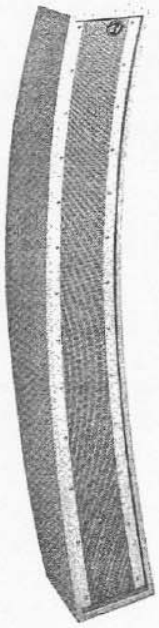
LR4A LINE RADIATOR LOUDSPEAKER



DESCRIPTION and APPLICATIONS

The Electro-Voice Model LR4A Line Radiator™ represents a new concept in controlled sound projection. This curved speaker, * utilizing nine 3" x 5" and three 3-1/2" cone speakers, has eliminated many of the problems of feedback, "spotty" coverage, and excessive size previously associated with high level projectors.

The LR4A is ideally suited for churches, theaters, and auditoriums where it is necessary to cover a large audience with a minimum of speakers. It may be mounted high above the microphone to eliminate difficult feedback problems and fill the room uniformly with sound while retaining close control of the pattern of sound being projected.

*U.S. Patent No. 3,125,181

SPECIFICATIONS

FREQUENCY RESPONSE:	200 to 15,000 cps
SOUND PRESSURE LEVEL:	112 db (at 4' with 25 watts input between 2 kc and 4 kc)
EIA PRESSURE RATING:	49 db
POWER HANDLING CAPACITY:	
PROGRAM:	25 watts
PEAK:	50 watts
NOMINAL IMPEDANCE:	8 ohms
DISPERSION:	60° vertical 160° horizontal (line radiator mounted with long dimension vertical)
MOUNTING:	Universal bracket
SIZE:	49" x 7-1/2" x 13"
WEIGHT:	
NET:	26 pounds
SHIPPING:	30 pounds

PLACEMENT

To make best use of the unique polar characteristics of the LR4A the unit should be mounted with its long axis vertical. The broad horizontal projection pattern thus aids in covering large audiences, while the limited vertical dispersion makes possible projection over long distances without unwanted reflections from floor and ceiling. In addition, when mounted above the system microphone, the LR4A is capable of outstanding coverage without the troublesome acoustic feedback which almost always accompanies less sophisticated reproducers. Since most of the LR4A's output is projected forward, and comparatively little is allowed to come from the ends, a microphone placed under the LR4A will receive much less direct sound than if similarily placed with respect to other loudspeakers, thereby greatly reducing or eliminating feedback.

In a typical theater installation, for example, one or more LR4A's may be mounted at the center of the proscenium, and microphones may then be placed in the footlights or elsewhere in the stage area, as needed, with a minimum of feedback.

When mounted high, as in a proscenium, the LR4A will be found to cover even very long audiences with minimum front-to-back loudness change. The 60° vertical dispersion may even provide balcony coverage in many instances without the need for additional speakers.

INSTALLATION

The LR4A can be easily installed using the universal brackets supplied. These brackets may be formed to accomodate any mounting location. Illustrated below are several of the many possible methods of

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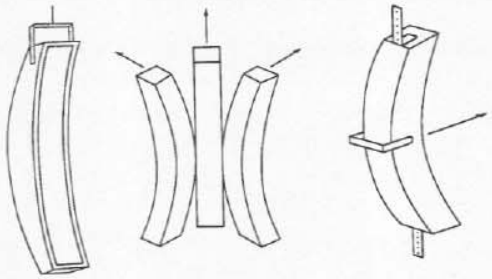
mounting the LR4A. The four lag screws supplied may be used to fasten the flexible 30-inch brackets to the cabinet. The speaker may then be mounted on a wall, ledge, or arch, or suspended by a wire from the ceiling as necessary.



NOTE: The curved back panel of the model LR4A is constructed of 1/4" hardboard. It is recommended that all mounting screws or bolts be used at the top, bottom or sides of the cabinet, as these are constructed of 1/2" plywood.

WIRING

Connection is made to the LR4A at the terminal strip on the top of the unit. Nominal impedance is eight-ohms, and the eight-ohm amplifier output should be employed. When the LR4A is used in 70.7 volt line systems, the matching transformer (such as the E-V TR30 or TM30) is installed under the metal coverplate supplied, providing a dependable, attractive transformer mounting.

