

TEBM54C30-8F Datasheet

1. Overview

The TEBM54C30-8F Balanced Mode Radiator (BMR®) is an audio drive unit with an extended frequency range and wide directivity. Combining the benefits of Tectonic bending-wave technology and piston modes of operation, this BMR is ideally suited for products that require a high-performance, low distortion acoustic solution, that delivers full-range, room filling sound.

- Full range: 120 Hz ~ 40 kHz
- Extremely wide directivity
- Power Handling: 20 W
- Nominal Impedance: 8 Ω
- 72mm H x 72mm L x 35mm D
- Mass: 265 g



Figure 1.1

2. Applications

- Conferencing Systems
- IoT devices
- Bluetooth Audio
- Smart Speakers and TVs
- Ceiling speakers
- Soundbars and monitors

3. Specifications

Transducer Performance			Parameter	Nominal	Unit
Frequency Response (±6dB)	120Hz ~ 40kHz		Fs	125	Hz
Sensitivity (1 W/ 1 m)	85.5	dB	Sd	25.5	cm ²
Rated Maximum SPL (1 Meter)	99	dB	Mms	3.0	g
Nominal Impedance	8	Ω	Cms	0.51	mm/N
Power Handling (IEC268-5)	20	W	Rms	0.54	kg/s
Operating Temperature	-20 to +55	°C	Re	7.7	Ω
Voice Coil Diameter	38.6	mm	BL	6.3	N/A
Voice Coil Material	CCAW		Le	0.07	mH
Diaphragm Material	Doped Paper Composite		Qts	0.41	
Max Linear Excursion*	5.6 mm Peak to peak				
Max Mechanical Excursion	9.2 mm Peak to peak		Max Surround Frontal Movement	2.7 mm	

*From Klippel LSI

3.1. On-Axis SPL and Impedance (Measured)

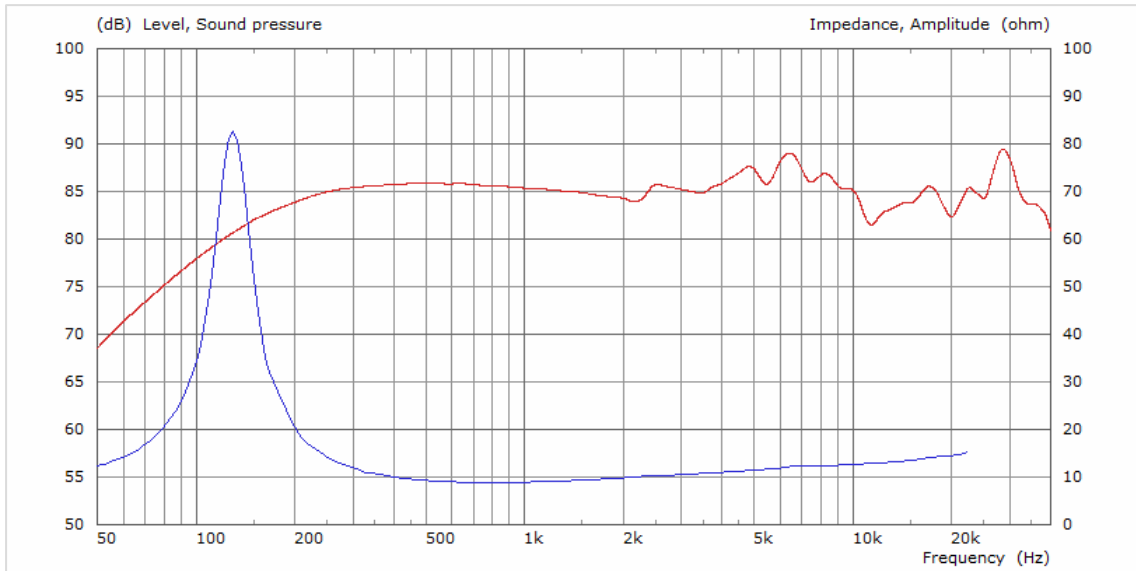


Figure 3.1.1 – Red: On-Axis SPL at 1W/1m (1/3-octave smoothed/spliced*/anechoic). Blue: Electrical Impedance

