

DH1A DH1A-16 High-Frequency Reproducer



General Product Description

The Electro-Voice® DH1A is a world-class, high-frequency compression driver capable of unprecedentedly high acoustic power output over an extremely wide frequency range.

This performance results from careful engineering and design, involving expert choices of material and advanced driver architecture which are ideally suited for efficient presentation of high quality musical and communication program material. Features of the DH1A include:

1. A unique, geometrically-optimized diaphragm consisting of a one-piece dome and suspension fabricated from titanium. Advanced metal forming and processing technology developed by EV engineers allows this high-elongation diaphragm design to be formed from .0015 inch thick material. The combination of diaphragm geometry and material choice gives the DH1A diaphragm an ideal combination of superb high frequency response and resistance to fatigue from stress.
2. A magnetic drive system which provides unsurpassed amplifier-to-diaphragm coupling. This gives the DH1A unusual bandwidth extension, high efficiency and a musical depth and transient clarity not normally associated with compression drivers. The drive system consists of the following advanced features:

An optimized and balanced magnetic circuit which provides a flux density of 2.1 Tesla (21 kilogauss). This represents the highest flux density currently available.

- b) A precision, lightweight voice-coil made from pure aluminum rectangular wire, which gives the DH1A high motor strength and maximum efficiency.

Proprietary high-temperature winding and electrical bonding technologies assure excellent coil reliability and performance.

- c) EV-exclusive PROTEFT™ (Patent no. 4547632) voice-coil protection, a Teflon®-based coating, applied to the top plate. Occasionally, violent power peaks of several seconds in duration may expand a normal driver's voice coil into contact with the top plate, causing deterioration. With the PROTEFT™ coating, added protection is provided; the coating lubricates any rubbing contact and provides direct electrical insulation between the coil and the steel top plate. This feature is unique for compression drivers and is a result of Electro-Voice's exclusive "Total Thermal Engineering" approach to loudspeaker design.
3. A phase-plug design giving optimum upper octave response.
 4. Screw-type input terminals, which are an EV exclusive. They provide an unusually positive electrical connection. Each terminal will easily accept a pair of 12 gauge wires, and any smaller size. These special terminals were designed using the results of an extensive field survey of consultants and sound-system installers.
 5. An integral diaphragm assembly and protective cap which is an EV-exclusive design. This allows for a single operation for diaphragm removal and acts as an effective out-of-driver diaphragm protection.



Recommended Horns

The following Electro-Voice horns are recommended for use with the DH1A: HPS64, HP85, HP99, HP99P.

Architects' and Engineers' Specifications

The loudspeakers shall be of the compression-driver type consisting of a titanium diaphragm joined to an edge-wound aluminum ribbon voice coil on a polyimide form.

The nominal impedances shall be 8 ohms (DH1A) and 16 ohms (DH1A-16).

The loudspeakers exhibit essentially flat power response from 500 to 5,000 Hz, with a smoothly rolled-off response from 5,000 to 20,000 Hz. Their efficiency shall not be less than 25%. Their sensitivity, when mounted on an EV HP4020 horn, shall be 115 dB (1 W/1 m) with a 500-to-5,000 Hz pink-noise signal applied.

The loudspeakers shall be capable of handling a 50 watt, 500-to-20,000 Hz pinknoise signal with a 6 dB crest factor (200 watts peak) for a period of 24 hours. In addition, they shall be capable of handling a 75 watt, 1,000-to-20,000 Hz pink-noise signal, with 6-dB crest factor, for a period of two hours.

The loudspeakers shall have a diameter of 22.5 cm (8.88 in.) and a depth of 14.0 cm (5.50 in.). They shall have a 1.94 inch throat opening, with four ¼-20 threaded bolt holes on a 4 inch diameter circle for mounting. They shall weigh no more than 10.7 kg (23.5 lbs).

The loudspeakers shall be the Electro-Voice model DH1A and model DH1A-16 compression drivers.

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 54.26-1984).

