

# Panaray® MA12EX

## full-range modular line array

# BOSE®

## Key Features

- **Twelve 2.25" (64 mm)** full-range drivers mounted in a vertical line array deliver wide horizontal coverage with narrow vertical pattern control
- **Modular design** allows stacking of multiple enclosures in a line array configuration to provide increased vertical pattern control which improves "throw" distance and reduces unwanted floor/ceiling reflections
- **Articulated Array®** design provides wide 160° horizontal coverage with 20° nominal vertical coverage for a single module. Actual vertical coverage varies with number of modules in line array configuration
- **Frequency range down to 58 Hz** allows full-range speech and light music reinforcement without separate low-frequency loudspeakers. For extended bass and higher output levels, use with Bose MB4, MB12, or MB24 modular bass loudspeakers
- **Optional brackets** allow easy installation of single-, double- or triple-stack line array modules



TECHNICAL DATA SHEET

## Product Overview

The Bose® Panaray® MA12EX is a full-range modular line array loudspeaker designed to provide outstanding vocal intelligibility in acoustically demanding spaces. The slim column enclosure blends with almost any décor. The "EX" version adds an Articulated Array® design to provide wider 160° horizontal coverage and weather-resistant components to allow outdoor applications.

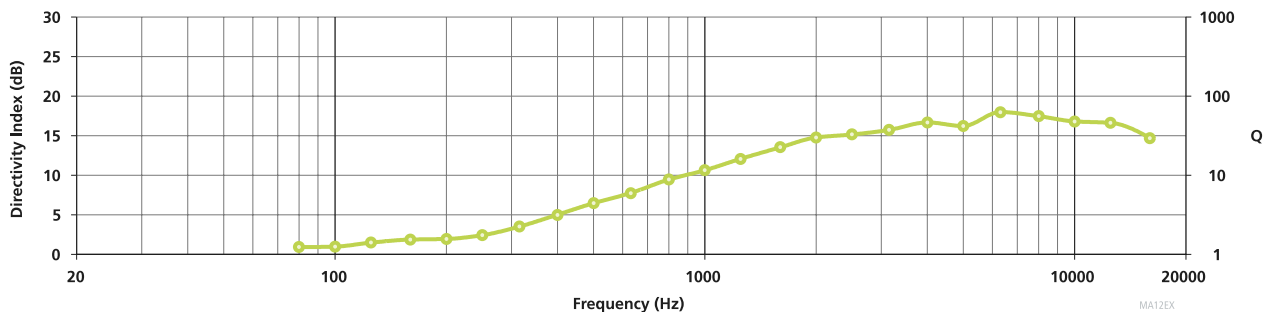
## Technical Specifications

System Performance	
Frequency Response (+/-3 dB) <sup>1</sup>	75 Hz - 13 kHz
Frequency Range (-10 dB) <sup>1</sup>	58 Hz - 16 kHz
Nominal Dispersion <sup>2</sup>	160° H x 20° V
Recommended High-Pass Filter	65 Hz
Loudspeaker EQ	Required
Overload Protection	PTC / Lamp
Long-Term Power Handling <sup>3, 4</sup>	150 W (600 W peak)
Sensitivity (SPL / 1 W @ 1 m) <sup>5</sup>	87 dB SPL
Maximum SPL @ 1 m <sup>6</sup>	109 dB SPL (115 dB SPL peak)
Nominal Impedance	8 Ω
Transformer Taps (70/100 V)	CVT-MA12EX transformer available
Transducers	
Driver Complement	Twelve (12) 2.25" (57 mm) high-excursion, weather-resistant drivers
Physical	
Enclosure	Extruded-aluminum sidewalls with zinc-plated steel top and bottom endcaps, all powder coated
Grille	Powder-coated aluminum grille
Environmental	Outdoor per IEC 529 IPX5
Connectors	Two (2) parallel-wired NL4 Neutrik® Speakon® connectors Two (2) two-conductor barrier strips
Suspension / Mounting	Six (6) x M6 threaded inserts (back)
Dimensions	38.8" H x 4.1" W x 5.5" D (985 mm x 104 mm x 139 mm)
Net Weight	21 lb (9.4 kg)
Shipping Weight	23 lb (10.4 kg)
Product Code	
Black	317302-0100
White	317302-0200

