**DESCRIPTION**

The Altec Lansing MR42 is a mid/high-frequency horn with excellent directivity control over the full frequency range from 800 Hz to 16 kHz.

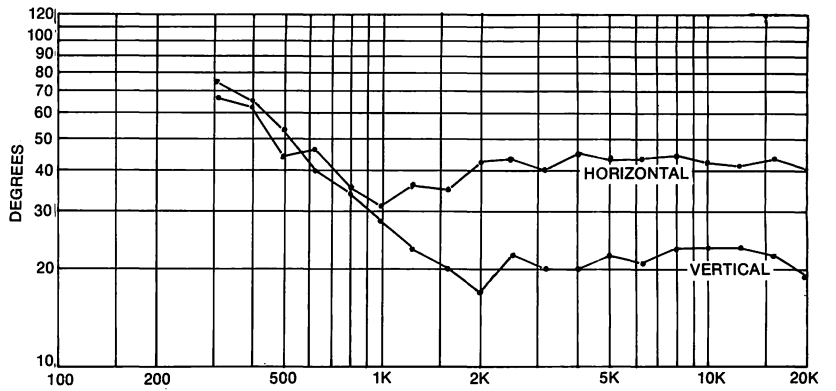
The result of a three-year research project by Altec Lansing, the MR42 is a radical departure from previous horn designs. The geometry of the MR42 eliminates the problem of high-frequency beaming and maintains uniform dispersion at all frequencies within the rated frequency band. This means that listeners sitting off-axis of a MANTARAY horn will hear the same sound quality as listeners sitting on-axis.

This can be seen graphically in the MR42's test results. Polar patterns look virtually identical at 800 Hz, 4 kHz, 16 kHz and all frequencies between. Frequency response curves show similar uniformity in the on and off-axis curves.

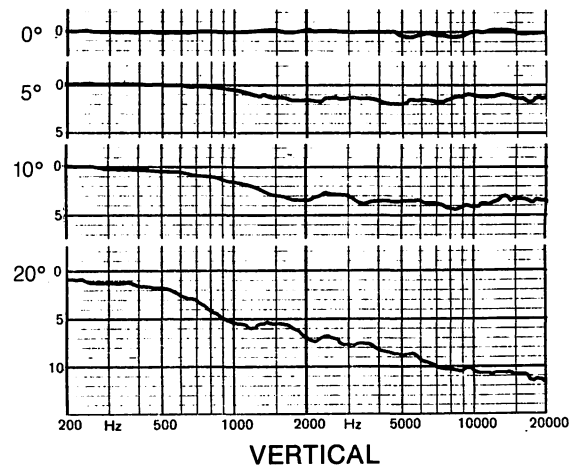
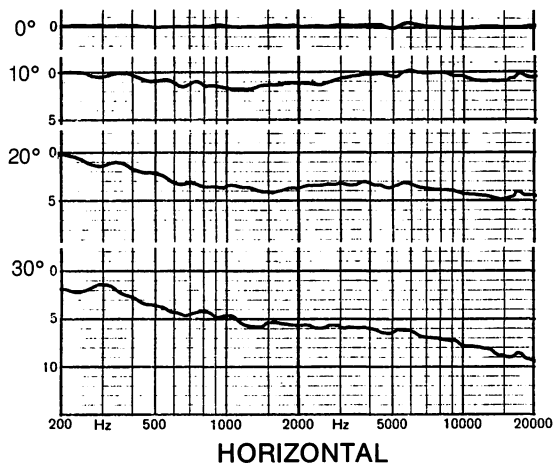
The MR42 comes with a cast-metal throat assembly for mating with Altec Lansing 288, 290 and 291 series 1.4-inch-throat compression drivers. The MANTARAY horn is constructed of heavy-duty sheet metal coated with a sound-deadening compound to minimize resonance. This construction technique results in a horn design that is surprisingly light weight yet extremely rugged and non-resonant. The MR42's coated sheet metal is actually lighter than fiberglass yet the MR42's strength and durability compares favorably with cast metal.

Note: For a detailed discussion of the design of the MANTARAY horns, see AES preprint number 1288 (0-2) presented at the 58th AES Convention in Nov. 77 in New York.

