

TFM SERIES ENGINEERING INFORMATION

The TFM-330 is a high specification professional bi-amped floor monitor for use in a wide variety of demanding monitoring applications.

It incorporates a custom designed 4" voice coil 15" low frequency driver and a high power 2" high frequency compression driver on a custom waveguide in a compact vented enclosure.

The TFM-330's small footprint results in a highly efficient wedge monitor package, ideal for use wherever high SPL and exceptional intelligibility is required. A low box profile is maintained, thereby improving sightlines, by mounting the HF horn alongside, rather than on top of, the low frequency driver. The HF horn pattern is 40° horizontal by 60° vertical, and is designed to give very even coverage both close to, and standing back from, the monitor while at the same time minimising sound spillage into adjacent microphones. As a result the TFM-330 offers impressive feedback rejection, developing high sound pressure levels without the need for excessive equalisation.

The TFM-330 responds dynamically to bass instruments and kick drum, combining the

deep low frequency response of a larger 2 x 15" monitor with the transient attack, presence and speed typically found in monitors using 12" LF drivers.

The TFM-330 has been designed as a symmetrical mirror-image monitor, allowing multiple units to be used on larger stages with one monitor inverted to form left and right pairs.

The cabinet is constructed from 3/4" (18mm) birch plywood, and is finished in TurboBlue™ semi-matt textured paint. Two EP6 connectors are concealed in a recessed panel at the rear of the cabinet for tidy cabling and protection. Side mounted flush handles are provided for easy lifting and handling. A grey powder coated perforated steel mesh grille protects the drive units from damage.

The TFM-330 can be used together with the LMS-D6 or LMS-660 loudspeaker management systems, which offer steep slope fixed crossovers and true r.m.s. output limiting functions.

Recommended complementary products:

LMS-D6, LMS-660 loudspeaker management systems



FEATURES

- Symmetrical mirror image enclosure
- High specification components
- Controlled dispersion

APPLICATIONS

- High power vocal monitoring
- Drum fills

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|---------------------------------------|---|
| DIMENSIONS (HxWxD) | 368mm x 663mm x 485mm (14.5" x 26.1" x 19.1") |
| NET WEIGHT | 39.5 kg (86.9 lbs) |
| COMPONENTS | 1 x custom 15" (381mm) LF driver, 1 x 2" (50mm) HF driver on a custom flare |
| FREQUENCY RESPONSE¹ | 60Hz - 16kHz ±4dB |
| NOMINAL DISPERSION² | 40°H x 60°V @-6db points |
| POWER HANDLING | LF: 400 watts r.m.s., 800 watts program, 1000 watts peak HF: 100 watts r.m.s., 200 watts program, 250 watts peak Recommended amplifiers: LF: 800 watts @ 8 ohms; HF: 200 watts @ 8 ohms |
| SENSITIVITY³ | 103dB, 1 watt @ 1 metre |
| MAXIMUM SPL | 130dB continuous ⁴ , 136dB peak ⁵ |
| CROSSOVER | Active only: Recommended point 1k3Hz, 24dB/octave slope, Linkwitz-Riley |
| NOMINAL IMPEDANCE | LF: 8 ohms; HF: 8 ohms |
| CONSTRUCTION | 18mm (3/4") birch plywood throughout; rebated, screwed and glued. Finished in TurboBlue™ semi-matt textured paint. Two recessed carrying handles |
| GRILLE | Grey powder coated perforated steel |
| CONNECTORS | EP6 wired pin1: LF negative, pin2: LF positive, pin3: MF/HF negative, pin4: MF/HF positive |
| SPARES AND ACCESSORIES | LS-1513 381mm (15") LF loudspeaker RC-1513 Recone kit for LS-1513 CD-204 50mm (2") HF compression driver RD-204 Replacement diaphragm for CD-204 MG-330 Replacement perforated metal grille |

All measurements are actual figures taken from real-time testing using stated inputs, free from any filtering or weighting. Therefore actual figures may significantly exceed that of other manufacturers with higher published weighted ratings.

