

**JBL**

# 2206H/J

300 mm (12 in)  
Low Frequency  
Transducer

Professional Series

## Key Features:

- ▶ 600 W continuous pink noise power capacity
- ▶ 100 mm (4 in) edgewound aluminum ribbon voice coil
- ▶ 45 Hz - 3.5 kHz response
- ▶ 95 dB sensitivity, 1 W, 1 m (3.3 ft)
- ▶ SFG magnet structure with Vented Gap Cooling technology<sup>1</sup>



The JBL 2206H/J low frequency transducer represents the results of JBL's latest engineering research in high power transducer design. The 2206H/J signifies a major advance in speaker design by incorporating JBL's patented Vented Gap Cooling technology in an improved Symmetrical Field Geometry (SFG) magnetic structure.

To increase power handling while reducing power compression, JBL engineers have created a unique, direct voice coil-to-air heat dissipation method called Vented Gap Cooling. This process pumps air through the magnetic gap and directly over and around the voice coil to provide immediate heat transfer and reduction in operating temperature - a direct improvement in power compression.

Through the use of new computer-aided magnet optimization and analysis techniques, JBL engineers were able to optimize both magnet weight, flux density and field saturation resulting in a 1.8 kg (3.9 lb) reduction in overall driver weight and a significant reduction in harmonic distortion. This new magnet structure offers much of the weight advantage of rare earth magnet structures without their prohibitive cost.

## Specifications:

Nominal Diameter:	300 mm (12 in)
Rated Impedance:	8 ohms
Power Capacity <sup>1</sup> :	600 W continuous pink noise
Sensitivity <sup>2</sup> :	95 dB SPL, 1 W, 1 m (3.3 ft)
Frequency Range <sup>3</sup> :	45 Hz - 3.5 kHz.
Power Compression <sup>4</sup> :	
at - 10 dB power (60 W):	0.6 dB
at - 3 dB power (300 W):	2.4 dB
at full power (600 W):	3.9 dB
Distortions	
2nd harmonic:	< 1.0%
3rd harmonic:	< 1.0%
Highest Recommended Crossover:	1500 Hz
Recommended Enclosure Volume:	28-113 l (1-4 ft <sup>3</sup> )
Effective Piston Diameter:	264 mm (10.4 in)
Maximum Excursion Before Damage (p-p):	40 mm (1.6 in)
Minimum Impedance:	6.9 ohms ± 10% @ 25°C (H) 12.2 ohms ± 10% @ 25°C (J)
Voice Coil Diameter:	100 mm (4 in)
Voice Coil Material:	Edgewound aluminum ribbon
Voice Coil Winding Depth:	19 mm (0.75 in)
Magnetic Gap Depth:	8 mm (0.32 in)
Magnetic Assembly Weight:	6.8 kg (15 lb)
B1 Factor:	18.1 N/A (H) 24.8 N/A (J)
Effective Moving Mass:	0.065 kg

Positive voltage on BLACK terminal gives forward diaphragm motion.

<sup>1</sup>AES standard (60-600 Hz).

<sup>2</sup>Sensitivity is based on a swept 100 Hz to 500 Hz signal. 1 W is 2.83 V @ 8 ohms, 4.0 Vat 16 ohms.

<sup>3</sup>Frequency range is defined as the frequency extremes where the response is - 10 dB from the rated sensitivity.

<sup>4</sup>Power compression is the sensitivity loss at the specified power, measured from 60 to 600 Hz, after a 5 minute AES standard (60-600 Hz) pink noise preconditioning test at the specified power.

<sup>5</sup>Distortion is measured at - 10 dB power, from 100-500 Hz.

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.

