

# 12NDA520

## High Output Midbass Neodymium Transducer

### Key Features

- 100,5 dB SPL 1W / 1m average sensitivity
- 65 mm (2,52 in) Interleaved Sandwich Voice coil (ISV)
- 300 W continuous pink noise power handling
- Neodymium magnet assembly
- A.I.C. (Active Impedance Control) technology
- Excellent transient response
- Ideal for high quality monitoring and sound reinforcement applications



### General Description

The 12NDA520 is a 12" mid-low transducer created for compact reflex 2-way enclosures and designed to be coupled with typical 1" and 1.4" compression drivers. It can also be used in mid-low applications on modern line-array systems.

Its features and design characteristics make it extremely defined in mid-range frequencies and offer a significant and consistent bottom-end, making the product also suitable for monitoring applications. The 12NDA520 incorporates our proprietary Active Impedance Control technology (AIC), consisting of an additional coil fixed on the pole piece and connected in parallel to the moving coil. The magnetic field generated by this coil has the following effects:

- 1) Impedance linearization
- 2) Acoustic and electric phase linearization
- 3) Significant increase of sensitivity and total SPL
- 4) Total harmonic distortion reduction
- 5) Constant power transfer

By not absorbing the moving coil's electromagnetic energy, AIC offers substantial advantages relating to the quality of sound.

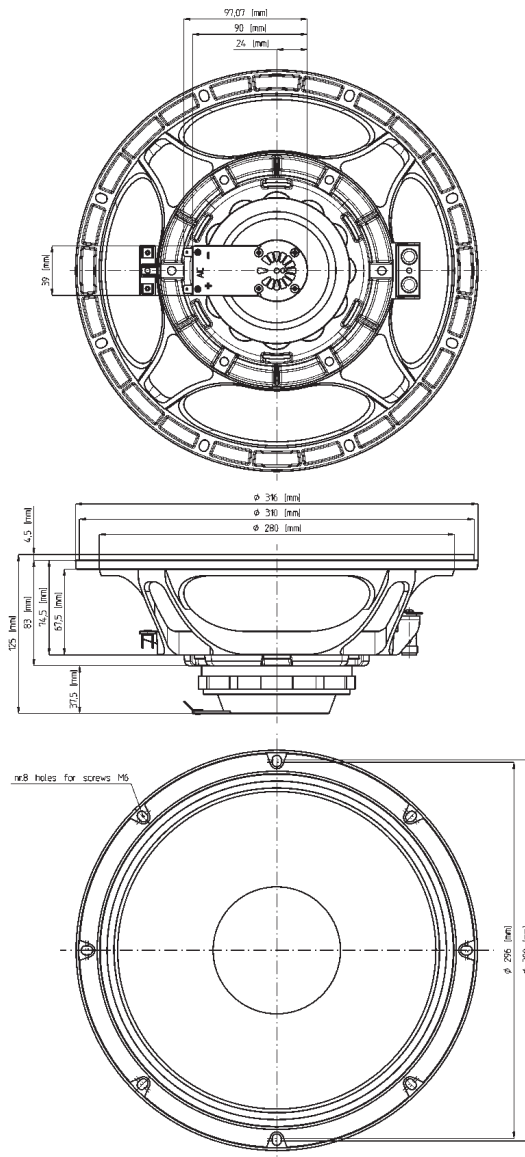
The neodymium magnet assembly developed by Eighteen Sound engineers assures high flux concentration, low power compression and excellent heat exchange since the external magnet configuration is considerably more efficient than traditional under-pole magnet topology. This results in high levels of force factor and power handling with an optimum power to weight ratio.

The curvilinear cone, created from a high damping wood pulp, has been designed to achieve the best possible linearity within its intended frequency range.

The 12NDA520 employs our Interleaved Sandwich Voice coil (ISV) technology in which a high strength fiberglass former carries windings on both the outer and inner surfaces to achieve a mass balanced coil. The final result is an extremely linear motor assembly with a reduced tendency for eccentric behavior when driven hard.

