MINA™ : Compact Curvilinear Array Loudspeaker

thinking sound Meyer Sound

The MINA™ compact curvilinear array loudspeaker is the smallest member of the industry-leading MILO® family of loudspeakers from Meyer Sound. Measuring just over a foot and a half wide (half a meter) and weighing only 41.2 lbs (18.69 kg), MINA is ideal for use in low-profile, high-power curvilinear array systems and an excellent choice for small theatres, theme parks, houses of worship, AV systems, and any venue where size and weight are concerns and exceptional fidelity a requirement.

Delivering the same signature MILO sound characterized by extended high-frequency response and an even wider 100-degree horizontal coverage, MINA was conceived for small footprint, high-power curvilinear arrays. Configurations of eight or more cabinets can comfortably cover up to 130 feet (40 m) and are an excellent compact solution for applications not requiring the power of larger systems comprised of M'elodies® and MICAs®. A myriad of MINA array configurations are possible to suit each venue's needs, with additional cabinets and adjustable splay angles able to contour the system's high-frequency vertical coverage and low-frequency directivity. Entire MINA systems can be designed with Meyer Sound's MAPP Online Pro™, effectively anticipating coverage needs.

With its low distortion, flat frequency and phase responses, uniform horizontal coverage, and tight vertical coverage, MINA is also well-equipped for use as a single cabinet, or for use with a small number of cabinets, for applications requiring a precise, high-frequency vertical pattern. Single cabinets and short stacks are ideal for frontfill and under-balcony applications, as well for main systems in small spaces. MINA integrates seamlessly with other members of the MILO family, partnering naturally with M'elodie and MICA.

When used in large arrays, typically as a main loudspeaker system, MINA can be flown with the optional MG-MINA grid. MINA's end plates include captive GuideALinks™ and quick-release pins that allow splay angles between cabinets to be readily adjusted. The end plates also include attachment points for the MYA-MINA mounting yoke and MUB-MINA U-bracket for mounting single cabinets and small numbers of cabinets, typically for fill applications and small main systems.

For most applications, Meyer Sound's 500-HP subwoofer is the logical choice for enhancing low frequencies in MINA loudspeaker systems, offering the same powerful, precise fidelity as MINA. The 500-HP can even be flown or groundstacked with MINA arrays using the optional MTF-M'elodie/MINA transition frame. For applications requiring more low-frequency headroom, Meyer Sound's 600-HP and 700-HP subwoofers are ideally suited for integration with MINA systems.

For portable applications, the optional MCF-MINA caster frame conveniently transports up to five fully rigged units. Durable nylon covers are also available for protecting MINAs during transport.

MINA includes two 6.5-inch cone drivers and one 3-inch compression driver mounted on an acoustical manifold coupled to a low-distortion, 100-degree horizontal, constant directivity horn. The close proximity of the cone drivers to each other, as well as to the high frequency horn, allows them to operate in parallel over their full frequency range to deliver the greatest acoustic output. The optimal driver placement extends MINA's remarkably consistent 100-degree horizontal polar pattern below 500 Hz. The acoustical manifold, based on Meyer Sound's patented REM™ ribbon emulation technology, radiates driver output in a wave front with very low distortion and a focused, well-behaved, narrow dispersion, minimizing destructive high-frequency interactions between cabinets.

The MINA drivers are powered by an extremely efficient onboard three-channel, Class-D amplifier that uses minimal AC power when idle. Signal processing includes a complex crossover, frequency and phase correction, and limiters that ensure maximum driver lifespan. The Intelligent AC™ power supply automatically adjusts for international line voltages, protects against transients, and provides soft turn-on.

The RMS™ remote monitoring system module comes standard on all MILO family loudspeakers and provides comprehensive monitoring of system parameters on a Windows®-based computer.

The MINA enclosure is constructed of premium birch plywood and coated with a black-textured finish. A powder-coated, hex-stamped steel grille with black mesh protects the unit's drivers. Additional options include weather protection and custom color finishes for fixed installations and applications with specific cosmetic requirements.

