

Vision Series

■ The PA281 is an extremely versatile wide-dispersion, low-profile, two-way loudspeaker system offering substantial power and value for a variety of professional applications that include primary sound reinforcement and supplementary fill for larger systems. Its compact size makes it ideal for low visibility column, side wall, or under balcony mounting.

■ The high-frequency section is a constant directivity horn loaded to a 1-inch compression driver with a 1.75-inch diaphragm assembly for smooth, wide dispersion. The low-frequency transducers are two 8-inch carbon fiber woofers suitable for difficult climatic environments.

■ The system includes a high-level crossover network that features markedly lower (than conventional) inductance values in series with the woofer. We call this innovation LICC (Low Impedance Compensated Crossover). The benefit is delay reduction, reduced phase shift and superior transient response. Dynamic high-frequency driver protection is accomplished with a fast-response filament resistor, chosen to complement the power curve of the driver.

■ The Mackie PA281 is a part of the VISION family of loudspeaker products including full-range, cost-effective two-way loudspeakers and complementary subwoofer cabinets. These enclosures have a trapezoidal footprint for easy array configuration. All enclosures are constructed using 19 mm void-free, birch plywood and finished with a scratch-resistant black coating. Transducer components are protected from the environment by a heavy gauge metal grille. The VISION products are eminently suited for fixed installation, ready for suspension via built-in M10 inserts with metal reinforcement and forged shoulder eyebolt hardware. The PA281 also includes M8 inserts.

■ This Mackie product is covered by an exclusive, one-time, NO FAULT repair policy in addition to a five year limited warranty.

Compact Two-Way Speaker System



PA281

Features

- Two 8-inch high-output carbon fiber LF transducers
- 100° x 85° modified constant directivity horn with 1-inch compression driver
- Trapezoidal enclosure for array configurations
- HF driver dynamic protection
- LICC (Low Impedance Compensated Crossover) network
- 19 mm birch plywood construction
- Suspension points (M10 and M8) and eyebolt suspension hardware
- Exclusive Mackie — one-time, NO FAULT repair policy
- Five year limited warranty

- Cluster Configurations
- Live Music Reinforcement
- High-Level AV Playback
- Zone Delay and Fill Systems

PA281 Compact Two-Way Speaker System

Specifications

System

Freq. Range (-10 dB):	45 Hz–18 kHz
Freq. Response (-3 dB):	60 Hz–13 kHz
Horz. Coverage Angle (-6 dB):	100° averaged 1 kHz to 16 kHz
Vert. Coverage Angle (-6 dB):	85° averaged 1 kHz to 16 kHz
Directivity Factor; Q (DI):	8.0 (9.0) averaged 1 kHz to 16 kHz
System Sensitivity ¹ :	92 dB, 1W @ 1m
Rated Maximum SPL:	123 dB, @ 1m
System Nominal Impedance:	4Ω
System Input Power Rating ² :	300W rms; 1200W Peak
Recommended Amplifier ³ :	450W
HF Protection:	Dynamic
Crossover:	2.1 kHz, 12 dB/octave

Transducers

Low-Frequency:	Two 8 in/203 mm carbon fiber woofers
High-Frequency:	1 in/25 mm throat, 1.75 in/44 mm coil diaphragm assembly

Physical

Enclosure:	Trapezoidal, 15° side angles, 19 mm multi-layered birch
Rigging Inserts:	5 points for M10, 4 points for M8 threaded hardware
Color:	Black, scratch-resistant paint
Grille:	Custom perforated steel grille
Input Connectors:	Screw terminals
Dimensions (HxWxD):	
Height:	30.3 in/770 mm
Width:	12.0 in/305 mm
Depth:	12.9 in/328 mm
Net Weight:	50.6 lb/23.0 kg

