BMR54C-8A Datasheet

1. Overview

The BMR54C-8A 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 pistonic 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: 150 Hz ~ 30 kHz
- Extremely wide directivity
- Nominal Impedance: 8 Ω
- Power Handling: 30 W

Figure 1.1

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

2. Applications

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

3. Specifications

Transducer Characteristics		
Frequency Response (±6dB)	150 Hz ~ 30 kHz	
Speaker Sensitivity (1 Watt / 1 meter)	85	dB
Rated Maximum SPL (1 Meter)	100	dB
Speaker Nominal Impedance	8	Ω
Voice Coil Diameter	38.6	mm
Voice Coil Material	CCAW	
Diaphragm Material	Doped Paper Composite	

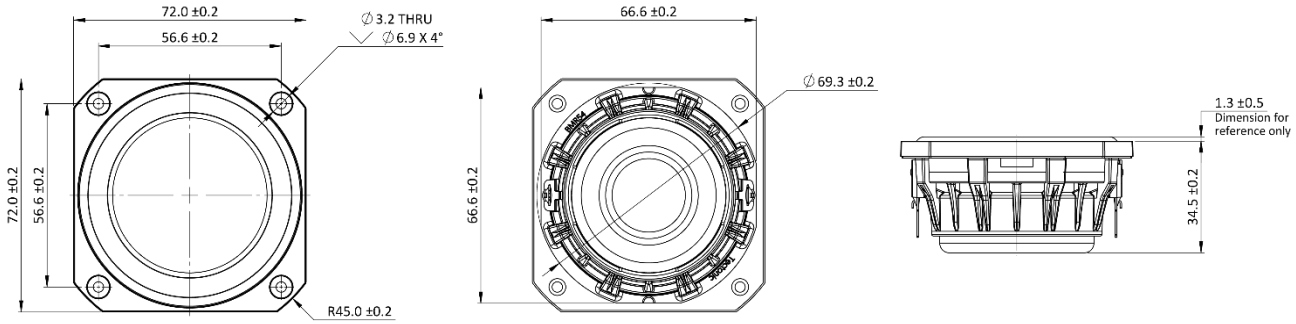
Parameter	Nominal	Unit
Fs	146	Hz
Sd	25.5	cm^2
Mms	3.3	g
Cms	0.36	mm/N
Rms	0.65	kg/s
Re	7.5	Ω
Bl	6.25	Tm
Le	0.075	mH
Qts	0.52	

3.1. Operating Conditions

Rated Noise Power (24 hours) *IEC268 Pink noise with 2nd order high-pass filter at 130Hz, 6dB crest factor, transducer in free air, ambient conditions – normal temperature and pressure*	:	30 W
Operating Ambient Temperature Range	:	-20 to +55 °C
Max Linear Excursion*	:	4.8 mm Peak to peak
Mechanical Excursion Limit	:	9.2 mm Peak to peak
Max Surround Frontal Movement	:	2.6 mm

**From Klippel LSI*

3.2. Product Dimension



Note:

- **Volume Displacement: 60 cc**
- **All dimensions are in mm**

Figure 3.2.1 – External product dimensions

3.3. On-Axis SPL and Impedance (Measured)

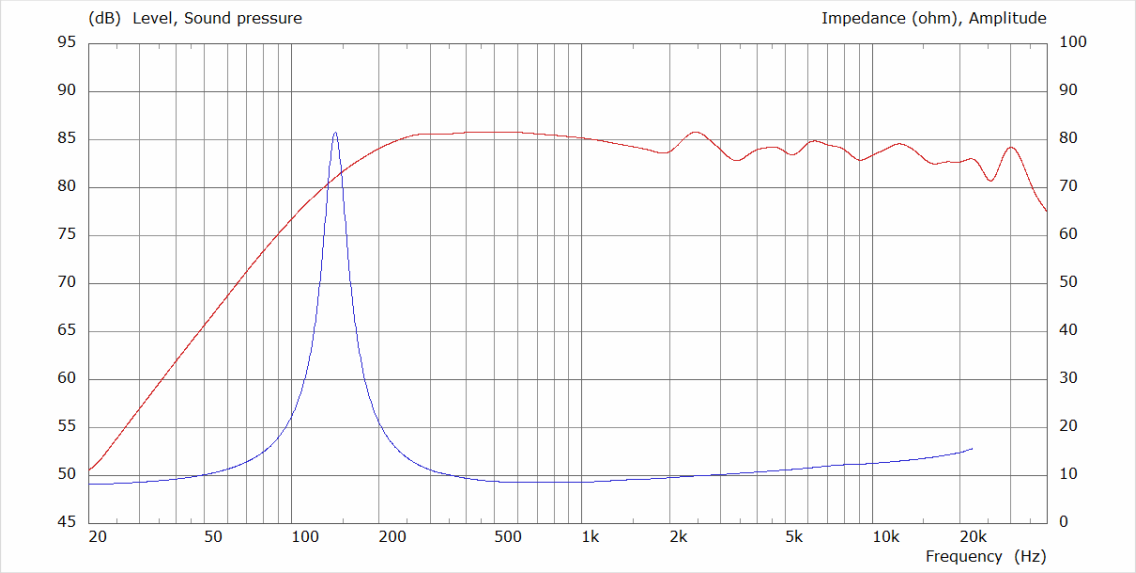


Figure 3.3.1 – Red: On-Axis SPL at 1W/1m (1/3-octave smoothed/spliced*/anechoic). Blue: Electrical Impedance