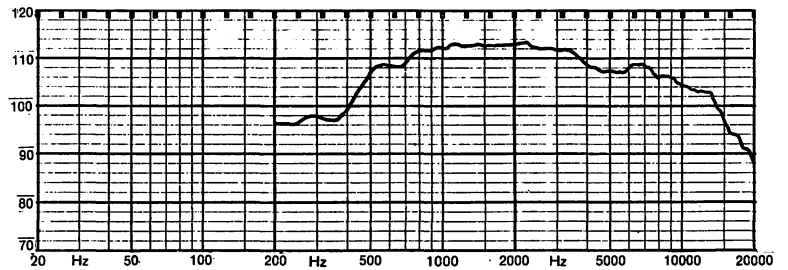
1. Dispersion Angle vs Frequency
 This graph displays the MR42's excellent horizontal and vertical directivity control. Note the uniformity above 800 Hz.



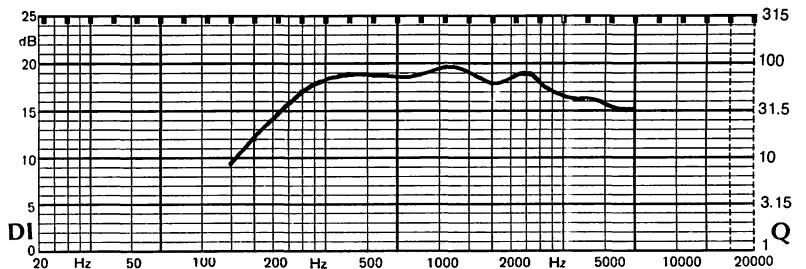
2. Off-Axis Horizontal and Vertical Frequency Response
 On-axis response has been equalized in this graph to illustrate the uniformity of the on and off-axis response curves.

