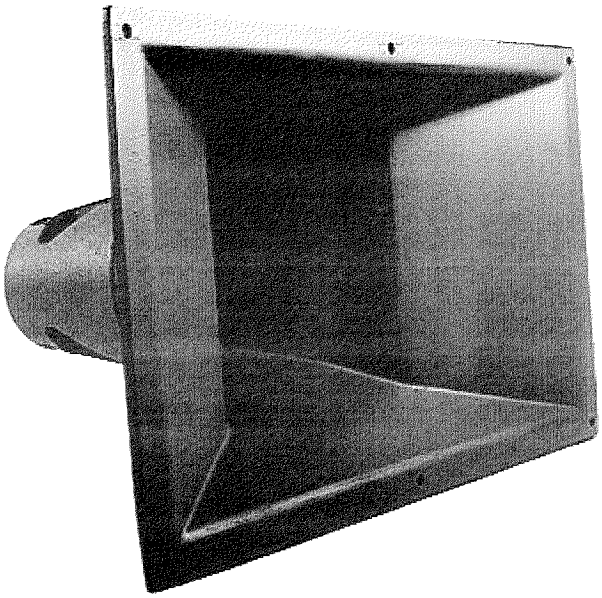
MR994A
Mantaray®
Constant Directivity Horn



KEY SPECIFICATIONS

Horizontal Dispersion Angle: (See Figure 3)	90°(+13°,-10°), 2 kHz to 20 kHz. 90°(+13°, -15°), 500 Hz to 20 kHz.
Vertical Dispersion Angle: (See Figure 3)	40° (+ 8°, - 6°), 2 kHz to 20 kHz
Mean Directivity (Q):	12.9 (+ 4.6, - 3.4), 2 kHz to 20 kHz.
Mean Directivity Index (DI):	11.1 dB (±1.3 dB), 2 kHz to 20 kHz.
Usable Low Frequency Limit: (See Figure 1)	500 Hz.
Frequency Response: (See Figure 1)	500 Hz to 20 kHz.
Pressure Sensitivity: (See Note 1)	500 Hz to 3.15 kHz.

Driver	Input Power	1 Meter	4 Feet
909-A	1 watt	108	106
	30 watts	122	120
731C	1 watt	110	108
	60 watts	127	125

KEY FEATURES

- UNIFORM DISPERSION
- 500 HZ LOADING
- LIGHTWEIGHT AND RUGGED

DESCRIPTION

The Altec Lansing **MR994A** is a mid/high frequency horn providing low frequency loading down to 500 Hz while having excellent directivity control over the full frequency range to 20 kHz. The dispersion angles of the horn are 90° horizontal by 40° vertical.

The result of continuing development of constant directivity devices at Altec Lansing, the **MR994A** offers superior directivity control for compression drivers with one inch exit throat diameters. The geometry of the **MR994A** minimizes the problem of high frequency beaming and maintains uniform dispersion at all frequencies within the rated bandwidth of the horn. This greatly benefits the listeners sitting off axis of a Mantaray horn, as they will hear the same sound quality as listeners sitting on axis.

Performance of the **MR994A** is characterized graphically in its polar patterns, which look nearly identical at all frequencies from 2 kHz to 20 kHz and demonstrate close adherence to the design angles of dispersion. Frequency response curves show similar uniformity both on axis and off axis.

The horn is constructed of heavy duty, injection molded, weather resistant General Electric Noryl™. The material and physical design features result in a horn that is surprisingly light weight, yet extremely rugged and non-resonant. Mounting points near the driver mounting flange are integrally molded into the horn throat. The one inch throat entry is compatible with Altec Lansing 900 series compression drivers.

SPECIFICATIONS (continued)

Construction: Injection molded General Electric Noryl™.

Finish: Texture gray polyurethane paint.

Dimensions:

Height:	12.76 inches (32.4 cm).
Width:	22.84 inches (58.0 cm).
Depth:	13.17 inches (33.5 cm).

Weight:

Net:	4.6 lbs (2.1 kgs).
Shipping:	7.2 lbs (3.3 kgs).