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

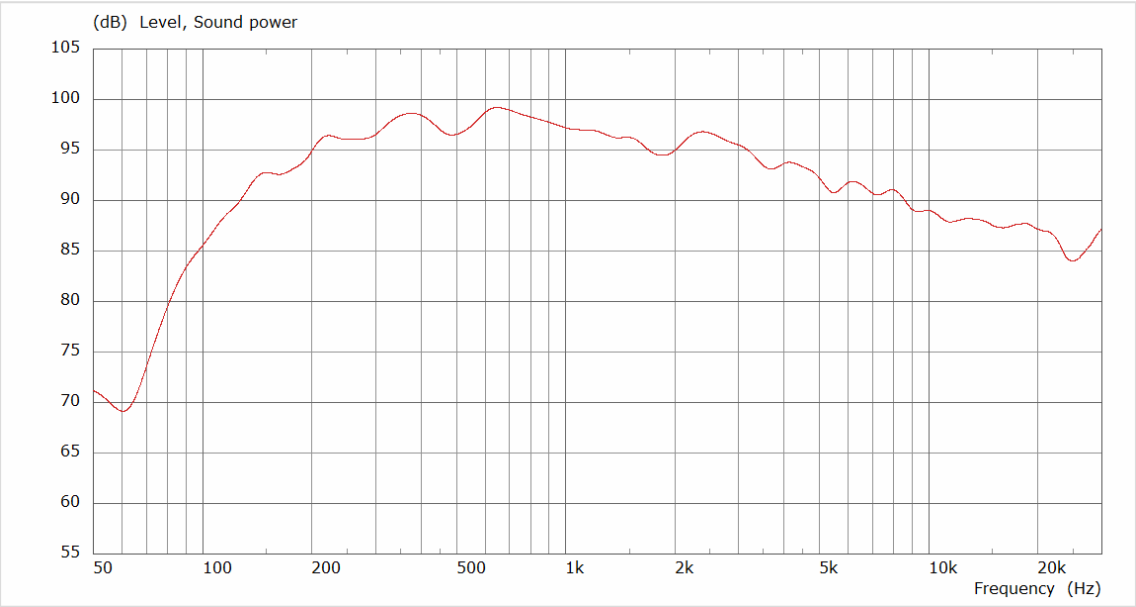


Figure 3.4.1 – Sound power calculated from SPL measurements, 1W/1m (1/3-octave smoothed)

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

3.5. Polar Response (Measured)

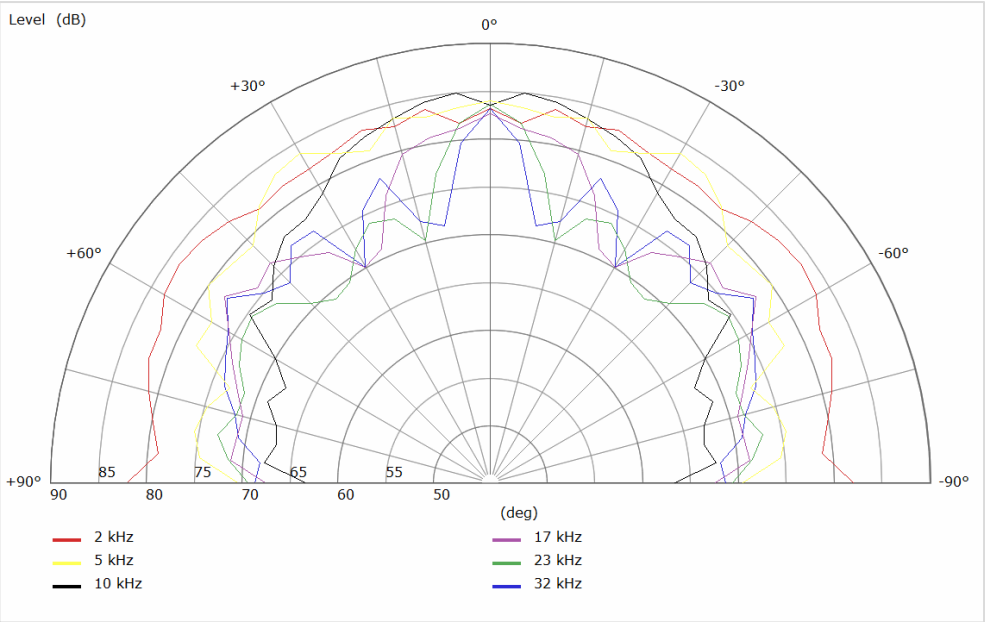


Figure 3.5.1 – Polar response, angle/ dB SPL, 1W/1m (1/3-octave smoothed / anechoic)

