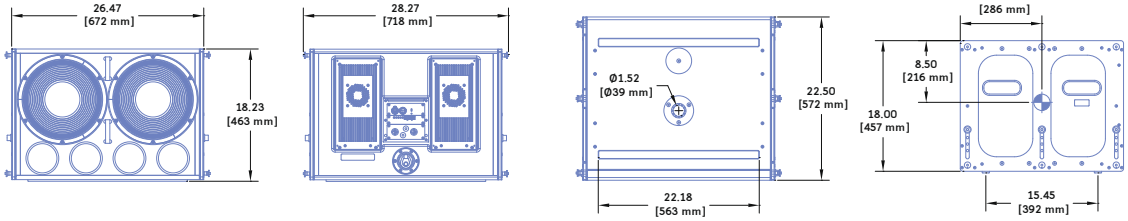
500-HP : Compact High-Power Subwoofer

thinking sound Meyer Sound®

Shown with optional MRF-500 rigging frame

Dimensions	26.55" w x 18.23" h x 22.50" d (674 mm x 463 mm x 572 mm)
Dimensions (w/rigging)	28.27" w x 18.23" h x 22.50" d (718 mm x 463 mm x 572 mm)
Weight	133 lbs (60.32 kg); with rigging, 164 lbs (74.38 kg)
Enclosure	Premium birch plywood
Finish	Black textured, hard-shell
Protective Grille	Powder-coated, hex-stamped steel with black mesh screen
Rigging	Optional QuickFly MRF-500 rigging frame for arrays with M'elodie curvilinear loudspeakers; rigging frame also compatible with MG-M'elodie multipurpose grid; integral 1-1/2" (38 mm) pole-mount receptacle on top



The 500-HP is a self-powered, high-output subwoofer suitable for both flown and groundstacked configurations. Available in two versions — one with side panel handles, one with rigging hardware — the compact subwoofer integrates smartly with Meyer Sound self-powered, full-range loudspeakers. When fitted with the optional QuickFly® MRF-500 rigging frame, the 500-HP arrays directly with the M'elodie™ ultracompact high-power curvilinear array loudspeaker. The integral 1.5-inch pole-mount receptacle, included with all 500-HPs, allows the subwoofer to be easily paired with UltraSeries™ loudspeakers, for either fixed or touring applications.

The 500-HP subwoofer boasts an operating frequency range of 35 Hz to 140 Hz and a peak SPL of 135 dB at 1 meter. Designed and manufactured at Meyer Sound's Berkeley, California headquarters, the unit's two 12-inch cone drivers are engineered to deliver optimal subwoofer performance. The high-excursion, back-vented drivers, each with 4-inch voice coils, are rated to handle 1200 W (AES)* and housed in a tuned, rectangular enclosure that has the same width as the M'elodie loudspeaker.

The low frequency drivers are driven by a two-channel class AB/H amplifier with complementary MOSFET output stages. Ample headroom is delivered with 1800 W of total burst output (900 W per channel). The 500-HP's amplifier and processing electronics are equipped with Meyer Sound's Intelligent AC™ power supply, which adapts to any power voltage worldwide and provides soft-turn on and transient protection. The amplifier, control electronics, and power supply are field-replaceable modules located in the rear of the enclosure.

The 500-HP includes protective, plastic skids on the bottom of the enclosure that securely align with its top slots for stacked units. The optional MRF-500 rigging frame includes captive, recessed GuideALinks™ that allow the subwoofer to be flown from the MG-M'elodie rigging grid, as well as suspend an array of M'elodies or additional 500-HPs. The GuideALinks, located at the front, center, and rear of the frame, are easily set to one of three positions with convenient, pinned handles and slots. A wide range of splay angles and configurations, including cardioid arrays, are possible with the different combinations of positions for the front, center, and rear GuideALinks; the angle for suspended M'elodie arrays can be uptilted by 5 degrees (for balcony coverage) or downtilted up to 15 degrees.

Constructed of premium birch plywood, the durable 500-HP enclosure is coated with a black textured, hard-shell finish. A hex-stamped, steel grille with acoustical black mesh protects the subwoofer's drivers. Other options include weather protection and custom color finishes for fixed installations and applications with specific cosmetic requirements. The dimensions for the 500-HP make its transport compatible with both European and U.S. trucks, and the unit can travel securely in stacks with the optional MCF-500 caster frame.

The RMS™ remote monitoring system — standard with the rigging version of the 500-HP and optional with the side panel configuration — allows comprehensive monitoring of system parameters on a Windows®-based computer.

** Driven continuously for two hours with a band-limited noise signal having a 6 dB peak-average ratio.*

Features & Benefits

- Exceptional power-to-size ratio
- Efficient low-distortion, high-power, high-excursion cone drivers
- High peak power output yields excellent transient reproduction and low-frequency clarity
- Low-frequency complement to M'elodie and UltraSeries self-powered loudspeakers
- Stackable and flyable with other 500-HPs in regular and cardioid arrays, as well as with M'elodie loudspeakers
- Integral pole-mount receptacle easily pairs the subwoofer with UltraSeries loudspeakers
- Portable in stacks of up to three units with the optional MCF-500 caster frame

Applications

- Small- to medium-sized theatres and clubs
- Houses of worship
- Ballrooms
- Portable and installed AV systems

