PA60
PA60M

Reentrant Paging Projector

COMMERCIAL

General Product Description

The PA60 is a 60-watt reentrant paging projector for use in any public address or paging application.

The driver employs rugged phenolic diaphragm, 1.5-inch diameter voice coil, and strontium ferrite magnet structure for long life and durability under extreme operating conditions.

The PA60M is identical to the Model PA60, but is white in color and is designed for marine use with stainless steel hardware.

A 13.5-inch SJTO-18-2 cable, phased and color-coded, is provided for connecting to the PA60.

A nominal 80° horizontal by 50° vertical coverage pattern together with a low-frequency cutoff of 400 Hz provides excellent articulation in demanding applications.

The PA60/PA60M is molded from high-impact ultraviolet inhibiting ABS (acrylonitrile butadiene styrene).

Ideal for both indoor and outdoor applications, these horns are well suited for any installation requiring rugged, reliable performance at a low cost.

Architects' and Engineers' Specifications

The loudspeaker shall be an integral driver and reentrant horn utilizing a rugged phenolic diaphragm and high temperature rated 1.5-inch diameter voice coil.

The axial frequency response will extend from 600 to 6,500 Hz and the horn shall exhibit a low frequency cutoff of 400 Hz. Sound pressure level will be 107 dB (1 W/1 M) with a 500 to 5,000 Hz pink noise signal applied, and the horn will produce a horizontal beamwidth of 80° and a vertical beamwidth of 50° at 2.0 kHz.

The loudspeaker shall be capable of handling a 60 watt, 500 to 5,000 Hz pink noise signal with a 6 dB crest factor for a period of eight hours.

The horn shall be molded high-impact acrylonitrile butadiene styrene (ABS), capable of satisfactory mechanical performance in the temperature range from -40°C (-40°F) to 71°C (160°F) and not subject to sunlight embrittlement. Other major external speaker parts shall be diecast zinc finished in mesa tan baked enamel to match the molded horn parts. The Model PA60M shall have external parts of stainless steel and will be white in color. All components shall be resistant to damage from weather, moisture, and fungus.

A serrated, positive-lock swivel bracket shall provide orientation adjustment in all three planes. Vertical adjustments are made by loosening a single wingnut on the mounting base.

Dimensions shall be 28.0 cm (11.0 in.) high by 16.5 cm (6.5 in.) wide by 21.6 cm (8.5 in.) deep. Net weight shall not exceed 1.8 kg (4.1 lb). The loudspeaker shall be the PA60/PA60M.

Specifications:

Frequency Response: ..... 600-6,500 Hz ±5 dB (see Figure 3)

Power Handling, 8 Hours, 6 dB Crest Factor:

..... 60 watts (500-5,000 Hz pink noise)

Impedance ..... Nominal: 8 ohms

Sound Pressure Level at 1 Meter 1 Watt Input Averaged, Pink Noise Band-Limited from 800 to 5,000 Hz:

..... 107 dB

Horizontal Beamwidth: ..... 80° @ 2 kHz (see Figure 2)

Vertical Beamwidth: ..... 50° @ 2 kHz (see Figure 2)

Directivity Factor R_θ (Q): ..... 7.9 @ 2 kHz

Usable Low-Frequency Limit: ..... 400 Hz

Construction:

High-impact acrylonitrile butadiene styrene (ABS) with ultraviolet light inhibiting mesa tan finish. Positive-lock painted steel swivel bracket. PA60M is white in color and has stainless steel hardware for marine use.

Voice-Coil Diameter:

..... 3.81 cm (1.5 in.)

Magnet Weight:

..... 0.28 kg (0.63 lb)

Magnet Material:

..... Strontium ferrite

Flux Density:

..... 1.25 Tesla

Dimensions,

Height: ..... 28.0 cm (11.0 in.)

Width: ..... 16.5 cm (6.5 in.)

Depth: ..... 21.6 cm (8.5 in.)

Net Weight:

..... 1.8 kg (4.1 lb)

Shipping Weight:

..... 2.1 kg (4.6 lb)

Installation

The base may be easily removed to simplify speaker installation by backing off the single wingnut to approximately the end of its bolt. Remove the base with a sliding motion. **It is not necessary to completely remove either the wingnut or its bolt.** Later, after the base is mounted, the speaker may be reinstalled on the base with a similar sliding motion, adjusted to any angular position, and the wingnut tightened.

