

MR64B
HORN

DESCRIPTION

The Altec Lansing MR64B 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 MR64B is a radical departure from previous horn designs. The geometry of the MR64B 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 MR64B'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 MR64B requires a Model 34654 single throat assembly for mating with Altec Lansing 1.4-inch throat compression drivers. The MANTARAY horn is constructed of heavy-duty, weather resistant polyester-fiberglass. This construction technique results in a horn design that is surprisingly light weight, yet extremely rugged and non-resonant.

SPECIFICATIONS

Horizontal Dispersion Angle: 60° (+6°, -10°)
from 800 Hz to 16 kHz

Vertical Dispersion Angle: 40° (+7°, -1°)
from 800 Hz to 16 kHz

Polar Pattern: See Figure No. 6

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

Directivity Index DI: See Figure No. 4

Recommended Crossover Frequency for Optimum Directivity Control: 800 Hz

Usable Low-Frequency Limit: 500 Hz 288-L, 291-L, 299-A, 906-A
500 Hz 290-L

Construction: Weather resistant polyester/fiberglass

Dimensions: 26" H × 30" W × 22" D
without throat, 28¼" D with 34654 throat

Throat: Model 34654 Throat for single 1.4 inch throat driver

Pressure Sensitivity: Measured on axis 10 feet from the horn with one watt (E²/Z_{min}) of pink noise, band-limited as indicated below and calculated to four foot equivalent by inverse square law

dB-SPL for 500 Hz-2.5 kHz band-limited pink noise.

Driver	Power Level	1 Meter	4 Feet
288	1 watt	114	112
	20 watts	127	125
290	1 watt	112	110
	120 watts	132	130
291	1 watt	113	111
	50 watts	129	127
299	1 watt	114	112
	50 watts	130	128
906	1 watt	114	112
	40 watts	129	127

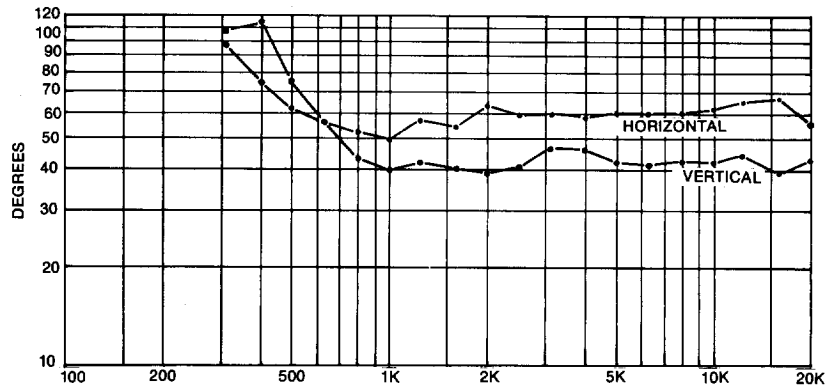
Weight: MR64B horn 22 lbs. (10.0 kg)
34654 throat 3 lbs. (1.4 kg)

Ordering Information for MR64B:

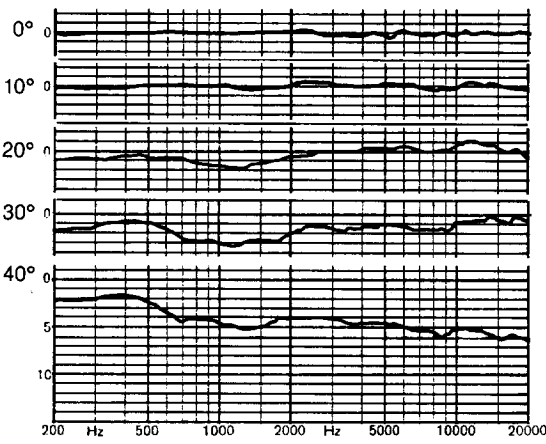
Throat: Altec Lansing 34654 throat (one throat must be ordered for each horn)

