

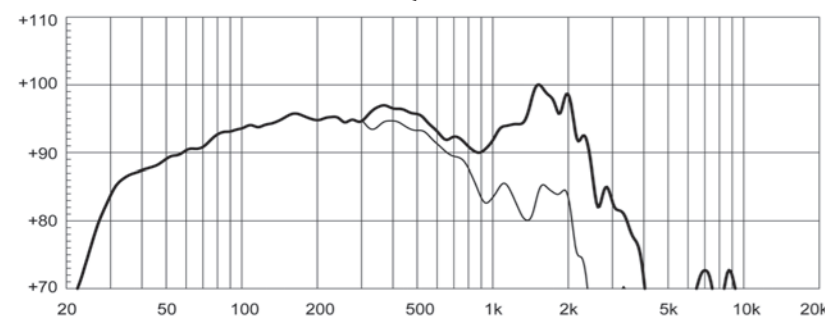
18NLW9600



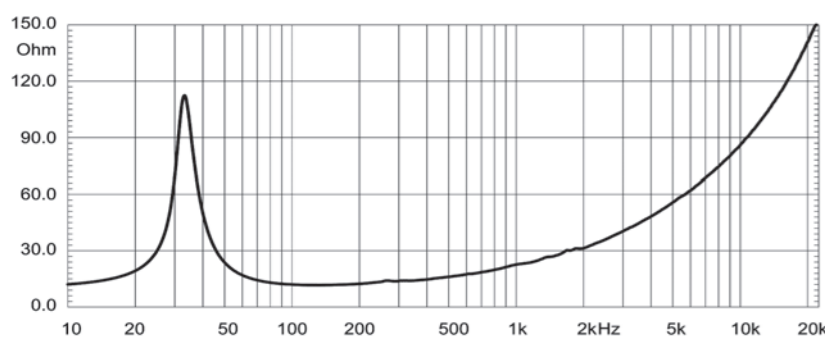
TECHNOLOGIES



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) Continuous 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.
- (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) 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.
- (6) Linear Math. Xmax is calculated as $(Hvc-Hg)/2 + Hg/4$ where Hvc is the coil depth and Hg is the gap depth.

KEY FEATURES

- 96 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) Interleaved Sandwich Voice coil (ISV)
- 1800 W AES power handling
- High force neodymium magnet assembly
- Triple Silicon Spider (TSS) for improved excursion control and linearity
- Single Demodulating Rings (SDR) for lower distortion
- Low noise forced ventilation design for low power compression
- Weather protected cone and plates for outdoor usage
- Suitable for reflex, bandpass or horn loaded high SPL subwoofer systems

GENERAL SPECIFICATIONS

Nominal diameter	462 mm	(18 in)
Rated impedance	8 Ohm	
AES power	1800 W	
Program power (1)	3600 W	
Peak power (2)	10000 W	
Sensitivity (3)	96.5 dB	
Frequency range (4)	32-2500 Hz	
Max. recomm. frequency	300 Hz	
Recomm. enclosure volume	110 ÷ 350 lt.	(3.88 ÷ 12.36 cuft)
Minimum impedance	6.6 Ohm	at 25°C
Max peak to peak excursion	70 mm	(2.75 in)
Voice coil diameter	135 mm	(5.32 in)
Voice coil winding material	aluminum	
Suspension	Triple roll, Polycotton	
Cone	Straight ribbed, Treated paper	

THIELE SMALL PARAMETERS (5)

Fs	34 Hz	
Re	4,7 Ohm	
Sd	0,1134 sq. mt.	(189.88 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 (6)	± 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 hole diam.	8.5 mm	(0.33 in)
Bolt circle diameter	440 mm	(17.32 in)
Front mount battle cutout diam.	416 mm	(16.38 in)
Rear mount battle cutout diam.	422 mm	(16.61 in)
Total depth	237.5 mm	(9.3 in)
Flange and gasket thickness	26 mm	(1.02 in)
Net weight	12.5 kg	(27.6 lb)

18 SOUND TECHNOLOGIES

- ACS Active Cooling System
- SDR Single Demodulating Ring
- TSS Triple Silicon Spider
- ISV Interleaved Sandwich Voice Coil



9000 series transducers have been developed after intense FEA and fluidodynamics simulation and testing, with special focus on dissipating the heat generated by the powerful 5.3" voice coil. Great attention was given to the optimization of air flow into the gap without introducing audible noise. An air diffractor placed into the heatsink acts as a cooling system increasing the power handling capability and lowering the power compression figure.



