

MR42B
HORN

MR42B MANTARAY®

Constant-Directivity Horn

- Rated control from 800 Hz to 16 kHz
- Uniform frequency response on and off-axis
- Heavy-duty, weather-resistant construction

Description

The Altec Lansing MR42B 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 MR42B is a radical departure from previous horn designs. The geometry of the MR42B 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 MR42B'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 MR42B requires a model 34652 single or model 34652Y dual 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.

Architects' and Engineers' 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 34652 single throat or a model 34652Y dual throat must be ordered 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 1,200 Hz to 16 kHz. Recommended crossover frequency, 800 Hz. Pressure sensitivity, 114 dB SPL at 4 ft on axis with 1 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 in. H x 36 in. W x 41 in. D without throat, 60-1/4 in. D with throat, and shall weigh 34 pounds.

The loudspeaker shall be the Altec Lansing Model MR42B.

Limited Warranty

Altec Lansing products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual prod-

uct data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Mark IV Audio Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Mark IV Audio Service or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Mark IV Audio Service at 10500 W. Reno Avenue, Oklahoma, OK 73127 (800/845-8727 or FAX 405/577-3274).

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Incidental and Consequential Damages Excluded:

Product repair or replacement and return to the customer are the only remedies provided to the customer. Altec Lansing shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Altec Lansing Speakers and Speaker Systems are guaranteed against malfunction due to defects in materials or workmanship for a period of five (5) years from the date of original purchase. The Limited Warranty does not apply to burned voice coils or malfunctions such as cone and/or coil damage resulting from improperly designed enclosures. Altec

Lansing active electronics associated with the speaker systems are guaranteed for three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

For technical assistance, contact Technical Support at 800/234-6831 or 616/695-6831, M-F, 8:00 a.m. to 5:00 p.m. Eastern Standard time.

Specifications subject to change without notice.

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Figure 1—Dispersion angle vs frequency this graph displays the MR42B's excellent horizontal and vertical directivity control. Note the uniformity above 800 Hz.

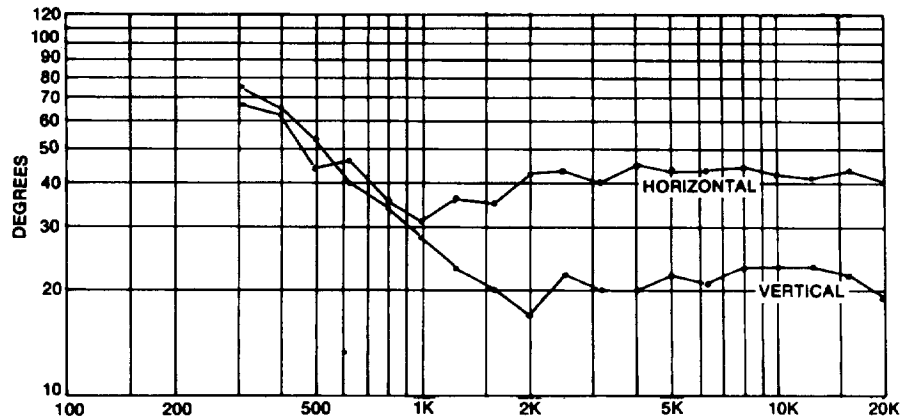
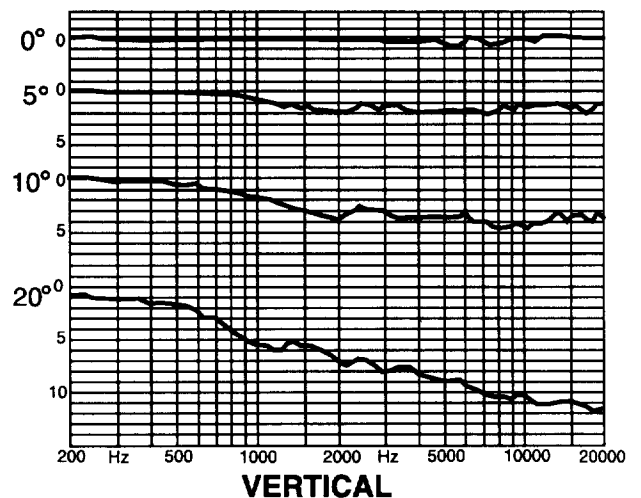
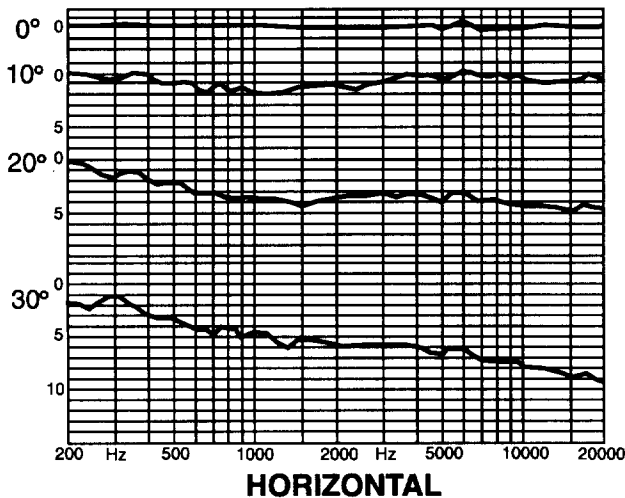


