



PROFISSIONAL LINE- Compression Driver D220 Ti

High quality compression driver with dome diaphragm in pure titanium, offers high efficiency and low distortion over the medium and high frequencies band.

It can be successfully used in studio monitors, stage boxes and sound reinforcement in small rooms, where a high performance is requested.

This performance results from the proper combination of the components.

Diaphragm type dome in pure, rigid, light and extremely thin titanium (0.025 mm). To avoid stress and distortion, the suspension has a special design.

Injected phase plug in engineering plastic, optimized to eliminate undesirable phase cancellations.

Magnetic assembly that concentrates flux in the gap, optimized using FEA (Finite Element Analysis).

Voice coil manufactured in CCAW (Copper Clad Aluminium Wire), Kapton[®] former, assures great stability and thermal resistance.

The moving assembly has a perfect auto-centering characteristic that turns replacement in an easy task.

Model D220Ti uses standard 1 3/8" screw - 18 threads per inches, for better fitting with Selenium horns.

SPECIFICATIONS

Nominal impedance:	8 Ω	
Minimum impedance @ 4,806 Hz:	6.9 Ω	
POWER USING CROSSOVER (12dB/oct)	ACTIVE	PASSIVE
AES (HPF 1,5 kHz) ⁵	23	-- W
AES (HPF 2 kHz) ⁵	27	-- W
MUSICAL PROGRAM (HPF 1,5 kHz) ¹	46	120 W
MUSICAL PROGRAM (HPF 2 kHz) ¹	54	160 W
Sensitivity		
On horn, 1W@1m, on axis ²	109 dB SPL	
On plane-wave tube, 0.0894V ³	116 dB SPL	
Frequency response @ -6 dB:	1,000 to 21,000 Hz	
Throat diameter:	25 (1) mm (in)	
Diaphragm material:	Titanium	
Voice coil diameter:	44 (1.7) mm (in)	
Re:	6.0 Ω	
Flux density:	1.60 T	
Minimum recommended crossover (12 dB / oct):	1,500 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 HL14-25 horn, 1,200 - 15,000 Hz average.

³ The sensitivity represents the SPL in a 25 mm terminated tube, 800 - 2,000 Hz average.

⁵ Test with duration of 2h with pink noise (from 6dB crest factor) and filtered a decade of often-cut.

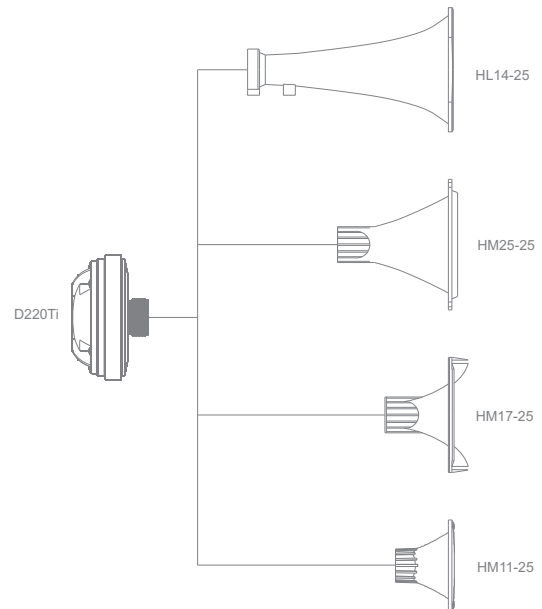
ADDITIONAL INFORMATION

Magnet material:	Barium ferrite	
Magnet weight:	675 (24) g (oz)	
Magnet diameter x depth:	115 x 15 (4.52 x 0.59) mm (in)	
Magnetic assembly weight :	1,700 (3.75) g (lb)	
Housing material:	Plastic	
Housing finish:	Black	
Magnetic assembly steel finish:	Zinc-plated	
Voice coil material:	CCA W	
Voice coil former material:	Polyimide (Kapton [®])	
Voice coil winding length:	2.6 (8.53) m (ft)	
Voice coil winding depth:	2.7 (0.11) mm (in)	
Wire temperature coefficient of resistance (α25):	0.00435 1/°C	
Volume displaced by driver:	0.5 (0.018) l (ft ³)	
Net weight:	1,730 (3.81) g (lb)	
Gross weight:	1,810 (3.99) g (lb)	
Carton dimensions (W x D x H):	12 x 13.6 x 10 (4.7 x 5.6 x 3.9) cm (in)	

