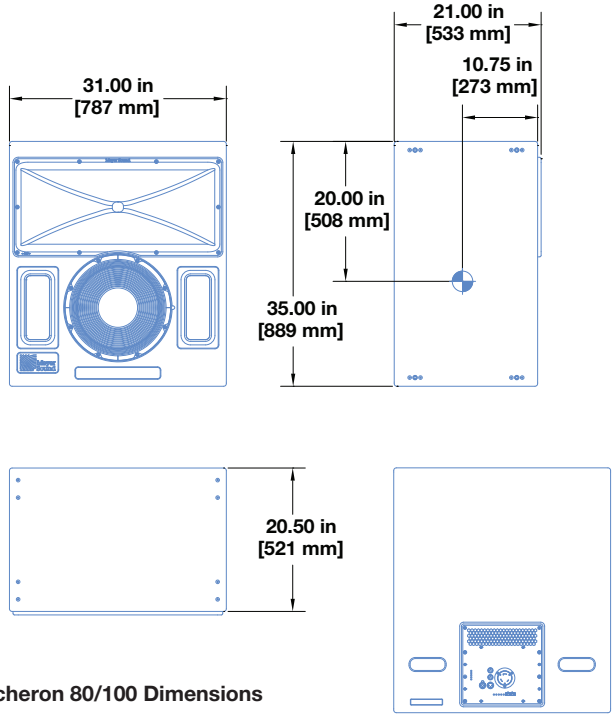
ACHERON 80/100/LF Screen Channel Loudspeaker System

Acheron 100



Acheron 80/100 Dimensions

At the heart of Meyer Sound's EXP line of cinema products is the Acheron high-performance screen channel loudspeaker. Optimized for installation behind perforated screens, the two-way loudspeaker combines the advantages of self-powered technology and innovative horn design to deliver exceptional, precise coverage for the left, right, and center sound channels of cinema.

The Acheron loudspeaker is available in two full-range models: the Acheron 100, with a 100° horizontal by 50° vertical horn, which is ideal for wide theaters; and the Acheron 80, with an 80° horizontal by 50° vertical horn, which is suitable for narrower theaters and re-recording stages.

The Acheron horn was specifically designed for cinema use and features a very soft roll-off outside the extremely well-behaved coverage angle. The horn is fixed within the enclosure to ensure an accurate acoustic crossover, phase response, and an incredibly consistent vertical pattern between the low and high frequencies. The Acheron's 580 Hz crossover point places most of the dialog in the horn, which is ideal for cinema applications.

Boasting a frequency response of 38 Hz to 17 kHz at ±4 dB, as well as a linear peak SPL of 135 dB with crest factor of 18.5 dB (measured with M-noise) with very low distortion, the Acheron stands up to the most demanding of digital soundtracks, maintaining a wide dynamic range and full fidelity. Designed and manufactured at Meyer Sound's headquarters in Berkeley, California, the Acheron's drivers include one 15-inch low-frequency neodymium magnet cone driver and one high-frequency 4-inch diaphragm compression driver. The drivers yield uncompromising quality and full bandwidth, making the Acheron suitable for small and medium theaters, re-recording stages, and production and postproduction facilities.

The Acheron's sophisticated onboard amplification produces consistent and predictable results in any system design. The proprietary Meyer Sound power amplifier is a two-channel, class AB/H amplifier with complementary MOSFET output stages that yields a total output of 1685 W (3370 W peak). Built-in signal processing includes an electronic crossover and correction filters—to achieve a flat phase and frequency response—along with driver protection circuitry. The self-powered design not only ensures consistent results but also simplifies installation in both new and existing rooms.

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

Strategically placed 3/8-inch threaded points on the side corners of the Acheron cabinet allow the unit to be fixed to floors with uptilt or downtilt using optional mounting brackets. The Acheron can also be mounted on top of the Acheron LF loudspeaker, also with uptilt or downtilt, using optional stacking brackets.