Options

PA-A1	Forged shoulder M10 eyebolt hardware
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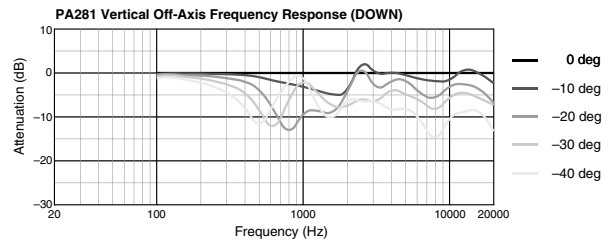
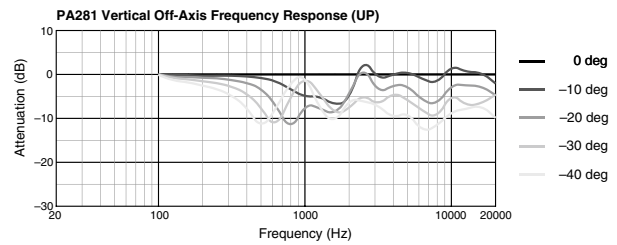
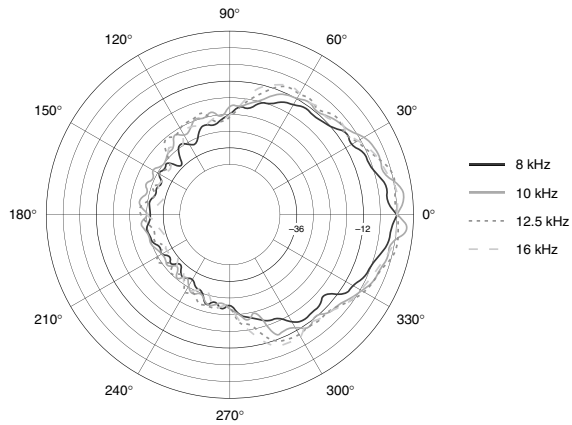
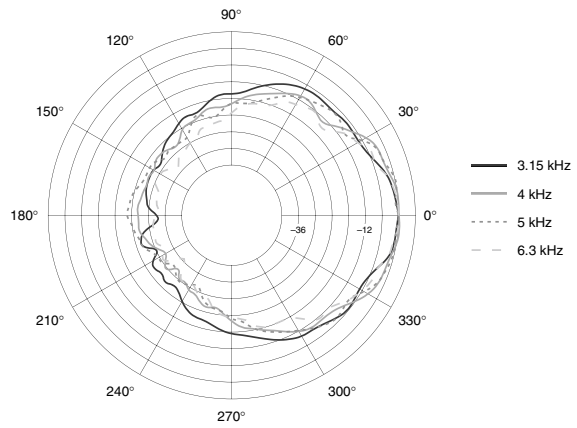
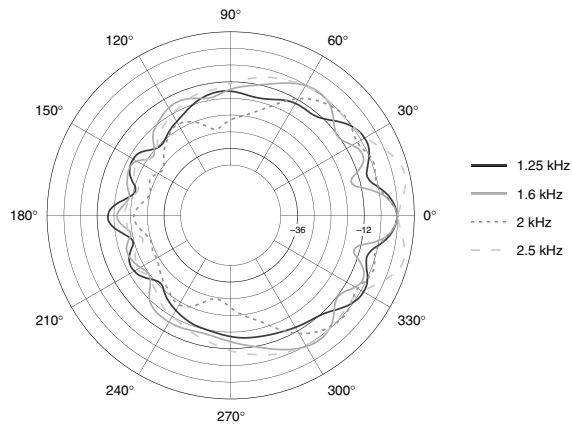
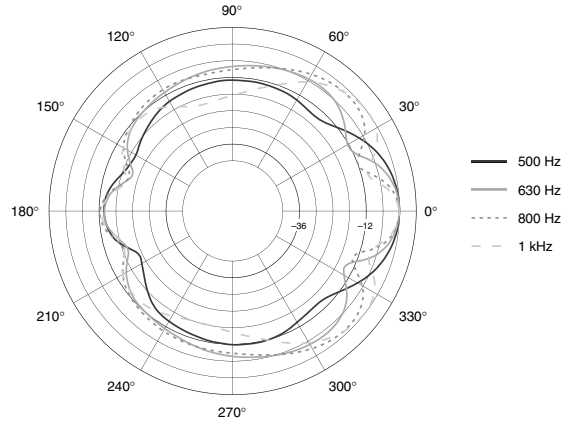
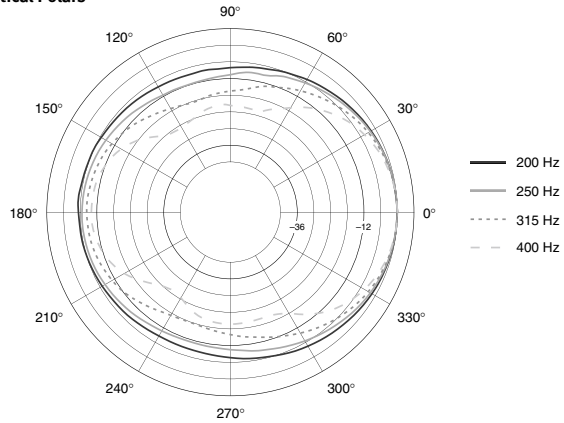
¹ Measured on axis in the far field with 1 watt (2.0V rms, 4Ω) input and referenced to 1 meter distance using the inverse square law. Listed sound pressure represents an average from 300 Hz to 3 kHz.

