

# 18W1300

## Low Frequency Transducer

### Key Features

- 99,5 dB SPL 1W / 1m average sensitivity
- 100 mm (4 in) Interleaved Sandwich Voice coil (ISV)
- 1000 W AES power handling
- Weather protected cone and plates for outdoor usage
- Double Silicon Spider (DSS) for improved excursion control and linearity
- Double Demodulating Rings (DDR) for lower distortion and improved heat dissipation
- Improved heat dissipation via unique basket design



### General Description

The 18W1300 is a low frequency loudspeaker which sets a new industry standard in 18" (460 mm) high output transducers. It represents a further development of the Eighteen Sound 18LW1400 but with a lighter mass and increased sensitivity.

The 18W1300 can be used as a low bass or subwoofer component, in either a reflex, bandpass or horn loaded configuration, in high power fixed or touring loudspeaker systems. It provides clean, linear, undistorted low frequency reproduction at very high power levels. In its reflex configuration, it can also be used for bass musical instrument applications.

The high excursion capabilities of the surround and suspension system, in conjunction with the Double Silicon Spider (DSS), enable the 18W1300 to achieve high levels of linear travel while maintaining full control over the moving mass.

The carbon fiber reinforced curvilinear ribbed cone assures smooth response and exceptional strength with maximum reliability under high mechanical stress.

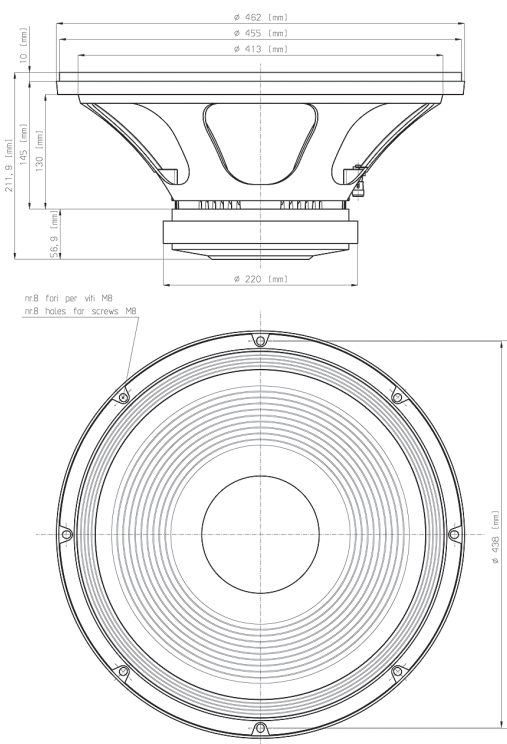
The state-of-the-art voice coil employs our own Interleaved Sandwich Voice coil (ISV) technology, in which a high strength fiberglass former carries windings on both the outer and inner surfaces. This results in a balanced coil with a uniform distribution of mass and motive energy, creating an extremely linear motor assembly. The already low distortion and unmistakable sound quality of this loudspeaker is improved by Double Demodulating Rings (DDR), designed to dramatically reduce the intermodulation and harmonic distortion while improving the transient response.

Excellent heat dissipation has been achieved by incorporating air channels between the basket and the magnetic top plate.

Maximum flux concentration and force factor in the gap is assured by the unique shape and design of the top and back plates, which have been researched and designed using our in-house magnetic flux FEA CAD resource.

Due to the increasing use of high power audio systems at outdoor events or in marine environments, the 18W1300 has been designed to perform properly under inclement weather conditions. This has been achieved using of an exclusive cone treatment which improves pulp strength and gives water repellent properties to both sides of the cone. In addition, a special treatment is applied to the top and back plates which is far more resistant to the corrosive effects of salts and oxidization than any other treatment in use.

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FERRITE LF-MB-MF TRANSDUCERS

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	460 mm (18 in)
RATED IMPEDANCE	8 Ohm
AES POWER	850 W
PROGRAM POWER (1)	1200 W
PEAK POWER (2)	6000 W
SENSITIVITY (3)	99,5 dB
FREQUENCY RANGE (4)	38 - 3300 Hz
POWER COMPRESSION @-10DB (5)	0,7 dB
POWER COMPRESSION @-3 DB	2,1 dB
POWER COMPRESSION @FULL POWER	3,2 dB
MAX RECOMM. FREQUENCY	500 Hz
RECOMM. ENCLOSURE VOLUME	150 ÷ 350 lt. (5,3 ÷ 12,36 cuft)
MINIMUM IMPEDANCE	6,4 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	50 mm (1,97 in)
VOICE COIL DIAMETER	100 mm (4 in)
VOICE COIL WINDING MATERIAL	aluminum
SUSPENSION	Triple roll, polycotton
CONE	Curvilinear ribbed, Paper

## THIELE SMALL PARAMETERS (6)

Fs	35 Hz
Re	5 Ohm
Sd	0,1225 sq. mt. (189,88 sq. in.)
Qms	5
Qes	0,35
Qts	0,33
Vas	336 lt. (11,87 cuft)
Mms	129 gr. (0,28 lb)
BL	20,4 Tm
Linear Mathematical Xmax (7)	± 8,5 mm (± 0,33 in)
Le (1kHz)	1,48 mH
Ref. Efficiency 1W@1m (half space)	98,2 dB

## MOUNTING INFORMATION

Overall diameter	462 mm (18,18 in)
N. of mounting holes	8
Mounting holes diameter	8,5 mm (0,33 in)
Bolt circle diameter	438-440 mm (17,24-17,32 in)
Front mount baffle cutout Ø	416 mm (16,38 in)
Rear mount baffle cutout Ø	422 mm (16,61 in)
Total depth	211,9 mm (8,34 in)
Flange and gasket thickness	26 mm (1,02 in)
Net weight	13 kg (28,7 lb)
Shipping weight	14,4 kg (32 lb)
CardBoard Packaging dimensions	482 x 482 x 257 mm (18,98 x 18,98 x 10,12 in)

FREQUENCY RESPONSE CURVE OF 18W1300 MADE ON 180 LIT. ENCLOSURE TUNED 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) Program 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 (1) 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 850 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.