A proprietary humidity-block cone treatment makes the transducer suitable for outdoor use in adverse weather conditions. In addition, a special coating applied to both the top and back plates makes the 12NDA520 far more resistant to the corrosive effects of salts and oxidation.

022128N300 8 Ohm



NEODYMIUM LF-MB-MF TRANSDUCERS

# 12NDA520

High Output Midbass Neodymium Transducer

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	300mm (12 in)
RATED IMPEDANCE	8 Ohm
CONTINUOUS PINK NOISE (1)	300W
CONTINUOUS POWER (2)	220W
PROGRAM POWER (3)	450W
PEAK POWER (4)	900W
SENSITIVITY (5)	100,5dB
FREQUENCY RANGE (6)	55 - 6000 Hz
POWER COMPRESSION @-10DB (7)	(22 W) 0,7 dB
POWER COMPRESSION @-3DB	(110 W) 2,5 dB
POWER COMPRESSION @FULL POWER	(220 W) 3,9 dB
MAX RECOMM. FREQUENCY	2000 Hz
RECOMM. ENCLOSURE VOLUME	50 ÷ 100 lt. (1,77 ÷ 3,53 cuft)
MINIMUM IMPEDANCE	6,5 Ohm 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
POLARITY	positive voltage on red terminal gives forward cone motion

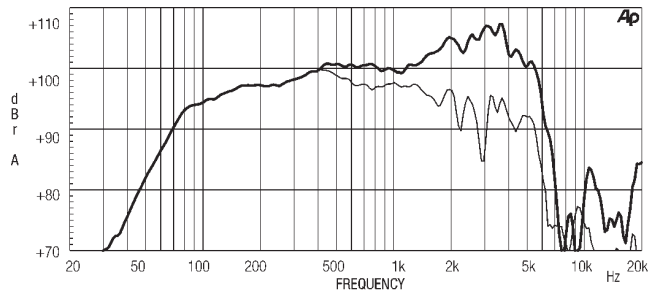
## THIELE SMALL PARAMETERS (8)

Fs	50 Hz
Re	5,2 Ohm
Sd	0,0531 sq.mt. (82,31 sq.in.)
Qms	5,5
Qes	0,284
Qts	0,27
Vas	111 lt. (3,9 cuft)
Mms	36 gr. (0,08 lb)
BL	14,4 Tm
Linear Mathematical Xmax (9)	± 4 mm (±0,16 in)
Le (1kHz)	0,03 mH (AIC on) - 0,57mH (AIC off)
Ref. Efficiency 1W@1m (half space)	98,9 dB

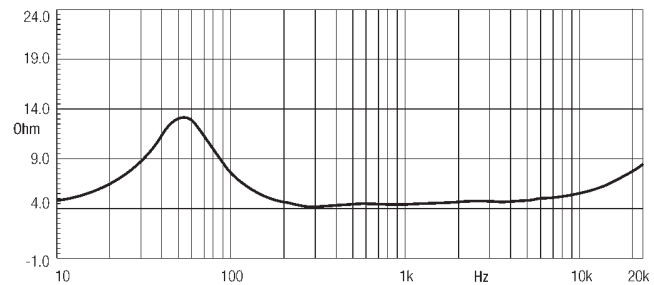
## MOUNTING INFORMATION

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	125 mm (4,92 in)
Flange and gasket thickness	11,5 mm (0,45 in)
Net weight	2,2 kg (4,86 lb)
Shipping weight	3 kg (6,62 lb)
CardBoard Packaging dimensions	332 x 332 x 184mm (13,07 x 13,07 x 7,24 in)

FREQUENCY RESPONSE CURVE OF 12NDA520 MADE ON 50 LIT. ENCLOSURE TUNED 60HZ INFREE 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 – AIC ON



### NOTES

- (1) AES standard
- (2) Continuous power rating is measured in 50 lit enclosure tuned 60Hz using a 40 - 400Hz 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 100Hz and 500Hz 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 50-500 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 300 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 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.