
# MINA

compact curvilinear array loudspeaker

thinking sound

Meyer® Sound


*"MINA is a mature product focusing all of the advances we've made since releasing MILO—a new digital amplifier, a new manifold configuration based on the patented REM and new horn design, even improved rigging—into a package that meets the demand for high-quality sound in small spaces."*

**– John Meyer**

# MINA

## Compact Curvilinear Array Loudspeaker

With the introduction of MILO in 2003, Meyer Sound started the most accurate, flexible, and usable family of line array products on the market. The subsequent introductions of MICA and M'elodie to the MILO family brought MILO's renowned sonic signature, self-powering, and high power-to-size ratio to more compact packages, each time satisfying yet more applications and winning more acclaim and awards.

Now, Meyer Sound introduces MINA, the newest and smallest member of the MILO family. Measuring just over 1.5 feet wide (0.5 meter) and weighing only 41.2 lbs (18.69 kg), MINA is an ideal low profile, high-power curvilinear array system 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 array applications. 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. Optional weather protection, custom color cabinets and low-profile rigging pins ensure that MINA will blend into any environment to deliver even coverage and pristine sound.

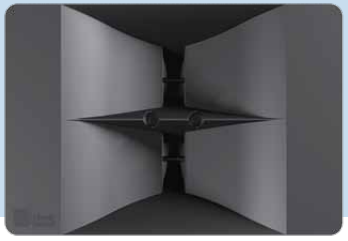
## Features and Benefits

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

## Applications

- **Smaller theatres and touring productions**
- **Houses of worship**
- **Ballrooms**
- **Corporate AV**
- **Theme parks**
- **Downfill or sidefill for M'elodie systems; sidefill for MICA systems**
- **Frontfill and under-balcony coverage**

*Innovative component configuration provides great efficiency.*



*MINA's 100 degree constant-directivity horn*

*Meyer Sound's years of research in horn design are apparent in the controlled, narrow vertical dispersion of MINA's horn, which minimizes destructive high-frequency interactions between cabinets.*

## Components

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.


*MINA's powerful three-channel Class-D amplifier*

## The Self-Powered Advantage

Fifteen years ago, Meyer Sound committed to self-powering its sound reinforcement loudspeakers, having pioneered the technology since the company's earliest days. Powerful and reliable, the advantages of self-powered systems quickly became clear: no amplifier racks or loudspeaker cables, no calibration, fast setup and teardown, and efficient truck packs.

Each MINA houses a three-channel Class-D amplifier with 975 Watts of output (1950 W peak). Every Meyer Sound self-powered loudspeaker contains all processing and amplification onboard, including limiting for maximum driver life, and an Intelligent AC power supply.

Meyer Sound loudspeakers are designed as integrated systems: drivers and electronics are engineered from the beginning to work together. This enables us to optimize performance; eliminate the weight, truck space, and cooling needs of amplifier racks; make signal loss from long loudspeaker cable runs a thing of the past; and greatly reduce setup and teardown time by removing the need to patch and calibrate crossovers and amplifier gains.

Our designs are meticulously manufactured to strict design tolerances in Meyer Sound's Berkeley factory. This level of control enables us to achieve high degrees of consistency and reliability, which pay many benefits. Curvilinear arrays depend on consistency from element to element to achieve optimal results. Consistency also makes it easy to scale array sizes up or down as needed. Reliability means that a MINA array will keep working hard and sounding great long after it has paid itself off.

*A curvilinear array of 8 MINA cabinets*

*The MG–MINA grid can fly up to 12 MINA cabinets.*

## QuickFly Rigging

Meyer Sound's QuickFly rigging is a collection of custom designed rigging, flying, and mounting systems that has led the way in safety and ease of use since its introduction. With captive GuideALinks, the hardware always travels with the cabinet; there is no need for any risk to fingers or hands between cabinets while rigging. The rear link of the rigging allows settings for 13 different angles between linked MINAs at 0.0, 0.5, and 1–11 degrees in one-degree increments.

