

SRM450

■ The Mackie Designs SRM450 is a full range, portable, active loudspeaker system providing high output, wide dispersion, and low distortion performance in a compact, composite molded enclosure. Two amplifiers independently power a high precision 12-inch professional woofer and 1.75-inch diaphragm titanium compression driver with a 1-inch exit throat. A sophisticated electronic control system provides phase correction, crossover, and five modes of thermal and active system protection.

■ The SRM450 is fitted with a specially designed horn assembly that combines both an exponential and conical geometry. With the addition of a multi-cell horn throat aperture, the complete assembly provides unparalleled dispersion characteristics. The result is super smooth, low-distortion linear audio performance across the entire specified coverage angle of 90 degrees.

■ A servo feedback circuit has been added to the low-frequency amplifier in order to provide extended bass response and woofer control. This design provides simultaneous positive and negative signal feedback information from the woofer's magnetic circuit to the low-frequency amplifier. This loop locks the two devices together and provides extreme control of the woofer mass. The result is extended linear movement of the woofer cone resulting in very high SPL low-frequency output levels.

■ Careful attention has been given to the ergonomic features of the system. The center of gravity, handle locations, handle design, position of fly-points, and ease of use have been carefully thought out. There is also an integrated pole mount on the bottom of the cabinet and a weather-resistant steel grille. The asymmetrical trapezoidal cabinet has been designed to provide an ideal floor monitoring position.

■ The SRM450 features a number of unique control features including a single microphone and line-level control in addition to a high-pass filter for floor monitoring applications, an AC timed turn off function that is ideal for fixed or remote installations, and a contour switch for low-level or background-level sound reinforcement applications.

■ The SRM450 cabinet is constructed of high pressure injected polypropylene. The enclosure features ample amounts of reinforcement ribbing and structural strengthening resulting in a strong, super-rigid design providing ideal acoustical characteristics.

Active 2-Way Sound Reinforcement Speaker System

**SRM450**

Features

- **Bi-amplification with 300 watts rms low-frequency and 100 watts rms high-frequency power**
- **127 dB peak SPL**
- **Wide dispersion, studio-quality high-frequency horn with multi-cell aperture throat**
- **Large format exponential/conical high-frequency horn mouth**
- **State of the art RCF Precision 1.75-inch titanium compression driver**
- **Servo feedback controlled RCF Precision 12-inch high-efficiency, light mass woofer**
- **Single mic/line level control**
- **High-pass switch for floor monitoring applications**
- **Contour switch provides ideal low to medium level music playback equalization**
- **Timed turn-off AC switch**
- **Complete electronic and component protection circuitry**
- **Electronic equalization and phase alignment**
- **Professional trapezoidal enclosure design**
- **Built-in pole mount cup on bottom**
- **Tilts on its side for use as a stage monitor**
- **Correctly weight-balanced with two comfortable side handles for easy carrying and set up**

Applications

- Live and playback applications
- Small to medium sized portable PA systems
- Corporate events
- Houses of worship

SRM450 Active Speaker System

SRM450 Specifications

System Acoustic

Frequency Response (-3 dB)	55 Hz-18 kHz
Frequency Range (-10 dB)	45 Hz-20 kHz
Directivity Factor; Q (DI)	9.95 (9.98), averaged 2 kHz to 10 kHz
Max SPL Long-term	124 dB
Max SPL Peak	127 dB
Crossover	Linkwitz-Riley, 24 dB/octave @ 1600 Hz

Audio

Input	Bal./unbal. Female XLR
Loop-through (parallel w/input)	Bal./unbal. Male XLR
Input Protection	RFI and level protected
Level Control	Rotating knob (off to +40 dB)
Sensitivity (center detent)	Line: +4 dBu Mic: -36 dBu
Maximum Input Level	+22 dBu
Low-Cut Frequency	75 Hz second-order high-pass filter
Acoustic Contour Equalization (peaking)	+3 dB @ 100 Hz +3 dB @ 12 kHz
Accessory Interface	±15 VDC, normalized signal I/O
Operating Temperature Range	-10°C to 45°C (14°F to 113°F)

