

# 12CX800

## High Output Coaxial Transducer

### Key Features

- 97.5dB / 108dB SPL 1W/1m average sensitivity
- 75 mm (3") LF Interleaved Sandwich Voice coil (ISV)
- 400 W LF - 100 W HF AES power handling
- 1.4" exit HF neodymium driver with high temperature ferrofluid
- 75 mm (3") HF edgewound voice coil
- FEA optimized coupling horn profile
- 70 degrees coverage angle
- Weather protected cone and plate for outdoor usage
- Ideal for compact reflex enclosures



### General Description

The 12CX800 is a 12" - 1.4" coaxial transducer designed for use in compact reflex enclosures and stage monitors as small as 30 lt, with a nominal dispersion of 70 degrees.

The state-of-the-art 75 mm (3 in) LF aluminum voice coil 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 balanced coil with a uniform distribution of mass and motion energy. This results in an extremely linear motor assembly.

The low profile smooth curvilinear LF cone provides a smooth response within its intended frequency range and maximum reliability under high mechanical stress.

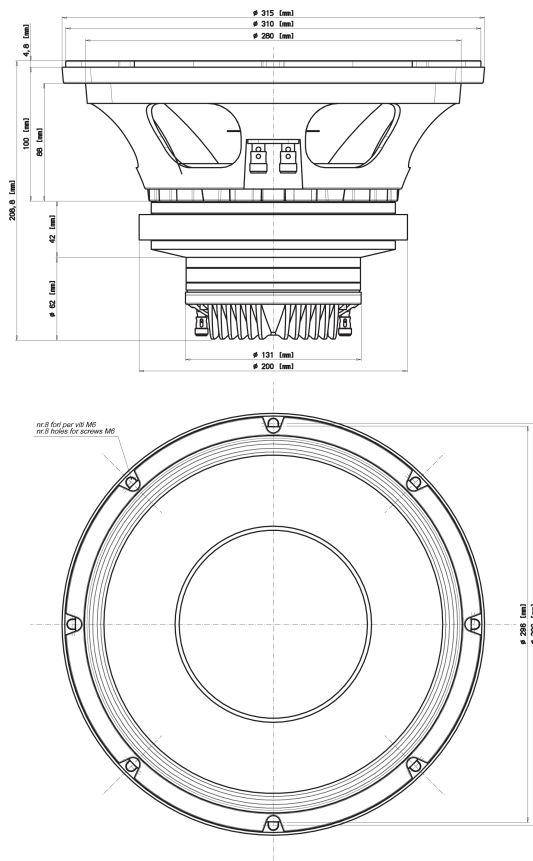
The neodymium 1.4" exit HF compression driver used is our ND1480 model. A further thermal power handling capacity has been added thanks to high temperature ferrofluid added in the gap. The HF driver diaphragm assembly uses a high strength high temperature treated Nomex voice coil former joined directly to the titanium dome on its upper bend edge. This assures extended frequency energy transfer giving improved linearity and unparallel reliability when compared to a usual straight former joint.

The HF motor structure utilizes a precisely machined coherent phase plug with 3 circumferential slots and a copper ring on the pole piece. This last feature reduces the inductance figure of frequencies above 10 kHz, improving phase and impedance linearisation.

A specific dedicated horn's throat design has also been chosen by Eighteen Sound engineers, maximizing the cone's profile coupling.

With the increasing use of high power audio systems at outdoor events, the ability to perform in adverse weather conditions is another excellent feature of the 12CX800. This has been achieved using exclusive cone and magnet plate treatment processes which increase resistance to corrosion and make the cone water repellent.

### 022128CX00



FERRITE LF-MB-MF TRANSDUCERS

# 12CX800

High Output Coaxial Transducer

## LF GENERAL SPECIFICATIONS

|                              |                              |
|------------------------------|------------------------------|
| NOMINAL DIAMETER             | 300 mm (8 in)                |
| RATED IMPEDANCE              | 8 Ohm                        |
| AES POWER (1)                | 400 W                        |
| PROGRAM POWER (2)            | 600 W                        |
| PEAK POWER (3)               | 1200 W                       |
| SENSITIVITY (4)              | 97,5 dB                      |
| FREQUENCY RANGE (5)          | 60 ÷ 5500 Hz                 |
| POWER COMPRESSION @-10DB (6) | 0,8 dB                       |
| POWER COMPRESSION @-3DB      | 2,5 dB                       |
| POWER COMPRESSION @0 DB      | 3,2 dB                       |
| MAX RECOMM. FREQUENCY        | 1200 Hz                      |
| RECOMM. ENCLOSURE VOLUME     | 30 ÷ 60 lt. (1,1 ÷ 2,2 cuft) |
| MINIMUM IMPEDANCE            | 7 Ohm at 25°C                |
| MAX PEAK TO PEAK EXCURSION   | 34 mm (1,3 in)               |
| VOICE COIL DIAMETER          | 75 mm (3,00 in)              |
| VOICE COIL WINDING MATERIAL  | aluminum                     |
| SUSPENSION                   | Triple roll, Polycotton      |
| CONE                         | Curvilinear, Paper           |

