PROFISSIONAL LINE- Compression Driver

D305

2" (50 mm) exit compression driver for high sensitivity, low distortion and smooth medium frequency response applications. That leads the D305 driver to deliver high performance, high quality and high value for the pinnacle in sound reinforcement applications.

Its construction features include:

- ferrofluid (Ferrosound®) loaded gap reducing heat build-up and offering consistent results over long-term demanding concert usage;
- voice coil is made of high temperature wire wound on Kapton® former to withstand high operating temperatures;
- injected plastic housing;
- precisely engineered diaphragm structure and alignment mechanism allows for easy, reliable and cost effective repair in case of diaphragm failure.

SPECIFICATIONS

Nominal impedance:		8	Ω
Minimum impedance @ 3,870 Hz:		6.8	Ω
POWER USING CROSSOVER (12dB/oct)	ACTIVE	PASSIVE	
AES (HPF 500 Hz)[5]	27	--	W
AES (HPF 1 kHz)[5]	32	--	W
MUSICAL PROGRAM (HPF 500 Hz)[1]	46	100	W
MUSICAL PROGRAM (HPF 1 kHz)[1]	64	250	W
Sensitivity			
On horn,1W@1m, on axis[2]		110	dB SPL
On plane-wave tube,0.0894V[3]		115	dB SPL
Frequency response @ -10 dB:		300 to 7,000	Hz
Throat diameter:		50 (2)	mm (in)
Diaphragm material:		Phenolic	
Voice coil diameter:		75 (3)	mm (in)
Re:		6.0	Ω
Flux density:		1.60	T
Minimum recommended crossover (12 dB / oct):		500	Hz

[1] Power handling specifications refer to normal speech and/or music program material, reproduced by an amplifier producing no more than 5% distortion. Power is calculated as true RMS voltage squared divided by the nominal impedance of the loudspeaker. This voltage is measured at the input of the recommended passive crossover when placed between the power amplifier and loudspeaker.
Musical Program= 2 x W RMS.
[2] Measured with HL4750-SLF horn, 500 - 3,500 Hz average.
[3] The sensitivity represents the SPL in a 25 mm terminated tube, 500 - 3,500 Hz average.
[5] Test with duration of 2h with pink noise (from 6dB crest factor) and filtered a decade of often-cut.

