# PA152

SPEAKER

PA152

## Vision Series

The PA152 is an extremely versatile, medium-throw, two-way loudspeaker system offering wide bandwidth, low profile, substantial power and value for a variety of professional applications that include primary sound reinforcement and supplementary fill for large speaker systems.

The low-frequency transducer is a 15" woofer with an efficient 4" voice coil that can provide excellent low-frequency response along with high power handling. The high-frequency section combines a modified constant directivity horn with a 2" exit coupled to a titanium compression driver with a 3" coil.

The system includes a high-level crossover network that features markedly lower (than conventional) induction 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 PA152's crossover is easily bypassed for bi-amp or tri-amp (with the PA180SW) operation via an installer-accessible changeover block. Back panel indicators display the current system setting.

The Mackie Industrial PA152 is a part of the VISION family of loudspeaker products including full-range, cost-effective, two-way loudspeakers and complementary subwoofer cabinets. The two-way 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.

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

## Two-Way Speaker System

## Features

- **15" high power, 4" voice-coil LF transducer**
- **85° x 65° modified constant-directivity horn with 2" exit, titanium compression driver**
- **Dual-function design: built-in passive crossover or external bi-amp**
- **Trapezoidal enclosure for array configurations**
- **HF driver dynamic protection**
- **LICC (Low Impedance Compensated Crossover) network**
- **19 mm birch plywood construction**
- **Twelve suspension points (M10) and standard suspension hardware**
- **Integrated hand-carry locations**
- **Exclusive Mackie Industrial — one-time, NO FAULT repair policy**
- **Five year limited warranty**

APPLICATIONS

- Cluster Configurations
- Live Music Reinforcement
- High-Level AV Playback
- Large Speech Systems

# PA152 Two-Way Speaker System

## Specifications

### System

| | |
|---|---|
| Freq. Range (–10 dB): | 50 Hz–21 kHz |
| Freq. Response (–3 dB): | 70 Hz–20 kHz |
| Horz. Coverage Angle (–6 dB): | 85° averaged 1 kHz to 16 kHz |
| Vert. Coverage Angle (–6 dB): | 65° averaged 1 kHz to 16 kHz |
| Directivity Factor; Q (DI): | 11 (10.5) averaged 1 kHz to 16 kHz |
| System Sensitivity[1]: | 97 dB, 1 W @ 1 m |
| Rated Maximum SPL: | 130 dB, @ 1 m |
| System Nominal Impedance: | 8 Ω |
| System Input Power Rating[2]: | 500 W RMS; 2000 W Peak |
| Recommended Amplifier[3]: | 750 W |
| HF Protection: | Dynamic |
| Crossover: | 1.6 kHz, 12 dB/Octave |

### Transducers

| | |
|---|---|
| Low-Frequency: | 15" (380 mm) woofer with 4" (100 mm) coil |
| Nominal Impedance: | 8 Ω |
| Input Power Rating: | 350 W AES; 1400 W Peak |
| Sensitivity[1]: | 97 dB, 1 W @ 1 m |
| High-Frequency: | 2" (51 mm) throat, 3" (76 mm) coil titanium compression driver assembly |
| Nominal Impedance: | 16 Ω |
| Input Power Rating: | 75 W AES; 300 W Peak |
| Sensitivity[1]: | 107 dB, 1 W @ 1 m |

### Physical

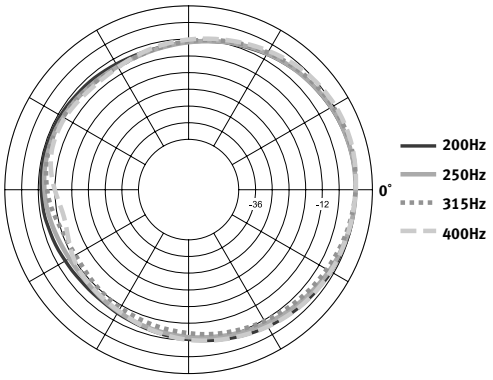
| | |
|---|---|
| Enclosure: | Trapezoidal, 15° back angles, 19 mm multilayered birch |
| Rigging Inserts: | 12 points; accepts M10 threaded hardware, 3 eyebolts provided |
| Color: | Black, scratch resistant paint |
| Grille: | Custom perforated steel grille with open-cell poly fiber backing |
| Input Connectors: | Speakon® NL4 |
| Dimensions (HxWxD): | 29.85" x 19.90" x 18" (758 mm x 505 mm x 455 mm) |
| Net Weight: | 96.8lb. (44 kg) |