Figure 2—Off-axis horizontal and vertical frequency response on-axis response has been equalized in this graph to illustrate the uniformity of the on and off-axis response curves.



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Figure 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 measured on a plane wave tube because of the dispersion uniformity of the MR42B.

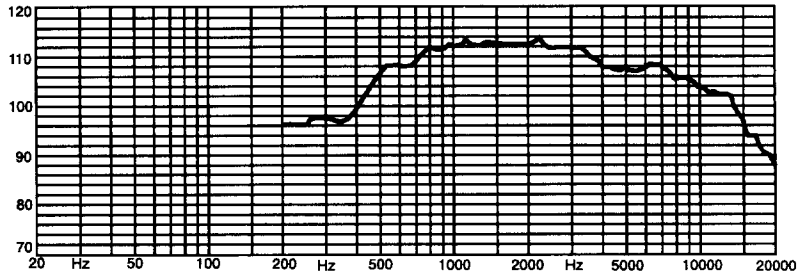


Figure 4—Q and DI vs frequency (DI = 10 log Q)

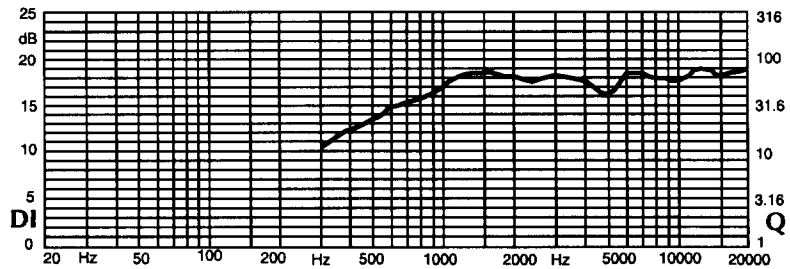
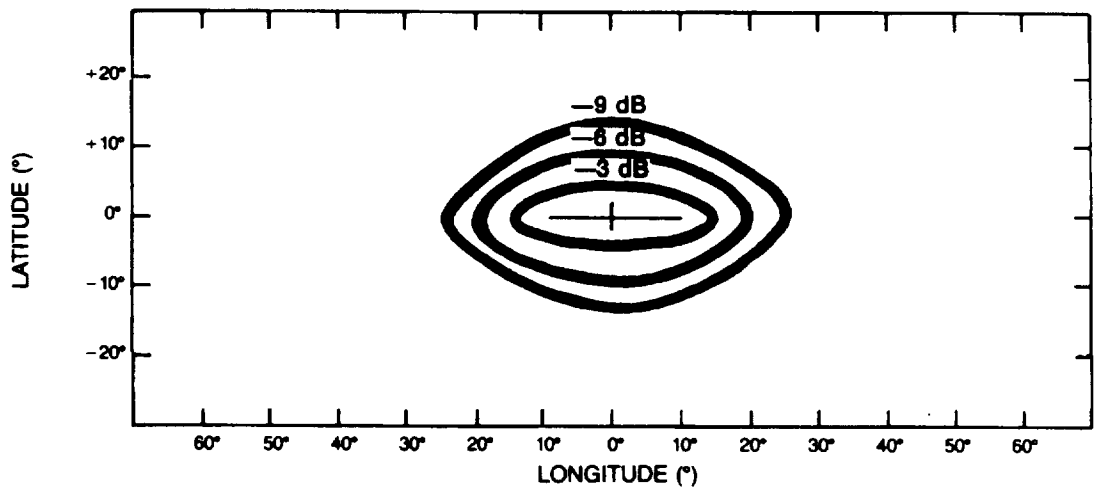
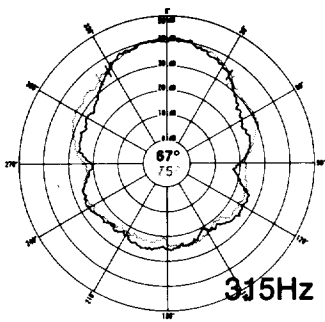
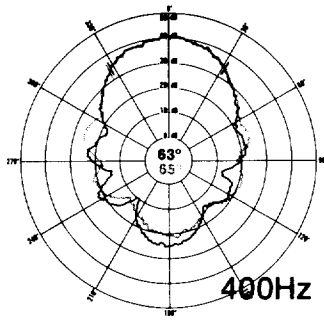


