15NLW9300

Extended Low Frequency Neodymium Transducer

Key Features

97 dB SPL 1W / 1m average sensitivity

100 mm (4 in) Interleaved Sandwich Voice coil (ISV)

1000 W continuous pink noise power handling

External neodymium magnet assembly

Double Silicon Spider (DSS) for improved excursion control and linearity

Double Demodulating Rings (DDR) for lower distortion and improved heat dissipation

Improved heat dissipation via Active Cooling System

Weather protected cone and plates for outdoor usage

General Description

The 15NLW9300 is an extended low frequency loudspeaker which sets a new industry standard in 15" (380mm) neodymium 4" voice coil high performance transducers. The speaker has been derived from our flagship 15LW1401, after in-depth studies on magnetic circuit design, which focused on dissipating the heat generated by the powerful 4" voice coil. Extensive care has been taken in order to symmetries both mechanical and electromagnetic non linear behaviour. The 15NLW9300 has been designed to cover the low frequency band in compact enclosures, with a high maximum SPL with reduced THD. Thanks to improved speaker design specifications and use of high grade materials it is the ideal transducer for touring applications or fixed installations. It is intended for use as the low-bass or sub-woofer component, either in compact reflex, bandpass or horn loaded enclosures; in each of these combinations, it provides clean, linear, undistorted sound reproduction. In its reflex configuration the 15NLW9300 can be used in 65 to 130 lit. enclosures with tuning frequencies of around 45Hz. Compared to the 15NLW9500, the 15NLW9300 offers increased output rather than very low frequency minimal extension. It also offers an increased motor driving force in order to make it suitable for high loading enclosures, such as compact bandpass or horn loaded configurations. Amplifier sizes of 700 to 1400W allow a maximum output from the loudspeaker.

The neo magnet assembly assures high flux concentration, low power compression and excellent heat exchange. This results in high levels of force factor and power handling with an optimum power to weight ratio. The heatsink has been specifically studied using F.E.A. simulators and the necessary heat transfer to the dissipative structure has been improved. The direct contact between the heatsink and the basket represents a fundamental improvement in heat dissipation, increasing power handling capabilities and lowering the power compression figure.

The carbon fiber reinforced, straight-sided ribbed cone has been adopted in order to enable the transducer to withstand high loading designs as well as high power peaks. Maximum strength, smooth response and high displacement piston motion have been obtained using Double Silicon Spider technology (DSS) and a large excursion surround. The suspension system has been designed to provide symmetric large signal behaviour throughout the whole working range, providing low harmonic distortion at different excitation levels.

The state-of-the-art 100mm (4in) Interleaved Sandwich Voice coil (ISV) provides high levels of thermal stability and durability.

Double Demodulating Rings technology (DDR) reduces the intermodulation and harmonic distortion whilst improving the transient response.

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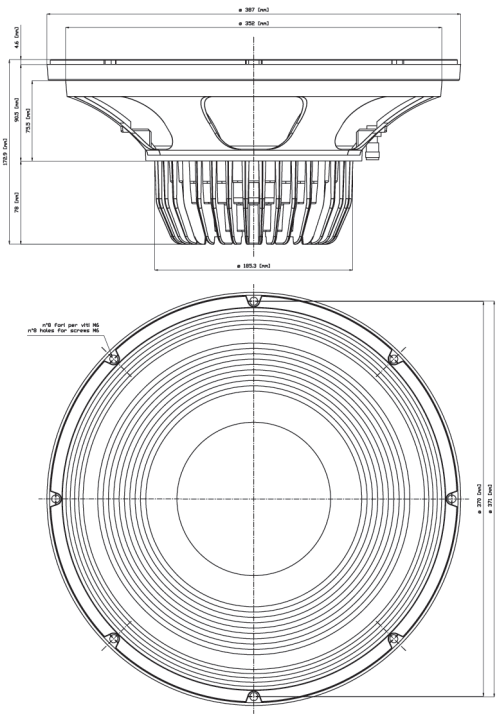

NEODYMIUM LF-MB-MF TRANSDUCERS

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15NLW9300

Extended Low Frequency Neodymium Transducer

GENERAL SPECIFICATIONS

NOMINAL DIAMETER	380mm (15 in)
RATED IMPEDANCE	8 ohms
CONTINUOUS PINK NOISE (1)	1000W
CONTINUOUS POWER (2)	700W
PROGRAM POWER (3)	1400W
PEAK POWER (4)	7000W
SENSITIVITY (5)	97 dB
FREQUENCY RANGE (6)	46 - 4200 Hz
POWER COMPRESSION @ -10 DB (7)	(35 W) 0,6 dB
POWER COMPRESSION @ -3 DB (8)	(175 W) 2,1 dB
POWER COMPRESSION @ FULL POWER (9)	(350W) 3 dB
MAX RECOMM. FREQUENCY	1000 Hz
RECOMM. ENCLOSURE VOLUME	70 ÷ 150 lt. (2,47 ÷ 5,30 cuft)
MINIMUM IMPEDANCE	6,7 ohms at 25°C
MAX PEAK TO PEAK EXCURSION	37 mm (1,5 in)
VOICE COIL DIAMETER	100 mm (3,94 in)
VOICE COIL WINDING MATERIAL	ALUMINUM

