datasheet

TFL-760H

FLOODLIGHT® SERIES ENGINEERING INFORMATION

The TFL-760H 3-way medium dispersion mid/high loudspeaker enclosure achieves outstanding transient ability over twice the nominal horizontal coverage angle of a Flashlight® enclosure, thus giving rise to its name: Floodlight®.

The use of specialised cone-type transducers, in combination with unique Axehead™ technology, results in high efficiency, accuracy, very low levels of distortion, even dispersion and exceptional intelligibility, enabling it to be considered for a multitude of near and mid field applications. Floodlight is therefore available in various housings and flying configurations to meet the specific requirements of a large range of applications.

The TFL-760H is the fully equipped touring version featuring an access door with integral multi-way speaker cable, heavy duty wheels, flush handles, birch plywood construction and optimised truck-pack dimensions. The dimensions and positions of the keyhole fly plates allow use of the highly advanced and well proven Flashlight flying system. All of these features combine to give a system unsurpassed in simplicity, ease and speed of handling, and long term durability.

The loudspeaker complement of the cabinet consists of a very powerful low/mid 12" cone loudspeaker which, combined with the Axehead™ waveguide, handles frequencies between 180Hz and 1.3kHz. The high/mid band between 1.3kHz and 8kHz is covered by a similar combination based on a specialised 6.5" loudspeaker. The remaining high frequency band, 8kHz to in excess of 20kHz, is handled by a 1" VHF compression driver. Perfect time alignment is achieved by the careful positioning of these three components and their wave guides within the enclosure.

The TFL-760H can also be used to augment Flashlight systems where venue dimensions dictate wider coverage and shorter throw.

Recommended complementary products:
TSW-118, TSW-718, TSW-721 bass enclosures
TSW-124 subwoofer enclosure
LMS-D6 loudspeaker management system

FEATURES

- Compact touring enclosure
- Ultra-low distortion
- Physically time-aligned
- Even dispersion control
- Superior transient response

APPLICATIONS

- Touring sound reinforcement
- Nightclub / discotheque
- Corporate presentation
- Theatre
- Side fills

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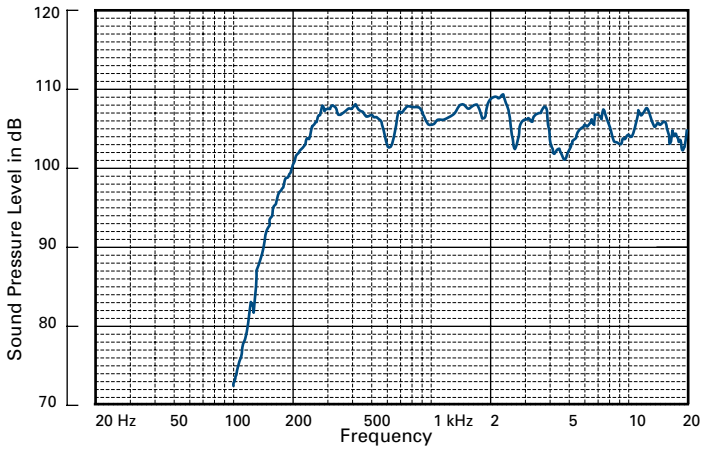
DIMENSIONS (HxWxD)	825mm x 574mm x 510mm (32.5” x 22.6” x 20.1”)
NET WEIGHT	60 kg (132 lbs)
COMPONENTS	1 x 12” (305mm) LMF driver, 1 x 6.5" (165mm) HMF driver, 1 x 1” (25mm) HF compression driver
FREQUENCY RESPONSE[1]	180Hz – 20kHz ±4dB
NOMINAL DISPERSION[2]	50°H x 25°V @ -6dB points
POWER HANDLING	LMF: 250 watts r.m.s., 500 watts program, 625 watts peak HMF: 100 watts r.m.s., 200 watts program, 250 watts peak HF: 50 watts r.m.s., 100 watts program, 125 watts peak Recommended amplifier power: LMF: 500 watts @ 8 ohms; HMF: 200 watts @ 16 ohms; HF: 100 watts @ 16 ohms
SENSITIVITY[3]	LMF: 105dB 1 watt @ 1metre; HMF: 108dB 1 watt @ 1metre; HF: 107dB 1 watt @ 1metre
MAXIMUM SPL	133dB continuous[4], 139dB peak[5]
CROSSOVER	Recommended crossover points at 1k3Hz and 8kHz, 24dB/octave Linkwitz-Riley
NOMINAL IMPEDANCE	LMF: 8 ohms HMF: 16 ohms HF: 16 ohms
CONSTRUCTION	18mm (3/4”) birch plywood throughout; rebated, screwed and glued. Finished in TurboBlue™ semi-matt textured paint. Eight recessed carrying handles. Four heavy duty wheels
GRILLE	Cloth/expanded steel mesh
CONNECTORS	(2) 6-pin EP6 wired; pin1 LMF-; pin2 LMF+; pin3 HMF-; pin4 HMF+; pin5 HF-; pin6 HF+
OPTIONS	Flying System: refer to the “Flying and Lifting” section
SPARES AND ACCESSORIES	LS-1209 12” (305mm) LMF loudspeaker LS-6503 6.5” (165mm) HMF loudspeaker CD-103 1” (25mm) HF compression driver RC-1209 Recone kit for LS-1209 RC-6503 Recone kit for LS-6503 RD-103 Replacement diaphragm for CD-103 MG-780 Replacement cloth/expanded metal grille PX-760 Internal HF protection filter

