

# 12LW800

## Extended Low Frequency Transducer

### Key Features

- 96 dB SPL 1W / 1m average sensitivity
- 75 mm (3 in) Interleaved Sandwich Voice coil (ISV)
- 500 W AES power handling
- Double Silicon Spider (DSS) for improved control and linearity
- Improved heat dissipation via unique basket design
- Weather protected cone and plates for outdoor usage
- Ideal for compact reflex subwoofers



### General Description

The 12LW800 is a low frequency loudspeaker which sets a new industry standard in 12" (300mm) Ø high performance transducers, achieving a remarkable 42Hz downwards extension with 96dB average sensitivity and handling peak power levels of 4000W with remarkably low distortion and excellent transient response.

The 12LW800 is intended as the low bass or sub-woofer component, either in highly compact reflex, bandpass or horn loaded configurations, in which it provides clean, linear frequency reproduction at high power levels, or as part of a compact high power fullrange system. In its reflex configuration, it can be used in extremely compact enclosures (40 - 70lt) making it ideal for portable applications such as road shows and bass musical instruments, for "wedge" stage monitors, etc.

The high excursion capabilities of the double-action roll surround and suspension system, in conjunction with the Double Silicon Spider (DSS), enable the 12LW800 to achieve very high levels of linear travel for a 12" unit.

With its custom design surround, the carbon fiber reinforced curvilinear ribbed cone assures smooth response and exceptional strength with maximum reliability under high mechanical stress.

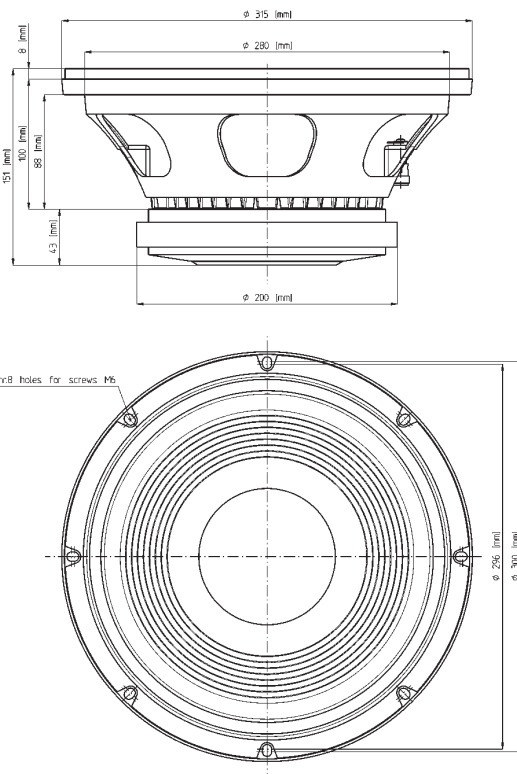
The 75 mm state-of-the-art voice coil employs the Interleaved Sandwich Voice coil (ISV), in which a high strength fibreglas former carries windings on both the outer and inner surfaces to achieve a mass balanced coil and providing a uniform motive drive. This, in conjunction with the use of unique high temperature resin adhesives, results in an extremely linear motor assembly with reduced tendency to break-up under hard drive conditions.

Excellent heat dissipation is achieved incorporating air channels between the basket and the top plate.

Maximum flux concentration and force factor in the gap are assured by the unique shape and design of the face and back plates, which have been designed using our in-house Magnetic Flux FEA CAD resource.

The ability to perform properly under inclement weather conditions is an essential point of the Eighteen Sound philosophy. These features are obtained through an exclusive cone treatment improving pulp strength and giving water repellent properties to the cone. In addition, a special treatment applied to both the face and back plates allows the product to be 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

# 12LW800

Extended Low Frequency Transducer

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	300 mm (12 in)
RATED IMPEDANCE	8 Ohm
AES POWER	500 W
PROGRAM POWER (1)	800 W
PEAK POWER (2)	4000 W
SENSITIVITY (3)	96 dB
FREQUENCY RANGE (4)	46 ÷ 4200 Hz
POWER COMPRESSION @-10DB (5)	0,9 dB
POWER COMPRESSION @-3DB	2,6 dB
POWER COMPRESSION @FULL POWER	4 dB
MAX RECOMM. FREQUENCY	1300 Hz
RECOMM. ENCLOSURE VOLUME	40 ÷ 100 lt. (1,41 ÷ 3,53 cuft)
MINIMUM IMPEDANCE	6,9 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	34 mm (1,34 in)
VOICE COIL DIAMETER	75 mm (2,95 in)
VOICE COIL WINDING MATERIAL	copper
SUSPENSION	Single roll, rubber
CONE	Curvilinear ribbed, Paper

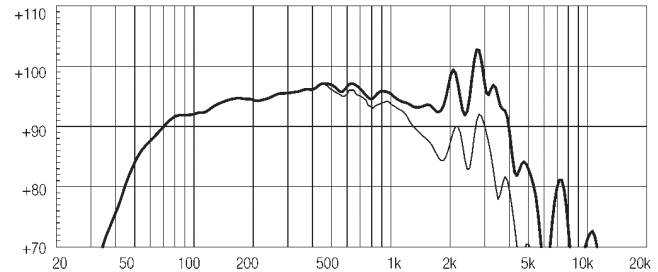
## THIELE SMALL PARAMETERS (6)

Fs	52 Hz
Re	5,6 Ohm
Sd	0,0531 sq.mt. (82,31 sq.in.)
Qms	7,6
Qes	0,3
Qts	0,29
Vas	48 lt. (1,70 cuft)
Mms	76,5 gr. (0,17 lb)
BL	21,3 Tm
Linear Mathematical Xmax (7)	± 6,5 mm (± 0,26 in)
Le (1kHz)	1,72 mH
Ref. Efficiency 1W@1m (half space)	95,5 dB

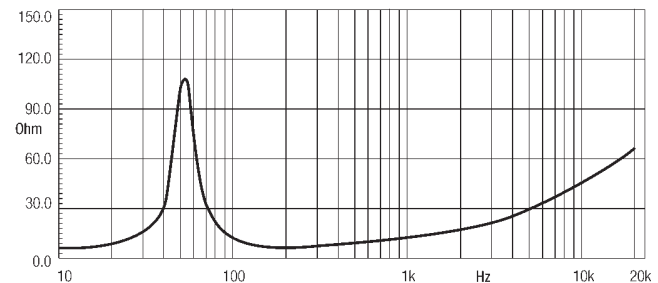
## MOUNTING INFORMATION

Overall diameter	315 mm (12,4 in)
N. of mounting holes	8
Mounting holes diameter	7,15 mm (0,28 in)
Bolt circle diameter	296 - 300 mm (11,65 - 11,8 in)
Front mount baffle cutout ø	282 mm (11,1 in)
Rear mount baffle cutout ø	282 mm (11,1 in)
Total depth	151 mm (5,94 in)
Flange and gasket thickness	20 mm (0,79 in)
Net weight	8,1 kg (17,88 lb)
Shipping weight	8,9 kg (19,65 lb)
CardBoard Packaging dimensions	332 x 332 x 184 mm (13,07 x 13,07 x 7,24 in)

**FREQUENCY RESPONSE CURVE OF 12LW800 MADE ON 50 LIT. ENCLOSURE TUNED 60HZ 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 rating is measured in 50 lit enclosure tuned 60Hz 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 500 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.

Eighteen Sound engages in research and product improvement. New materials and design refinements can be introduced into existing products without notice.