FEATURES AND BENEFITS

- Small footprint and narrow width are ideal for small venues or fill applications
- Amazing power-to-size ratio
- Exceptional linearity and transient reproduction at any level, high peak power output, and extremely low distortion
- Self-powered to simplify setup and increase reliability
- Flexible rigging for flown and ground-stacked arrays
- Integrates easily with Meyer Sound's 750-LFC, 900-LFC, and LEOPARD loudspeakers

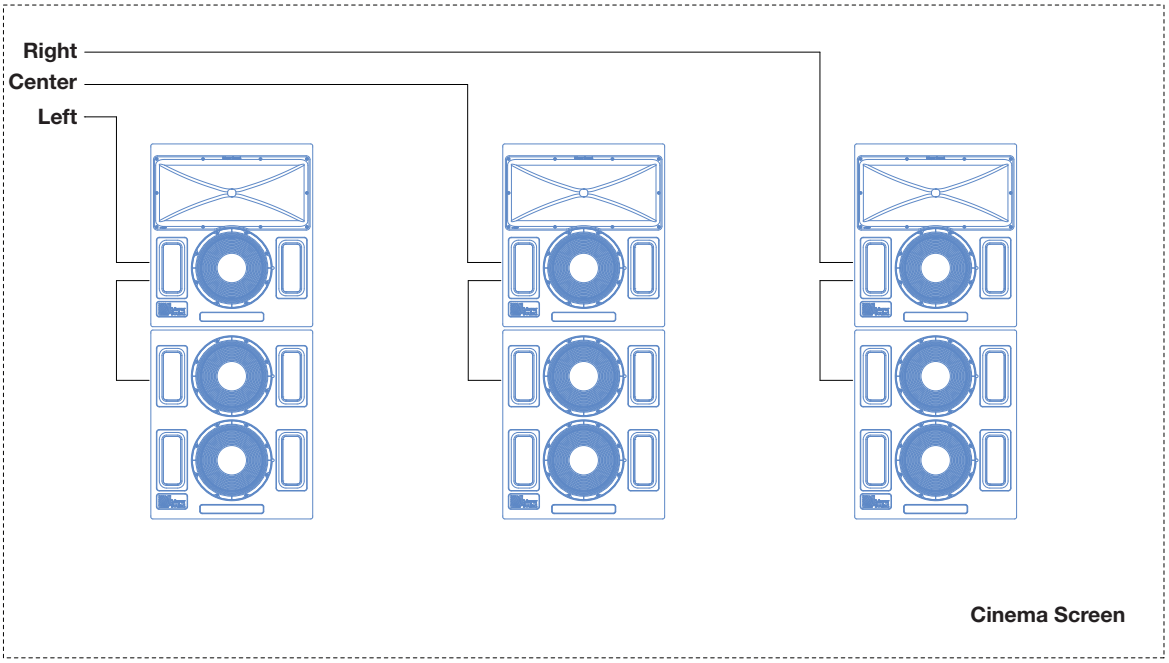
APPLICATIONS

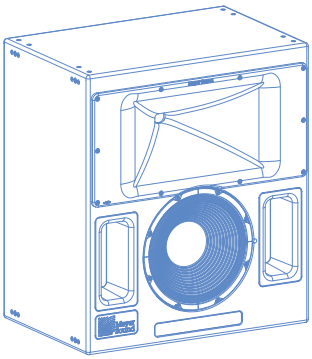
- Small to medium-sized theaters
- Larger theaters with use of Acheron LF
- Re-recording stages
- Production and postproduction studios

ACHERON LCR SYSTEM WITH ACHERON LF

To meet the SPL requirements for large rooms, the Acheron 80 and Acheron 100 can be daisy-chained with the Acheron LF loudspeaker, which has been carefully designed so its frequency and phase responses compliment the Acheron.

