

TECHNICAL SPECIFICATIONS

MLA3-2i

Product Group: Installation Class
System Type: Three-way Line Array

FEATURES AND ADVANCES

- Enclosure and Rigging Engineered for Seamless Vertical Coverage
- Symmetric Box Design with 90° Horizontal Coverage
- High Power Handling McCauley 8232 12" Low-Mid Drivers
- Versatile Integrated Rigging
- Extreme Waterproofing

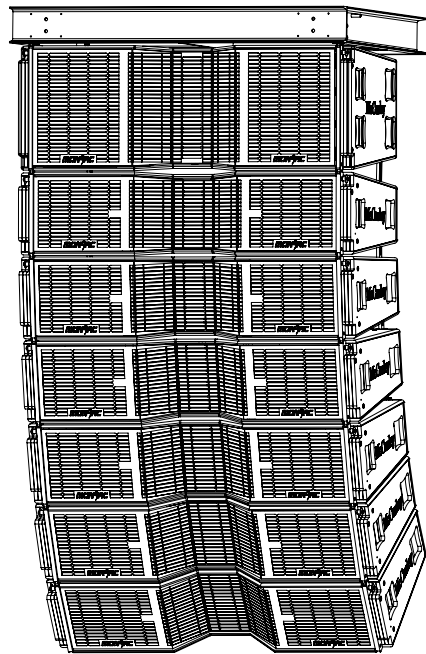
PRODUCT DESCRIPTION

The MLA3-2i is a 3-way, axisymmetric large format line array system designed specifically for permanent installation. The system is engineered to deliver high definition, high SPL sound reinforcement for a broad range of applications, including concert halls, stadiums, and large clubs.

Each MLA3-2i line array cabinet features two manifold loaded 12" McCauley 8232 Low-Mid drivers, two 77087 8" Midrange Drivers and two 1.0" exit compression drivers on a 90° x 10° slot-loaded wave guide.

The McCauley 8232 Low-Mid driver is built around a new field serviceable motor with integrated aluminum heat sink. The new motor design has a thinner, 0.3" top plate and longer 0.9" by 4.0" diameter aluminum coil which improves the linearity of the BL vs. displacement profile. The 8232 Low-Mid driver features a hybrid composite-paper cone which balances light weight and high stiffness, to improve overall sensitivity, with the internal damping that is inherent to paper cone loudspeakers.

The coupling of the cone drivers and high frequency waveguide has been specially engineered to produce a rich and fully balanced sound from 40 Hz to 18 kHz. The 8232 12" low-mid drivers are manifold loaded to improve the sensitivity over their operating band and increase array density. The 77087 8" midrange drivers are phase plug loaded to match the pattern of the HF around the crossover frequency and reduce cabinet to cabinet interferences. The HF slot loaded waveguide is optimized to reduce resonances which would require DSP equalization. The sensitivity of each component has been specifically engineered for the MLA3-2i to allow for the extra HF headroom which is often required in longer throw applications.



CONSTRUCTION

The enclosure is constructed from 18mm 13-ply void-free birch plywood and is coated with a weather and wear resistant ProCoat™ polyurea hybrid finish. All rigging components are weather protected with a heat cured epoxy powder coat finish. Components in the front of the enclosure are protected by a fitted grill made from perforated steel that is coated with heat cured epoxy powder, and lined with acoustically transparent foam. Cam-Lock quick release fasteners allow easy access to the loudspeakers with only a screw driver.

The MLA3-2i enclosure is available with an Extreme Weatherproof option. All wood products are treated with a waterproof conformal coating. All loudspeaker drivers are made with water resistant adhesives and all soft parts impregnated with a proprietary silicone based compound. The grill and jack panel are manufactured from stainless steel and the standard NL8 connectors are replaced by a water-tight gland nut with AWG 12-8 SOOW or higher grade pigtail.

