



BOSE®

**PANARAY®
MB4 Modular Bass
Loudspeaker**

General Description

The PANARAY MB4 Modular bass loudspeaker is a 200W, low-frequency loudspeaker that can be used for indoor permanent installations and for portable applications. Multiple MB4 speakers can be combined to effectively create a larger single bass source resulting in higher SPL.

The MB4 speaker's output, bandwidth and size make it useful as a single bass unit, or as a modular building block to match other Bose® products in most professional systems.

The MB4 speaker can also be configured using MB4 Endfire or Broadside bass array spacing, described in the MB4 bass array sheet (PC 031395), and the PANARAY system digital controller to create directional bass.

The PANARAY MB4 Modular bass loudspeaker offers the following features:

- Wide frequency range, from 40Hz to 300Hz, which can be easily matched to any Bose professional loudspeaker
- High impact output for dominant bass material
- Rugged portable enclosure with metal grille and carrying handles
- Distinctive styling
- Recessed back plate with two Speakon® NL4 connectors

The MB4 speaker can be used with the Bose PANARAY system digital controller to provide smooth accurate spectral response over the entire operating range of the system.

The MB4 speaker can also be used with the Bose 1600 or 1800 amplifiers in combination with the MB4 plug-in EQ card to provide active equalization for the system.

Technical Information

Frequency Range

40Hz to 300Hz ±3dB

Sensitivity¹

87dB-SPL @ 1W, 1m (pink noise)

Maximum Acoustic Output²

110dB-SPL, @ 1m (pink noise)

Dispersion

Omnidirectional at all frequencies below 200Hz

Long-Term Power Handling³

200W continuous

Impedance

8Ω nominal

Mechanical Specifications

Dimensions:

18.1"D x 10.2"W x 26.7"H

(46 cm x 25.9 cm x 67.8 cm)

Weight: 45 lb (20 kg)

Connectors: Two (2) parallel-wired NL4 connectors

Available colors: White and Black

Enclosure construction: High-density MultiFiber multi-layer wood particle panel with high-impact foamed polypropylene end caps.

MB4 Loudspeaker Combinations

Incremental bass output can be achieved by combining multiple MB4 units in close proximity.

# of PANARAY MB4s	Max Output (dB)
1	110
2	116
3	119
4	122

A single MB4 speaker is well matched in output and bandwidth to one or two PANARAY 402®-II, 502®A or MA12 loudspeakers, providing a full-range solution for distributed or portable systems.

Two or three MB4 speakers are a good match for higher-output loudspeakers, like the PANARAY 802®-III speaker, for engineered or portable systems.

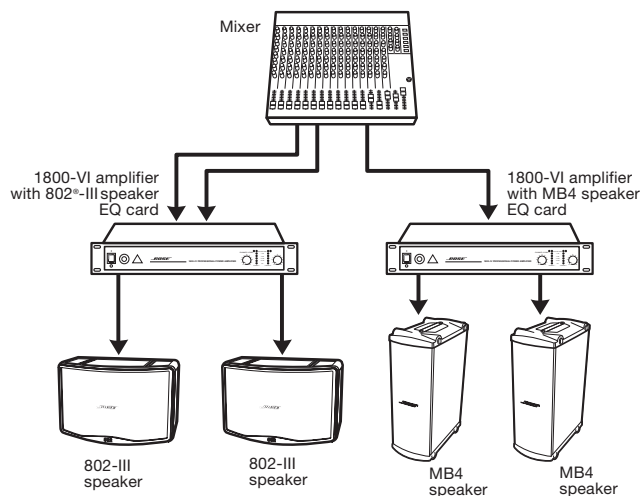
For larger spaces that require even higher SPL, four or more MB4 speakers can be combined with each PANARAY LT series loudspeaker.

¹Band-limited pink noise is applied to the MB4 speaker and amplified to a level at the loudspeaker terminals corresponding to 1 Watt as referenced to the nominal impedance. The average sound pressure level (dB-SPL) is measured at 1 meter from the speaker in an anechoic environment.

