USM-1

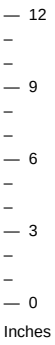
High Power Stage Monitor

Features

- High gain-before-feedback
- Wide horizontal coverage
- Flat frequency response
- Rugged and reliable

Applications

- Stage monitoring
- Live music clubs
- Touring reinforcement



The USM-1 is a high-powered, wide-coverage loudspeaker for professional stage monitoring applications. Specifically designed for touring reinforcement, the accurate, rugged USM-1 is a biamplified system consisting of a proprietary 15-inch low-frequency driver in a vented enclosure, and a 70-degree high-frequency horn with 2-inch (throat diameter) driver.

The USM-1's drivers provide exceptional efficiency and power handling, with low distortion for maximum clarity. Its very flat frequency response allows control of feedback at high stage levels.

The sturdy, multi-ply hardwood enclosure with textured finish is designed to withstand road abuse. The USM-1 comes with handles and, optionally, aircraft-style rigging pan fittings.

The USM-1 requires a high-quality professional stereo power amplifier capable of delivering up to 600 watts per channel continuously into 8 ohms, with a signal voltage gain of 10dB (minimum) to 30dB (maximum).

Meyer Sound Laboratories, Inc.
2832 San Pablo Avenue
Berkeley, CA 94702
(510) 486-1166
FAX (510) 486-8356

MEYER SOUND

USM-1 Specifications

Acoustical – USM-1/S-1 System	
Frequency Response[1]	40-18k Hz ±4 dB
Maximum SPL[2]	
Continuous	130 dB
Peak	139 dB
Maximum Peak (Music Signal)	144 dB
HF Coverage, -6dB points	70° horizontal x 60° vertical
Acoustical Crossover Frequency	900 Hz
USM-1 Loudspeaker	
Transducers	
Low Frequency	MS-15 15-inch cone driver, 12 ohms
High Frequency	MS-2001A 2-inch throat compression driver, 8 ohms
High Frequency Horn	70 degree modified radial
HF Network	DC blocking capacitor
Enclosure	2.3 cu. ft. vented, multi-ply Finnish birch
Finish	Black textured
Protective Grill	Hex perforated metal, powder coated, charcoal-
	grey foam covering
Connector	EP-4 male, EP-5 male (Europe only)
Rigging (optional)	Aircraft pan fittings or ⅜"-16 or M10 x 1.5 nut plates
Physical Dimensions	21" W x 24¼" H x 18¼" D
Weight	82 lbs. (37.3 kg)

S-1 Control Electronics Unit	
Input Type[3]	Active balanced ISO™ input, 10k ohms, 5k ohms per leg
Output Type	Active push-pull, will drive 600 ohms
Maximum Input/Output Level	
Balanced	+26 dBu
Unbalanced	+20 dBu
Hum and Noise[4]	-90 dBV
Dynamic Range	>110 dB
Sense Inputs	100k ohms true differential
Low-Frequency Delay Type	Active all-pass
Driver Protection Circuitry	
Low Frequency	RMS limiter and excursion limiter
High Frequency	RMS limiter and excursion limiter
	VHF Peak limiter
Indicators	
Sense/Gain Detect, Hi and Lo	Green/Red LEDs
Limit, Hi, Lo, and VHF	Red LEDs
Safe	Green LED
Power Supply	Green/Red LED
Controls	
Front Panel	Input attenuator, AC power switch
Preset Panel	Lo Cut switch, Safe switch, VHF switch, VHF control
Connectors	
Balanced Inputs/Outputs	3-pin XLR (A-3)
Sense Inputs	Banana jacks
Power	90-105/180-250 VAC, 50/60 Hz (rear-panel switchable)
Physical Dimensions	19" W x 1¾" H x 7¾" D standard rack mount
Weight	8 lbs. (3.6 kg)

Note 1:
Measured 1 meter on-axis to high horn, half-space con–ditions, pink noise input, in third-octave bands.

Note 2:
Loudspeaker driven with "A" weighted noise (peak-to-RMS ratio ≈ 12 dB), with amplifier rated at 600 W/channel at 8Ω ohms. The USM-1 will accom-modate amplifiers capable of output levels up to ±140 vpk.

Note 3:
ISO™ input: Pins 1, 2 and 3 are transformer isolated, shell is connected to chassis/AC mains ground.

Note 4:
"A"- weighted, unbalanced.

The S-1 Control Electronics Unit

The USM-1 operates as a system with the S-1 Control Electronics Unit (one per channel). A single-channel device operating at line level, the S-1 is the final component in the signal chain before the amplifier.

Optimized for the USM-1 loudspeaker and pre-aligned at the factory, the S-1 contains frequency and phase response alignment circuitry, and Meyer Sound's exclusive SpeakerSense™ driver protection circuitry, incorporating both peak and RMS signal limiting as well as excursion protection.

