

21NLW9001

Extended LF Neodymium Transducer

KeyFeatures

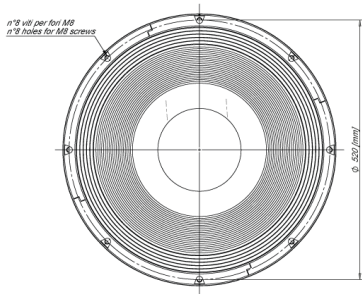
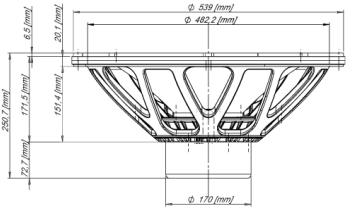
- 95 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) split winding four layers ISV copper coil
- 3600 W program power handling
- Carbon fiber reinforced cellulose cone
- Double Silicon Spider (DSS) for improved excursion control
- Aluminum demodulating ring (SDR) for lower distortion
- Low noise forced ventilation design for low power compression
- Weather protected cone and plates for outdoor usage
- Suitable for vented and bandpass subwoofer systems

Description

The 21NLW9001 is an ultra low frequency 21 inch neodymium high performance transducer. The transducer is the evolution of the 21NLW9001 subwoofer, and has been optimized for direct radiation and bandpass subwoofer cabinet designs. For optimum results recommended amplifier should be able to deliver 3600 Watt program power without clipping. At the heart of the updated design stays the improved double silicon spider based on DSS technology, letting the 21NLW9001 being able to control the moving mass with high linearity, showing an exceptional stability of mechanical parameter values in the long term. The transducer design features include a high performance large displacement suspension system for improved cone control at very high level of SPL matching. 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 copper voice coil is an inside-outside split winding, four layers design, enabling the 21NLW9001 to handle up to 3600W program power. 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, ± 14 mm linear Xmax - makes the The 21NLW9001 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 low distortion and sound quality are further improved by an aluminum demodulating ring (SDR technology) that flatten impedance and phase with a constant power transfer. The carbon fiber reinforced, straight ribbed cone shows a proprietary resin treatment for extra pulp strength and water repellent properties. 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.

Models

Model	Code	Info
21NLW9001 8 OHM	022218N110	
21NLW9001 4 OHM	022214N110	



General Specifications

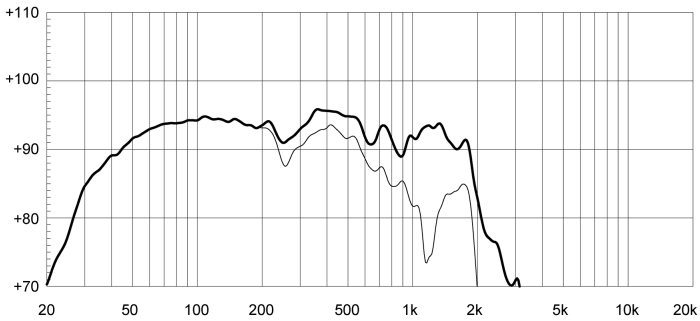
Nominal Diameter	533 mm (21 in)
Rated Impedance	8 Ohm
AES Power	1800W
Program Power	3600W
Peak Power	10000W
Sensitivity	95 dB
Frequency Range	25 - 1500 Hz
Power Compression @-10dB	0,7 dB
Power Compression @-3dB	1,5 dB
Power Compression @Full Power	2,2 dB
Max Recomm. Frequency	150 Hz
Recomm. Enclosure Volume	120 - 500 lt (4,24 - 17,7 cuft)
Minimum Impedance	7,6 Ohm at 25°C
Max Peak To Peak Excursion	70 mm (2,75 in)
Voice Coil Diameter	135 mm (5,3 in)
Voice Coil winding material	Copper
Suspension	Triple roll, Polycotton
Cone	Straight ribbed carbon fiber loaded cellulose

Thiele Small Parameters

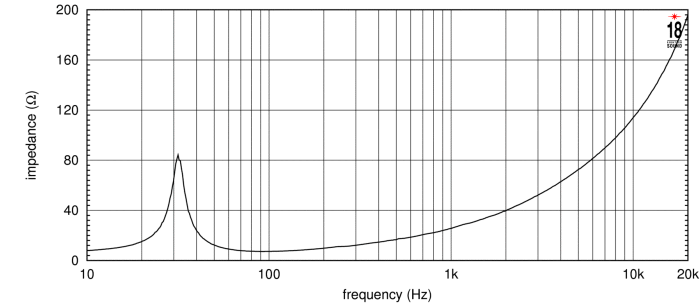
Fs	32 Hz
Re	5,9 Ohm
Sd	0,1662 sq.mt. (257,6 sq.in.)
Qms	4,5
Qes	0,34
Qts	0,31
Vas	244 lt. (8,62 cuft)
Mms	390 gr. (0,86 lb)
BL	37 Tm
Linear Mathematical Xmax	±14 mm (±0,55 in)
Le (1kHz)	3,1 mH
Ref. Efficiency 1W@1m (half space)	95,5 dB

Mounting information

Overall diameter	545 mm (21,46 in)
N. of mounting holes and bolt	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	520 mm (20,47 in)
Front mount baffle cutout ø	492 mm (19,37 in)
Rear mount baffle cutout ø	490 mm (19,29 in)
Total depth	250 mm (9,8 in)
Flange and gasket thickness	18 mm (0,7 in)
Net weight	13,40 kg (29,54 lb)
Shipping weight	15,5 kg (34,2 lb)
Packaging Dimensions	570x570x290 mm (22,4x22,4x11,4 in)



FREQUENCY RESPONSE CURVE OF 21NLW9001 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) AES power is determined according to AES2-1984 (r2003) standard
- 2) Program power rating is measured in 250 lit. enclosure tuned at 28 Hz using a 30-300 band limited pink noise test signal applied for 2 hours and with 50% duty cycle
- 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 2 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: $(Hvc-Hg)/2 + Hg/4$ where Hvc is the coil depth and Hg is the gap depth.