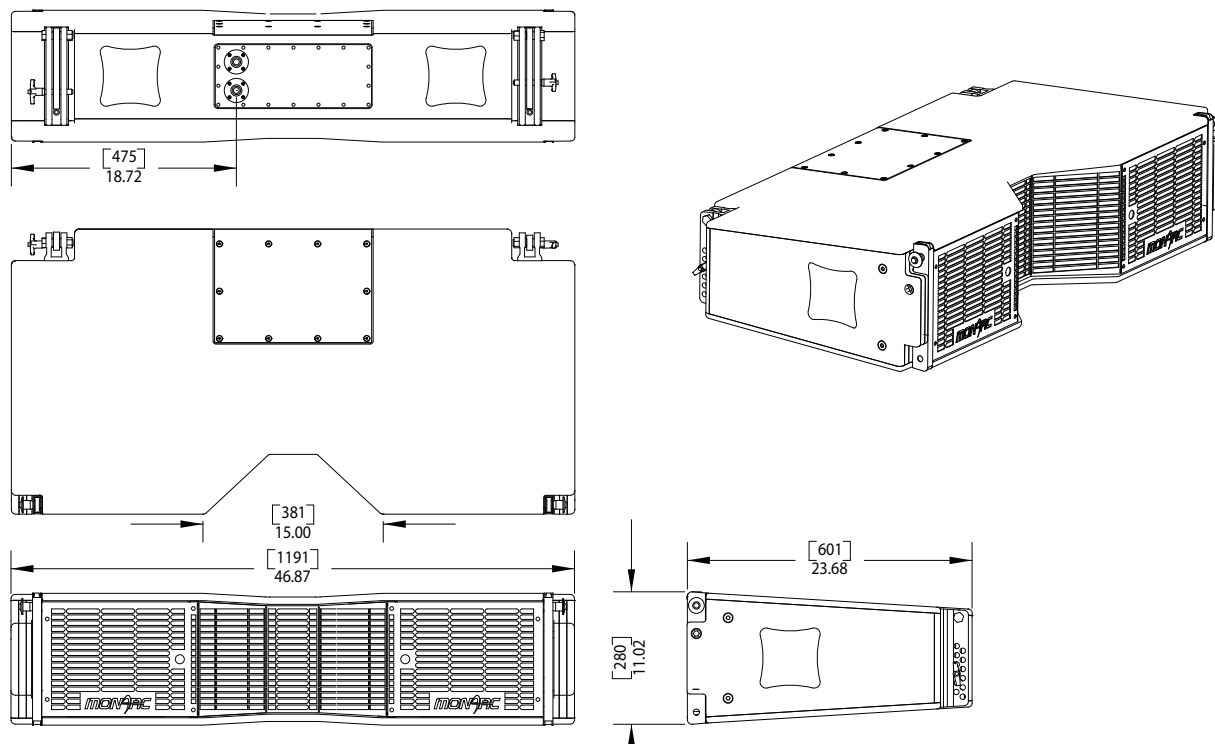
PERFORMANCE PARAMETERS

MLA3-2i	Three-way Line Array
Frequency Response	
-10dB	35Hz - 20kHz
+/- 3dB	40Hz - 18kHz
Sensitivity	
LF	100dB SPL @ 4Ω / 2.0V / 1m
MF	100dB SPL @ 8Ω / 2.83V / 1m
HF	108dB SPL @ 8Ω / 2.83V / 1m
Continuous SPL	
LF	133dB average
MF	129dB average
HF	132dB average
Power Ratings	
LF - AES	1000w @ 4Ω
MF - AES	400w @ 8Ω
HF - AES	140w @ 8Ω
MS3-2i	Arrayable Quad 15" Subwoofer
Frequency Response	40Hz - 250Hz
Sensitivity	106dB SPL @ 2 x 4Ω / 2.0V / 1m
Continuous SPL	141dB average
Power Rating - AES	3200w @ 2x4Ω

PHYSICAL PROPERTIES

Weight	
MLA3-2i	135lb / 61.2kg
MS3-2i	215lb / 97.5kg
Dimensions	
MLA3-2i	11.0H x 46.9W x 24.6D (in) / 278H x 1190W x 625D (mm)
MS3-2i	22.5H x 46.9W x 30.5D (in) / 571H x 1190W x 775D (mm)
Enclosure Material	5/8" multi-ply Birch Laminate
Suspension	Integrated Rigging
Finish	Procoat™ Polyurea-Hybrid Weatherproofing (Black is standard, White and / or Custom Colors Available)
Transducers	
MLA3-2i	
LF	(2) 8232 12" Transducers, 4" Dual Voice Coil
MF	(2) 77087 8" Transducers, 2" Dual Voice Coil
HF	(2) 77069 2.0" Diaphragm Compression Drivers, 1.0" Exit
MS3-2i	
LF	(4) 8241 15" Transducers, 4" Dual Voice Coil
Connectors	Neutrik™ Speakon NL8, Terminal Strips (4)
Rigging Accessories	
	MB31i (Rigging Frame For MLA3-2i)
	MB32i (Rigging Frame for MS3-2i)

