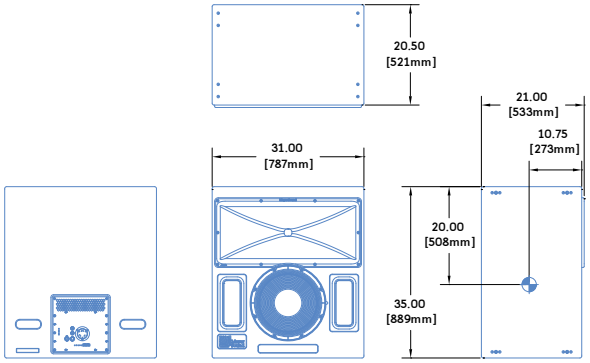
ACHERON® : Screen Channel Loudspeaker System

Acheron 100



Dimensions	31.00" w x 35.00" h x 20.50" d (787 mm x 889 mm x 521 mm)
Weight	173 lbs (78.47 kg)
Enclosure	Premium birch plywood
Finish	Low gloss, black textured
Mounting	3/8" threaded points on side corners for optional bracket adapters, which 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)

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 for cinema.

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

The Acheron horn (patent pending) 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 generous peak output of 139 dB 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 theatres, 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 on a Windows®-based computer.

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 & Benefits

- Exceptional fidelity and extended high-frequency performance
- Constant-Q horn yields uniform response throughout the coverage area
- Extraordinarily flat amplitude and phase response for tonal accuracy
- Wide horn coverage available for larger, wider rooms with the Acheron 100
- Narrow, focused coverage available for smaller rooms with the Acheron 80
- Seamless integration with the Acheron LF loudspeaker and HMS-10 surround loudspeaker

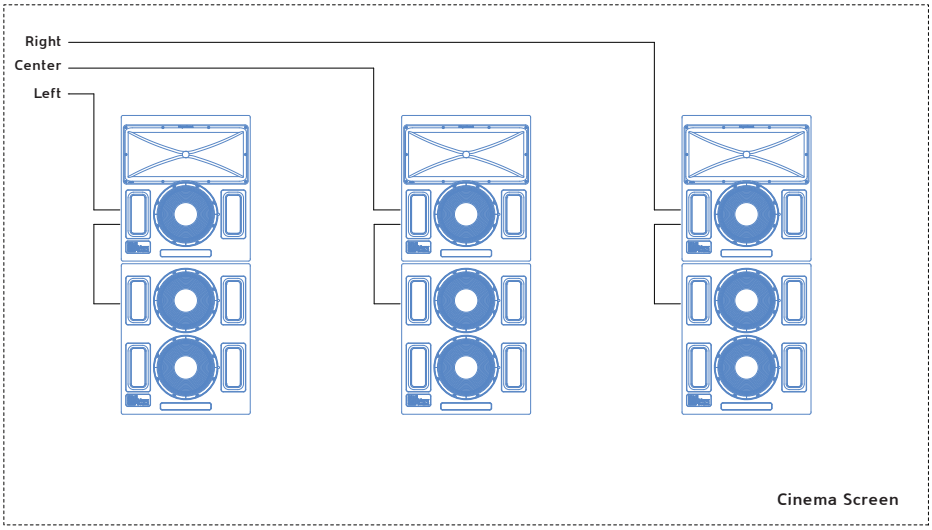
Applications

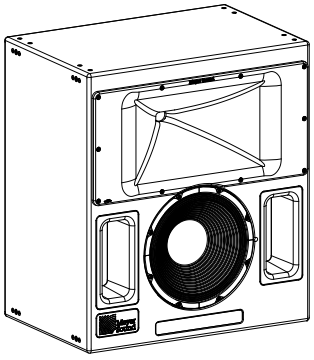
- Small to medium-sized theatres
- Larger theatres with use of Acheron LF
- Re-recording stages
- Production and postproduction studios

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.

