HM-1 *Self-Powered Loudspeaker*

FEATURES

- Bi-amplified
- Integrated electronics
- Dual-concentric drivers
- Full-range response (42Hz - 20kHz)
- Phase corrected to 15 kHz
- Magnetically shielded
- 48 VDC powered

Superior engineering for the art and science of sound.

Meyer Sound

The Meyer Sound HM-1 is a very compact, full-range self-powered loudspeaker system designed to serve in a wide variety of installed sound reinforcement and reproduction applications.

The HM-1 incorporates significant design innovations that afford unprecedented performance with practical advantages. In contrast to conventional small speaker systems, the cabinet venting is tuned at 40 Hz to provide flat, full-range response with half-space loading. The concentric tweeter mounting structure is optimized to minimize both back-wave interference and IM distortion. A constant-directivity high-frequency horn affords a 100° beam width, and sophisticated phase-correction circuitry assures true point-source performance without the off-axis cancellation effects that plague customary dual-concentric designs.

By implementing distributed amplification, the HM-1 affords substantial advantages in reliability and ease of installation when compared with constant-voltage (70 V) distributed systems. The HM-1 accepts a unipolar 48 VDC power source which may be supplied using twisted-pair wiring jacketed with the signal source conductors, eliminating the need for wiring conduits and greatly reducing induced noise. Its amplifier and signal-processing circuits are designed to tolerate supply voltage drops of up to 15%, accommodating light-gauge cables and long cable runs. Internal energy storage circuits minimize the system's peak-to-average supply current demands, allowing efficient use of switched-mode regulated supplies.

The HM-1 is a two-way system comprising a 7" graphite cone low-frequency driver, and a concentrically-mounted 1" soft-dome high frequency driver with constant-directivity horn, in a vented cabinet. Integral bi-amplifiers affording 400 Watts total power output are built into the enclosure, along with an active crossover, driver protection voltage limiters, and frequency and phase response alignment circuitry. A laser-trimmed differential input stage affords superior common-mode rejection to accommodate simple twisted-pair signal distribution. Front-panel LEDs indicate power, signal limit, and thermal overload, and a rear-panel circuit breaker provides overall DC power protection.

The magnetically shielded HM-1 enclosure is coated with a textured black or white finish, and a variety of factory-installed mounting configurations may be ordered. Optional accessories include a remote switched-mode power supply, a variable-speed cooling fan assembly controlled from an integral rear-panel drive output, and an auxiliary subwoofer that provides flat response to 42 Hz in free field and is powered by the HM-1 low-frequency

HM-1 SPECIFICATIONS

Acoustical[1] (each loudspeaker)	**Frequency Range**[2]	42 Hz - 20 kH[2]
	Free Field	±2.5 dB 100 Hz – 20 kHz; –6 dB 42 Hz – 100 Hz
	Half-space[3]	±2.5 dB 90 Hz – 20 kHz; –3 dB 42 Hz – 90 Hz
	Free Field with Subwoofer[4]	±2.5 dB 42 Hz – 20 kHz
	Phase Response[5]	±20° 250 Hz – 15 kHz
	Maximum SPL[6]	Without Sub: 116 dB SPL; With Sub: 120 dB SPL
	Off-axis Amplitude Response	±3.5 dB 100 Hz – 20 kHz up to 45° coverage[7]
	Crossover	Complex roll-off shape, ≈ 3 kHz equal acoustic amplitude
	Signal to Noise Ratio	>100 dB (A-weighted noise floor to max SPL)
Coverage	**(-6 dB points)**	100° H; 100° V
Transducers Dual-Concentric Drivers (magnetically shielded)	**Low Frequency**	7" graphite cone driver
	High Frequency	1" soft-dome tweeter
	Subwoofer (optional)	10" cone driver (not shielded)
Audio Input	**Connector**	Options are 1 female XLR or a pluggable terminal strip
	Type	Differential balanced input circuit[8]
	Impedance	10 kΩ differential (between pins 2 and 3)
	XLR Wiring	Pin 1: chassis; Pin 2: + signal; Pin 3: – signal
	RF Filter	Common Mode: 425 kHz low-pass; Differential Mode: 142 kHz low-pass
	Common Mode Rejection Ratio	>80 dB (50 Hz – 1 kHz); typically 90 dB
Amplifiers	**Type**	Complementary MOSFET output stages class A/B, bridged
	Output Power	400 Watts RMS, 200 Watts/channel at 4 Ω (with subwoofer)
	THD, IM, TIM	<.02 %
AC-Power	**Voltage**	Nominal: 48 VDC; Maximum: 52 VDC; Minimum: 35 VDC;
	Current[9]	Typical: 2.0 Arms, 3.5 Apk; Maximum in limiting: 3.0 Arms, 5.0 Apk
Physical	**Dimensions**	Height: 11.0"; Width: 8.4"; Depth: 9.7", 10.5" with fan attachment
	Weight	11.0 lb (5.0 kg); shipping: 13.5 lb (6.1 kg)
	Protective Grill	Removable perforated steel grill causes < 0.5 dB response variation
	Enclosure/Finish	All birch plywood/black textured

