

# 18iD

Extended LF Neodymium Transducer

## KeyFeatures

- Class D amplifier optimized for maximum power transfer
- Conforms to Powersoft™ iPal® standards
- 95 dB SPL 1W / 1m average sensitivity
- 135mm (5.3") split winding, four layer ISV aluminum voice coil
- 3600 W program power handling
- Triple Silicon Spider (TSS) for improved excursion control
- Aluminum demodulating ring (SDR) for lower distortion

## Description

The 18iD is an 18 inch neodymium high performance subwoofer. The loudspeaker has been optimized for vented and bandpass subwoofer cabinet designs and is recommended to use a Class D or iPal (tm\*) amplifier 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 composite fiber reinforced, straight ribbed cone. Thanks to the Triple Silicon Spider (TSS) technology, the 18iD 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,  $\pm 14\text{mm}$  linear  $X_{\text{max}}$  - makes the 18iD an extremely low distortion, highly dynamic transducer. The 18iD features a state-of-the-art 5,3" inside outside ISV (Interleaved Sandwich Voice-Coil) enabling the 18iD to deliver extraordinary transient results. The 18iD 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 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.



## Models

Model	Code	Info
18iD	022182N01B	2 Ohm

## General Specifications

Nominal Diameter	460mm (18 in)
Rated Impedance	2 Ohm
AES Power	1800W
Program Power	3600W
Peak Power	10000W
Sensitivity	95 dB
Frequency Range	30 - 2500 Hz
Power Compression @-10dB	0,7 dB
Power Compression @-3dB	1,5 dB
Power Compression @Full Power	2,2 dB
Max Recomm. Frequency	200 Hz
Recomm. Enclosure Volume	110 - 350 lt. (3,89 - 12,36 cuft)
Minimum Impedance	2 Ohm at 25°C
Max Peak To Peak Excursion	70 mm (2,76 in)
Voice Coil Diameter	135 mm (5,31 in)
Voice Coil winding material	Copper wire
Suspension	Triple Roll, Heavy Polycotton
Cone	Straight ribbed carbon fiber loaded cellulose

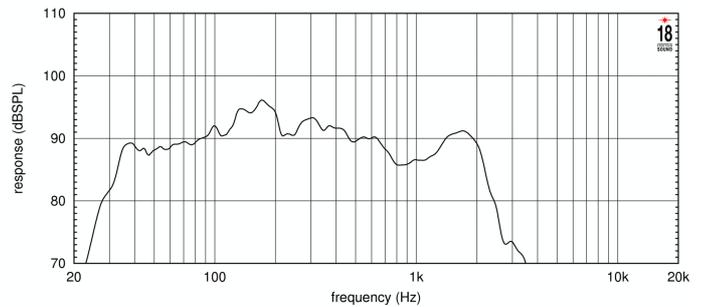
## Thiele Small Parameters

Fs	40 Hz
Re	1,5 Ohm
Sd	0,113 sq.mt. (175.15 sq.in.)
Qms	5,5
Qes	0,27
Qts	0,26
Vas	67 lt. (2,36 cuft)
Mms	420 gr. (0,92 lb)
BL	24 Tm
Linear Mathematical Xmax	±15,5 mm (±0,6 in)
Le (1kHz)	1,22 mH
Ref. Efficiency 1W@1m (half space)	94,2 dB

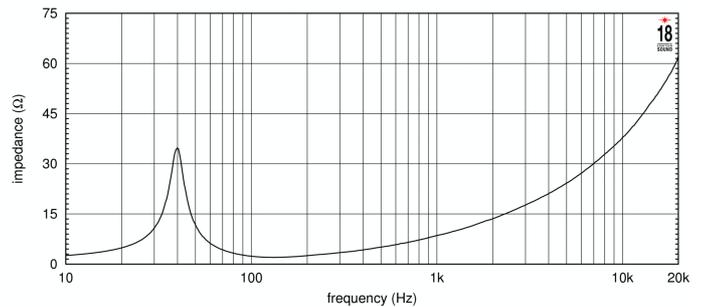
## Mounting information

Overall diameter	462 mm (18,19 in)
N. of mounting holes and bolt	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	440mm (17,32 in)
Front mount baffle cutout ø	416 mm (16,38 in)
Rear mount baffle cutout ø	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 (27,56 lb)
Shipping weight	14 kg (30,86 lb)
Packaging Dimensions	14 kg (30,86 lb)

## FREQUENCY RESPONSE CURVE



## FREQUENCY RESPONSE MADE IN 180 LT. ENCLOSURE TUNED AT 35 Hz IN FREE FIELD (4m) ENVIRONMENT. ENCLOSURE CLOSES THE REAR OF THE DRIVER FREE AIR IMPEDANCE MAGNITUDE CURVE



## Notes

- 1) AES2-1984 (r2003) standard
- 2) Program power rating is measured in 160 lit. enclosure tuned at 33 Hz using a 40-400 band limited pink noise test signal applied for 2 hours and with 50% duty cycle.
- 3) The peak power rating is based on a 4.5 dB crest factor above the program power rating and represents the maximum permitted instantaneous peak power level over a maximum period of 10ms, which can be withstood by the loudspeaker without damage.
- 4) Sensitivity represents the averaged value of acoustic output as measured on the forward central axis of the cone, at a distance of 1m from the baffle panel, when connected to a 1,41V 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 a half space environment.
- 6) Power compression represents the loss of sensitivity for the specified power, measured from 40 to 400Hz 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 a 1 hour 20 Hz sine, and represents the expected long term parameters after a short period of use.
- 9) Linear Math. Xmax is calculated as;  $(Hvc-Hg)/2 + Hg/4$  where Hvc is the coil depth and Hg is the gas depth.