² rms using 20 Hz to 20 kHz, PN Spectrum, Peak for 2 hours with +6 dB crest factor.

³ Recommended Amplifier is a power capability value that should be taken as a guide.

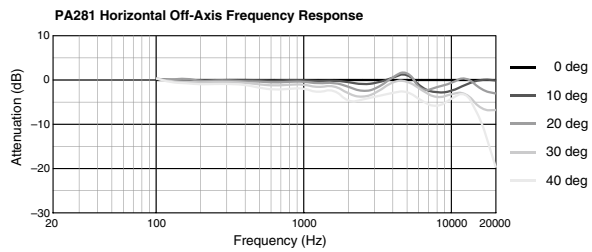
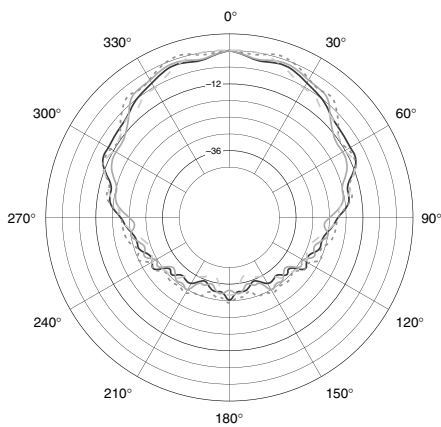
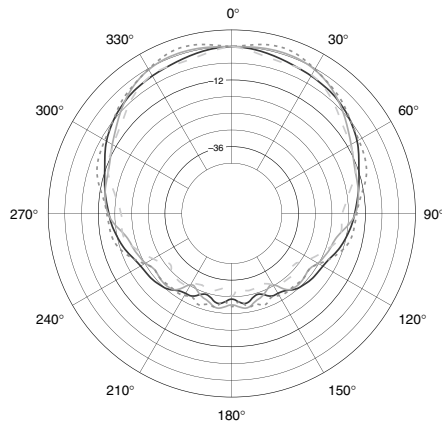
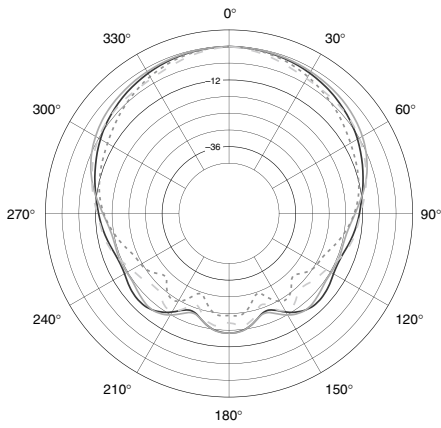
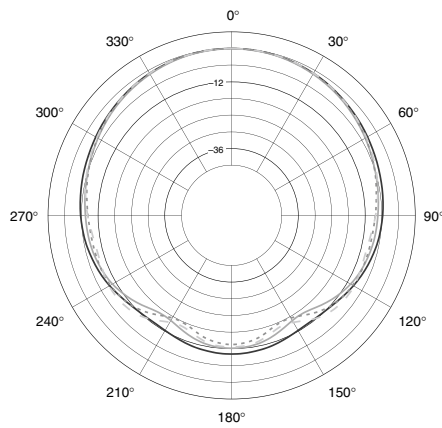
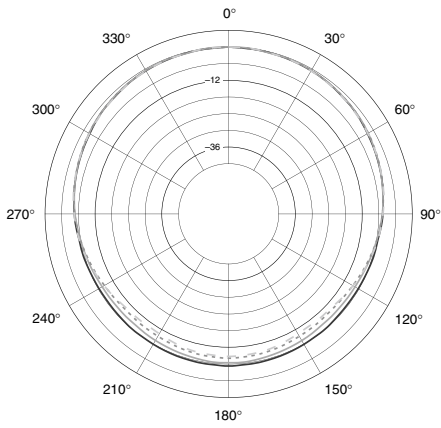
PA281 Compact Two-Way Speaker System

