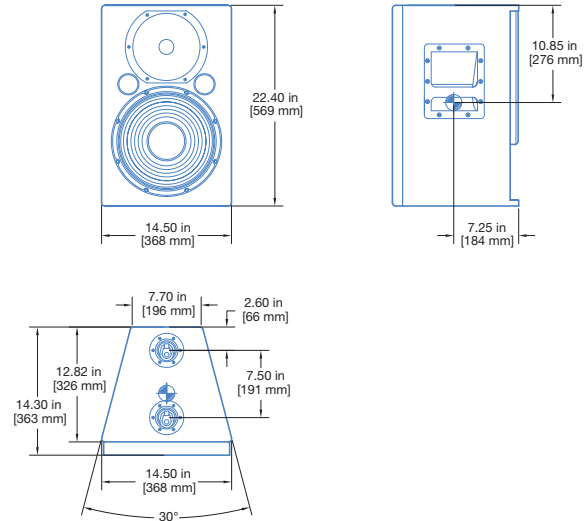


# UPA-2P Compact Narrow Coverage Loudspeaker



The UPA-2P loudspeaker provides high power output, low distortion, and consistent polar response in a compact, vented two-way enclosure. The loudspeaker features a 12-inch cone low-frequency driver and a 3-inch diaphragm compression driver coupled with a 45° symmetrical high-frequency horn. The versatile UPA-2P has a variety of sound reinforcement applications including as a main front-of-house loudspeaker in smaller venues (singly or in arrays) and as a delay or fill loudspeaker in larger systems.

The extraordinarily smooth and predictable behavior of its proprietary horn distinguishes the UPA-2P. The result of intensive research in Meyer Sound's anechoic chamber, the patented UPA-2P horn design exhibits constant Q. The beamwidth remains consistent within close tolerances, in both the horizontal and vertical planes and across the horn's operating frequency range of 1 kHz – 18 kHz. The result is uniform attenuation of all frequencies outside the specified beam width, with minimal side lobing. Uniformly predictable polar behavior takes much of the guesswork out of system design, and ensures arrays that exhibit minimal destructive interference.

A proprietary two-channel, class AB/bridged power amplifier with complementary MOSFET output stages drives the UPA-2P. Total peak power is 1000 watts; the incoming audio signal is processed through an electronic crossover and correction filters for flat phase and frequency response as well as for driver protection. Phase-corrected electronics

ensure flat acoustical amplitude and phase response, resulting in exceptional impulse response and precise imaging.

The field-replaceable amplifier/processing package incorporates Intelligent AC™, which auto-selects the correct operating voltage, suppresses high voltage transients, filters EMI and provides soft-start power-up. The high common-mode rejection of the laser-trimmed differential input circuit permits long signal runs through a simple shielded twisted-pair cable. The UPA-2P cabinet provides XLR input and looping output connectors for balanced audio and a powerCON 20 connector for power.

The optional RMS™ remote monitoring system module provides comprehensive monitoring of loudspeaker parameters from a host computer running Compass® software.

Meyer Sound covers the durable trapezoidal enclosure with a slightly textured black finish and includes a protective hex-stamped steel grille with black mesh. Standard rigging points are four ring and stud pan fittings (two on top and bottom) with a load rating of 420 lb (190.51 kg) at a 5:1 safety factor. The optional 30° rigging frame, mounting yoke and pole mount adapters allow fast, flexible installation and easy aiming. Options include weather protection and custom color finishes for applications requiring specific cosmetics.

