

15NLW9300

LF Neodymium Transducer

KeyFeatures

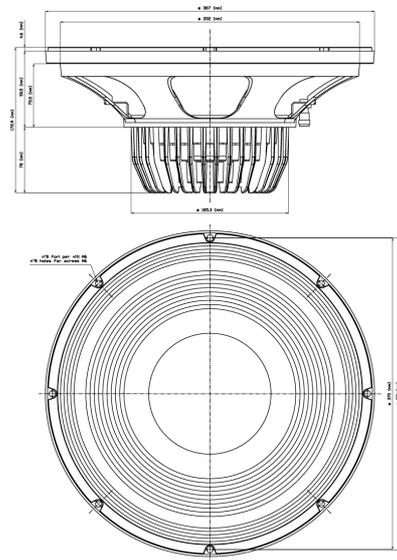
- 97 dB SPL 1W / 1m average sensitivity
- 100 mm (4 in) Interleaved Sandwich ISV copper clad voice coil
- 800W AES power handling
- Carbon fiber reinforced cone
- Double Demodulating Rings (DDR) for lower distortion
- Improved dissipation via onboard aluminum heatsink and multi-cell air diffractor
- External Neodymium magnet assembly
- Weather protected cone and plates for outdoor usage
- Recommended for line array and wedge monitor applications

Description

The 15NLW9300 is a low frequency loudspeaker which sets a new industry standard in 15" (380mm) neodymium 4" voice coil high performance transducers. The design has evolved from an extensive R&D program carried out at Eighteen Sound, providing clean, undistorted LF reproduction at very high SPL without damages. The transducer is mainly intended as woofer in compact vented enclosures (65 - 130 lit). The external neo magnet assembly assures high flux concentration, low power compression and excellent heat exchange, resulting in high levels of force factor and power handling with an optimum power to weight ratio. The aluminum 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 voice coil heat dissipation. A special low density multi-cell material air diffractor has been also placed into the backplate venting hole, acting as a cooling system, furtherly increasing power handling capability and lowering the power compression figure. 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 15NLW9300 features a dedicated exclusive carbon fibre reinforced straight ribbed cone, with a specific pulp formulation containing damping fibres. The membrane is impregnated with a proprietary resin mix in order to increase the cone bend performances - up to 6 times better if compared with traditional celluloses pulp, twice than glass fibre added pulps. The result is a very linear piston action across the entire working range reducing breaking modes, and makes the 15NLW9300 suitable for outdoor application. The performances are further improved by the proprietary Double Demodulating Rings technology (DDR), designed to reduce dramatically the intermodulation and harmonic distortion whilst improving the transient response. The 100mm (4in) copper clad aluminum wire Interleaved Sandwich Voice coil (ISV) provides high levels of thermal stability and durability.

Models

Model	Code	Information
022158N160	022158N160	8Ohm



15NLW9300

LF Neodymium Transducer

General Specifications

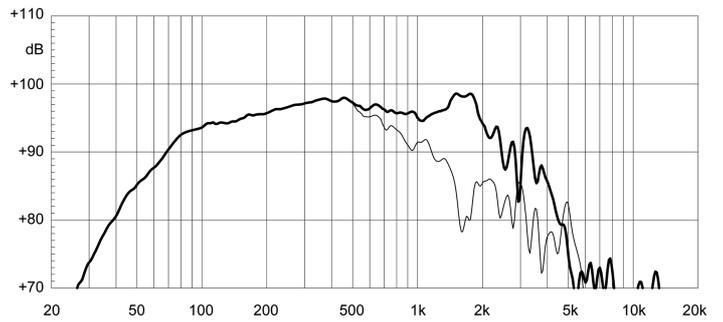
Nominal Diameter	380mm (15 in)
Rated Impedance	8 Ohm
AES Power	800W
Program Power	1200W
Peak Power	2400W
Sensitivity	97dB
Frequency Range	50 - 3000 Hz
Power Compression @-10dB	0,6 dB
Power Compression @-3dB	2,1 dB
Power Compression @Full Power	3,0 dB
Max Recomm. Frequency	1200 Hz
Recomm. Enclosure Volume	65 ÷ 150 lt. (2,30 ÷ 5,30 cuft)
Minimum Impedance	8 Ohm at 25°C
Max Peak To Peak Excursion	37 mm (1,46 in)
Voice Coil Diameter	100 mm (4 in)
Voice Coil Winding Material	copper clad aluminum
Suspension	Triple roll, Polycotton
Cone	Straight ribbed, carbon fiber reinforced cellulose

Thiele Small Parameters

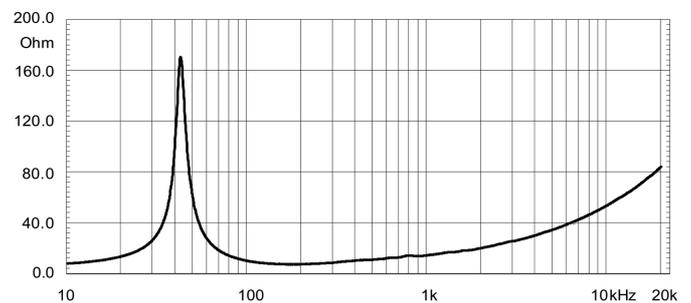
Fs	39 Hz
Re	6 Ohm
Sd	0,09 sq.mt. (139,5 sq.in.)
Qms	6,7
Qes	0,274
Qts	0,26
Vas	170 lt. (6 cuft)
Mms	107 gr. (0,24 lb)
BL	24,4 Tm
Linear Mathematical Xmax	±8 mm (±0,31 in)
Le (1kHz)	0,95 mH
Ref. Efficiency 1W@1m (half space)	98 dB

Mounting information

Overall diameter	387 mm (15,24 in)
N. of mounting holes and bolt	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 ø	353 mm (13,9 in)
Rear mount baffle cutout ø	357 mm (14,06 in)
Total depth	174 mm (6,85 in)
Flange and gasket thickness	19,5 mm (0,76 in)
Net weight	6,8 kg (15 lb)
Shipping weight	7,9 kg (17,41 lb)
CardBoard Packaging dimensions	405x405x214 mm (15,94x15,94x8,43 in)



FREQUENCY RESPONSE CURVE OF 15NLW9300 MADE ON 125 LIT. ENCLOSURE TUNED AT 50HZ 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 power is determined according to AES2-1984 (r2003) standard
- 2) Program power rating is measured in 125 lt enclosure tuned at 50Hz using a 50-500Hz band limited pink noise test signal with 50% duty cycle, applied for 2 hours.
- 3) The peak power rating represents the maximum permitted instantaneous peak power level over a maximum period of 10ms which will be withstood by the loudspeaker without damage.
- 4) 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 1000Hz with the test specimen mounted in the same enclosure as given for (1) above.
- 5) 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.
- 6) Linear Math. Xmax is calculated as $(Hvc \cdot Hg) / 2 + Hg / 4$ where Hvc is the coil depth and Hg is the gap depth.