4. Appendix

4.1. Klippel LSI

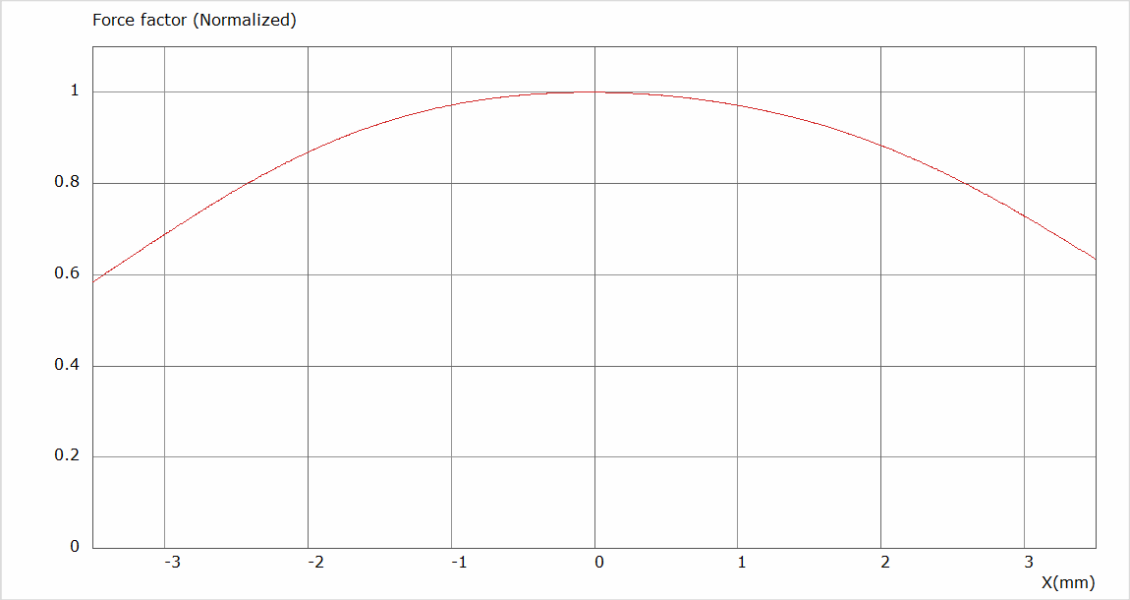


Figure 4.1.1 – Normalized BL (x)

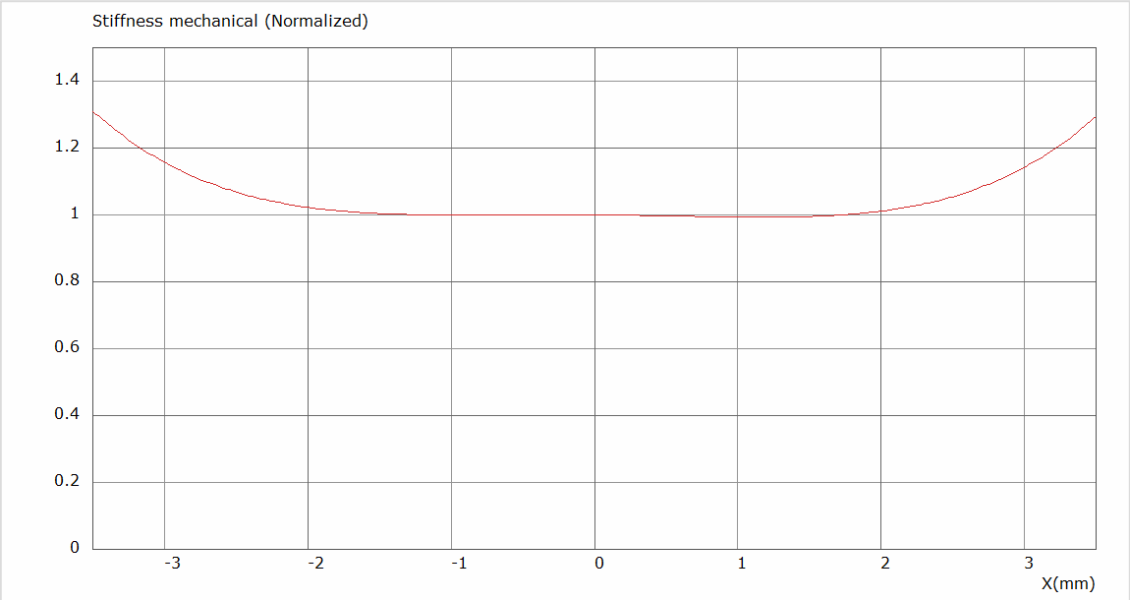


Figure 4.1.2 – Normalized Kms (x)