15LW2400

Extended Low Frequency Transducer

Key Features

97 dB SPL 1W / 1m average sensitivity

100 mm (4 in) Interleaved Sandwich Voice coil (ISV)

2400 W program power handling

Double Silicon Spider (DSS) for improved excursion control and linearity

Double Demodulating Rings (DDR) for lower distortion

Unlimited life lead wire construction

Improved heat dissipation via multi-cell air diffractor and multiple backplate vents

Weather protected fiberglass reinforced cellulose cone

Suitable for 60 to 130 liters low bass or subwoofer applications

General Description

The 15LW2400 has been developed as an evolution of the 15LW1401 low frequency transducer, setting a new industry standard in 15" (380 mm) ferrite high performance transducers.

The speaker has been designed for use as a low bass or sub-woofer component in a compact cabinet (60 - 130 lt) reflex configuration, providing clean, linear, undistorted low frequency reproduction at very high power levels.

The high excursion capabilities of the Double Silicon Spider (DSS) enable the 15LW2400 to achieve high levels of linear travel and maintain full control of the moving mass. The fiberglass fiber reinforced, straight-sided ribbed cone assures smooth response with high internal damping.

The 100 mm Ø copper voice coil employs the Interleaved Sandwich Voice coil (ISV) technology, in which a high strength fiberglas former carries windings on both the outer and inner surfaces to achieve a mass balanced coil. The weight of the windings are evenly distributed, providing a uniform motive drive.

The already low distortion and sound quality of 15LW2400 has been further improved by the Double Demodulation Rings (DDR) designed to dramatically reduce the intermodulation and harmonic distortion whilst improving the transient response.

Excellent heat dissipation has been achieved by incorporating air channels between the basket and the top plate of the magnet. Further ventilation is provided using air vents in the back plate that direct air into the lower part of the voice coil gap. In order to furtherly increase power handling and reduce power compression figure, 15LW2400 uses the same voice coil ventilation technology developed for our flagship 9000 neodymium transducer series. A low density material air diffractor is placed into the backplate acting as a cooling system, increasing power handling capability and lowering the power compression figure. As a final result the transducer shows 1 dB reduction in full power power compression value if compared to 15LW1401, and a program power handling value of 2400 Watt.

10% reduction in weight have been obtained optimizing the magnetic structure through advanced FEA CAD simulation tools.

The 15LW2400 ability to perform properly under inclement weather conditions has been achieved using an exclusive cellulose treatment which gives water repellent properties to both sides of the cone. In addition, an epoxy coating is applied to metal plates in order to resist against the corrosive effects of salts and oxidization.

0221582400 8 Ohm   0271582400 R-kit 8 Ohm
0221542400 4 Ohm   0271542400 R-kit 4 Ohm
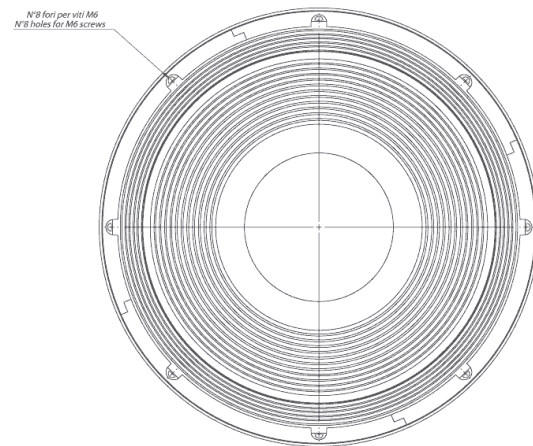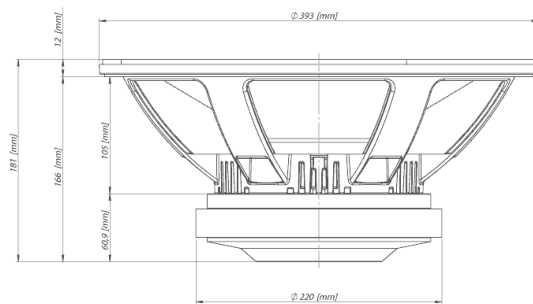
FERRITE LF-MB-MF TRANSDUCERS