Features & Benefits

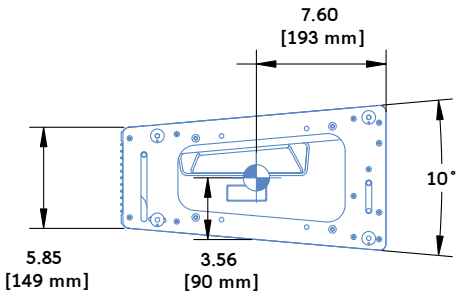
- Small footprint and narrow width ideal for small venues and fill applications
- Exceptional fidelity and transient response for intelligibility and high impact
- High power-to-size ratio
- Wide, even horizontal coverage pattern
- Flexible rigging options
- Seamless integration with M'elodie, MICA, and the 500-HP subwoofer
- QuickFly rigging with captive GuideALinks for flown and ground-stacked arrays, with additional MINAs, or with M'elodies or 500-HPs

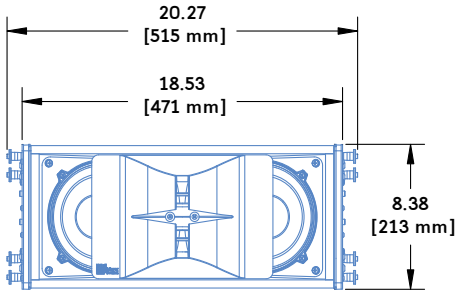
Applications

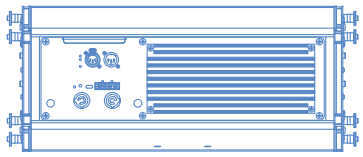
- Small theatres and touring productions
- Houses of worship, ballrooms, and corporate AV
- Theme parks
- Frontfill and under-balcony coverage
- Downfill and sidefill for M'elodie systems; sidefill for MICA systems

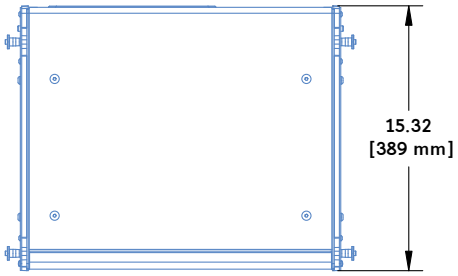
MG-MINA Multipurpose Grid with Array of Eight MINA Cabinets

Loudspeakers linked with captive GuideALinks and quick-release pins. Splay angles of 0.0, 0.5, and 1–11 degrees (in 1-degree increments) supported for flexible array configurations.









Dimensions	20.27" w x 8.38" h x 15.32" d with rigging pins (515 mm x 213 mm x 389 mm)
Weight	41.2 lbs (18.69 kg)
Enclosure	Premium birch plywood
Finish	Black textured
Protective Grille	Powder-coated, hex-stamped steel with black mesh
QuickFly Rigging	End frames with four captive GuideALinks, secured with 0.25" x 0.53" quick-release pins; metric M6 attachment points for optional MYA-MINA mounting yoke and MUB-MINA U-bracket

Architect Specifications

The loudspeaker shall be a self-powered, full-range unit for deployment in line array systems. The low-frequency transducers shall include two 6.5-inch cone drivers. The high-frequency transducer shall be a single 3-inch diaphragm, 1.2-inch exit compression driver and mounted on a custom manifold coupled to a 100-degree horizontal constant-directivity horn.

The loudspeaker shall incorporate internal processing and a three-channel amplifier. Processing functions shall include equalization, phase correction, driver protection, and signal division for the three frequency sections. The crossover point shall be 760 Hz. Each amplifier channel shall be Class D. Burst capability shall be 975 watts total (1950 watts peak) with two channels at 375 watts each into a nominal 4-ohm load for the low-frequency drivers and one channel at 225 watts into a nominal 8-ohm load for the high-frequency driver. Distortion (THD, IM, TIM) shall not exceed 0.02%.

