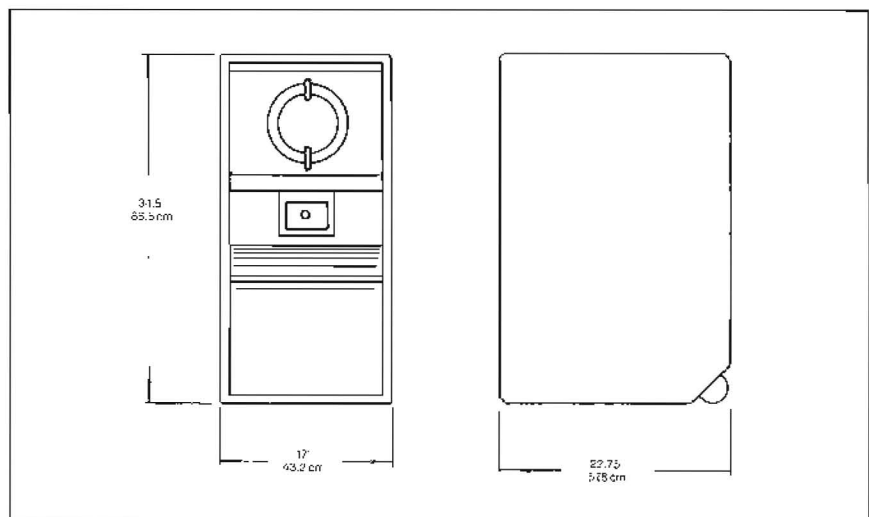
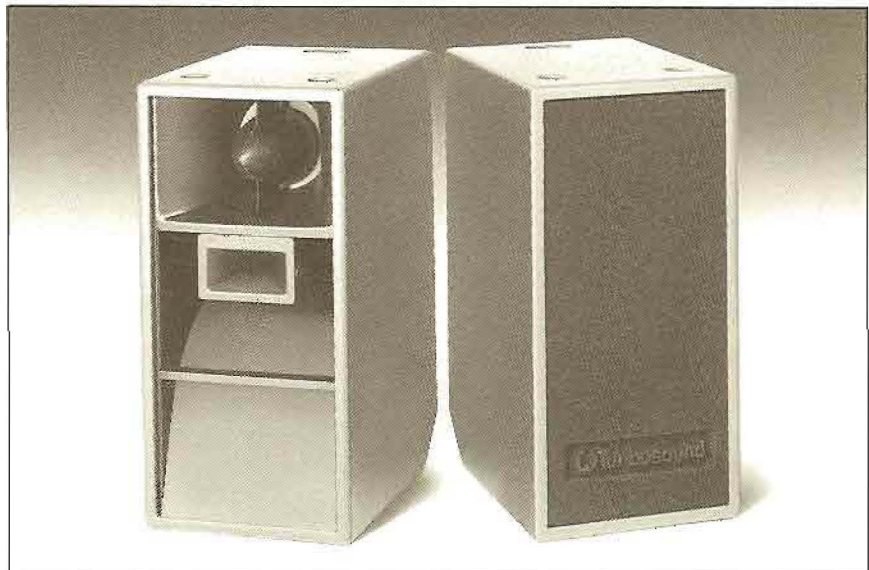


# TMS-2A



The TMS-2A is a bi-amped \*3-way line array speaker enclosure, featuring Turbosound's patented design principles in an exceptionally compact full-range enclosure.

It is designed for any application where compactness and ease of handling are as important as stringent audio quality. It is ideal for theatres, halls, clubs and general sound reinforcement, and it may be used in discotheques, in conjunction with a sub-woofer, for example the TSW-124.

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).

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-2A 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-2A Sales Data Sheet and TMS Series catalogue.