Figure 5—Solid-angle coverage at 1 to 2 kHz

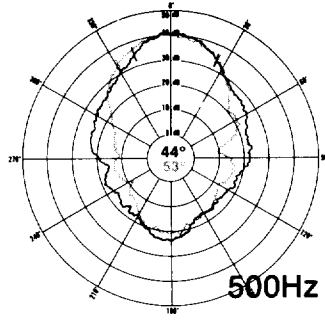




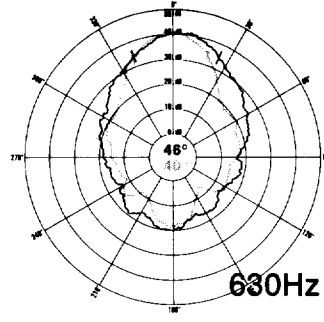
315Hz



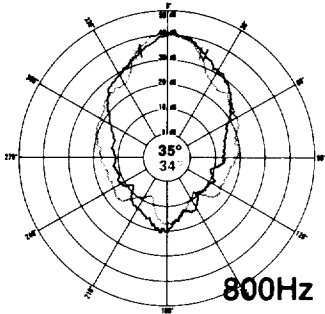
400Hz



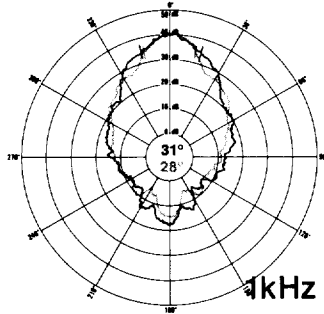
500Hz



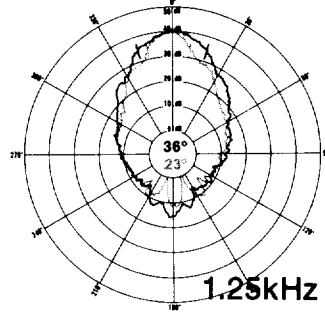
630Hz



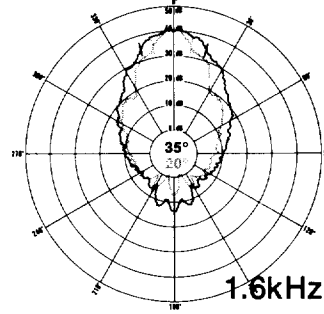
800Hz



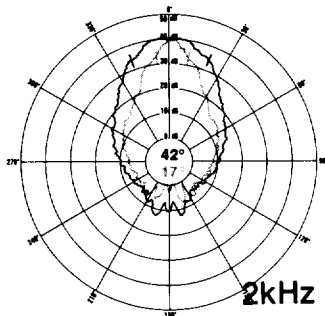
1kHz



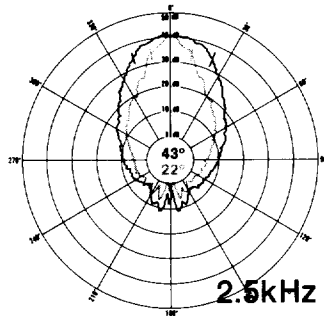
1.25kHz



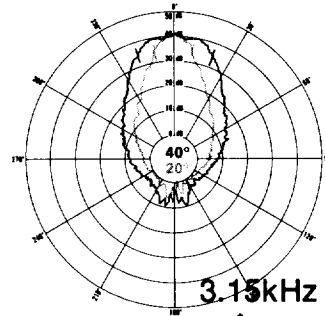
1.6kHz