Notes

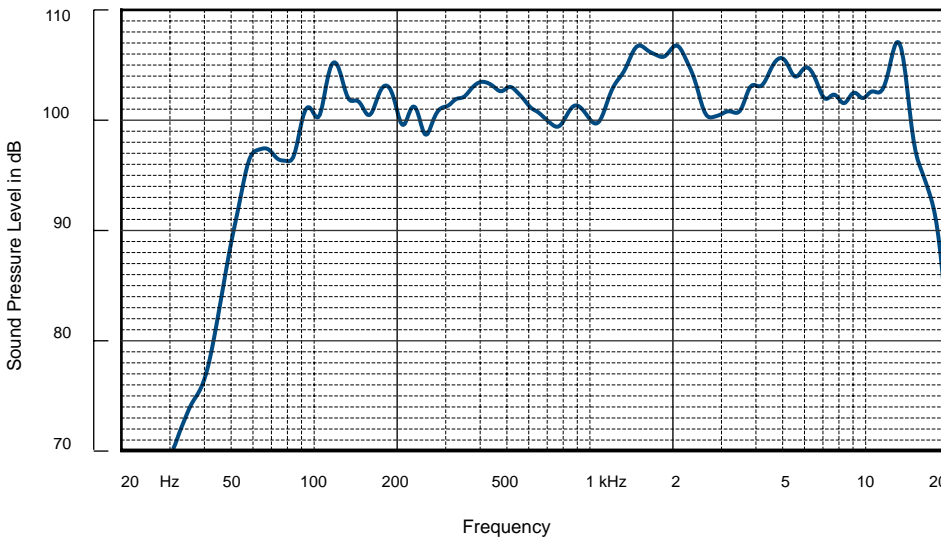
¹Measured on axis

²Average over stated bandwidth

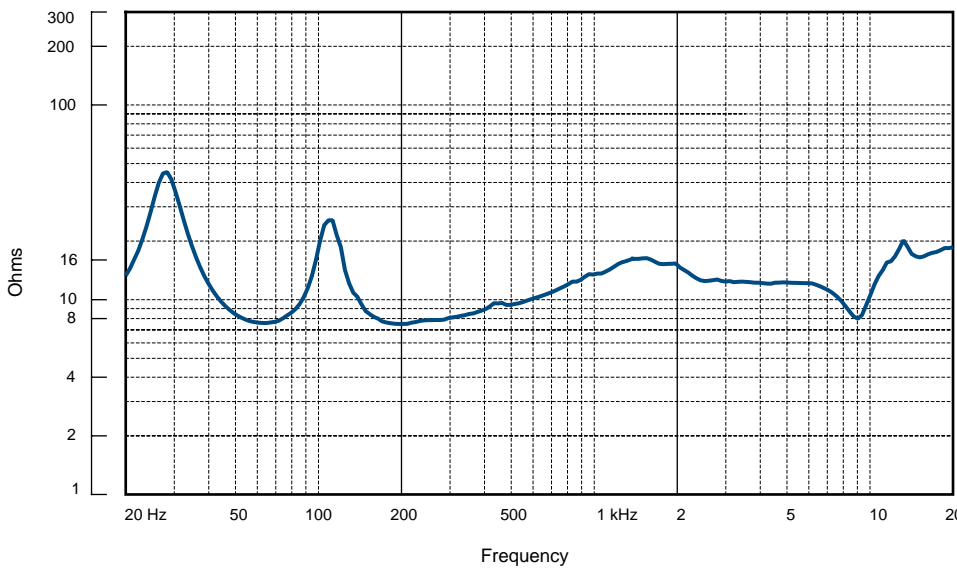
³Average over stated bandwidth

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

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 shall be of the bi-amped, two-way type consisting of one 381mm (15") low-frequency loudspeaker and one 50mm (2") high frequency compression 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 $\pm 4\text{dB}$ from 60Hz – 16kHz. Dispersion at -6dB points shall average 40° x 60°. Nominal impedance shall be LF: 8 ohms, HF: 8 ohms. Power handling shall be LF: 400 watts rms, 800 watts program, 1000 watts peak; HF: 100 watts r.m.s., 200 watts program, 250 watts peak. Sensitivity measured with 1 watt input at 1 metre distance on-axis, mean averaged over stated bandwidth, shall be 103dB. Maximum SPL (peak), measured with music program at stated amplifier power, shall be 136dB. Dimensions: 368mmH x 663Wmm x 485mmD (14.5" x 26.1" x 19.1") Weight: 39.5 kg (86.9lbs) The loudspeaker shall be the Turbosound TFM-330. 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.

DIMENSIONS