- The **MG–MINA** multipurpose grid can fly up to 12 MINA cabinets with a 7:1 safety ratio, or 16 cabinets at a 5:1 ratio. The grid offers multiple and single-center pickup points and can also be used for groundstacking MINA.
- The **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.
- The **MCF–MINA** caster frame allows up to five cabinets to be transported fully rigged, and is dimensioned for tight packing in both U.S. and European trucks. Durable nylon covers, sized for stacks of 3, 4 and 5 units, are also available to ensure MINA is completely road ready.
- The **MYA–MINA** mounting yoke enables arrays of up to three MINA loudspeakers to be suspended from a single point, or pole-mounts up to two cabinets (pole-mount adapter not included).
- The **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 adaptor not included).

*MTF–M'elodie/MINA transition grid can be used to fly or groundstack MINA with M'elodie or the 500-HP subwoofer.*

*MCF–MINA caster frame*

*MUB–MINA u-bracket*

*MYA–MINA mounting yoke*

# Integration

## MILO Family

MINA is an excellent choice for smaller theatres, theme parks, or other venues where size and weight are concerns. Regional sound companies will make MINA a go-to system for corporate AV jobs. But MINA also is designed to combine seamlessly with other members of the MILO family, making it a system that won't be outgrown. Though M'elodie, as the next larger MILO family member, is a natural partner, MINA performs any number of crucial fill or utility roles in the larger jobs using MICA.

## Subwoofer Integration

Low-frequency support for MINA has to have the same powerful yet precise quality exhibited by MINA itself. Meyer Sound's 500-HP compact high-power subwoofer makes the perfect complement to MINA, producing a peak SPL of 135 dB at 1 meter over its 35 Hz – 140 Hz operating frequency range.

The 500-HP is ideal when it is desirable to fly subwoofers as part of a MINA array. The MTF-M'elodie/MINA transition grid enables MINA to be flown beneath M'elodie or 500-HP cabinets, or groundstacked with them.

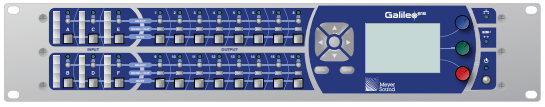
For applications requiring more low-frequency headroom, Meyer Sound's 600-HP and 700-HP subwoofers are also ideally suited for integration with MINA systems.

*500-HP*
*compact high-power subwoofer*

## System Control and Integration Tools

Getting the best sound requires not only the best loudspeakers, but also the best use of them. Meyer Sound supports the use of our loudspeakers with a robust set of tools for users to assure maximum performance for every event:

- **MAPP Online Pro** acoustical prediction software gives users accurate predictions of the coverage, SPL, and frequency response of any Meyer Sound system.
- **Galileo** loudspeaker management system, with the Compass control software, provides all of the facilities required to drive a MINA system, including a new approach to array correction that makes system calibration easier than ever.
- The **RMS** remote monitoring system delivers extensive status and system performance data directly to the operator from every loudspeaker.
- The **SIM 3** audio analyzer, an integrated hardware and software package, provides real-time system performance analysis of an entire acoustical/electronic systems or individual electronic components.



*Galileo 616*
*loudspeaker management system*

*Galileo 408*
*loudspeaker management system*

*MINA*

*M'elodie*

*MICA*

*MILO*

## MILO Family

MINA comes from a heritage worth boasting about. Since the 2003 introduction of the MILO high-power curvilinear array loudspeaker, products from this family of self-powered loudspeakers have become the "gold standard" for touring and installed line array systems. Now the newest member, MINA, fills a niche by providing a very compact yet powerful package capable of integrating easily with its sibling M'elodie, yet strong enough to stand alone in smaller theatres, houses of worship, ballrooms and corporate AV situations.