Mounting the Base

The removable mounting base has three evenly-spaced holes on a 60.3 mm (2.38 in.) diameter circle. This diameter is small enough to be conveniently mounted on the cover of a standard 4-inch square or octagon electrical outlet box. The base may be used as a template. In addition, the base is slotted for mounting with 1/2-inch steel banding material. Banding tools and materials are available commercially and permit attachment to I-beams, pillars, or similar structural supports, where screwmounting is impractical. Finally, the base may also be attached to many structural supports with small C-clamps providing appropriate safety measures are observed.

Polar Response

The directional characteristics of the PA60 were measured by running a set of horizontal/vertical polar responses in Electro-Voice's large anechoic chamber, at each one-third-octave center frequency. The test signal was one-third-octave pseudo-random pink noise centered at the indicated frequencies. The measurement microphone was placed 6.1 m (20 ft.) from the horn mouth, while rotation was about the waveguide geometric apexes. These axes of rotation are quite close to the apparent (acoustic) apexes across the frequency range of measurement. Errors attributable to the slight differences between the geometric and acoustic apexes are reduced to an inconsequential level by the relatively long, 20-foot measuring distance. The horn was suspended freely with no baffle. The polar plots shown in Figure 1 display the results of these tests. The center frequency is noted on each plot. The wider plot on each chart is the horizontal polar (–) and the narrower plot is the vertical polar (– – –).

Beamwidth

A plot of the PA60's 6-dB-down total included beamwidth angle is shown in Figure 2 for each one-third-octave center frequency.

Frequency Response

Figure 3 shows the axial frequency response of the PA60. It was measured at a distance of 1 meter, using a swept sine wave.

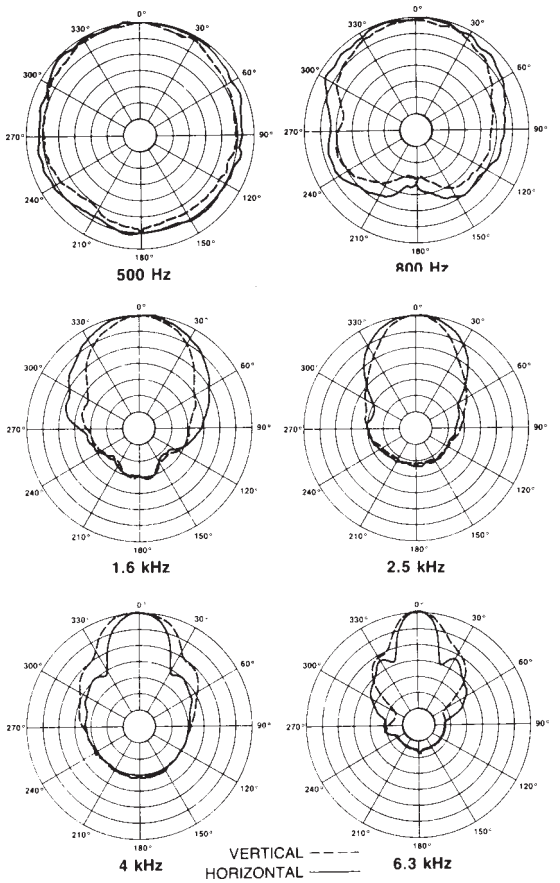

Figure 1
PA60 Polar Response

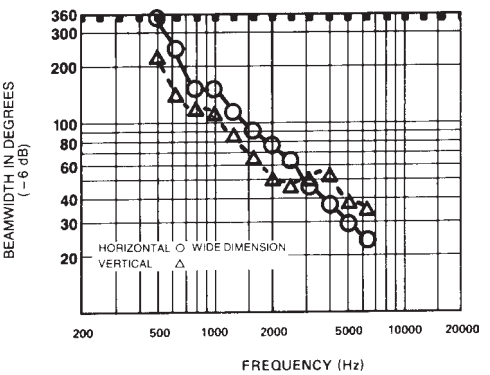

Figure 2
PA60 Beamwidth vs. Frequency

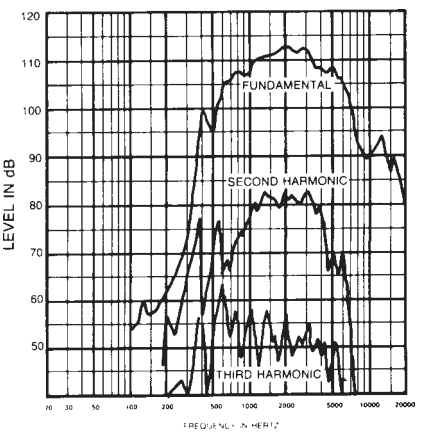

Figure 3
PA60 Frequency Response (1 watt at 1 meter)

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