

## TEBM28C10-4B Datasheet

### 1. Overview

The TEBM28C10-4B Balanced Mode Radiator (BMR<sup>®</sup>) is an audio drive unit with an extended frequency range and wide directivity. The small form-factor is ideally suited for compact products that require a full-range drive unit, room filling sound and a high-performance acoustic solution.

- Power Handling: 10 W
- Nominal Impedance: 4  $\Omega$
- Dia: 55 mm Depth: 25.8 mm
- Mass: 58 g

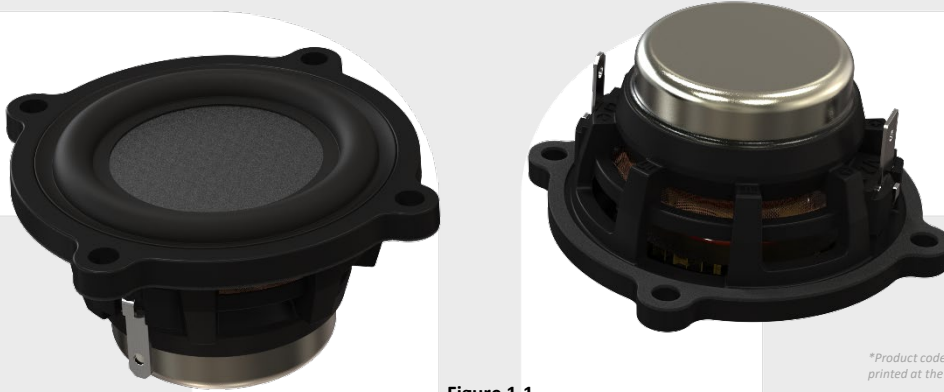


Figure 1.1

*\*Product code and manufacture date is printed at the back of the return cup*

### 2. Applications

- Full-range Compact Systems
- Conferencing Systems
- Bluetooth Audio
- Smart Speakers
- Gaming Devices
- IoT Devices

### 3. Specifications

| Transducer Characteristics              |                       |          | Parameter | Nominal | Unit            |
|---|-----------------------|----------|-----------|---------|-----------------|
| Frequency Response ( $\pm 6\text{dB}$ ) | 150 Hz ~ 16.5 kHz     |          | Fs        | 167     | Hz              |
| Speaker Sensitivity (1 Watt / 1 meter)  | 80                    | dB       | Sd        | 8.55    | cm <sup>2</sup> |
| Rated Maximum SPL (1 Meter)             | 90                    | dB       | Mms       | 1.36    | g               |
| Speaker Nominal Impedance               | 4                     | $\Omega$ | Cms       | 0.67    | mm/N            |
| Voice Coil Diameter                     | 19.05                 | mm       | Rms       | 0.41    | kg/s            |
| Voice Coil Material                     | Copper                |          | Re        | 3.65    | $\Omega$        |
| Diaphragm Material                      | Doped Paper Composite |          | Bl        | 3.04    | Tm              |
|   |                       |          | Le        | 0.06    | mH              |
|   |                       |          | Qts       | 0.48    |                 |