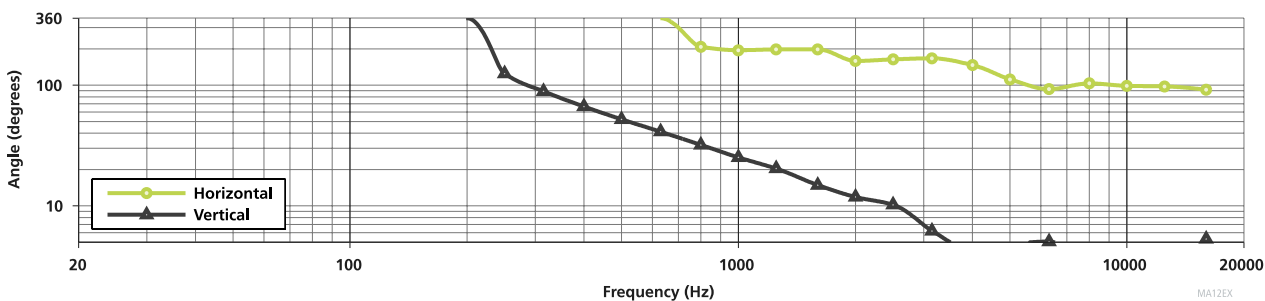
### Footnotes:

- <sup>1</sup> Frequency response and range measured on-axis with recommended active EQ in an anechoic environment.
- <sup>2</sup> Vertical coverage varies by number of modules vertically arrayed and distance from line-source boundary. Use Modeler® software for the best prediction.
- <sup>3</sup> Power handling tested using pink noise filtered to meet IEC 268-5, 6 dB crest factor, 100 hours, with recommended EQ.
- <sup>4</sup> MA12EX PowerHandling. 150W for full-range music and speech applications. Speech-only applications (155 Hz to 12 kHz), power handling (continuous) at 300W/1200W.
- <sup>5</sup> Sensitivity measured in free field (no boundary-loading gain) with recommended active EQ, referenced to 1W/1m.
- <sup>6</sup> Maximum SPL calculated from sensitivity and power handling specifications, exclusive of power compression.

