

Professional Series

Model 2225H/J 380 mm (15 in) Low Frequency Transducer

400 W continuous program power capacity
100 mm (4 in) edgewound copper ribbon voice coil
30 Hz-2 kHz response
97 dB sensitivity, 1 W, 1 m



The JBL Model 2225H/J represents JBL's latest engineering developments in low frequency driver design. Specifically designed for both horn-loaded and vented box enclosures, it has the ruggedness to withstand high-power sound reinforcement use. The extended length of the voice coil allows increased linear travel, and carefully selected suspension elements provide an optimum balance of motor and suspension forces to produce tight, accurate transient characteristics and complete freedom from dynamic instabilities. The choice of surround material and damping treatment provides an optimum termination for the cone edge, reducing distortion and allowing a smooth high frequency response that permits higher crossover frequencies than normally specified for a 380 mm driver.

The 2225H/J incorporates a heavy cast aluminum frame to resist deformation and aid in heat dissipation. The magnetic structure features JBL's unique Symmetrical Field Geometry (SFG) design to reduce second harmonic distortion to inconsequential levels. The 100 mm (4 in) diameter voice coil benefits from new adhesive technology and an optimized coil-former construction of aluminum, plastic, and high temperature paper for increased power capacity. Extremely tight manufacturing tolerances also contribute to the high performance and linear frequency response. The driver is available as the 2225H with an impedance of 8 ohms or as the 2225J with a 16-ohm impedance.

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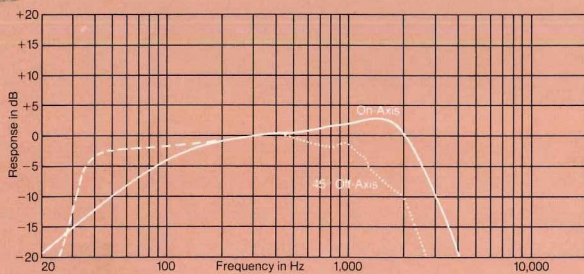
Model 2225H/J Low Frequency Transducer

Architectural Specifications

The low frequency transducer shall have a nominal diameter of 380 mm (15 in), overall depth not greater than 137 mm (5½ in), and weigh at least 10.1 kg (22¼ lb). The frame shall be of cast aluminum to resist deformation, and the magnetic assembly shall utilize a ferrite magnet and produce a symmetrical magnetic field at the voice coil gap. In addition, an aluminum ring encircling the pole piece shall act to reduce flux modulation. The voice coil shall be 100 mm (4 in) in diameter and shall be made of edgewound copper ribbon operating in a magnetic field of not less than 1.2 T (12,000 gauss).

Performance specifications of a typical production unit shall be as follows: Measured sensitivity (SPL at 1 m (3.3 ft) with 1 W input, swept 100 Hz-500 Hz) shall be at least 97 dB on axis. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 23 (34) newtons per ampere. The half-space reference efficiency shall be 3.5%. Usable frequency response shall extend from 30 Hz-2000 Hz. On axis response, measured at a distance of 1.8 m (6 ft) or more under free field conditions, shall be ± 3 dB from 50 Hz-1200 Hz. Acoustic loading shall further extend the low frequency response. Nominal impedance shall be 8 (16) ohms. Rated power capacity shall be at least 400 W normal program material.

The transducer shall be the JBL Model 2225H/J. Other loudspeakers will be considered for equivalency provided that submitted data from a recognized independent test laboratory verify that the above performance specifications are met.



Frequency response contour of the 2225H/J taken in a hemispherical free-field environment, a closed box of 140 L (5 ft³) internal volume enclosing the rear of the driver. Measured response of a typical production unit, including all peaks and dips, does not deviate more than 2 dB from the above curve. The dashed curve represents the response from a 160 cm² (25 in²) port with a 13 cm (5 in) long duct tuning this enclosure to 40 Hz.

Specifications

Nominal Diameter	380 mm	15 in
Rated Impedance		
2225H	8 ohms	
2225J	16 ohms	
Power Capacity ¹	400 W continuous program	
Sensitivity ²	97 dB SPL, 1 W, 1 m	
Frequency Range	30 Hz-2 kHz	
Highest Recommended Crossover Frequency	1200 Hz	
Recommended Enclosure Volume	85-285 L	3-10 ft ³
Effective Piston Diameter	337 mm	13¼ in
Maximum Excursion Before Damage	22 mm	¾ in peak to peak
Minimum Impedance	7.3 ohms ± 10% @ 25°C (H), 13.9 ohms ± 10% @ 25°C (J)	
Voice Coil Diameter	100 mm	4 in
Voice Coil Material	Edgewound copper ribbon	
Voice Coil Winding Depth	16.0 mm	0.63 in
Magnetic Gap Depth	7.1 mm	0.28 in
Magnetic Assembly Weight	8.5 kg	18½ lb
Flux Density	1.2 T	12,000 gauss
BI Factor	23 N/A (H), 34 N/A (J)	
Effective Moving Mass	0.105 kg	
Positive voltage on black terminal gives forward diaphragm motion.		

Thiele-Small Parameters

f _s	40 Hz	
R _e	6.3 ohms (H), 12.9 ohms (J)	
Q _{ts}	0.28	
Q _{ms}	2.5	
Q _{es}	0.31	
V _{as}	170 L	6 ft ³
S _D	0.089 m ²	138 in ²
X _{max}	5 mm	0.2 in
V _D	445 cm ³	27 in ³
L _e	1.1 mH (H), 2.2 mH (J)	
η _o (Half space)	3.5%	
P _e (Max)	200 W Continuous sine wave	

Mounting Information

Overall Diameter	388 mm	15 ¹ / ₆₄ in
Bolt Circle Diameter	370 mm	14 ⁵ / ₁₆ in
Baffle Cutout Diameter		
Front Mount	355 mm	13 ³ / ₃₂ in
Rear Mount	343 mm	13½ in
Depth	137 mm	5½ in
Volume Displaced by Driver When Mounted in Enclosure	6 L	0.2 ft ³
Net Weight	10.1 kg	22¼ lb
Shipping Weight	11.2 kg	24¼ lb

¹Continuous program power is defined as 3 dB greater than continuous sine wave power (RMS) and is a conservative expression of the transducer's ability to handle typical speech and music program material.

²The sensitivity rating of JBL low frequency loudspeakers is based on a signal swept from 100 Hz to 500 Hz, rather than the conventional 1 kHz single frequency test signal, since these drivers are usually used below 800 Hz. Therefore, usable sensitivity of the 2225H/J may be substantially greater than that of loudspeakers with higher published ratings.

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.



Professional Division

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