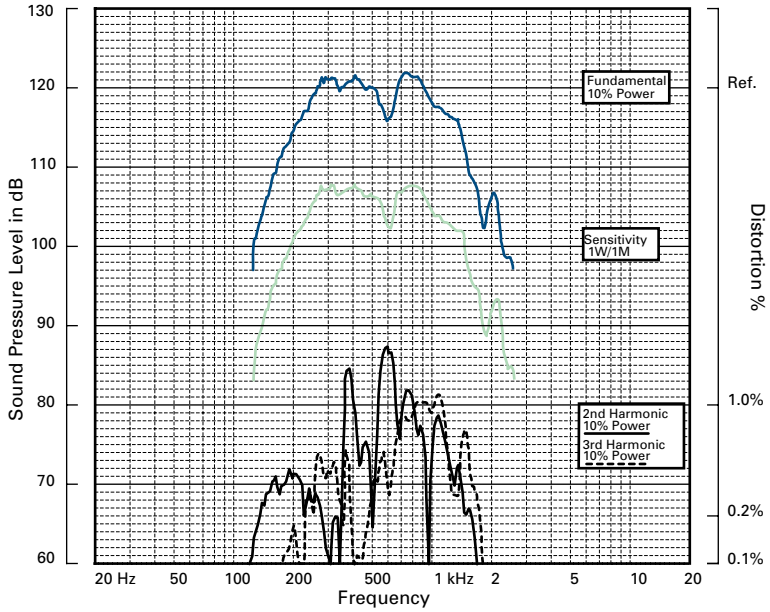
Notes

[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

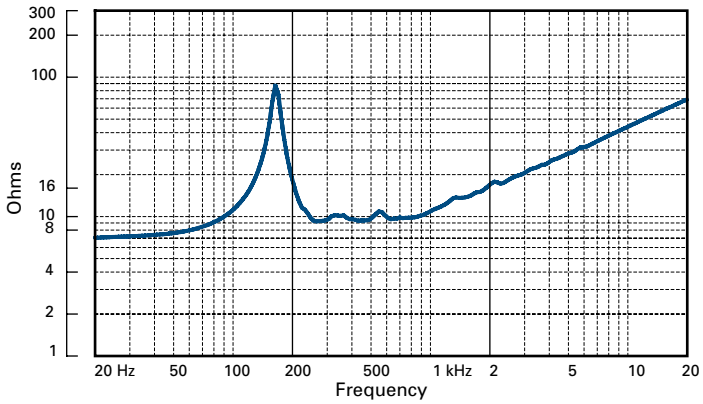
SYSTEM FREQUENCY RESPONSE



LOW-MID FREQUENCY RESPONSE



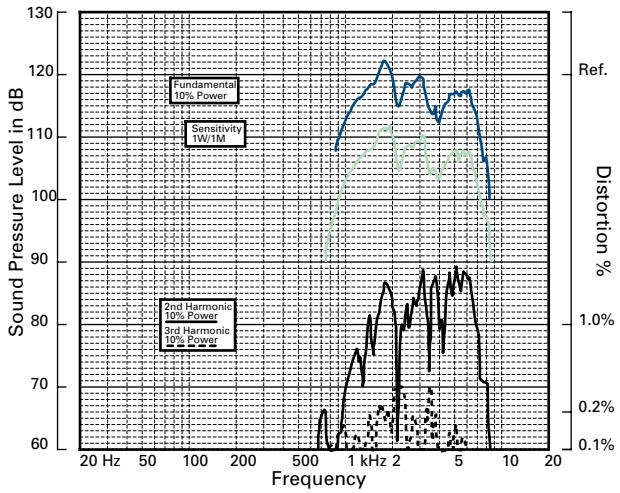
LOW-MID IMPEDANCE



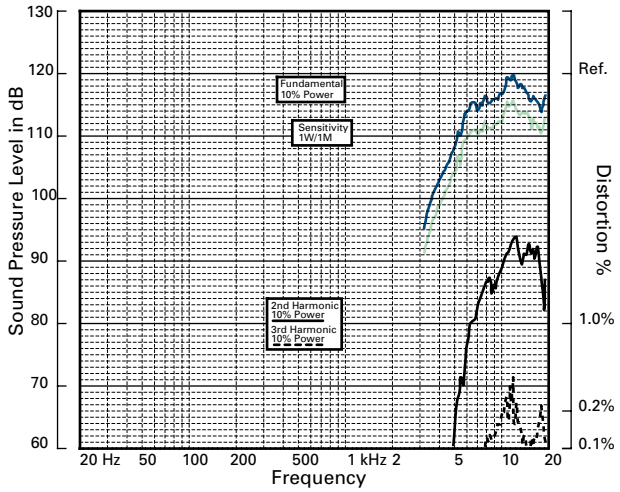
NOTES ON MEASUREMENT CONDITIONS

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.