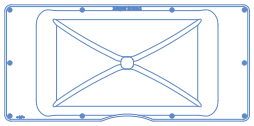
The Acheron LF has the same low end frequency response as the Acheron (38 Hz) and rolls off at 320 Hz to avoid any interference in the crossover region of the Acheron. This coupling is optimized to allow a single parametric filter to achieve a flat frequency response with approximately 10 dB more of headroom in the low frequencies (depending on the room acoustics and loading conditions).



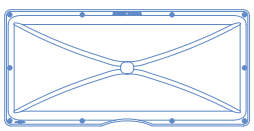


Acheron 80

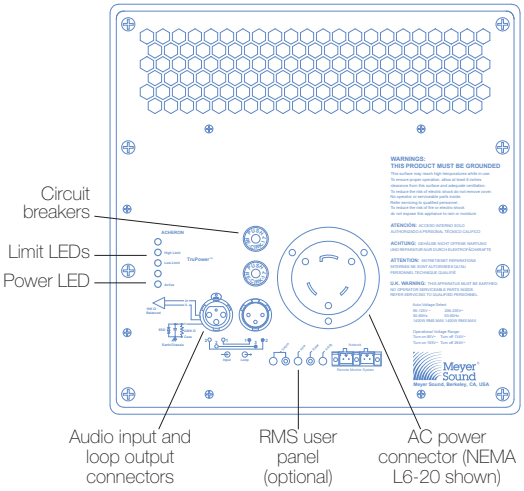
Acheron 80 Horn
80° horizontal by 50° vertical coverage



Acheron 100 Horn
100° horizontal by 50° vertical coverage

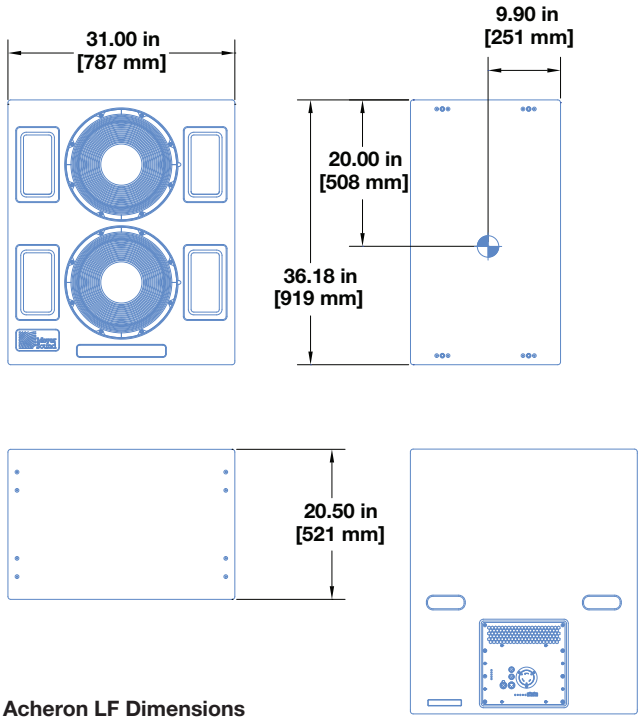


Acheron Rear Panel



ACHERON LF LOUDSPEAKER

Acheron LF



Acheron LF Dimensions

The Acheron LF loudspeaker can be paired with the Acheron 80 or Acheron 100 screen channel loudspeaker to deliver the low-frequency headroom required by larger theaters. The self-powered Acheron LF with dual 15-inch drivers boosts the headroom on the LCR channels, converting each Acheron loudspeaker to a system with three low-frequency drivers in an aligned column.

The unique multi-way, gradated design offers smooth coverage and maximum low-frequency impact with all drivers active at the lowest frequencies and each rolling off, one at a time, via the integral active crossover. This technique eliminates interference between drivers that would otherwise occur at shorter wavelengths, enabling the system to maintain ideal polar, phase, and frequency responses throughout the low and low-mid operating ranges. As a result, the system can deliver the necessary power to completely fill a large theater with rich, clean sound, thereby ensuring that the full intensity and nuance so carefully crafted into today's movie soundtracks reach every listener without compromise.