Power Frequency Response:

500-20,000 Hz (essentially flat 500-5,000Hz with 6-dB-per-octave roll off to 20,000 Hz, rapid roll off beyond)

Nominal Impedance:

DH1A: 8 ohms
DH1A-16: 16 ohms

Minimum Impedance, on HP Series Horns Above 500 Hz:

DH1A: 7 ohms at 6,000 Hz
DH1A-16: 14 ohms at 6,000 Hz

DC Resistance:

DH1A: 4.5 ohms
DH1A-16: 10.5 ohms

Long-Term Average Power Capacity on HP Horns, Indicated Bands of Pink-Noise, 8 Ohm Impedance Assumed,

24 Hours, 6-dB Crest Factor: 50 watts (500-20,000 Hz)
2 Hours, 6-dB Crest Factor: 75 watts (1000-10,000 Hz)

Nominal Efficiency, 1,000-5,000-Hz Pink-Noise, 8-Ohm Impedance Assumed:

..... 25

Maximum Long-Term Acoustic Power Output (24 hours):

..... 10 watts

Recommended Minimum Crossover Frequency:

..... 500 Hz

Sound Pressure Level at 1 Meter, 1 Watt Input Averaged from 500 Hz to 5,000 Hz:¹

114 dB, HP420 horn
112 dB, HP640 horn
110 dB, HP940 horn
108 dB, HP1240 horn

Throat Diameter: 4.92 cm (1.94 in.)

Voice Coil Diameter: 7.62 cm (3.00 in.)

Voice Coil Construction:

Rectangular edge-wound pure aluminum wire on a high-temperature polyimide form.

Diaphragm Construction:

Integral all-titanium construction consisting of spherical diaphragm dome and geometrically optimized suspension; a low fatigue, high temperature, long-duration-cure engineering polymer bonds the coil form to the diaphragm.

Electrical Connection:

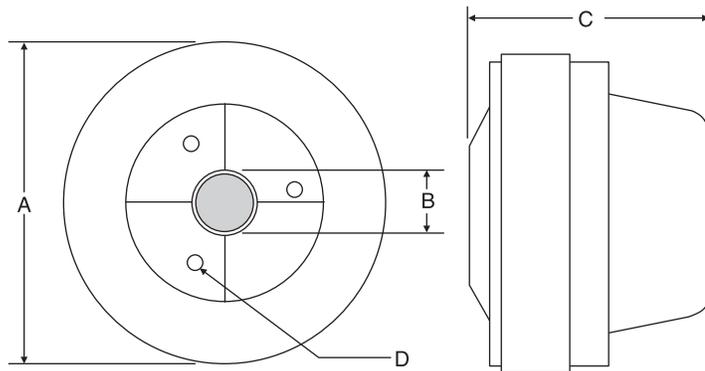
Screw terminals, each of which will accept a pair of 12-gauge wires and any smaller size.

Polarity:

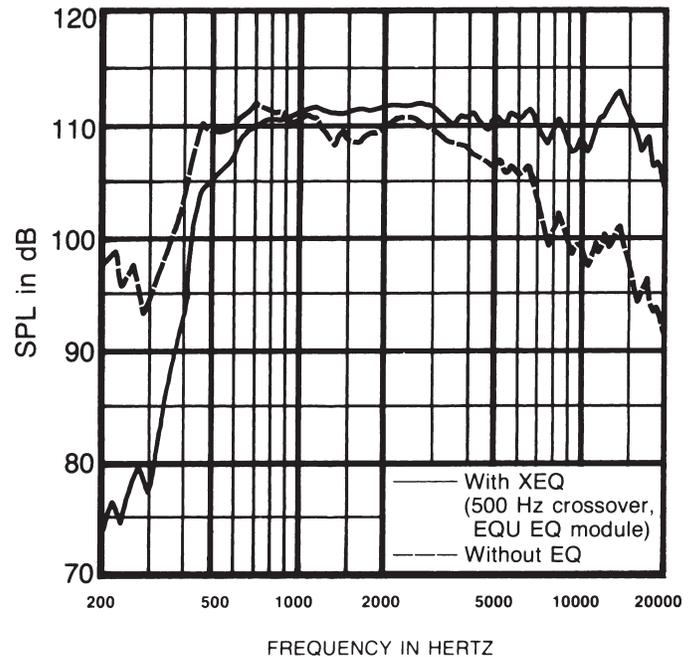
A positive voltage applied to the positive (+) terminal produces a positive acoustic pressure in the throat.

Net Weight: 10.7 kg (23.5 lb)

1. Measured axis in the far field with 1 watt input of band-limited pink-noise from 500-5,000 Hz end calculated to 1 m or equivalent by inverse square law.



Dimensions: (in)	
A	8.9
B	1.94
C	5.5
D	1/4 - 10



Axial Frequency Response With and Without Equalization, 1 Watt/1 Meter, HP9040 Horn

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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 Marme La Vallee, France, Phone: 33/1-6480-0090, FAX: 33/1-6480-4538
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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 866/78AUDIO

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