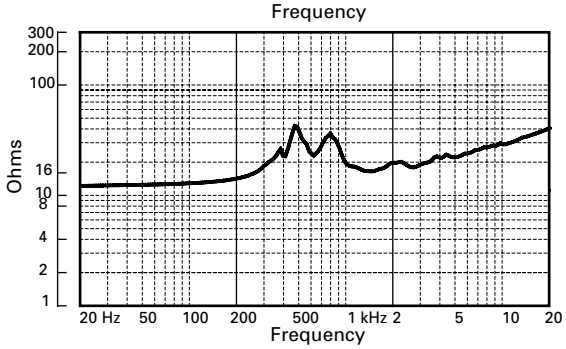
HIGH-MID FREQUENCY RESPONSE



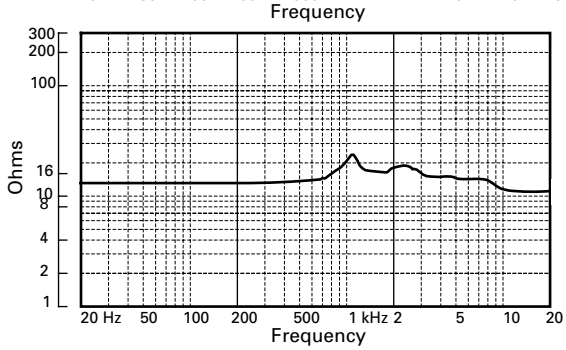
HF FREQUENCY RESPONSE



HIGH-MID IMPEDANCE



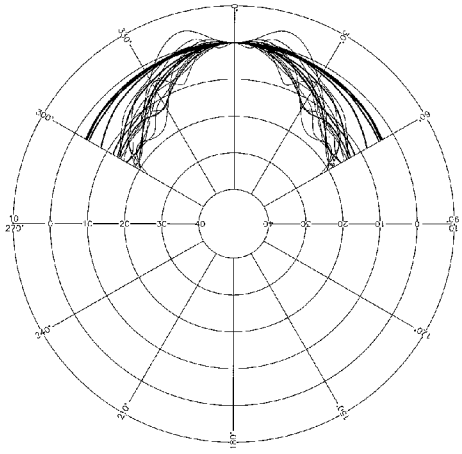
HF IMPEDANCE



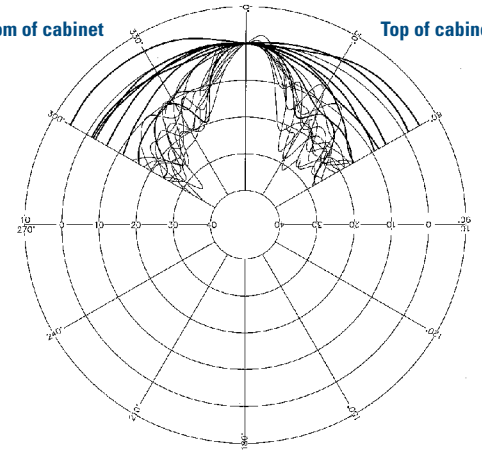
NOTES ON MEASUREMENT CONDITIONS

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.

