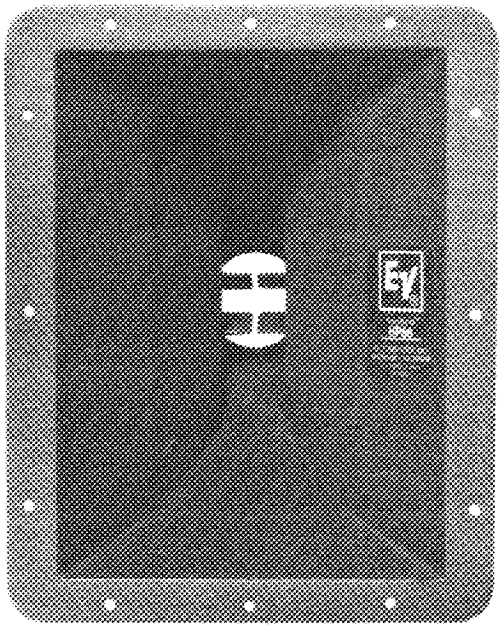
Electro-Voice®



HP66

TransPlanar™ Constant-Directivity Horn

- **Unique, 60° x 60° dispersion solves many vertical coverage problems**
- **Compact size—beamwidth control down to 1,600 Hz**
- **Driver loading down to 650 Hz**
- **Ideal for VHF use in three-way systems or compact, high-crossover two-way systems**
- **Flat-front for easy use in boxes or component arrays**
- **Beamwidth control vanes maintain uniform vertical coverage in the top octaves compared to other 2-inch-throat horns**
- **Fiberglass construction with integral die-cast throat gives superior strength**

SPECIFICATIONS

The following specifications are in accordance with or exceed the AES Recommended Practice for Specification of Loudspeaker Components Used in Professional Audio and Sound Reinforcement (AES2-1984/ANSI S4.26-1984).

Horizontal Beamwidth:
60° (+20°, –10°)
(–6 dB, 1.6 kHz to 20 kHz)
Vertical Beamwidth:
60° (+20°, –10°)
(–6 dB, 1.25 kHz to 20 kHz)
Directivity Factor R_θ (Q):
17.8 (average 1.6 kHz to 20 kHz)
Directivity Index D_I ($10\log_{10}R_\theta$):
12.5 dB (+2.0, –3.0 dB)
Usable Lower Frequency Limit:
650 Hz
Construction:
Polyester resin and glass-fiber laminate integrally molded to a die-cast zinc throat section: this hybrid construction assures a rigid driver mount, accurate, loss-free throat-wave transmission and low total weight compared to horns of similar size
Mechanical Connection of Driver:
Bolt on: standard 2-in.-diameter throat, 5-in.-diameter mounting flange and four clearance holes for 1/4-in. bolts on a 4-in.-diameter bolt circle
Recommended Drivers:
DH1A, DH2A, DH2As2, DH2/4MT, DH3/4MT
Dimensions:
Height: 27.9 cm (11.0 in.)
Width: 22.4 cm (8.8 in.)
Depth: 16.5 cm (6.5 in.)
Weight:
2.2 kg (4.8 lb)
Shipping Weight:
2.9 kg (6.4 lb)

DESCRIPTION

The Electro-Voice HP66 is a wide-range, flat-front, constant-directivity, high-frequency horn. It offers economy of space, where its geometry is "just big enough for the job." With the HP66, a horizontal dispersion angle is controlled over a frequency range of 1.6 kHz to 20 kHz, and the vertical angle is controlled from 1.25 kHz to 20 kHz, both with unusual precision and adherence to the intended angle. Furthermore, excellent loading is maintained to a low frequency of 650 Hz. The HP horn series (U.S. Patent #4,629,029) represents the latest development in "CD" horn design, employing the same principles which EV engineers developed and used to design the world's first true constant-directivity horns in 1974. The flat-front TransPlanar™ design makes the HP66 suitable for all modern boxed and clustered systems. A unique, integral fiberglass-and-zinc construction gives a strength-to-weight ratio superior to that of conventional fiberglass horn construction, resulting in exceptional strength in the throat area and the elimination of acoustically induced wall vibrations. Lastly, a special vaned waveguide throat detail gives the HP66 unusually uniform vertical directivity control in the top octaves when compared to similar 2-inch-throat horn designs (see Figure 2).

DIRECTIVITY

The directional characteristics of the HP66 were measured in Electro-Voice's large anechoic chamber using a stock Electro-Voice DH1A. The test signal was one-third-octave filtered pink noise at the frequencies indicated. A full spherical measurement system was used, one which is compatible with Mark IV Audio's AccoustaCADD™ computer-aided design program. All directional information was measured at 6.1 meters (20 feet) from the horn.

HP66 R_θ AND D_I VS. FREQUENCY (one-third-octave bandwidths)

Frequency	R_θ	D_I (dB)
630	3.67	5.65
800	5.24	7.19
1,000	5.24	7.19
1,250	8.75	9.42
1,600	13.90	11.43
2,000	17.10	12.33
2,500	17.26	12.37
3,150	19.23	12.84
4,000	21.48	13.32
5,000	19.72	12.95
6,300	17.99	12.55
8,000	19.63	12.93
10,000	13.12	11.18
12,000	8.63	9.36
16,000	28.44	14.54

Figure 2 shows the horizontal and vertical beamwidths. Beamwidth is the angle at which the horizontal and vertical polar responses have decreased in level by 6 dB when compared with the axial frequency response.

