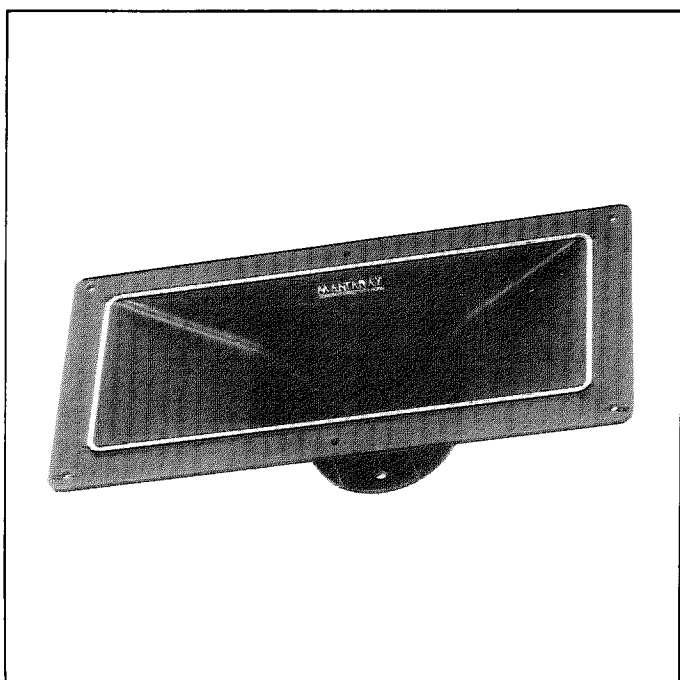




# MR931-12 MANTARAY® CONSTANT DIRECTIVITY HORN



## DESCRIPTION

The Altec Lansing MR931-12 is a high frequency horn with excellent directivity control over the frequency range from 1500 Hz to 20,000 Hz.

The geometry of the MR931-12 minimizes 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 the horn will hear the same sound quality as listeners sitting on-axis. Additionally, the horn's 60° asymmetrical directivity projects the wedge of sound energy more efficiently into the listening area. The 60° vertical asymmetrical components of 20° and 40° may be oriented in two ways by rotating the horn 180°; see Figure 5.

The MR931-12's excellent dispersion characteristic is seen graphically in the test results. Polar patterns show beneficial similarity from 2000 Hz to 16 kHz.

The MR931-12 is designed for use with the Altec Lansing 900 series high frequency compression drivers. Construction of the MANTARAY is of durable ABS blended plastic with a sound deadening texture to minimize resonance.

## SPECIFICATIONS

**Horizontal Dispersion Angle:** 110° nominal from 2000 Hz to 16 kHz

**Vertical Dispersion Angle:** 60° nominal from 2000 Hz to 16 kHz

**Polar Pattern:** See Figure 4

**Directivity Factor Q (R<sub>a</sub>):** See Figure 3

**Directivity Index (DI):** See Figure 3

**Recommended Crossover Frequency:** 2000 Hz

**Useable Low Frequency Limit:** 1250 Hz

**Throat:** 0.875" (2.22 cm) diameter

**Pressure Sensitivity:** Measured on-axis 4' from horn mouth with one watt (ExI) pink noise, band-limited as given below

Driver	1 Watt, 4' Rating dB SPL	
	1250 Hz-2.5 kHz	2 kHz-16 kHz
902-8B	105	106
908-8B	104	103

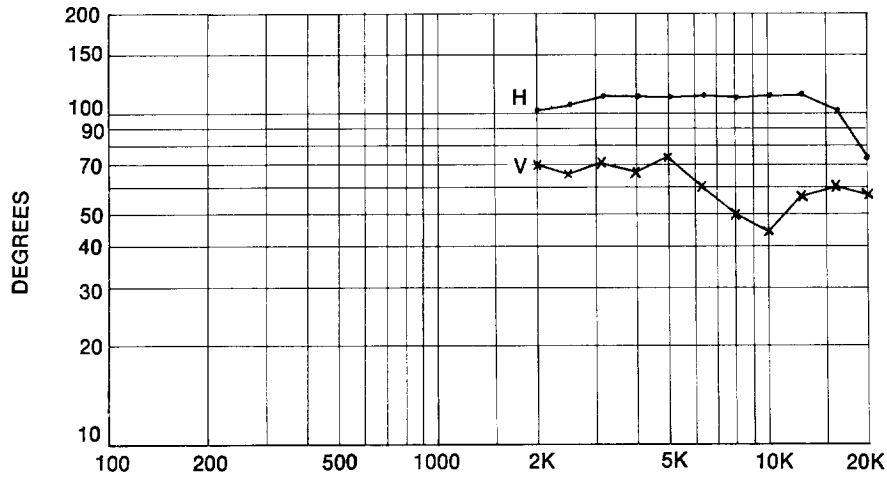
**Construction:** Heavy duty ABS blended plastic