## HF GENERAL SPECIFICATIONS

|                         |                    |
|-------------------------|--------------------|
| D.C. RESISTANCE         | 6,2 Ohm            |
| AES POWER (7)           | 100W above 1,2 kHz |
| PROGRAM POWER (8)       | 200W above 1,2 kHz |
| SENSITIVITY (9)         | 108 dB             |
| FREQUENCY RANGE         | 0,5 KHz ÷ 20 kHz   |
| RECOMM. XOVER FREQUENCY | 1,2 kHz 12 dB/oct  |
| VOICE COIL DIAMETER     | 74,6 mm (3,0 in)   |

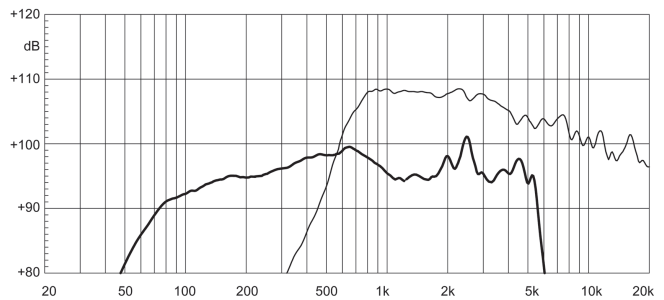
## LF THIELE SMALL PARAMETERS (10)

|                              |                            |
|------------------------------|----------------------------|
| Fs                           | 53 Hz                      |
| Re                           | 5,8 Ohm                    |
| Sd                           | 0,053 sq.mt. (82,2 sq.in.) |
| Qms                          | 4                          |
| Qes                          | 0,27                       |
| Qts                          | 0,25                       |
| Vas                          | 73 lt. (2,6 cuft)          |
| Mms                          | 48 gr. (106,0 lb)          |
| BL                           | 18,5 Tm                    |
| Mathematical Xmax (11)       | ± 6,25 mm (± 0,25 in)      |
| Le (1kHz)                    | 1,3 mH                     |
| Ref. Effic. 1W@1m (1/2space) | 4% (99 dB)                 |

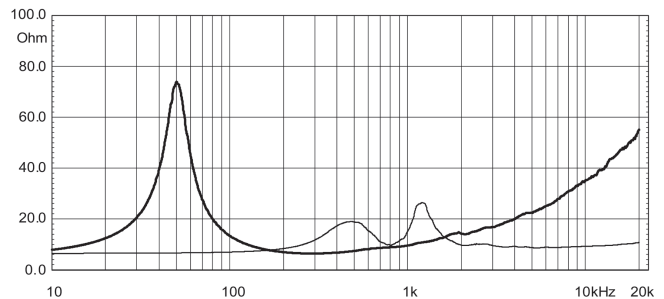
## MOUNTING INFORMATIONS

|                             |                                   |
|-----------------------------|-----------------------------------|
| Overall diameter            | 315 mm (12,4 in)                  |
| N. of mounting holes        | 8                                 |
| Mounting holes Ø            | 7,15 mm (0,3 in)                  |
| Bolt circle Ø               | 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                 | 209 mm (8,2 in)                   |
| Flange and gasket thickness | 17 mm (0,7 in)                    |
| Net weight                  | 11,4 kg (25,2 lb)                 |
| Shipping weight             | 12 kg (26,5 lb)                   |
| CardBoard Packaging Dim.    | 313x313x225 mm (12,3x12,3x8,9 in) |

**FREQUENCY RESPONSE CURVE OF 12CX800 MADE ON 50 LT ENCLOSURE TUNED AT 60HZ IN FREE FIELD (4PI) ENVIRONMENT. ENCLOSURE CLOSES THE REAR OF THE DRIVER. THE THIN LINE REPRESENTS HIGH FREQUENCY RESPONSE**



**FREE AIR IMPEDANCE MAGNITUDE CURVE**



### NOTES

- (1) AES power is determined according to AES2-1984 (r2003) standard
- (2) Program power rating is measured in 50 lit enclosure tuned 60Hz using a 40 - 400Hz 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 2,83 V 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 1/2 space environment.
- (6) 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.
- (7) AES power rating is tested with a pink noise input having a 6 dB crest factor for two hours duration. Power calculated on minimum impedance.
- (8) Program power is defined as 3 dB greater than AES power rating, and is a conservative expression of the transducer ability to handle music program material.
- (9) Sensitivity is measured on 1W input on rated impedance at 1m on axis from the mouth of the woofer and averaged in 3kHz band.
- (10) Thiele - Small parameters are measured after test specimen has been conditioned by AES power and represent the expected long term parameters after a short period of use.
- (11) Math. Xmax is calculated as  $(Hvc-Hg)/2 + Hg/4$ . 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.