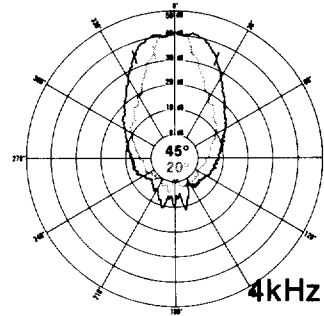
2kHz



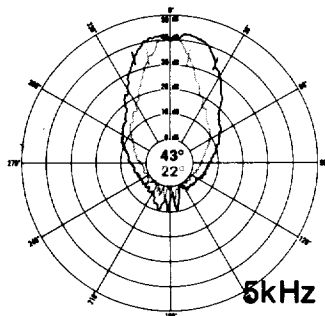
2.5kHz



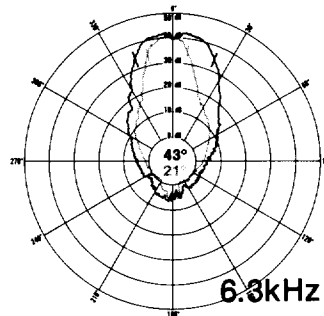
3.15kHz



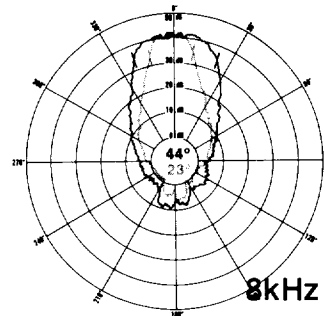
4kHz



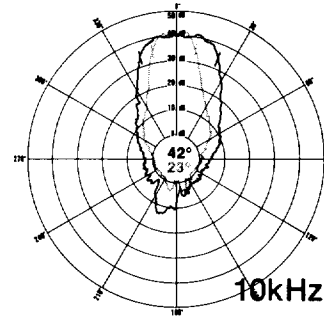
5kHz



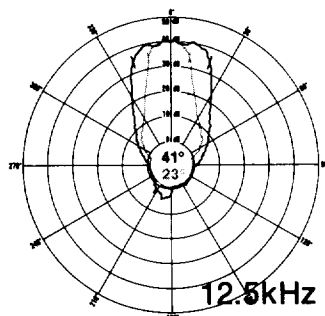
6.3kHz



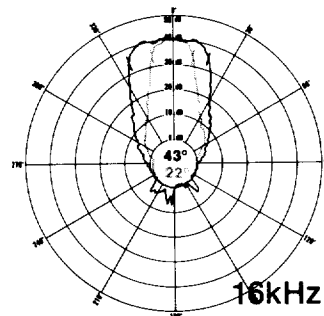
8kHz



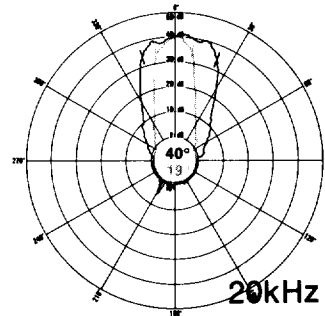
10kHz



12.5kHz



16kHz



20kHz

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

HORIZONTAL
VERTICAL

ROW 1 (1 : 3)