The Acheron LF was designed exclusively for use with Acheron loudspeakers. The Acheron LF's 37 Hz to 370 Hz operating frequency range and 133 dB linear peak SPL were carefully chosen to compliment the Acheron. The Acheron LF also features the same high-power 15-inch cone driver used in the low frequency section of the Acheron. Engineered to deliver optimum performance, the high-excursion, back-vented drivers include 4-inch voice coils and are housed in a tuned, vented enclosure that shares the same rectangular footprint as the Acheron.

The Acheron LF is powered by an onboard two-channel class AB/H amplifier with complementary MOSFET output stages. Total output power is 2250 W (4500 W peak) and provides the system with enough headroom to easily accommodate the extreme demands of digital soundtracks.

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

Strategically placed 3/8-inch threaded points on the side corners of the Acheron LF cabinet allow the unit to be mounted to floors with optional mounting brackets. The Acheron 100 and Acheron 80 can be mounted on top of the Acheron LF with uptilt or downtilt with optional stacking brackets.

SPECIFICATIONS

ACOUSTICAL[1]	Acheron 80	Acheron 100	Acheron LF
Operating Frequency Range[2]	37 Hz – 18 kHz	37 Hz – 18 kHz	37 Hz – 370 Hz
Frequency Response[3]	38 Hz – 17 kHz ±4 dB	38 Hz – 17 kHz ±4 dB	38 Hz – 340 Hz ±4 dB
Phase Response	700 Hz – 17 kHz ±30°	700 Hz – 17 kHz ±30°	60 Hz – 230 Hz ±30°
Linear Peak SPL[4]	**135 dB with crest factor of 18.5 dB (M-noise),** 134 dB (Pink noise), 136 dB (B-noise)	**134 dB with crest factor of 18 dB (M-noise),** 133.5 dB (Pink noise), 135 dB (B-noise)	**133 dB with crest factor > 11 dB (M-noise),** 133 dB (Pink noise), 133 dB (B-noise)
COVERAGE			
Horizontal Coverage	80°	100°	N/A
Vertical Coverage	50°		N/A
CROSSOVER			
	580 Hz[5]		200 Hz[6]
TRANSDUCERS			
Low Frequency	One high-power 15-inch cone driver with neodymium magnet; 4 Ω nominal impedance		Two high-power 15-inch cone drivers with neodymium magnets; 4 Ω nominal impedance
High Frequency	One 4-inch diaphragm compression driver; 8 Ω nominal impedance		
AUDIO INPUT			
Type	Differential, electronically balanced		
Maximum Common Mode Range	±15 V DC, clamped to earth for voltage transient protection		
Connectors	XLR 3-pin female input with male loop output; optional XLR 5-pin connector to accommodate both balanced audio and RMS signals.		
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 – Case: Earth ground and chassis		
Nominal Input Sensitivity	10 dBV (3.2 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 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker.		
AMPLIFIER			
Type	Two-channel with complementary MOSFET output stages (class AB/H)		
Total Output Power[7]	3370 W peak		4500 W peak
THD, IM, TIM	< 0.02%		
Cooling	Forced air cooling, two internal fans (one ultra low-speed fan, one reserve fan)		
AC POWER			
Connector	250 V NEMA L6-20 (twistlock) inlet or IEC 309 male inlet		
Automatic Voltage Selection	Automatic, two ranges, each with high-low voltage tap (uninterrupted)		
Safety Rated Voltage Range	95–125 V AC; 208–235 V AC, 50/60 Hz		
Turn-on and Turn-off Points	85–134 V AC; 165–264 V AC		

SPECIFICATIONS, CONT'D.

