TITANIUM DRIVER
D3500Ti-Nd

The D3500Ti-Nd model is an ultra high quality compression driver for professional use wherever high SPL and low distortion are of great concern.

Pure titanium specially designed diaphragm with IPF® (Impregnated Polymer Fiber) surround, has structured type snow flake for high sensitivity, low distortion and smooth extended frequency response applications.

The D3500Ti-Nd is recommended for use in arenas, stage monitors, side fills and sound reinforcement systems.

Optimized aluminum injected phase plug avoids phase cancellation problems.

High flux density magnetic assembly with Neodymium ring and copper shorting ring that lowers distortion and reduces the voice coil self-inductance.

Protection circuit DPD® (Driver Protection Device). This circuit uses a PTC and a HPCCR resistor assuring more reliability under overload condition.

The flat wire voice coil (copper clad aluminum) uses a high temperature Polyimide former.

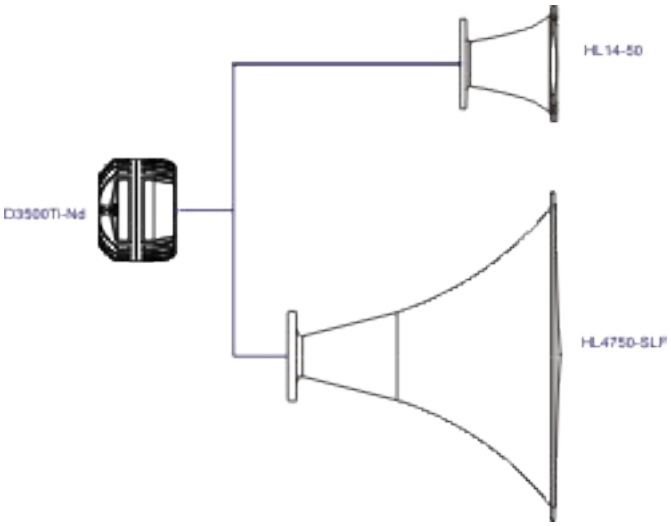
Precisely engineered diaphragm structure and alignment mechanism allow for easy, reliable and cost effective repair in case of diaphragm failure.

In the rare case a repair may be necessary, please read carefully the instructions supplied and be sure to correctly follow the items step by step.

With a 2" exit throat and standard bolt pattern, it directly couples to Selenium horns with (50 mm) throats.

Base and cover are injected aluminum, assuring high mechanical resistance and a very shallow profile.

DRIVER x HORN CONNECTION



SPECIFICATIONS

Nominal impedance	8	Ω
Minimum impedance @ 5,500 Hz	5.1	Ω
Power handling		
Musical Program (w/ xover 800 Hz 12 dB / oct)[1]	150	W
Sensitivity		
On horn, 2.83V@1m, on axis[2]	111	dB SPL
On plane-wave tube, 0.0894V[3]	118	dB SPL
Frequency response @ -10 dB	500 to 25,000	Hz
Throat diameter	50 (2)	mm (in)
Diaphragm material		Titanium
Voice coil diameter	75 (3)	mm (in)
Re	4.8	Ω
Flux density	2.00	T
Minimum recommended crossover (12 dB / oct)	800	Hz

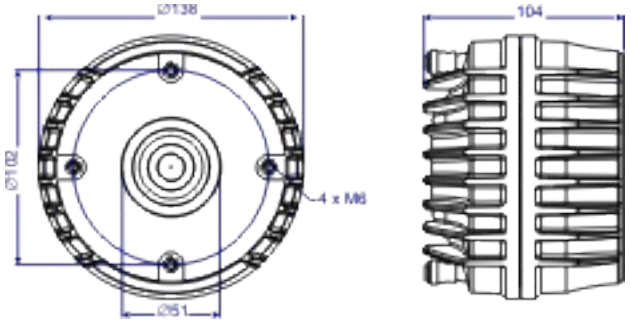
[1] Power handling specifications refer to normal speech and/or music program material, reproduced by an amplifier producing no more than 5% distortion. Power is calculated as true RMS voltage squared divided by the nominal impedance of the loudspeaker. This voltage is measured at the input of the recommended passive crossover when placed between the power amplifier and loudspeaker.
Musical Program= 2 x W RMS.
[2] Measured with HL14-50 horn, 1,000 - 20,000 Hz average.
[3] The sensitivity represents the SPL in a 25 mm terminated tube, 800 - 3,000 Hz average.

ADDITIONAL INFORMATION

Magnet material		Neodymium
Magnet weight	610(21.5)	g (oz)
Magnet diameter x depth	126 x 11 (4.96 x 0.43)	mm (in)
Magnetic assembly weight	2,400(5.3)	g (lb)
Housing material		Aluminum
Voice coil material		Flat CCAW
Voice coil former material		Polyimide (Kapton®)
Voice coil winding length	4.7 (15.4)	m (ft)
Voice coil winding depth	2.0 (0.08)	mm (in)
Wire temperature coefficient of resistance (α25)	0.00404	1/°C
Volume displaced by driver	1.8(0,0635)	l (ft^3)
Net weight	3,400 (7.5)	g (lb)
Gross weight	3,525(7.77)	g (lb)
Carton dimensions (W x D x H)	145x145x115 (5.7x 5.7x4.5)	cm (in)

MOUNTING INFORMATION

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



Dimensions in mm.