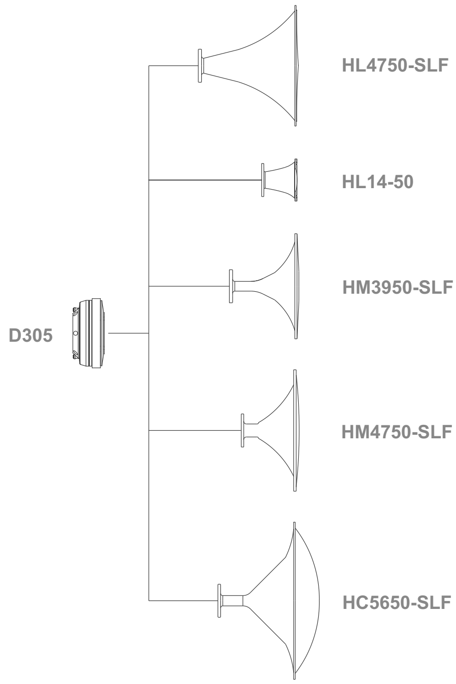
ADDITIONAL INFORMATION

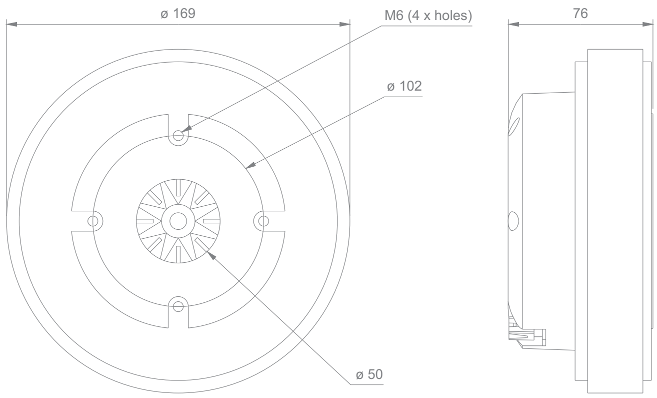
Magnet material:	Barium ferrite	
Magnet weight:	1,600 (57)	g (oz)
Magnet diameter x depth:	169 x 19 (6.65 x 0.75)	mm (in)
Magnetic assembly weight :	4,360 (9.61)	g (lb)
Housing material:	Plastic	
Housing finish:	Black	
Magnetic assembly steel finish:	Zinc-plated	
Voice coil material:	Copper	
Voice coil former material:	Polyimide (Kapton®)	
Voice coil winding length:	5.3 (17.4)	m (ft)
Voice coil winding depth:	3.5 (0.14)	mm (in)
Wire temperature coefficient of resistance (α25):	0.00337	1/°C
Volume displaced by driver:	1.4 (0.049)	l (ft^3)
Net weight:	5,000 (11.02)	g (lb)
Gross weight:	5,100 (11.24)	g (lb)
Carton dimensions (W x D x H):	19 x 18.5 x 8.5 (7.5 x 7.3 x 3.4)	cm (in)

MOUNTING INFORMATION

Horn connection:	Bolt on
Number of holes:	4 (M6) equally spaced threaded holes
Threaded holes diameter:	102 (4) mm
Connectors:	Push terminals
Polarity:	Positive voltage applied to the positive terminal (red) gives diaphragm motion toward the throat

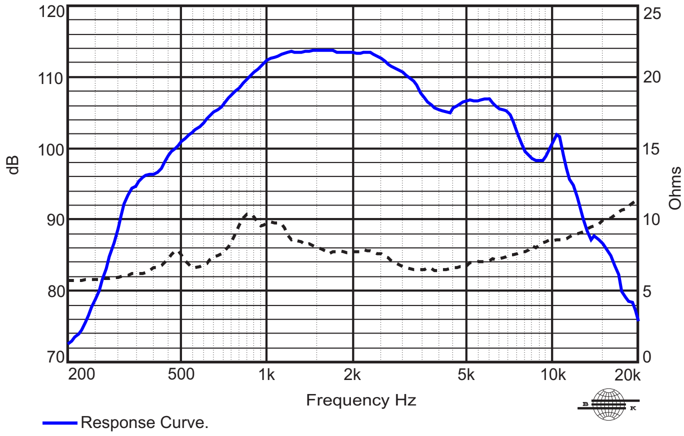
DRIVER x HORN CONNECTION





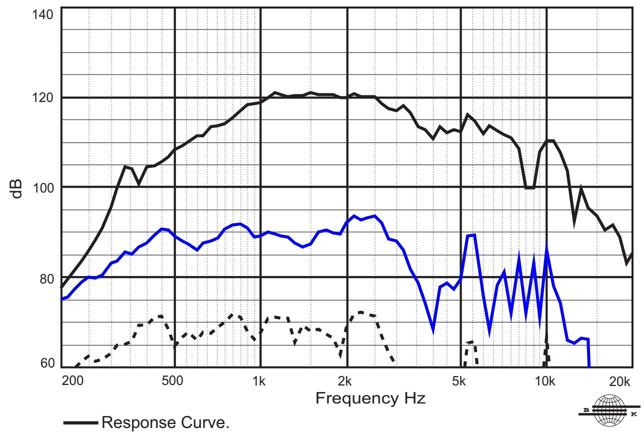
Dimensions in mm (in).

RESPONSE AND IMPEDANCE CURVES W/ HL4750-SLF HORN INSIDE AN ANECHOIC CHAMBER, 1 W / 1 m



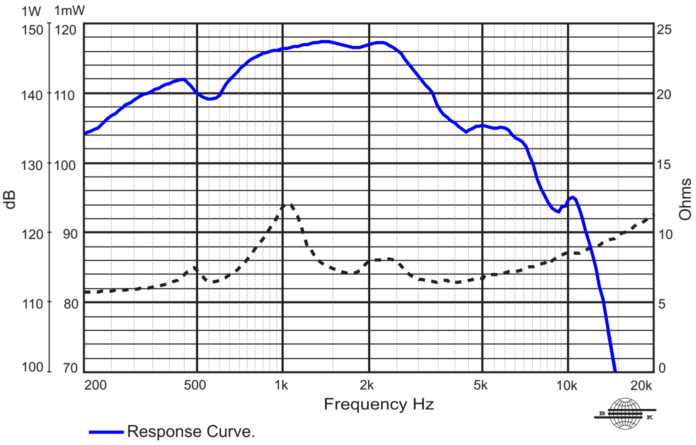
Response Curve.
Impedance Curve.

