

HP99 TransPlanar™ Constant-Directivity Horn

- Unique, 90° x 90° dispersion solves many vertical coverage problems
- Compact size—beamwidth control down to 800 Hz
- Driver loading down to 800 Hz
- Ideal for VHF use in three-way systems or compact, high-cross-over two-way systems
- Flat-front for easy use in boxes or component arrays
- Durable fiberglass construction

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:

90° (+25°, -10°)
(-6 dB, 800 to 20,000 Hz)

Vertical Beamwidth:

90° (+15°, -30°)
(-6 dB, 800 to 20,000 Hz)

Directivity Factor $R_s(Q)$, averaged from 800 Hz to 16 kHz:

8.4 (+4.6, -3.5)

Directivity Index D_i (10 log₁₀ R), averaged from 800 to 16,000 Hz:

9.1 dB (+2.0 dB, -2.2 dB)

Usable Low-Frequency Limit:

800 Hz

Construction:

Polyester resin and fiberglass laminate

Color:

Dark gray (high gloss on audience side)¹

Mechanical Connection of Driver:

Bolt on, 34.9-mm (1.375-in.) diameter throat, 114.3-mm (4.5-in.) diameter mounting flange and four clearance holes for 6.35-mm (0.25-in.) bolts on an 88.9-mm (3.5-in.) diameter bolt circle

Recommended Drivers:

DH2As1, DH1Amt

Dimensions (see Figure 1),

Height:

279.4 mm (11.0 in.)

Width:

222.3 mm (8.8 in.)

Depth:

118.6 mm (4.7 in.)

Net Weight:

1.1 kg (2.3 lb)

Shipping Weight:

1.4 kg (3.0 lb)

DESCRIPTION

The Electro-Voice HP99 is a wide-range, flat-front, constant-directivity, high-frequency horn. It offers economy of space, employing a geometry that is "just big enough for the job." With the HP99, the horizontal and vertical dispersion angles are controlled over a frequency range of 800 to 20,000 Hz, both with unusual precision and adherence to the intended angle. Furthermore, excellent loading is maintained to a low frequency of 800 Hz. The HP horn series (U.S. Patent #4,685,532) 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 HP99 suitable for all modern boxed and clustered systems.

DIRECTIVITY

The directional characteristics of the HP99 were measured in Electro-Voice's large anechoic chamber using a DH1Amt compression driver. The test signal was one-third-octave filtered pink noise at the frequencies indicated. A full spherical measurement system was used. All directional information was measured at 6.1 meters (20 feet) from the horn.

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 and Table 1 illustrate the total directivity of the HP99. The directivity factor $R_s(Q)$ is ratio of the SPL of the HP99 at a given point to the SPL of an ideal omnidirectional source at that same point. The directivity index, D_i , is calculated by $D_i = 10 \log_{10} R_s$.

Figure 4 illustrates the horizontal and vertical polar responses.

TABLE 1 — HP99 Directivity Response
(anechoic environment, 4 volts/5.1 meters (20 feet))

Frequency (Hz)	R_s	D_i (dB)
630	2.2	3.5
800	4.9	6.9
1,000	6.6	8.2
1,250	7.5	8.7
1,600	9.1	9.6
2,000	13.0	11.1
2,500	10.7	10.3
3,150	12.1	10.8
4,000	10.2	10.1
5,000	6.6	8.2
6,300	7.9	9.0
8,000	6.4	8.0
10,000	6.3	8.0
12,500	8.8	9.4
16,000	7.9	9.0

1. HP99T available, painted near-flat black on the audience side



HP99 SPECIFICATION GRAPHICS

FIGURE 1 — HP99 Dimensions

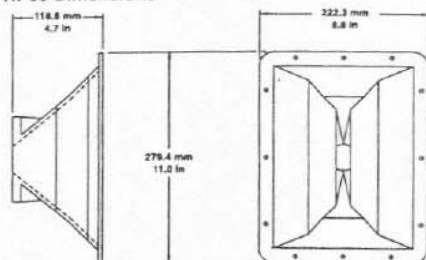
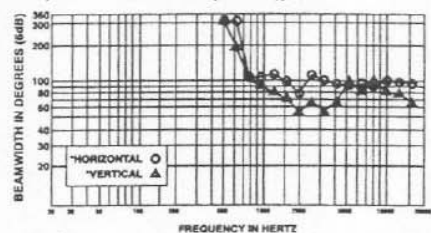