Accessories: (optional) Altec Lansing 21216 throat adapter
Altec Lansing 30546 waterproof 45° angle adapter

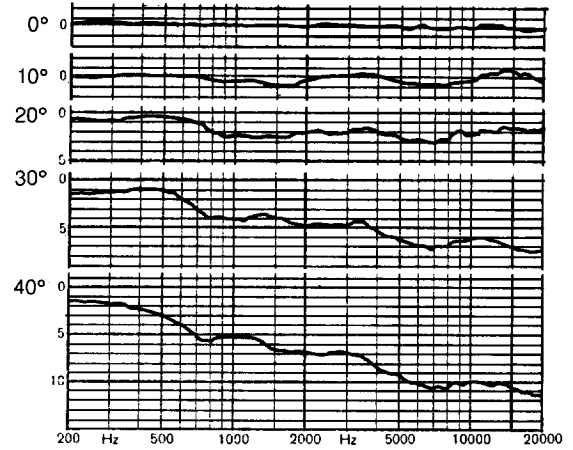
1. Dispersion Angle vs Frequency
 This graph displays the MR64B's excellent horizontal and vertical directivity control. Note the uniformity above 800 Hz.



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.

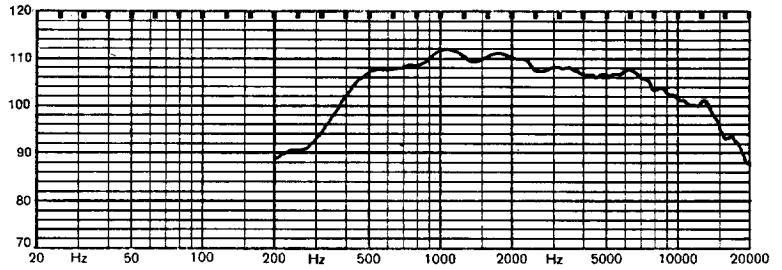


HORIZONTAL

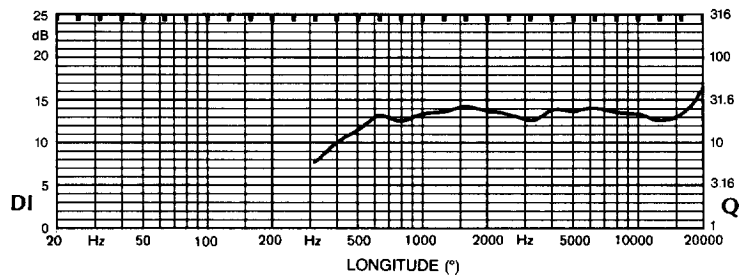


VERTICAL

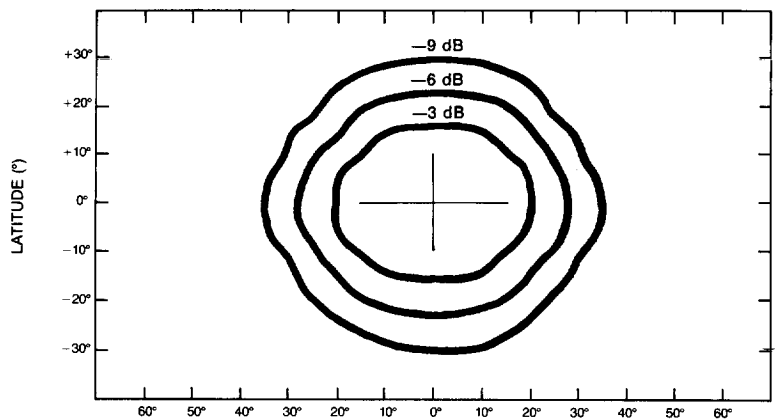
3. Unequalized Frequency Response (Measured with an Altec Lansing 288-L Compression Driver)
 The response curves exhibited here are very similar to the actual power response of the 288-L driver measured on a plane wave tube because of the dispersion uniformity of the MR64B.