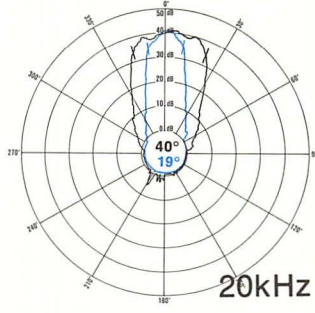
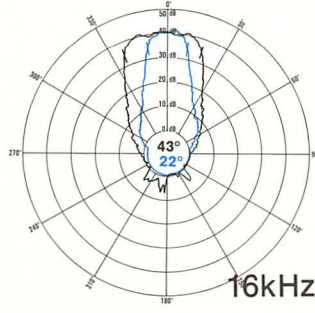
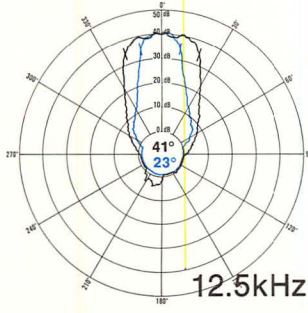
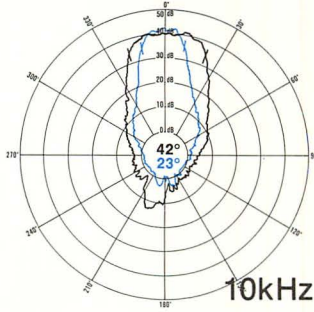
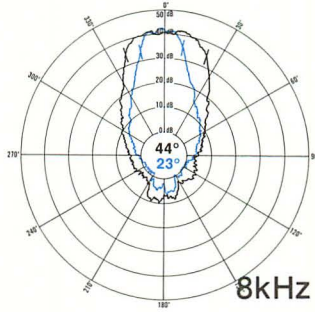
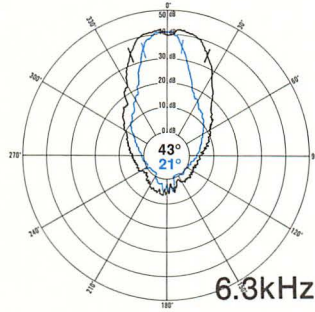
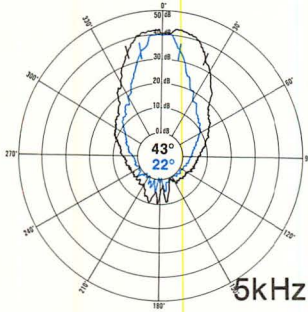
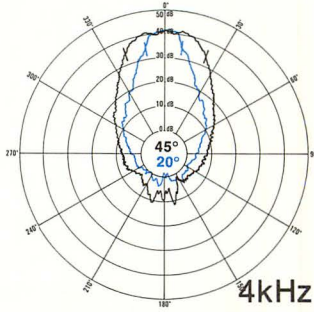
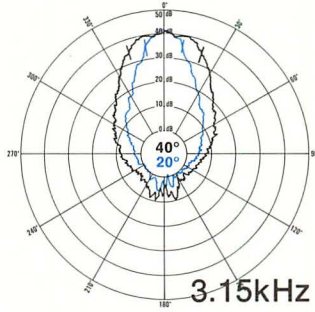
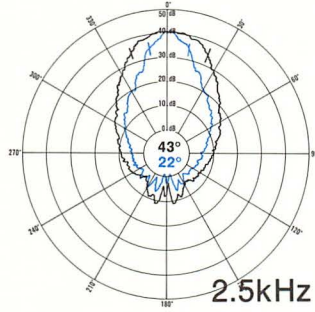
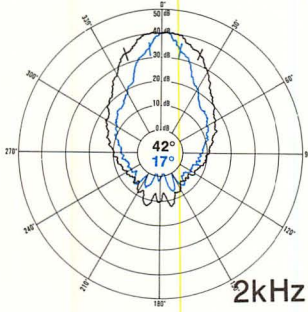
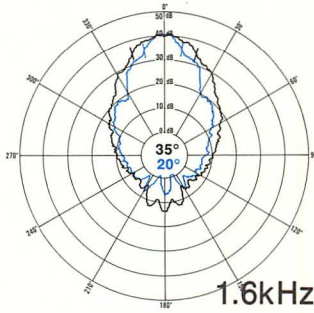
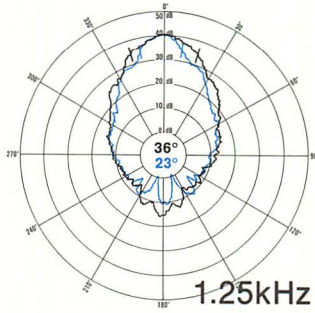
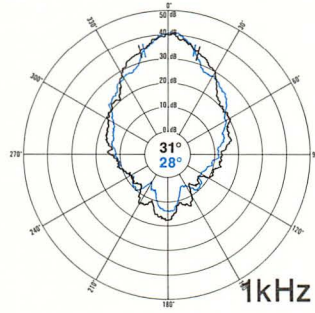
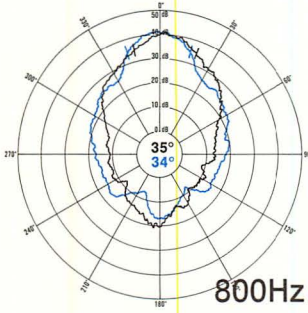
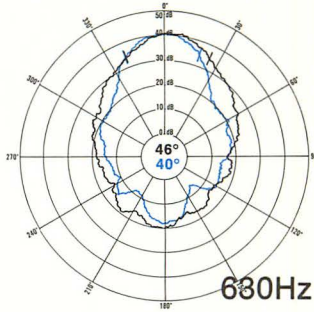
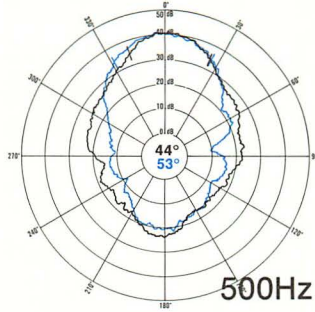
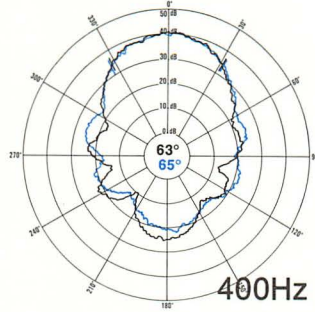
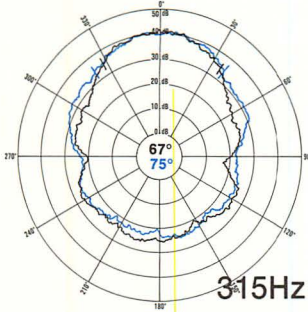


3. Unequalized Frequency Response (Measured with an Altec Lansing 288-16G Compression Driver)
 The response curves exhibited here are very similar to the actual power response of the 288-16G driver measured on a plane wave tube because of the dispersion uniformity of the MR42.



