturally correct acoustic output without the need for less reliable, artificial compensating electronics. The result is a natural, transparent sound quality from an unusually compact enclosure, that is easier to work with than competitive designs.

For further general information, please refer to the TMS-3 Sales Data Sheet and TMS Series catalogue.

 **Turbosound®**

TRI-AMPED 3-WAY FULL-RANGE PROFESSIONAL SOUND REINFORCEMENT ENCLOSURE

BEAMWIDTH
(Single Unit)

BEAMWIDTH
(Two Units Splayed)

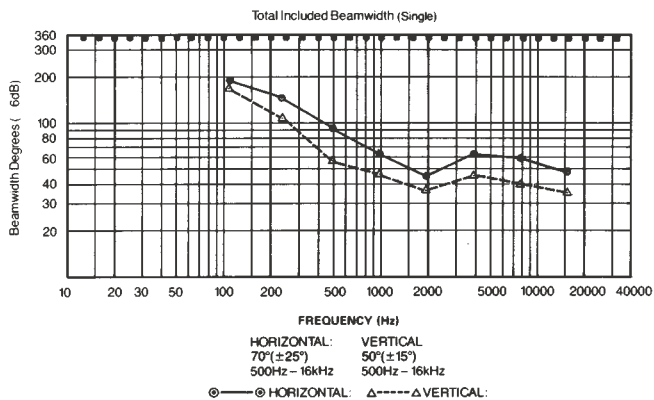
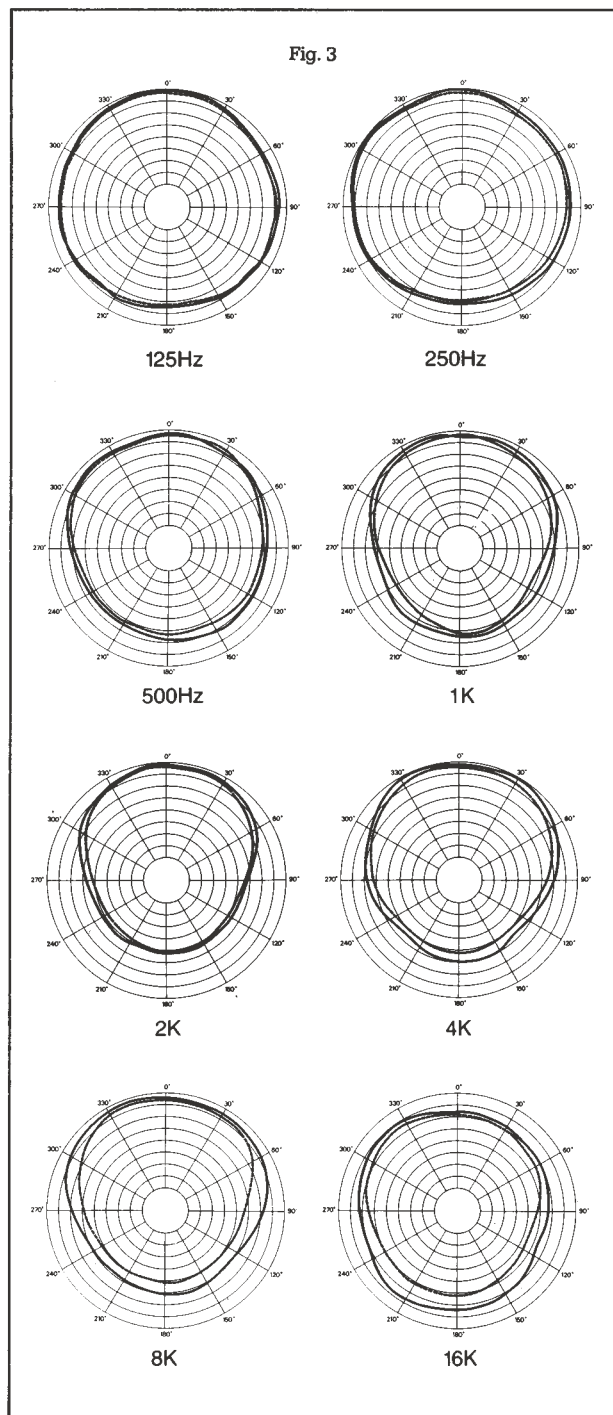
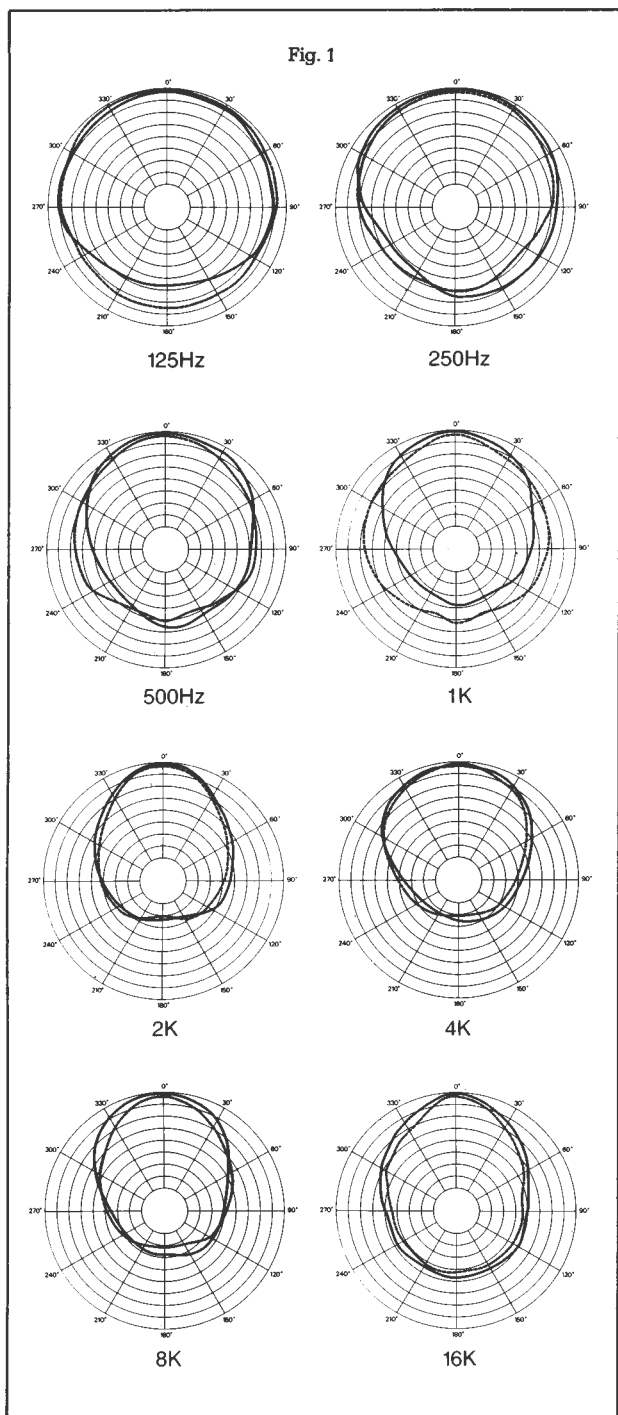