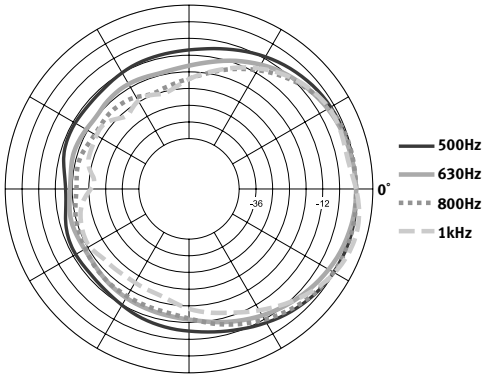
### Options

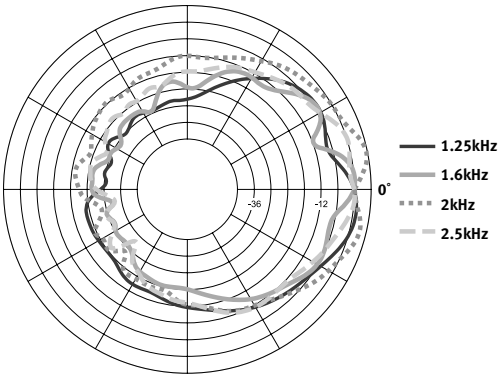
| | |
|---|---|
| PA-A1 | Forged shoulder M10 eyebolt hardware |

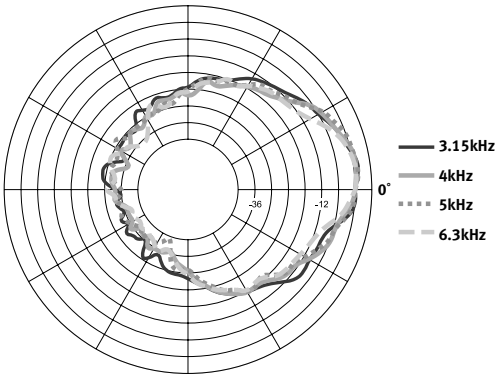
1 Measured on axis in the far field with 1 watt (2.83 V RMS, 8 Ω or 4.0 V RMS, 16 ohms) input and referenced to 1 meter distance using the inverse square law. Listed sound pressure represents an average from 300 Hz to 3 kHz.
2 RMS using 20 Hz to 20 kHz, PN Spectrum, Peak for 2 hours with +6 dB crest factor.
3 Recommended Amplifier is a power capability value that should be taken as a guide.

