4645C Single 460 mm (18 in) Subwoofer System

Professional Series

Key Features:

- 800 Watts Continuous Pink Noise, 1600 Watts Continuous Program Power Handling
- Usable response to 22 Hz (-10 dB, no EQ), flat to 22 Hz (-3 dB) with External EQ
- 2242H SVG™ Super Vented Gap Cooled Driver
  - – High Sensitivity
  - – Minimal Power Compression
  - – Highest Maximum-SPL Capability
  - – Extremely Low 2nd and 3rd Harmonic Distortion
  - – Symmetrical Field Geometry SFG™ Magnet Structure
  - – Extended Excursion Capability
- Approved by Lucasfilm, Ltd. for THX® installations

The JBL Model 4645C is a high quality subwoofer system, featuring an advanced technology 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.

Transducer:

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.

*U.S. Patent #5,042,072. Foreign Patents Pending.

Specifications:

TRANSDUCER:	JBL Model 2242H 460 mm (18 in) Low Frequency Transducer			
SYSTEM:				
Rated Impedance:	8 ohms			
Minimum Impedance:	7.2 ohms			
POWER HANDLING CAPABILITY:				
Continuous Pink Noise[1]:	800 watts			
Continuous Program[2]:	1600 watts			
Peak Power[3]:	3200 watts			
OUTPUT CAPABILITY:				
Axial Sensitivity[4]:	50 Hz to 500 Hz; 99 dB, 1W @ 1m 40 Hz to 100 Hz; 97 dB, 1W @ 1m			
Power Compression[5]:				
At -10 dB power (80 W):	0.6 dB			
At -3 dB power (400 W):	2.0 dB			
At rated power (800 W):	3.3 dB			
	Single Module	Two Modules	Four Modules	Eight Modules
Half-Space Reference Efficiency[6]:	4%	8%	12%	16%
Max. Continuous Acoustical Power Output:	32 W	128 W	384 W	1024 W
Maximum Continuous SPL @ 1 meter[7]:	126 dB	132 dB	137 dB	141 dB
Maximum Peak SPL @ 1 meter[7]:	132 dB	138 dB	143 dB	147 dB
FREQUENCY RESPONSE[8]:	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			
Recommended Crossover Frequencies:	High-pass: 20 Hz, 12 dB/octave or greater Low-pass: 80 Hz to 150 Hz, 12 dB/octave or greater			
Distortion[9]:				
2nd harmonic:	<0.6%			
3rd harmonic:	<0.8%			
System Polarity:	EIA Standard. Positive voltage to RED terminal produces forward cone motion.			
Input Connectors:	Color-coded push terminals			
Net Weight:	63 kg (138 lbs.)			
Shipping Weight:	69 kg (151 lbs.)			
ENCLOSURE:				
Materials and Finish:	19 mm (¾ 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 cu. ft)			
Dimensions: H x W x D	1010 mm x 674 mm x 450 mm 39¾ in x 26½ in x 17¾ in			

See footnotes on back ☞

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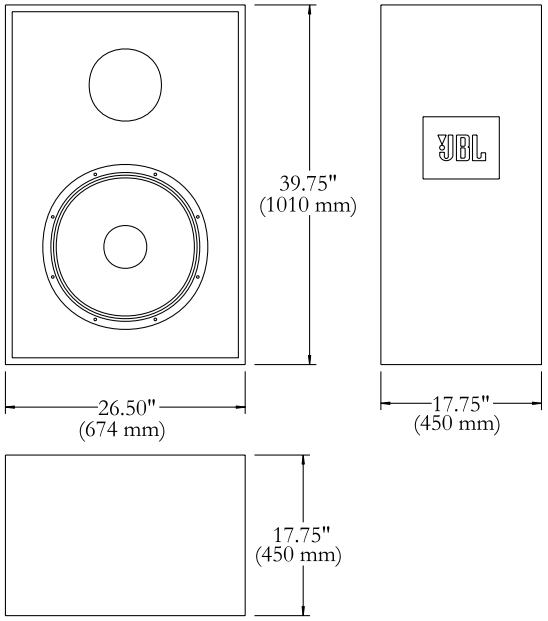
The magnet structure and compliance allow for long peak-to-peak excursions without damage to the speaker. The pole piece incorporates a shorted copper ring while functioning as a shorted secondary turn, with the voice coil acting as the primary winding. The benefits are a reduction of third harmonic 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.

