

15LW1400

Extended Low Frequency Transducer

Key Features

- 98 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
- Extremely low power compression



General Description

15LW1400 is a 15" (380 mm) high performance low frequency loudspeaker. The 15LW1400 achieves a remarkable 33Hz downwards extension with 98dB average sensitivity - due largely to retaining the 100mm ISV technology.

15LW1400 is intended as the low bass or sub-woofer component, either in a more compact reflex, bandpass or horn loaded configuration. It provides clean, linear, undistorted LF reproduction at very high power levels, as part of a high power full range system. In its reflex configuration, it can be used in extremely compact enclosures (65-130 ltr). This make it ideal for touring applications including indoor and outdoor concert reinforcement systems.

The high excursion capabilities of the surround and suspension system, in conjunction with the Eighteen Sound Double Silicon Spider (DSS), enable the 15LW1400 to achieve high levels of linear travel maintaining full control of moving mass. The carbon fiber reinforced, straight-sided ribbed cone assures smooth response and exceptional strength with maximum reliability under high mechanical stress.

The 100 mm state-of-the-art voice coil employs our 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. The weight of the winding is evenly distributed, thus also providing a uniform motive drive. This, in conjunction with the use of state-of-the-art and unique high temperature resin adhesives, results in an extremely linear motor assembly.

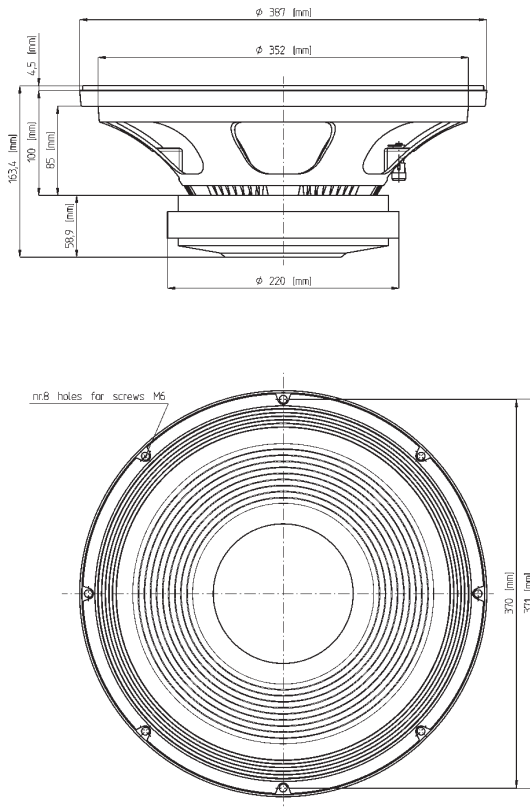
The already low distortion and sound quality of this loudspeaker is improved using Double Demodulation Rings (DDR) designed to reduce dramatically the intermodulation and harmonic distortion whilst improving the transient response.

Excellent heat dissipation is achieved incorporating air channels between the basket and the magnetic faceplate. Further ventilation is provided via back plate air vents to direct air also into the lower part of the voice coil gap.

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

The ability to perform properly under inclement weather conditions is obtained through an exclusive cone treatment that improves pulp strength and gives water repellent properties to both sides of the cone. In addition, the special treatment applied to both the face and back plates is far more resistant to the corrosive effects of salts and oxidization than any other treatment in use.

0221583110 8ohm



FERRITE LF-MB-MF TRANSDUCERS

15LW1400

Extended Low Frequency Transducer

GENERAL SPECIFICATIONS

NOMINAL DIAMETER	380 mm (15 in)
RATED IMPEDANCE	8 Ohm
AES POWER	1000 W
PROGRAM POWER (1)	1400 W
PEAK POWER (2)	7000 W
SENSITIVITY (3)	98 dB
FREQUENCY RANGE (4)	40 ÷ 2100 Hz
POWER COMPRESSION @-10DB (5)	(70 W) 0,9 dB
POWER COMPRESSION @-3DB	(350 W) 2,1 dB
POWER COMPRESSION @0DB	(700 W) 3,0 dB
MAX RECOMM. FREQUENCY	800 Hz
RECOMM. ENCLOSURE VOLUME	70 ÷ 150 lt. (2,47 ÷ 5,30 cuft)
MINIMUM IMPEDANCE	7,8 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	39 mm (1,53 in)
VOICE COIL DIAMETER	100 mm (3,95 in)
VOICE COIL WINDING MATERIAL	copper
SUSPENSION	
CONE	

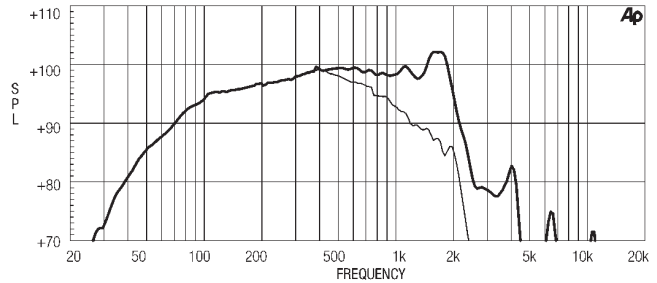
THIELE SMALL PARAMETERS (6)

Fs	42 Hz
Re	5,8 Ohm
Sd	0,090 sq.mt. (139,5 sq.in.)
Qms	4,36
Qes	0,26
Qts	0,25
Vas	137 lt. (4,84 cuft)
Mms	120 gr. (0,26 lb)
BL	26,55 Tm
Linear Mathematical Xmax (7)	± 6,5 mm (± 0,26 in)
Le (1kHz)	2,55 mH
Ref. Efficiency 1W@1m (half space)	98,1 dB

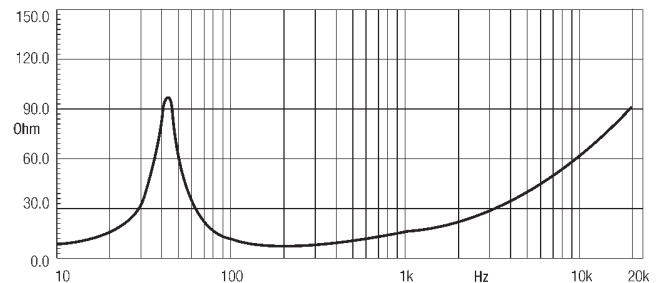
MOUNTING INFORMATIONS

Overall diameter	387 mm (15,23 in)
N. of mounting holes	8
Mounting holes diameter	7,15 mm (0,28 in)
Bolt circle diameter	370 - 371 mm (14,55 - 14,6 in)
Front mount baffle cutout ø	353 mm (13,90 in)
Rear mount baffle cutout ø	357 mm (14,06 in)
Total depth	163,4 mm (6,43 in)
Flange and gasket thickness	19,5 mm (0,76 in)
Net weight	12,4 kg (27,37 lb)
Shipping weight	13,4 kg (29,58 lb)
CardBoard Packaging dimensions	405 x 405 x 214 mm (15,94 x 15,94 x 8,43 in)

FREQUENCY RESPONSE CURVE OF 15LW1400 MADE ON 125 LIT. ENCLOSURE TUNED 50HZ 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 125 lit enclosure tuned 50Hz using a 40 - 400Hz band limited pink noise test signal with 50% duty cycle, applied for 2 hours.
- (2) The peak power rating is based on a 10dB crest factor above the continuous power rating and 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) 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 Mat. 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.