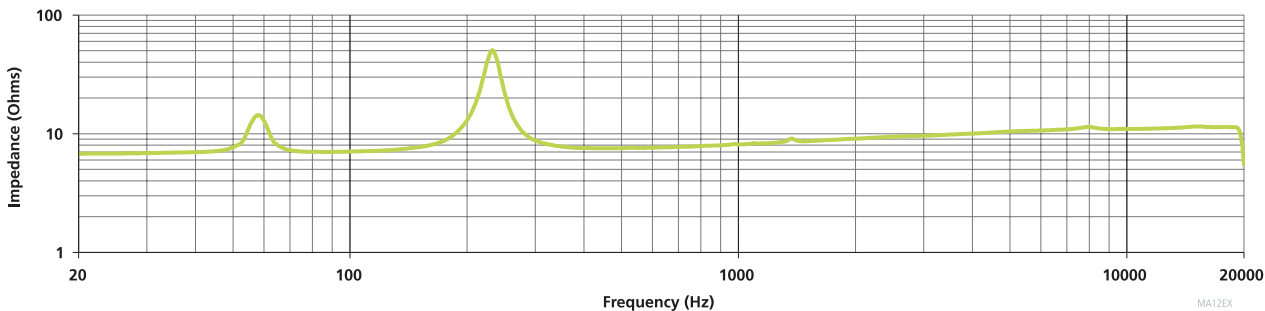
### Directivity Index and Q



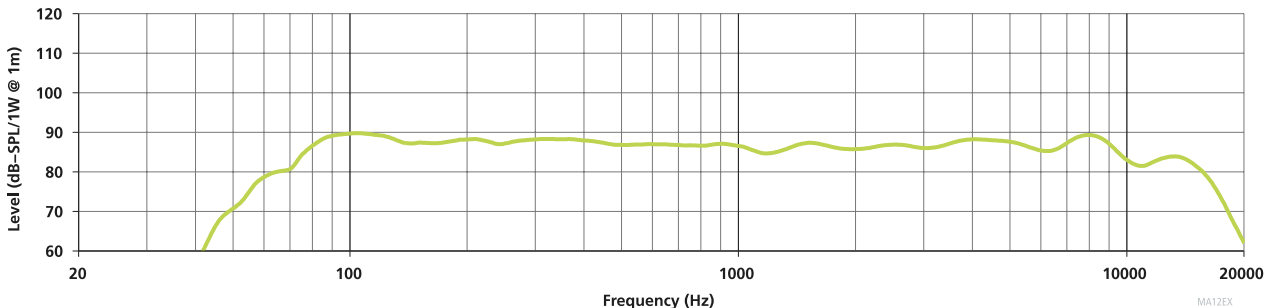
### Beamwidth



### Impedance



### On-Axis Response

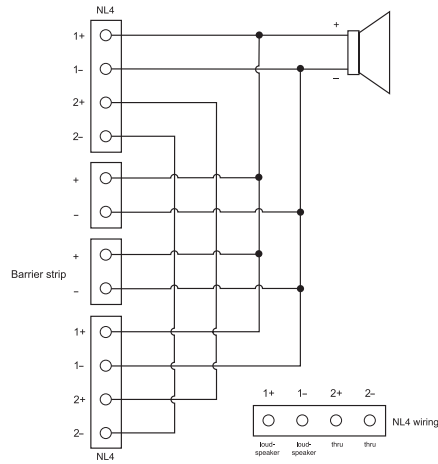


# Panaray<sup>®</sup> MA12EX

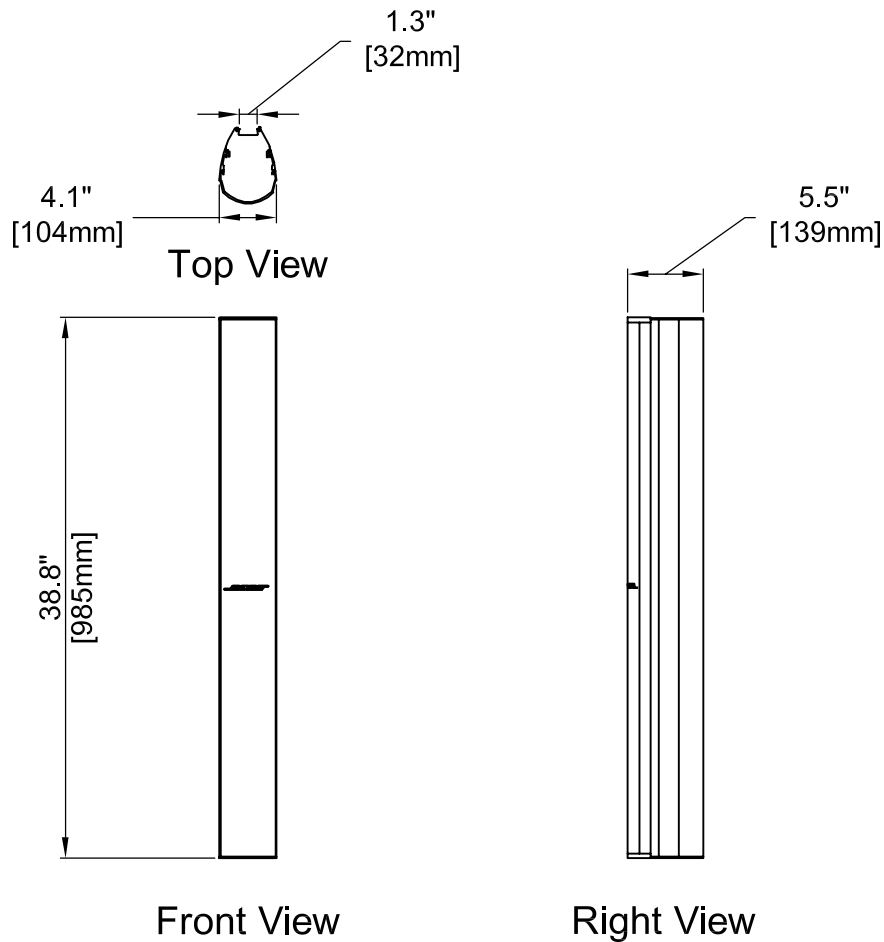
full-range modular line array



## Wiring Diagram



## Mechanical Diagrams



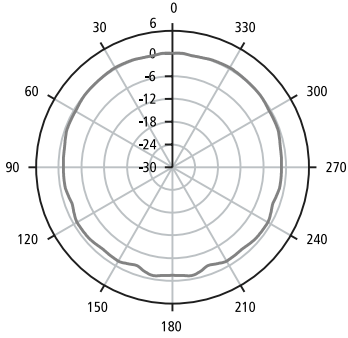
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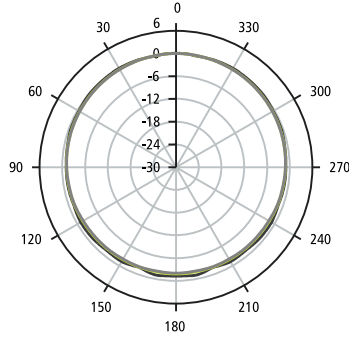
## Horizontal Plots

