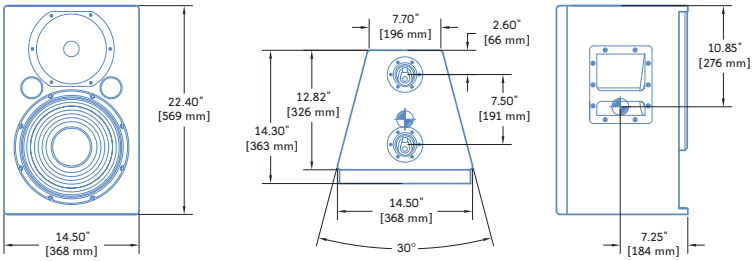
UPA-2P : Compact Narrow Coverage Loudspeaker



Dimensions	14.50" w x 22.40" h x 14.30" d (368 mm x 569 mm x 363 mm)
Weight	77 lbs (34.93 kg)
Enclosure	Premium birch plywood
Finish	Black textured
Protective Grille	Powder-coated hex-stamped steel, foam 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" or metric M10 nut plates optional

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-degree symmetrical high-frequency horn. The versatile UPA-2P has many sound reinforcement applications, as a main front-of-house loudspeaker in smaller venues (singly or in arrays), as a delay or fill loudspeaker in larger systems, and more.

The UPA-2P is distinguished by the extraordinarily smooth and predictable behavior of its proprietary horn. 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 to 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.

Each driver is individually powered by a dedicated channel of the proprietary class AB/bridged amplifier with complementary MOSFET output stages. Total power is 550 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. Audio input modules accommodate a range of applications. The standard version offers looping XLR input and output connectors, while an enhanced looping version adds polarity switching (the looping output is not affected) and input attenuation (0 dB to -18 dB). A summing mono version with two inputs is also available.

The durable trapezoidal enclosure is covered with a black textured hard-shell finish. A protective hex-stamped steel grille and charcoal grey foam cover are included. Standard rigging points are four ring and stud pan fittings (two on top and bottom) with a load rating of 420 lbs (190.51 kg) at a 5:1 safety factor. The optional 30-degree rigging frame, mounting yoke and pole mount adaptors allow fast, flexible installation and easy aiming. Options include weather protection, custom color finishes, and cabinets with no handles for fixed applications requiring specific cosmetics.

The UPA-2P is compatible with the RMS™ remote monitoring system, which offers comprehensive monitoring of system parameters on a Windows®-based network.

FEATURES & 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 efficency 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

UPA-2P SPECIFICATIONS

ACOUSTICAL	
Operating Frequency Range[1]	60 Hz – 18 kHz
Frequency Response[2]	80 Hz – 17 kHz ±4 dB
Phase Response	600 Hz – 16 kHz ±35˚
Maximum Peak SPL[3]	133 dB
Dynamic Range	›110 dB
COVERAGE	
Horizontal	45˚
Vertical	45˚
CROSSOVER[4]	
	1000 Hz
TRANSDUCERS	
Low Frequency	One 12" cone driver Nominal impedance: 2 Ω Voice coil size: 3" Power-handling capability: 400 W (AES)[5]
High Frequency	One 3" compression driver Nominal impedance: 16 Ω Voice coil size: 3" Diaphragm size: 3" Exit size: 1.4" throat Power-handling capability: 100 W (AES)[5]
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 or VEAM all-in-one (integrates AC, audio and network)
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)[6] 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
AMPLIFIER	
Type	Two-channel complementary MOSFET output stages (class AB/bridged)
Output Power[7]	550 W total
THD, IM, TIM	‹.02 %
Load Capacity	2 Ω low channel, 16 Ω high channel
Cooling	Convection; 24 V DC output for optional external fan
AC POWER	
Connector	PowerCon or VEAM
Voltage Selection	Automatic, continuous range from 90 V AC to 265 V AC
Safety Agency Rated Operating Range	100 V AC – 240 V AC; 50/60 Hz
Turn-on and Turn-off Points[8]	90 V AC on, no turn-off, only fuse-protect 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)
Max 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)	3.2 A rms (115 V AC); 1.6 A rms (230 V AC); 3.7 A rms (100 V AC)
Ultimate Short-Term Peak Current Draw	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 pk (115 V AC and 230 V AC)
RMS NETWORK (OPTIONAL)	
	Equipped for two-conductor, twisted-pair network, reporting 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 mid- and high-frequency transducers produce equal sound pressure levels.*
5. *Power handling is measured under AES standard conditions: transducer driven continuously for two hours with band-limited noise signal having a 6 dB peak-average ratio.*
6. *Two additional 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.*
7. *Amplifier wattage rating based on the maximum unclipped burst sine-wave rms voltage that the amplifier will produce into the nominal load impedance. Low channel 30 V rms (42 V pk) into 2 ohms; high channel 32 V rms (45 V pk) into 16 ohms.*
8. *No automatic turn-off voltages. Voltages above 265 V AC are fuse protected but may cause permanent damage to the power supply. Voltages below 90 V AC may result in intermittent operation.*

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N775

3K59 COMMERCIAL AUDIO SYSTEM
US LISTED

UPA-2P - 04.077.017.01 A

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ARCHITECT 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-degree horizontal by 45-degree 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. The crossover point shall be 1 kHz. Each amplifier channel shall be class AB/bridged with complementary MOSFET output stages. Burst capability shall be 550 watts total with nominal 16-ohm resistive load for the high-frequency channel and 2-ohm 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, measured at 1/3-octave resolution: Operating frequency range shall be 60 Hz to 18 kHz. Phase response shall be ±35˚ from 600 Hz to 16 kHz. Maximum peak SPL shall be 133 dB at 1 meter. Horizontal coverage shall be 45 degrees and vertical coverage shall 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 80 dB from 50 Hz to 500 Hz. Two additional input module options shall be offered with an attenuator and polarity reversal switch: one with loop-through output, and another with two summing inputs instead of the loop-through input and output.

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 connectors shall be PowerCon or VEAM all-in-one muti-pin connector.

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 hard-shell finish. The front protective grille shall be powder-coated hex-stamped steel covered by charcoal gray foam. Dimensions shall be 14.50" wide x 22.40" high x 14.30" deep (368 mm x 569 mm x 363 mm). Weight shall be 77 lbs (34.93 kg). Rigging points shall be four ring and stud pan fittings, two each on top and bottom, rated at 420 lbs (190.51 kg) per fitting, based on a 5:1 safety factor.

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