

# HP99C

TransPlanar™  
Constant-Directivity  
Horn



## General Product Description

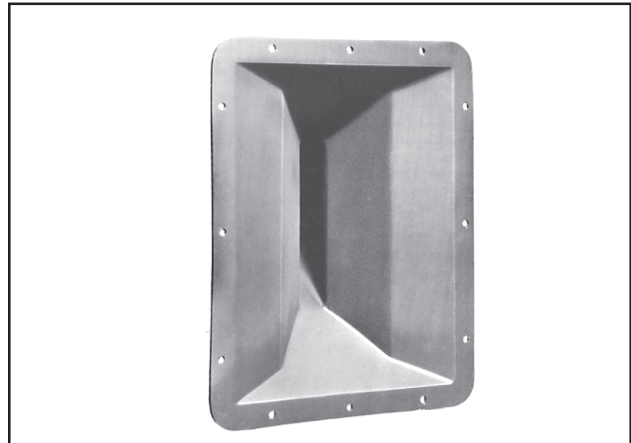
The Electro-Voice® HP99C is a wide-range, flat-front, constant-directivity, high-frequency horn. With the HP99C, a horizontal dispersion angle is controlled over a frequency range of 800 Hz to 20 kHz, and the vertical angle is controlled from 1.25 kHz to 20 kHz, both with unusual precision and adherence to the intended angle. Furthermore, excellent loading is maintained to a low frequency of 1000 Hz.

The flat-front TransPlanar™ design makes the HP99C suitable for all modern boxed and clustered systems. A special vaned waveguide throat detail gives the HP99C unusually uniform vertical directivity control in the top octaves when compared to similar 1.4-inch-throat horn designs.

## 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 1000 Hz.

The horn shall be of polyurethane 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 a 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.) high, 222.3 mm (8.8 in.) wide and 16.5 cm (6.5 in.) long. It shall weigh no more than 1.1 kg (2.3 lb).

The horn shall be the Electro-Voice HP99C constant-directivity horn.

## 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 Hz to 20 kHz)

### Vertical Beamwidth:

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

### Directivity Factor $R_{\theta}$ (Q):

8.4 (average 800 Hz to 16 kHz)

### Directivity Index $D_i$ :

9.1 dB (+2.0, -2.2 dB)

10 log  $R_{\theta}$ , (average 800 Hz to 16 kHz)

### Lowest Recommended Crossover Frequency:

1000 Hz

### Construction:

Black polyurethane with a matt texture. This construction assures a rigid driver mount, accurate, loss-free throat-wave transmission and low total weight compared to horns of similar size.

### Color:

Black

### Mechanical Connection of Driver:

Bolt on; standard 1.4" diameter throat, 4.5" diameter mounting flange and four clearance holes for 1/4" bolts on a 3.5" diameter bolt circle.

### Recommended Driver:

DH2As1, DH1Amt

### Weight:

1.1 kg (2.3 lb)

Dimensions:	Inches
A	1.375
B	4.50
C	8.688
D	10.969
E	3.50
F	0.281 x 4
G	5.00
H	4.725

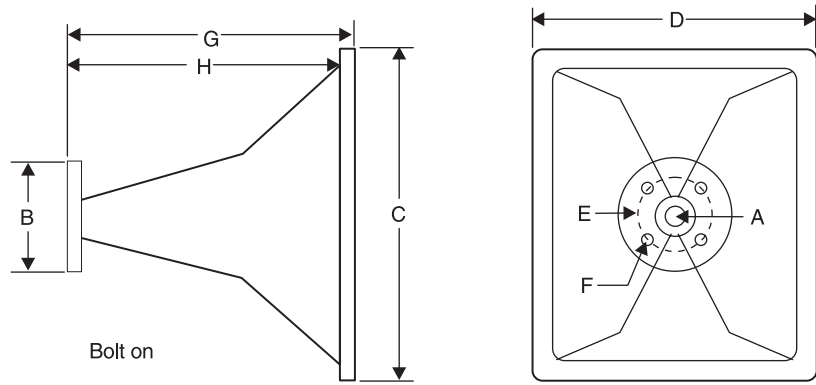


Figure 1: Dimensions

### Directivity

The directional characteristics of the HP99C 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.

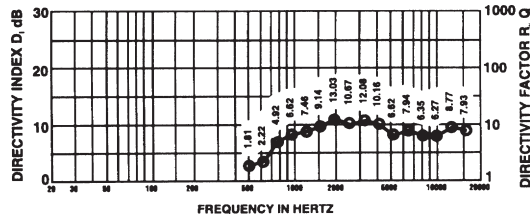


Figure 2: Directivity versus Frequency

This illustrates the total directivity of the H P99P. The directivity factor  $R_0$  (Q) is the ratio of the SPL of an ideal omnidirectional source at the same point. The directivity index,  $D_i$  is calculated by  $D_i = 10 \log_{10} R_0$ .

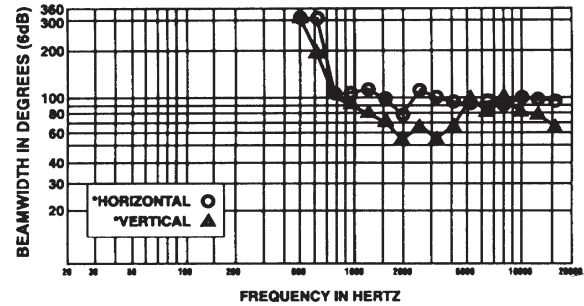


Figure 3: 6-dB-Down Beamwidth versus Frequency

This 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.

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 800/392-3497 Fax: 800/955-6831

For warranty repair or service information, contact the Service  
 Repair department at 800/685-2606

For technical assistance, contact Technical Support at 866/78AUDIO  
 Please refer to the Engineering Data Sheet for warranty information.  
 Specifications subject to change without notice.