

# 4648

## LOW FREQUENCY SYSTEM



### FEATURES:

- Usable Response to 35 Hz
- 100 dB Sensitivity, 1 W, 1 m
- 800 Watts Continuous Program Power Capacity
- Two 380 mm (15 in) Low Frequency Transducers
- Direct Radiating Ported Enclosure

The JBL 4648 low frequency system is designed for general sound reinforcement and motion picture theater use where high power output with smooth power response and low distortion are essential. The 4648 system covers the frequency range from 35 Hz to 500 or 800 Hz, depending upon application.

The two transducers used in the 4648 system feature 100 mm (4 in) voice coils operating in a large symmetrical field geometry (SFG) magnet structure for high power handling and linearity. The total linear excursion capability of each transducer is 10 mm (0.4 in), peak-to-peak, and total harmonic distortion (THD) is less than 2.5% from 40 to 800 Hz with sine wave input of 100 watts.

The enclosure is constructed of dense stock and is extensively braced on all panels. Net internal volume is 225 L (8 cu ft), and the enclosure is tuned to 40 Hz. Port area is large, ensuring minimum turbulence at full power input at low frequencies.

### ARCHITECTURAL SPECIFICATIONS:

The low frequency system shall consist of two 380 mm (15 in) diameter transducers mounted in a direct radiator ported enclosure. The transducers shall be capable of 10 mm (0.4 in) linear excursion (2 x X max) and shall be designed to produce a symmetrical magnetic field in the voice coil gap. In addition, a flux stabilizing ring encircling the pole piece shall act to reduce flux modulation. The transducer frame shall be of cast aluminum to resist deformation, and the voice coil shall be wound of copper ribbon 100 mm (4 in) in diameter. The enclosure shall be 225 L (8 cu ft) net internal volume, tuned to 40 Hz, and constructed of dense stock extensively braced on all panels.

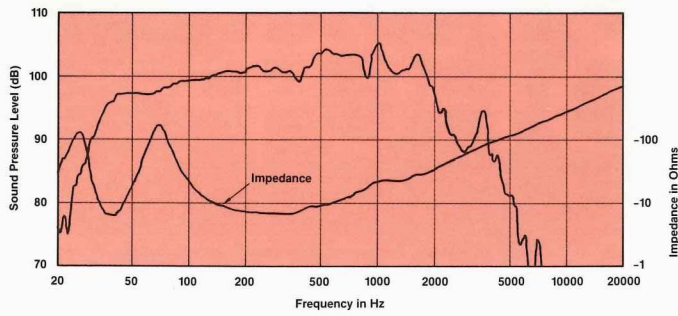
Performance specifications of a typical production unit shall be as follows: Under hemispherical free-field conditions, measured sensitivity (SPL at 1 m (3.3 ft) with 1 W swept input, 100-500 Hz) shall be at least 100 dB. The half-space reference efficiency shall be 7%. Usable low frequency response shall extend from 35 Hz (-10 dB) and be flat at 45 Hz (-3 dB). Nominal impedance shall be 4 ohms. Rated power capacity shall be at least 800 watts, normal program material. The system shall be the JBL Model 4648. Other loudspeaker systems will be considered as equivalent provided that submitted data from a recognized independent test laboratory verify that the above performance specifications are met.

### SPECIFICATIONS:

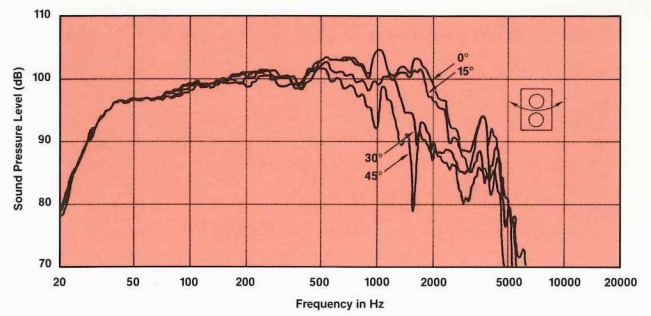
COMPONENTS:	1-JBL 4508 low frequency enclosure 2-JBL 2225H low frequency transducers (Note: Components may be ordered separately for field assembly.)
SYSTEM SPECIFICATIONS:	
Rated impedance:	4 ohms
Minimum impedance:	3.5 ohms
Input power rating:	400 watts, sine wave 800 watts, continuous program
Axial sensitivity:	100 dB, 1 W, 1 m
Half-space reference efficiency:	7%
Maximum continuous acoustical power output (sine wave input):	28 watts
Maximum continuous SPL (sine wave input):	Half-space at 1 m (3.3 ft): 126 dB Half-space at 3 m (10 ft): 116 dB Half-space at 30 m (100 ft): 96 dB
Recommended crossover frequencies:	High-pass: 40 Hz, 12-dB/octave Low-pass: 500 or 800 Hz, 12- or 18-dB/octave
System polarity:	Positive voltage to black terminal produces forward cone motion
Input connectors:	Color coded push terminals
Net system weight:	69.2 kg (152.25 lb)
ENCLOSURE SPECIFICATIONS:	
Materials and finish:	19 mm (¾ inch) particle board with 25 mm (1 inch) baffle; matte black finish
Enclosure volume:	225 L (8 cu ft)
Vent tuning frequency:	40 Hz
Dimensions:	1060 mm x 667 mm x 464 mm deep 41¾ in x 26½ in x 18¼ in deep
Net weight:	49 kg (108.5 lb)

