

MLA

Multi-Cellular Loudspeaker Array



Features

- Numerically optimised, fully integrated, touring sound system
- Compact size and inherent scalability provide ideal “one-box” solution across rental markets
- Cellular array format with built-in amplification, DSP and digital networking
- 6 dedicated Class D amplifier channels per enclosure for individual powering and DSP control of individual cells
- Industry leading DISPLAY2™ intelligent software interacts with onboard DSP for highly accurate array optimisation. Eliminates trial-and-error array preset library approximations
- “Fly-by-wire” software adjusts vertical coverage electronically to cope with changing environmental conditions and last-minute changes in rigging height
- Switched mode power supply with PFC (Power Factor Correction) and global mains voltage operation
- Three-way all-horn design delivers LF/MF/HF peak SPL's of 140/139/145dB @ 1m from a single, compact enclosure
- Fast, integral flying system for suspension of up to 24 enclosures
- True 90° (-6dB) horizontal constant directivity, mid and high frequency pattern control. Consistent and usable out to 120° (-10dB)
- 60Hz–18kHz $\pm$ 3dB full bandwidth frequency response

Benefits

- Unprecedented, even, house-curve balance achieved right from power-up
- Intelligent numerical optimisation software eliminates trial and error in system set-up
- Improved venue-to-venue, gig-to-gig consistency and repeatability
- Artistic changes to balance at the mix position or elsewhere translate directly and accurately throughout the audience
- Exceptionally high power density means tighter truck-pack for higher SPL compared to other systems
- “Greener” audio power via PFC (Power Factor Correction)

Applications

- Large-scale touring sound reinforcement for outdoor festivals, stadia, arenas and concert halls
- Premium fixed installations in concert halls, theatres and sports



Martin Audio's revolutionary award-winning Multi-cellular Loudspeaker Array [MLA] technology is reinventing the way loudspeaker arrays are configured and controlled.

With it has come an unsurpassed control of sound with pristine fidelity and huge output capability — bringing the FOH engineer and the audience together in a more powerful, involving experience.

In its simplest terms each MLA Array has up to 144 individual acoustic elements [cells], each with its own onboard amplifier and DSP, which can be optimised by software to deliver the sound across the audience to meet the sonic goals required for any space.

It remains the only system on the market to allow multiple sonic goals to be prioritised and optimised accordingly. For example, not only can MLA generate an even sound field over the audience, it can contain it as well — significantly reducing the influence of the room.

‘Hard avoid’ areas - such as behind and below the array, ceilings, balcony edges and beyond the venue perimeter - can also be programmed in. Vertical coverage can even be fine-tuned electronically in-situ to cope with changing environmental conditions and last-minute changes in rigging height, without having to re-rig.

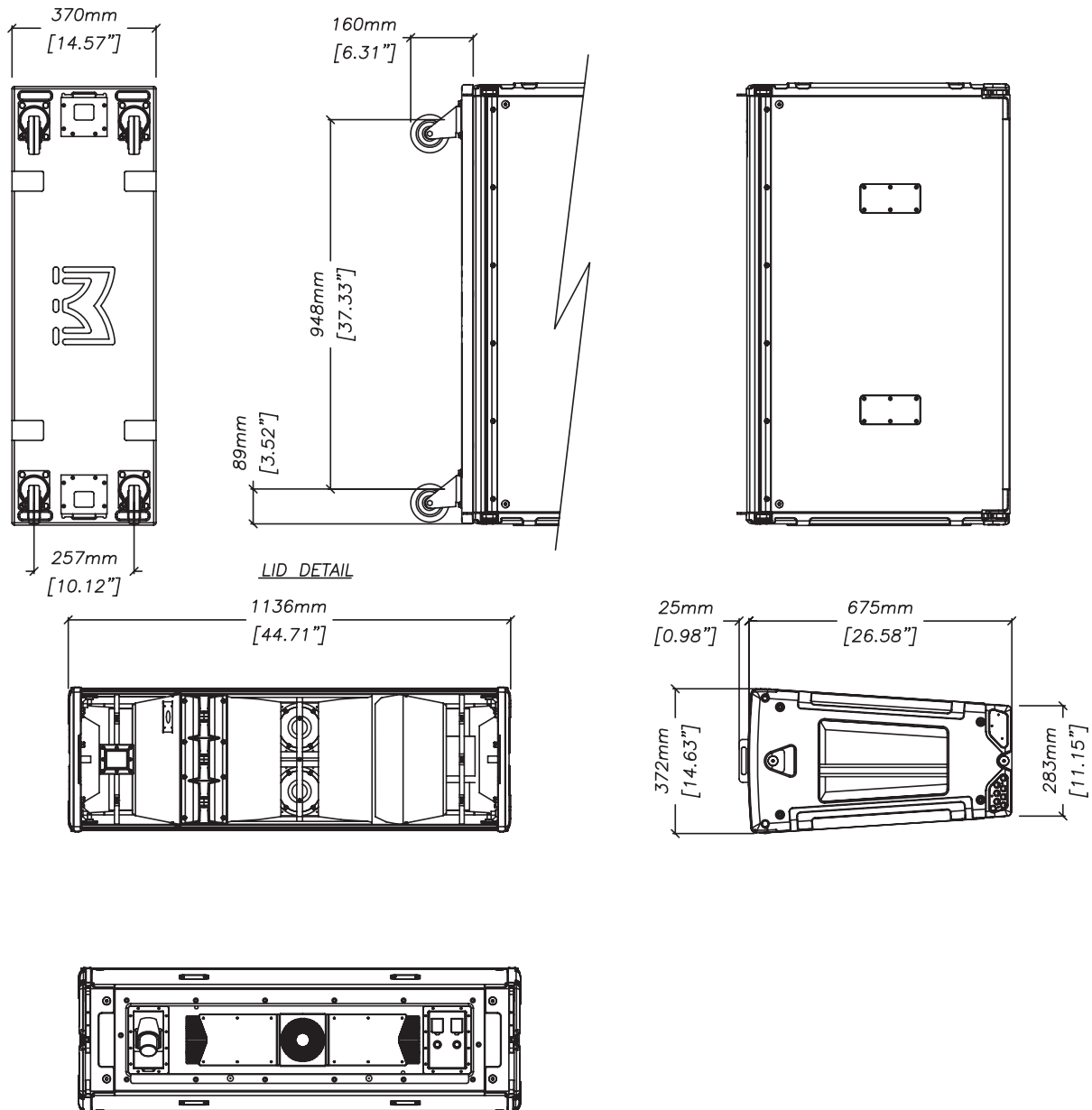
With incredibly easy-to-use and highly accurate predictive software [DISPLAY] doing all the grunt work with the system, the FOH engineer retains full artistic control and can enjoy mixing the show in the full knowledge that the sound created at the mix position will be heard everywhere throughout the audience.