4. Q and DI vs Frequency (DI = 10 Log Q)





HORIZONTAL

VERTICAL

5. Polar Response Charts (using 1/3 octave bands of pink noise).

SPECIFICATIONS

Horizontal Dispersion Angle: 40° (+5°, -9°) from 800 Hz to 16 kHz

Vertical Dispersion Angle: 20° (+14°, -3°) from 800 Hz to 16 kHz
20° ±3 from 1200 Hz to 16 kHz

Polar Pattern: See Figure No. 5

Directivity Factor Q (R_θ): See Figure No. 4

Directivity Index DI: See Figure No. 4

Recommended Minimum Crossover Frequency: 800 Hz

Construction: Damping compound-coated sheet metal with cast metal throat assembly

Dimensions: 24" H x 34" W x 60" D

Throat: Will accept 1.4-inch-throat-diameter drivers.

Pressure Sensitivity: Measured on axis 10 feet from the horn mouth with one watt (EX I) of pink noise, band limited as indicated below and calculated to four foot equivalent by inverse square law.

Driver	1 watt, 4' Rating dB SPL	
	800 Hz-16 kHz	500 Hz-2.5 kHz
288-8G	114	116
290-8G	112	114
291-16B	113	115

Weight: 52 pounds (with throat)

Accessories: (Optional) Altec Lansing 21216 throat adapter

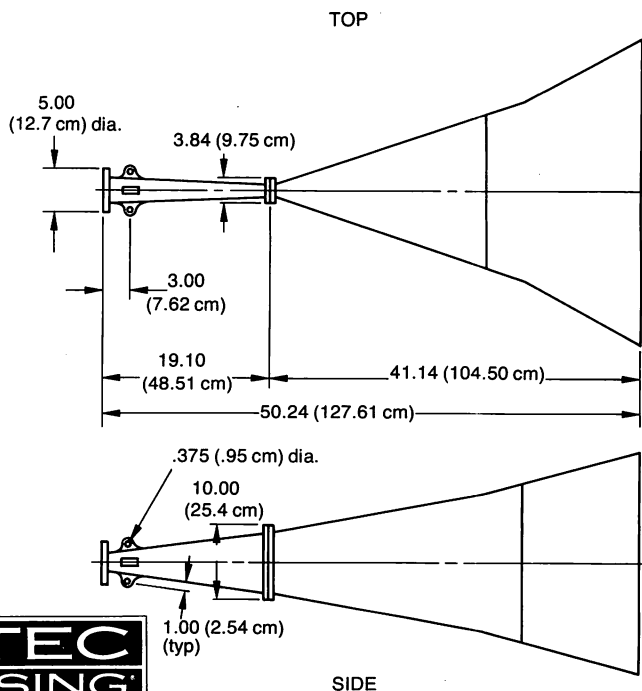
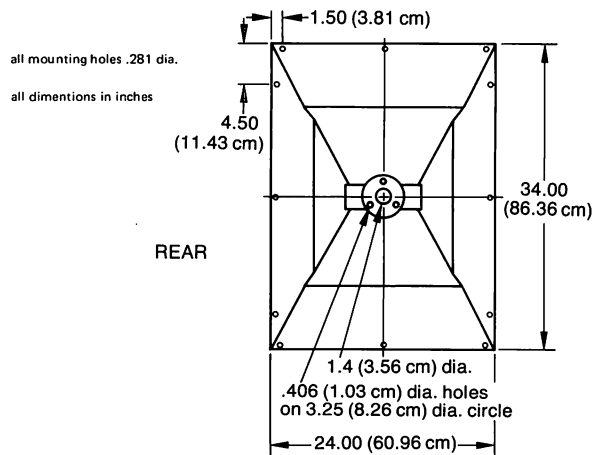
Altec Lansing 30546 waterproof 45° angle adapter

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The loudspeaker shall be a directivity-control mid/high-frequency horn. It shall be constructed of heavy-duty sheet metal treated with a sound-deadening material to ensure freedom from resonance. A cast-metal throat with a 1.4-inch driver throat opening shall be supplied with each horn. The horn shall meet the following performance criteria. Horizontal dispersion angle, 40° (+5°, -9°) from 800 Hz to 16 kHz. Vertical dispersion angle, 20° (±3°) from 1200 Hz to

16 kHz. Recommended crossover frequency, 800 Hz. Pressure sensitivity, 114 db SPL at 4' on axis with 1 watt (EXI) input of band-limited pink noise from 800 Hz to 16 kHz applied to an attached model 288-8G Altec Lansing compression driver. The horn shall be 24" H x 34" W x 60" D and shall weigh 52 pounds.

The loudspeaker shall be the Altec Lansing Model MR42.



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