Fig. 2

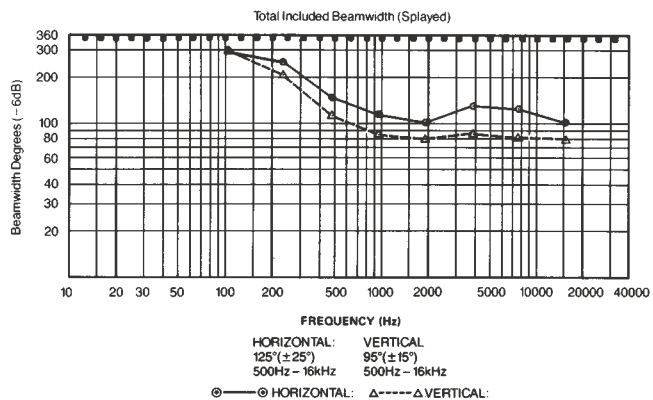


Fig. 4

SPECIFICATIONS

| | | | |
|---------------------------------|--|-------------|---|
| Dimensions | 33¼"H × 40½"W × 22¾"D (84.4cm × 101.9cm × 57.8cm) | Connectors | 1 Cannon AP-6-13 (female panel), 1 Cannon AP-6-12 (male cable) on 6' six conductor 14 gauge speaker cable |
| Weight | 295 lbs. (134 kg.) | Flying | 1 Turbo Fly Plate per side, with 2 angling points on back Optional TMS-3 flying bar complete with straps and all necessary hardware |
| Components: | | Hardware | 6 recessed handles Hinged door on back to access connectors, mid and high drivers, and protection circuitry Optional heavy duty cover |
| Bass | 2 15" LF drivers on 2 TurboBass™ devices; 500 watts RMS, 1,000 watts Program; 4 ohms | Transport | Removable 33" × 22" wheel dolly, fitted with 4 heavy duty 4" swivel castors |
| Mid | 2 10" MF drivers on 2 TurboMid™ devices; 200 watts RMS, 400 watts Program; 8 ohms | Please note | No tools required for any part of TMS-3 operation. |
| High | 1 2" HF driver on a proprietary flare; 75 watts RMS, 150 watts Program; 16 ohms | | |
| Frequency response ¹ | 55 – 17,000 Hz ±3dB; 45 – 20,000 Hz +3/-6dB | | |
| Phase response | Coherent over stated bandwidth | | |
| Dispersion ² | 70°H × 50°V at -6dB down points | | |
| Power handling | 775 watts RMS; 1,550 watts Program | | |
| Sensitivity ³ | 108dB 1 watt/1 meter (Average); 111dB 1 watt/1 meter (Peak) | | |
| Maximum SPL ⁴ | 130dB (Continuous); 141 dB (Peak) | | |
| Crossover | Tri-amped; recommended points 250Hz, 3,700Hz; 24dB/octave slope | | |
| Construction | 15mm Finnish birch ply, rabbeted, sealed with marine glue, and finished in Trimite semi-matt TurboBlue ⁵ paint | | |
| Protective grille | 1" 30 PPI fully reticulated foam | | |

All measurements are actual figures taken from real-time testing using stated inputs, free from any filtering or weighting, rather than treated inputs and/or calculated figures used by many manufacturers. Therefore, actual performance of the TMS-3 may substantially exceed that of loudspeaker systems with higher published ratings.

Notes
¹ Measured on-axis, half-space conditions, using swept sine wave input
² Average over stated bandwidth
³ Mean average of three bands, each measured 1 watt/1 meter, half-space conditions, using swept sine wave input
⁴ Continuous measurement: Unweighted pink noise input
 Peak measurement: Music program input
 Both measured at 1 meter, using stated amplifier power
⁵ Optional black