Driver Mounting Data: Two 0.28 in (0.7 cm) holes on a 3.0 in (7.6 cm) diameter bolt circle.

Recommended Drivers: Altec Lansing 909-A
731 C

Altec Lansing continually strives to improve products and performance. Therefore, specifications are subject to change without notice.

NOTES ON MEASUREMENT CONDITIONS

1. On axis, pink noise signal, power calculated using E^2/Z^{Min}, 3.16 meter measurement distance from horn mouth referred to one meter.

2. On axis, one watt calculated using E^2/Z^{Min}, 3.16 meter measurement distance from horn mouth referred to one meter.

3. Distortion components invalid above 10 kHz. The percentage distortion of a harmonic at given frequency may be found by graphically taking the difference between the fundamental and harmonic, adding 12 dB, and applying the formula:
   percentage distortion = $100 \times 10^{(-dB\ change/20)}$

4. On axis frequency response has been equalized. Horn has been rotated around the apparent apex.

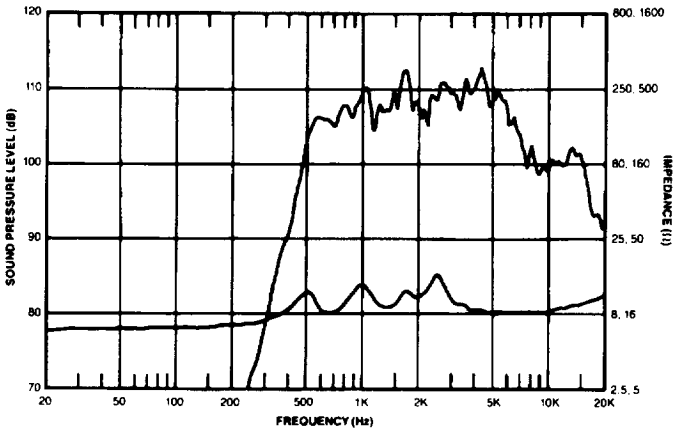


Figure 1. Frequency Response and Magnitude of Impedance with 909-A driver (See Note 2)

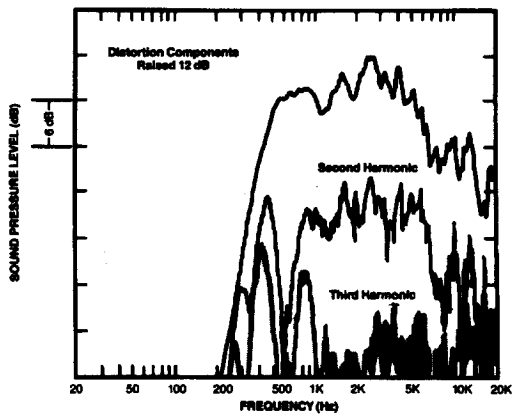


Figure 2. Harmonic Distortion at 0.1 Rated Power (909-A Driver, 3 watts, See Note 3)