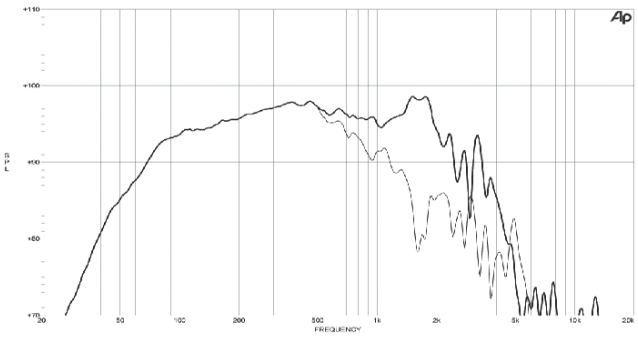
THIELE SMALL PARAMETERS (10)

Fs	45 Hz
Re	5 ohms
Sd	0,09 sq.mt. (139,5 sq.in.)
Qms	6,2
Qes	0,27
Qts	0,26
Vas	143 lt. (5,1 cuft)
Mms	107 gr. (236,2 lb)
BL	23,2 Tm
Linear Mathematical Xmax (11)	±9 mm (±0,35 in)
Le (1kHz)	1,1 mH
Ref. Efficiency 1W@1m (half space)	98,7 dB

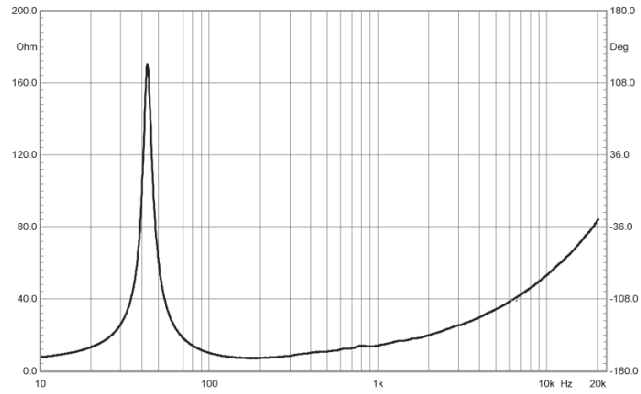
MOUNTING INFORMATIONS

Overall diameter	387 mm (15,24 in)
N. of mounting holes	8
Mounting holes diameter	7,15 mm (0,28 in)
Bolt circle diameter	370-371 mm (14,55-14,6 in)
Front mount baffle cutout diameter	353 mm (13,90 in)
Rear mount baffle cutout diameter	357 mm (14,06 in)
Total depth	179 mm (7,05 in)
Flange and gasket thickness	19,5 mm (0,76 in)
Net weight	6,8 kg (15,01 lb)
Shipping weight	7,6 kg (16,78 lb)
CardBoard Packaging dimensions	405x405x214 mm (15,94x15.94x8,43 in)

FREQUENCY RESPONSE CURVE OF 15NLW9300 MADE ON 180 LIT. ENCLOSURE TUNED AT 35HZ IN FREE FIELD (4PI) ENVIRONMENT. ENCLOSURE CLOSES THE REAR OF THE DRIVER. THE THIN LINE REPRESENTS 45 DEG. OFF AXIS FREQUENCY RESPONSE



FREE AIR IMPEDANCE MAGNITUDE CURVE



NOTES

(1) AES standard

(2) Continuous power rating is measured in 180 lit enclosure tuned 35Hz using a 40-400Hz band limited pink noise test signal applied continuously for 2 hours.

(3) Program power rating is measured as for 2 above but 50% duty cycle.

(4) The peak power rating is based on a 10dB crest factor above the continuous power rating and represents the maximum permitted instantaneous peak power level over a maximum period of 10ms which will be withstood by the loudspeaker without damage.

(5) Sensitivity represents the averaged value of acoustic output as measured on the forward central axis of cone, at distance 1m from the baffle panel, when connected to 2,83V sine wave test signal swept between 100Hz and 500Hz with the test specimen mounted in the same enclosure as given for 2 above.

(6) Frequency range is given as the band of frequencies delineated by the lower and upper limits where the output level drops by 10 dB below the rated sensitivity in half space environment.

(7) Power compression represents the loss of sensitivity for the specified power, measured from 50-500 Hz, after a 5 min pink noise preconditioning test at the specified power.

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(9) Power compression represents the loss of sensitivity for the specified power, measured from 50-500 Hz, after a 5 min pink noise preconditioning test at the specified power.

(10) Thiele - Small parameters are measured after the test specimen has been conditioned by 1000 W AES power and represent the expected long term parameters after a short period of use.

(11) Linear Mat. Xmax is calculated as; (Hvc-Hg)/2 + Hg/4 where Hvc is the coil depth and Hgis the gap depth.