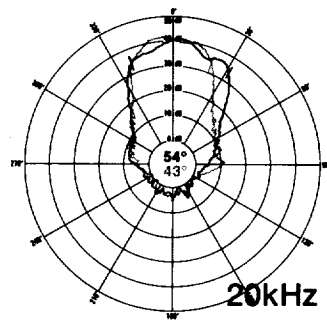
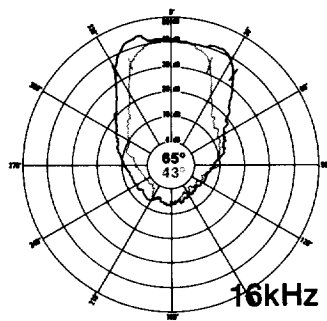
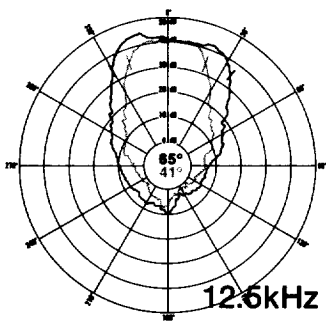
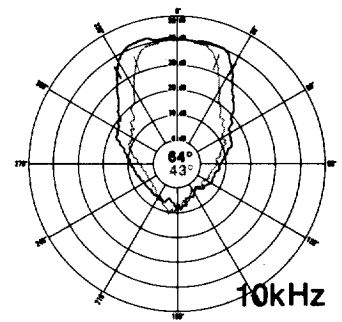
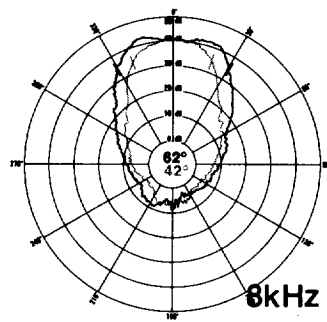
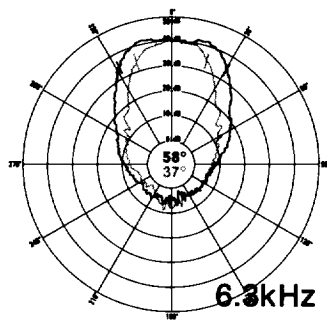
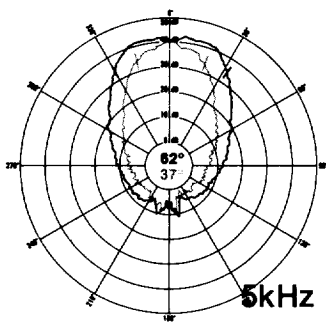
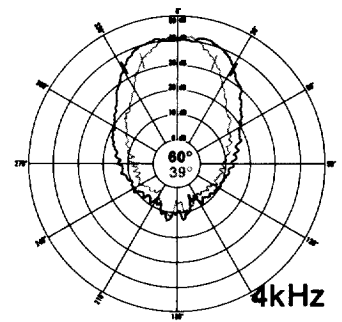
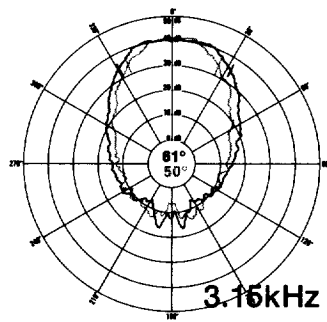
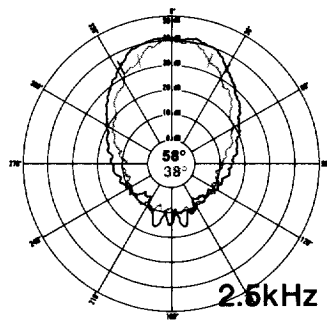