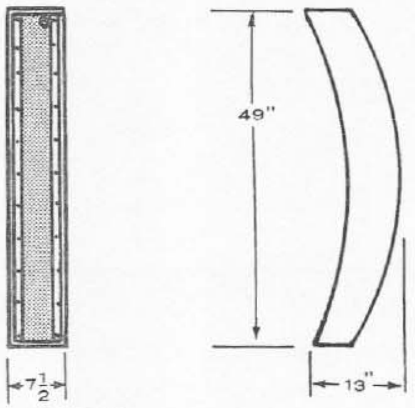


Figure 1
Dimensions

NOTES

Best results from any voice reinforcement system will be obtained if a quality microphone is used. Normally a unidirectional type is preferred, since the directional characteristics of such a microphone complement those of the LR4A, further reducing the possibility of feedback. Microphones which have proved highly successful in voice reinforcement applications are the E-V 666, 676, and 664 cardioid types, and the 642* and 644* Cardiline™ units.

A problem commonly encountered in large rooms is excessive low-frequency reverberation, often the cause of muddy reproduction and feedback. The limited vertical dispersion of the LR4A greatly reduces reverberation. In addition, two of the above microphones, Models 642 and 676, are equipped with integral low-frequency attenuation filters to aid in eliminating unwanted low frequencies. When the problem is severe, however, the E-V Model 513 high pass filter is recommended. This is an extremely sharp cutoff filter which is effective at 100 cps. The 100 cps cutoff point is ideally suited to the elimination of troublesome low frequencies, yet vital mid-frequency response is not altered. The Model 513 may be inserted in any low impedance microphone line, and affects only microphone response. Use of the Model 513 can often turn a difficult or borderline system into a complete success.

* U.S. Patent No. 3095084

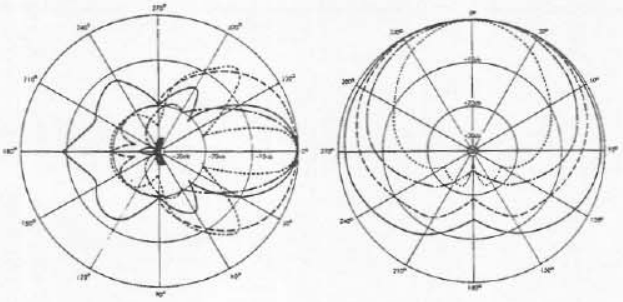


Figure 2 - Polar Response

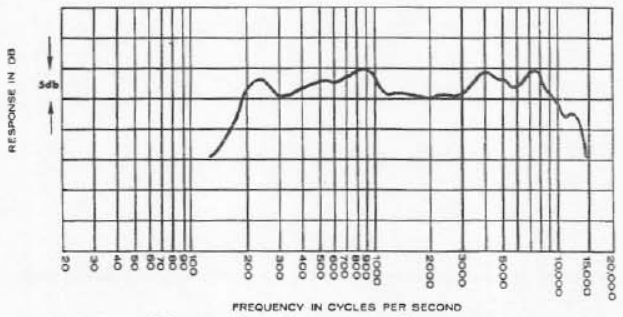


Figure 3 - Frequency Response

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The loudspeaker shall be of the curved line radiator type, utilizing nine 3" x 5" and three 3-1/2" cone speakers in a concave array. The speakers shall be enclosed in a wooden cabinet painted a neutral tan. A metal grille shall be provided. The overall size shall be 49 inches by 7-1/2 inches. Frequency response shall be uniform from 200 to 15,000 cps. Horizontal dispersion (with long axis vertical) shall be 160° and vertical dispersion shall be 60°. Sound pressure level at 4 feet on axis shall be 122 db when full rated power of 25 watts, from 2 kc to 4 kc with 1 cps sweep, is applied. Nominal impedance shall be 8 ohms. Weight shall be 26 pounds, and mounting hardware shall be supplied. Provision shall be made for internal mounting of line matching transformer. Electro-Voice Model LR4A is specified.

Part No. 531033 ELECTRO-VOICE, INC. / Buchanan, Michigan Litho in U.S.A.