

## TSW SERIES ENGINEERING INFORMATION

**The TSW-124 is a unique low-frequency subwoofer enclosure incorporating Turbosound's patented loading principles.**

It is designed for use in primary sound reinforcement applications which demand accurate and powerful reproduction of very low frequency energy at high levels. These include motion picture sound systems, nightclubs and discotheques, as well as live sound reinforcement and audio-visual special effects.

The enclosure incorporates the TurboBass™ device. This is a patented design, and employs a high velocity partial horn loading technique, giving precise control at high power levels.

The TSW-124 is built around a single custom-built 6" coil, 24" bass driver. This driver combines massive motor strength with a large cone assembly, capable of moving meaningful quantities of air. Motor strength (BL) is the product of the total magnetic flux of the magnet assembly and the length of wire present in the field. The 6" high temperature voice coil assembly,

combined with a 12" ceramic magnet, gives a total BL of 41, which is unprecedented in contemporary transducer designs. This approach also gives considerable strength and stability to the cone/coil structure.

The TSW-124 operates over a frequency range from 37Hz to 300Hz, although it is actually usable down to 17Hz. It is designed to be used on the ground because of its specialised low frequency applications.

The TSW-124 is solidly built from 1" (25mm) birch plywood throughout for maximum rigidity and long-term durability. It is fitted with four recessed flush handles and there are four heavy duty wheels for ease of handling.

Connection to the unit is via a pair of Speakon connectors. A cosmetic reticulated foam grille is fitted to the front of the enclosure.

**Recommended complementary products:**  
**TFL-760H, TFL-760Ht, TFL-760Hs enclosures**  
**TSW-718, TSW-721 bass enclosures**  
**LMS-D6 loudspeaker management system**



### FEATURES

**Unique 24" LF driver**  
**High motor strength**

### APPLICATIONS

**Concert touring**  
**Fixed installations**

<b>DIMENSIONS (HxWxD)</b>	660mm x 1019mm x 1010mm (26" x 40.1" x 39.8")						
<b>NET WEIGHT</b>	125kg (275 lbs)						
<b>COMPONENTS</b>	1 x 24" LF driver on a TurboBass™ device						
<b>FREQUENCY RESPONSE<sup>1</sup></b>	37Hz - 300Hz ±3dB (useful to 17Hz)						
<b>PHASE RESPONSE</b>	Coherent over stated bandwidth						
<b>POWER HANDLING</b>	600 watts r.m.s., 1200 watts program, 1500 watts peak						
<b>SENSITIVITY<sup>2</sup></b>	100dB 1 watt @ 1 metre average						
<b>MAXIMUM SPL</b>	130dB continuous <sup>3</sup> , 136dB peak <sup>4</sup>						
<b>NOMINAL IMPEDANCE</b>	4 ohms						
<b>CONSTRUCTION</b>	25mm (1") birch plywood, rebated, screwed and glued. Finished in textured semi-matt TurboBlue™ paint <sup>5</sup>						
<b>GRILLE</b>	2" 30 PPI fully reticulated foam						
<b>CONNECTORS</b>	(2) Speakon NL4MP wired pin 1+: positive, pin 1-" negative						
<b>HARDWARE</b>	Four recessed handles, four heavy duty 4" swivel wheels fitted to back						
<b>SPARES AND ACCESSORIES</b>	<table border="0"> <tr> <td>LS-2403</td> <td>607mm (24") LF loudspeaker</td> </tr> <tr> <td>RC-2403</td> <td>Recone kit for LS-2403</td> </tr> <tr> <td>FG-124</td> <td>Replacement foam grille</td> </tr> </table>	LS-2403	607mm (24") LF loudspeaker	RC-2403	Recone kit for LS-2403	FG-124	Replacement foam grille
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FG-124	Replacement foam grille						

