

12NLW9300

Low Frequency Neo Transducer

Key Features

- 97 dB SPL 1W / 1m average sensitivity
- 100 mm (4in) Interleaved Sandwich Voice coil (ISV)
- 800W AES power handling
- External neodymium magnet assembly
- Double Demodulating Rings (DDR) for lower distortion and improved heat dissipation
- Weather protected cone and plates for outdoor usage
- Improved dissipation via onboard heatsink
- Recommended for two way and multiway systems



General Description

The 12NLW9300 is a high performance low frequency neodymium loudspeaker. It is intended mainly as woofer for two way systems and works extremely well in compact vented enclosures (30 - 70 lit).

The neo magnet external assembly assures high flux concentration, low power compression and excellent heat exchange. The external magnet configuration is considerably more efficient than the traditional under-pole magnet topology. This allows to obtain high levels of force factor and power handling with a power to weight ratio at the upper level.

The heatsink has been specifically studied according to F.E.A. simulators, improving the necessary heat transfer to the dissipative structure. The direct contact between the heat sink and the specially designed basket, together with the magnetic structure, represents a fundamental improvement in heat dissipation, increasing power handling capabilities and lowering power compression figure.

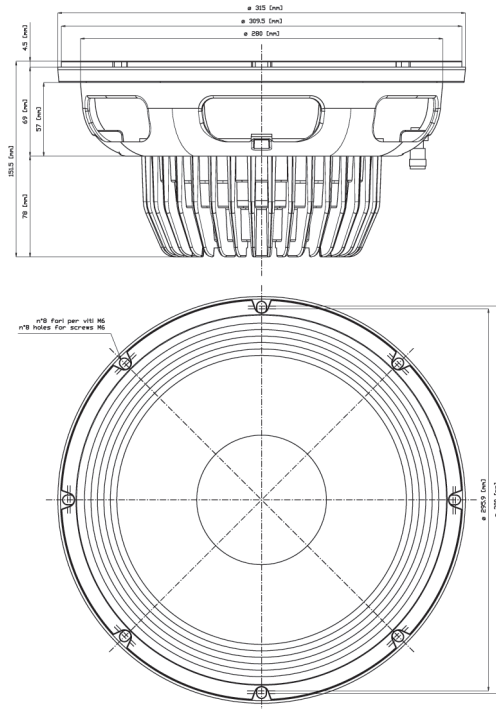
A state-of-the-art Interleaved Sandwich Voice coil (ISV) voice coil provides high levels of thermal stability and durability. The ISV technology is based on a high strength fiberglass former with half the coil wound on the outside and half on the inside ensuring uniform thermal dissipation on both sides, bonded together using unique high-temperature resin adhesives achieving a balanced and solid linear motor unit.

The 12NLW9300 performances are further improved by the use of Double Demodulation Rings (DDR), designed to reduce dramatically the intermodulation and harmonic distortion whilst improving the transient response.

The 12NLW9300 design features a dedicated exclusive Carbon fibre reinforced straight ribbed cone; the pulp formulation contains special damping fibres and is further treated in-house with a proprietary resin compound in order to increase the cone bend performances 5 times more than traditional celluloses pulp and twice than glass fibre added pulps. The result is a very linear piston action across the entire working range minimizing the destroying breaking modes.

The coating of both the face and back plates is far more resistant to the corrosive effects of salts and oxidization than any other treatment normally in use.

022128N110 80hm



NEODYMIUM LF-MB-MF TRANSDUCERS

12NLW9300

Low Frequency Neo Transducer

GENERAL SPECIFICATIONS

| | |
|--------------------------------|--------------------------------|
| NOMINAL DIAMETER | 300mm (11,81 in) |
| RATED IMPEDANCE | 8 ohms |
| AES POWER | 800W |
| PROGRAM POWER (1) | 1200W |
| PEAK POWER (2) | 2400W |
| SENSITIVITY (3) | 97 dB |
| FREQUENCY RANGE (4) | 45 - 3800 Hz |
| POWER COMPRESSION @ -10 DB (5) | 0,8 dB |
| POWER COMPRESSION @ -3 DB | 2,5 dB |
| POWER COMPRESSION @ FULL POWER | 3,1 dB |
| MAX RECOMM. FREQUENCY | 1500 Hz |
| RECOMM. ENCLOSURE VOLUME | 30 ÷ 70 lt. (1,06 ÷ 2,47 cuft) |
| MINIMUM IMPEDANCE | 6,2 ohms at 25°C |
| MAX PEAK TO PEAK EXCURSION | 37 mm (1,46 in) |
| VOICE COIL DIAMETER | 100 mm (3,94 in) |
| VOICE COIL WINDING MATERIAL | aluminum |
| SUSPENSION | Triple Roll, Polycotton |
| CONE | Straight ribbed, paper |

