

The Meyer Sound UPM-2 is an ultra compact, high-powered 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 constant-directivity high-frequency horn and 1" titanium dome driver. The enclosure contains a 3-way passive crossover and is fitted with $\frac{3}{8}$ "-16 threaded mounting points on both sides and at each end. An optional steel mounting bracket is available.

The UPM-2 is designed to operate as a system with the Meyer Sound P-2 Control Electronics Unit. The P-2 contains frequency response alignment circuitry optimized for the UPM-2, and Meyer Sound exclusive SpeakerSense™ driver protection circuitry, incorporating both peak and RMS signal limiting.



UPM-2 Reinforcement Loudspeaker

Operating Instructions

Amplifier Requirements The UPM-2 requires a professional quality amplifier rated at least 125 watts per channel continuously into 16 ohms. Use of amplifiers of lower power will not allow the full power and headroom of the UPM-2 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 XLR-type connectors (one male, one female) located on the rear of the UPM-2 cabinet.

The pin configuration for the XLR-type connectors 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-2 the minimum recommended wire size is 18 gauge. For parallel connections, use the loop-through connections at the UPM-2's and use a larger gauge cable to the amplifier. Four UPM-2's can be run on a single amplifier channel, provided that the amplifier can drive a four ohm load.

The UPM-2 **must** be used with the **P-2 Control Electronics Unit**. For connections between the CEU and the power amplifier, refer to its **Operating Instructions**.

Verifying System Polarity The polarity of the UPM-2 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 250 Hz and a polarity reversal between the mid-frequency 5" driver and the tweeter will show up as a cancellation at 3600 Hz. Either of these conditions will be very noticeable in frequency response testing or A/B comparisons with other UPM-2's.

The "phase-popper" type of speaker polarity checker cannot reliably be used to test for correct polarity of multiple UPM-2 cabinets. However, Meyer Sound's SIM® System II many of the portable spectrum analyzers can be used, with a pink noise source, to test system polarity 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 two loudspeakers will show up as a 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-2 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 or 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 UPM-2 is suitable for use as a conference-room sound system for voice reinforcement and music playback, and its compact size and high power output capability makes it appropriate for situations in which a high-output main system is undesirable, such as in houses of worship. Further applications include surround channels in cinema systems, and multimedia room main speakers.

The UPM-2 features even coverage in both the horizontal and the vertical axis, with high-frequency coverage of 60° horizontal and vertical. To increase the coverage angle in under-balcony situations, place two UPM-2's end-to-end, with the tweeters apart. You may separate the angle between the cabinets to a maximum of 40° to increase the effective coverage angle to 120°. For upright (side-by-side) installation, keep the separation angle between the two cabinets to at least 20° and not more than 45°. Always keep the rear corners of adjacent cabinets touching, where possible.

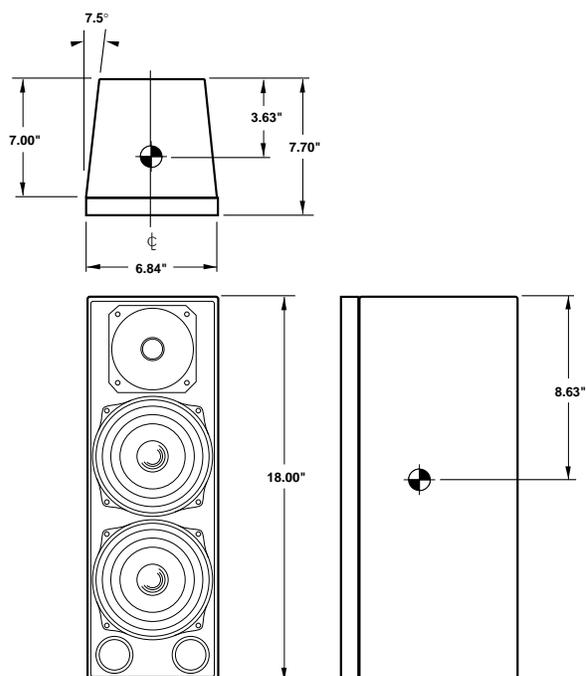
When the UPM-2 is placed in a corner (¼ or ⅓ space loading), the bass response of the system is extended by up to an octave. If this additional response is not required, engage the **Lo Cut** switch of the P-2 to insert a 160 Hz high-pass filter.