**Dimensions:** 7.16" (18.19 cm) H  
14.45" (36.70 cm) W  
4.50" (11.43 cm) D

**Weight:** 11.5 oz. (0.33 kg)

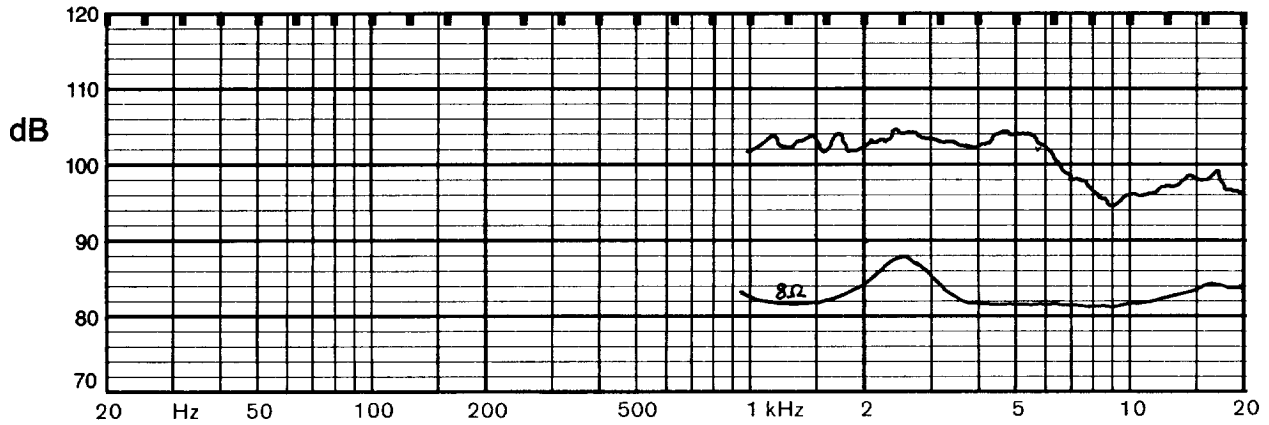
### 1. Dispersion Angle vs Frequency

This graph displays the MR931-12's excellent horizontal and vertical directivity control. Note the uniformity above 2000 Hz.

