

# HP640



## Constant-Directivity Horn

### General Product Description

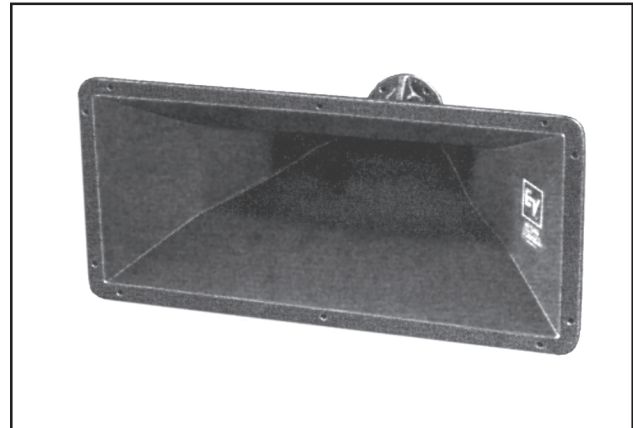
The Electro-Voice® HP640 is a wide-range, flat-front, constant-directivity, high-frequency horn. With the HP640, a horizontal dispersion angle is controlled over a frequency range of 500 Hz to 20 kHz, and the vertical angle is controlled from 1.5 kHz to 20 kHz, both with unusual precision and adherence to the intended angle. Furthermore, excellent loading is maintained to a low frequency of 500 Hz.

The flat-front design makes the HP640 suitable for all modern boxed and clustered systems. A special vaned waveguide throat detail gives the HP640 unusually uniform vertical directivity control in the top octaves when compared to similar 2-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 60 degrees, deviating no more than 20 degrees from this angle over the frequency range of 500 to 20,000 Hz. It shall produce a vertical beamwidth of 40 degrees, deviating no more than 10 degrees from this angle over the frequency range of 1,500 to 20,000 Hz. In addition, it shall provide useful acoustic loading at all frequencies above 500 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 4.9 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 33.0 cm (13.0 in.) high, 71.1 cm (28.0 in.) wide and 43.7 cm (17.2 in.) long. It shall weigh no more than 4.3 kg (9.5 lb).

The horn shall be the Electro-Voice HP640 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:

60° (+20°, -10°) (-6 dB 1.6 kHz to 20 kHz)

#### Vertical Beamwidth:

40° (+20°, -10°) (-6 dB, 1.25 kHz to 20 kHz)

#### Directivity Factor $R_0$ (Q):

17.8 (average 1.6 kHz to 20 kHz)

#### Directivity Index D<sub>i</sub>:

12.5 dB (+2.0, -3.0 dB)  
10 log  $R_0$ , (average 1.6 kHz to 20 kHz)

#### Lowest Recommended Crossover Frequency:

500 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" diameter throat, 5" diameter mounting flange and four clearance holes for 1/4" bolts on a 4" diameter bolt circle.

#### Recommended Driver:

DH1A, DH2A, DH2As2

#### Weight:

4.3 kg (9.5 lb)

# Electro-Voice®

Dimensions:	Inches
A	1.938
B	5.00
C	13.00
D	28.00
E	4.00
F	0.281 x 4
G	17.20
H	16.95

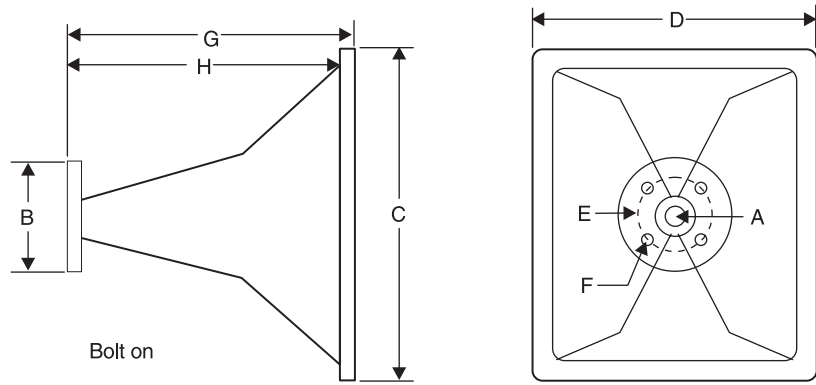


Figure 1: Dimensions

### Directivity

The axial directivity factor  $R_0$  (formerly Q) of the HP640 horn was computed at each one-third-octave center frequency from the horizontal/vertical polars. The graph in Figure 2 illustrates this data over the range 500 Hz to 20 kHz. The axial frequency response of the HP640 with a particular driver is in close correspondence to that driver's power response above 1 kHz.