Figure 3 illustrates the total directivity of the HP66. The directivity factor R_θ (Q) is the relative value at a point of the HP66 when compared to an ideal spherical response. The directivity index D_I is calculated by $D_I = 10\log_{10}R_\theta$.

Figure 4 illustrates the horizontal and vertical polar responses.

HP66 SPECIFICATION GRAPHICS

FIGURE 1 — Dimensions

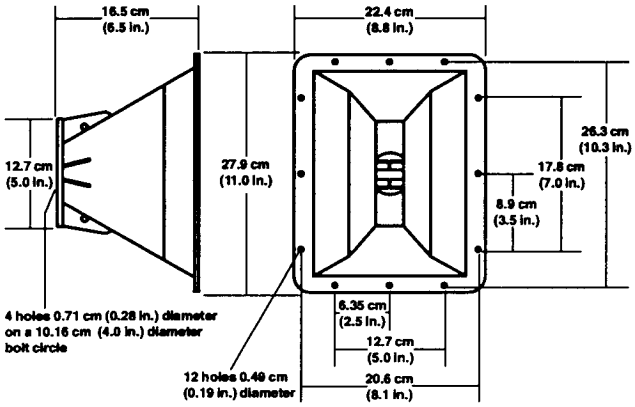


FIGURE 2 — Beamwidth vs. Frequency

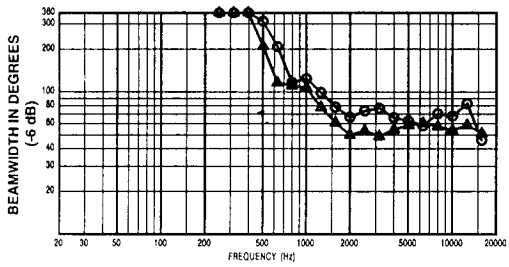


FIGURE 3 — Directivity vs. Frequency

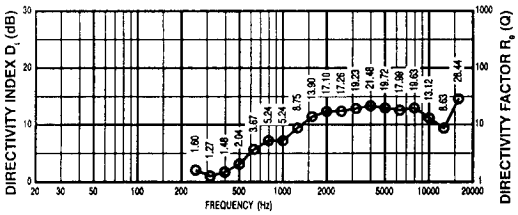
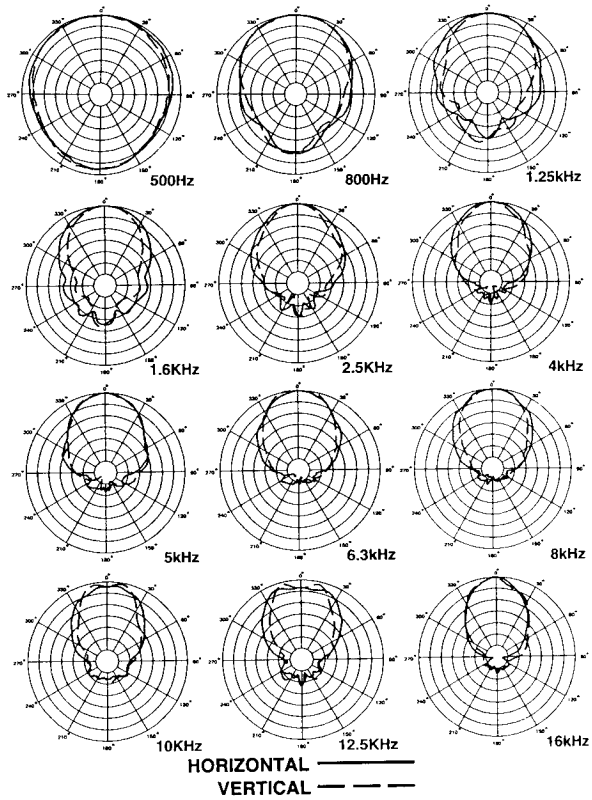


FIGURE 4 — Polar Response



ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The horn shall be of the constant-directivity type. It shall produce a horizontal beamwidth (6-dB-down angle) of 60 degrees, deviating no more than 20 degrees from this angle over the frequency range of 1,600 to 20,000 Hz. It shall produce a vertical beamwidth of 60 degrees, deviating no more than 20 degrees from this angle over the frequency range of 1,250 to 20,000 Hz. In addition, it shall provide useful acoustic loading at all frequencies above 650 Hz.

The horn shall be of hybrid fiberglass-and-zinc construction. The initial throat section shall be constructed on die-cast zinc and shall be integrally laminated into the fiberglass portion of the horn.

The horn shall possess a throat of 4.93-cm (1.94-in.) diameter, and its flange shall be provided with four clearance holes for 1/4-20 bolts, located on a 10.2-cm (4.0-in.) circle for the mounting of the compression driver. The horn shall be 27.9 cm (11.0 in.) high, 22.4 cm (8.8 in.) wide and 16.5 cm (6.5 in.) long. It shall weigh no more than 2.2 kg (4.8 lb).

The horn shall be the Electro-Voice HP66 constant-directivity horn.

UNIFORM LIMITED WARRANTY

Electro-Voice 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 product 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 Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice 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 Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831 or 800/234-6831). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice 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.

Electro-Voice 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. Electro-Voice 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.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (616/695-6831 or 800/234-6831).

Specifications subject to change without notice.