\*Optional passive module

 **Turbosound**™

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

**BEAM WIDTH**  
(Single Unit)

**BEAMWIDTH**  
(Two Units Splayed)

Fig. 1

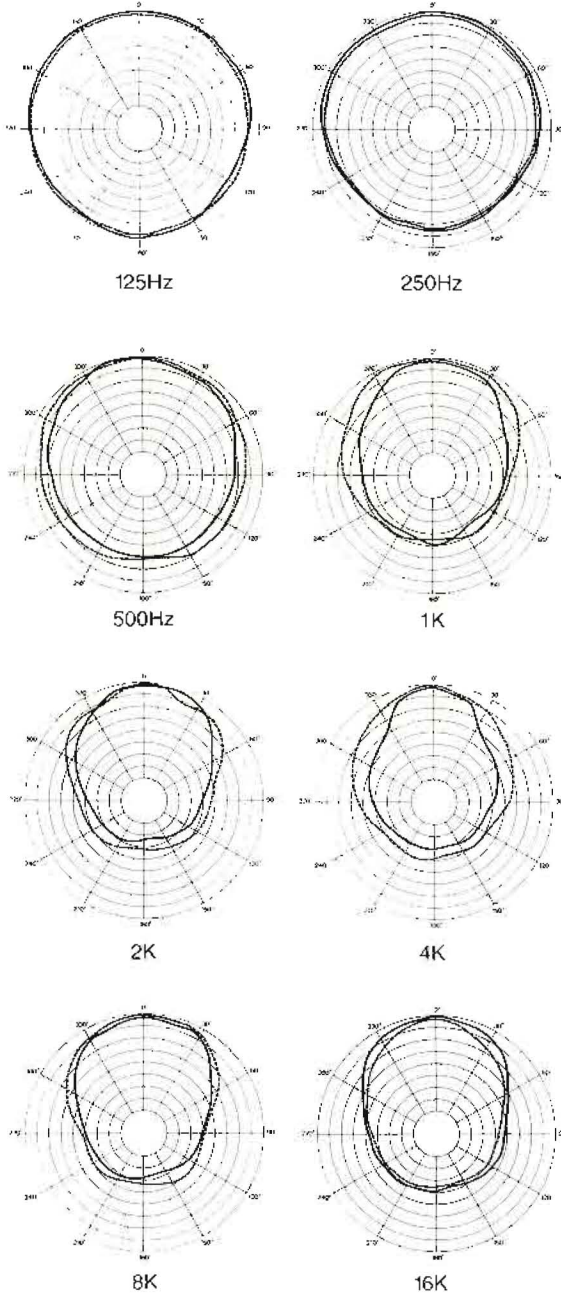


Fig. 3

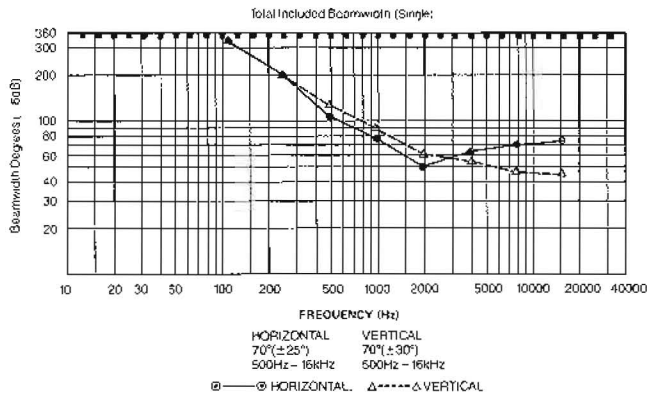
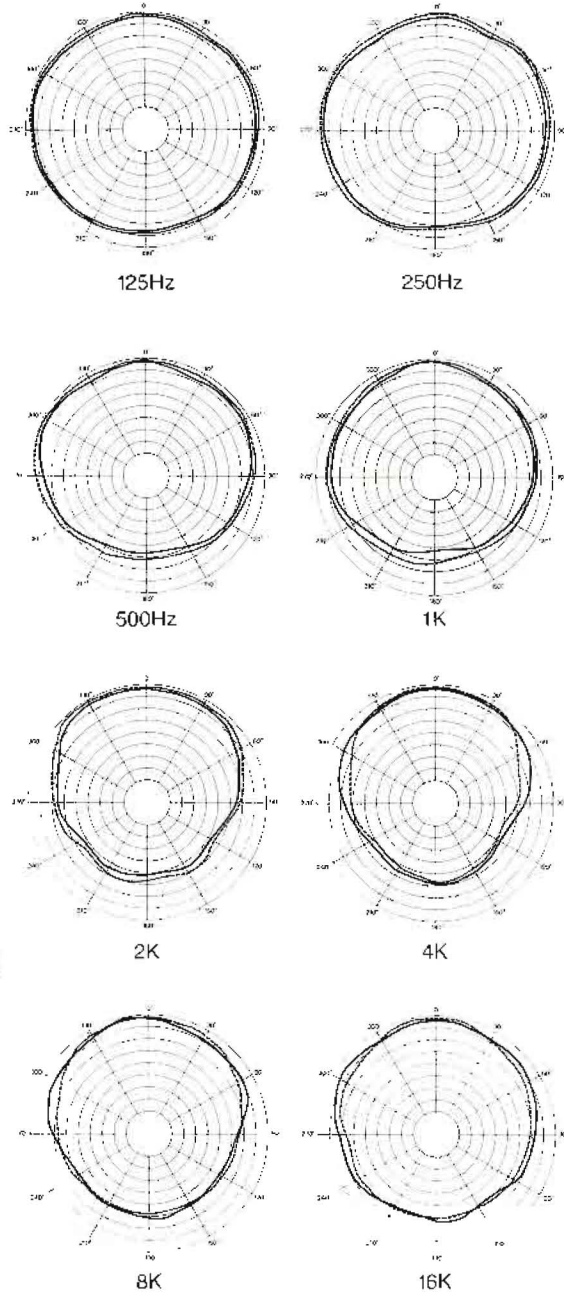