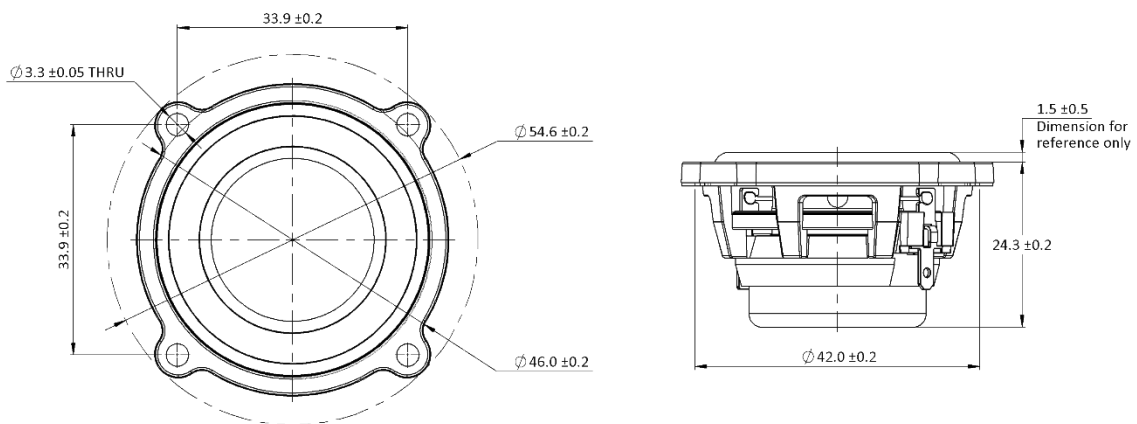
*\*From Klippel LPM*

### 3.1. Operating Conditions

|  |   |                     |
|--|---|---------------------|
| <b>Rated Noise Power (100 hours)</b><br><i>IEC268 Pink noise with 2<sup>nd</sup> order high-pass filter at 150Hz, 6dB crest factor, transducer in free air, ambient conditions – normal temperature and pressure</i> | : | 10 W                |
| <b>Operating Ambient Temperature Range</b>   | : | -20 to +55 °C       |
| <b>Max Linear Excursion*</b>   | : | 2.8 mm Peak to peak |
| <b>Mechanical Excursion Limit</b>  | : | 7.2 mm Peak to peak |
| <b>Max Surround Frontal Movement</b>   | : | 2.2 mm              |

\*From Klippel LSI

### 3.2. Product Dimension



**Note:**

- Volume Displacement: 13 cc
- All dimensions are in mm

Figure 3.2.1 – External product dimensions

### 3.3. On-Axis SPL and Impedance (Measured)

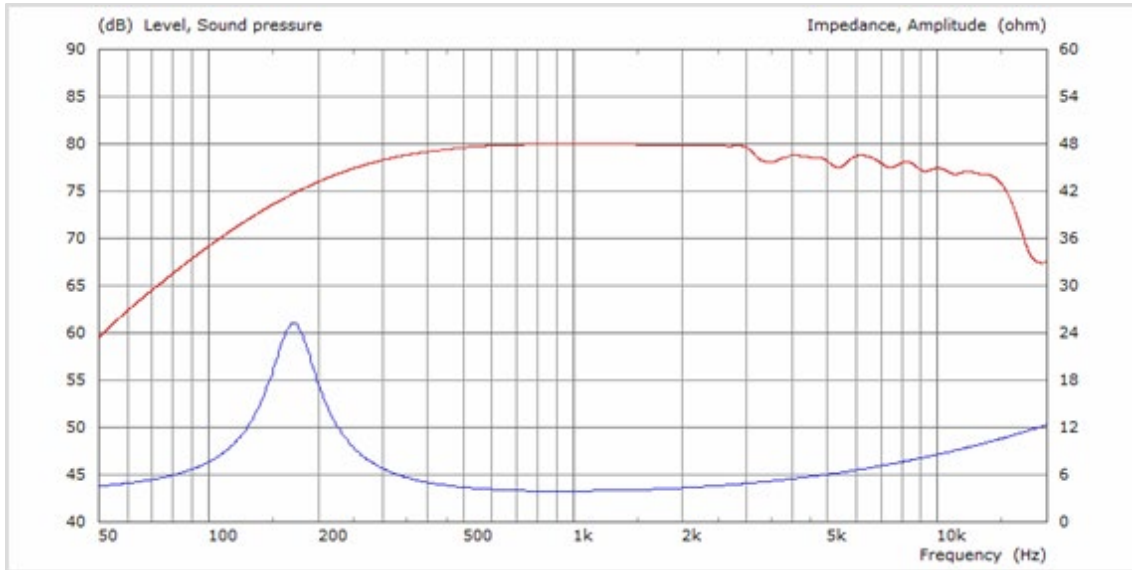


Figure 3.3.1 – Red: On-Axis SPL at 1W/1m (1/3-octave smoothed/spliced\*/anechoic). Blue: Electrical Impedance