DIMENSIONAL ILLUSTRATIONS



ARCHITECTS AND ENGINEERS SPECIFICATIONS

Each, three-way, full range line array element shall incorporate two (2), McCauley 8232 12" (305mm) diameter, 4" (102mm) dual voice coil Low-Mid transducers, two (2), McCauley 77087 8" (203mm), 2" (51mm) dual voice coil Midrange transducers, and two (2), McCauley 77069 2.0" (51mm) diaphragm, 1.0" (25.4mm) exit, HF compression drivers.

The high frequency transducers shall feed a high gain, slot loaded, waveguide optimized to reduce resonance modes. The waveguide shall be coupled to a combined midrange phase-plug and horn mouth assembly engineered such that the directivity is matched at the crossover frequency. The -6dB pattern when measured at 4m shall be 90° x 10°. The total vertical coverage pattern of an array will vary with the number of enclosures and curvature selected.

The 77087 8" Midrange transducers shall be mounted individually in a sealed chamber of such volume to have maximally flat output in their operating band from 250Hz – 1500Hz. The 77087 transducers shall be phase plug loaded to increase sensitivity and to match the directivity of the HF section in the crossover band. The 8232 12" Low-Mid transducers shall be mounted individually in a ported chamber tuned for a maximally flat output when a minimum of six (6) enclosures are used in an array. The 8232 transducers shall be manifold loaded to increase sensitivity in their operating band from 35Hz – 250Hz.

The unprocessed system frequency response shall vary no more than ± 3 dB from 40 Hz to 18 kHz measured on axis. The low-mid section shall produce a Sound Pressure Level (SPL) of 100dB SPL at a distance of 1 meter with an electrical input of 2V (measured at 60Hz), and shall be capable of producing an average output of 133 dB SPL on axis at 1 meter. The midrange section shall produce an SPL of 100 dB SPL on axis at 1 meter with an electrical input of 2.83V (measured at 1000Hz), and shall be capable of producing an average output of 129 dB SPL on axis at 1 meter. The high frequency section shall produce an SPL of 108 dB SPL on axis at 1 meter with an electrical input of 2.83V (measured at 4000Hz), and shall be capable of producing average output of 132 dB SPL on axis at 1 meter.

The low-mid section shall have a power rating of 1000W (per AES Standard AES2-2012) and shall have a nominal impedance of 4 Ω inside the operating band. The midrange section shall have a power rating of 400W and a nominal impedance of 8 Ω inside the operating band. The high frequency section shall have a power rating of 140W and a nominal impedance of 8 Ω inside the operating band.

The loudspeaker enclosure shall have a maximum weight of 135 lbs. (61.2 kg) and shall measure 11.0 in. (278mm) high at the front, 46.9 in. (1190mm) in width, and 24.6 in. (625mm) in depth. The enclosure top and bottom shall taper at 5° from a maximum frontal height, narrowing in the vertical plane toward the rear. The enclosure shall be constructed of multi-ply void-free birch hardwood plywood and shall have a weather and wear resistant ProCoat™ polyuria hybrid finish. Components in the front of the enclosure are to be protected by a compound-curved grill made from perforated steel that is coated with heat cured epoxy powder, and lined with acoustically transparent foam.

Input connectors shall be two locking Neutrik NL8 wired in parallel with 12 AWG wire. The connectors shall have a contact resistance of less than 3 m Ω , insulation rating of at least 250 Vrms, and rated continuous current rating of 30 A per contact. The lifetime of the connectors shall be at least 5000 mating cycles. The connectors shall meet or exceed UL 94 HB flammability standards. Pins 1+, 1-, and 2+, 2- shall be wired to Low-Mid section. Pins 3+, 3- shall be wired to the MF section, and Pins 4+, 4- shall be wired to the HF section.

The three-way full range line array element shall be the McCauley Sound MLA3-2i.