Fig. 2

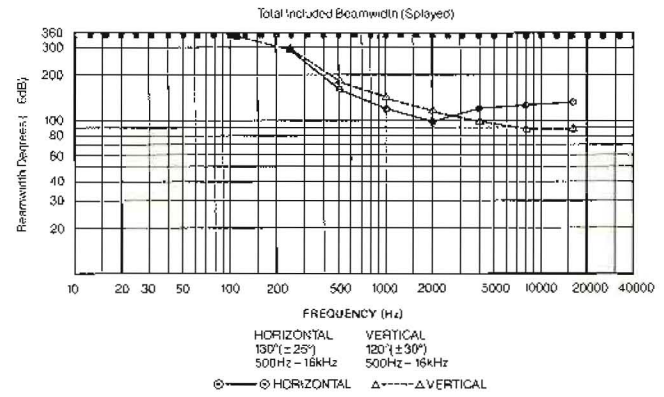


Fig. 4

# SPECIFICATIONS

Dimensions	34½"H × 17"W × 22¾"D (86.5cm × 43.2cm × 57.8cm)	Construction	15mm Finnish birch ply, rabbeted, sealed with marine glue, and finished in Trimate semi-matt TurboBlue <sup>6</sup> paint
Weight	106lbs. (48kg.)	Protective grille	1" 30 PPI fully reticulated foam
Components:		Connectors	3 pin XLR; 2 male, 2 female
Bass	1 15" LF driver on a TurboBass™ device, 250 watts RMS, 500 watts Program; 8 ohms	Flying	Optional ring-type flying points
Mid/High	1 10" MF driver on a TurboMid™ device; 1 1" HF driver on a proprietary flare; 150 watts RMS, 300 watts Program; 16 ohms	Hardware	HF attenuator 2 recessed handles Optional heavy duty cover
Frequency response <sup>1</sup>	65 – 17,000 Hz ± 3dB 60 – 18,000 Hz +3/-6dB	Transport	2 heavy duty 3" "tip-back" castors
Phase response	Coherent over stated bandwidth	Please note	No tools required for any part of TMS-2A operation.
Dispersion <sup>2</sup>	70°H × 70°V at -6dB points	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-2A may substantially exceed that of loudspeaker systems with higher published ratings	
Power handling	400 watts RMS, 800 watts Program	Notes	
Sensitivity <sup>3</sup>	104dB 1 watt/1 meter (Average) 107dB 1 watt/1 meter (Peak)	<sup>1</sup> Measured on-axis, half-space conditions, using swept sine wave input	
Maximum SPL <sup>4</sup>	125dB (Continuous) 133dB (Peak)	<sup>2</sup> Average over stated bandwidth	
Crossover	Bi-amped <sup>5</sup> ; recommended point 250 Hz, 24dB/octave slope	<sup>3</sup> Mean average of two bands, each measured 1 watt/1 meter, half-space conditions, using swept sine wave input	
		<sup>4</sup> Continuous measurement. Unweighted pink noise input Peak measurement: Music program input Both measured at 1 meter using stated amplifier power.	
		<sup>5</sup> Optional passive module	
		<sup>6</sup> Optional black	

