12NMB420

High Output Midbass Neodymium Transducer

Key Features

100,5 dB SPL 1W / 1m average sensitivity
65 mm (2,5 in) Interleaved Sandwich Voice coil (ISV)
300 W continuous pink noise power handling
External neodymium magnet assembly
Single Demodulating Rings (SDR) for lower distortion
Weather protected cone and plates for outdoor usage
Specially designed for compact two way systems

General Description

The 12NMB420 is a 12" midbass transducer designed for professional monitoring and sound reinforcement. At the heart of this speaker is a carefully engineered drive system, designed to assure linear, low-distortion output, high power capability and efficient heat transfer. The most extended bass, lowest distortion and best control is usually realized in properly designed vented enclosures. In such designs, the vent, or port, actually provides the lowest octave of output. The vent is driven to full acoustic output by a relatively small motion of the speaker cone itself, acting through the air contained within the enclosure. The excursion of the 12NMB420 at these frequencies is much reduced compared to sealed enclosures, directly reducing harmonic distortion and the possibility of speaker bottoming. Typical vented enclosure sizes range from 40lit up with tunings from 50 to 60Hz; low frequency equalization is suggested and normally added, in order to improve the bass output if the 12" will work without subwoofer. The amplifier size ranges from 250-500W.

The onboard copper sleeve positioned in the gap and coupled with SDR (Single Demodulating Ring) results in optimum balance for reproducing instantaneous peaks on mid frequencies, reducing intermodulation distortion.

The external magnet typology neodymium magnet assembly assures high flux concentration, low power compression and excellent heat exchange since the external magnet configuration is considerably more efficient than the traditional under - pole magnet topology. This allows to obtain high levels of force factor and power handling with a power to weight ratio at the upper level.

The high quality paper cone has a smooth, curvilinear profile design that eliminates bell-mode resonances within the intended frequency range. This is carried by a specially treated and damped double triple-roll linen suspension designed to control excursion maintaining the piston action linearity.

The 12NMB420 employs a 64mm Interleaved Sandwich Voice coil (ISV), in which a high strength fiberglass former carries windings on both the outer and inner surfaces to achieve a mass balanced coil, resulting in an extremely linear motor assembly with reduced tendency to eccentric behavior when driven hard.

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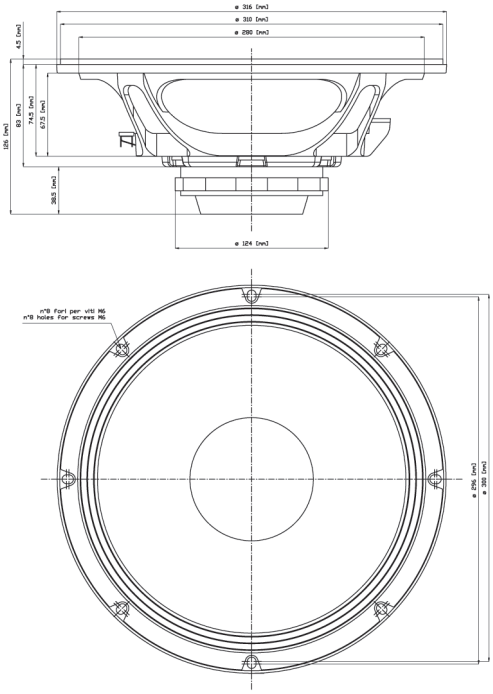

NEODYMIUM LF-MB-MF TRANSDUCERS

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High Output Midbass Neodymium Transducer

GENERAL SPECIFICATIONS

NOMINAL DIAMETER	300mm (12 in)
RATED IMPEDANCE	8 Ohm
CONTINUOUS PINK NOISE (1)	300 W
CONTINUOUS POWER (2)	220 W
PROGRAM POWER (3)	450 W
PEAK POWER (4)	900 W
SENSITIVITY (5)	100,5 dB
FREQUENCY RANGE (6)	55 ÷ 6000 Hz
POWER COMPRESSION @-10DB (7)	(22 W) 0,9 dB
POWER COMPRESSION @-3DB	(110 W) 2,2 dB
POWER COMPRESSION @FULL POWER	(220 W) 2,9 dB
MAX RECOMM. FREQUENCY	2000 Hz
RECOMM. ENCLOSURE VOLUME	50 ÷ 100 lt. (1,77÷ 3,53 cuft)
MINIMUM IMPEDANCE	6,90hm at 25°C
MAX PEAK TO PEAK EXCURSION	22 mm (0,87 in)
VOICE COIL DIAMETER	64 mm (2,52 in)
VOICE COIL WINDING MATERIAL	aluminum