63 Hz Octave Band



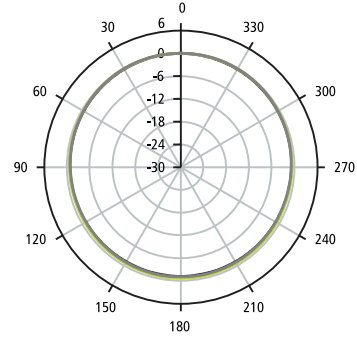
80 Hz

125 Hz Octave Band



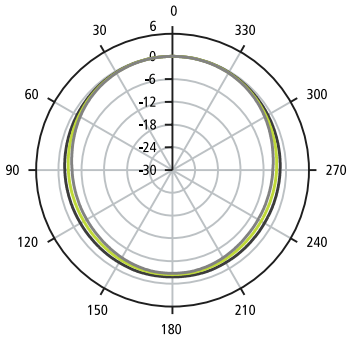
100 Hz  
125 Hz  
160 Hz

250 Hz Octave Band



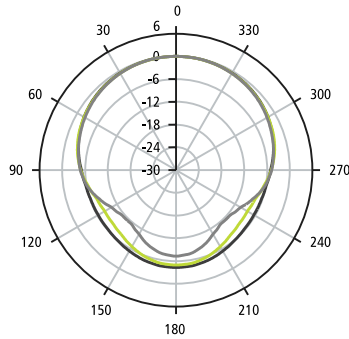
200 Hz  
250 Hz  
315 Hz

500 Hz Octave Band



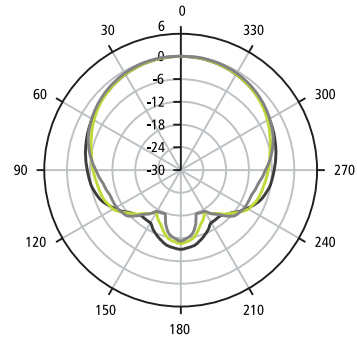
400 Hz  
500 Hz  
630 Hz

1000 Hz Octave Band



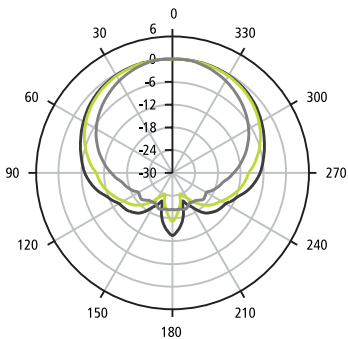
800 Hz  
1000 Hz  
1250 Hz

2000 Hz Octave Band



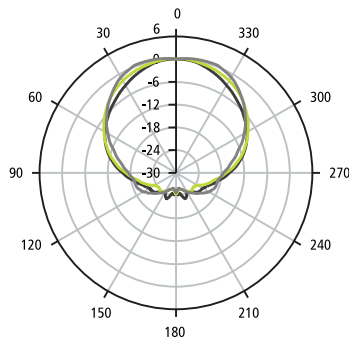
1600 Hz  
2000 Hz  
2500 Hz

4000 Hz Octave Band



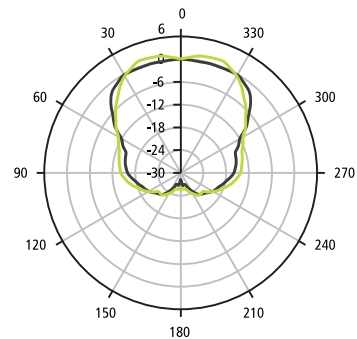
3150 Hz  
4000 Hz  
5000 Hz

8000 Hz Octave Band



6300 Hz  
8000 Hz  
10000 Hz

16000 Hz Octave Band



12500 Hz  
16000 Hz

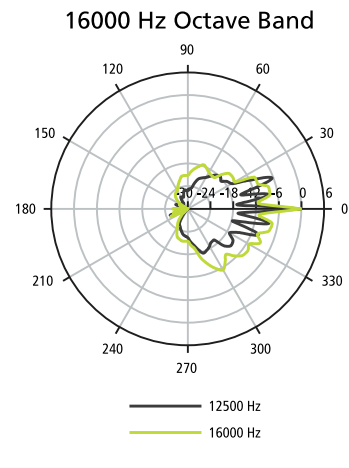
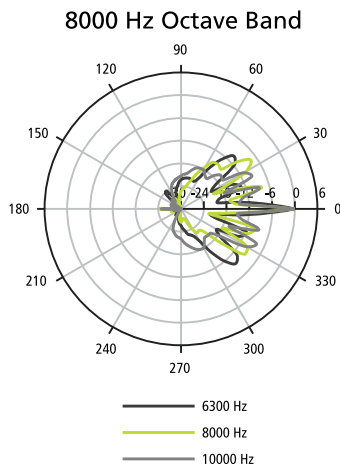
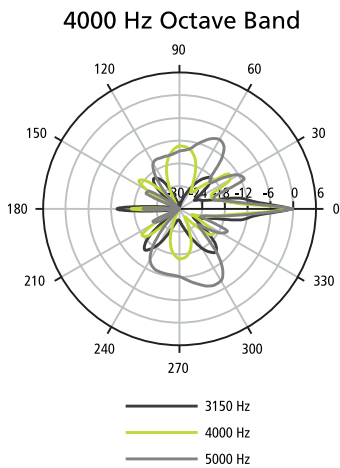
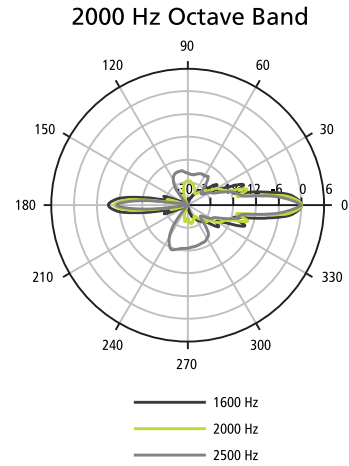
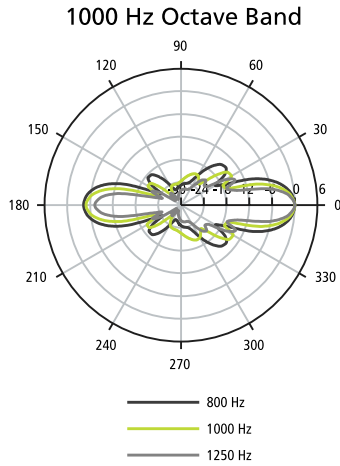
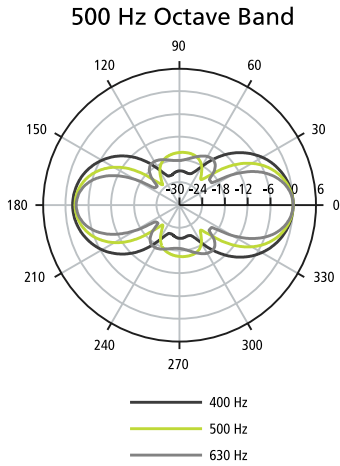
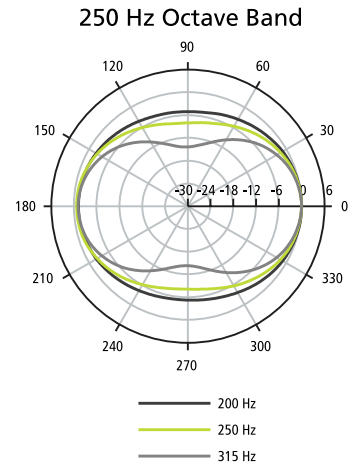
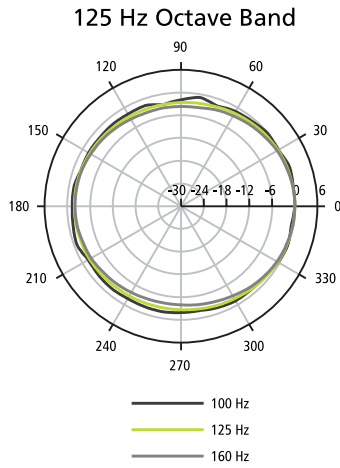
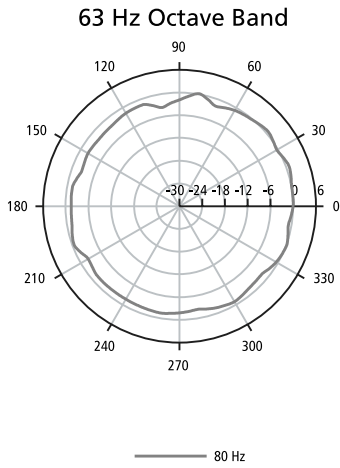
MA1EX2

# Panaray® MA12EX

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## Vertical Plots



MA12EX

# Panaray® MA12EX

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### Architects' and Engineers' Specifications

The loudspeaker shall be a multiple driver, full-range system with matched active equalization as follows:

The transducer complement shall consist of twelve 2.25" (57 mm) high-excursion, weather-resistant drivers mounted in an Articulated Array® loudspeaker design. Each driver shall have a rated impedance of 5 ohms and wired in series/parallel, resulting in a composite nominal impedance of 8 ohms.

The nominal horizontal beamwidth of the loudspeaker shall be 160 degrees, and the vertical coverage is a band of constant height. The power handling capacity of the loudspeaker shall be 150 watts continuous pink noise, band-limited from 75 Hz to 13 kHz ( $\pm 3$  dB).

The loudspeaker shall be provided with a ducted vent system, tuned at 75 Hz. The input connector of the loudspeaker module shall consist of two parallel-wired NL4 Neutrik® Speakon® connectors and two (2) two-conductor barrier strips.

The enclosure of the MA12EX speaker module shall be extruded-aluminum sidewalls with zinc-plated steel top and bottom endcaps, all powder coated. Its outer dimensions shall be 38.8" x 4.1" x 5.5" (985 mm x 104 mm x 139 mm). Its weight shall be 21 lb (9.4 kg).

The loudspeaker shall be the Bose® Panaray® MA12EX modular line array loudspeaker.