For detailed technical specifications please contact us at our e-mail: info@eighteensound.com

Authorized dealer

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DC18S9000
Rev0709

18
EIGHTEEN
SOUND

PROFESSIONAL
LOUDSPEAKERS

The 9000 series

EIGHTEEN SOUND

The 9000 series

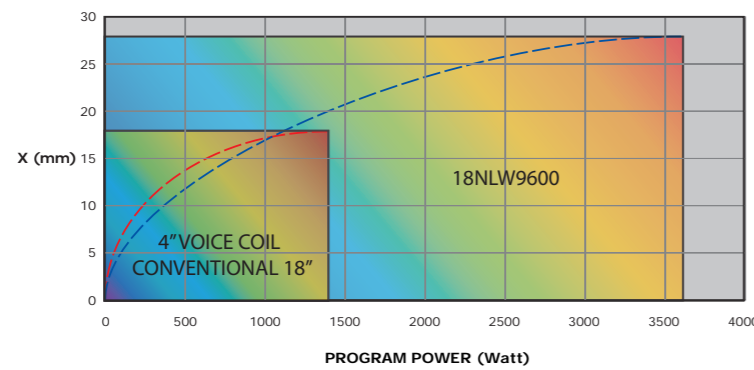
Touring companies have always requested reduced weight and size of sound reinforcement systems, without compromising sound quality, narrowing the frequency range, and with the precise objective in mind of delivering the same, or even higher SPL, to the audience. At the same time, an audio contractor designer's goal is to use the least intrusive audio systems possible, guaranteeing the highest possible quality of audio reproduction. Is there a possible solution? In theory the answer is simple: keeping constant the total weight and size of the audio system, you should increase the audio system efficiency, calculated as the electrical into acoustical energy transfer ratio. Unfortunately, turning this dream into reality is far more complex.

In the last ten years, amplifier technology has made a quantum leap in terms of watts per kilogram output. Today's power amplifier energy capabilities are way beyond the potential of last century's units, being able to manage accurately a tremendous output current in a compact package.

From the loudspeaker side, it was clear to Eighteen Sound that the market was rapidly changing, demanding transducers capable to take full advantage of these new amplifier's power potential. In order to fulfill this requirement, it was necessary to develop a new generation of loudspeakers capable to manage very high power and consequently able to withstand increased mechanical stress, due to extremely high excursion requirements.

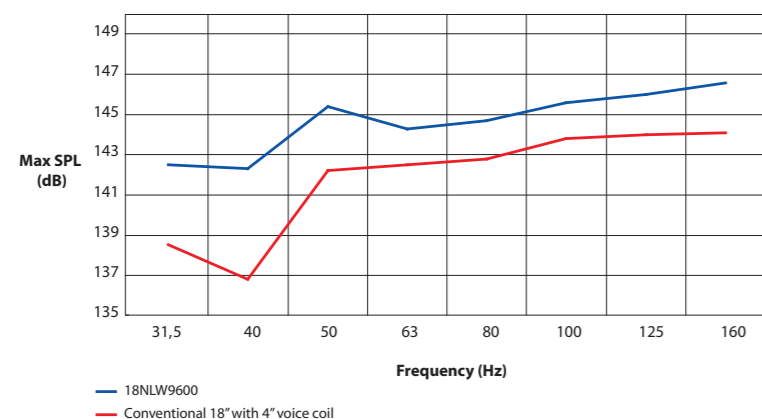
Our answer to this technological challenge is the 9000 series neodymium extended low frequency loudspeakers range. When compared to 4 inch voice coil diameter 18 inch and 21 inch models, the 9000 series exhibit more than twice the performances in terms of power handling and maximum SPL output capability.

