



**1220** 8 Ω  
**1230** 16 Ω

**B17**

PROFESSIONAL SERIES

## 6.5" Bass Midrange Drivers Ultimate Sounding Quality

### APPLICATIONS

These 6.5" ultimate sounding quality Bass-Midrange drivers have been designed to match advanced studio monitoring requirements for proximity monitoring.

The exceptional sound accuracy of these units results from a careful design using A/B listening tests to select technological solutions, which authorizes their use up to 2.5kHz without any compromise, and up to 4.0kHz with full preservation of dynamic behavior (Compromise is on directivity pattern only).

Optimum Bass-Reflex loading is situated between 12L and 16L tuned from 45Hz to 40Hz.

### DESIGN CONCEPT

**DEFLECTION CONTROLLED DIAPHRAGM** optimized for dynamic damping. DEFLECTION CONTROLLED DIAPHRAGM technology consists in optimizing the shape and material of the diaphragm so that it works as a mechanical transmission line, to avoid breaking modes as well as mechanical threshold which destroy sound quality.

This leading edge technology offers substantial sonic advantages. Among them: sound coherency, fast transients, stable sound imaging, high sensitivity, wide frequency range and reduced directivity pattern.

**SOFT EXCURSION LIMITING.** The SOFT EXCURSION LIMITING mechanism is a special S-profile design of the rubber surround avoiding voice-coil bottoming which destroys driver functionality instantaneously.

The cone excursion is progressively limited to +/- 8mm, introducing a soft clipping which totally protects loudspeakers from over-excursion damage.

**COMPACT MAGNET SYSTEM.** Its design has been specially optimized to obtain maximum transducing efficiency while avoiding nonlinear behavior such as coil inductance variation with position, flux modulation, harmonic distortion, rest position offset, air compression, and off-axis voice-coil pushing.

Its design incorporates a T-shaped pole piece, and a flux stabilization ring. It also takes into consideration demagnetization at cold temperatures.

**INTERCOOLER SYSTEM** (patented). Entirely integrated into the loudspeaker itself, the INTERCOOLER SYSTEM extracts the heat produced by Joule effect in the voice-coil by the means of an air flow directed through the heatsink rims of the basket by the motion of the dust-cap and the spider.

The gain brought about by this technology is over 20 % of extra power, so for example, a 3" coil according to this design has the same power handling capacity as a classical 4" one.



### FEATURES

Power handling capacity **100 W AES**  
Reference efficiency (1W @ 1m) **93 dB SPL**  
SPL max (continuous) **109 dB SPL**  
Usable frequency range **50-4000 Hz**  
Environmental withstanding **Outdoor+**

### ARCHITECTURAL SPECIFICATIONS

**NOMINAL DIAMETER** : 166 mm.

**FRAME** : High tensile alloy pressure die-cast basket with patented INTERCOOLER SYSTEM.

**MAGNET SYSTEM** : 1.5" highly energized, heat extracting design with flux stabilizing ring.

**VOICE COIL** : High-temperature stabilized copper-clad aluminum ribbon wound on vented, high-strength glass polyimide.

**CONE ASSEMBLY** : High-strength cellulose fiber cone impregnated and coated on both sides with damped resins, fitted with central carbon-fiber dome, acoustically damped rear cavity and S-shaped, viscoelastic damped neoprene surround.

**SPEAKER MASS** : 2.15 Kg.

# 1220 ■ 1230

## 6.5" Bass Midrange Drivers

1220      1230

### TYPICAL CHARACTERISTICS

|  |                    |                   |              |        |    |
|--|--------------------|-------------------|--------------|--------|----|
| Rated impedance                            | Z                  | 8                 | 16           | Ω      |    |
| Reference efficiency (1 W@1 m)             | -                  | 93                | 93           | dB SPL |    |
| Usable frequency range <sup>1</sup>        | -                  | 50-4000           | 50-4000      | Hz     |    |
| Power handling capacity <sup>2</sup> (AES) | -                  | 100               | 100          | W      |    |
| Max Sound Pressure Level <sup>3</sup>      | SPL <sub>max</sub> | 109               | 109          | dB SPL |    |
| Min. impedance modulus                     | Z <sub>min</sub>   | 6.6 @ 360Hz       | 13.5 @ 360Hz | Ω      |    |
| Voice-coil inductance <sup>4</sup> @ 1 kHz | L <sub>e1k</sub>   | 0.64              | 1.33         | mH     |    |
|  | @ 10 kHz           | L <sub>e10k</sub> | 0.23         | 0.46   | mH |
| Bl product                                 | Bl                 | 8.30              | 11.90        | N/A    |    |
| Moving mass                                | M <sub>ms</sub>    | 0.012             | 0.012        | Kg     |    |

