

# 18NLW9600

## Extended Low Frequency Neo Transducer

### Key Features

- 97 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) split winding four layers ISV aluminum voice coil
- 3600 W program power handling
- Carbon fiber reinforced cone
- Triple Silicon Spider (TSS) for improved excursion control
- Single Demodulating Ring (SDR) for lower distortion
- Low noise forced ventilation design
- High force neodymium magnet assembly
- Weather protected cone and plates for outdoor usage
- Suitable for reflex, bandpass or horn loaded high SPL subwoofer systems



### General Description

The 18NLW9600 is an extended low frequency 18 inch neodymium high performance transducer. The loudspeaker has been designed for use as a subwoofer component, in either a reflex, bandpass or horn loaded configuration, in high power auditorium or arena loudspeaker systems.

For optimum results recommended amplifier should be able to deliver 3600 Watt program power.

Eighteen Sound engineers have obtained the best possible results with today's available materials in terms of clean and undistorted LF reproduction at a ultra high SPL, with the lowest possible power compression figure.

The state-of-the-art 5,3" diameter ISV CCAW (copper clad aluminum wire) voice coil shows a inside-outside split winding, four layers design, enabling the 18NLW9600 to handle up to 3600W program power.

The transducer design features include a large displacement suspension system specifically designed for matching the carbon fiber reinforced, straight ribbed cone.

Thanks to the Triple Silicon Spider (TSS) technology, the 18NLW9600 is able to control the moving mass with high linearity, showing an exceptional stability of mechanical parameter values in the long term. Bl force factor, as well as all other electro-dynamic parameters, are linear within the working range. This, together with the exceptional high excursion behavior - 70mm before damage,  $\pm 14$ mm linear Xmax - makes the 18NLW9600 an extremely low distortion, highly dynamic transducer.

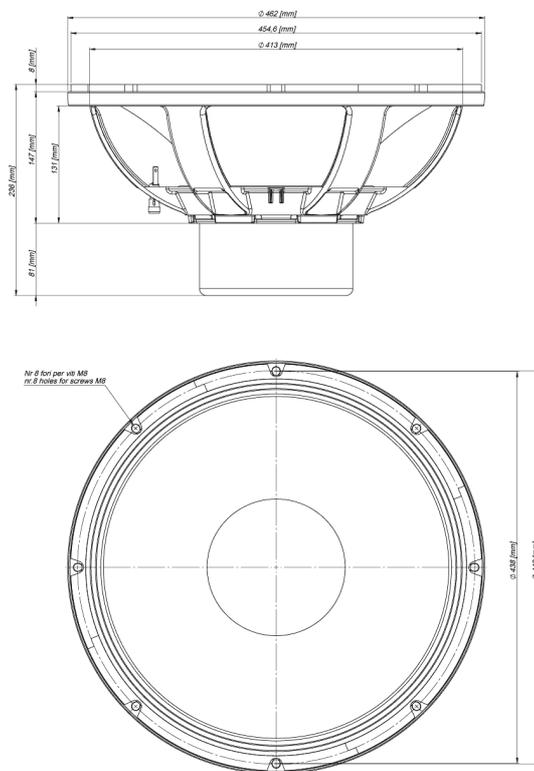
The already low distortion and sound quality are further improved by an aluminum Single Demodulating Ring (SDR technology) that flatten impedance and phase with a constant power transfer.

The 18NLW9600 has been developed after intense FEA and fluidodynamics simulation and testing, focusing on dissipating the heat generated by the powerful voice coil. Special attention was given to the optimization of air flow into the gap without introducing audible noise. A special low-density material air diffractor placed into the heatsink acts as a cooling system, increasing the power handling capability and lowering the power compression figure.

The exclusive cone treatment improves pulp strength and gives water repellent properties to both sides of the cone. A special coating applied to both the top and back plates makes the transducer far more resistant to the corrosive effects of salts and oxidation.