In the below chart is shown, in a convenient graphic format, the working range area of a conventional design 4" voice coil 18" loudspeaker compared to our 18NLW9600 5,3" voice coil neodymium transducer. On the vertical axis is shown the loudspeakers membrane displacement (X), on the horizontal axis the program power delivered by the amplifier (Y). We can use this graphic as a sort of acoustic energy calculator: the 18NLW9600 shows more than double the program power capability and almost double the displacement.



A very important part of efficiency in the loudspeaker is due to the power compression factor, that measures the loss in SPL output when the voice coil is heated up due to the current delivered by the amplifier's output. When comparing the 18NLW9600 with a traditional technology loudspeaker at the same input power, power compression figures show an average reduction of almost 2 dB. Final result is an increased capability of generating impressive SPL when driven at extremely high power.

In the below chart, you will see that the highest generated SPL of an 18NLW9600 - blue plot - driven at maximum program power, exceeds by 3dB or more the one generated by a traditional design 18" loudspeaker acoustic output - red plot (1).



(1) Transducers were loaded in our standard test 180 liters cabinet tuned at 35Hz. A 2 x 2000W into 8ohm power amplifier was used for testing. One single channel has been connected to the conventional 18" transducer, while the 18NLW9600 was connected to the bridged unit - for a nominal 8kW maximum power. Seven log spaced tone burst measurements have been made, each one with a 200V peak value for the conventional unit, and with 380V peak value for the 18NLW9600. 180 Lit enclosure positioned at corner, pi/4 emission, floor microphone measurement.

21NLW9000



KEY FEATURES

- 96 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) Interleaved Sandwich Voice coil (ISV)
- 1800 W AES power handling
- Neodymium magnet assembly
- Triple Silicon Spider (TSS) for improved excursion control and linearity
- Single Demodulating Rings (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 SPECIFICATIONS

Nominal diameter	533 mm	(21 in)
Rated impedance	8 Ohm	
AES power	1800 W	
Program power (1)	3600 W	
Peak power (2)	10000 W	
Sensitivity (3)	96 dB	
Frequency range (4)	24-1500 Hz	
Max. recomm. frequency	100 Hz	
Recomm. enclosure volume	120 ÷ 500 lt.	(4.24 ÷ 17.7 cuft)
Minimum impedance	8.2 Ohm	at 25°C
Max peak to peak excursion	70 mm	(2.75 in)
Voice coil diameter	135 mm	(5.32 in)
Voice coil winding material	copper	
Suspension	Triple roll, Polycotton	
Cone	Straight ribbed, Treated paper	

THIELE SMALL PARAMETERS (5)

Fs	29 Hz	
Re	6 Ohm	
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 (6)	± 14 mm	(± 0.55 in)
Le (1kHz)	2.8 mH	
Ref. Efficiency 1W@1m (half space)	95.0 dB	

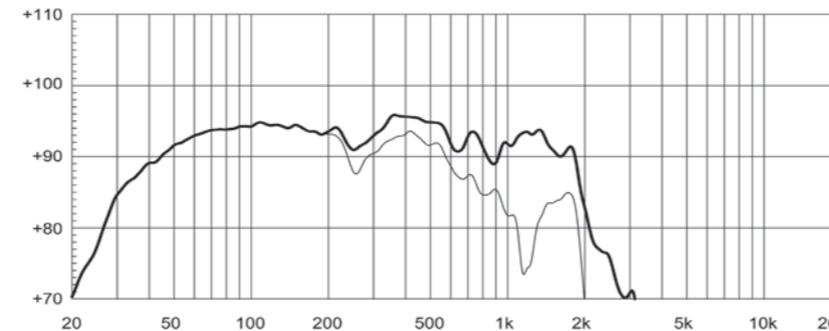
MOUNTING INFORMATIONS

Overall diameter	545 mm	(21.46 in)
N. of mounting holes	8	
Mounting hole diam.	10 mm	(0.39 in)
Bolt circle diameter	520 mm	(20.47 in)
Front mount battle cutout diam.	494 mm	(19.37 in)
Rear mount battle cutout diam.	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)