MOUNTING INFORMATION

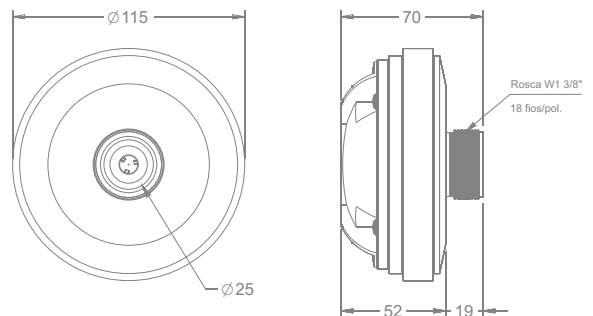
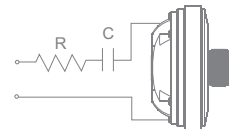
Horn connection:	Screw-on 1 3/8" - 18 TPI
Connectors:	Faston
Polarity:	Positive voltage applied to the positive terminal (red) gives diaphragm motion toward the throat

DRIVER x HORN CONNECTION



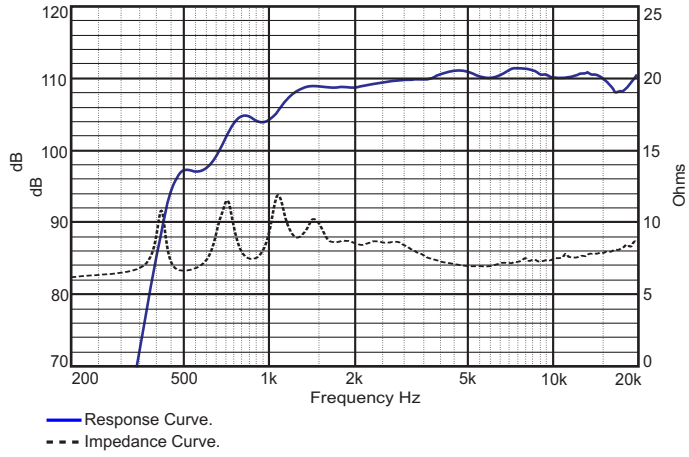
CROSSOVERS RECOMENDADOS

HP1B8 1.500 Hz 12 dB/oit
RC 2.000 Hz 6 dB/oit. (60W RMS Máx.)
 R= 8,8 ohms / 30W
 C= 3,3 μF / 250V

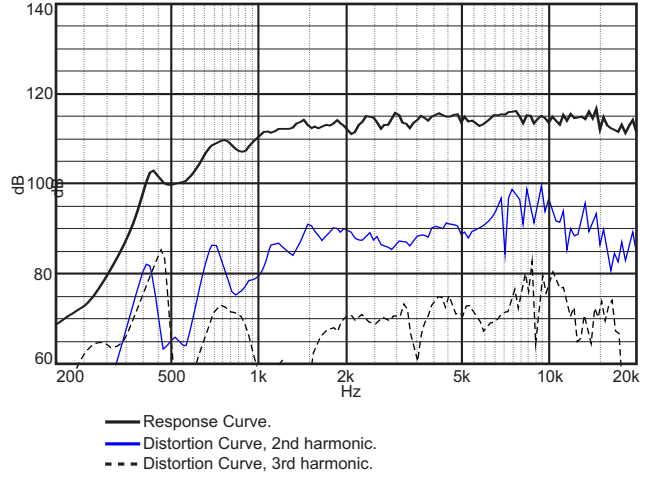


Dimensions in mm (in).