Featuring drivers and acoustical combining manifolds designed and built by Meyer Sound, all MILO family loudspeakers seamlessly integrate in virtually any combination. Each of these loudspeakers represents a complete solution for fixed installations of any size, and total flexibility for touring or rental applications. Even as the system configuration changes in every show, MILO family loudspeakers can provide the same sound quality as the show before.

With six distinct variations on a successful theme, the MILO family offers a comprehensive solution that allows every audience member to enjoy the power and transparency of MILO in venues of any size.

## Manufacturing Without Compromise

Since its founding, Meyer Sound has been devoted to meeting the needs of sound professionals with the finest products available, the industry's most extensive and knowledgeable customer support, and high-level technical education.

Meyer Sound products are made at its factory in Berkeley, California, where every aspect of manufacturing is supervised and controlled directly by John Meyer and senior engineering and production staff. This constant interaction allows Meyer Sound to continuously analyze production methods and implement improvements immediately.

Consistency is paramount at Meyer Sound, and it can only be guaranteed by exhaustive quality control, including thorough and repeated testing from incoming parts to assembled components, to complete systems. The performance of every unit is individually tested against the reference unit to match precise design specifications. Resulting enclosures are rugged enough to tour the globe with top-name artists and brave treacherous weather conditions in outdoor installations. All Meyer Sound products carry a three-year warranty.

With our attention to the minutest detail in the manufacturing processes, Meyer Sound guarantees that each product will perform the way it was designed to operate.

# 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<br>Nominal impedance: 4 Ω<br>Voice coil size: 1.5" |
| High Frequency[5] | 3" compression driver<br>Nominal impedance: 8 Ω<br>Voice coil size: 3"<br>Diaphragm size: 3"<br>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<br>Pin 2: Signal +<br>Pin 3: Signal –<br>Case: Earth ground and chassis<br>Differential DC blocking up to the maximum common mode voltage |
| DC Blocking | ›50 dB, typically 80 dB (50 Hz – 500 Hz) |
| CMRR | Common mode: 425 kHz |
| RF Filter | 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

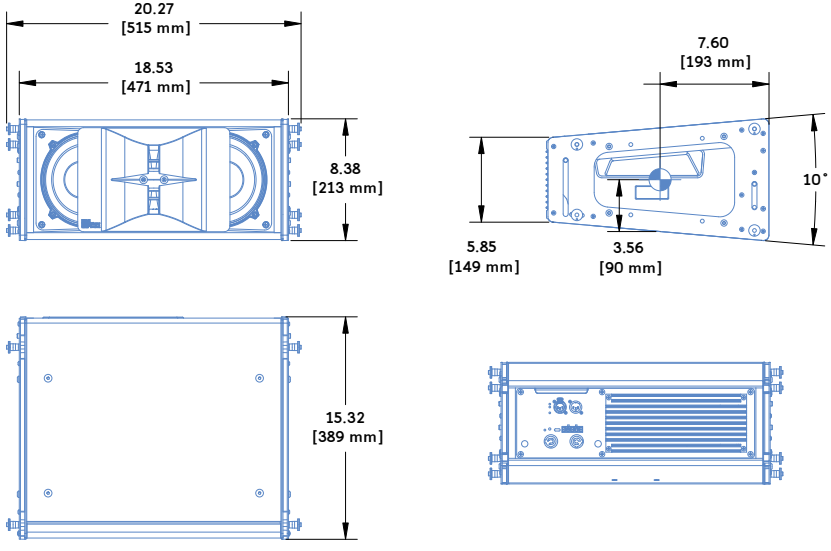
| | |
|---|---|
| Connectors | PowerCon with loop output |
| Voltage Selection | Automatic, continuous from 90–265 V AC |
| Safety Agency Rated Operating Range | 100–240 V AC, 50/60 Hz |
| Turn-on and Turn-off Points | 90 V AC turn-on, no turn-off<br>Internal fuse-protection above 265 V AC |
| *Current 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

## PHYSICAL

| | |
|---|---|
| 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 |




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.*

# MINA

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loudspeaker

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