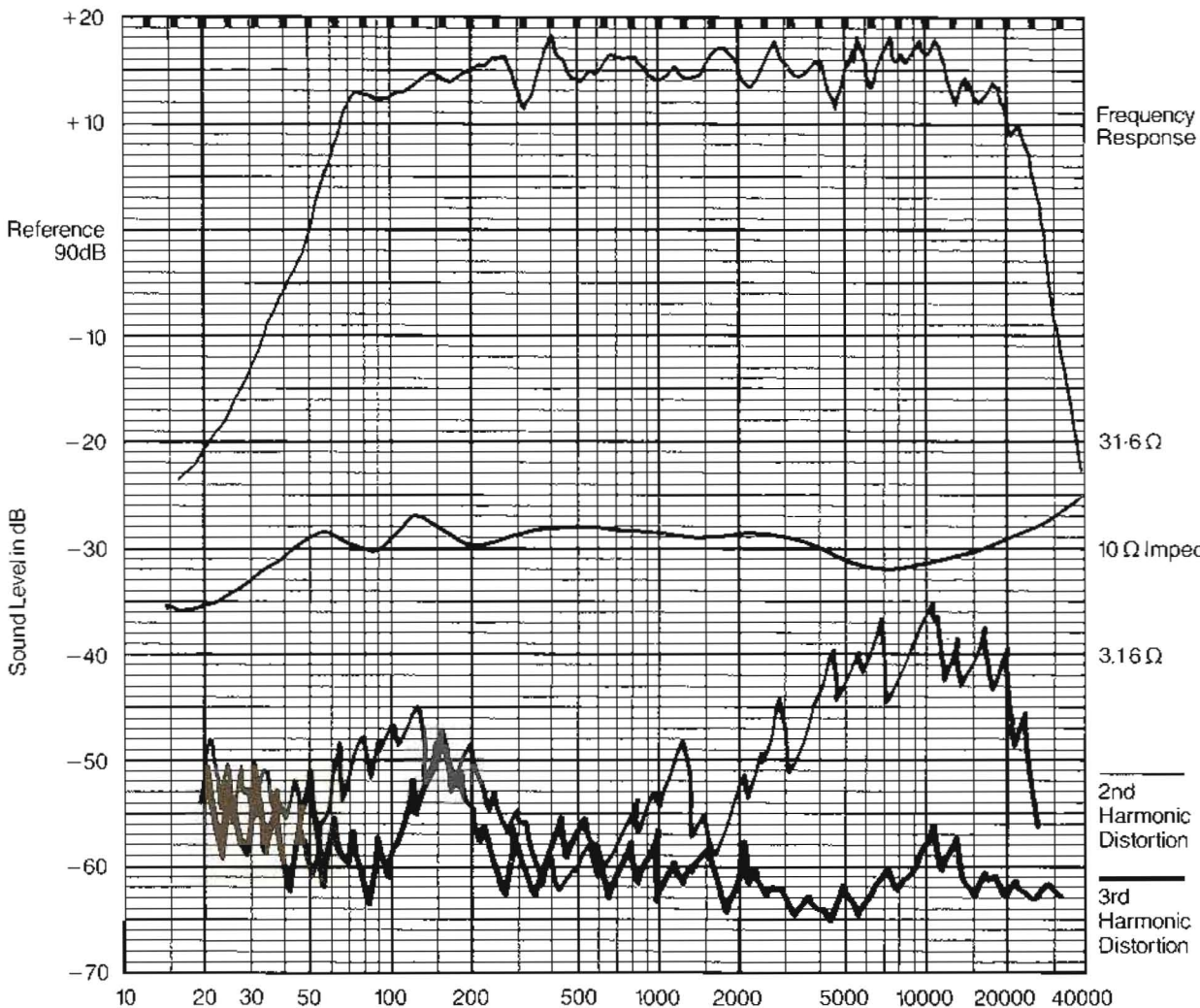


Fig. 5

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 horizontally on-axis, vertically 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-2A 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-2A'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  $70^\circ (\pm 30^\circ)$  over the same range

Fig. 5 shows a plot of the total included beamwidth angle for two cabinets, splayed at an angle of  $30^\circ$  horizontally and  $25^\circ$  vertically, for each octave centre frequency. The horizontal beamwidth, measured at these splay angles, is maintained at  $130^\circ (\pm 25^\circ)$  over the range 500Hz to 16,000Hz. Vertical beamwidth is maintained at  $120^\circ (\pm 30^\circ)$  over the same range.

### ARCHITECTURAL AND ENGINEERING SPECIFICATIONS

The loudspeaker system shall be one of the bi-amped\*, three-way type, consisting of one 15" low frequency loudspeaker loaded with a patented TurboBass™ device, one 10" mid frequency loudspeaker loaded with a patented TurboMid™ device, and one 1" 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  $\pm 3\text{dB}$  from 65 – 17,000 Hz. Dispersion, at  $-6\text{dB}$  points, shall average  $70^\circ\text{H} \times 70^\circ\text{V}$ . Rated Impedances shall be: Bass 8 ohms, Mid/High 16 ohms. Power handling shall be 400 watts RMS, 800 watts Program. Sensitivity, measured with 1 watt input at 1 meter distance on-axis, averaged over the stated bandwidth, shall be 104dB. Maximum SPL (Peak), measured with music program input at stated amplifier power, shall be 133dB.

Dimensions:  $34\frac{1}{2}"\text{H} \times 17"\text{W} \times 22\frac{3}{4}"\text{D}$ . Weight: 106 lbs. Total enclosure volume shall not exceed  $7\frac{3}{4}$  cu.ft.

The loudspeaker system shall be the Turbosound TMS-2A.

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.

\*Optional passive module



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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  
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