

ASPECT SERIES ENGINEERING INFORMATION

The Aspect series is a range of high performance modular loudspeaker enclosures designed for use across a wide spectrum of sound reinforcement activities, easily scaleable to specific acoustical and venue requirements ranging from large scale indoor or outdoor concerts to corporate events, theatre shows and nightclub applications.

The aim of any sound reinforcement system is to distribute sound evenly, with consistent frequency response and in a predictable way, across all seats of an auditorium or listening area. An optimum method of attaining this goal is through the correct application of point source arrays to create a segment of a spherical wavefront. Not only does this approach provide an exceptionally well defined and coherent acoustic source, but it also allows for considerable flexibility when assembling arrays in both horizontal and vertical dimensions.

In practice, the dispersion characteristics of a typical sound system are less than ideal because of the tendency for conventional high frequency exponential horns to 'beam' with increasing frequency. When arraying such horns, interference between adjacent sources is inevitable due to the variable curvature of the wavefront caused by the horn's geometry, and this results in undesirable comb filtering effects.

Turbosound engineers, through intensive research and the subsequent implementation of innovative and patented Polyhorn™ designs, have identified and overcome these deficiencies and implemented solutions in the Turbosound Aspect series. Fundamental to the Polyhorn™ designs—and applied in both high-mid and high frequency bands—is the principle of dividing an exponential horn flare into a multiplicity of tapered waveguides. A further requirement is that all path lengths from the diaphragm surface to horn mouth are identical, and consequently guarantees uniformity of phase of the wavefront

at the horn mouth. The Polyhorn™ design effectively locates the acoustic centre well behind the motor system, forming a virtual point source whose radius coincides with the array curvature without requiring an excessively deep enclosure.

The **TA-880LM** is a trapezoidal low-mid enclosure designed for ground stacked touring and fixed installation applications, matched to the complementary **TA-880HM** high-mid frequency enclosure. It houses two 10" low frequency elements covering the frequency range from 95Hz to 405Hz.

The drive units employ high stability, radial neodymium magnet structures in order to provide very high motor strength—and hence fast transient response—as well as exceptional thermal performance. This also results in a useful reduction in weight which aids transportation and handling.

The TA-880LM cabinet is constructed from 15mm (5/8") birch plywood and is trapezoidally shaped with side angles optimised at 12.5° to ensure that adjacent boxes are currently positioned relative to each other with the optimum horizontal array angle. A recessed panel on the rear carrying two linked Speakon NL8MP's is further set in to ensure that the cable connectors do not protrude beyond the rear of the box profile. A keeping strap attachment point and M10 rigging point are provided on a further recessed panel on the rear, situated just below the centre of gravity, for adjusting the vertical angle.

The TA-880LM is highly recommended for installing in venues such as theatres, concert halls and entertainment venues. The cost-effective flying system consists of removable steel swords which pass through slots in the top and bottom of the cabinet.



FEATURES

- Ultra low distortion
- Very high output
- Trapezoidal enclosure
- Seamless arrayability
- Removable rigging system

APPLICATIONS

- Stadia and arenas
- Ground stacked touring
- Regional concert touring
- Downfills
- Sidefills
- Theatre and Corporate
- Dance clubs

KEY FEATURES

- 10" low-mid drivers employ high stability, high temperature radial neodymium magnet structures which offer much higher efficiency, as well as reduced weight
- Revolutionary composite cone materials are used in all cone transducers, giving high strength to weight ratio
- Flying system consists of removable swords which enable quick and simple rigging for permanent installations

KEY SYSTEM BENEFITS

- Minimal destructive interference between adjacent enclosures, effectively giving seamless arrayability in both horizontal and vertical planes. All audience seats get essentially the same frequency response
- Intuitive 'point and shoot' characteristics make it very easy to adapt flown or ground stacked clusters to widely variable venue and audience requirements
- Very high power capability combined with high efficiency means that peak sound pressure levels of up to 146dB are easily achievable from one cabinet
- Greatly improved thermal performance from neodymium magnet structures reduces power compression to negligible levels and delivers more amplifier power into acoustic watts
- Ability to tailor the PA coverage according to extremely varied venue requirements; can achieve optimum coverage even in irregularly shaped rooms



DIMENSIONS (HxWxD)	566mm x 477mm x 463mm (22.3" x 18.8" x 18.2")						
NET WEIGHT	36kg (79.2 lbs)						
COMPONENTS	2 x custom 10" (254mm) LMF drivers						
FREQUENCY RESPONSE¹	95Hz - 405Hz ±4dB						
POWER HANDLING	500 watts r.m.s., 1000 watts program						
SENSITIVITY² (1W@1M)	108dB						
MAXIMUM SPL	140dB continuous ⁴ , 146dB peak ⁵						
CROSSOVER BANDS	101Hz - 405Hz						
NOMINAL IMPEDANCE	8 ohms						
CONSTRUCTION	15mm (5/8") birch plywood throughout; rebated, screwed and glued. Finished in black semi-matt textured paint (optional TurboBlue™). Two recessed carrying handles						
GRILLE	Foam/expanded metal						
CONNECTORS	Neutrik Speakon NL8 wired: pin 1+ LMF positive, pin 1- LMF negative; pin 2+ n/c, 2- n/c; pin 3+ n/c, pin 3- n/c, pin 4+ n/c, pin 4- n/c						
SPARES AND ACCESSORIES	<table border="0"> <tr> <td>MG-880LM</td> <td>Replacement cloth/expanded metal grille</td> </tr> <tr> <td>LS-1022</td> <td>10" (254mm) LMF loudspeaker</td> </tr> <tr> <td>RC-1022</td> <td>Recone kit for LS-1022</td> </tr> </table>	MG-880LM	Replacement cloth/expanded metal grille	LS-1022	10" (254mm) LMF loudspeaker	RC-1022	Recone kit for LS-1022
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Notes