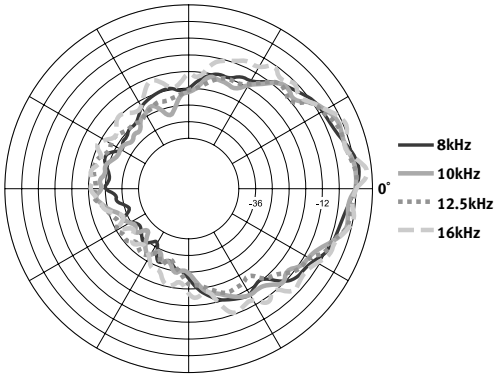
**PA152**
**Vertical Polars**



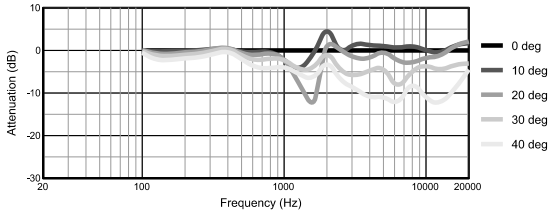



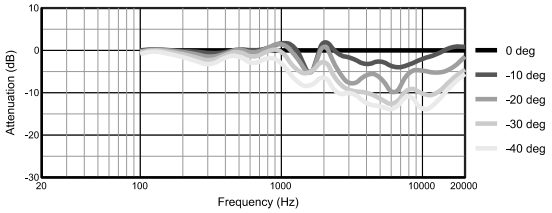



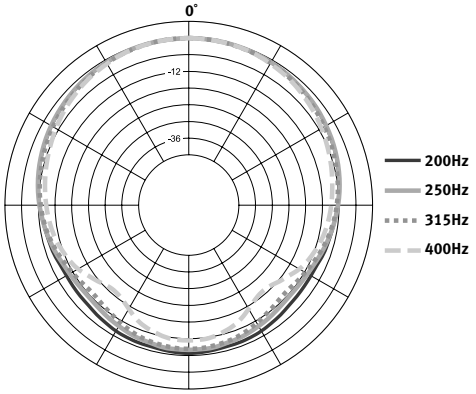

**Vertical Off-Axis Frequency Response (UP)**

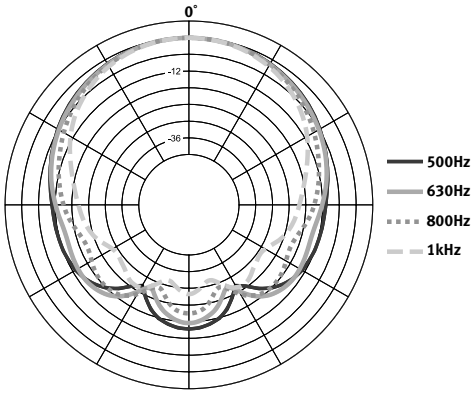


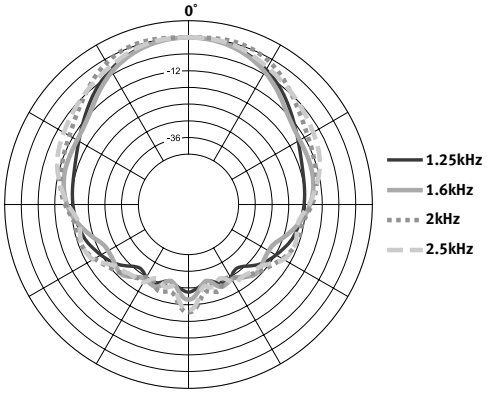

**Vertical Off-Axis Frequency Response (DOWN)**

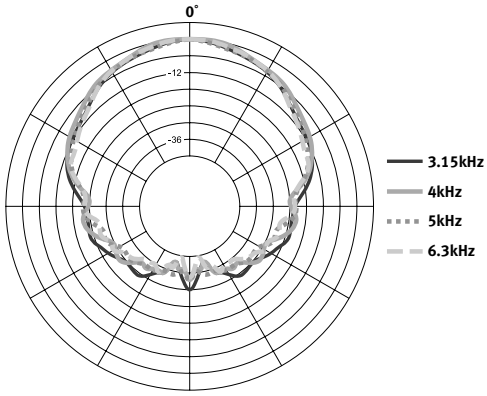


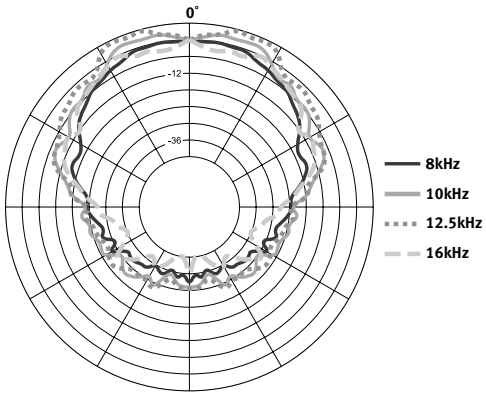