The audio input shall be electronically balanced with a 10 kOhm impedance and accept a nominal 0 dBV (1.0 V rms, 1.4 V peak) signal. Connectors shall be XLR (A-3) type male and female. RF filtering shall be provided. CMRR shall be greater than 50 dB (typically 80 dB, 50 Hz – 500 Hz).

Performance specifications for a typical production unit shall be as follows, measured at 1/3-octave resolution: operating frequency range shall be 66 Hz to 18 kHz; phase response shall be ±30° from 1 kHz to 18 kHz; maximum peak SPL shall be 128 dB at 1 meter. Beamwidth shall be 100 degrees horizontal. Vertical coverage for multi-cabinet arrays shall depend on system configuration.

The internal power supply shall perform automatic voltage selection, EMI filtering, soft current turn-on, and surge suppression. Power requirements shall be nominal 100, 110, or 230 V AC line current at 50 or 60 Hz. UL and CE operating voltage range shall be 100 to 240 V AC. Maximum long-term continuous current draw (<10 sec) shall be 1.26 A rms at 115 V AC, 0.66 A rms at 230 V AC, and 1.50 A rms at 100 V AC. Current inrush during soft turn-on shall not exceed 16.8 A rms at 115 V AC, 20.0 A rms at 230 V AC, and 15.0 A rms at 100 V AC. AC power connectors shall be PowerCon with loop output. The loudspeaker system shall include the RMS remote monitoring system module.

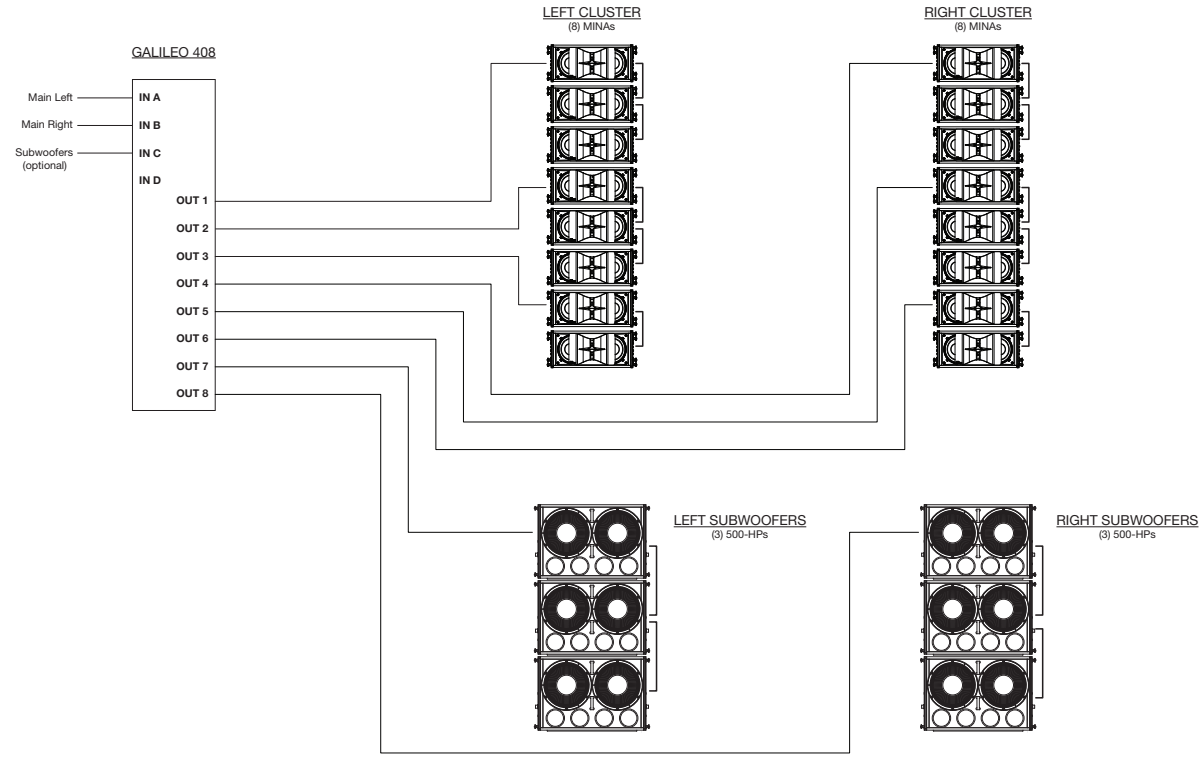
Loudspeaker components shall be mounted in an enclosure constructed of premium birch plywood with a black textured finish. The enclosure shall include end plates with GuideALinks for linking units in vertical arrays at angles from 0 to 11 degrees; attachment points shall accommodate the optional mounting yoke and U-bracket. The front protective grille shall be powder-coated, hex-stamped steel with black mesh.

