10NMB420

High Output MB Neodymium Transducer

Key Features

- 99 dB SPL 1W / 1m average sensitivity
- 65 mm (2.5 in) Interleaved Sandwich Voice coil (ISV)
- 350 W AES power handling
- External neodymium magnet assembly
- Single Demodulating Ring (SDR) for lower distortion
- Weather protected cone and plates for outdoor usage
- Suitable for line arrays and compact two way systems

Description

The 10NMB420 neodymium transducer has been developed in response to a specific market requirement for a 10” midbass driver that combines excellent linearity with good efficiency and high power handling capabilities. The 10NMB420 is primarily intended for use as a midbass driver in line-arrays as well as high quality 2-way or multiway reflex enclosures. The low pass filter might be positioned as high as 2000Hz. The extremely powerful external neodymium magnet assembly assures high flux concentration, low power compression and excellent heat exchange. The levels of force factor and power handling are, as a consequence, at the upper professional level with best power to weight ratio. The 65mm Ø state-of-the-art, aluminum wire voice coil employs Interleaved Sandwich Voice coil (ISV) technology. It is composed by a high strength fiberglass former used to carry windings on both the outer and inner surfaces, in order to achieve a mass balanced coil. This results in an extremely linear motor assembly which, in conjunction with the highly advanced design of the magnetic structure, provides a high BL force factor. The voice coil is cooled through airways placed between the chassis back plate and the magnet faceplate. In this way heated air is channeled away from the voice coil and the gap. Another technology present into the 10NMB420 is the SDR (Single Demodulating Ring), used to reproduce instantaneous peak on mid frequencies, reducing intermodulation distortion. Thanks to the increasing use during outdoor audio events, the ability to perform in humid environments is an extra key feature of the 10NMB420. This is achieved through an exclusively developed cone treatment which renders the cone humidity repellent while does not increasing the total moving speaker mass.

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Code</th>
<th>Information</th>
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<tr>
<td>022108N400</td>
<td>022108N400</td>
<td>8 Ohm</td>
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<tr>
<td>022106N400</td>
<td>022106N400</td>
<td>16 Ohm</td>
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10NMB420

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General Specifications

Nominal Diameter 260mm (10 in)
Rated Impedance 16 Ohm
AES Power 350 W
Program Power 500 W
Peak Power 1000 W
Sensitivity 99 dB
Frequency Range 65 ÷ 5000 Hz
Power Compression @-10dB 0,8 dB
Power Compression @-3dB 2,2 dB
Power Compression @Full Power 2,9 dB
Max Recom. Frequency 2000 Hz
Recomm. Enclosure Volume 10 ÷ 40 lt. (0,35 ÷ 1,41 cuft)
Minimum Impedance 11,90 Ohm at 25°C
Max Peak To Peak Excursion 25 mm (1 in)
Voice Coil Diameter 65 mm (2,5 in)
Voice Coil Winding Material aluminum
Suspension M-roll, Polycotton
Cone Curvilinear, Treated paper

Thiele Small Parameters

Fs 65 Hz
Re 10,5 Ohm
Sd 0,0346 sq.mt. (53,6 sq.in.)
Qms 4,6
Qes 0,36
Qts 0,33
Vas 30 lt. (1,06 cu.ft.)
Mms 31,5 gr. (0,07 lb)
BL 19,5 Tm
Linear Mathematical Xmax ± 4 mm (±0,16 in)
Le (1kHz) 0,4 mH
Ref. Efficiency 1W@1m (half space) 96 dB

Mounting information

Overall diameter 260 mm (10,24 in)
N. of mounting holes and bolt 8
Mounting holes diameter 7 mm (0,27 in)
Bolt circle diameter 244 mm (9,6 in)
Front mount baffle cutout ø 232 mm (9,1 in)
Rear mount baffle cutout ø 232 mm (9,1 in)
Total depth 122 mm (4,8 in)
Flange and gasket thickness 11 mm (0,43 in)
Net weight 3 kg (6,6 lb)
Shipping weight 3,5 kg (7,7 lb)
CardBoard Packaging dimensions 275 x 275 x 164 mm (9,25 x 9,25 x 5,91 in)

FREQUENCY RESPONSE CURVE OF 10NMB420 MADE ON 30LIT. ENCLOSURE TUNED @ 55HZ IN FREE FIELD (API) 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 is determined according to AES2-1984 (2003) standard
2) Program power rating is measured in 30 lit. enclosure tuned at 55 Hz using a 70-2000Hz band limited pink noise test signal with 50% duty cycle, applied for 2 hours.
3) 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.
4) 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 4V sine wave test signal swept between 100Hz and 500Hz with the test specimen mounted in the same enclosure as given for (1) above.
5) 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.
6) 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.
7) Linear Math. Xmax is calculated as (Hvc-Hg)/2 + Hg/4 where Hvc is the coil depth and Hg is the gap depth.