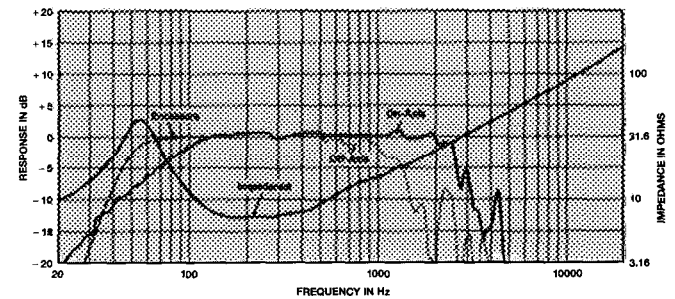
## ► 2206H/J 300 mm (12in) Low Frequency Transducer

With increased power handling, special attention was paid to increased mechanical integrity. A new cone design which greatly improves cone strength allows for increased reliability and longer life. Greater linear excursion for matched power and displacement levels was achieved via a new surround topology and edge damping treatment. The 100 mm (4 in) voice coil benefits from a new winding technique which offers greater thermal stability with increased power handling. All elements of the cone, voice coil and suspension system have been carefully optimized and controlled to reduce high frequency resonance modes and ensure smooth high frequency response.

The 2206H/J can directly retrofit the 2204H transducer without enclosure re-tuning while providing up to 2.5 dB more acoustic output with lower levels of distortion and smoother response.

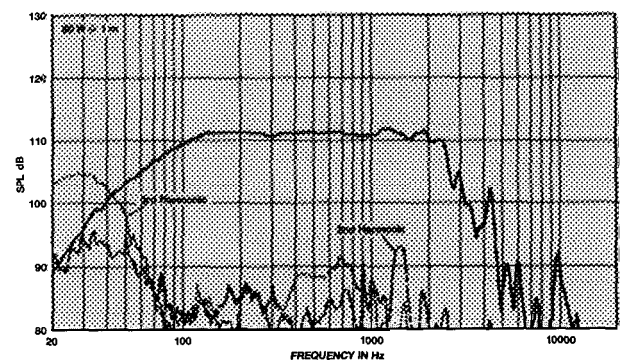
The 2206H/J is ideally suited for use in touring sound, fixed sound installations, and critical monitoring applications, where high SPL, low distortion and smooth response are required.

### Typical response and Impedance Curves, Enclosure Volume and Port Tuning



Frequency response contour of the 2206H 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 dotted line represents measured 45 degree off-axis response. The dashed curve represents the response when the driver is mounted in a 57 l(2 ft³) vented enclosure tuned to 50 Hz. The impedance magnitude curve is measured in free-air.

### Distortion vs. Frequency



Distortion levels raised 20 dB, measured at 60 watts, 1 meter.

#### THIELE/SMALL PARAMETERS:

$f_s$ : 52 Hz

$R_e$ : 5.3 ohms (H), 10.0 (J)

$Q_{es}$ : 0.32

$Q_{ms}$ : 4.5

$Q_{ts}$ : 0.34

$V_{as}$ : 62 l(2.2 ft³)

$S_D$ : 0.055 m² (84.7 in²)

$X_{ms}$ : 7.5 mm (0.30 in)

$V_D$ : 413 cm³ (25.4 ins)

$L$ : 1.5 mH (H), 3.0 (J)

$\eta_0$  (Half space)\*: 2.5%

$P_e$  (Max): 600 W continuous pink noise

#### MOUNTING INFORMATION:

Overall Diameter: 311 mm (12¼ in)

Bolt Circle Diameter: 294 mm (11 9/16 in)

Baffle Cutout Diameter

Front mount or rear mount: 280 mm (11 1/16 in)

Depth: 127 mm (5 in)

Volume Displaced by Driver: 41(0.15 ft³)

Net Weight: 7.8 kg (17 1/8 lb)

Shipping Weight: 8.4 kg (18½ lb)

\*AES standard (60-600 Hz)

Sensitivity is based on a swept 100 Hz to 500 Hz signal. 1 W js 2.83 V @ 8 ohms, 4.0V at 16ohms.

Thiele/Small parameters are measured after 2 hour exercise period using a 600 W AES power test and will reflect the expected long term parameter values once the driver has been installed and operated for a short period of time.

Clearance of at least 76 mm (3 in) must be provided behind the magnet assembly and the gap vents to allow sufficient air circulation and proper cooling to take place.



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