Amplifiers

Total Amplifier Power	400 watts continuous*
High Frequency	100 watts*
Type	Class AB
Rated THD	.03%
Low Frequency	300 watts*
Type	Class G with parametric servo feedback
Rated THD	0.03%

*Rated power is continuous rms wattage into transducer's rated impedance @ 1 kHz for the HF amplifier and @ 100 Hz for the LF amplifier

High Frequency Section

Diaphragm Size	1.75 in/44.5 mm
Horn Exit Diameter	1.0 in/24.5 mm
Power Handling	100 watts rms (long term) ¹
Sensitivity	106 dB (1W@1m)
Frequency Range	1000 Hz to 20 kHz
Nominal Impedance	8 ohms
Diaphragm Material	Damped titanium
Magnet Type	Ferrite

Horn Design

Horizontal Coverage	90° 1 kHz to 20 kHz avg.
Vertical Coverage	45° 2.8 kHz to 20 kHz avg.
Type	Exponential and conical
Mouth Size	12.0 in x 7.0 in/ 30.5 cm x 17.8 cm
Throat size	1.0 in/2.5 cm

¹ Measured on-axis in the far field, referenced back to 1 watt rms from maximum power and to 1 meter distance using the inverse square law.

Low Frequency Section

Number of Drivers	1
Woofers Diameter	12 in/300 mm
Voice Coil Diameter	2.5 in/63 mm
Power Handling	450 watts rms (long term) ¹
Sensitivity	98 dB (1W@1m)
Frequency Range	45 Hz to 3000 Hz
Magnet Type	Ferrite

Construction Features

Basic Design	Asymmetrical Trapezoidal
Material	Polypropylene
Finish	Grey, textured finish
Handles	Two on sides, one on top
Grille	Perforated metal with weather-resistant coating

Line Input Power

Power Consumption	320W with musical program and Peak LED blinking
US Recommended amperage service	120 VAC, 60Hz 2.5 amps
Europe Recommended amperage service	230 VAC, 50Hz 1.25 amps
Japan Recommended amperage service	100 VAC, 50/60Hz 3.0 amps
AC connector	3-pin IEC 250 VAC

Control System Function

Electronic Crossover	
Phase Alignment	
Equalization	
Parametric equalization	

Safety Features

Protection	Low Frequency Dynamic Bass Protection, Independent LF and HF Compressors, Power Supply and Amplifier Thermal Protection
Display LEDs	Signal Present, Peak, Power ON, and Thermal (Cool Down Auto Reset)

Physical

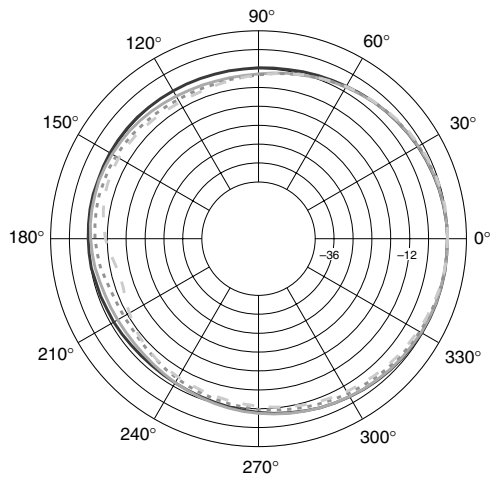
Height	26.0 in/660 mm
Width Front	15.4 in/390 mm
Depth	14.8 in/376 mm
Weight	51.0 lb/23.2 kg

Options

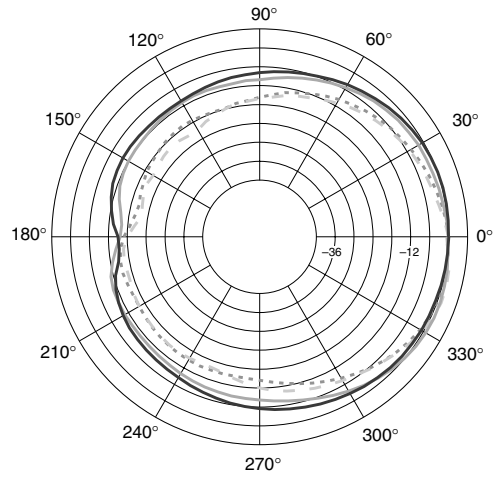
PA-A1 Eyebolt (M10 x 1.5 mm x 20 mm)

