2245H

460 mm (18 in) LOW FREQUENCY LOUDSPEAKER

FEATURES:

600 W continuous program power capacity

100 mm (4 in) edgewound copper ribbon voice coil

20 Hz-2kHz response

95 dB sensitivity, 1 W, 1 m

The JBL Model 2245H is a professional quality low frequency transducer designed for use in custom studio monitors or other applications requiring high sensitivity and power capacity, as well as extremely low distortion and extended bass response.

To achieve this performance, the 2245H incorporates a new die-cast aluminum frame, integrally stiffened cone with foam surround, 100 mm (4 in) diameter edgewound copper ribbon voice coil, and individually machined magnetic pole piece and back plate. Additionally, the cone is coated with an exclusive damping formulation to ensure optimum mass and density.

The 2245H also features a large, high flux, Symmetrical Field Geometry (SFG) magnetic structure. The SFG design, in combination with a Flux Stabilizing Ring around the pole piece, significantly reduces second harmonic distortion and provides exceptionally accurate low frequency reproduction. This motor assembly is optimally balanced with a 25 mm (1 in) long voice coil and carefully engineered suspension elements to allow maximum excursion linearity with complete freedom from dynamic instabilities.

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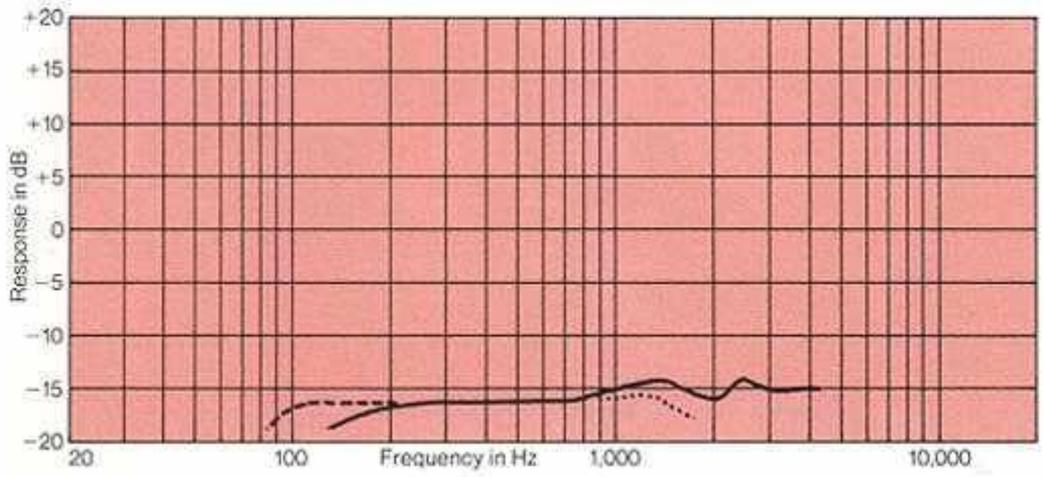
ARCHITECTURAL SPECIFICATIONS:

The low frequency transducer shall have a nominal diameter of 460 mm (18 in), overall depth not greater than 191 mm (7½ in), and weigh at least 13.6 kg (30 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, a Flux Stabilizing 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 1.22 T (12,200 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 95 dB on axis. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 21 newtons per ampere. The half-space reference efficiency shall be 2.1%. Usable frequency response shall extend from 20 Hz-2 kHz. On-axis response, measured at a distance of 2 m (6.6 ft) or more under free field conditions, shall be ± 3 dB from 40 Hz-800 Hz. Acoustic loading shall further extend the low frequency response. Nominal impedance shall be 8 ohms. Rated power capacity shall be at least 600 W normal program material.

The transducer shall be the JBL Model 2245H. 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.

Typical Response Curve, Enclosure Volume and Port Tuning



Frequency response contour of the 2245H taken in a hemispherical free-field environment, a closed box of 280 L (10 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 320 cm² (50 in²) port with a 20 cm (8 in) long duct tuning this enclosure to 30 Hz.

SPECIFICATIONS:

Nominal Diameter:	460 mm (18 in)
Rated Impedance:	8 ohms
Power Capacity[1]:	600 W continuous program
Sensitivity[2]:	95 dB SPL, 1 W, 1m
Frequency Range:	20 Hz-2 kHz
Highest Recommended Crossover Frequency:	800 Hz
Recommended Enclosure Volume:	225—450 L (8—16 ft³)
Effective Piston Diameter:	406 mm (16 in)
Maximum Excursion Before Damage:	25 mm (1 in peak to peak)
Minimum Impedance:	7.1 ohms ± 10% @ 25°C
Voice Coil Diameter:	100 mm (4 in)
Voice Coil Material:	Edgewound Copper Ribbon
Voice Coil Winding Depth:	24 mm (0.96 in)
Magnetic Gap Depth:	9 mm (0.35 in)
Magnetic Assembly Weight:	9.1 kg (20 lb)
Flux Density:	1.22 T (12,200 gauss)
BI Factor:	21 N/A
Effective Moving Mass:	0.185 kg
Positive voltage on BLACK terminal gives forward diaphragm motion.	
Thiele-Small Parameters:	
f_s:	20 Hz
R_e:	5.8 ohms
Q_{ts}:	0.27
Q_{ms}:	2.2
Q_{es}:	0.31
V_{as}:	820 L (29 ft³)
S_D:	0.130 m² (200 in²)
X_{max}:	9.5 mm (⅜ in)
V_D:	1,230 cm³ (75 in³)
L_e:	1.4 mH
η_o(Half space):	2.1%
P_e (Max):	300 W Continuous Sine Wave
Mounting Information:	
Overall Diameter:	464 mm (18¼ in)
Bolt Circle Diameter:	441 mm (17⅜ in)
Baffle Cutout Diameter:	
Front Mount:	427 mm (16¹³⁄₁₆ in)
Rear Mount:	422 mm (16⅝ in)
Volume Displaced by Driver When Mounted in Enclosure:	8.5 L (0.3 ft³)
Net Weight:	13.6 kg (30 lb)
Shipping Weight:	14.5 kg (32 lb)

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

[2]The 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 2245H may be substantially greater than that of loudspeakers with higher published ratings.

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