

12NCX750H

High output neodymium coaxial transducer

KeyFeatures

- 95.3 dB LF / 110 dB HF SPL 1W/1m average sensitivity
- Single magnet neodymium motor
- 800W LF - 240W HF maximum program power handling
- 75 mm (3") LF Interleaved Sandwich Voice coil (ISV)
- Aluminum demodulating ring (SDR) for minimum LF distortion
- 60 mm (2.4") HF Titanium diaphragm
- Edge-wound Aluminum ribbon HF voice coil (EWAL)
- HF copper sleeve for reduced distortion and higher output
- 70H x 50V degrees nominal conical dispersion
- Suitable for very compact enclosures and stage monitor
- Proprietary Phase Plug (3P)

Description

The 12NCX750H is a 12" neodymium coaxial transducer designed for use in compact reflex enclosures and stage monitors as small as 40lt with a nominal dispersion of 70x50 degrees.

The curvilinear profile LF cone provides smooth response within its intended frequency range thanks to its high damping pulp composition. The 75mm (3in) LF copper voice coil employs Interleaved Sandwich Voice coil (ISV) technology, in which a high strength former carries windings on both the outer and inner surfaces. This results in a balanced coil with a uniform distribution of mass and motive energy and an extremely linear motor assembly. The low distortion and sound quality are further improved by an aluminum demodulating ring (SDR technology) that flattens LF impedance and phase with constant power transfer.

Equipped with a proprietary hybrid radial tangerine phase plug, the integrated HF compression driver has been designed to give a smooth, coherent wavefront at the horn entrance in all working frequency ranges with an high level of manufacturing consistency. The phase plug, with its short openings and high flare rate value, assures low distortion and remarkable improvements in mid-high frequency reproduction. A copper sleeve reduces the inductance value above 10kHz, improving phase and impedance linearization.

The 2.4" diameter HF diaphragm assembly uses a high strength, high temperature treated Nomex voice coil former joined directly to the titanium diaphragm on its upper bend edge, assuring extended frequency energy transfer. This improves linearity and shows unparalleled reliability when compared with a straight former joint. A specific HF exit profile design has been chosen in order to maximize the cone's profile coupling.

The high force neodymium single magnet structure makes the 12NCX750H a lightweight speaker for its performance class - only 4.7 kg (10.36 lb).

The XO12NCX dedicated passive crossover filter is provided, making this neo coaxial speaker a ready-to-use transducer system.

Due to the widespread use of high power audio systems at outdoor events, the ability to perform in adverse weather conditions is an additional key feature of the 12NCX750H. This has been achieved using exclusive cone and magnet plate treatment processes which increase resistance against corrosion and make the cone water repellent.

Models

Model	Code	Info
022128NCH0	022128NCH050	8 ohm LF, 8 or 16 ohm HF



General Specifications

Nominal Diameter	300 mm (12 in)
Rated Impedance	8 Ohm
AES Power	400 W
Program Power	
Peak Power	1600 W
Sensitivity	
Frequency Range	60 ÷ 4000 Hz
Power Compression @-10dB	0.9 dB
Power Compression @-3dB	2.8 dB
Power Compression @Full Power	4.2 dB
Max Recomm. Frequency	1800 Hz
Recomm. Enclosure Volume	40 ÷ 90 lt. (1,41 ÷ 3,18 cuft)
Minimum Impedance	
Max Peak To Peak Excursion	27 mm (1.06 in)
Voice Coil Diameter	
Voice Coil winding material	Copper
Suspension	Triple roll, polycotton
Cone	Curvilinear, Water repellent, High damping pulp

Thiele Small Parameters

Fs	58 Hz
Re	5,4 Ohm
Sd	0,0531 sq.mt. (82.31 sq.in.)
Qms	6.42
Qes	0,31
Qts	0,29
Vas	63 lt. (2.23 cuft)
Mms	47 gr. (0,10 lb)
BL	17.5 Tm
Linear Mathematical Xmax	± 5.5 mm (±0,22 in)
Le (1kHz)	0.62 mH
Ref. Efficiency 1W@1m (half space)	3.8 %

Mounting information

Overall diameter	310 mm (12.20 in)
N. of mounting holes and bolt	8
Mounting holes diameter	5.9 mm (0,23 in)
Bolt circle diameter	295 mm (11.61 in)
Front mount baffle cutout ø	280 mm (11,02 in)
Rear mount baffle cutout ø	280 mm (11,02 in)
Total depth	148.5 mm (7.15 in)
Flange and gasket thickness	14 mm (0,55 in)
Net weight	4.7 kg (10.36 lb)
Shipping weight	5.4 kg (11.90 lb)
Packaging Dimensions	5.4 kg (11.90 lb)

Notes

- 1) AES power is determined according to AES2-1984 (r2003) standard-

- 2) Program power rating is measured in 50 lit. enclosure tuned at 60 Hz using a 60-600 Hz band limited pink noise test signal applied for 2 hours and with 50% duty cycle. Power measured on minimum impedance-

- 3) The peak power rating represent the maximum permitted instantaneous peak power level over a maximum period of 10 ms 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 3V sine wave test signal swept between 100 Hz and 500 Hz with the test specimen mounted in the same enclosure as given for 2 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 60 to 600Hz after a 5 min pink noise preconditioning test at the specified power.

- 7) Continuous Power is defined as a level that is 3 dB greater than the one measured with the

FREQUENCY RESPONSE CURVE

FREQUENCY RESPONSE MADE IN 50 LT. ENCLOSURE TUNED AT 60 Hz IN FREE FIELD (4n) ENVIRONMENT. ENCLOSURE CLOSES THE REAR OF THE DRIVER, THE THIN LINE REPRESENTS HIGH FREQUENCY RESPONSE FREE AIR IMPEDANCE MAGNITUDE CURVE

Horizontal and Vertical Polar Directivity Map



- new AES2-2012 standard, using continuous pink noise having 12 dB crest factor for 2 hours.

- 8) Program power is defined as 3 dB greater than continuous power rating.

 - 9) 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 3V sine wave test signal swept between 1000 Hz and 4000 Hz with the test specimen mounted in the same enclosure as given for 2 above.

 - 10) Minimum crossover frequency require at least 12 dB/oct. slope high pass filter, preferred 24dB/oct. slope high pass filter LR.

 - 11) Thiele - Small parameters are measured after the test specimen has been conditioned by 1 hour 20 Hz sine and represent the expected long term parameters after a short period of use.

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

HORIZONTAL 1/3 OCTAVE POLAR PLOTS

VERTICAL 1/3 OCTAVE POLAR PLOTS