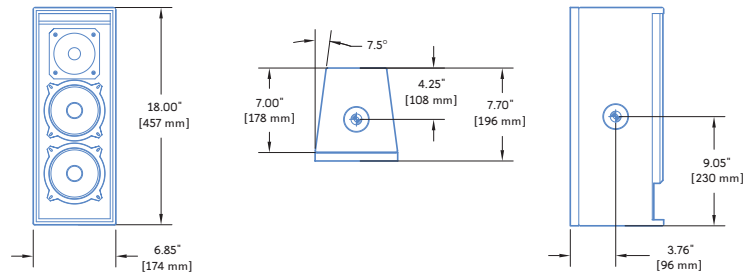




UPM-2P : Ultra-Compact Narrow Coverage Loudspeaker



Dimensions	6.85" w x 18.00" h x 7.70" d (174 mm x 457 mm x 196 mm)
Weight	21 lbs (9.53 kg)
Enclosure	Premium birch plywood
Finish	Black textured
Protective Grille	Powder-coated hex-stamped steel, foam covering
Rigging	Three 3/8"-16 or metric M10 nut plates

The UPM-2P is a remarkably compact, self-powered professional sound reinforcement loudspeaker system. It is ideally suited to applications requiring a relatively small and inconspicuous loudspeaker that also can provide high sound pressure levels, extremely low distortion, and uniform directional control.

The UPM-2P loudspeaker provides vocal range reinforcement as a small PA system or as a fill or delay loudspeaker in larger indoor or outdoor systems. A full-range system can be created with the addition of an optional subwoofer. The UPM-2P's narrow beamwidth makes it ideally suited to applications where coverage must be restricted to defined areas, often to prevent unwanted reflections or bleed into microphones.

The UPM-2P high-frequency section comprises a 1-inch metal dome tweeter on a symmetrical constant-directivity high-frequency

horn with 45-degree beamwidth. At lower frequencies, sophisticated phase-correction circuitry assures true point-source performance without the off-axis cancellation effects that plague customary dual-woofer designs. Two 5-inch low-frequency cone drivers are driven in parallel at low frequencies to take advantage of their combined acoustic output. To prevent destructive interference and comb filtering effects in the mid-band frequencies close to the crossover area, one of the drivers rolls off above 320 Hz.

Two channels of power amplification are provided, 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 allow long signal runs through shielded twisted-pair cable. The standard UPM-2P is switchable between the 115 V AC and 230 V AC ranges. A 100 V AC version is

also available. The UPM-2P's integral power supply suppresses high-voltage transients, while two PowerCon AC connectors facilitate AC looping.

Mounting is via three 3/8"-16 or metric M10 threaded recessed nut plates. Optional U-bracket, yoke, and pole-mount hardware is available. The UPM-2P loudspeaker can be supplied with either the standard audio input module incorporating looping XLR connectors, or an alternate that adds attenuation and a polarity switch. The UPM-2P easily integrates with the optional RMS™ remote monitoring system network and software. RMS displays signal and power levels, driver status, limiter activity, and amplifier temperature on a remote Windows® computer.

Options include weather protection and finishes in custom colors for situations requiring specific cosmetics.

FEATURES & BENEFITS

- Exceptional fidelity and power capability in an ultra-compact package
- Narrow, symmetrical pattern provides precise coverage control
- Unique crossover design eliminates combing for consistent midrange response
- Metal dome driver delivers exceptionally smooth high-frequency characteristic

APPLICATIONS

- Frontfill and under balcony
- Theatrical sound reinforcement
- Portable and installed audio-visual systems
- Effects for theatre
- Compact voice reinforcement systems