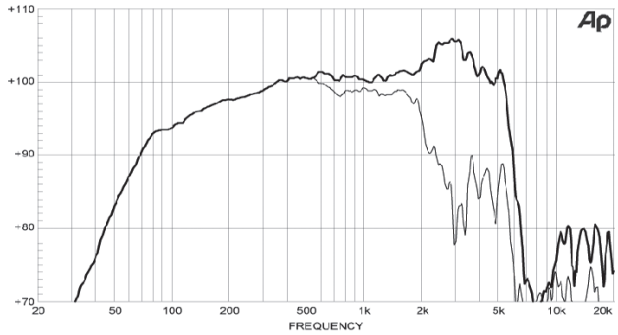
THIELE SMALL PARAMETERS (8)

Fs	53 Hz
Re	5,2 Ohm
Sd	0,053 sq.mt. (82,15 sq.in.)
Qms	3,6
Qes	0,3
Qts	0,28
Vas	105 lt. (3,71cuft)
Mms	33,5 gr. (73,95 lb)
BL	13,9 Tm
Linear Mathematical Xmax (9)	± 4 mm (±0,16 in)
Le (1kHz)	0,2 mH
Ref. Efficiency 1W@1m (half space)	99 dB

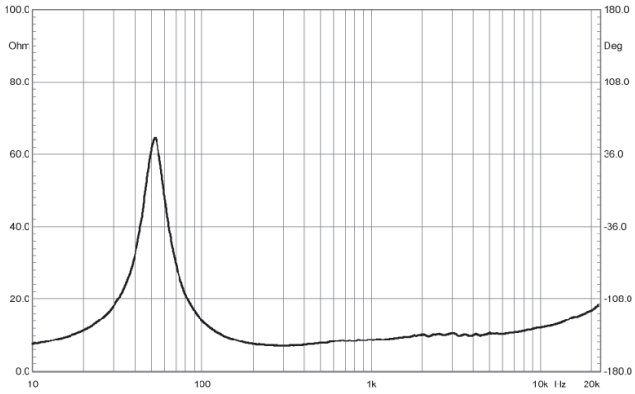
MOUNTING INFORMATIONS

Overall diameter	315 mm (12,40 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 (11,10 in)
Rear mount baffle cutout ø	282 mm (11,10 in)
Total depth	127 mm (5,00 in)
Flange and gasket thickness	11,5 mm (0,45 in)
Net weight	2,7 kg (5,96 lb)
Shipping weight	3 kg (6,62 lb)
CardBoard Packaging dimensions	332 x 332 x 184 mm (13,07 x 13,07 x 7,24 in)

FREQUENCY RESPONSE CURVE OF 12NMB420 MADE ON 18 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 standard

(2) Continuous power rating is measured in 18 lit enclosure tuned at 60 Hz using a 70 -3000Hz band limited pink noise test signal applied continuously for 2 hours.

(3) Program power rating is measured as for 2 above but 50% duty cycle.

(4) The peak power rating is based on a 6dB 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.

(5) 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 500Hz and 2500Hz with the test specimen mounted in the same enclosure as given for 2 above.

(6) 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.

(7) Power compression represents the loss of sensitivity for the specified power, measured from 100-1000 Hz, after a 5 min pink noise preconditioning test at the specified power.

(8) Thiele - Small parameters are measured after the test specimen has been conditioned by 200 W AES power and represent the expected long term parameters after a short period of use.

(9) Linear Mat. Xmax is calculated as; (Hvc-Hg)/2 + Hg/4 where Hvc is the coil depth and Hgis the gap depth.