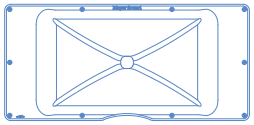
The Acheron LF has the same low end frequency response as the Acheron (38 Hz) and rolls off at 320 Hz to avoid any interference in the crossover region of the Acheron. This coupling is optimized to allow a single parametric filter to achieve a flat frequency response with approximately 10 dB more of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



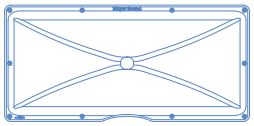


Acheron 80

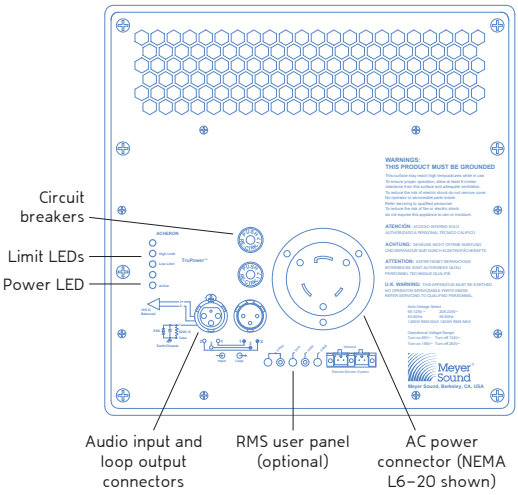
Acheron 80 Horn
80-degree horizontal by 50-degree vertical coverage



Acheron 100 Horn
100-degree horizontal by 50-degree vertical coverage



Acheron Rear Panel



Acheron 80/100 Architect 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-degree horizontal by 50-degree vertical, and 100-degree horizontal by 50-degree 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 watts total with a nominal 4-ohm resistive load and 560 watts for the high-frequency channel with a nominal 8-ohm resistive load. Total burst power shall be 1685 watts (3370 watts 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 to 18 kHz; phase response shall be ±30° from 700 Hz to 17 kHz; maximum peak SPL shall be 139 dB at 1 meter, free field.

The audio input shall be electronically balanced with a 10 kOhm impedance and accept a nominal 10 dBV (3.2 V rms, 4.5 V peak) signal. Connectors shall be XLR (A-3) type male and female. RF filtering shall be provided, and CMRR shall be greater than 50 dB from 50 Hz to 500 Hz.

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, 110 V, or 230 V AC line at 50 or 60 Hz. UL and CE 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.

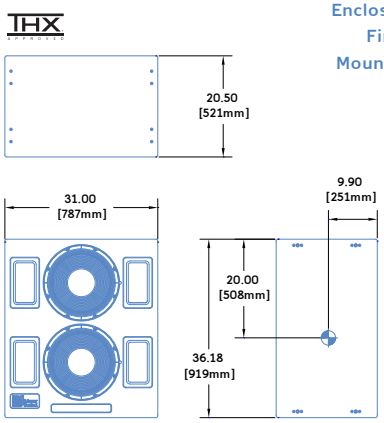
The loudspeaker system shall include support for the optional RMS remote monitoring system module.

All loudspeaker components shall be mounted in an acoustically vented enclosure constructed of premium birch plywood with a black textured finish. Dimensions shall be 31.00" wide x 35.00" high x 20.50" deep (787 mm x 889 mm x 521 mm). Weight shall be 173 lbs (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 Loudspeaker

Acheron LF



Dimensions	31.00" w x 36.18" h x 20.50" d (787 mm x 919 mm x 521 mm)
Weight	185 lbs (83.91 kg)
Enclosure	Premium birch plywood
Finish	Low gloss, black textured
Mounting	3/8" threaded points on side corners for optional bracket adapters, which allow the Acheron LF to be mounted to floors; The Acheron 100 and Acheron 80 can be mounted on top of the Acheron LF with uptilt or downtilt

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 theatres. The self-powered Acheron LF with dual 15-inch drivers boosts the headroom on the LCR channels be 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 theatre 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 136 dB maximum 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 on a Windows-based computer.

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.

Acheron LF Architect 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), each rated to handle 1200 AES* watts.

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 watts total with a nominal 4-ohm resistive load. Total burst power shall be 2250 watts (4500 watts peak). Distortion (THD, IM, TIM) shall not exceed 0.02%. The audio input shall be electronically balanced with a 10 kOhm impedance and accept a nominal 10 dBV (3.2 V rms, 4.5 V peak) signal. Connectors shall be XLR type male and female. RF filtering shall be provided, and CMRR shall be greater than 50 dB (50 Hz – 500 Hz). Performance specifications for a typical production unit shall be as follows, measured at 1/3-octave resolution: operating frequency range shall be 37 Hz to 370 Hz; phase response shall be ±30˚ from 60 Hz to 230 Hz; maximum peak SPL shall be 136 dB at 1 meter, free field.

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, 110 V, or 230 V AC line 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 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 and 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 black textured finish. Dimensions shall be 31.00" wide x 36.18" high x 20.50" deep (787 mm x 919 mm x 521 mm). Weight shall be 185 lbs (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.