HARMONIC DISTORTION CURVES W/ HL4750-SLF HORN, 10 W / 1 m



Response Curve.
Distortion Curve, 2nd harmonic.
Distortion Curve, 3rd harmonic.

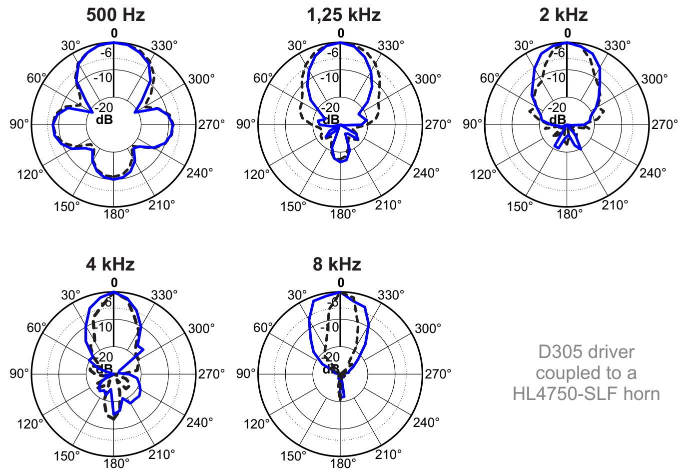
RESPONSE AND IMPEDANCE CURVES W/ PLANE-WAVE TUBE, 1 mW



Response Curve.
Impedance Curve.

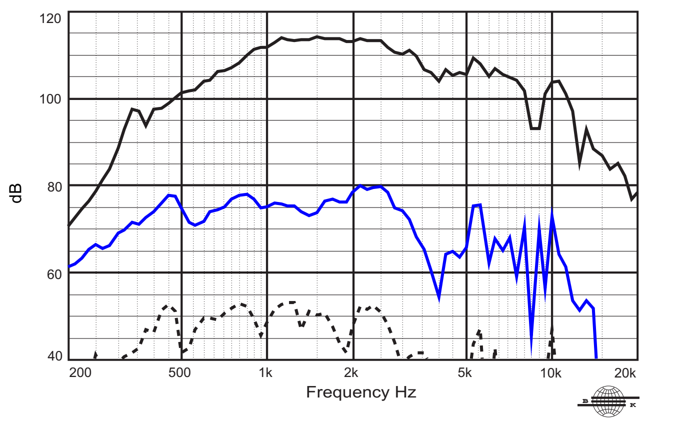
Frequency response and impedance curves measured with 50 mm terminated plane-wave tube, with sensitivity referenced to a 25 mm tube.

POLAR RESPONSE CURVES



Polar Response Curve.

HARMONIC DISTORTION CURVES W/ HL4750-SLF HORN, 1 W / 1 m



Response Curve.
Distortion Curve, 2nd harmonic.
Distortion Curve, 3rd harmonic.

HOW TO CHOOSE THE RIGHT AMPLIFIER

The power amplifier must be able to supply twice the RMS driver power. This 3 dB headroom is necessary to handle the peaks that are common to musical programs. When the amplifier clips those peaks, high distortion arises and this may damage the transducer due to excessive heat. The use of compressors is a good practice to reduce music dynamics to safe levels.

FINDING VOICE COIL TEMPERATURE

It is very important to avoid maximum voice coil temperature. Since moving coil resistance (R_E) varies with temperature according to a well known law, we can calculate the temperature inside the voice coil by measuring the voice coil DC resistance:

$$T_B = T_A + \left(\frac{R_B}{R_A} - 1\right)\left(T_A - 25 + \frac{1}{\alpha_{25}}\right)$$

T_A , T_B= voice coil temperatures in °C.
R_A , R_B= voice coil resistances at temperatures T_A and T_B, respectively.
α_{25}= voice coil wire temperature coefficient at 25 °C.

JBL by HARMAN

HARMAN

© 2011 HARMAN International Industries, Incorporated. All rights reserved. Harman do Brasil Indústria Eletrônica e Participações Ltda. is a trademark of Harman International Industries, registered in the United States and/or other countries. Features, specifications and appearance are subject to change without notice.

Code: NA - Rev.: 03 - 01/16