## FEATURES AND BENEFITS

- Exceptional fidelity and extended high-frequency performance
- Surprising power capability in a compact package
- Extraordinarily flat amplitude and phase response for tonal accuracy and precise imaging
- Constant-Q horn affords uniform response throughout the coverage area
- Narrow pattern enables precisely controlled coverage and arrayability and increases efficiency at high frequencies
- Predictable array performance ensures system design flexibility
- Symmetrical horn allows loudspeakers to be oriented horizontally or vertically

## APPLICATIONS

- Concert halls and clubs
- Portable and installed audio-visual systems
- Theatrical sound reinforcement
- Frontfill and under balcony
- Conference centers, presentations, ballrooms and houses of worship

## SPECIFICATIONS

ACOUSTICAL <sup>1</sup>	
Operating Frequency Range <sup>2</sup>	60 Hz - 18 kHz
Frequency Response <sup>3</sup>	80 Hz - 17 kHz $\pm 4$ dB
Phase Response	600 Hz - 16 kHz $\pm 35^\circ$
Linear Peak SPL <sup>4</sup>	132.5 dB with 18 dB crest factor (M-noise), 132 dB (Pink noise), 136 dB (B-noise)
COVERAGE	
Horizontal Coverage	45°
Vertical Coverage	45°
TRANSDUCERS	
Low Frequency	One 12-inch cone driver; 2 $\Omega$ nominal impedance
High Frequency	One 3-inch compression driver; 16 $\Omega$ nominal impedance
AUDIO INPUT	
Type	Differential, electronically balanced
Maximum Common Mode Range	$\pm 15$ V DC, clamped to earth for voltage transient protection
Connectors <sup>5</sup>	XLR 3 female input with male loop output; optional XLR 5-pin connectors to accommodate both balanced audio and RMS signals.
Input Impedance	10 k $\Omega$ differential between pins 2 and 3
Wiring	Pin 1: Chassis/earth through 220 k $\Omega$ , 1000 pF, 15 V clamp network to provide virtual ground lift at audio frequencies Pin 2: Signal + Pin 3: Signal - (optional polarity reversal switch) Case: Earth ground and chassis
Nominal Input Sensitivity	0 dBV (1.0 V rms) continuous is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing of +20 dBV (10 V rms) into 600 $\Omega$ to produce the maximum peak SPL over the operating bandwidth of the loudspeaker.
AMPLIFIER	
Type	Two-channel complementary MOSFET output stages (class AB/bridged)
Total Output Power <sup>6</sup>	1000 W peak
THD, IM, TIM	< 0.02%
Cooling	Convection; 24 V DC output for optional external fan
AC POWER	
Connector	PowerCON 20 input
Automatic Voltage Selection	90–265 V AC
Safety Rated Voltage Range	100–240 V AC, 50–60 Hz
Turn-on and Turn-off Points	90 V AC turn-on, no turn-off; internal fuse-protection above 265 V AC
CURRENT DRAW	
Idle Current	0.25 A rms (115 V AC); 0.13 A rms (230 V AC); 0.3 A rms (100 V AC)
Maximum Long-Term Continuous Current (>10 sec)	2.8 A rms (115 V AC); 1.4 A rms (230 V AC); 3.2 A rms (100 V AC)
Burst Current (<1 sec) <sup>7</sup>	3.2 A rms (115 V AC); 1.6 A rms (230 V AC); 3.7 A rms (100 V AC)
Maximum Instantaneous Peak Current	5.0 A pk (115 V AC); 2.5 A pk (230 V AC); 5.8 A pk (100 V AC)
Inrush Current	< 9 A peak (115 V AC and 230 V AC)
RMS NETWORK (OPTIONAL)	
	Equipped with two-conductor twisted-pair network, reporting all operating parameters of amplifiers to system operator's host computer.