### THIELE-SMALL PARAMETERS : TYPICAL (QC LIMITS)

|                                     |  |            |             |                                 |
|-------------------------------------|--|------------|-------------|---------------------------------|
| Resonance frequency <sup>5</sup>    | F <sub>s</sub>                               | 45 (±6)    | 45 (±6)     | Hz                              |
| DC resistance <sup>6</sup>          | R <sub>e</sub>                               | 6.1 (±0.6) | 12.1 (±1.2) | Ω                               |
| Mechanical quality factor           | Q <sub>ms</sub>                              | 3.1        | 3.1         | 1                               |
| Electrical quality factor           | Q <sub>es</sub>                              | 0.27       | 0.29        | 1                               |
| Total quality factor                | Q <sub>ts</sub>                              | 0.25       | 0.27        | 1                               |
| Mechanical suspension compliance    | C <sub>ms</sub>                              | 1000       | 1000        | 10 <sup>-6</sup> m/N            |
| Effective piston area               | S <sub>d</sub>                               | 0.0143     | 0.0143      | m <sup>2</sup>                  |
| Equivalent C <sub>as</sub> air load | V <sub>as</sub>                              | 0.030      | 0.030       | m <sup>3</sup>                  |
| Max. linear excursion               | X <sub>max</sub>                             | ±3.5       | ±3.5        | mm                              |
| Linear displacement volume          | V <sub>d</sub>                               | 0.050      | 0.050       | 10 <sup>-3</sup> m <sup>3</sup> |
| Half-space efficiency               |  | 1.0        | 0.9         | %                               |
| Unity load volume                   | V <sub>as</sub> Q <sub>ts</sub> <sup>2</sup> | 1.8        | 2.1         | 10 <sup>-3</sup> m <sup>3</sup> |

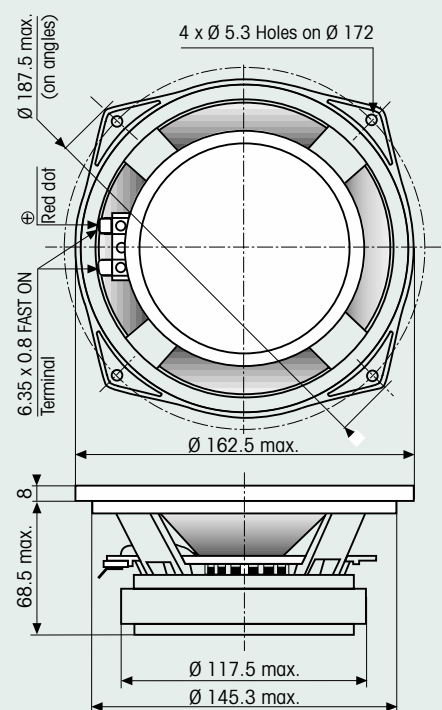
### ABSOLUTE MAXIMUM RATINGS

|  |                  |            |     |    |
|--|------------------|------------|-----|----|
| Short term max. input voltage <sup>7</sup> | V <sub>max</sub> | 60         | 85  | V  |
| Max. excursion before damage               | X <sub>dam</sub> | 8.0        | 8.0 | mm |
| Ambient operating temperature              |                  | -10 to +50 |     | °C |
| Storage temperature <sup>8</sup>           |                  | -20 to +70 |     | °C |
| Environmental conditions <sup>9</sup>      |                  | Outdoor+   |     |    |

### APPLICATION INFORMATION

|   |                                |  |      |                                 |
|---|--------------------------------|--|------|---------------------------------|
| Air volume occupied by the driver <sup>10</sup> |                                | 0.5  | 0.5  | 10 <sup>-3</sup> m <sup>3</sup> |
| Speaker net mass                                |                                | 2.15   | 2.15 | Kg                              |
| Recommended reflex box                          | V <sub>b</sub> /F <sub>b</sub> | 15 / 45  |      | L / Hz                          |
| Electrical polarity                             |                                | A positive voltage applied on the red terminal produces forward cone motion. |      |                                 |

### PHYSICAL CHARACTERISTICS



### SPECIFICATION NOTES

- Note 1 : Allowing for energy response, excursion capability, Power spectrum, and -3dB low freq. roll-off for standard reflex tuning.
- Note 2 : Established at 20°C ambient temp, according to AES2-1984 standard using IEC268-1 simulated programme signal and a 12 liter Bass-Reflex test enclosure tuned at 55Hz.
- Note 3 : Established at 1m on axis of the loudspeaker mounted in test enclosure, when driven at full AES Power Handling Capacity, including 4dB of thermal compression loss.
- Note 4 : Measured at 20 mA in free air.
- Note 5 : Measured at 20 mA and 20°C ambient temp. in free air conditions, after full run and rest.
- Note 6 : Measured at 20°C ambient temp. QC limits are ±10%
- Note 7 : Stated in RMS voltage according to IEC 268-5.
- Note 8 : Includes shipping conditions. The lower limit prevents from demagnetization.
- Note 9 : Our products are classified in three categories : Indoor, Outdoor, and Outdoor+ for permanent outdoor use or severe conditions.
- Note 10 : Calculated for front mounting on to a 18 mm thick board.



461, rue des chênes . Z.A  
77590 CHARTRETTES  
FRANCE

Tél : 33 01 64 81 29 80  
Fax : 33 01 60 69 10 28

e-mail : phludio@phludio.com  
http : //www.phludio.com