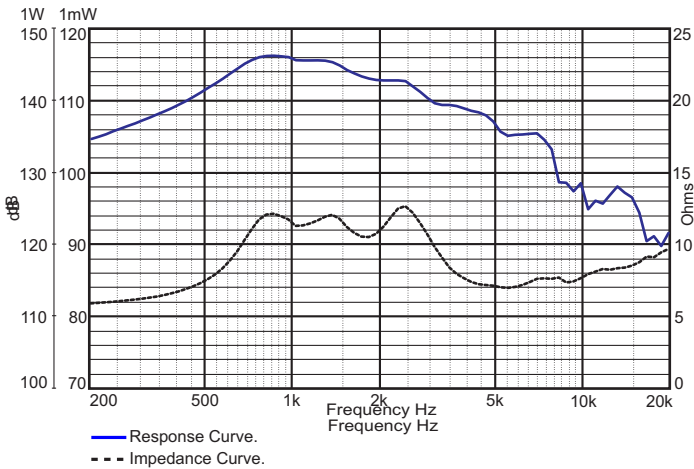
RESPONSE AND IMPEDANCE CURVES W/ HL14-25 HORN INSIDE AN ANECHOIC CHAMBER, 1 W / 1 m



HARMONIC DISTORTION CURVES W/ HL14-25 HORN, 10 W / 1 m

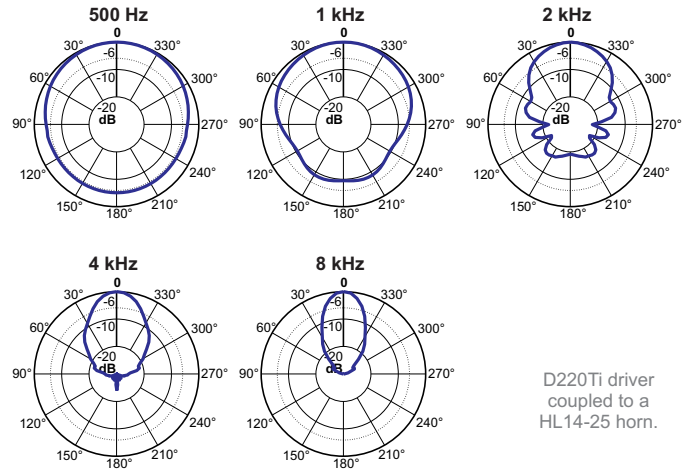


RESPONSE AND IMPEDANCE CURVES W/ PLANE-WAVE TUBE, 1 mW



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

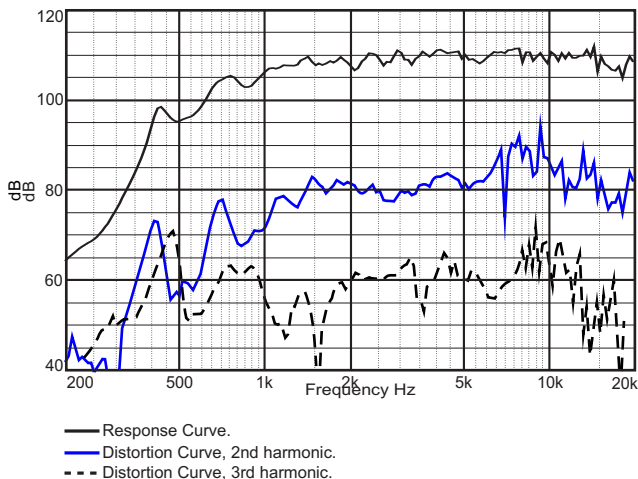
POLAR RESPONSE CURVES



D220Ti driver coupled to a HL14-25 horn.

— Polar Response Curve, Horizontal.

HARMONIC DISTORTION CURVES W/ HL14-25 HORN, 1 W / 1 m



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_c) 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.



Harman Consumer, Inc.
8500 Balboa Boulevard, Northridge, CA 91329 USA
www.jbl.com



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