SRM450 Active Speaker System

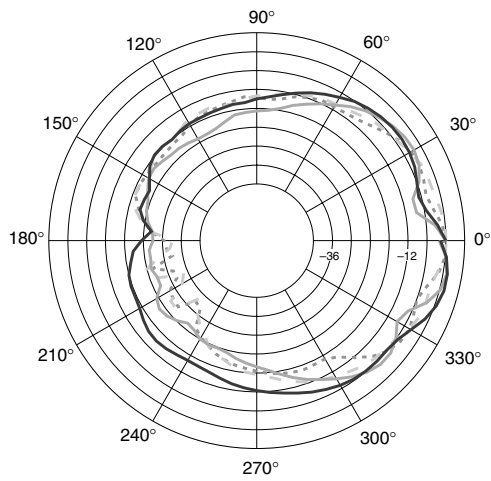
SRM450 Vertical Polars



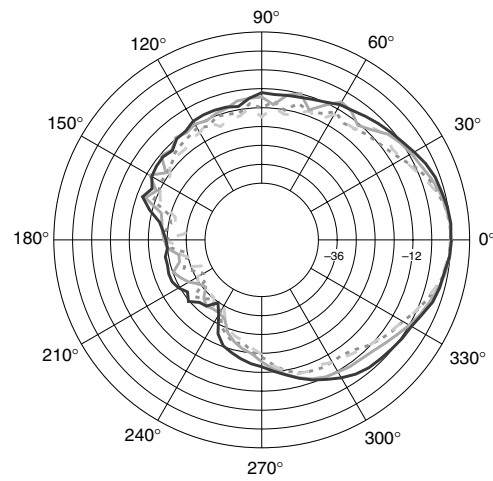
- 200Hz
- 250Hz
- 315Hz
- - - 400Hz



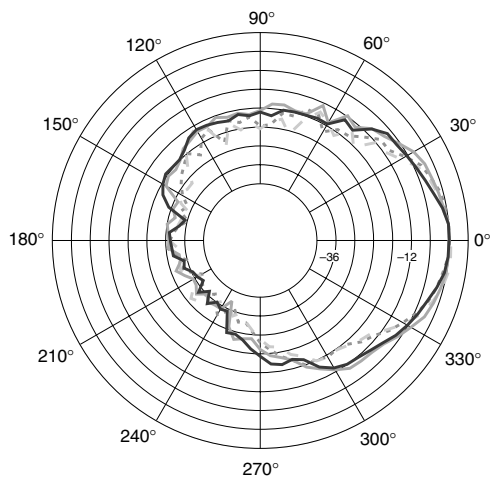
- 500Hz
- 630Hz
- 800Hz
- - - 1kHz



- 1.25kHz
- 1.6kHz
- 2kHz
- - - 2.5kHz

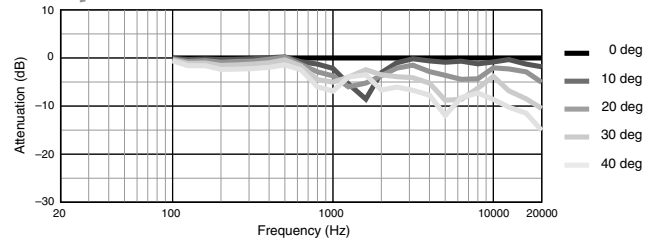


- 3.15kHz
- 4kHz
- 5kHz
- - - 6.3kHz

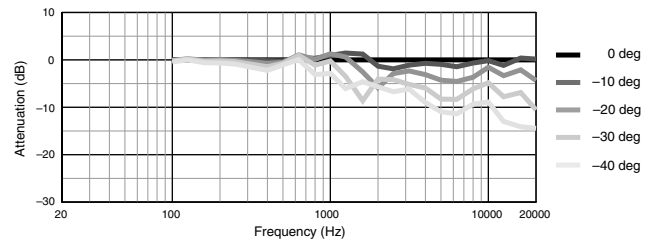


- 8kHz
- 10kHz
- 12.5kHz
- - - 16kHz

SRM450 Vertical Off-Axis Frequency Response (UP)