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

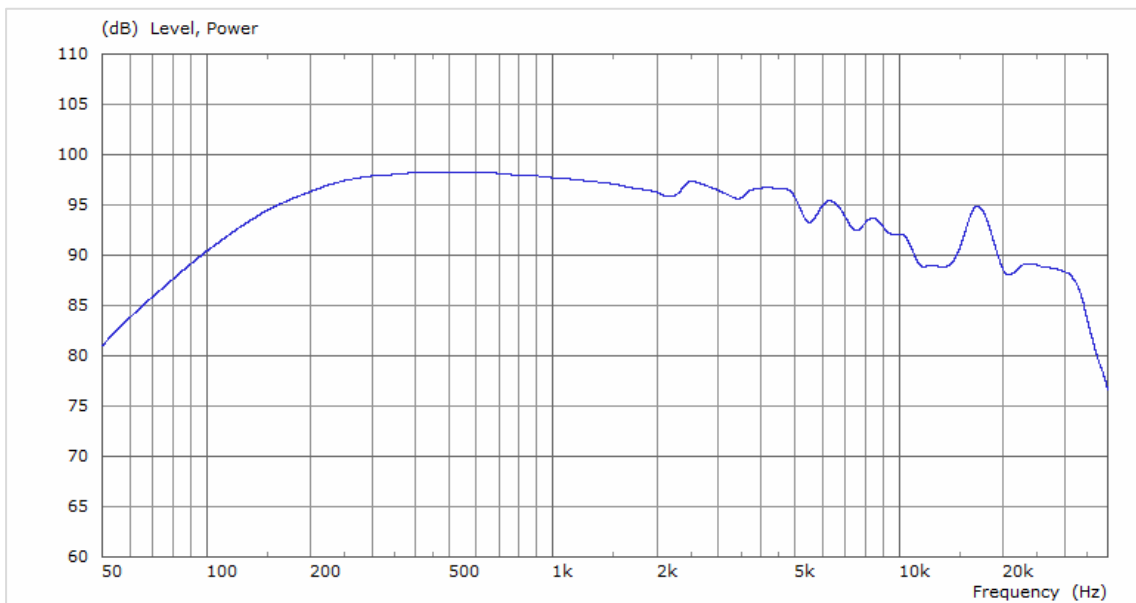


Figure 3.2.1 – Sound power calculated from SPL measurements, 1W/1m (1/3-octave smoothed/spliced*)

*Acoustic measurement data is shown above spliced frequency. Lower frequency performance is derived from diaphragm scan using Polytec PSV500 scanning laser vibrometer.

3.3. Polar Response (Measured)

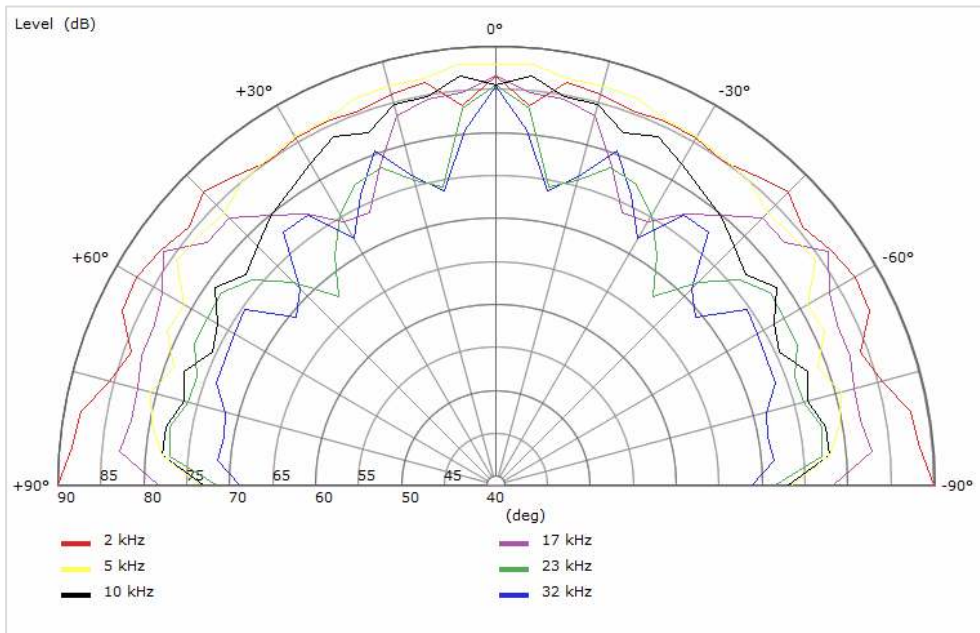
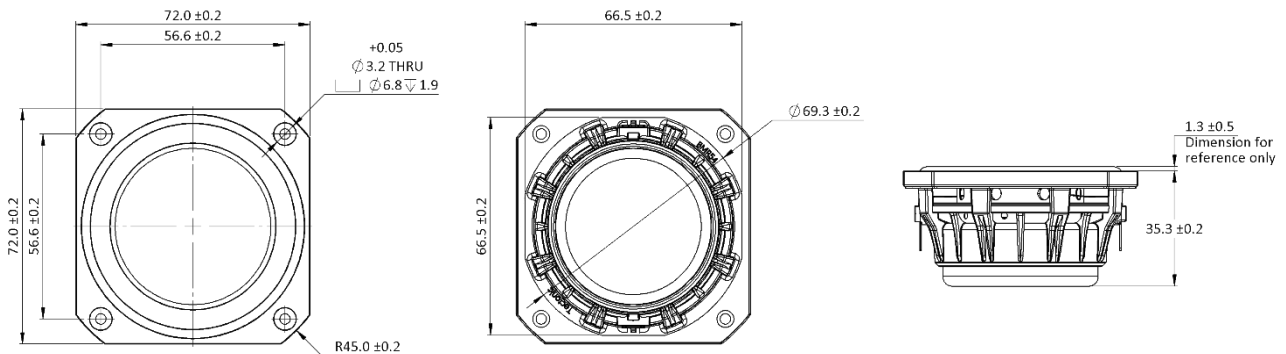