Dimensions shall be 20.27" wide x 8.38" high x 15.32" deep (515 mm x 213 mm x 389 mm). Weight shall be 41.2 lbs (18.69 kg).

The loudspeaker shall be the Meyer Sound MINA.

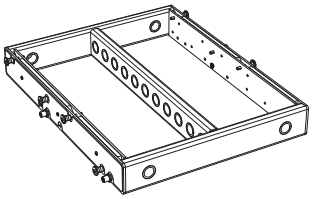
Signal Flow for a MINA Reinforcement System

MINA loudspeakers can be deployed in versatile arrays and integrate seamlessly with other Meyer Sound loudspeakers, giving sound designers maximum freedom to customize systems. This block diagram illustrates the signal flow for a typical sound reinforcement system using eight MINA cabinets per side for the main arrays.

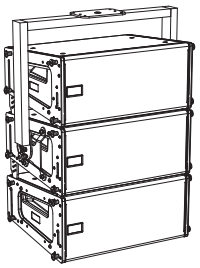


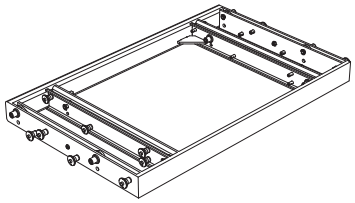
QuickFly Rigging and Transport Accessories

MG-MINA Multipurpose Grid
Flies up to 12 MINA cabinets with a 7:1 safety ratio, or up to 16 MINA cabinets at a 5:1 ratio. The grid offers multiple and single-center pickup points and can also be used for groundstacking.



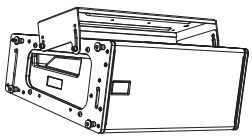
MYA-MINA Yoke
Suspends arrays of up to three MINA cabinets from a single point; pole-mounts up to two cabinets (pole-mount adapter not included).



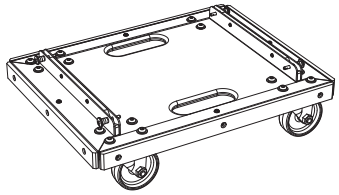


MTF-M'elodie/MINA Transition Frame
Integrates MINAs in M'elodie arrays for downfill, flies MINA arrays under 500-HP subwoofers, and groundstacks MINAs on top of 500-HPs.

MUB-MINA U-Bracket
Mounts up to three cabinets for frontfill or under-balcony coverage with up to 20 degrees of tilt; pole-mounts up to two cabinets (pole-mount adapter not included).



MCF-MINA Caster Frame
Transports up to five fully-rigged MINA cabinets. Caster dimensions are suitable for tightly-packed transports in both U.S. and European trucks. Durable nylon covers, sized for stacks of 3, 4, and 5 units, are also available to ensure the MINA is completely road ready.



