

# 12MB650

High Output MB Ferrite Transducer

## KeyFeatures

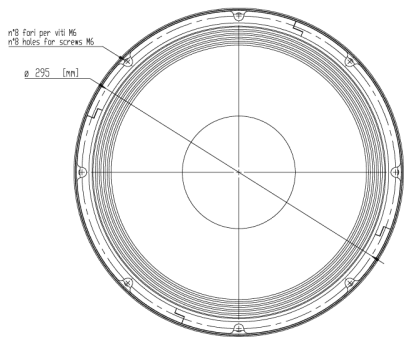
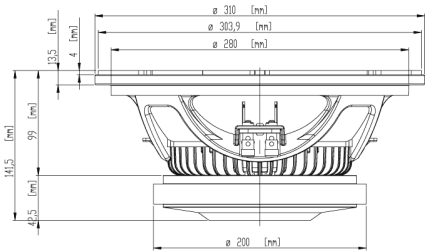
- 98 dB SPL 1W / 1m sensitivity
- 65 mm (2.5 in) Edgewound Aluminum Voice coil (EWAL)
- 800W program power handling
- Improved heat dissipation via proprietary basket design
- Weather protected cone and plates for outdoor usage
- Ideal for high quality two way and stage monitor applications

## Description

The 12MB650 is a high sensitivity midbass driver with 800W program power handling capabilities. The 12MB650 can be used as either a bass/mid driver in compact 2-way reflex enclosures or in high quality stage monitor applications. Eighteen Sound engineers have obtained the best possible results with today's available materials in terms of clean and undistorted LF reproduction at a ultra high SPL, with the lowest possible power compression figure. Its curvilinear paper cone made from a special high strength wood pulp, has been designed to achieve the best possible linearity within its intended frequency range and to control bell-mode resonances around the cone circumference. The cone is carried by a triple roll suspension formed of a linen-like material, which is more resistant to aging and fatigue than traditional materials. The 65 mm (2.5 in) diameter state-of-the-art voice coil is made with edgewound aluminum wire wound over a high strength fiberglass former. This results in an extremely linear motor assembly with a reduced tendency for eccentric behavior when driven hard. Voice coil cooling has been achieved by incorporating airways between the chassis back plate and the top plate of the magnet, allowing heated air from the voice coil and gap to be channeled away and dissipated by the chassis basket. Special attention was given to the optimization of air flow into the gap without introducing audible noise. A special low-density material air diffractor placed into the heatsink acts as a cooling system, increasing the power handling capability and lowering the power compression figure. The magnetic structure has been optimized using FEA CAD resource, maximizing the flux density in the voice coil gap. Due to the increasing use of high power audio systems at outdoor events or in marine environments, the ability to perform properly under inclement weather conditions is a key feature in Eighteen Sound philosophy. Hence, an exclusive treatment has been applied to the cone giving it water repellent properties. In addition, another special treatment has been applied to the top and back plates making the transducer far more resistant to the corrosive effects of salts and oxidization.

## Models

| Model      | Code       | Info  |
|------------|------------|-------|
| 0221286500 | 0221286500 | 8 Ohm |



General Specifications

|                               |                                 |
|-------------------------------|---------------------------------|
| Nominal Diameter              | 300 mm (12 in)                  |
| Rated Impedance               | 8 Ohm                           |
| AES Power                     | 400 W                           |
| Program Power                 | 800 W                           |
| Peak Power                    | 1600 W                          |
| Sensitivity                   | 98 dB                           |
| Frequency Range               | 45 - 5000 Hz                    |
| Power Compression @-10dB      | 0,7 dB                          |
| Power Compression @-3dB       | 1,5 dB                          |
| Power Compression @Full Power | 2,2 dB                          |
| Max Recomm. Frequency         | 2000 Hz                         |
| Recomm. Enclosure Volume      | 70 - 150 lt. (2.47 - 5.30 cuft) |
| Minimum Impedance             | 7,2 Ohm at 25°C                 |
| Max Peak To Peak Excursion    | 24 mm (0,95 in)                 |
| Voice Coil Diameter           | 65 mm (2.5 in)                  |
| Voice Coil winding material   | aluminum                        |
| Suspension                    | Triple-roll, Polycotton         |
| Cone                          | Curvilinear, Treated paper      |