Such is the confidence that MLA can bring, that significantly less time is spent setting up the system and even less time is spent walking the room.

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Multi-Cellular Loudspeaker Array

Technical Drawing



MLA

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Technical Specifications

Acoustical

TYPE	Three-way cellular drive, active array element
FREQUENCY RESPONSE (1)	52Hz-18kHz $\pm$ 3dB
MAXIMUM SPL @ 1m	LF: 133dB continuous, 139dB peak (3) MF: 134dB continuous, 140dB peak (4) HF: 139dB continuous, 145dB peak (4)

Drivers

LF: 2 x 12" (300mm)/3" (75mm) voice coil, ultra-long excursion, neodymium magnet drivers, Hybrid® bass horn loaded
MF: 2 x 6.5" (165mm)/2" (50mm) coil, neodymium magnet drivers, horn loaded
HF: 3 x 1" (25mm) exit neodymium magnet compression drivers, horn loaded

Rated Power (2)

LF: 800W AES, 3200W peak
MF: 400W AES, 1600W peak
HF: 150W AES, 600W peak

Dispersion

(-6dB) 90° horizontal
(-10dB) 120° horizontal
7.5° vertical

Crossover Frequencies

320Hz: 8th-order Linkwitz-Riley
4kHz: Vanishing Point™ FIR filters

Audio input

CONNECTORS	Female XLR input, male XLR link output
ANALOGUE INPUT IMPEDANCE	20k Ω balanced to ground
MAXIMUM ANALOGUE INPUT LEVEL	6.15Vrms (+18dBu), over voltage protected
NOMINAL SYSTEM GAIN	28.5dB
AES/EBU IMPEDANCE	110 Ohms balanced, Receive and transmit termination

Network

CONNECTORS	2x IP68 rated 8-way, quick-release type
PROTOCOL	U-NET

Amplifier Module

TYPE	Six channel Class D, fixed frequency
PEAK OUTPUT POWER	6000W
AVERAGE EFFICIENCY	75%
COOLING	4 x temperature controlled internal fans 1 x low-speed internal blower 1 x temperature controlled external fan
MAXIMUM AMBIENT TEMPERATURE	45°C (113°F) for full output

Power Supply

TYPE	Switch mode, fixed frequency with PFC
AC INPUT OPERATING RANGE	100 – 240V ~ AC, 50 - 60Hz

POWER FACTOR	> 0.95
NOMINAL POWER CONSUMPTION	900W
MAINS CONNECTOR	16A IEC309 (Ceeform) – IP44 rated

General

ENCLOSURE	Vertical trapezoid with 3.75° wall angle, multi-laminate birch and poplar-ply construction
FINISH	Textured black PU coating
PROTECTIVE GRILLE	Black HEX perforated steel
FITTINGS	Proprietary rigging system Bar handles on each side Protective rubber side-cheeks incorporating skids Wheel-board Transit cover Weather Protection Cowl
IP RATING	IP 24
DIMENSIONS (inc. wheel-board)	(W) 1136mm x (H) 372mm (376mm) x (D) 675mm (825mm) (W) 44.7in x (H) 14.6in (14.8in) x (D) 26.5in (32.4in)
WEIGHT (ex. wheel-board)	87.5kg (193lbs)

Accessories

- Flying frame (including clinometer)
- Ground stacking bar
- Flying Pin
- Mains distribution system
- Tour-grade network interconnects
- U-Hub/DX4.0 Controller/U-NET Hub

Notes

- (1) Measured on-axis in open (4p) space at 4 metres, then referred to 1 metre.
- (2) AES Standard ANSI S4.26-1984.
- (3) Measured in half-space at 1 metre with a tone burst signal, then referred back to open (4p) space.
- (4) Calculated from 4m 2.83v sensitivity, referred to 1m.

Trade Descriptions Act

Due to Martin Audio's policy of continuing improvement, we reserve the right to alter these specifications without prior notice. Martin Audio is committed to refining state of the art sound reinforcement, combining in-depth product and field applications research with advanced manufacturing techniques. Every Martin Audio product is built to the highest manufacturing standards and rigorously tested to ensure that it meets the performance criteria specified in the design.