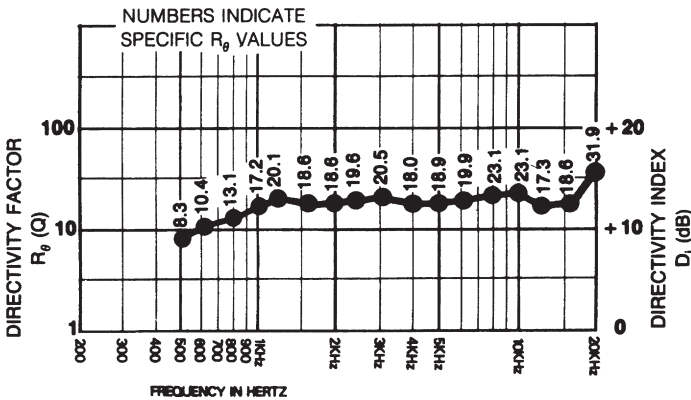


Figure 2: Directivity versus Frequency

### Beamwidth

A plot of the HP640's 6-dB-down total included beamwidth angle is shown in Figure 3 for each one-third-octave center frequency. The horizontal beamwidth is maintained at 60° (+10°, -10°) over the range 500 Hz to 20 kHz. Vertical beamwidth control occurs only above 1.5 kHz because of the relatively short vertical dimension of the horn's mouth.

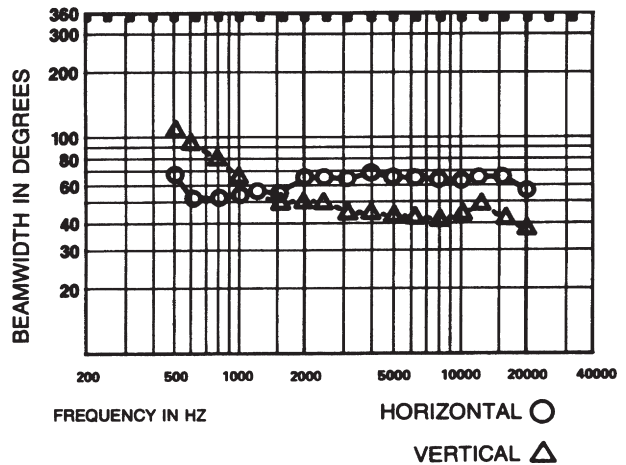


Figure 3: 6-dB-Down Beamwidth versus Frequency

USA 12000 Portland Ave South, Burnsville, MN 55337, Phone: 952-884-4051, FAX: 952-884-0043  
 Canada 705 Progress Avenue, Unit 46, Scarborough, Ontario, Canada, M1H2X1, Phone: 416-431-4975, 800-881-1685, FAX: 416-431-4588  
 Germany Hirschberger Ring 45, D94315, Straubing, Germany, Phone: 49 9421-706 0, FAX: 49 9421-706 287  
 France Parc de Courcerin, Alle Lech Walesa, Lognes, 77185 Marne La Vallee, France, Phone: 33/1-6480-0090, FAX: 33/1-6480-4538  
 Australia Unit 23, Block C, Slough Business Park, Slough Avenue, Silverwater, N.S.W. 2128, Australia, Phone: 61/2-9648-3455, FAX: 61/2-9648-5585  
 Hong Kong Unit E & F, 21/F, Luk Hop Industrial Bldg., 8 Luk Hop St., San PO Kong, Kowloon, Hong Kong, Phone: 852-2351-3628, FAX: 852-2351-3329  
 Japan 5-3-8 Funabashi, Setagaya-ku, Tokyo, 156-0055 Japan, Phone: +81 (0) 3-5316-5020, FAX: +81 (0) 3-5316-5031  
 Singapore 3015A Ubi Rd 1, 05-10, Kampong Ubi Industrial Estate, Singapore 408705, Phone: 65-746-8760, FAX: 65-746-1206  
 Mexico Av. Parque Chapultepec #66-201, Col. El Parque Edo. Mex. 53390, Phone: (52) 5358-5434, FAX: (52) 5358-5588  
 UK 4, The Willows Centre, Willow Lane, Mitcham, Surrey CR4 4NX, UK, Phone: 44 181 640 9600, FAX: 44 181 646 7084  
 Africa, Mid-East 12000 Portland Ave South, Burnsville, MN 55337, Phone: 952-887-7424, FAX: 952-887-9212  
 Latin America 12000 Portland Ave South, Burnsville, MN 55337, Phone: 952-887-7491, FAX: 952-887-9212

[www.electrovoice.com](http://www.electrovoice.com) • Telex Communications, Inc. • [www.telex.com](http://www.telex.com)

© Telex Communications, Inc. 02/2001  
 Part Number 38109-955 Rev A



**Electro-Voice®**

U.S.A. and Canada only.  
 For customer orders, contact the Customer Service department at  
 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 866/78 AUDIO

Please refer to the Engineering Data Sheet for warranty information.  
 Specifications subject to change without notice.

## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>