CURRENT DRAW	Acheron 80/100	Acheron LF
Idle Current	0.71 A rms (115 V AC); 0.38 A rms (230 V AC); 0.79 A rms (100 V AC)	0.64 A rms (115 V AC); 0.32 A rms (230 V AC); 0.85 A rms (100 V AC)
Maximum Long-Term Continuous Current (>10 sec)	5.8 A rms (115 V AC); 2.8 A rms (230 V AC); 6.3 A rms (100 V AC)	8.8 A rms (115 V AC); 4.4 A rms (230 V AC); 10.0 A rms (100 V AC)
Burst Current (<1 sec)[8]	6.4 A rms (115 V AC), 3.2 A rms (230 V AC), 7.2 A rms (100 V AC)	19.0 A rms (115 V AC), 9.5 A rms (230 V AC), 22.0 A rms (100 V AC)
Maximum Instantaneous Peak Current	26 A peak (115 V AC), 14 A peak (230 V AC), 28 A peak (100 V AC)	39 A peak (115 V AC), 20 A peak (230 V AC), 45 A peak (100 V AC)
Inrush Current	7 A peak (115 V AC), 7 A peak (230 V AC), 10 A peak (100 V AC)	7 A peak (115 V AC), 7 A peak (230 V AC), 10 A peak (100 V AC)
RMS NETWORK (OPTIONAL)		
	Two-conductor twisted-pair network that reports all operating parameters of amplifiers to system operator's host computer.	
PHYSICAL		
Dimensions	W: 31 in (787 mm) x H: 35 in (889 mm) x D: 20.5 in (521 mm)	W: 31 in (787 mm) x H: 36.18 in (919 mm) x D: 20.5 in (521 mm)
Weight	173 lb (78.5 kg)	185 lb (83.91 kg)
Enclosure	Premium multi-ply birch with slightly textured black finish	
Protective Grille	Powder-coated, hex-stamped steel with black mesh	
Rigging	3/8-inch threaded points on side corners for optional bracket adapters that allow the Acheron to be mounted to floors with uptilt or downtilt, as well as on top of the Acheron LF (also with uptilt or downtilt)	

NOTES

1. Loudspeaker system predictions for coverage and SPL are available in Meyer Sound's MAPP System Design Tool.
2. Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
3. Free-field, measured with 1/3 octave frequency resolution at 4 m.
4. **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 °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. The presence of a greater-than (>) symbol with regard to crest factor indicates it may be higher depending on EQ and boundary loading.

   Pink noise 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.
5. At this frequency, the transducers for the Acheron 80/100 produce equal sound pressure levels.
6. Below this frequency, both Acheron LF transducers are active. Above this frequency, one transducer rolls off to avoid interaction in the higher frequncies (shorter wavelengths) of the Acheron 80/100.
7. Peak power based on the maximum unclipped peak voltage the amplifier will produce into the nominal load impedance.
8. 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.

ACHERON 80/100 ARCHITECTURAL SPECIFICATIONS

The loudspeaker shall be a self-powered, full-range system; the transducers shall consist of a 15-inch diameter cone driver and 4-inch diaphragm compression driver. Two horn options shall be available: 80° horizontal by 50° vertical, and 100° horizontal by 50° vertical. The loudspeaker system shall incorporate internal processing electronics and a two-channel amplifier, one channel for each driver. Processing functions shall include frequency and phase correction, signal division, and protection for the low- and high-frequency sections. The crossover point shall be 580 Hz.

Each amplifier channel shall be class AB/H with complementary MOSFET output stages. Burst capability for the low-frequency channel shall be 1125 W total with a nominal 4 Ω resistive load and 560 W for the high-frequency channel with a nominal 8 Ω resistive load. Total burst power shall be 1685 W (3370 W peak). 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 37 Hz–18 kHz; phase response shall be 700 Hz–17 kHz ±30°; linear peak SPL for the Acheron 80 shall be 135 dB with 18.5 dB crest factor and linear peak SPL for the Acheron 100 shall be 134 dB with 18 B crest factor (both measured with M-noise, free field at 4 meters and referred to 1 meter).