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.

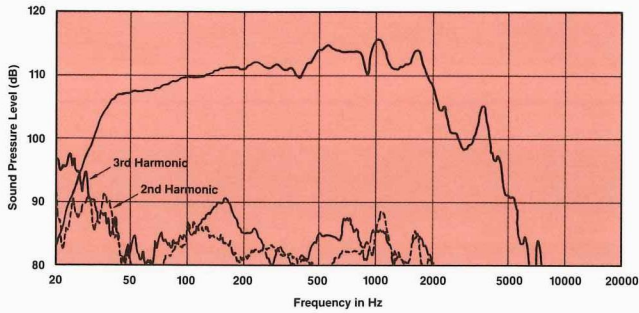




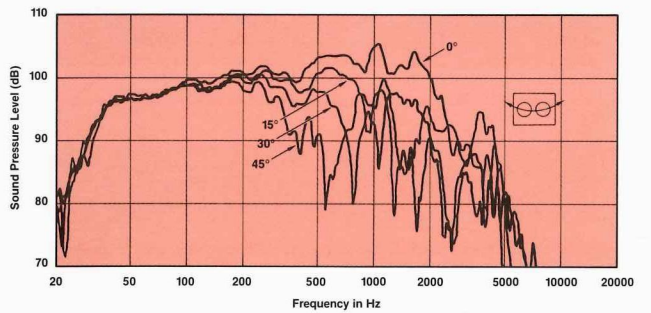
Graph 1. 4648 system half-space ( $2\pi$ ) response, one watt at one meter on-axis; impedance.



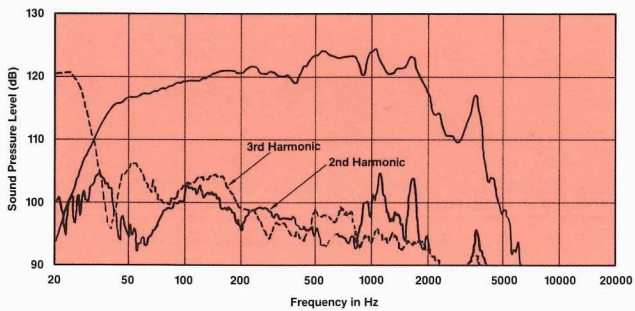
Graph 4. 4648 system horizontal off-axis response (0, 15, 30 and 45 degrees); one watt at one meter.



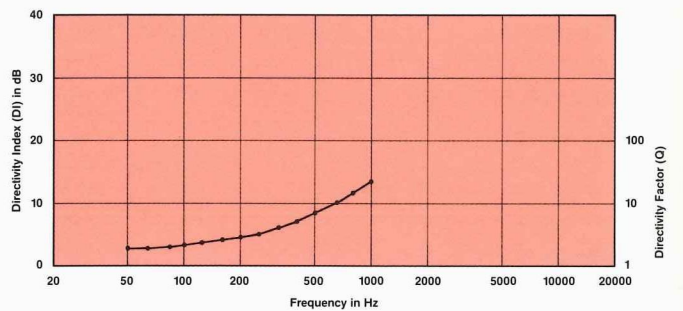
Graph 2. 4648 system half-space ( $2\pi$ ) response, 10 watts at one meter on-axis; distortion raised 20 dB.



Graph 5. 4648 system vertical off-axis response (0, 15, 30 and 45 degrees); one watt at one meter.



Graph 3. 4648 system half-space ( $2\pi$ ) response, 100 watts at one meter on-axis; distortion raised 20 dB.



Graph 6. Directivity Index (DI) and Directivity Factor (Q), on-axis, half-space ( $2\pi$ ).