PA281 Vertical Polars



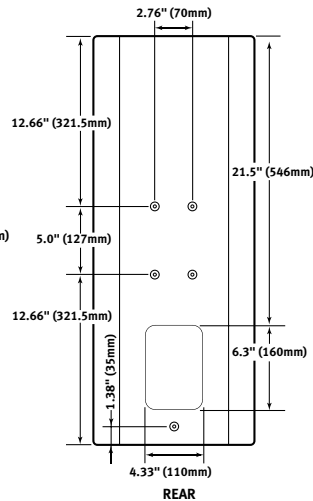
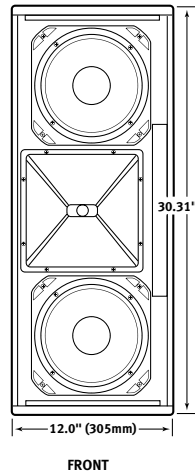
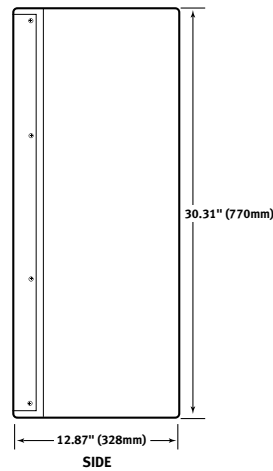
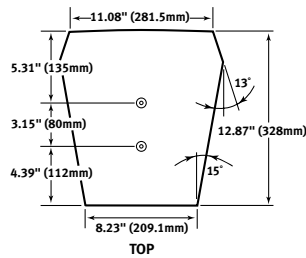
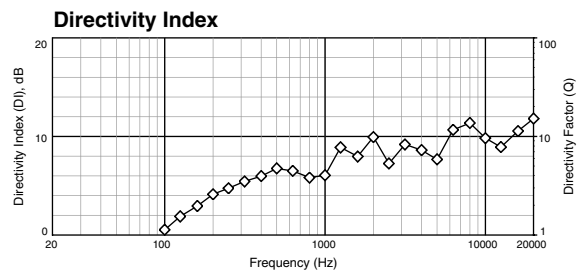
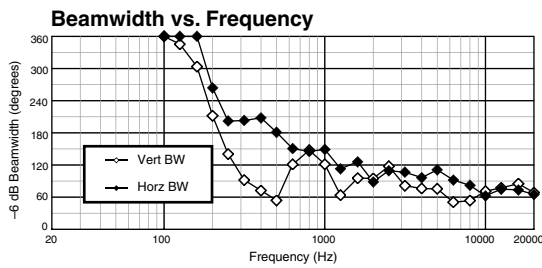
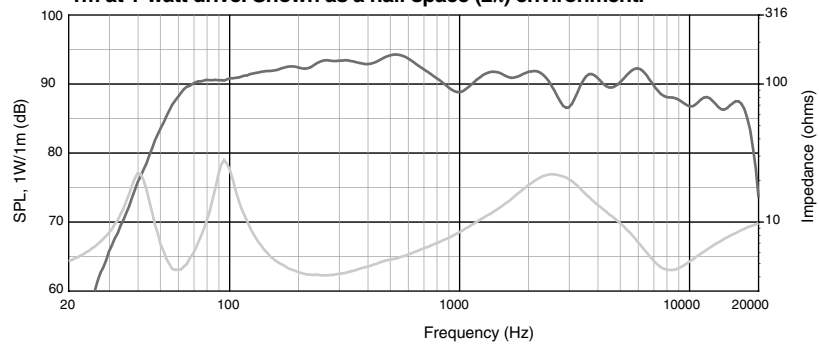
PA281 Compact Two-Way Speaker System