COMPOSITE POLARS

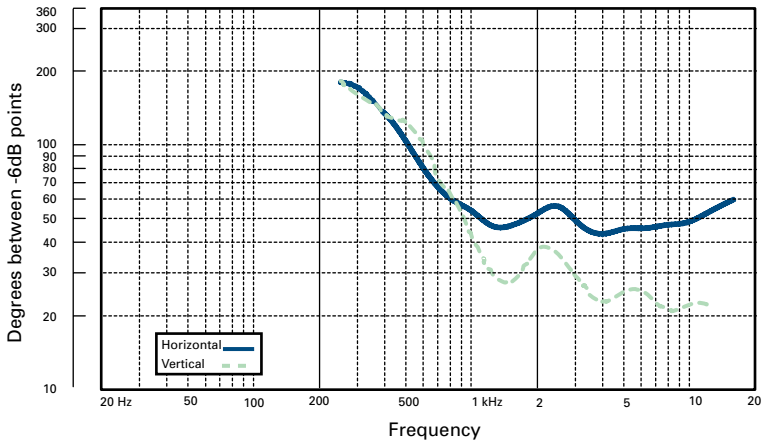


Bottom of cabinet



Top of cabinet

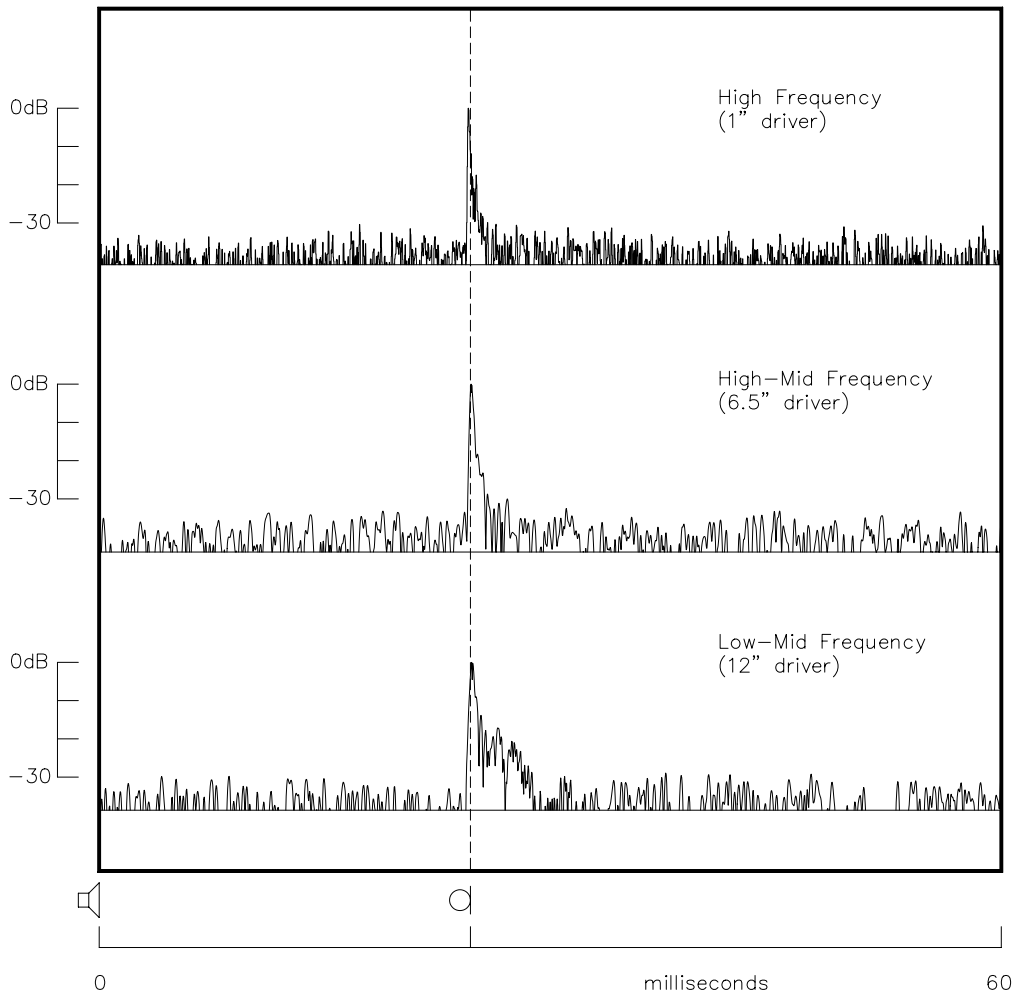
BEAMWIDTH



NOTES ON MEASUREMENT CONDITIONS

All the polar measurements were taken using calibrated MLSSA test equipment, with a microphone placed at a distance of 9 metres from the rotational axis of the loudspeaker enclosure under test. This method reduces the effect that the interaction between the MF and the HF has on the measurements.
For clarity, the polar information is displayed with progressively thinner lines from 250Hz to 15kHz in third octave steps. The beamwidth plots were computed from the third octave polars. The enclosures were measured in a half space environment. All graphs are digitally generated using the APEX custom software system, designed to translate data derived from Audio Precision 'System One' test equipment into AudoCAD™. This program enables graphical information to be plotted to a high degree of accuracy.

TIME DOMAIN



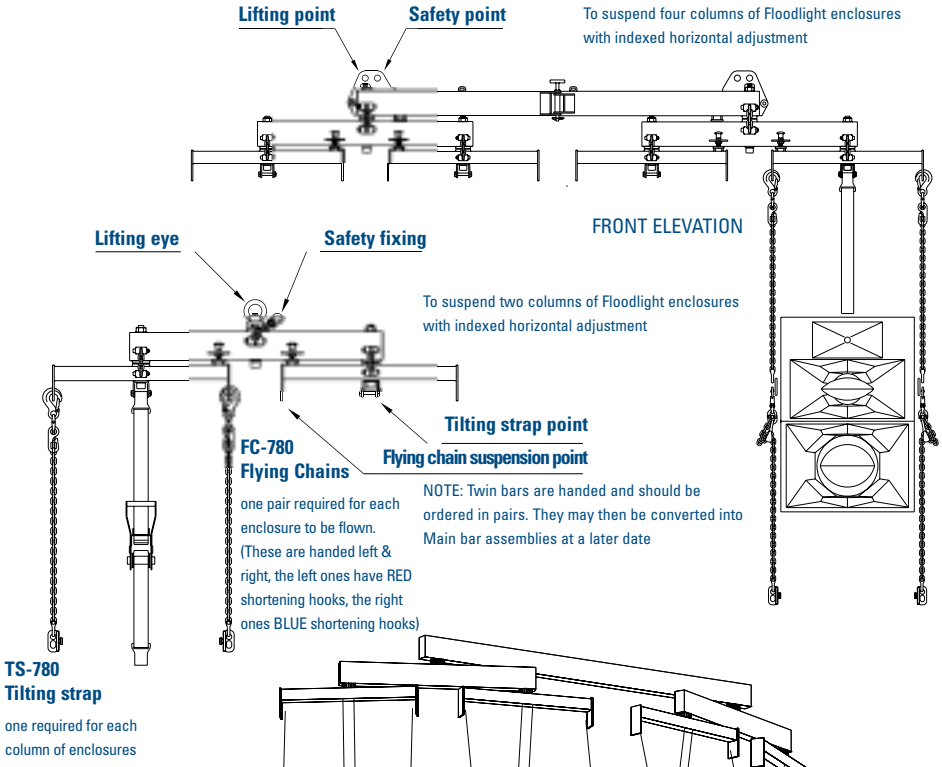
Time Domain information has been included because Turbosound have always regarded transient response as a crucial factor in the general perception of sound quality; particularly intelligibility. Transient response (rise/decay time) is an indication of a loudspeakers ability to follow a given input signal accurately. The human ear is capable of discerning minute increments of time, which means that a loudspeaker with poor transient ability will sound dull and certainly less intelligible. Since Turbosound's inception, transducer designs have always been based around high efficiency and excellent transient response, as can be seen on the Energy/Time (ETC) graphs above. The research and creation of Flashlight and Floodlight Systems exploits the speed of the response times to an extreme level. To maintain this level of accuracy, it is obvious that, not only should the components be good in themselves, but that the various components covering the different frequency bands must also be critically time-aligned with respect to each other. All transducers in the TFL-760H are physically time-aligned with each other.