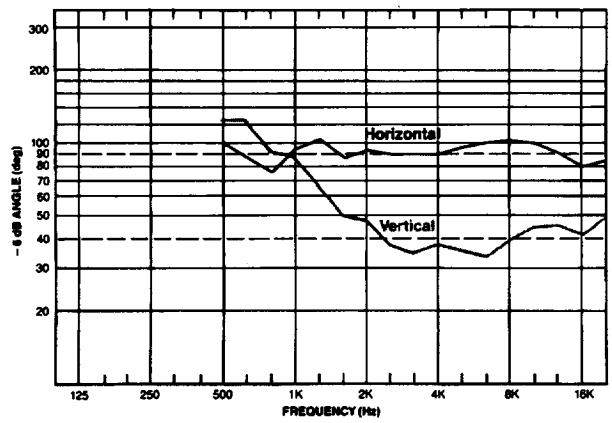


Figure 3. Dispersion Angle

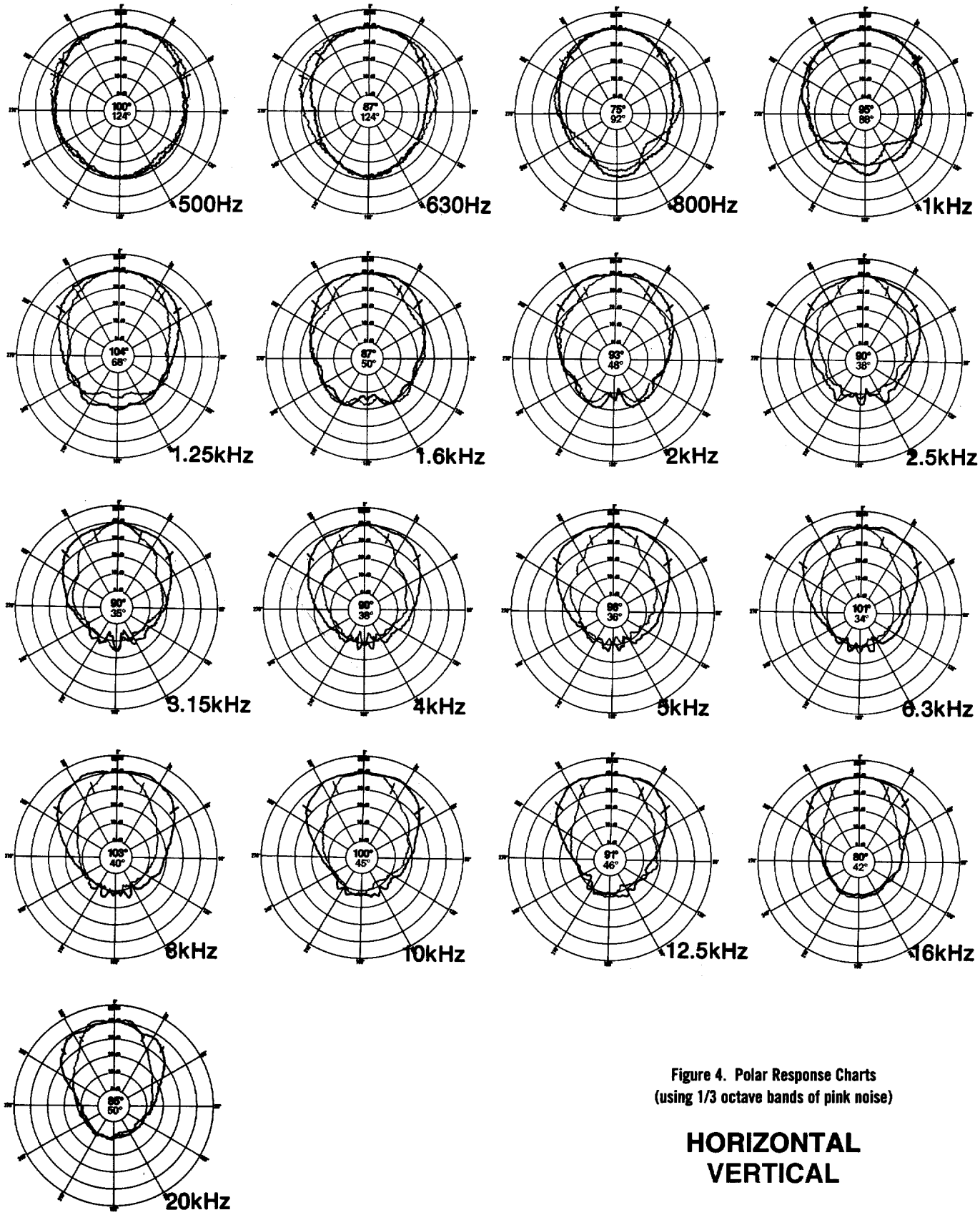
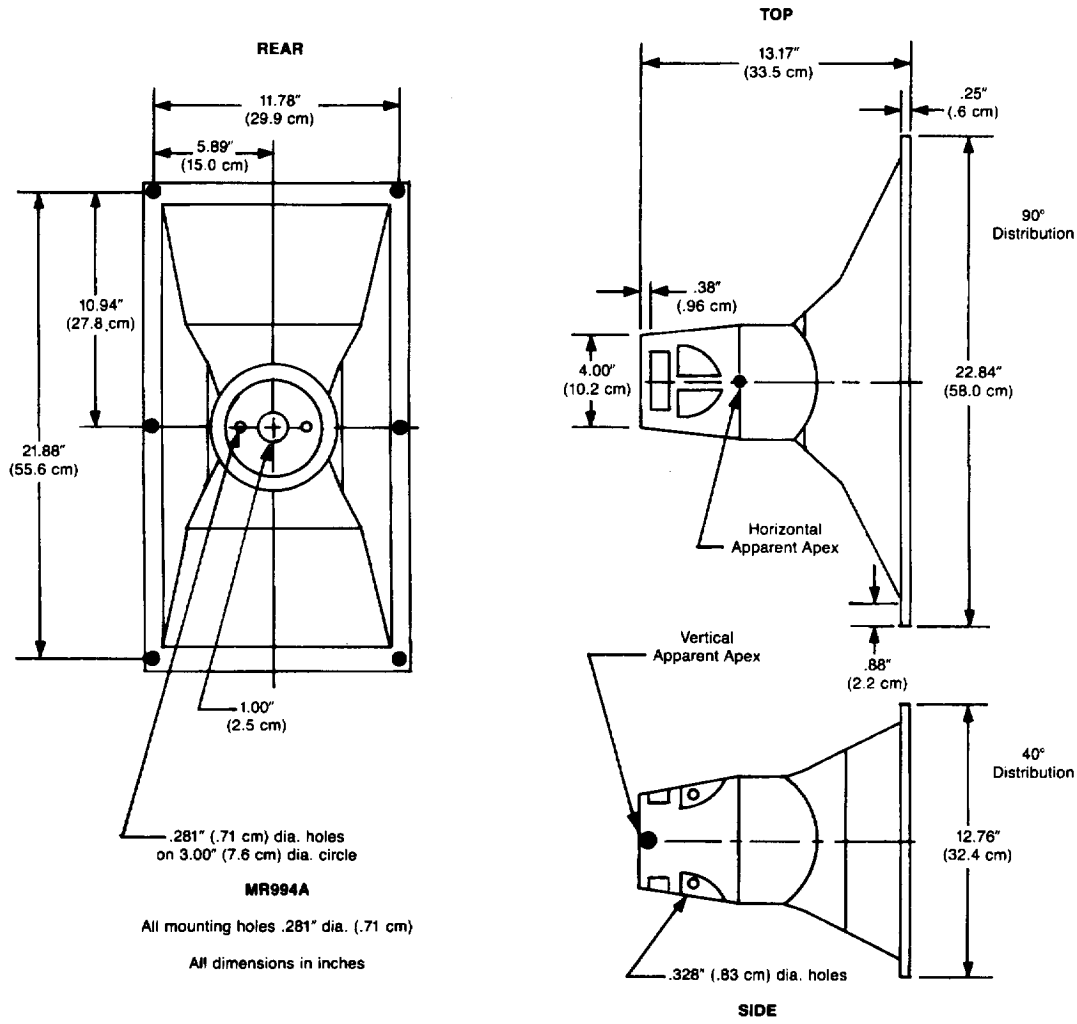


Figure 4. Polar Response Charts (using 1/3 octave bands of pink noise)

HORIZONTAL
VERTICAL



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The loudspeaker shall be a directivity control mid/high frequency horn. It shall be of heavy duty injection molded construction. The horn shall meet the following performance criteria over the band-pass of 2 kHz to 20 kHz. Horizontal dispersion angle 90° (+ 13°, - 10°). Vertical dispersion angle 40°(+8°, -6°). The horn shall provide a proper acoustic load to a compression driver down to 500 Hz. Pressure sensitivity shall be 108 dB SPL at one meter on axis with one watt (E^2/Z^{Min}) input of band limited pink noise from 500 Hz to 3.15 kHz applied to an attached Altec Lansing 909-A type compression driver. The horn shall be 12.76 inches (32.4 cm) high by 22.84 inches (58.0 cm) wide by 13.17 inches (33.5 cm) deep and shall weigh 4.6 lbs (2.1 kgs).

The loudspeaker shall be the Altec Lansing Model MR994A.

ALTEC LANSING

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