### 3.4. Sound Power Response (Measured over 0 – 90°)

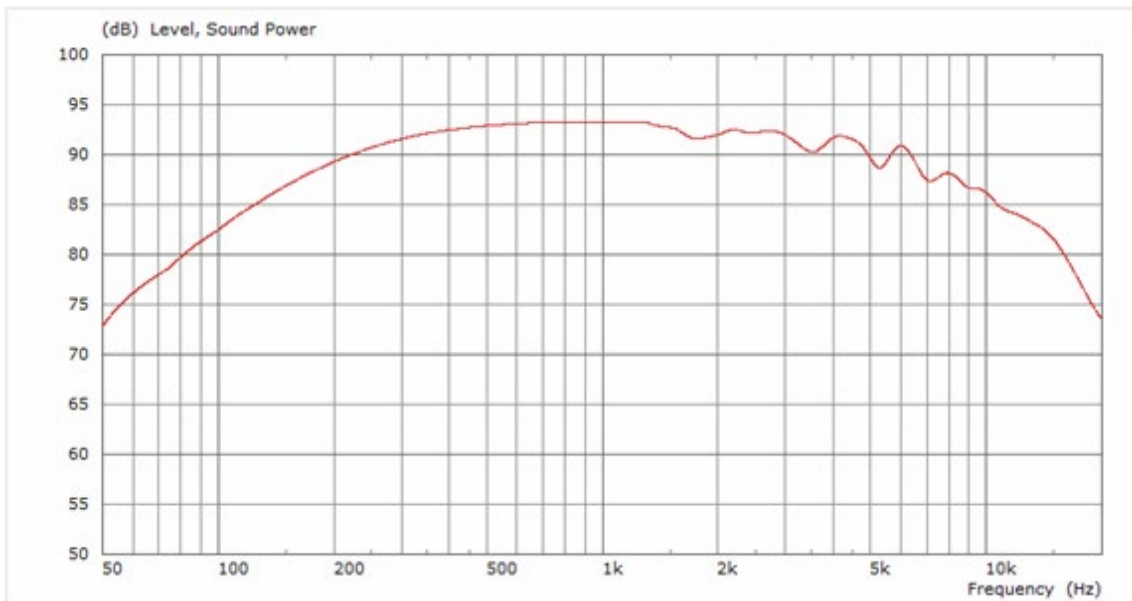


Figure 3.4.1 – Sound power calculated from SPL measurements, 1W/1m (1/3-octave smoothed/spliced\*)

*\*Anechoic acoustic measurement spliced to low frequency response derived from diaphragm scan using Polytec PSV500 scanning vibrometer*

### 3.5. Polar Response (Measured)

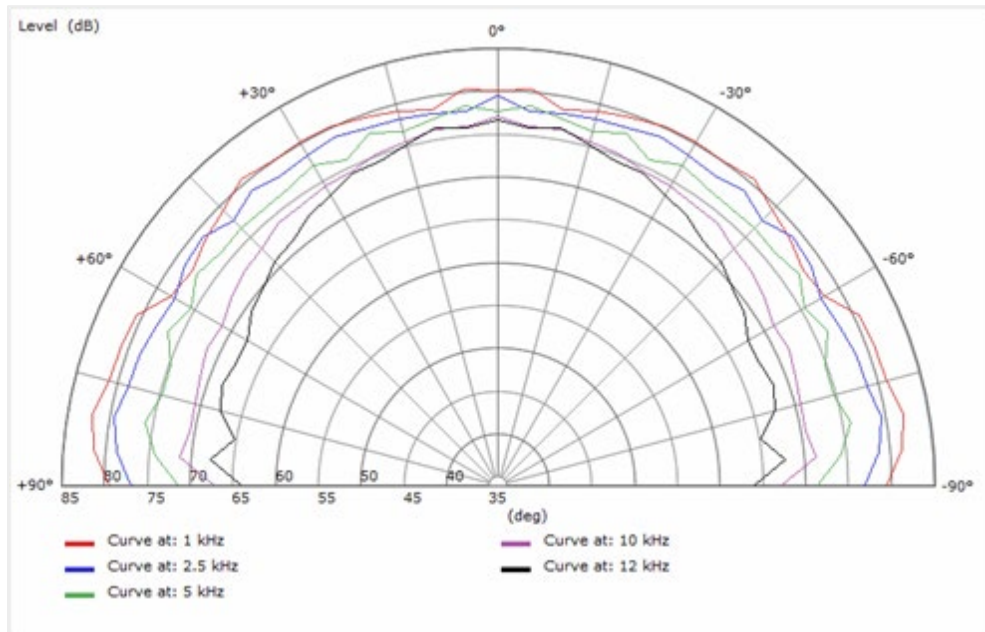


Figure 3.5.1 – Polar response, angle/ dB SPL, 1W/1m (1/3-octave smoothed / anechoic)