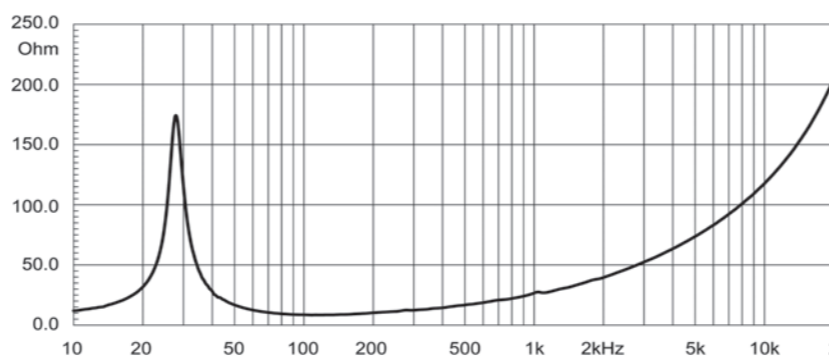
TECHNOLOGIES



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) Continuous 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.
- (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) 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.
- (6) Linear Math. Xmax is calculated as $(Hvc-Hg)/2 + Hg/4$ where Hvc is the coil depth and Hg is the gap depth.

21NLW9600



KEY FEATURES

- 97 dB SPL 1W / 1m average sensitivity
- 135 mm (5.3 in) Interleaved Sandwich Voice coil (ISV)
- 1800 W AES power handling
- Ultra High force neodymium magnet
- Triple Silicon Spider (TSS) for improved excursion control and linearity
- Single Demodulating Rings (SDR) for lower distortion
- Low noise forced ventilation design for low power compression
- Weather protected cone and plates for outdoor usage
- Suitable for high loading, high SPL subwoofer systems

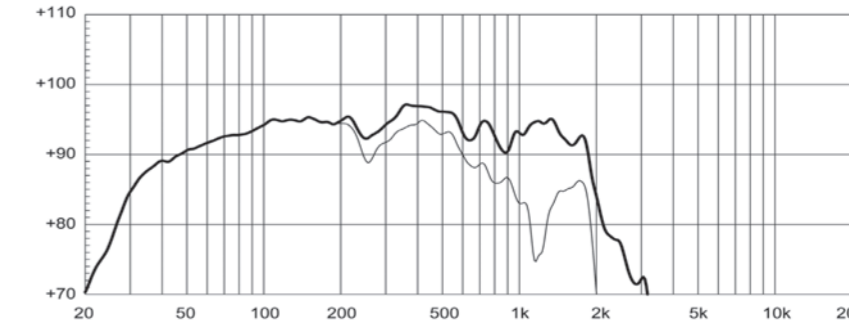
GENERAL SPECIFICATIONS

Nominal diameter	533 mm	(21 in)
Rated impedance	8 Ohm	
AES power	1800 W	
Program power (1)	3600 W	
Peak power (2)	10000 W	
Sensitivity (3)	97 dB	
Frequency range (4)	24-2000 Hz	
Max. recomm. frequency	100 Hz	
Recomm. enclosure volume	120 ÷ 500 lt.	(4.24 ÷ 17.7 cuft)
Minimum impedance	8.2 Ohm	at 25°C
Max peak to peak excursion	70 mm	(2.75 in)
Voice coil diameter	135 mm	(5.32 in)
Voice coil winding material	copper	
Suspension	Triple roll, Polycotton	
Cone	Straight ribbed, Treated paper	

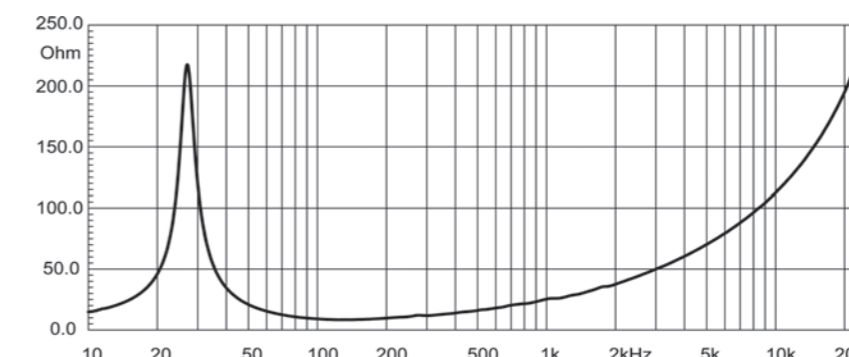
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