FIGURE 2 — HP99 Beamwidth Response (anechoic environment, 4 volts/6.1 meters (20 feet))



* Long Horn Axis Vertical

FIGURE 3 — HP99 Directivity Response (anechoic environment, 4 volts/6.1 meters (20 feet))

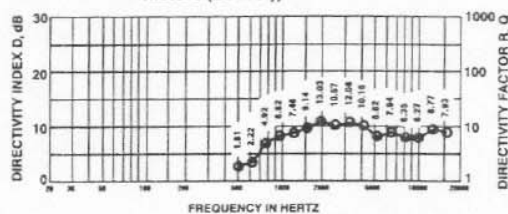
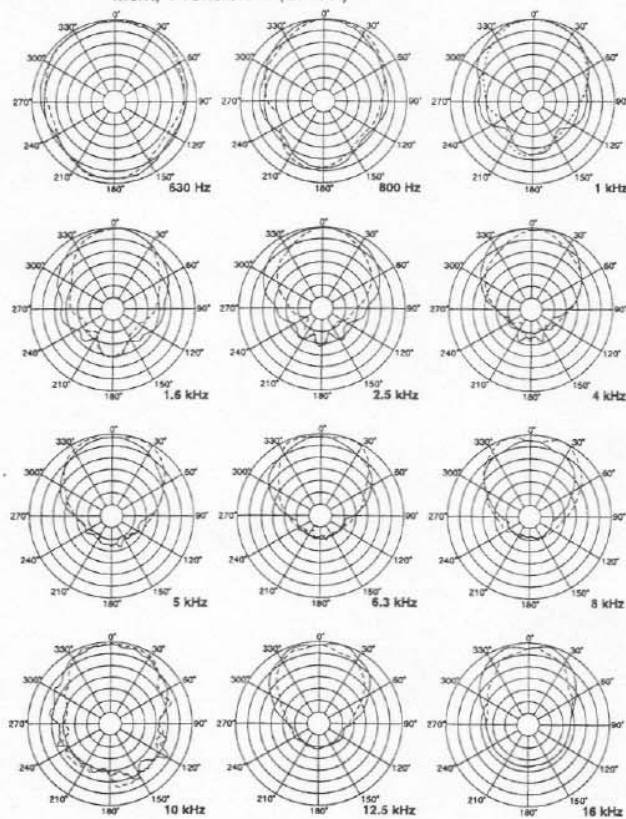


FIGURE 4 — HP99 One-Third-Octave Polar Response (anechoic environment, 4 volts/6.1 m (20 feet))



5 dB PER
DIVISION

*HORIZONTAL ———
*VERTICAL ———

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The horn shall be of the constant-directivity type. It shall produce a horizontal beamwidth (6-dB-down angle) of 90 degrees, deviating no more than positive 25 degrees or negative 10 degrees from this angle over the frequency range of 800 to 20,000 Hz. It shall produce a vertical beamwidth of 90 degrees, deviating no more than positive 15 degrees or negative 30 degrees from this angle over the frequency range of 800 to 20,000 Hz. In addition, it shall provide useful acoustic loading at all frequencies above 800 Hz.

The horn shall be of fiberglass construction.

The horn shall possess a throat of 34.9 mm (1.375 in.) diameter. Its 114.3-mm (4.5-in.) mounting flange shall include four clearance holes for 1/4-20 bolts, located on an 88.9-mm (3.5-in.) bolt circle for the mounting of the compression driver. The horn shall be 279.4 mm (11.0 in.) tall, 222.3 mm (8.8 in.) wide, and 118.6 mm (4.7 in.) long. It shall weigh no more than 1.1 kg (2.3 lb).

The horn shall be the Electro-Voice HP99 constant-directivity horn.

WARRANTY (Limited)

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) and/or Electro-Voice West, at 8234 Doe Avenue, Visalia, CA 93291 (209/651-7777 or 800/825-1242). **Incidental and Consequential Damages Ex-**

cluded: 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.