500-HP Specifications

Acoustical	
Operating Frequency Range[1]	35 Hz – 140 Hz
Frequency Response[2]	36 Hz – 130 Hz ±4 dB
Phase Response	45 Hz – 125 Hz ±45˚
Maximum Peak SPL[3]	135 dB
Dynamic Range	›110 dB
Coverage	
	360˚ for a single unit; varies with number of units and configuration
Transducers	
Low Frequency	Two 12" cone drivers with ceramic magnets Nominal impedance: 2 Ω Voice coil size: 4" Power handling capability: 1200 W (AES)[4] each
Audio Input	
Type	Differential, electronically balanced
Maximum Common Mode Range	±15 V DC, clamped to earth for voltage transient protection
Connectors	Female XLR input with male XLR loop output or VEAM all-in-one connector (integrates AC, audio, and network)
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 – (optional polarity switch)[5] Case: Earth ground and chassis
DC Blocking	Differential DC blocking up to 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 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 +20 dBV (10 V rms, 14 V peak) into 600 Ω in order to produce the maximum peak SPL over the operating bandwidth of the loudspeaker
Amplifier	
Type	Two-channel complementary MOSFET output stages (class AB/H)
Output Power[6]	1800 W (2 x 900 W)
Total Output[7]	3600 W peak
THD, IM, TIM	‹.02%
Load Capacity	2 Ω each channel
Cooling[8]	Convection at low to mid audio levels; fan-assisted only at high audio levels
AC Power	
Connector	PowerCon with looping output or VEAM
Voltage Selection	Automatic, two ranges, each with high-low voltage tap (uninterrupted)
Safety Agency Rated Operating Range	95–125 V AC; 208–235 V AC, 50/60 Hz
Turn-on and Turn-off Points	85–134 V AC; 165–264 V AC
Current Draw: Idle Current	0.49 A rms (115 V AC); 0.26 A rms (230 V AC); 0.55 A rms (100 V AC)
Maximum Long-Term Continuous Current (›10 sec)	8.4 A rms (115 V AC); 4.2 A rms (230 V AC); 9.7 A rms (100 V AC)
Burst Current (‹1 sec)[9]	18 A rms (115 V AC); 9 A rms (230 V AC); 21 A rms (100 V AC)
Ultimate Short-Term Peak Current Draw	40 A peak (115 V AC); 22 A peak (230 V AC); 46 A peak (100 V AC)
Inrush Current	10 A peak (115 V AC); 13 A peak (230 V AC); 10 A peak (100 V AC)
RMS Network (optional)	
	Equipped with two-conductor twisted-pair network, reporting all operating parameters of amplifiers to the system operator's host computer

Notes:

1. *Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.*
2. *Free field, measured with 1/3-octave frequency resolution at 4 meters.*
3. *Measured with music, referred to 1 meter, half-space loading.*
4. *Power handling measured under AES standards: transducers driven continuously for two hours with a band limited noise signal having a 6 dB peak-average ratio.*
5. *Two additional input module options are available with a polarity switch and attenuator (0 dB to –18 dB), one with a looping output, the other with two summed inputs.*
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; both channels, 42 V rms into 2 ohms.*
7. *Peak power based on the maximum unclipped peak voltage the amplifier will produce for at least 100 milliseconds into the nominal load impedance; both channels, 60 V peak into 2 ohms.*
8. *Fan controlled by audio level; remains off at turn-on and at low to mid audio levels. Fan operation at high audio levels makes it virtually inaudible.*
9. *AC power cabling must be of sufficient gauge so that under burst current rms conditions, cable transmission losses do not cause the voltage to drop below the specified operating range at the loudspeaker.*

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Made in USA with domestic and foreign parts

500-HP — 04.187.004.01 A

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Architect Specifications

The loudspeaker shall be a self-powered, sub-bass system that can be deployed as either a flown or a ground-stacked unit. The transducers shall consist of two 12-inch cone drivers (with 4-inch voice coils), each rated to handle 1200 watts.

The loudspeaker shall incorporate internal processing electronics and a two-channel amplifier. Each amplifier channel shall be class AB/H with complementary MOSFET output stages. Burst power shall be 1800 watts (3600 watts peak) with a nominal 2-ohm resistive load. 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 V rms) signal. Connectors shall be XLR (A-3) type male and female or VEAM all-in-one (integrates AC, audio, and network). Two additional input modules shall be offered with a polarity switch and attenuator knob, one with a looping output, the other with two summed inputs. RF filtering shall be provided, and CMRR shall be greater than 50 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 35 Hz to 140 Hz; phase response shall be ±45˚ from 45 Hz to 125 Hz; maximum peak SPL shall be 135 dB at 1 meter, half-space loading.

The internal power supply shall perform automatic voltage selection, EMI filtering, soft current turn-on, and surge suppression. Power requirements shall be nominal 100 V, 110 V, or 230 V AC line current at 50 Hz or 60 Hz. UL and CE operating voltage ranges shall be 95 to 125 V AC and 208 to 235 V AC. The maximum long-term continuous current draw (›10 sec) shall be 8.4 A rms at 115 V AC, 4.2 A rms at 230 V AC, and 9.7 A rms at 100 V AC. Current inrush during soft turn-on shall not exceed 10 A at 115 V AC. AC power connectors shall be PowerCon with looping output or VEAM all-in-one.

The loudspeaker system shall include support for the optional RMS remote monitoring system.

Loudspeaker components shall be mounted in a premium birch plywood enclosure with a black textured, hard-shell finish. The front protective grille shall be powder-coated, hex-stamped steel with black mesh screen. The unit shall be available in two versions: one with side panels with handles, the other with a rigging frame that provides arraying capabilities with the M'elodie loudspeaker, the MG-M'elodie multipurpose grid, as well as with other 500-HPs. The enclosure shall include an integral 1.5-inch (38 mm) diameter pole-mount receptacle and protective, plastic bottom skids.

Dimensions without rigging shall be 26.55" wide x 18.23" high x 22.50" deep (674 mm x 463 mm x 572 mm). Weight shall be 133 lbs (60.32 kg). Weight with rigging shall be 164 lbs (74.38 kg).

The loudspeaker shall be the Meyer Sound 500-HP compact high-power subwoofer.