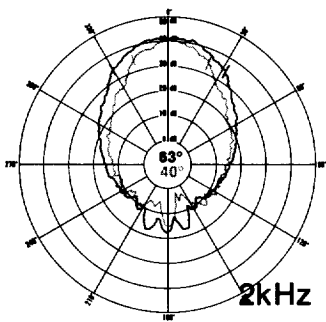
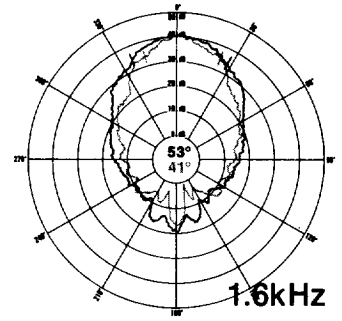
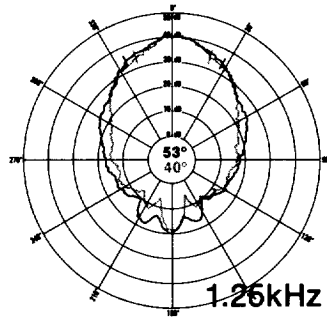
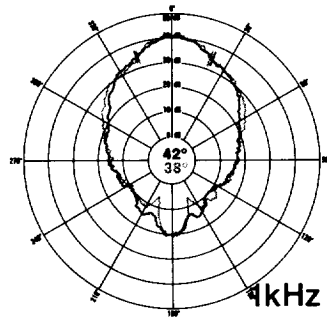
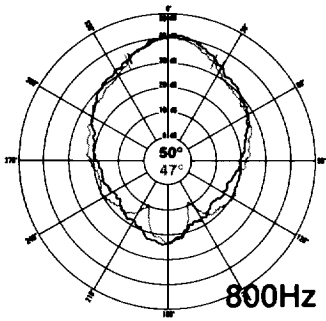
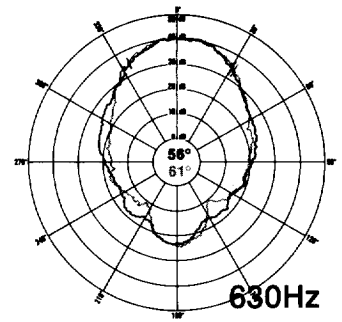
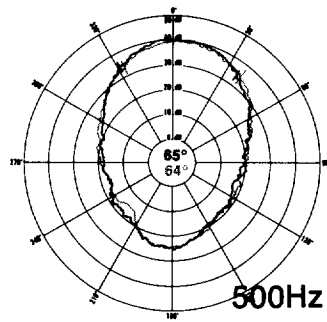
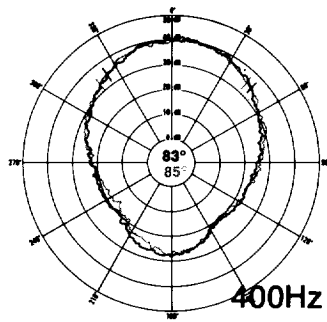
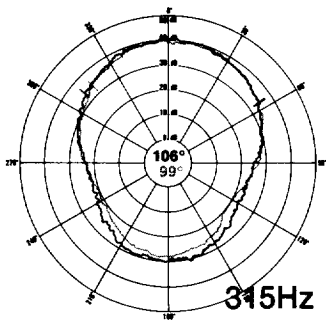


