

# 21NLW9000

## Extended Low Frequency Neo Transducer

### Key Features

- 96 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) split winding four layers ISV copper coil
- 3600 W program power handling
- Neodymium magnet assembly
- Triple Silicon Spider (TSS) for improved excursion control and linearity
- Single Demodulating Ring (SDR) for lower distortion
- Low noise forced ventilation design for low power compression
- Weather protected cone and plates for outdoor usage
- Suitable for ultra low frequency systems



### General Description

The 21NLW9000 is an ultra low frequency 21 inch neodymium high performance transducer. The transducer has been optimized for direct radiation subwoofer cabinet designs. For optimum results recommended amplifier should be able to deliver 3600 Watt program power without clipping.

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 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 21NLW9000 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 high excursion design - 70mm before damage,  $\pm 14$ mm linear Xmax - makes the 21NLW9000 an extremely low distortion, highly dynamic transducer.

The state-of-the-art 5,3" diameter ISV copper voice coil shows a inside-outside split winding, four layers design, enabling the 21NLW9000 to handle up to 3600W program power.

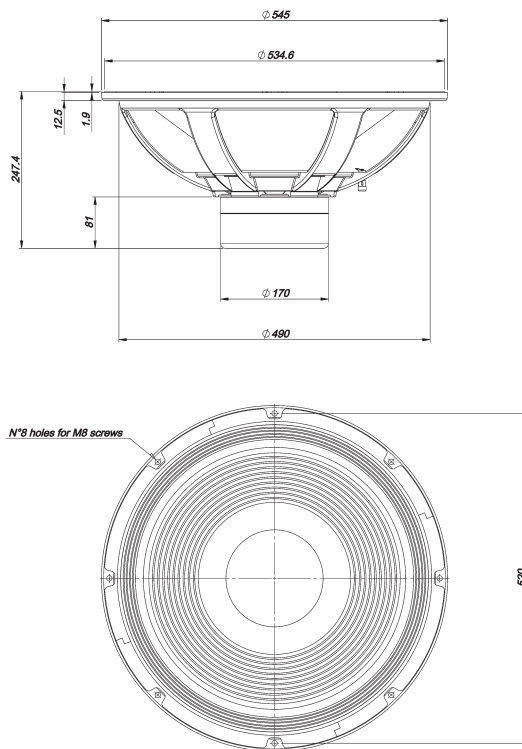
The already low distortion and sound quality are further improved by an aluminum Single Demodulating Ring (SDR technology) that flatten impedance and phase with a constant power transfer.

The 21NLW9000 has been developed after intense FEA and fluidodynamics simulation and testing, focusing on dissipating the heat generated by the powerful 5.3" 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 backplate 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 oxidization.

022218N100 8Ohm  
022214N100 4Ohm

027218N000 R-KIT 8Ohm  
027214N000 R-KIT 4ohm



NEODYMIUM LF-MB-MF TRANSDUCERS

# 21NLW9000

Extended Low Frequency Neo Transducer

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	533 mm (21 in)
RATED IMPEDANCE	8 ohms
AES POWER	1800W
PROGRAM POWER (1)	3600W
PEAK POWER (2)	10000W
SENSITIVITY (3)	96 dB
FREQUENCY RANGE (4)	24 - 1500 Hz
POWER COMPRESSION @ -10 DB (5)	0.7 dB
POWER COMPRESSION @ -3 DB	1.3 dB
POWER COMPRESSION @ FULL POWER	2.2 dB
MAX RECOMM. FREQUENCY	100 Hz
RECOMM. ENCLOSURE VOLUME	120 ÷ 500 lt. (4,24 ÷ 17,7 cuft)
MINIMUM IMPEDANCE	8,2 ohms at 25°C
MAX PEAK TO PEAK EXCURSION	70 mm (2,75 in)
VOICE COIL DIAMETER	135 mm (5,3 in)
VOICE COIL TECHNOLOGY	split winding, 4 layers copper wire
SUSPENSION	Triple roll, Polycotton
CONE	Straight Ribbed, Treated Paper

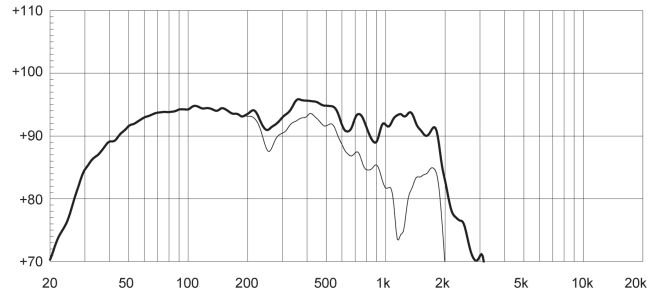
## THIELE SMALL PARAMETERS (6)

Fs	29 Hz
Re	6 ohms
Sd	0,1662 sq.mt. (257,6 sq.in.)
Qms	9,32
Qes	0,36
Qts	0,34
Vas	304 lt. (10,4 cuft)
Mms	390 gr. (0,86 lb)
BL	34,5 Tm
Linear Mathematical Xmax (7)	±14 mm (±0,55 in)
Le (1kHz)	2,8 mH
Ref. Efficiency 1W@1m (half space)	95,0 dB

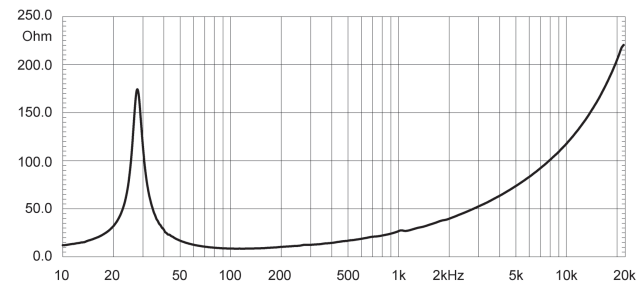
## MOUNTING INFORMATION

Overall diameter	545 mm (21,46 in)
N. of mounting holes	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	520 mm (20,47 in)
Front mount baffle cutout diameter	492 mm (19,37 in)
Rear mount baffle cutout diameter	490 mm (19,29 in)
Total depth	250 mm (9,8 in)
Flange and gasket thickness	18 mm (0,7 in)
Net weight	14 kg (30,9 lb)
Shipping weight	15,5 kg (34,2 lb)
CardBoard Packaging dimensions	570x570x290 mm (22,4x22,4x11,4 in)

FREQUENCY RESPONSE CURVE OF 21NLW9000 MADE ON 250 LIT. ENCLOSURE TUNED AT 28HZ 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 250 lit enclosure tuned 28Hz using a 30-300Hz 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 2 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 1800 W AES power and represent the expected long term parameters after a short period of use.
- (7) 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.