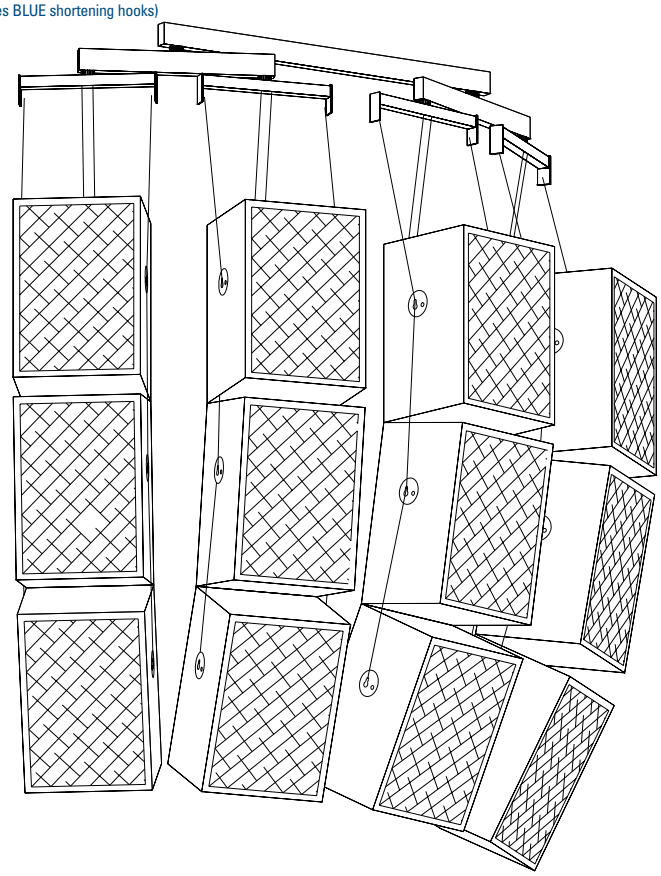
NOTES ON MEASUREMENT CONDITIONS

Time Domain measurements were taken using the MLSSA system in a half space environment. 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.

INSTALLATION HARDWARE

The TFL-760H professional touring cabinet utilises the same flying system as Flashlight. This purpose-designed system allows a wide range of adjustment to the horizontal and vertical angles between adjacent enclosures. The overall vertical inclination of each vertical column is also adjustable. Horizontal adjustment is in 5° increments from 5° to 30° by a swivel locked with a detent pin. Available vertical adjustment is between 5° and 25° using the shortening hooks fitted to the hanging chains.