022188N000 8 Ohm  
022184N000 4 Ohm

027188N000 R-kit 8 Ohm  
027184N000 R-kit 4 Ohm



NEODYMIUM LF-MB-MF TRANSDUCERS

# 18NLW9600

Extended Low Frequency Neo Transducer

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	462mm (18 in)
RATED IMPEDANCE	8 ohms
AES POWER (1)	1800W
PROGRAM POWER (2)	3600W
PEAK POWER (3)	10000W
SENSITIVITY (4)	97 dB
FREQUENCY RANGE (5)	32 - 2500 Hz
POWER COMPRESSION @ -10 DB (6)	0.7 dB
POWER COMPRESSION @ -3 DB	1.3 dB
POWER COMPRESSION @ 0 DB	2.2 dB
MAX RECOMM. FREQUENCY	300 Hz
RECOMM. ENCLOSURE VOLUME	110 ÷ 350 lt. (3,88 ÷ 12,36 cuft)
MINIMUM IMPEDANCE	6,6 ohms at 25°C
MAX PEAK TO PEAK EXCURSION	70 mm (2,75 in)
VOICE COIL DIAMETER	135 mm (5,3 in)
VOICE COIL HEIGHT	32 mm (1.26 in)
VOICE COIL TECHNOLOGY	split winding, 4 layers copper clad Al wire
GAP DEPTH	12 mm (0.47 in)
SUSPENSION	Triple Roll Polycotton
CONE	Straight ribbed carbon fiber loaded cellulose

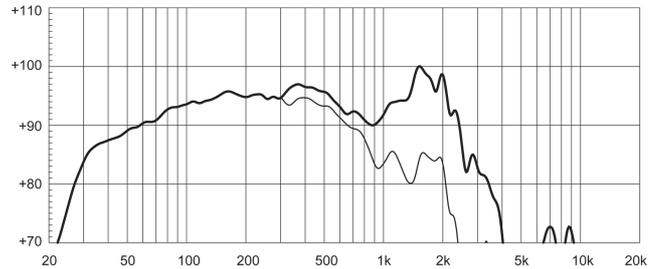
## THIELE SMALL PARAMETERS (7)

Fs	34 Hz
Re	4,7 ohms
Sd	0,1134 sq.mt. (189,9 sq.in.)
Qms	8,7
Qes	0,29
Qts	0,28
Vas	149 lt. (5,1 cuft)
Mms	261 gr. (0,58 lb)
BL	30 Tm
Linear Mathematical Xmax (8)	±14 mm (±0,55 in)
Le (1kHz)	2,11 mH
Ref. Efficiency 1W@1m (half space)	95,1 dB

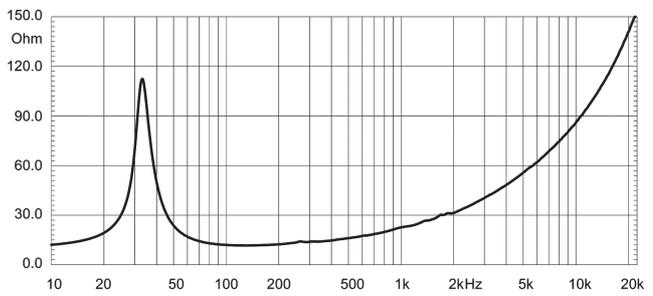
## MOUNTING INFORMATION

Overall diameter	462 mm (18,18 in)
N. of mounting holes	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	440mm (17,32 in)
Front mount baffle cutout diameter	416 mm (16,38 in)
Rear mount baffle cutout diameter	422 mm (16,61 in)
Total depth	236 mm (9,29 in)
Flange and gasket thickness	26 mm (1,02 in)
Net weight	12,5 kg (27,6 lb)
Shipping weight	14 kg (30,9 lb)
Packaging Size	482 x 482 x 257 mm (19 x 19 x 10,1 in)

FREQUENCY RESPONSE CURVE OF 18NLW9600 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 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 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 limits where the output level drops by 10 dB below the rated sensitivity in half space 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 1800 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.

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