**PA152**
**Horizontal Polars**



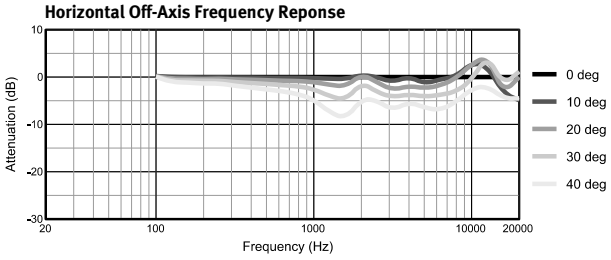




**Horizontal Off-Axis Frequency Reponse**



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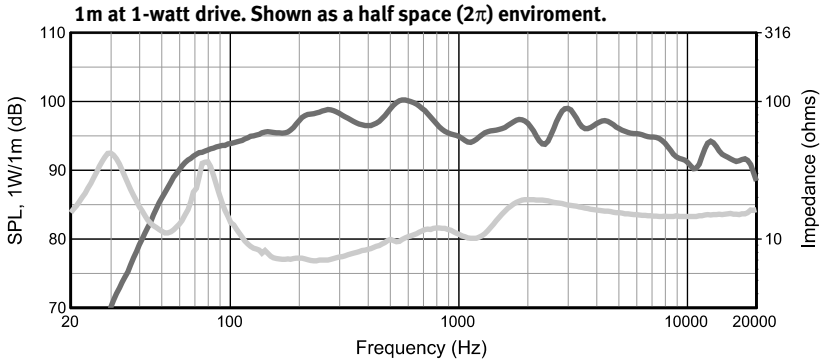
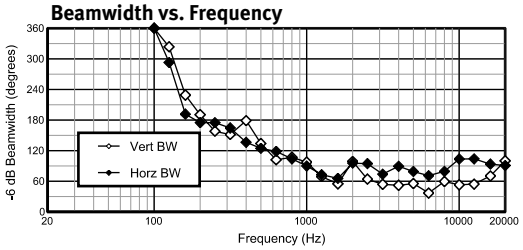
# PA152 Two-Way Speaker System

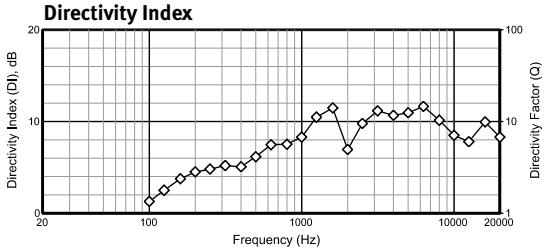
**Frequency response is measured on-axis at a distance referenced back to 1m at 1-watt drive. Shown as a half space (2π) enviroment.**