SpeakerSense driver protection circuitry protects the USM-1 loudspeaker components from damage due to overheating or excessive excursion under high power conditions. This unique circuit continuously monitors the power applied to the USM-1 drivers, and individually limits the high-frequency and low-frequency outputs when the safe operating limits of the drivers are exceeded. Until the onset of overload, the SpeakerSense circuitry has no effect on the signal.

The S-1 SpeakerSense circuit incorporates Meyer Sound's new MultiSense™ function, which allows the use of multiple power amplifiers having different channel gains and/or power ratings. The S-1 accommodates two stereo power amplifiers, and provides separate Sense inputs for each. Its MultiSense circuit, which implements an analog OR condition, automatically tracks the power amplifier with the greatest output voltage swing to control the system protection limiters.

To enhance the effectiveness of the USM-1 in stage monitoring applications, the S-1 incorporates sliding filters which band-limit the system response under full-power conditions. This has the effect of discriminating for vocal information in the signal to increase clarity.

Also provided is a switch-selectable Safe function, which widens the safety margin of the system and is intended to be used when extended periods of overload are anticipated. The Safe switch and other setup controls are located behind a cover plate on the S-1 front panel, providing a means of securing the system installer's presets.

MEYER SOUND

Architectural and Engineering Specifications USM-1/S-1

The compact speaker system shall be of the two-way type, with a 15" low-frequency loudspeaker front-mounted in a ducted bass-reflex hardwood plywood enclosure, a compression driver mounted on a high-frequency horn which has a 2.0" throat and 4" diameter diaphragm with gap field of strength of 19k Gauss, and a separate Control Electronics Unit.

The Control Electronics Unit shall contain a power supply capable of operating from a 90-125/180-250 VAC, 50/60 Hz line; electronic crossover circuitry; electronic delay for the phase alignment of the low-frequency speaker; low- and high-frequency protection filters which automatically activate under high power conditions; RMS, peak and excursion limiters to protect the speaker components; equalization circuitry; active balanced input; and indicator LEDs for power and limiters. Total harmonic distortion shall be less than 0.1%. "A"- weighted noise level shall be at least 110 dB below maximum rated output of +26 dBu.

The speaker system, its companion Control Electronics Unit, and a power amplifier rated at 600 watts/channel into 8ohms shall meet the following performance criteria: frequency response, 40 Hz to 18 kHz plus or minus 4 dB measured with $^{1}/_{3}{}^{rd}$ octave pink noise at 1 meter on axis; output of 130 dB SPL one meter on axis with peaks of 139 dB SPL when driven with "A"-weighted noise. High frequency distribution pattern, 70 degrees horizontal by 60 degrees vertical.

Speaker enclosure dimensions are 21" W x 24¼" H x 18¼" D, weight 82 lbs (37.3 kg).

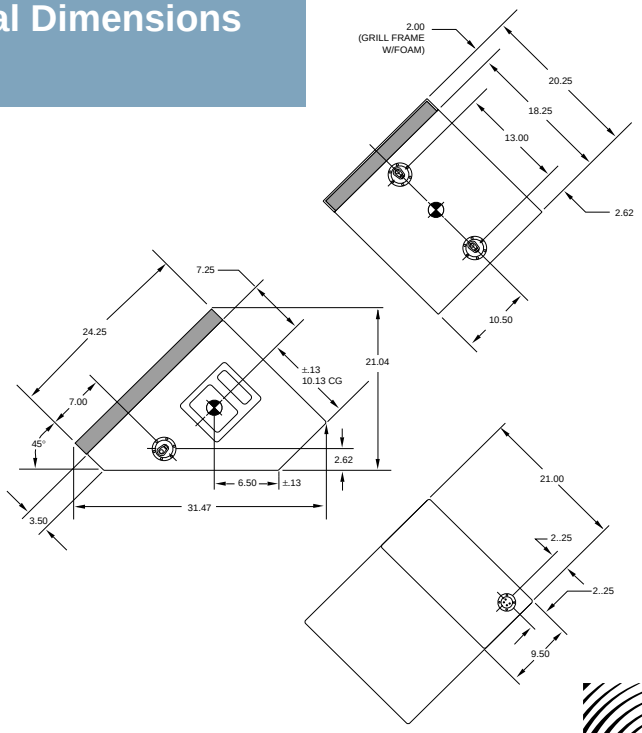
Control Electronics Unit dimensions are 19" W x 1¾" H 7¾" D, weight 8 lbs (3.6kg).

The speaker system shall be the Meyer Sound USM-1.

The Control Electronics Unit shall be the Meyer Sound S-1.

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



Sound engineering for the art and science of sound.

Meyer Sound Laboratories, Inc.
2832 San Pablo Avenue
Berkeley, CA 94702
(510) 486-1166
FAX (510) 486-8356

04.151.014.01 B2