¹Measured on axis

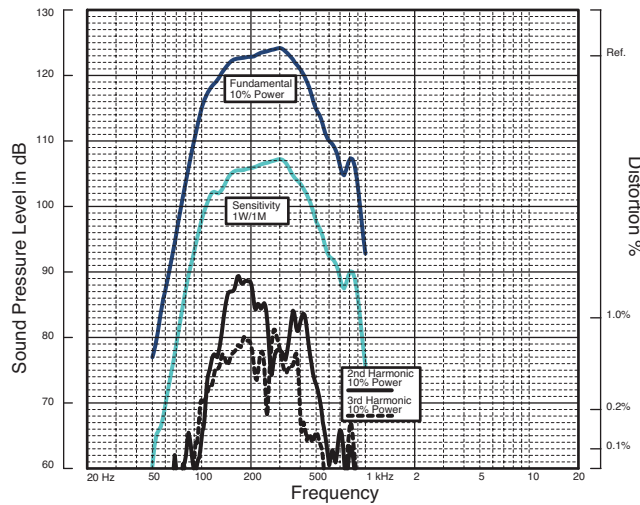
²Average over stated bandwidth

³Average over stated bandwidth

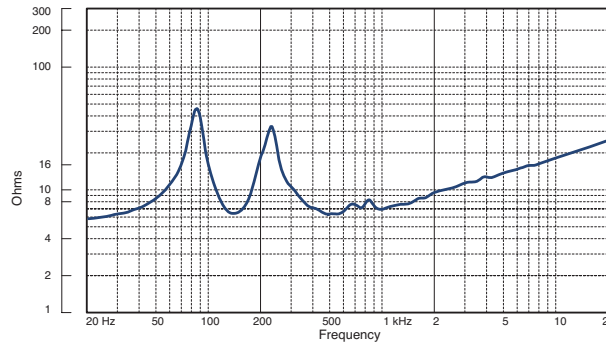
⁴Unweighted diode-clipped pink noise. Measured in a half space environment.

⁵Verified by subjective listening tests of familiar program material, before the onset of perceived signal degradation.

FREQUENCY RESPONSE



IMPEDANCE



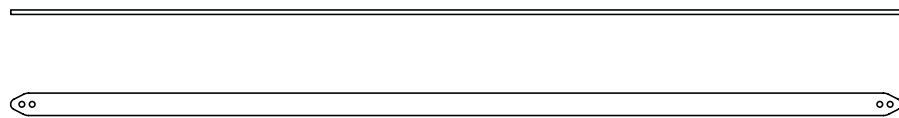
NOTES ON MEASUREMENT CONDITIONS

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.

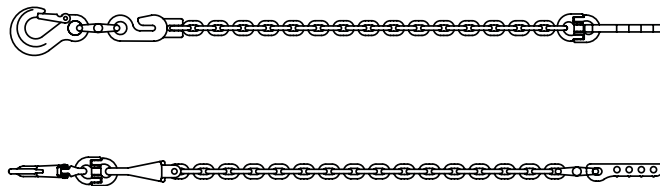
FLYING AND RIGGING

The TA-880LM is designed for both ground stacking and flown applications. The 880 rigging system is external to the box, thereby not penalising users who have no flying requirements. It consists of swords that pass through slots in the box, fastened with lynch pins inside the 'sword box' which is an integral part of the cabinet. The two holes at each end of the sword allow an incrementally greater distance between cabinets, and hence gives a choice of vertical angle at 8°, 11° or 15°. TA-880LM cabinets will most often be flown as a low-mid component of a trapezoidal TA-880H system.

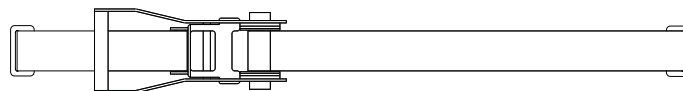
SW-880 FLYING SWORD



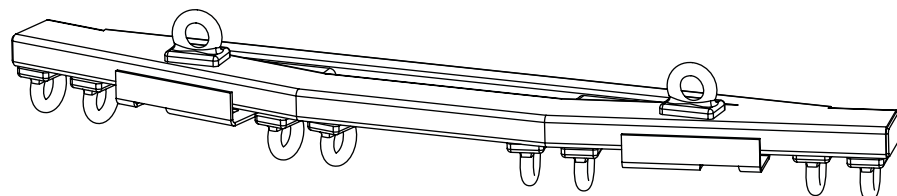
FC-880 FLYING CHAIN



TS-890 TILTING STRAP



FB-880 2/W TWO WIDE FLY BAR



**ARCHITECTURAL
& ENGINEER'S
SPECIFICATIONS**

The loudspeaker system shall be of the trapezoidal bi-amped type comprising: two low-mid frequency drivers loaded with patented TurboBass™ devices. Performance specifications of a typical production unit shall meet or exceed the following:- Frequency response, measured with a swept sine wave input shall be flat within $\pm 4\text{dB}$ from 95Hz to 405Hz. Nominal impedance shall be 8 ohms. Power handling shall be 500 watts r.m.s., 1000 watts program. Sensitivity measured with 1 watt input at 1 metre distance on axis, mean averaged over stated bandwidth shall be 108dB. Maximum SPL (peak), measured with music program shall be 146dB. The loudspeaker system shall be the Turbosound Aspect TA-880LM. No other system shall be acceptable unless the above combined performance specifications are equalled or exceeded. Flying and installation hardware shall be available comprising a range of load-certified components.

DIMENSIONS