PA281 Horizontal Polars



PA281 Compact Two-Way Speaker System

Frequency Response is measured on-axis at a distance referenced back to 1m at 1-watt drive. Shown as a half space (2π) environment.



PA281 Compact Two-Way Speaker System

Architects' and Engineers' Specifications

The two-way loudspeaker system shall be self-contained and consist of the following components: (1) two 8-inch, low-frequency drivers; (2) a high-frequency section consisting of a constant-directivity horn and compression driver; (3) a two-way crossover network; (4) a vented enclosure.

The two low-frequency transducers shall be cone type loudspeakers having cone diameters of at least 8 inches/203 mm. They shall have voice coils of at least 3 inches/76 mm in diameter and carbon fiber diaphragms. Together they shall present a nominal impedance load of 4 ohms. Sensitivity shall be at least 92 dB when measured at 1 m with an input of 1 watt.

The high-frequency section shall have a compression driver with a titanium diaphragm of at least 1.75 inches/44 mm in diameter. It shall present a constant-impedance load of 8 ohms. It shall be connected to a constant-directivity horn having a throat diameter of at least 1 inch/25 mm and a nominal coverage pattern of 100° horizontal by 85° vertical. Sensitivity shall be at least 107 dB when measured at 1 m with an input of 1 watt.

The system shall be crossed over by an internal, high-level, passive network having a response of 12 dB/octave. The nominal crossover frequency shall be 2.1 kHz. The low-pass section of the network shall have minimum inductance in series with the low-frequency drivers. The high-pass section of the network shall be equalized to optimize the performance of the constant-directivity horn. A dynamic high-frequency protection circuit based on a low-value, low-mass filament resistor shall limit the current available to the compression driver. A connection option shall be provided to disconnect the crossover network, but not the high-frequency protection circuit, from the drivers to allow bi-amp operation. Connections to the loudspeaker shall be screw terminal connectors.

(continued Architects' & Engineers' Specs)

The enclosure shall be a vented design with an internal volume of at least 0.83 cubic feet. The vent shall be tuned to 60 Hz. It shall be constructed using 0.75 inch/19 mm, void-free birch plywood and finished with black, scratch-resistant paint. It shall be trapezoidal shaped with 15° angled sides. A full size, detachable, perforated steel grille, finished in black scratch-resistant paint shall be provided. At least 9 reinforced threaded metal sockets (M10, M8) for attaching mounting hardware and three eye bolts shall also be provided. The overall dimensions of the enclosure shall not exceed 30.3 in/770 mm x 12.0 in/305 mm x 12.9 in/328 mm).

The performance of the two-way loudspeaker system shall be as follows: long-term power handling, at least 300 watts rms; peak power handling, at least 1200 watts; frequency response, 60 Hz–13 kHz at –3 dB; maximum SPL, 123 dB (anechoic–1m); sensitivity, 92 dB SPL (1W/1m anechoic); –6 dB coverage, measured average 800 Hz–16 kHz, 100° horizontal by 85° vertical. The two-way loudspeaker system shall be a model PA281 manufactured by Mackie Designs.

MACKIE®

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Electronic files for this product available at:
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This Specification Sheet

PA281.PDF

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