The audio input shall be electronically balanced with a 10 kΩ impedance and accept a nominal 10 dBV (3.2 V rms) signal. Connectors shall be XLR (A-3) type male and female.

The internal power supply shall perform automatic voltage selection, EMI filtering, soft current turn-on, and surge suppression. Power requirements shall be nominal 100 V, 115 V, or 230 V AC line at 50 or 60 Hz. Safety agency operating voltage ranges shall be 100 to 240 V AC. Maximum peak current draw during burst shall be 6.4 A at 115 V AC, 3.2 A at 230 V AC, and 7.2 A at 100 V AC. Current inrush during soft turn-on shall not exceed 7 A at 115 V AC, 7 A at 230 V AC, and 10 A at 100 V AC. AC power connectors shall be locking NEMA L6-20 male inlet or IEC 309 male inlet.

The loudspeaker system shall include support for the optional RMS remote monitoring system module.

All loudspeaker components shall be mounted in an acoustically vented enclosure constructed of premium birch plywood with a slightly textured black finish. Dimensions shall be W: 31 in (787 mm) x H: 35 in (889 mm) x D: 20.5 in (521 mm). Weight shall be 173 lb (78.47 kg). Optional bracket adapters shall allow the Acheron to be fixed to floors, as well as on top of the Acheron LF, with uptilt or downtilt

The loudspeaker shall be the Meyer Sound Acheron.

ACHERON LF ARCHITECTURAL SPECIFICATIONS

The loudspeaker shall be a self-powered bass system. The transducers shall consist of two 15-inch cone drivers (with 4-inch voice coils). The loudspeaker shall incorporate internal processing electronics and a two-channel amplifier. Each amplifier channel shall be class AB/H with complementary MOSFET output stages. Burst capability shall be 1125 W total with a nominal 4 Ω resistive load. Total burst power shall be 2250 W (4500 W peak). Distortion (THD, IM, TIM) shall not exceed 0.02%.

The audio input shall be electronically balanced with a 10 kΩ impedance and accept a nominal 10 dBV (3.2 V rms) signal. Connectors shall be XLR type male and female. Performance specifications for a typical production unit shall be as follows, measured at 1/3-octave resolution: operating frequency range shall be 37 Hz–370 Hz; phase response shall be 60 Hz–230 Hz ±30°; linear peak SPL for the Acheron LF shall be 133 dB with > 11 dB crest factor (measured with Pink noise, free field at 4 meters and referred to 1 m).

The internal power supply shall perform automatic voltage selection, EMI filtering, soft current turn-on, and surge suppression. Power requirements shall be nominal 100 V, 115 V, or 230 V AC line at 50 or 60 Hz. Safety agency operating voltage range shall be 100 to 240 V AC. Maximum peak current draw during burst shall be 19.0 A at 115 V AC, 9.5 A at 230 V AC, and 22.0 A at 100 V AC. Current inrush during soft turn-on shall not exceed 7 A at 115 V AC, 7 A at 230 V AC, and 10 A at 100 V AC. AC power connectors shall be locking NEMA L6-20 male inlet or IEC 309 male inlet.

The loudspeaker system shall include support for the optional RMS remote monitoring system module.

All loudspeaker components shall be mounted in an acoustically vented enclosure constructed of premium birch plywood with a slightly textured black finish. Dimensions shall be W: 31 in (787 mm) x H: 36.18 in (919 mm) x D: 20.5 in (521 mm). Weight shall be 185 lb (83.91 kg). Optional bracket adapters shall allow the Acheron LF to be fixed to floors.

The loudspeaker shall be the Meyer Sound Acheron LF.

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ACHERON 80/100/LF
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