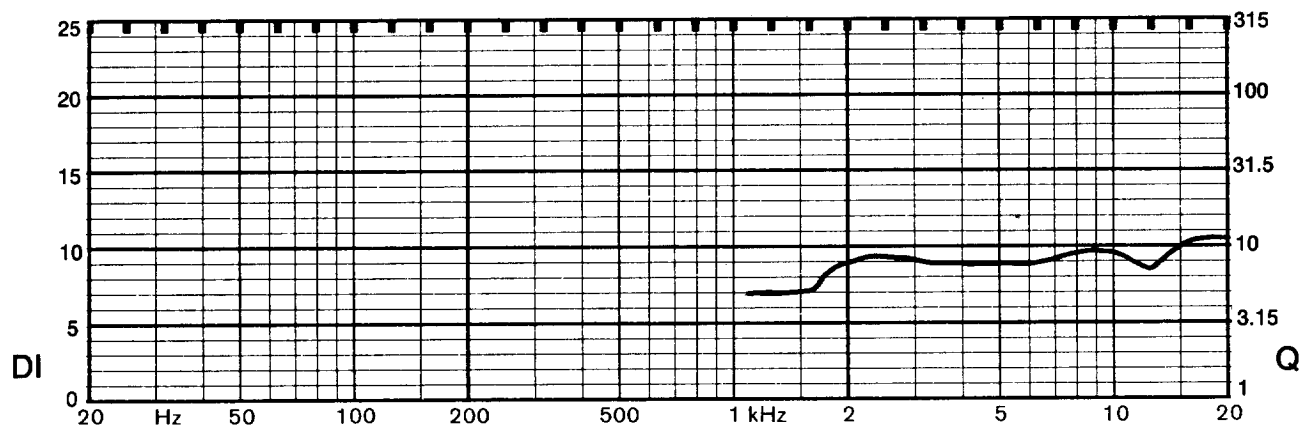


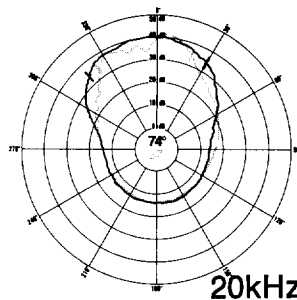
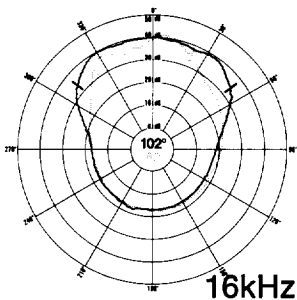
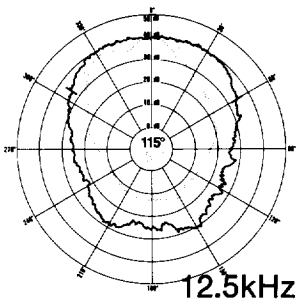
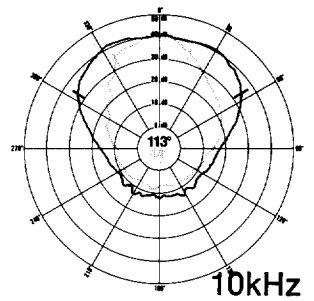
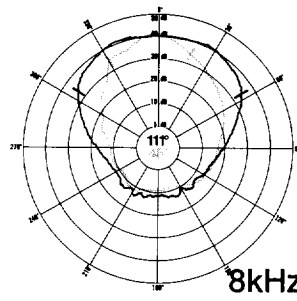
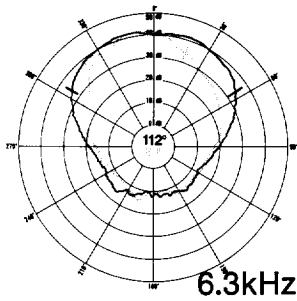
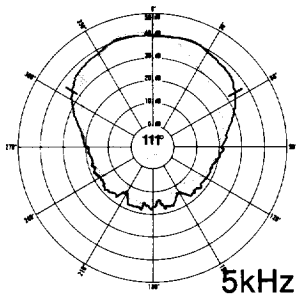
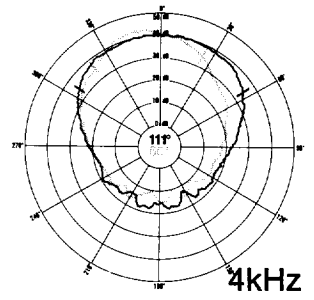
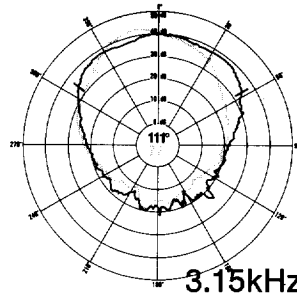
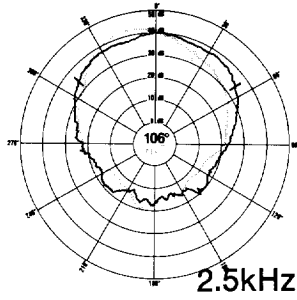
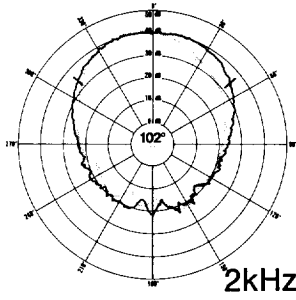
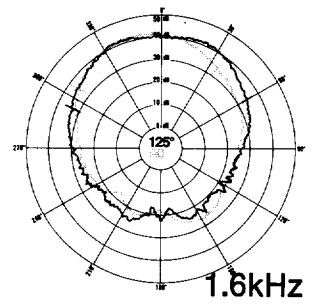
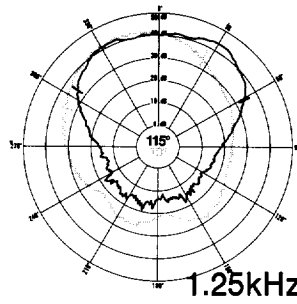
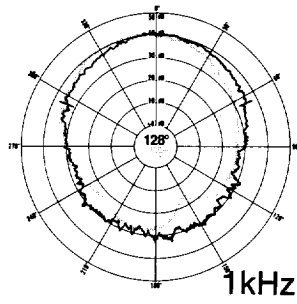
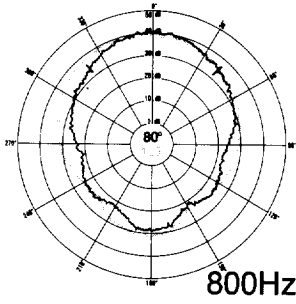
### 2. Unequalized Frequency Response (Measured with Altec Lansing 902-8B High Frequency Compression Driver)

The response curve exhibited here is typical of the actual power response of the 902-8B driver, because of the dispersion uniformity of the MR931-12.