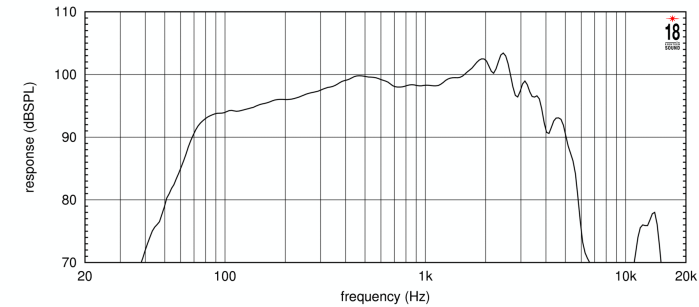
Thiele Small Parameters

|                                    |                             |
|------------------------------------|-----------------------------|
| Fs                                 | 48 Hz                       |
| Re                                 | 6,0 Ohm                     |
| Sd                                 | 0,053 sq.mt. (82,15 sq.in.) |
| Qms                                | 3,2                         |
| Qes                                | 0,24                        |
| Qts                                | 0,23                        |
| Vas                                | 90 lt. (3.18 cuft)          |
| Mms                                | 48 gr. (0.11 lb)            |
| BL                                 | 19 Tm                       |
| Linear Mathematical Xmax           | ± 5,5 mm (± 0.22 in)        |
| Le (1kHz)                          | 0,83 mH                     |
| Ref. Efficiency 1W@1m (half space) | 98,1 dB                     |

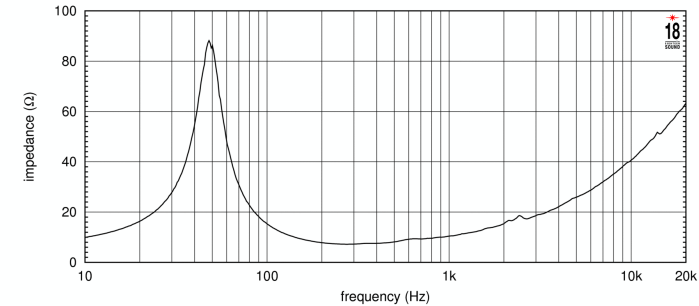
Mounting information

|                               |  |
|-------------------------------|--|
| Overall diameter              | 310 mm (12,2 in)                             |
| N. of mounting holes and bolt | 8  |
| Mounting holes diameter       | 5,9 mm (0,23 in)                             |
| Bolt circle diameter          | 295 mm (11.61 - 11,8 in)                     |
| Front mount baffle cutout ø   | 280 mm (11,02 in)                            |
| Rear mount baffle cutout ø    | 280 mm (11,02 in)                            |
| Total depth                   | 143 mm (5.63 in)                             |
| Flange and gasket thickness   | 14 mm (0.55 in)                              |
| Net weight                    | 6,8 kg (14.95 lb)                            |
| Shipping weight               | 7,5 kg (16.53 lb)                            |
| Packaging Dimensions          | 332 x 332 x 184 mm (13,07 x 13,07 x 7,24 in) |

FREQUENCY RESPONSE CURVE



FREQUENCY RESPONSE CURVE MADE ON 50 LIT. ENCLOSURE TUNED 60HZ IN FREE FIELD (4PI) ENVIRONMENT. ENCLOSURE CLOSES THE REAR OF THE DRIVER.



FREE AIR IMPEDANCE MAGNITUDE CURVE

Notes

- 1) AES power is determined according to AES2-1984 (r2003) standard
- 2) Program power rating is measured in 250 lit. enclosure tuned at 28 Hz using a 30-300 band limited pink noise test signal applied for 2 hours and with 50% duty cycle
- 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 2,83V sine wave test signal swept between 500Hz and 2500Hz 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 50-500 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.