Figure 3.3.1 – Polar response, angle/ dB SPL, 1W/1m (1/3-octave smoothed / anechoic)

3.4. Product Dimensions



Note:

- Volume Displacement: 63 cc
- All dimensions are in mm

Figure 3.4.1 – External product dimensions

4. Appendix

4.1. Klippel LSI

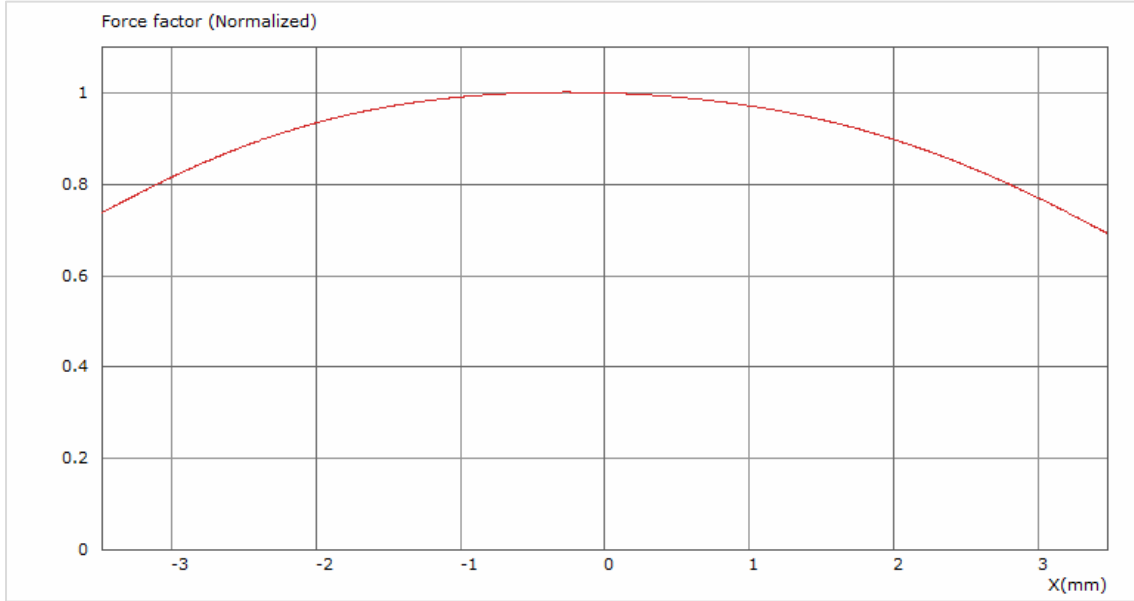


Figure 4.1.1 – Normalized BL (x)

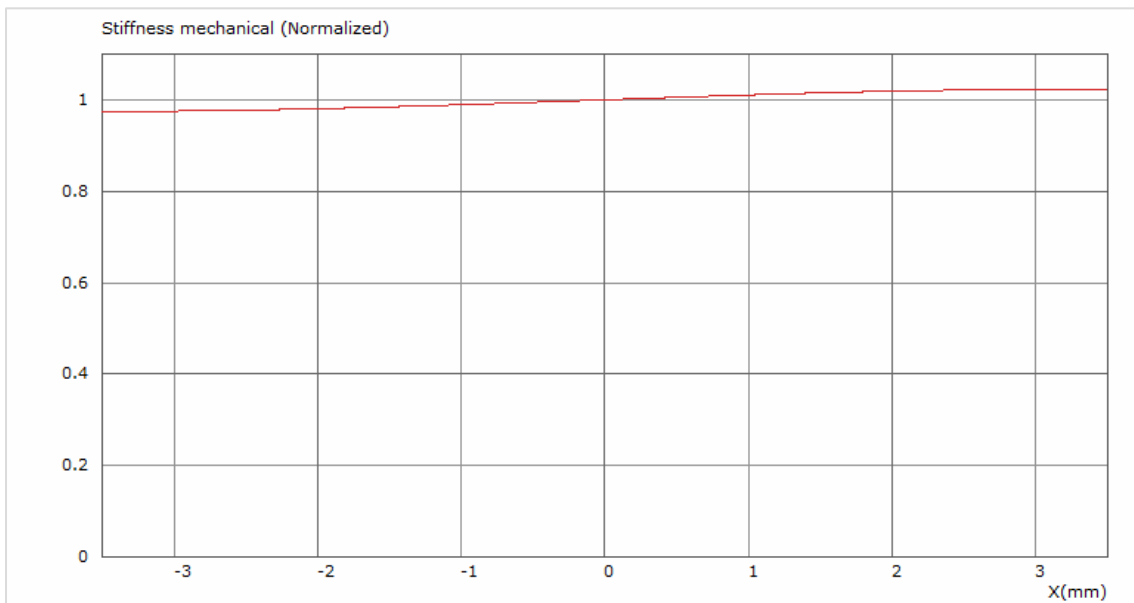


Figure 4.2.1 – Normalized Kms (x)