**Driven continuously for two hours with a band-limited noise signal having a 6 dB peak-average ratio.*

Acheron Specifications

	Acheron 80/100	Acheron LF
Acoustical		
Operating Frequency Range[1]	37 Hz – 18 kHz	37 Hz – 370 Hz
Frequency Response[2]	38 Hz – 17 kHz ±4 dB	38 Hz – 340 Hz ±4 dB
Phase Response	700 Hz – 17 kHz ±30˚	60 Hz – 230 Hz ±30˚
Maximum Peak SPL[3]	139 dB	136 dB[4]
Dynamic Range	›110 dB	›110 dB
Coverage		
	Acheron 80: 80˚ horizontal x 50˚ vertical Acheron 100: 100˚ horizontal x 50˚ vertical	N/A
Crossover		
	580 Hz[5]	200 Hz[6]
Transducers		
Low Frequency	One high-power 15" cone driver with neodymium magnet Nominal impedance: 4 Ω Voice coil size: 4" Power handling: 1200 W (AES)[7]	Two high-power 15" cone drivers with neodymium magnets Nominal impedance: 4 Ω Voice coil size: 4" Power handling: 1200 W (AES)[7]
High Frequency	One 4" compression driver Nominal impedance: 8 Ω Voice coil size: 4" Diaphragm size: 4" Exit size: 1.5" Power handling: 250 W (AES)[7]	N/A
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 – Case: Earth ground and chassis	
DC Blocking	None on input, DC blocked through signal processing	
CMRR	›50 dB, typically 80 dB (50 Hz – 500 Hz)	
RF Filter	Common mode: 425 kHz; Differential mode: 142 kHz	
TIM Filter	Integral to signal processing (‹80 kHz)	
Nominal Input Sensitivity	10 dBV (3.2 V rms, 4.5 V peak) continuous is typically the onset of limiting for noise and music	
Input Level	Audio source must be capable of producing +20 dBV (10 V rms, 14 V peak) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker	
Amplifier		
Type	Complementary MOSFET output stages (class AB/H)	Complementary MOSFET output stages (class AB/H)
Output Power[8]	1685 W 1125 W low channel 560 W high channel	2250 W 1125 low channels
Total Output	3370 W peak	4500 W peak
THD, IM, TIM	‹.02%	‹.02%
Load Capacity	4 Ω low channel 8 Ω high channel	4 Ω low channels
Cooling	Forced air cooling, two internal fans (one ultra low-speed fan, one reserve fan)	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 Agency Rated Operating 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	
Current Draw:	*Acheron 80/100*	
Idle Current	0.71 A rms (115 V AC); 0.38 A rms (230 V AC); 0.79 A rms (100 V AC)	
Max. 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)	
Burst Current (‹1 sec)[9]	6.4 A rms (115 V AC), 3.2 A rms (230 V AC), 7.2 A rms (100 V AC)	
Ultimate Short-Term Peak Current	26 A peak (115 V AC), 14 A peak (230 V AC), 28 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)	
Current Draw:	*Acheron LF*	
Idle Current	0.64 A rms (115 V AC); 0.32 A rms (230 V AC); 0.85 A rms (100 V AC)	
Max. Long-Term Continuous Current (›10 sec)	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)[9]	19.0 A rms (115 V AC), 9.5 A rms (230 V AC), 22.0 A rms (100 V AC)	
Ultimate Short-Term Peak Current	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)	
RMS Network (Optional)		
	Equipped with two-conductor twisted-pair network, reporting all operating parameters of amplifiers to system operator's host computer	

Notes:

1. *Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.*
2. *Measured free field with 1/3-octave frequency resolution at 4 meters.*
3. *Measured free field with music referred to 1 meter.*
4. *SPL for the Acheron LF calibrated to complement the Acheron 80/100 in the common frequency range.*
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 frequencies (shorter wavelengths) of the Acheron 80/100.*
7. *Power handling measured using AES standards: transducers driven continuously for two hours with a band-limited noise signal having a 6 dB peak-average ratio.*
8. *Amplifier wattage rating based on the maximum unclipped burst sine-wave RMS voltage the amplifier will produce into the nominal load impedance: low frequency channel, 67 V rms (95 V peak) into 4 ohms; high frequency channel, 67 V rms (95 V peak) into 8 ohms.*
9. *AC power cabling must be of sufficient gauge so that under burst current rms conditions, cable transmission losses do not drop below the loudspeaker's specified operating voltage range.*

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Made in USA with domestic and foreign parts

3JKB COMMERCIAL AUDIO SYSTEM
c UL us LISTED

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