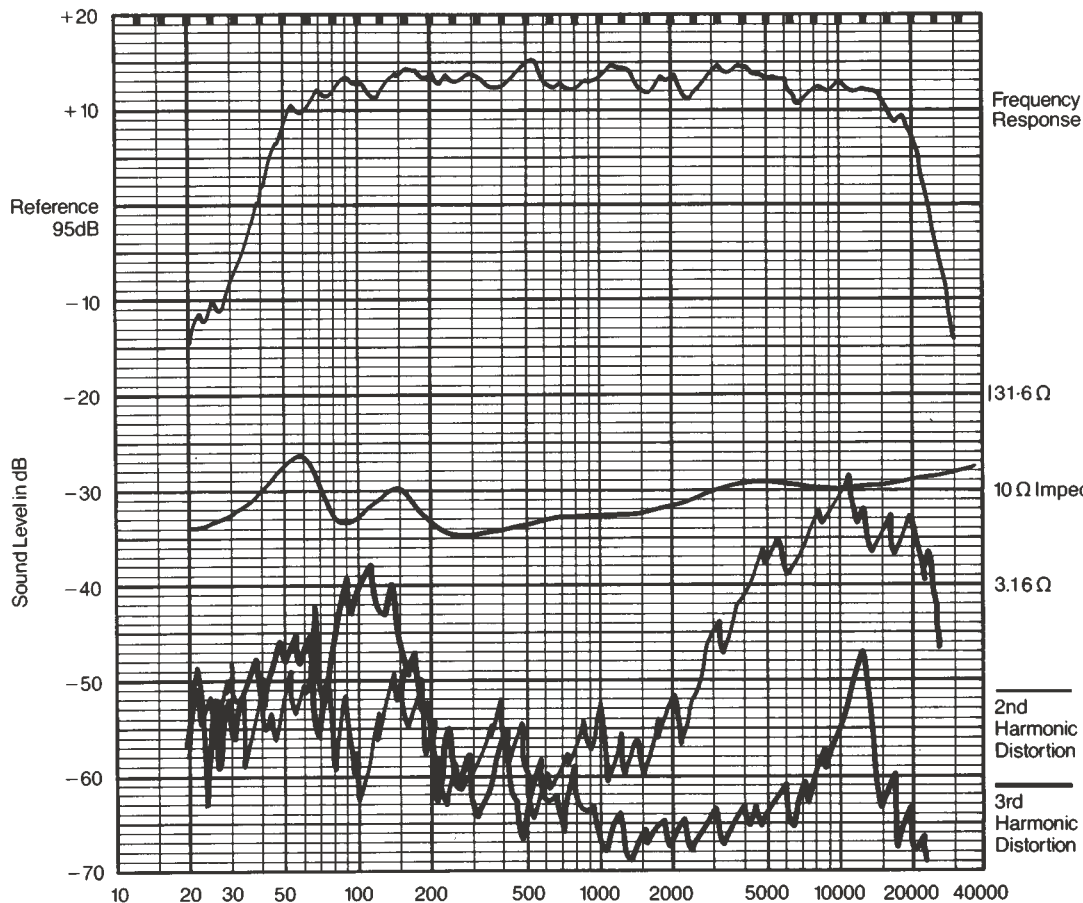


Fig. 5

Fig. 6

Fig. 7

FREQUENCY RESPONSE

The frequency response shown in Figure 5 was obtained by feeding a swept sine wave through the system in a large anechoic chamber. The position of the microphone was vertically on-axis, horizontally in-line with the MF/HF section, and at a distance of one meter.

IMPEDANCE

A common method constant current drive circuit was used to measure the impedance response, shown in Fig. 6.

2ND AND 3RD HARMONIC DISTORTION

Distortion measurements shown in Fig. 7 were obtained using a Bruel and Kjaer harmonic distortion analysis system.

POLAR RESPONSE

The directional characteristics of the TMS-3 were measured by running a set of horizontal and vertical polar responses, in a large anechoic chamber, at each octave centre frequency. The test signal was octave pseudo-random pink noise (1.0Hz repetition rate) entered at the indicated frequencies. The measurement microphone was placed 6.1 meters (20ft) from the enclosure, while rotation was about the MF/HF section. The polar plots shown in Figs. 1 & 3 display the results of these tests. The centre frequency and beamwidth angle are noted on each plot. Horizontal beamwidth is represented by a solid line (—), and the vertical beamwidth by a dotted line (---).

BEAMWIDTH

A plot of the TMS-3's total included beamwidth angle is shown in Fig. 2 for each octave centre frequency. The horizontal beamwidth is maintained at $70^\circ (\pm 25^\circ)$ over the range 500Hz to 16,000Hz. Vertical beamwidth is maintained at $50^\circ (\pm 15^\circ)$ over the same range.

Fig. 4 shows a plot of the total included beamwidth angle for two cabinets, splayed at an angle of 30° horizontally and 25° vertically, for each octave centre frequency. The horizontal beamwidth, measured at these splay angles, is maintained at $125^\circ (\pm 25^\circ)$ over the range 500Hz to 16,000Hz. Vertical beamwidth is maintained at $95^\circ (\pm 15^\circ)$ over the same range.

ARCHITECTURAL AND ENGINEERING SPECIFICATIONS

The loudspeaker system shall be of the tri-amped, three-way type, consisting of two 15" low frequency loudspeakers loaded with two patented TurboBass™ devices, two 10" mid frequency drivers loaded with two patented TurboMid™ device, and one 2" high frequency unit.

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 ± 3 dB from 55 – 17,000 Hz. Dispersion, at -6 dB points, shall average $70^\circ\text{H} \times 50^\circ\text{V}$. rated Impedances shall be: Bass 4 ohms, Mid 8 ohms, High 16 ohms. Power handling shall be 775 watts 1,550 watts Program. Sensitivity, measured with 1 watt input at 1 meter distance on-axis, mean averaged over the stated bandwidth, shall be 108dB. Maximum SPL (Peak), measured with music program input at stated amplifier power, shall be 141dB.

Dimensions: $33\frac{1}{4}"\text{H} \times 40\frac{1}{8}"\text{W} \times 22\frac{3}{4}"\text{D}$. Weight: 295 lbs. Total enclosure volume shall not exceed $17\frac{1}{2}$ cu.ft.

The loudspeaker system shall be the Turbosound TMS-3.

No other loudspeaker system shall be acceptable unless submitted data from an independent test laboratory verify that the above combined performance/size specifications are met.



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TURBOSOUND®
PATENT INFORMATION
U.K. 1,592,246 & 1,598,310
U.S. 4,181,193 & 4,215,761
Canada patented 1980
Australia 515,535
Other patents pending

Due to ongoing product improvement,
specifications are subject to change
without notice.

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