Notes

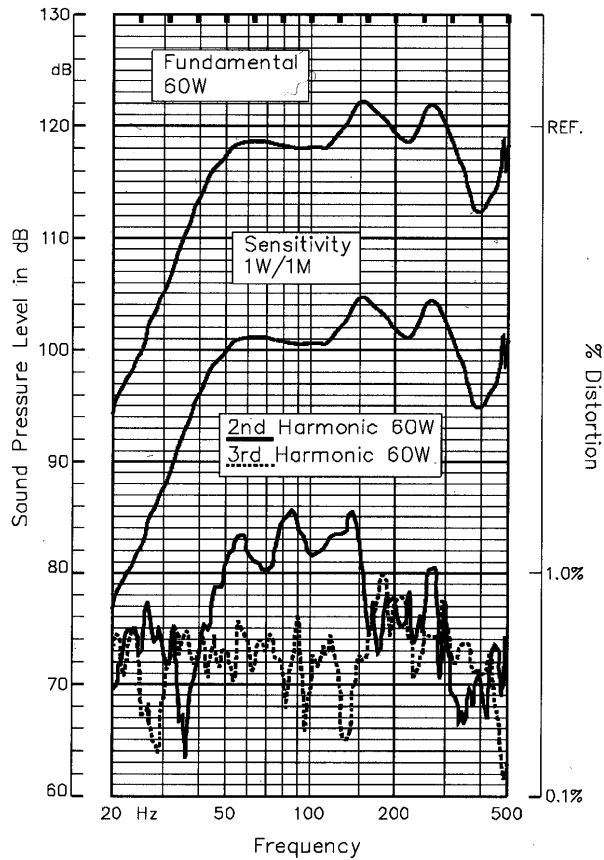
<sup>1</sup>Measured on axis, using swept sine-wave input, in a true half space environment.

<sup>2</sup>Average over stated bandwidth. Measured in a true half space environment (below 100Hz, verified with ground-plane measurement) at 5 Watts @ 3 metres, then scaled to represent 1 Watt @ 1 metre, using a swept sine-wave input.

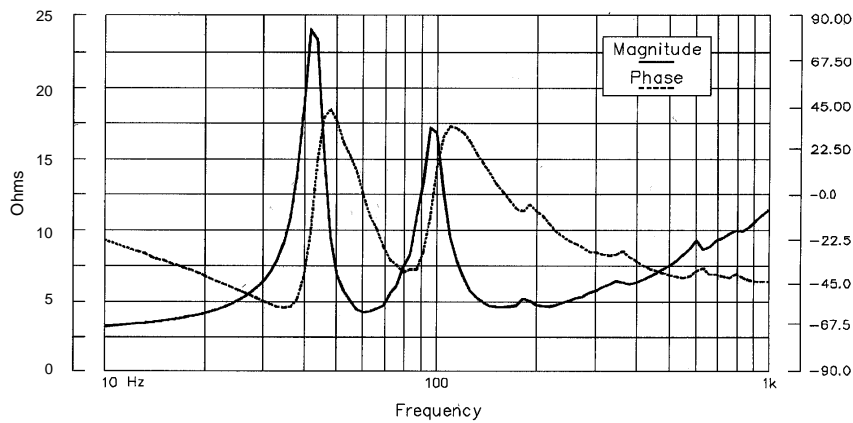
<sup>3</sup>Unweighted pink noise input, measured at 1 metre.

<sup>4</sup>Verified by subjective listening tests of familiar program material, before the onset of perceived signal degradation.

<sup>5</sup>Not included on installation version.



**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**

**ARCHITECTURAL  
& ENGINEER'S  
SPECIFICATIONS**

The loudspeaker system shall be of the subwoofer type, consisting of one 24" low frequency loudspeaker loaded with a patented TurboBass™ device. 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 37Hz - 300Hz, and useful to 17Hz. Nominal impedance shall be 4 ohms. Power handling shall be 600 watts r.m.s., 1200 watts program, 1500 watts peak. Sensitivity, measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth, shall be 100dB. Maximum SPL (peak), measured with music program input at stated amplifier power shall be 136dB. Dimensions: 660mmH x 1019mmW x 1010D (26" x 40.1" x 39.8"). Weight: 125 kg (275 lbs). The loudspeaker system shall be the Turbosound TSW-124. No other loudspeaker system shall be acceptable unless submitted data from an independent test laboratory verify that the above combined performance/size specifications are equalled or exceeded.

**DIMENSIONS**