## SPECIFICATIONS, CONT'D.

PHYSICAL	
Dimensions	W: 14.50 in (368 mm) x H: 22.40 in (569 mm) x D: 14.30 in (363 mm)
Weight	77 lb (34.93 kg)
Enclosure	Premium multi-ply birch with slightly textured black finish
Protective Grille	Powder-coated, hex-stamped steel with black mesh covering
Rigging	Four ring and stud pan fittings, two on both top and bottom. Working load for each fitting is 420 lbs (190.51 kg), 1/5 the cabinet breaking strength (with straight tensile pull); 3/8 in or metric M10 nut plates optional

## NOTES

- Loudspeaker system predictions for coverage and SPL are available in Meyer Sound's MAPP System Design Tool.
- Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
- Free-field, measured with 1/3 octave frequency resolution at 4 m.
- Linear Peak SPL** is measured in free-field at 4 m referred to 1 m. Loudspeaker SPL compression measured with M-noise at the onset of limiting, 2-hour duration, and 50-degree C ambient temperature is < 2 dB.  
**M-noise** is a full bandwidth (10 Hz–22.5 kHz) test signal developed by Meyer Sound to better measure the loudspeaker's music performance. It has a constant instantaneous peak level in octave bands, a crest factor that increases with frequency, and a full bandwidth Peak to RMS ratio of 18 dB.  
**Pinknoise** is a full bandwidth test signal with Peak to RMS ratio of 12.5 dB.  
**B-noise** is a Meyer Sound test signal used to ensure measurements reflect system behavior when reproducing the most common input spectrum, and to verify there is still headroom over pink noise.
- Two additional 3-pin XLR input module options are available with a polarity reversal switch and an attenuator (0 dB to -18 dB): one looping and one with two inputs for mono summing.
- Peak power based on the maximum unclipped peak voltage the amplifier will produce into the nominal load impedance.
- AC power cabling must be of sufficient gauge so that under burst current rms conditions, cable transmission losses do not cause the loudspeaker's voltage to drop below the specified operating range.

## ARCHITECTURAL SPECIFICATIONS

The loudspeaker shall be a self-powered, full-range system. The transducers shall consist of a 12-inch diameter cone driver and a 3-inch diaphragm compression driver on a 45° horizontal by 45° vertical symmetrical conic horn.

The loudspeaker system shall incorporate internal processing electronics and a two-channel amplifier. Processing functions shall include equalization, phase correction, signal division and protection for the high- and low-frequency sections. Each amplifier channel shall be class AB/bridged with complementary MOSFET output stages. Burst capability shall be 1000 watts total with nominal impedance of 16  $\Omega$  for the high-frequency channel and 2  $\Omega$  for the low-frequency channel. Distortion (THD, IM, TIM) shall not exceed 0.02%.

Performance specifications for a typical production unit shall be as follows (free-field, measured with 1/3-octave resolution at 4 m): operating frequency range shall be 60 Hz to 18 kHz. Phase response shall be from 600 Hz to 16 kHz  $\pm 35^\circ$ . Linear peak SPL shall be 132.5 dB with 18 dB crest factor, measured with M-noise, free field at 4 m and referred to 1 m. Horizontal coverage shall be 45° and vertical coverage shall be 45°.

The audio input shall be electronically balanced with a 10 k $\Omega$  impedance and accept a nominal 0 dBV (1 V rms) signal. Connector shall be XLR 3-pin

female with male loop.

The internal power supply shall perform automatic voltage selection, EMI filtering, soft current turn-on and surge suppression. Powering requirements shall be nominal 100, 110 or 230 V AC line current at 50 or 60 Hz. UL and CE operating voltage range shall be 100 to 240 V AC. Maximum peak current draw during burst shall be 5 A at 115 V AC, 2.5 A at 230 V AC and 5.8 A at 100 V AC. Current inrush during soft turn-on shall not exceed 9 A at 115 V AC. AC power connector shall be PowerCON.

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 multi-ply birch with a slightly textured black finish. The front protective grille shall be powder-coated hex-stamped steel covered by charcoal gray foam. Dimensions shall be W: 14.50 in (368 mm) x H: 22.40 in (569 mm) x D: 14.30 in (363 mm). Weight shall be 77 lb (34.93 kg). Rigging points shall be four ring and stud pan fittings, two each on top and bottom, rated at 420 lb (190.51 kg) per fitting, based on a 5:1 safety factor.

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