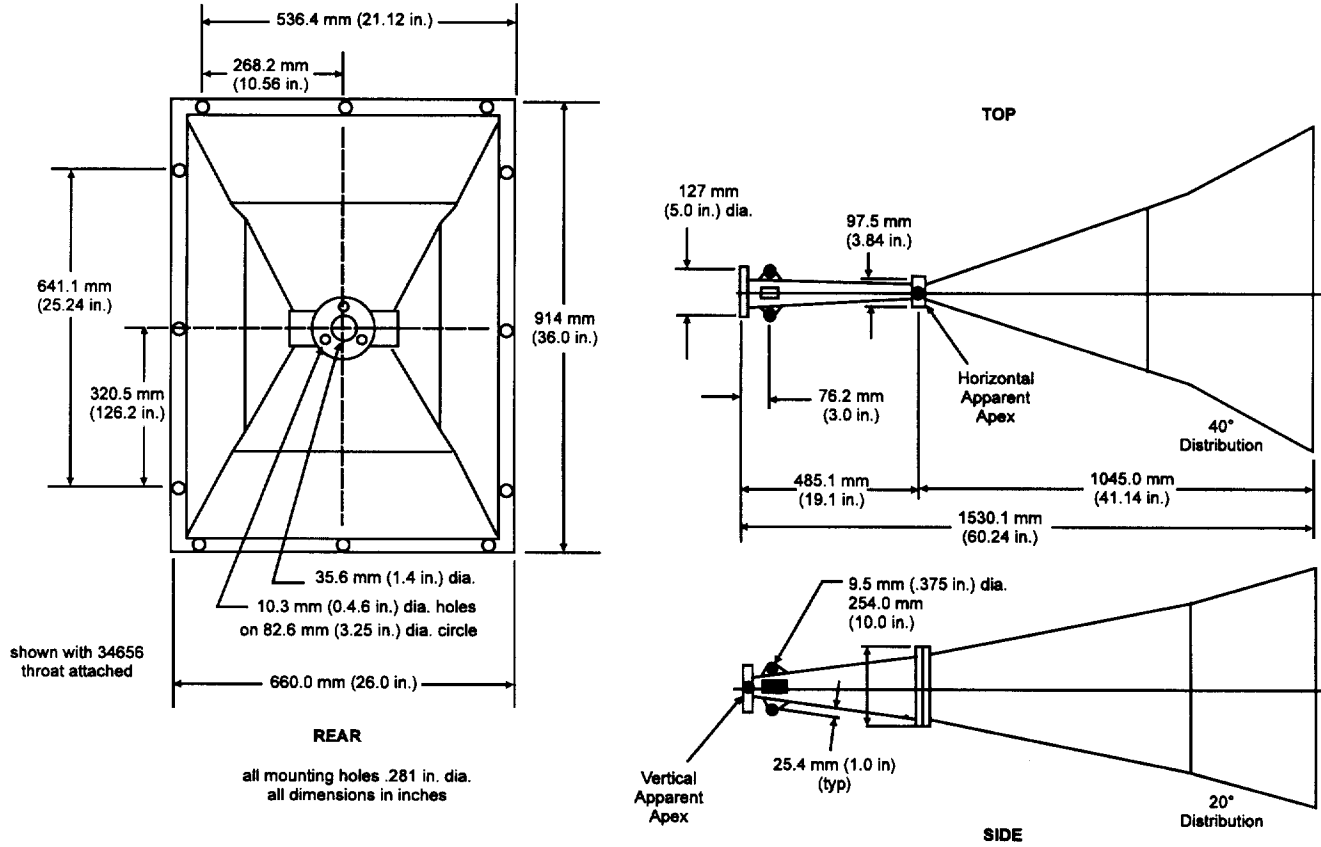


ROW 2 (3 : 7)



MR42B MANTARAY[™] Constant-Directivity Horn

Figure 7—MR42B dimension diagram



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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 1,200 Hz to 16 kHz

Polar Pattern:

See Figure 6

Directivity Factor Q (R₀):

See Figure 4

Directivity Index D_i:

See Figure 4

Recommended Crossover Frequency for Optimum Directivity Control:

800 Hz

Usable Low-Frequency Limit:

500 Hz 288-L, 291-L, 299-A, 906-A,

300 Hz 290-L

Throat:

Model 34652 throat for single 1.4-inch throat driver model 34652Y throat for dual 1.4-inch throat drivers

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	116	114
	20 watts	129	127
290	1 watt	114	112
	120 watts	134	132
291	1 watt	115	113
	50 watts	131	129
299	1 watt	116	114
	50 watts	132	130
906	1 watt	116	114
	40 watts	131	129

Add 3 dB to rated power level and SPL for dual throat with two drivers

Construction:

Weather-resistant polyester/fiberglass

Dimensions:

26 in. H x 36 in. W x 41 in. D without throat, 60-1/4 in. D with 34652 throat

Weight:

MR42B horn 15.4 kg (34.0 lb)
34652 throat 2.5 kg (5.5 lb)
34652Y throat 3.2 kg (7.0 lb)

Ordering Information for MR42B,

Throat:

34652 throat
34652Y throat
(one throat must be separately ordered for each horn)

Accessories (optional):

21216 throat adapter
30546 waterproof 45° angle adapter

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.



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