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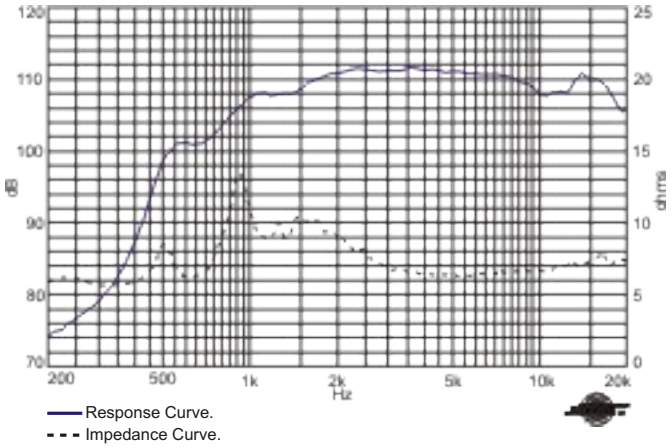
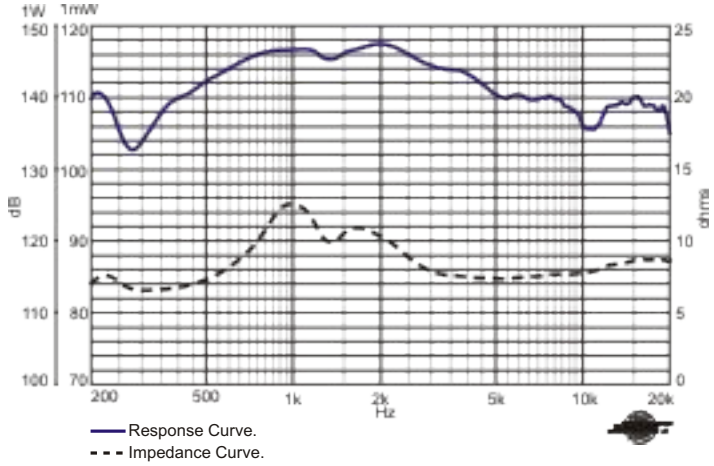
RESPONSE AND IMPEDANCE CURVES W/ HL14-50 HORN INSIDE AN ANECHOIC CHAMBER, 1 W / 1 m



Response Curve.
Impedance Curve.

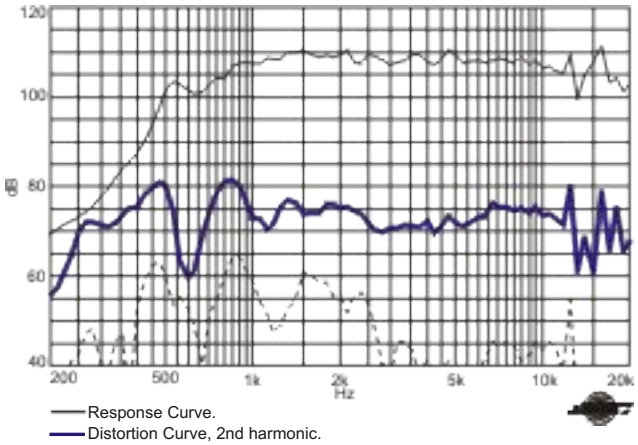
RESPONSE AND IMPEDANCE CURVES W/ PLANE-WAVE TUBE, 1 mW



Response Curve.
Impedance Curve.

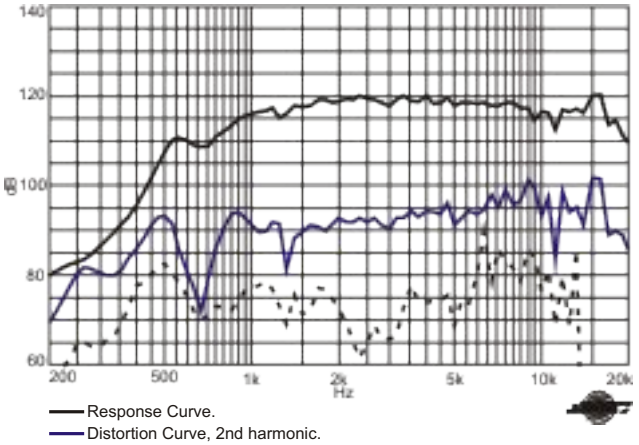
Frequency response and impedance curves measured with 50 mm terminated plane-wave tube, with sensitivity referenced to a 25 mm tube.

HARMONIC DISTORTION CURVES W/ HL14-50 HORN, 1 W / 1 m.



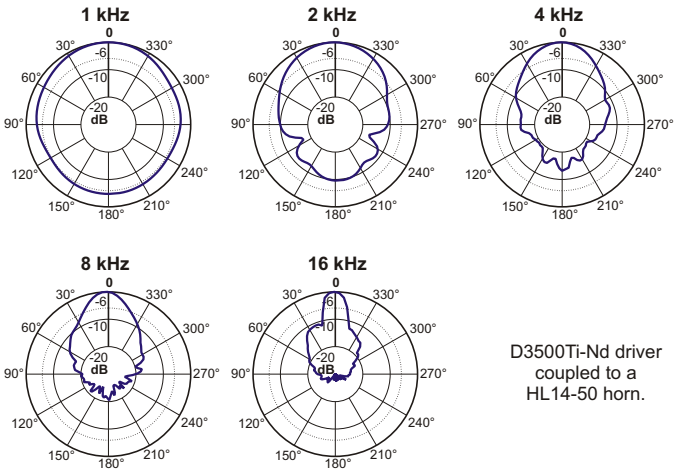
Response Curve.
Distortion Curve, 2nd harmonic.
Distortion Curve, 3rd harmonic.

HARMONIC DISTORTION CURVES W/ HL14-50 HORN, 7.5 W / 1 m.



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

POLAR RESPONSE CURVES



Polar Response Curve.

D3500Ti-Nd driver coupled to a HL14-50 horn.

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.

DPD® (Driver Protection Device): Selenium trademark.
IPF® (Impregnated Polymer Fiber): Selenium trademark.

Specifications subject to change without prior notice.

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