ACOUSTICAL		Operating Frequency Range¹ 80 Hz – 20 kHz Frequency Response² 85 Hz – 19 kHz ± 4 dB Phase Response 300 Hz – 18 kHz $\pm 60^\circ$ Maximum Peak SPL³ 123 dB Dynamic Range >110 dB
COVERAGE		Horizontal 45° Vertical 45°
CROSSOVER		2300 Hz ⁴
TRANSDUCERS		Low Frequency⁵ Two 5" cone drivers Nominal impedance: 8 Ω Voice coil size: 1" Power-handling capability: 200 W (AES)⁶ High Frequency One 1" metal dome tweeter Nominal impedance: 8 Ω Voice coil size: 1" Diaphragm size: 1" Power-handling capability: 20 W (AES)⁶
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 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 reversal switch)⁷ 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 <80 kHz, integral to signal processing Nominal Input Sensitivity 0 dBV (1 V rms, 1.4 V pk) continuous average is typically the onset of limiting for pink noise and music Input Level Audio source must be capable of producing a minimum of +20 dBV (10 V rms, 14 V pk) into 600 Ω to produce maximum peak SPL over the operating bandwidth of the loudspeaker
AMPLIFIERS		Type Complementary MOSFET output stages (class AB/bridged) Output Power⁸ 350 W total THD, IM, TIM <0.2 % Load Capacity 4 Ω low channel, 8 Ω high channel Cooling Convection
AC POWER		Connector PowerCon with looping output Voltage Selection External 115/230 V AC switch (100 V AC version available)⁹ Operating Voltage Ranges¹⁰ 105 V AC – 130 V AC (115 V AC); 210 V AC – 260 V AC (230 V AC) Current Draw: Idle Current 0.13 A rms (115 V AC); 0.065 A rms (230 V AC); 0.15 A rms (100 V AC) Max Long-Term Continuous Current (>10 sec) 1 A rms (115 V AC); 0.5 A rms (230 V AC); 1.2 A rms (100 V AC) Burst Current (<1 sec) 1.3 A rms (115 V AC); 0.65 A rms (230 V AC); 1.5 A rms (100 V AC) Ultimate Short-Term Peak Current Draw 2.9 A pk (115 V AC); 2 A pk (230 V AC); 3.3 A pk (100 V AC) Inrush Current 18 A pk (115 V AC); 12 A pk (230 V AC); 15 A pk (100 V AC)
RMS NETWORK (OPTIONAL)		Equipped for two-conductor twisted-pair network, reporting all amplifier operating parameters to 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 at 1 meter.
4. At this frequency, the transducers produce equal sound pressure levels.
5. To eliminate interference at short wavelengths, the two 5" drivers work in combination at low frequencies below 320 Hz. Above 320 Hz only the cone driver closer to the tweeter is fed from the crossover up to the crossover frequency to maintain optimal polar and off-axis frequency response characteristics.
6. Power handling is measured under AES standard conditions: transducer driven continuously for two hours with a band-limited noise signal having a 6 dB peak-to-average ratio.
7. Two additional input module options are available with polarity reversal switch and an attenuator (0 dB to -18 dB): one looping and one with two inputs for mono summing.
8. Amplifier wattage rating based on the maximum unclipped burst sine-wave rms voltage the amplifier will produce in to the nominal load impedance. Low and high channels 30 V rms (42 V pk).
9. 100 V AC version, range 90 – 100 V AC recommended maximum 115 V AC.
10. Fuse-protected above 135 V AC (115 V AC switch position) and 265 V AC (230 V AC switch position).

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The loudspeaker shall be a self-powered, full-range system. The transducers shall consist of two 5-inch diameter cone drivers and a 1-inch metal dome tweeter.

The loudspeaker system shall incorporate internal processing electronics and a two-channel amplifier. Processing functions shall include equalization, phase correction and signal division and driver protection for the high- and low-frequency sections. The crossover point shall be 2.3 kHz. Each amplifier channel shall be class AB/bridged with complementary MOSFET output stages. Burst capability shall be 350 watts total with nominal 4 ohms low channel and 8 ohms high channel resistive load. Distortion (THD, IM, TIM) shall not exceed 0.02%.

Performance specifications for a typical production unit shall be as follows, measured at 1/3 octave resolution at 4 meters. Operating frequency range shall be 80 Hz to 20 kHz. Peak response shall be $\pm 6^\circ$ from 300 Hz to 18 kHz. Maximum SPL

shall be 123 dB at 1 meter. Horizontal coverage and vertical coverage shall both be 45 degrees.

The audio input shall be electronically balanced with a 10 kOhm impedance and accept a nominal 0 dBV (1 V rms, 1.4 V pk) signal. Connector shall be XLR (A-3) type female with parallel looping male. RF filtering shall be provided, and CMRR shall be greater than 50 dB from 50 Hz to 500 kHz. Two input module options shall be offered: one with loop-through output and another with an attenuator and polarity reversal switch in addition to the loop-through output.

Two versions shall be available: a switchable 115/230 V and a non-switchable 100 V-only version. The voltage selection needs to be manually selected. The internal power supply shall perform EMI filtering, soft current turn-on and surge suppression. Powering requirements shall be nominal 100 (100 V version) and 110 or 230 V AC (115/230 version) line current

at 50 or 60 Hz. UL and CE operating voltage range shall be 115 V AC – 240 V AC. Ultimate short-term peak current draw shall be 2.9 A at 115 V AC, 2 A at 230 V AC and 3.3 A at 100 V AC. Current inrush during turn-on shall not exceed 18 A at 115 V AC. AC power connectors shall be PowerCon with looping output. The loudspeaker system shall provide facilities for installing Meyer Sound's optional RMS™ remote monitoring system.

All loudspeaker components shall be mounted in an acoustically vented trapezoidal enclosure constructed of premium birch plywood with a black textured finish. The front protective grille shall be hex-stamped steel covered by charcoal gray foam. Dimensions shall be 6.85" wide x 18" high x 7.70" deep (174 mm x 457 mm x 196 mm). Weight shall be 21 lbs (9.53 kg). Rigging shall be three 3/8"-16 or M10 nut plates.

The loudspeaker shall be the Meyer Sound UPM-2P.