## 4. Appendix

### 4.1. Klippel LSI

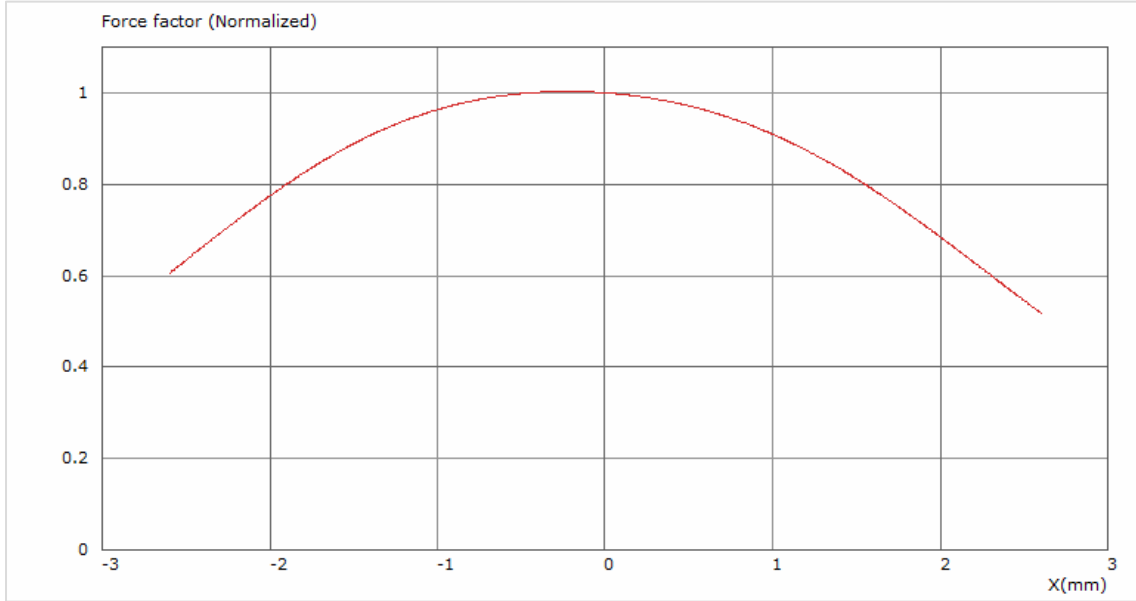


Figure 4.1.1 – Normalized BL (x)

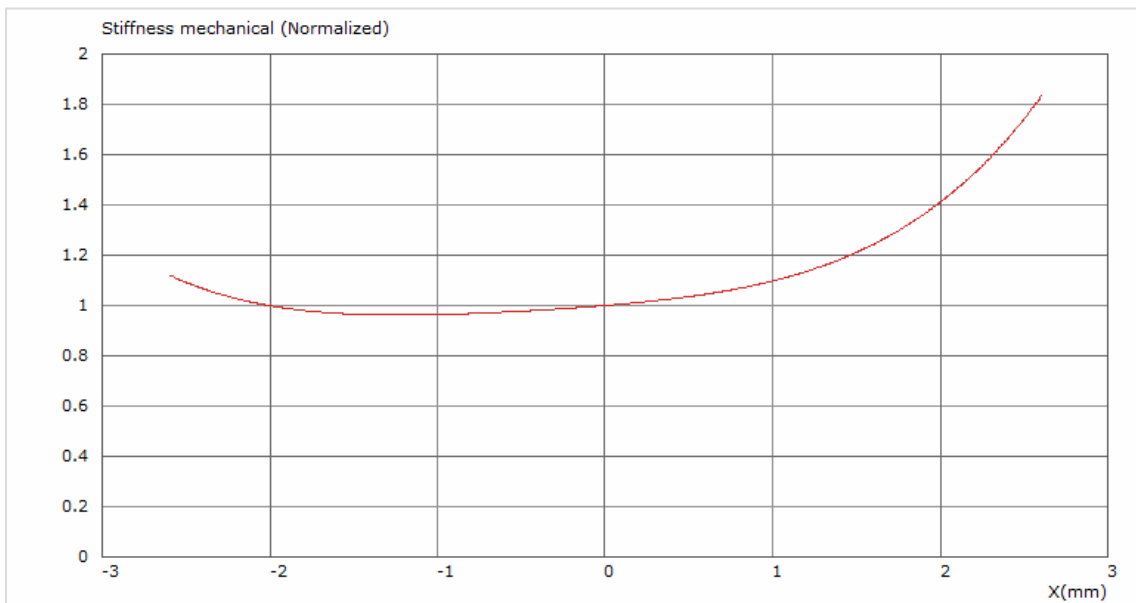


Figure 4.2.1 – Normalized Kms (x)