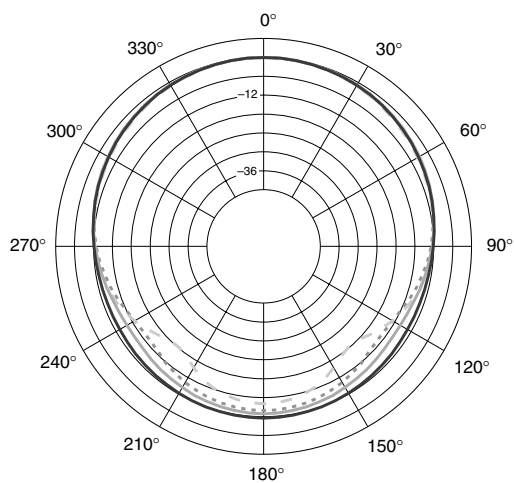


SRM450 Vertical Off-Axis Frequency Response (DOWN)

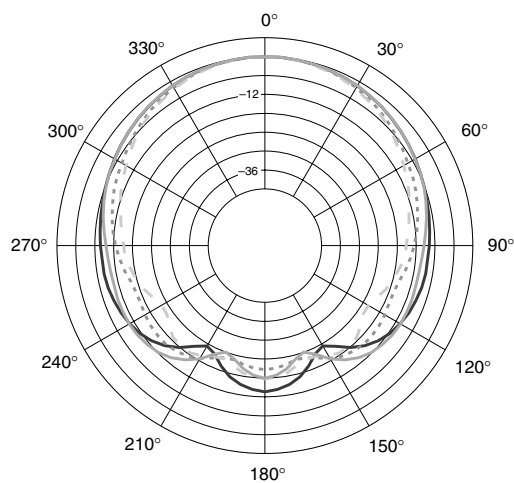


SRM450 Active Speaker System

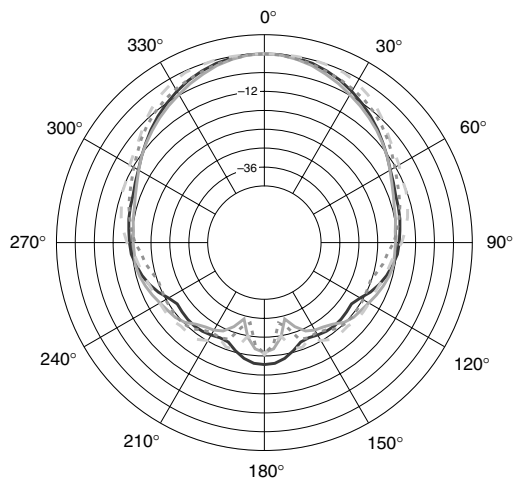
SRM450 Horizontal Polars



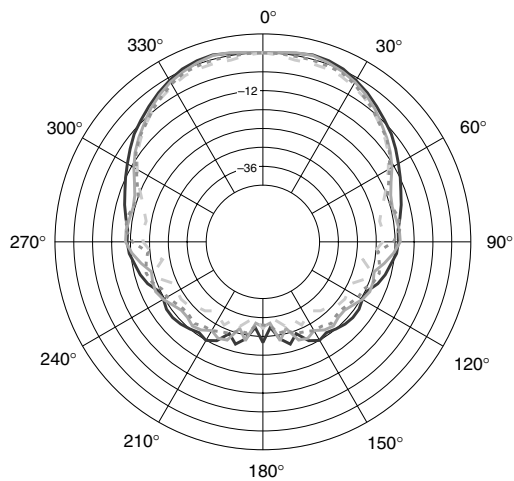
- 200Hz
- 250Hz
- 315Hz
- - - 400Hz



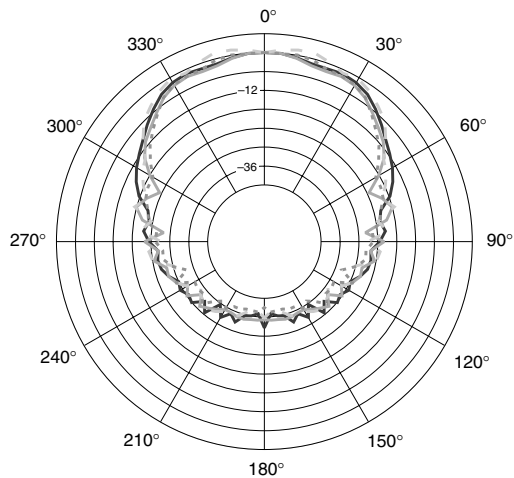
- 500Hz
- 630Hz
- 800Hz
- - - 1kHz



- 1.25kHz
- 1.6kHz
- 2kHz
- - - 2.5kHz

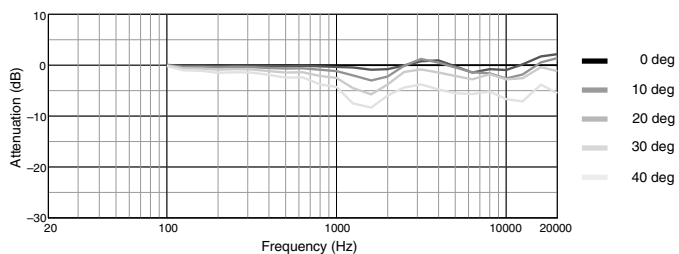


