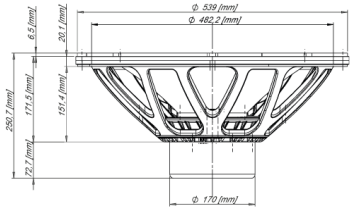
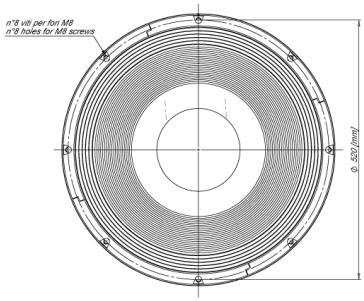
21NLW9601

Extended LF Neodymium Transducer

KeyFeatures

- 96 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 treated cellulose cone
- Triple Silicon Spider (TSS) improves excursion control and linearity even in extreme loading and SPL conditions
- Single Demodulating Ring (SDR) for lower distortion
- Low noise cooling design for very low power compression
- Suitable for bandpass and horn loaded subwoofer designs





Description

The 21NLW9601 is a 21 inch neodymium high performance transducer. It is the evolution of the 21NLW9600 speaker. The transducer is suitable for high loading, ultra-low frequency horn loaded as well as bandpass subwoofer designs. For optimum results recommended amplifier should be able to deliver 3600 Watt program power without clipping. At the heart of the transducers stands the improved Triple Silicon Spider (TSS) lets the 21NLW9601 being able to control the moving mass with exceptional 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 even at very high level of SPL matching. The state-of-the-art 5,3" diameter ISV copper voice coil shows a inside-outside split winding, four layers design, enabling the 21NLW9601 to handle up to 3600W program power. Bl force factor as well as all electro-dynamic parameters are linear within the working range. This, together with the high excursion behavior - 70 mm before damage, ±14 mm linear Xmax - makes the 21NLW9601 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 21NLW9601 has been developed after intense FEA and fluido-dynamics 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. Weight reduction was a key development aspect of the 21NLW9601, resulting in a net value of 14kg (30,9b). 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
022218N010	022218N010	8 Ohm
022214N010	022214N010	4 Ohm

General Specifications

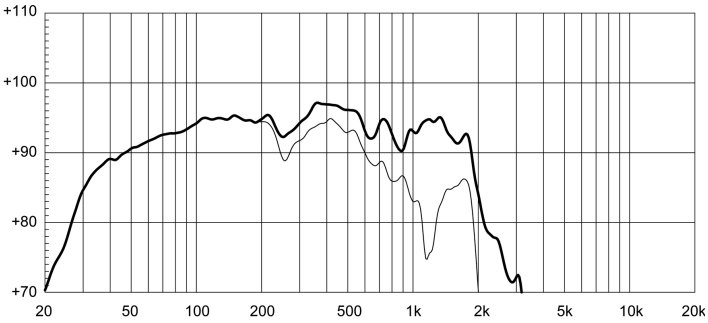
Nominal Diameter	533mm (21 in)
Rated Impedance	8 Ohm
AES Power	1800W
Program Power	3600W
Peak Power	10000W
Sensitivity	96 dB
Frequency Range	25 - 2000 Hz
Power Compression @-10dB	0,7 dB
Power Compression @-3dB	1,5 dB
Power Compression @Full Power	2,2 dB
Max Recomm. Frequency	150 Hz
Recomm. Enclosure Volume	120 - 250 lt. (4.24 - 8.83 cuft)
Minimum Impedance	7,9 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

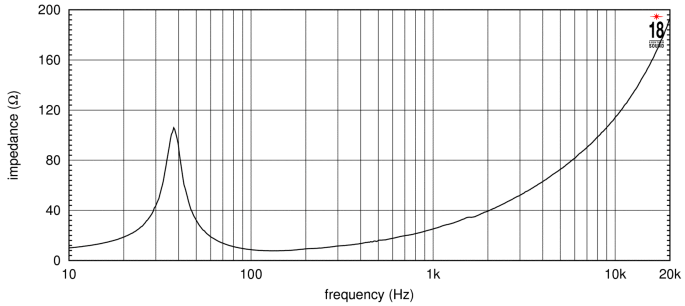
Fs	37 Hz
Re	5,9 Ohm
Sd	0,1662 sq.mt. (257,6 sq.in.)
Qms	5,5
Qes	0,31
Qts	0,29
Vas	175 lt. (6.18 cuft)
Mms	408 gr. (0,90 lb)
BL	43 Tm
Linear Mathematical Xmax	±14 mm (±0.55 in)
Le (1kHz)	3,10 mH
Ref. Efficiency 1W@1m (half space)	96,5 dB

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	14 kg (30,9 lb)
Shipping weight	15,5 kg (34,2 lb)
Packaging Dimensions	570x570x290 mm (22,4x22,4x11,4 in)



FREQUENCY RESPONSE CURVE OF 21NLW9601 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 3V 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.
