

The Meyer Sound UPM-1 is an ultra compact, high-power loudspeaker designed for sound reinforcement applications where minimum loudspeaker size is desired. The system consists of two 5-inch low-frequency cone drivers in a vented enclosure with a 2" x 5" high-frequency piezoelectric horn driver. The enclosure contains a 3-way passive crossover and is fitted with $\frac{3}{8}$ "-16 threaded mounting points at each end. An optional steel mounting bracket is available.

The UPM-1 is designed to operate as a system with the Meyer Sound P-1A Control Electronics Unit. The P-1A contains frequency response alignment circuitry optimized for the UPM-1, and Meyer Sound exclusive SpeakerSense™ driver protection circuitry, incorporating both peak and RMS signal limiting.



UPM-1 Loudspeaker

Operating Instructions

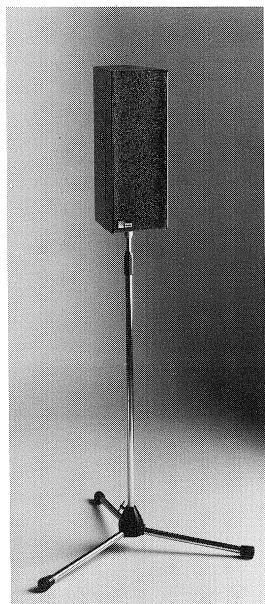
Specifications

Acoustical—UPM-1/P-1A System

Frequency Response ¹	
Free Air	70-20,000 Hz + / - 4dB
Half Space	60-20,000 Hz + / - 4dB
Maximum SPL ²	
Continuous	108dB
Peak	118dB
High Frequency Coverage Pattern	
Horizontal	80 degrees
Vertical	60 degrees

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Driver Complement	
Low Frequency	2 x MS-5 cone drivers, water resistant
High Frequency	2" x 5" horn-loaded tweeter
Passive Network	
Function	3-way crossover and HF driver protection
Enclosure	0.2 cu. ft. vented
Finish	Black textured
Physical Dimensions	6-3/4"W x 18-1/8"H x 7-1/8"D
Weight	17 lbs. (7.7kg)
Protective Grill	Metal screen, charcoal-grey foam covering
Connectors	3-pin XLR-type (male and female)
Mounting Points	3/8"-16 threaded insert plates



Notes:

1. Measured 1 meter on-axis, pink noise input, in third-octave bands.
2. Loudspeaker driven by 125 watt (16 ohm rating) mono amplifier, "A" weighted noise.

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Amplifier Requirements

The UPM-1 requires a professional quality power amplifier capable of delivering 125 watts continuously into 16 ohms. Use of amplifiers of lower power will not allow the full power and headroom of the UPM-1 system to be realized (though this may be acceptable in applications where high

pressure levels are not required). Conversely, use of amplifiers rated at significantly more than 125 watts into 16 ohms may endanger the loudspeaker, and is not recommended.

Connections

The connection terminals appear on two Cannon XLR-type connectors (one male, one female) located on the rear of the UPM-1 cabinet. The pin configuration has been chosen so that microphone cable (two conductor and shield) can be used for short speaker runs. The connection within the cabinet is a loop-through parallel connection and the pin assignments are:

Pin 1—common
Pin 2—hot
Pin 3—hot (in parallel with Pin 2)

For runs of less than 100' to a single UPM-1 the minimum recommended wire size is 18 gauge. For parallel connections, use the loop-through connections at the UPM-1s and use a larger gauge cable to the amplifier. Four UPM-1s can be run on a single amplifier channel, provided that the amplifier can drive a 4 ohm load.

The UPM-1 **must** be used with the **P-1A Control Electronics Unit**. For connections between the P-1 and the power amplifier, refer to the **P-1A Operating Instructions**.

Verifying System Phase

The polarity of the UPM-1 loudspeaker is checked at the factory before shipment, so polarity within the individual cabinet need only be checked if replacement of a part becomes necessary. The colored speaker wires attached to the drivers should be connected to the corresponding colored terminal on the potted network within the cabinet. A polarity reversal between the 5" drivers will result in severe cancellation at 250Hz and a polarity reversal between the mid-frequency 5" driver and the tweeter will show up as cancellation at 3600Hz. Either of these conditions will be very noticeable in frequency response testing or A/B comparisons with other UPM-1s.

Because of the extensive signal processing circuitry of the P-1A Control Electronics Unit, the "phase-popper" type of speaker phase checkers cannot reliably be used to test for correct polarity of multiple UPM-1 cabinets. However, many of the portable spectrum analyzers can be used, with a pink noise source, to test system phase as follows:

- Connect one loudspeaker in the array and advance the pink noise to a convenient measuring level. Position the measuring microphone on the axis between the first loudspeaker and the cabinet adjacent to it, and about 6 feet distant. Note the frequency response and overall level.
- Leaving the first loudspeaker connected, connect the adjacent one and observe the analyzer display. The entire curve should jump up in level, indicating correct addition between the loudspeakers. A polarity reversal between the loudspeakers will show up as severe low frequency cancellation.
- Similarly, connect the rest of the cabinets in the array one by one, looking for correct addition as each loudspeaker is connected. (It will be necessary to reposition the microphone.)

Placement and Arraying

The UPM-1 is designed primarily as a supplementary loudspeaker to provide subtle reinforcement in situations where the coverage of the main loudspeaker system is compromised, such as under balconies in theaters and cabarets. When correctly installed with appropriate delay the system can add presence and fidelity to the sound quality without diverting attention from the main source.

The system is suitable for use as a conference-room sound system for voice reinforcement and playback, and its compact size and high power output capability makes it appropriate for reinforcement situations in which a high level main system is undesirable, such as in church and paging systems. Further applications include use as an effects channel loudspeaker system in cinema and multimedia applications.

The UPM-1 features even coverage on both axes, with a high frequency horizontal coverage angle of 80 degrees

and a vertical coverage angle of 60 degrees. In order to increase the coverage angle in under-balcony installations, place two UPM-1s end to end, with the tweeters adjacent. Separating the angle between the two cabinets to a maximum of 40 degrees will increase the total effective coverage angle of the two UPM-1s to 120 degrees. For upright (side by side) installation keep the separation angle between the two cabinets at least 20 degrees, and not more than 45 degrees. Always keep the rear corners of adjacent cabinets touching where possible.

When the UPM-1 is placed in a corner (1/4 or 1/8 space conditions) the bass response of the system is extended by up to an octave. If this low frequency response is unnecessary, use the P-1A **Lo Cut** switch to insert the 160Hz high-pass filter.



Literature Addendum

OPERATING INSTRUCTION ADDENDUM FOR UPM-1J, UPM-2J, MPS-305J, AND MPS-355J

The following describes the pin differences between standard UPM-1J, UPM-2J, MPS-305J, and MPS-355J. Note that product serial numbers for the "J" pin out configuration will have a "J" suffix.

STANDARD PIN OUTS

Pin 1 Common
Pin 2 Hot
Pin 3 Hot (parallel with Pin 2)

"J" PIN OUTS

Pin 1 No connection
Pin 2 Hot
Pin 3 Common



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