Notes

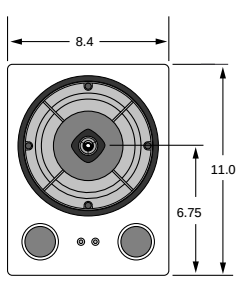
1. Measurements are taken at 1 m on-axis, 1/3 octave, unless otherwise stated.
2. Amplitude tolerance depends on loading conditions and whether the subwoofer is used.
3. Flush-mounted into single boundary surface.
4. Subwoofer adds approximately 8 dB 42 – 100 Hz.
5. Phase variation from pure delay and minimum phase removed.
6. Pink noise or music.
7. A gradual amplitude attenuation occurs as the angle increases beyond 45°. Greater attenuation occurs at 2 kHz and beyond 10 kHz. There are no response peaks.
8. Capacitively coupled; accepts up to ±50 VDC common mode.
9. Idle current @ 0.4 A; using the slaved subwoofer increases stated currents by @ 20%.

Meyer Sound Laboratories has devoted itself to designing, manufacturing, and refining components that deliver superb sonic reproduction. Every part of every component is designed and built to exacting specifications and undergoes rigorous, comprehensive testing in the laboratories.

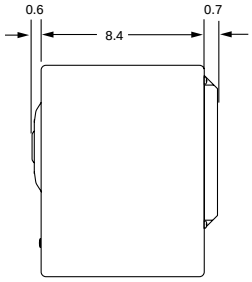
Research remains an integral, driving force behind all production. Meyer strives for sound quality that is predictable and neutral over an extended lifetime and across an extended range.

PHYSICAL DIMENSIONS

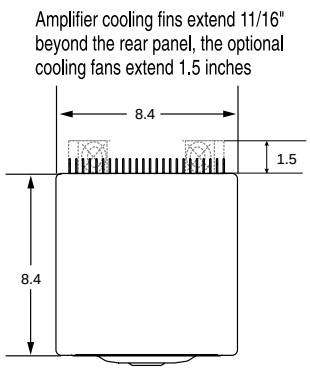
ALL UNITS IN INCHES



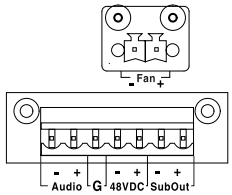
Front



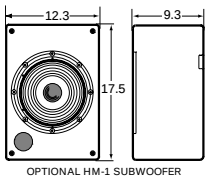
Side



Top



Rear Panel



OPTIONAL HM-1 SUBWOOFER

Made by Meyer Sound, Berkeley, CA, USA
European Office:
Meyer Sound Europe
Dalston House
39-49 Hastings Street
Luton Bedfordshire
England, LU1 5BE

LISTED 3K59 COMMERCIAL AUDIO SYSTEM

HM-1 - 04.039.002.01B

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