4. Q and DI vs Frequency (DI = 10 Log Q)



5. Solid-Angle Coverage at 1 to 2 kHz





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

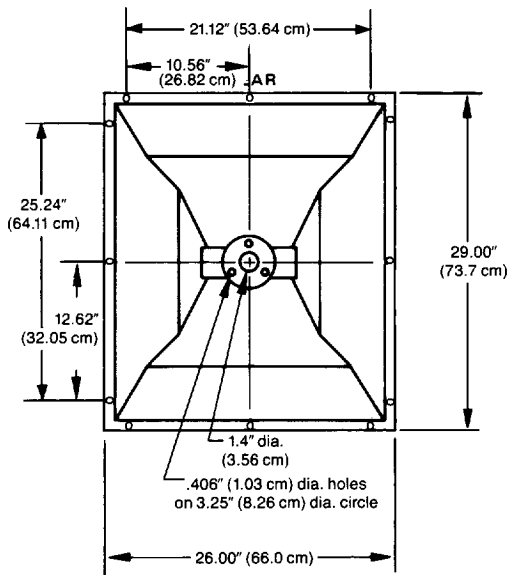
VERTICAL
HORIZONTAL

ROW 1 (1 : 3)



ROW 2 (3 : 7)



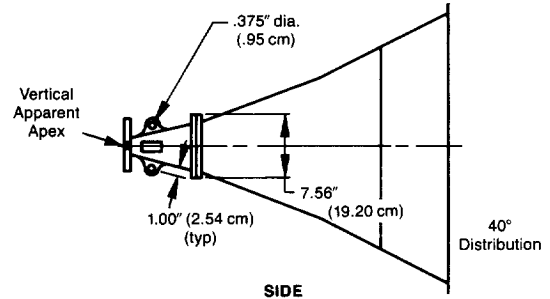
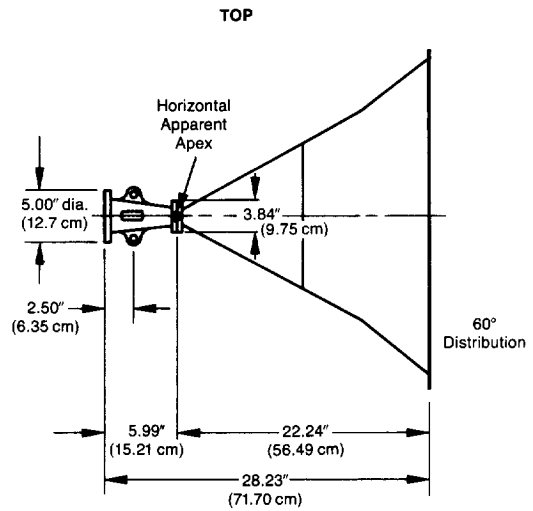


shown with 34654 throat attached

REAR

all mounting holes .281" dia.

all dimensions in inches



SIDE

REFERENCE LITERATURE

"The Mantaray Horns," C.A. Henricksen and M. Ureda, *J. Audio Eng. Soc.*, vol. 26, p 629-634 (1978 Sept.)

"Apparent Apex Theory: Far-Field Polar Characteristics at Close Proximity," M. Ureda, *J. Audio Eng. Soc.*

(Abstracts), vol. 26, p 988 (1978 Dec.)

"Coverage of Multiple Mantaray Horns," M. Ureda and T. Uzzle, *Tech. Letter #262*, Altec Lansing.

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The loudspeaker shall be a directivity-control mid/high frequency horn. It shall be constructed of heavy duty, weather resistant polyester/fiberglass. A Model 34654 single throat with a 1.4-inch driver throat opening must be ordered with each horn. The horn shall meet the following performance criteria. Horizontal dispersion angle, 60° (+6°, -10°) from 800 Hz to 16 kHz. Vertical dispersion angle, 40° (+7°, -1°) from 800 Hz to 16 kHz. Recommended crossover frequency, 800 Hz. Pressure sensitivity, 112 dB SPL

at 4' on axis with one watt (E^2/Z_{min}) input of band-limited pink noise from 500 Hz to 2.5 kHz applied to an attached model 288-L Altec Lansing compression driver.

The horn shall be 26" H x 30" W x 22" D without throat, 28 1/4" D with throat, and shall weigh 22 pounds.

The loudspeaker shall be the Altec Lansing Model MR64B.



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