MINA Specifications

Acoustical	
Operating Frequency Range[1]	66 Hz – 18 kHz
Frequency Response[2]	70 Hz – 17.5 kHz ±4 dB
Phase Response	1 kHz – 18 kHz ±30˚
Maximum Peak SPL[3]	128 dB
Dynamic Range	>110 dB
Coverage	
Horizontal Coverage	100˚
Vertical Coverage	Varies, depending on array length and configuration
Crossover[4]	
	760 Hz
Transducers	
Low Frequency	Two 6.5" cone drivers with neodymium magnets Nominal impedance: 4 Ω Voice coil size: 1.5"
High Frequency[5]	3" compression driver Nominal impedance: 8 Ω Voice coil size: 3" Diaphragm size: 3" Exit size: 1.2"
Audio Input	
Type	Differential, electronically balanced
Maximum Common Mode Range	±5 V DC
Connectors	XLR female input with XLR male loop output
Input Impedance	10 kΩ differential between pins 2 and 3
Wiring	Pin 1: Chassis/earth through 220 kΩ, 1000 pF, 15 V clamp network to provide virtual ground lift at audio frequencies Pin 2: Signal + Pin 3: Signal – Case: Earth ground and chassis
DC Blocking	Differential DC blocking up to the maximum common mode voltage
CMRR	>50 dB, typically 80 dB (50 Hz – 500 Hz)
RF Filter	Common mode: 425 kHz Differential mode: 142 kHz
TIM Filter	Integral to signal processing (<80 kHz)
Nominal Input Sensitivity	0 dBV (1.0 V rms, 1.4 V peak) continuous is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing of +20 dBV (10 V rms, 14 V peak) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker
Amplifier	
Type	Three-channel, Class-D
Output Power[6]	975 W (three channels; 2 x 375 W, 1 x 225 W)
Total Output[7]	1950 W peak
THD, IM, TIM	<.02%
Load Capacity	4 Ω low channels; 8 Ω high channel
Cooling	Convection
AC Power	
Connectors	PowerCon with loop output
Voltage Selection	Automatic, continuous from 90–265 V AC
Safety Agency Rated Operating Range	100–240 V AC, 50/60 Hz
Turn-on and Turn-off Points	90 V AC turn-on, no turn-off Internal fuse-protection above 265 V AC
Current Draw:	
Idle Current	0.256 A rms (115 V AC); 0.249 A rms (230 V AC); 0.284 A rms (100 V AC)
Maximum Long-Term Continuous Current (>10 sec)	1.26 A rms (115 V AC); 0.66 A rms (230 V AC); 1.50 A rms (100 V AC)
Burst Current (<1 sec)[8]	3.24 A rms (115 V AC), 1.74 A rms (230 V AC), 4.02 A rms (100 V AC)
Ultimate Short-Term Peak Current	10.4 A peak (115 V AC), 5.2 A peak (230 V AC), 11.1 A peak (100 V AC)
Inrush Current	16.8 A peak (115 V AC), 20.0 A peak (230 V AC), 15.0 A peak (100 V AC)
RMS Network	
	Equipped with two-conductor twisted-pair network, reporting all operating parameters of amplifiers to system operator's host computer

Notes:

1. *Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.*
2. *Measured free field with 1/3 octave frequency resolution at 4 meters.*
3. *Measured with music referred to 1 meter.*
4. *At this frequency, the transducers produce equal sound pressure levels.*
5. *Driver coupled to a 100-degree horizontal constant-directivity horn through a proprietary acoustical manifold (REM).*
6. *Amplifier wattage rating based on the maximum unclipped burst sine-wave rms voltage the amplifier will produce for at least 0.5 seconds into the nominal load impedance: 39 V rms low channels, 43 V rms high channel.*
7. *Peak power based on the maximum unclipped peak voltage the amplifier will produce for at least 100 milliseconds into the nominal load impedance: 55 V peak low channels, 60 V peak high channel.*
8. *AC power cabling must be of sufficient gauge so that under burst current rms conditions, cable transmission losses do not cause the loudspeaker's voltage to drop below the specified operating range.*

CE N775
www.meyersound.com
Made in USA with domestic and foreign parts

(pending)

MINA — 04.207.004.01 A

MEYER SOUND LABORATORIES INC.
2832 San Pablo Avenue
Berkeley, CA 94702

T: +1 510 486.1166
F: +1 510 486.8356

techsupport@meyersound.com
www.meyersound.com