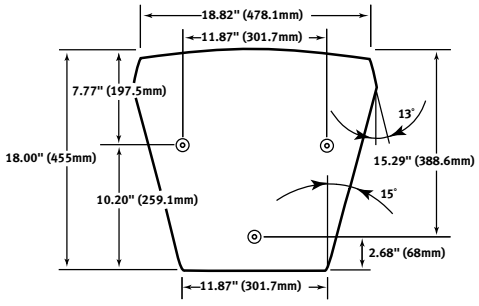



**Beamwidth vs. Frequency**

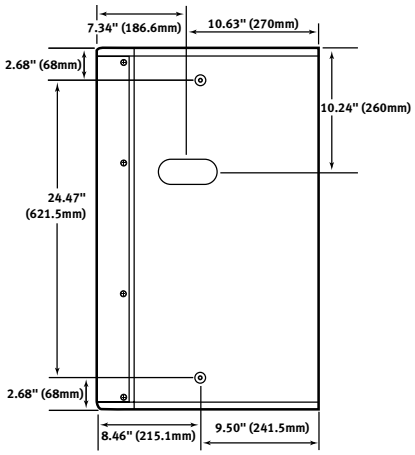



**Directivity Index**

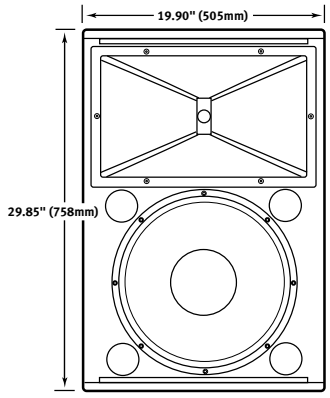


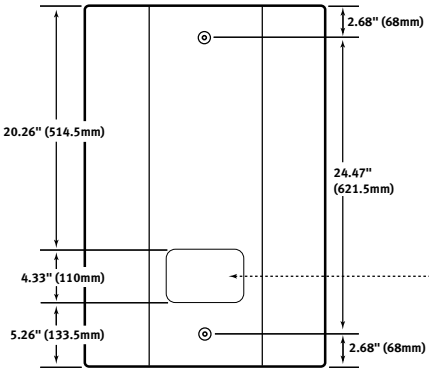

TOP



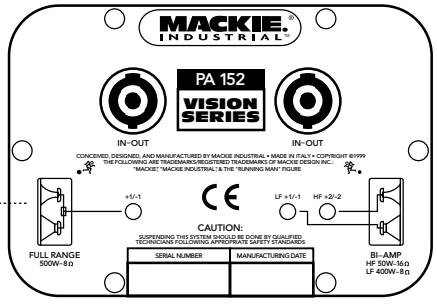

SIDE




FRONT




REAR



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# PA152 Two-Way Speaker System

## Architects' and Engineers' Specifications

The two-way loudspeaker system shall be self-contained and consist of the following components: (1) a 15-inch, low-frequency driver; (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 low-frequency transducer shall be a cone type loudspeaker having a cone diameter of at least 15 inches (380 mm). It shall have a voice coil of at least 4 inches (100 mm) in diameter. It shall present a nominal load impedance of 8 Ω. Sensitivity shall be at least 97 dB when measured at 1 m with an input of 1 Watt and have a power rating of at least 350 Watts (AES), 1400 Watts peak.

The high frequency section shall have a compression driver with a titanium diaphragm of at least 3 inches (76 mm) in diameter. It shall present a constant-impedance load of 16 Ω. It shall be connected to a constant-directivity horn having a throat diameter of at least 2 inch (51 mm) and a nominal coverage pattern of 85° horizontal by 65° vertical. Sensitivity shall be at least 107 dB when measured at 1 m with an input of 1 Watt and the power rating shall be at least 75 Watts (AES), 300 Watts peak.

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 1.6 kHz. The low-pass section of the network shall have minimum inductance in series with the low-frequency driver. 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 Speakon® NL4 connectors.

The enclosure shall be a vented design with an internal volume of at least 3.39 cu. ft. and a vent shall be tuned to 55 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 10 reinforced threaded metal sockets (M10) for attaching mounting hardware, three eye bolts and two hand-carry locations shall also be provided. The overall dimensions of the enclosure shall not exceed 29.85 x 19.9 x 18 inches (758 mm x 505 mm x 455 mm).

The performance of the two-way loudspeaker system shall be as follows: long-term power handling, at least 500 Watts RMS; peak power handling, at least 2000 Watts; frequency response, 70 Hz–20 kHz at –3 dB; maximum SPL, 130 dB (anechoic–1 m); sensitivity, 97 dB SPL (1 W/1 m anechoic); –6 dB coverage, measured average 1 kHz–16 kHz, 85° horizontal by 65° vertical. The two-way loudspeaker system shall be a model PA152 manufactured by Mackie Industrial.

**Electronic files for this product available at:**
**www.mackieindustrial.com**

| This Specification Sheet | PA152.PDF |
|---|---|

MACKIE INDUSTRIAL

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