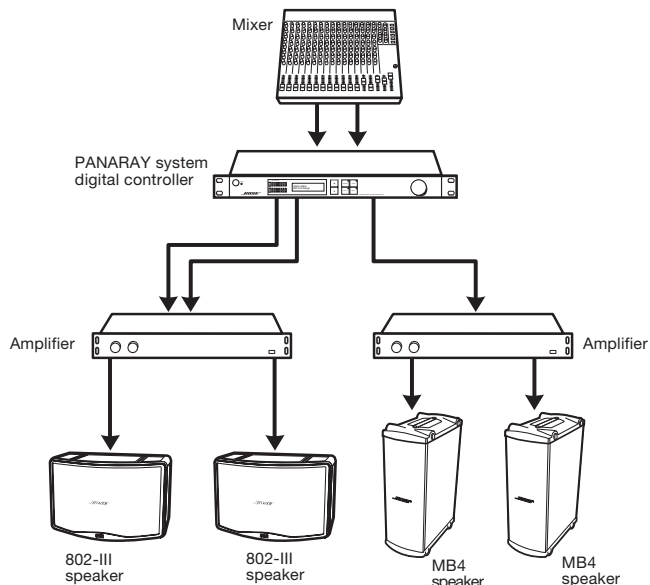
²Band-limited pink noise is applied to the MB4 speaker and amplified to a level at the loudspeaker terminals corresponding to the long-term rated power handling of the speaker. The average sound pressure level (dB-SPL) is measured at 1 meter from the speaker in an anechoic environment.

³Band-limited noise, meeting the IEC Standard #268-5 is applied to the MB4 speaker and amplified to a level at the loudspeaker terminals corresponding to the power handling of the loudspeaker. The loudspeaker must show no visible damage or measurable loss of performance after 100 hours of continuous testing.

Full-Range System with Bose® Amplifiers



Full-Range System with PANARAY® system digital controller



Loudspeaker Configuration

The MB4 Modular bass loudspeaker can be used with the Bose® 1600 and 1800 amplifiers. The MB4 plug-in EQ card must be used with these amplifiers to provide active equalization for the system.

When used with the PANARAY® system digital controller, the MB4 speaker is also compatible with industry standard amplifiers rated for 4Ω to 8Ω loads.

The MB4 speaker is packaged one per carton.

Installation

Installation and user instructions are included with the loudspeaker.

MB4 Modular bass loudspeakers are designed to be wall mounted. They can also be configured as bass arrays, using the MB4 Endfire or Broadside spacing in conjunction with the Bose PANARAY system digital controller.

No stands are required for portable use.

Accessories

The MB4 single-unit wall mount bracket is available from Bose.

Engineers' and Architects' Specifications

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

The transducer complement shall consist of four low-frequency drivers of 5.2" (13.3 cm) diameter, mounted symmetrically in vertical pairs. Each driver shall have rated impedance of 8Ω and shall be wired in series/parallel, resulting in composite nominal impedance of 8Ω.

The loudspeaker system sensitivity shall be 87dB-SPL in the 40Hz to 300Hz frequency range with measurements referenced to 1W (2.85V) pink noise input at 1m. The dispersion shall be omnidirectional at all frequencies below 200Hz. The power handling capacity of the loudspeaker shall be 200W continuous pink noise, band-limited from 40Hz to 300Hz.

The loudspeaker shall be a vented enclosure, tuned at 45Hz. The input connectors of the PANARAY MB4 speaker shall consist of two parallel Speakon® NL4 receptacles.

The enclosure of the MB4 loudspeaker shall be composed of high-density MultiFiber multi-layer wood particle panel with high-impact foamed polypropylene end caps. Its outer dimensions shall be 18.1"D x 10.2"W x 26.7"H (46 cm x 25.9 cm x 67.8 cm). Its weight shall be 45 lb (20 kg).

The loudspeaker shall be the PANARAY MB4 Modular bass loudspeaker.

The loudspeaker system shall be used with a separate system controller, to be connected to the input(s) of the system power amplifier(s), or with an MB4 speaker EQ card, to be installed in a Bose 1600 or 1800 amplifier.

The PANARAY system digital controller shall provide active electronic equalization and crossover functions.

Safety and Regulatory Compliance

All versions of the PANARAY MB4 Modular bass loudspeakers comply with ANSI/EIA 636, Recommended Loudspeaker Safety Practices and EMC Directive 89/336/EEC and Article 10 (1) of the Directive in compliance with EN50081-1, EN 50082-1, as signified by the CE mark.

Warranty Information

All versions of the Bose PANARAY MB4 Modular bass loudspeakers are covered by a 5-year, transferable limited warranty.

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