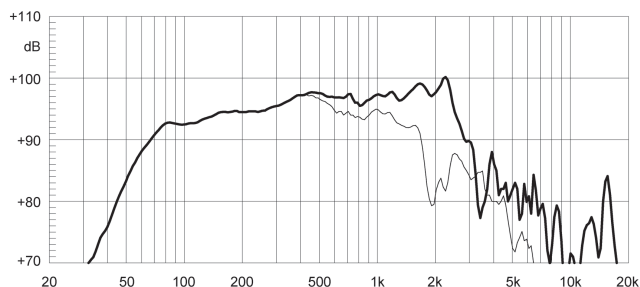
THIELE SMALL PARAMETERS (6)

| | |
|------------------------------------|-----------------------------|
| Fs | 40 Hz |
| Re | 4,7 ohms |
| Sd | 0,053 sq.mt. (82,15 sq.in.) |
| Qms | 4,67 |
| Qes | 0,25 |
| Qts | 0,24 |
| Vas | 87 lt. (3,07 cuft) |
| Mms | 72 gr. (0,16 lb) |
| BL | 18 Tm |
| Linear Mathematical Xmax (7) | ±8mm (±0,31 in) |
| Le (1kHz) | 0,49 mH |
| Ref. Efficiency 1W@1m (half space) | 95,4 dB |

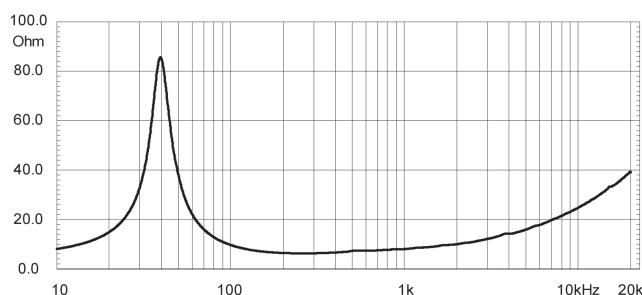
MOUNTING INFORMATION

| | |
|------------------------------------|--------------------------------------|
| Overall diameter | 315 mm (12,40 in) |
| N. of mounting holes | 8 |
| Mounting holes diameter | 7,15 mm (0,28 in) |
| Bolt circle diameter | 296-300 mm (11,65-11,8 in) |
| Front mount baffle cutout diameter | 282 mm (11,10 in) |
| Rear mount baffle cutout diameter | 282 mm (11,10 in) |
| Total depth | 153 mm (6,02 in) |
| Flange and gasket thickness | 17 mm (0,67 in) |
| Net weight | 6,2 kg (13,69 lb) |
| Shipping weight | 7 kg (15,45 lb) |
| CardBoard Packaging dimensions | 332x332x184 mm (13,07x13,07x7,24 in) |

FREQUENCY RESPONSE CURVE OF 12NLW9300 MADE ON 50 LIT. ENCLOSURE TUNED AT 60HZ 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) Program power rating is measured in 50 lit enclosure tuned at 60Hz using a 40-400Hz band limited pink noise test signal with 50% duty cycle, applied for 2 hours.
- (2) 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.
- (3) 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 (1) above.
- (4) 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.
- (5) 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.
- (6) Thiele - Small parameters are measured after the test specimen has been conditioned by 800W AES power and represent the expected long term parameters after a short period of use.
- (7) Linear Mat. Xmax is calculated as $(Hvc-Hg)/2 + Hg/4$ where Hvc is the coil depth and Hg is the gap depth.

Eighteen Sound engages in research and product improvement. New materials and design refinements can be introduced into existing products without notice.