- 3.15kHz
- 4kHz
- 5kHz
- - - 6.3kHz



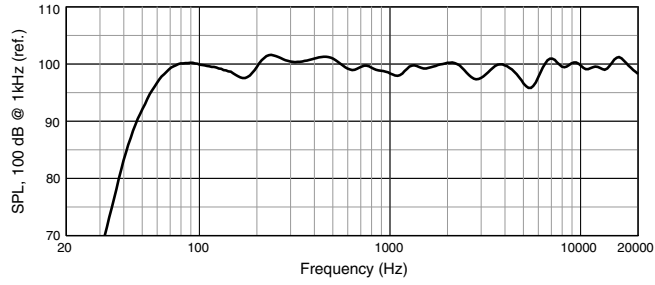
- 8kHz
- 10kHz
- 12.5kHz
- - - 16kHz

SRM450 Horizontal Off-Axis Frequency Response

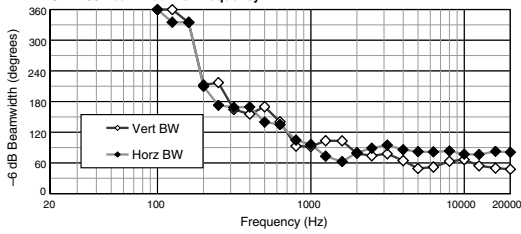


SRM450 Active Speaker System

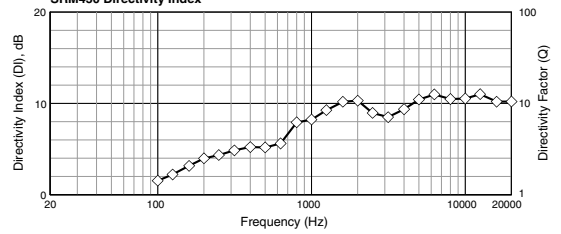
SRM450 Frequency Response On-Axis



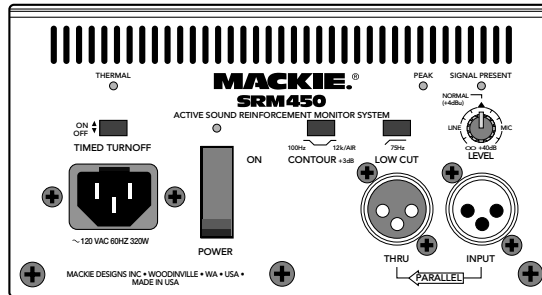
SRM450 Beamwidth vs. Frequency



SRM450 Directivity Index



SRM450 Input Panel



SRM450 Dimensions

