4181 Single 460 mm (18”) Cinema Subwoofer System

Professional Series

Application:

Cost effective film sound reproduction for basic cinema

Key Features:

- 500 Watts continuous pink noise, 1000 Watts continuous program power handling
- Usable response to 28 Hz (-10 dB, no EQ), flat to 34Hz (-3 dB) with External EQ
- Dual coils in parallel, vented cooling driverr
  - High Sensitivity
  - Low Power Compression
  - High Maximum-SPL Capability
  - Low 2nd and 3rd Harmonic Distortion
  - Long Excursion Capability

The JBL 4181 is a high quality subwoofer system, featuring an advanced technology 460mm (18in), low frequency transducer mounted in a direct radiator, bass-reflex enclosure for smooth response to the lowest audible frequencies. The 4181 is ideal for low-frequency augmentation of either analog or digital soundtracks in motion picture theaters and for general sound reinforcement applications.

The driver unit utilizes vented cooling loop, which pumps air through the magnetic gap and directly over and around the voice coil, providing immediate heat transfer. Through the use of computer-aided magnet optimization and analysis techniques, JBL engineers were able to optimize magnet weight, flux density and field saturation, resulting in a significant reduction in harmonic distortion. The 75mm (3in) voice coil, using dual coils in parallel and with holes in bobbin, which offer greater thermal stability with increased power handling. All elements of the optimized parts of the driver ensure smooth low frequency response, lower power compression and enable the system to carry a 500 watts continuous pink noise rating.

The enclosure is constructed of dense stock and is extensively braced on all panels. It is tuned to 30Hz with three large ports to minimize port compression and to reduce distortion due to turbulent air flow.

Specifications:

System:				
Rated Impedance:	8 ohms			
Minimum Impedance:	5.6 ohms			
Power Handling Capability:				
Continuous Pink Noise[1]:	500 Watts			
Continuous Program[2]:	1000 Watts			
Peak Power[3]:	2000 Watts			
Output Capability:				
Axial Sensitivity[4]:	50 Hz to 500 Hz; 101 dB, 1W @ 1m 40 Hz to 100 Hz; 99 dB, 1W @ 1m			
	Single Module	Two Modules	Three Modules	Four Modules
Half-Space Reference Efficiency[5]:	5%	10%	15%	20%
Max. Continuous Acoustical Power Output:	25W	100 W	225 W	400 W
Maximum Continuous SPL @ 1 meter[6]:	126 dB	132 dB	136 dB	138 dB
Maximum Peak SPL @ 1 meter[6]:	132 dB	138 dB	142 dB	144 dB
Frequency Response[7]:	Lower Frequency Limits (no EQ): -10 dB: 28 Hz -3 dB: 40 Hz Lower Frequency Limits (with EQ): -10 dB: 26 Hz -3 dB: 34 Hz			
Recommended Crossover Frequencies:	High-pass: 20 Hz, 24 dB/octave or greater Low-pass: 80 Hz to 150 Hz, 12 dB/octave or greater			
Distortion[8]: 2nd harmonic: 3rd harmonic:	 <3% <2%			
System Polarity:	EIA Standard. Positive voltage to RED terminal produces forward cone motion.			
Input Connectors:	Color-coded binding posts			
Transducer:				
Nominal Diameter:	460 mm (18 in)			
Physical:				
Materials and Finish:	15mm MDF. Extensive bracing on all panels. Vinyl laminated.			
Enclosure Tuning Frequency:	30 Hz			
Net Internal Volume:	255 liters (9 cu. ft)			
Dimension (H x W x D):	1100 mm x 640 mm x 450 mm (43 $^{1/3}$ in x 25 $^{1/5}$ in x 17 $^{3/4}$ in)			
Net Weight:	44 kg (96 lbs.)			
Shipping Weight:	50 kg (109 lbs.)			

*See note [1] to [8] on the next page

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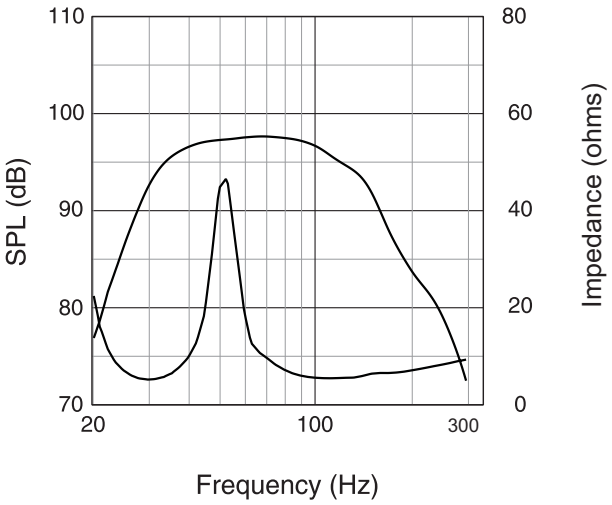
Frequency Response and Impedance

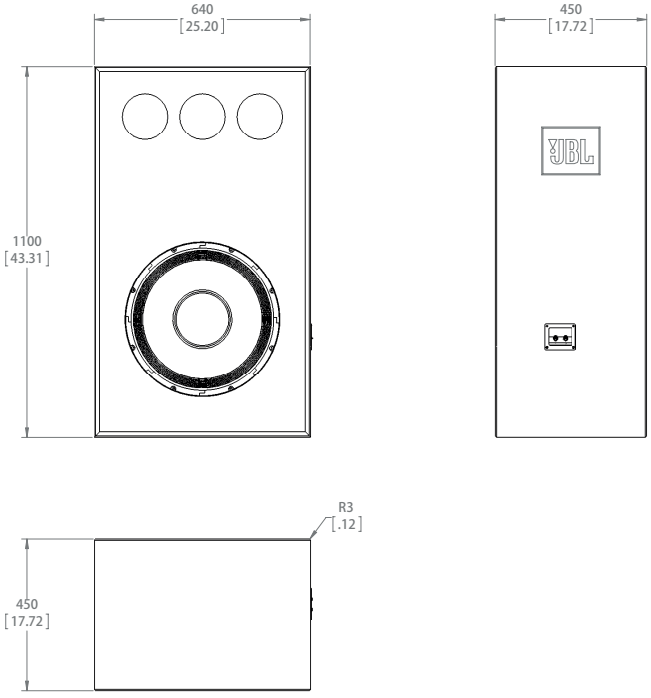
in full-space



4181 frequency response, 1w@1m, with 150Hz Butterworth 4th order low-pass filter and 3 dB PEQ at 32Hz with Q=2 conditions.

Dimensions

Dimensions in mm (in)



[1] Continuous pink noise with a peak-to-average ratio of 6dB,18dB per octave roll-off, 100 hours duration.

[2] Continuous program power is defined as 3 dB greater than continuous pink noise and is a conservative expression of the transducer’s ability to handle normal music program material.

[3] Peak power is defined as 6 dB greater than continuous pink noise, reflecting the 6 dB crest factor contained in the pink noise signal.

[4] Averaged half-space (2π). Quarter-space (1π, wall/floor junction placement) is 6 dB higher.

[5] Based upon specified half-space 40 Hz to 100 Hz sensitivity; 50 Hz to 500 Hz reference efficiency is higher.

[6] Per industry practice, maximum long-term SPL is a calculation that references half-space 1W/1m sensitivity, scaled by the long-term continuous power rating.

[7] Based upon specified sensitivity, 40 Hz to 100 Hz.

[8] 100 watt sine wave input, averaged from 40 Hz to 100 Hz.

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