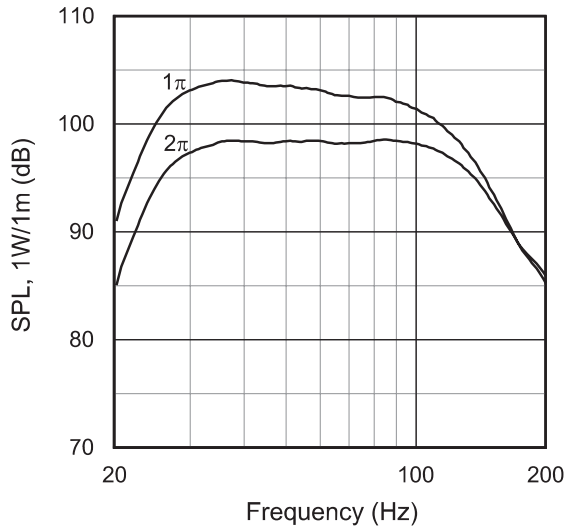
Frequency Response:

The 4645C features high sensitivity. It is intended for use as a subwoofer with a low-pass filter and appropriate high-pass filtering for protection and equalization.

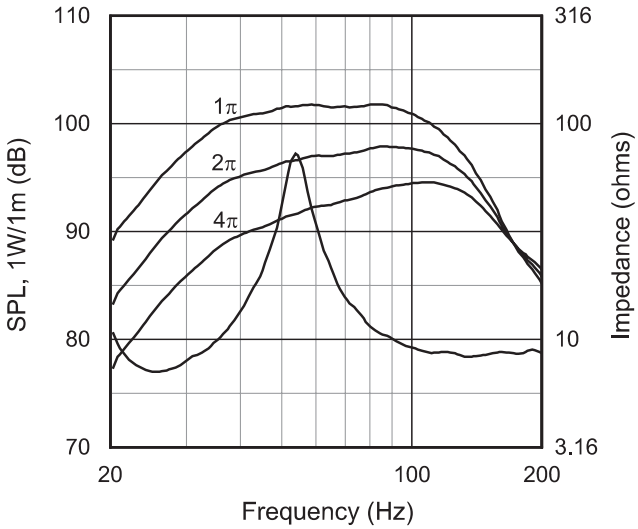


Note: Drawing not to scale. All dimensions are reference only.

[1]AES continuous pink noise (25 - 250 Hz), 2 hours duration.
[2]Continuous program power is defined as 3 dB greater than AES 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 AES 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]Power compression is the sensitivity loss at the specified power, measured from 50 Hz to 500 Hz, after a 5 minute AES standard (50 to 500 Hz) signal at the specified power.
[6]Based upon specified half-space 40 Hz to 100 Hz sensitivity; 50 Hz to 500 Hz reference efficiency is higher.
[7]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.
[8]Based upon specified sensitivity, 40 Hz to 100 Hz.
[9]100 watt sine wave input, averaged from 40 Hz to 100 Hz.



4645C frequency response, 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. 1π (upper curve) and 2π (lower curve) conditions.



4645C frequency response and impedance (bottom curve), 1 watt at 1 meter, with 150 Hz Linkwitz-Riley 4th order low-pass filter measured under 4π ground plane conditions. 1π (upper curve) and 2π (center curve) loading condition predictions also shown.

JBL continually engages in research related to product improvement. New materials, production methods, and design refinements are introduced into existing products without notice as a routine expression of that philosophy. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

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