### 3. Q and DI Frequency (DI = 10 Log Q)





HORIZONTAL  
VERTICAL

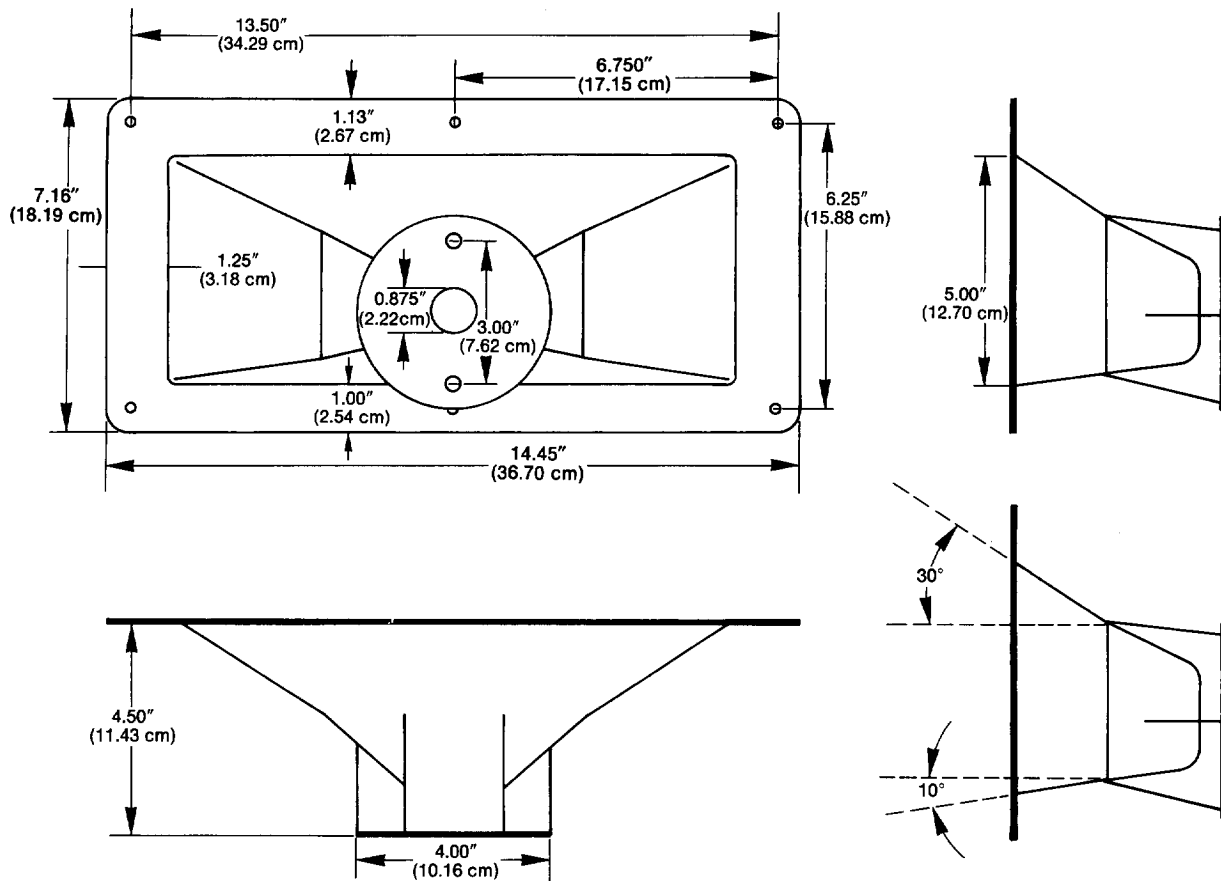
4. Polar Response Charts (using 1/3 octave bands of pink noise).

ROW 1 (1 : 4)



ROW 2 (5 : 6)





**Figure 5. Outline and Mounting Dimensions, Asymmetrical Vertical Dispersion**

**ARCHITECT'S AND ENGINEER'S SPECIFICATIONS**

The loudspeaker horn shall be a high frequency horn having directivity control. It shall be constructed of heavy duty ABS blended plastic with a sound deadening texture to minimize resonance. The horn shall meet the following performance criteria. Horizontal dispersion angle, 110° nominal from 2000 Hz to 16 kHz. Asymmetrical vertical dispersion angle, 60° nominal from 2000 Hz to 16 kHz; the 60° vertical asymmetry shall consist of 20° and 40° components that may be oriented in two ways by rotating the horn 180°. Frequency Response, 1250 Hz to 20 kHz.

Recommended crossover frequency, 2000 Hz. Useable low frequency limit, 1250 Hz. Pressure sensitivity, 106 dB SPL at 4' on axis with one watt (E x I) input of band-limited pink noise from 2000 Hz to 16 kHz applied to an attached Altec Lansing Model 902-8A High Frequency Compression Driver. The horn shall be 7.16" H x 14.45" W x 4.5" D and shall weigh 11.5 ounces.

The loudspeaker horn shall be the Altec Lansing Model MR931-12.



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