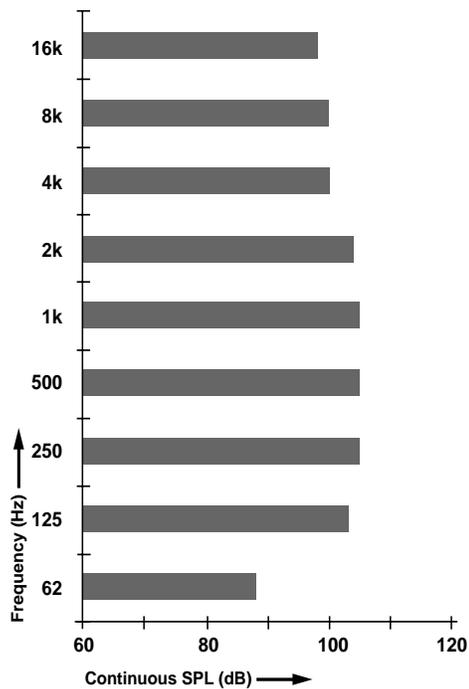
UPM-2 Reinforcement Loudspeaker

Operating Instructions

Physical Dimensions



Maximum Output



UPM-2 Reinforcement Loudspeaker

Operating Instructions

Specifications	Acoustical – UPM-2/P-2	
	Frequency Response ¹	
	Half space	60-16,000 Hz \pm 4 dB
	Free air	70-16,000 Hz \pm 4 dB
	Maximum SPL ²	
	Continuous	108 dB
	Peak	118 dB
	HF Distribution Pattern (-6dB points)	
	Horizontal	60 degrees
	Vertical	60 degrees
	UPM-2 Loudspeaker	
	Driver Complement	
	Low-Frequency	(2) MS-5 5-inch cone drivers
	High-Frequency	1" titanium dome horn driver
	Passive Network	
	Function	3-way crossover
	Capacitor Type	Polypropylene
	Inductor Type	Ferrite core
	Nominal Impedance	16 ohms
	Enclosure	0.2 cu. ft. vented, multi-ply Finnish birch
	Finish	Black textured
	Connector	EP 4 (EP 5, Europe only), 3-pin XLR (male and female) or Terminal block
	Protective Grill	Perforated steel screen, powder coated charcoal-grey foam covering
	Mounting Points	$\frac{3}{8}$ "-16 nut plates
	Physical Dimensions	6 $\frac{3}{4}$ " W x 18 $\frac{1}{8}$ " H x 7 $\frac{1}{8}$ " D
	Weight	16 lbs. (7.3 kg)
	P-2 Control Electronics Unit	
	Input Type	Balanced (active), 47k ohms
	Output Type	Push-pull (active), 200 ohms source impedance
	Maximum Input/Output Level ³	
	Unbalanced	>+20 dBu
	Balanced	>+26 dBu
	Hum and Noise ⁴	<-90 dBV
	Dynamic Range ⁵	>105 dB
	Sense Input	10K ohms true differential
	Driver Protection Circuitry	RMS and LF Excursion Limiters
	Indicators	
	Sense	Green LED
	Limit	Red LED
	Power	Green LED
	Controls	Level control, AC on/off switch, Lo Cut switch
	Connectors	
	Balanced Input/Output	3-pin XLR (A-3)
	Sense Input	Banana jacks
	Power	120/240V AC, 50/60 Hz (internally switchable)
	Physical Dimensions	19" W x 1 $\frac{3}{4}$ " H x 7 $\frac{3}{4}$ " D Standard rack mount
	Weight	7 lbs. (3.2 kg)

Note 1:

Measured 1 meter on axis, pink noise input, in third-octave ISO bands.

Note 2:

"A"-weighted noise input, loudspeaker driven by 125 watt (16 ohm rating) mono amplifier.

Note 3:

1 kHz, 10k Ω load, < 0.1% THD.

Note 4:

"A" weighted.

Note 5:

Noise floor to maximum output.

