

# 4645C

## Single 460 mm (18 in) Subwoofer System



### Key Features:

- 650 W (72 Vrms) power handling (100-hour AES rating), 800 W (80 Vrms) power handling (2-hour AES rating)
- Usable response to 22 Hz (-10 dB) with no EQ; flat to 22 Hz (-3 dB) with external EQ
- 2242H SVG™ (Super Vented Gap) driver provides long peak-to-peak excursion, high sensitivity and high maximum SPL capability
- SFG™ (Symmetrical Field Geometry) magnet structure for extremely low 2nd and 3rd harmonic distortion
- Approved by Lucasfilm, Ltd. for THX® installations



### Description:

The JBL 4645C is a high-quality subwoofer system, featuring a technologically advanced 460 mm (18 in) low frequency transducer mounted in a direct radiator, bass-reflex enclosure for smooth response to the lowest audible frequencies. The 4645C is ideal for low frequency augmentation of either analog or digital soundtracks in motion picture theaters and for general sound reinforcement applications. The 2242H transducer utilizes the patented Vented Gap Cooling (VGC) process\*, which pumps air through the magnetic gap and directly over and around the voice coil, providing immediate heat transfer and a reduction in operating temperature. This increases power handling while reducing power compression.

The 2242H utilizes a rugged 100 mm (4 in) diameter voice coil and incorporates a large motor structure with a pole piece that extends both above and below the top plate to improve gap flux symmetry and increase thermal conductivity. This magnet structure and the use of a voice coil with one-third more exposed area than in former designs, provides the 2242H with very effective heat sinking, enabling the system to carry an 800 watt continuous AES pink noise power rating.

### Specifications:

Component Electronics – Model 2242H				
Low Frequency Transducer	1 x 2242H, 460 mm (18 in)			
Rated Impedance	8 ohms			
Minimum Impedance	7.2 ohms			
Power Handling Capability				
Input Power Handling (AES 100-Hour Rating)	650 W (72 Vrms), pink/IEC			
Input Power Handling (AES 2-Hour Rating)	800 W (80 Vrms), pink/IEC			
Output Capability				
Sensitivity <sup>1</sup>	40 Hz – 100 Hz, 97 dB, 1 W @ 1m; reference 2.83 V			
	Single Module	Two Modules	Four Modules	Eight Modules
Max Continuous SPL @ 1 meter <sup>2</sup>	126 dB	132 dB	137 dB	141 dB
Max Peak SPL @ 1 meter <sup>2</sup>	132 dB	138 dB	143 dB	147 dB
Frequency Response <sup>3</sup>	Lower Frequency Limits (no EQ):			
	-10 dB: 22 Hz			
	-3 dB: 35 Hz			
	Lower Frequency Limits (with EQ):			
-10 dB: 20 Hz				
-3 dB: 22 Hz				

Other	
Recommended Crossover Frequencies	High-pass: 20 Hz, 12 dB/octave or greater Low-pass: 80 Hz to 150 Hz, 12 dB/octave or greater
System Polarity	EIA Standard. Positive voltage to RED terminal produces forward cone motion.
Input Connectors	Color-coded push terminals
Net Weight	63 kg (138 lb)
Shipping Weight	69 kg (151 lb)
Enclosure	
Materials and Finish	19 mm (0.75 in) particle board with 25 mm (1 in) baffle and back panel; extensive bracing on all panels
Enclosure Tuning Frequency	25 Hz
Net Internal Volume	225 liters (8 cubic ft)
Dimensions (H x W x D)	1010 mm x 674 mm x 450 mm (39.75 in x 26.50 in x 17.75 in)
<sup>1</sup> Averaged half-space (2pi). Quarter-space (1pi, wall/floor junction placement) is 6 dB higher.	
<sup>2</sup> 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.	
<sup>3</sup> Based upon specified sensitivity, 40 Hz to 100 Hz.	
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\*U.S. Patent #5,042,072. Foreign Patents Pending.

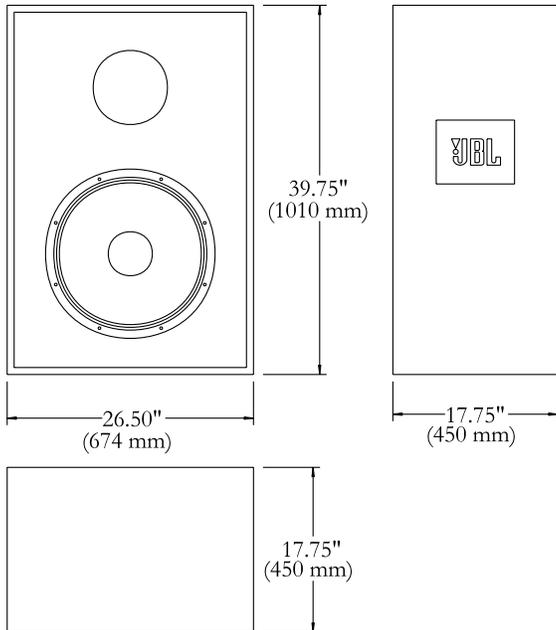
Note: specifications are subject to change without notice.  
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## Dimensions:



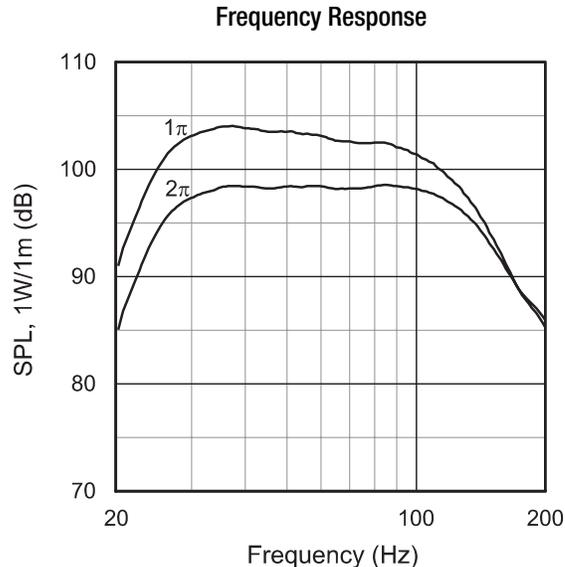
**Note:** Drawing not to scale. All dimensions are for reference only.

The magnet structure and compliance allow for long peak-to-peak excursions without damage to the speaker. The pole piece incorporates a shorted copper ring while functioning as a shorted secondary turn, with the voice coil acting as the primary winding. The benefits are a reduction of third harmonic distortion from magnetic flux modulation and a reduced inductive component of the voice coil impedance, for improved transient response. Symmetrical Field Geometry (SFG) minimizes second harmonic distortion.

**Enclosure:** The enclosure is constructed of dense stock and is extensively braced on all panels. It has a net internal volume of 225 liters (8 cu. ft.) and is tuned to 25 Hz with a very large port to minimize port compression and to reduce distortion due to turbulent air flow.

**Frequency Response:** The 4645C is intended for use as a subwoofer with a low-pass filter and appropriate high-pass filtering for protection and equalization.

## Graphs:



1 watt at 1 meter, with 150 Hz Linkwitz-Riley 4th order low-pass filter and 2nd order high-pass filter at 25 Hz with Q=2. 1 pi (upper curve) and 2 pi (lower curve) conditions.