15LW2400
Extended Low Frequency Transducer

GENERAL SPECIFICATIONS

|	
NOMINAL DIAMETER	380 mm (15 in)
RATED IMPEDANCE	8 Ohm
AES POWER	1200 W
PROGRAM POWER (1)	2400 W
PEAK POWER (2)	7000 W
SENSITIVITY (3)	97 dB
FREQUENCY RANGE (4)	40 ÷ 2200 Hz
POWER COMPRESSION @-10DB (5)	0,7 dB
POWER COMPRESSION @-3DB	1,5 dB
POWER COMPRESSION @FULL POWER	2,2 dB
MAX RECOMM. FREQUENCY	500 Hz
RECOMM. ENCLOSURE VOLUME	60 ÷ 130 lt. (2.12 ÷ 4.59 cuft)
MINIMUM IMPEDANCE	7,2 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	38 mm (1,53 in)
VOICE COIL DIAMETER	100 mm (4 in)
VOICE COIL WINDING MATERIAL	copper
SUSPENSION	Triple roll, Polycotton
CONE	Straight ribbed, Fiberglass reinforced treated cellulose

THIELE SMALL PARAMETERS (6)

|	
Fs	40 Hz
Re	5,3 Ohm
Sd	0,090 sq.mt. (139,5 sq.in.)
Qms	4,75
Qes	0,32
Qts	0,30
Vas	131 lt. (4.63 cuft)
Mms	138 gr. (0,30 lb)
BL	24 Tm
Linear Mathematical Xmax (7)	± 10 mm (±0,39 in)
Le (1kHz)	1,25 mH
Ref. Efficiency 1W@1m (half space)	96,4 dB

MOUNTING INFORMATIONS

Overall diameter	393 mm (15.47 in)
N. of mounting holes	8
Mounting holes diameter	7,15 mm (0,28 in)
Bolt circle diameter	371 mm (14.6 in)
Front mount baffle cutout ø	354mm (13.93 in)
Rear mount baffle cutout ø	360 mm (14.17 in)
Total depth	181 mm (7.13 in)
Flange and gasket thickness	12,5 mm (0,49 in)
Net weight	11,2 kg (24.7 lb)
Shipping weight	12,2 kg (26.9 lb)
CardBoard Packaging dimensions	405 x 405 x 214 mm (15,94 x 15,94 x 8,43 in)

FREQUENCY RESPONSE CURVE OF 15LW2400 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
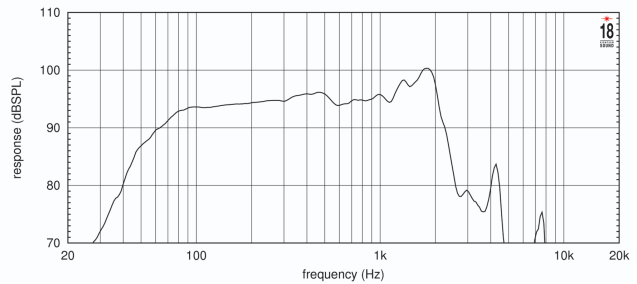
FREE AIR IMPEDANCE MAGNITUDE CURVE
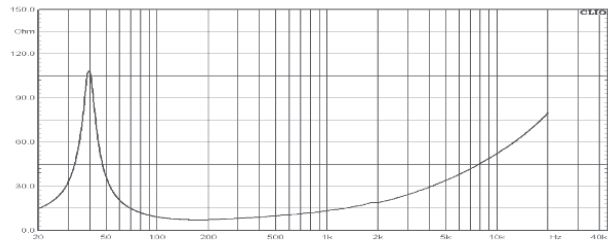
NOTES

(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 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 40-400 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 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.