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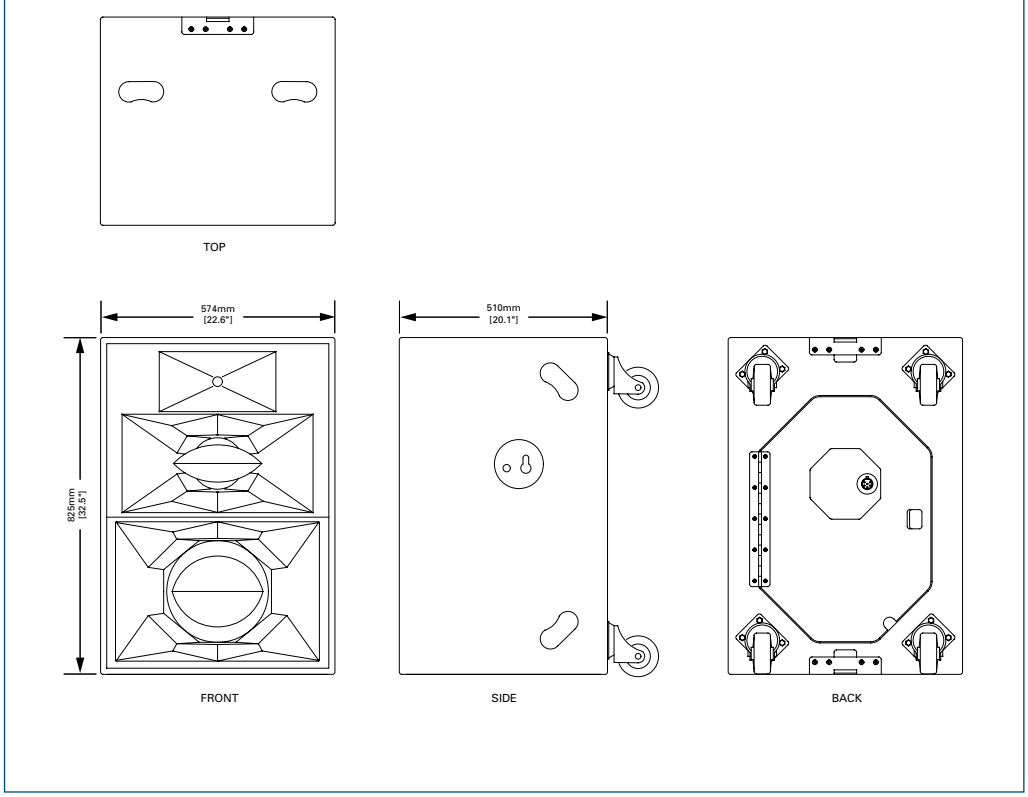
TFL-760H

FLOODLIGHT® SERIES ENGINEERING INFORMATION

ARCHITECTURAL & ENGINEER'S SPECIFICATIONS

The loudspeaker system shall be of the tri-amped, three way active type consisting of one 305mm (12") low-mid frequency loudspeaker loaded with an Axehead™ device, one 6.5" (165mm) high-mid frequency loudspeaker loaded with an Axehead™ device, and one 1" (25mm) high frequency compression driver. 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 ±4dB from 180Hz - 20kHz. Nominal dispersion, at -6dB points, shall average 50°H x 25°V. Nominal impedance shall be low-mid: 8 ohms, high-mid: 16 ohms, high: 16 ohms. Power handling shall be low-mid: 250 watts r.m.s., 500 watts program, 625 watts peak; high-mid: 100 watts r.m.s., 200 watts program, 250 watts peak; high: 50 watts r.m.s., 100 watts program, 125 watts peak. Average enclosure 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 input at stated amplifier power, shall be 139dB. Dimensions: 825mmH x 574mmW x 510mmD (32.5" H x 22.6" W x 20.1" D). Weight: 60kg (132 lbs). The loudspeaker system shall be the Turbosound TFL-760H. 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. A complete flying and arraying hardware system shall be available, comprising a range of load-certified components. The system shall be modular and have the facility of installing a single enclosure up to a 360° point-source array.

DIMENSIONS



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