

18ND9300

Extended Low Frequency Neo Transducer

KeyFeatures

- 98 dB SPL 1W / 1m average sensitivity
- 100 mm (4 in) Interleaved Sandwich Voice coil (ISV)
- 1000 W AES power handling
- Carbon fiber reinforced cone
- Double Silicon Spider (DSS) for improved excursion control and linearity
- Double Demodulating Rings (DDR) for lower distortion Neodymium magnet assembly
- Improved heat dissipation via unique basket design
- Weather protected cone and plates for outdoor usage

Description

The 18ND9300 is an extended low frequency loudspeaker which sets a new industry standard in 18" (460 mm) neodymium high performance transducers. The speaker has been derived from our flagship 18LW1400, after in-depth studies on magnetic circuit design, which focused on dissipating the heat generated by the powerful 4" coil.

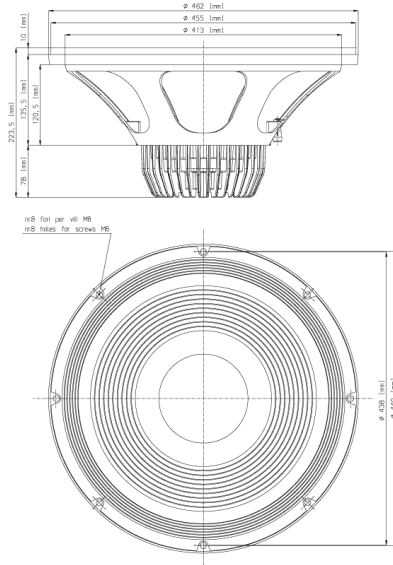
The loudspeaker design provides clean and undistorted LF reproduction at a very high SPL and enables the speaker to withstand high power levels without damage.

The neo magnet assembly assures high flux concentration, low power compression and excellent heat exchange. The heatsink has been specifically studied using F.E.A. simulators and the necessary heat transfer to the dissipative structure has been improved. The heat sink concept has been further improved by using an air-diffraction that offers high thermal capacity and has been designed to force air moved by the dust cap through the heat sink fins and cool it down.

The 18ND9300 design features include an exceptional displacement suspension system which, in conjunction with a carbon fibre reinforced, straight ribbed cone and a Double Silicon Spider (DSS), result in an ultra-linear piston action, providing full control across the entire working range.

The 4" state-of-the-art voice coil, based on Interleaved Sandwich Voice coil (ISV) technology, provides high levels of thermal stability and durability. The ISV technology achieves a balanced linear motor unit exerting an exceptionally high force factor. This is realised through a high strength fiberglass former with half the coil wound half on the outside and half on the inside and bonded together using unique high-temperature resin adhesives.

The low distortion and unmatched sound quality of the 18ND9300 have been further improved by Double Demodulating Rings (DDR) embedded in the pole piece of the magnetic structure. A proprietary humidity-block cone treatment makes the transducer suitable for outdoor use in adverse weather conditions. In addition, a special coating applied to both the top and back plates makes the 18ND9300 far more resistant to the corrosive effects of salts and oxidization.



Models

Model	Code	Info
022188N100	022188N100	8 Ohm
022184N100	022184N100	4 Ohm
027188N100	027188N100	R-kit
027184N100	027184N100	R-kit

General Specifications

Nominal Diameter	460mm (18 in)
Rated Impedance	8 Ohm
AES Power	1000W
Program Power	1400W
Peak Power	7000W
Sensitivity	98 dB
Frequency Range	28 - 2500 Hz
Power Compression @-10dB	0,8 dB
Power Compression @-3dB	2,1 dB
Power Compression @Full Power	3,2 dB
Max Recomm. Frequency	500 Hz
Recomm. Enclosure Volume	100 - 300 lt. (3,53 - 10,6 cuft)
Minimum Impedance	
Max Peak To Peak Excursion	50 mm (1,97 in)
Voice Coil Diameter	100 mm (4 in)
Voice Coil winding material	copper
Suspension	Triple roll, Polycotton
Cone	Straight ribbed carbon fiber loaded cellulose

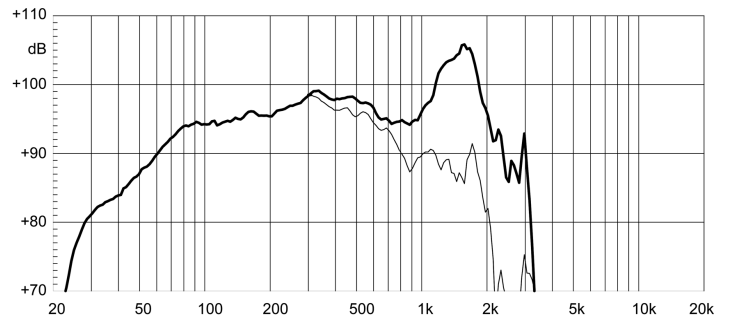
Thiele Small Parameters

Fs	30 Hz
Re	5 Ohm
Sd	0,122 sq.mt. (189,1 sq.in.)
Qms	7,86
Qes	0,29
Qts	0,28
Vas	316 lt. (11,16 cuft)
Mms	184 gr. (0,41 lb)
BL	24,4 Tm
Linear Mathematical Xmax	±9,5 mm (±0,37 in)
Le (1kHz)	2,02 mH
Ref. Efficiency 1W@1m (half space)	96,7 dB

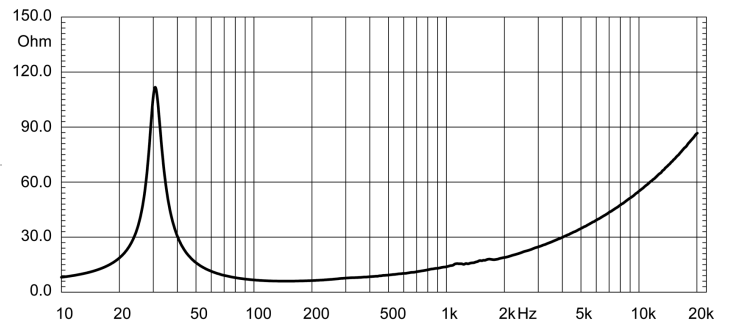
Mounting information

Overall diameter	462 mm (18,2 in)
N. of mounting holes and bolt	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	438-440 mm (17,24-17,32 in)
Front mount baffle cutout ø	416 mm (16,38 in)
Rear mount baffle cutout ø	422 mm (16,61 in)
Total depth	223,5 mm (8,8 in)
Flange and gasket thickness	26 mm (1,0 in)
Net weight	7,6 kg (16,8 lb)
Shipping weight	9,45 kg (20,83 lb)
Packaging Dimensions	482x482x257 mm (18,98x18,98x10,12 in)

FREQUENCY RESPONSE CURVE OF 18ND9300 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 power is determined according to AES2-1984 (r2003) standard
- (2) Program power rating is measured in 180 lit enclosure tuned @ 35Hz using a 40-400Hz band limited pink noise test signal with 50% duty cycle, applied for 2 hours.
- (3) 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.
- (4) Sensitivity represents the averaged value of acoustic output as measured on the forward central axis of cone, at 1m distance 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.
- (5) Frequency range is given as the band of frequencies delineated by the lower and upper environment.
- (6) 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.
- (7) 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.
- (8) Linear Math. Xmax is calculated as $(Hvc-Hg)/2 + Hg/4$ where Hvc is the coil depth and Hg is the gap depth.