

# JBL Professional Series Model 2220 15" Low Frequency Transducer

Highest Efficiency  
100 Watts Continuous Program  
Bass Horn Driver  
4" Edgewound Copper Ribbon Voice Coil  
For Reinforcement Applications

*Professional audio consultants and engineers are invited to compare the JBL 2220 with other loudspeakers, both on the basis of acoustical measurements and extended listening tests.*



Model 2220 is the professional quality low frequency transducer with the greatest possible conversion efficiency. Its combination of a highly efficient magnetic structure and relatively light cone assembly ideally suit the 2220 for use as a bass horn driver, or in arrays of multiple low frequency units. It also will deliver good results in a ported enclosure, but with reduced deep bass response. The unit is offered in 8, 16 and 32 ohm impedances.

The JBL 2220 incorporates a molded curvilinear cone, 4-inch edgewound copper ribbon voice coil, and individually machined magnetic pole pieces and pot casting. A specially damped cone suspension maintains precise centering of the voice coil in the magnetic gap with less than 0.014 inch clearance between the moving coil and the fixed pole pieces. Heat generated in the coil is transferred to the magnetic assembly and rapidly dissipated. Thus the transducer can handle high power levels without mechanical damage or overheating.



# Model 2220 Low Frequency Transducer

## Architectural Specifications

The low frequency transducer shall have a nominal diameter of 15 inches, overall depth not greater than 5-7/8 inches, and weigh at least 14 pounds. The frame shall be of cast aluminum to resist deformation and the magnetic assembly shall use Alnico V enclosed in a heavy cast iron return circuit for maximum efficiency and suppression of stray fields. The voice coil shall be four inches in diameter and shall be made of edgewound copper ribbon operating in a magnetic field of not less than 12,000 Gauss with at least 275,000 Maxwells total flux.

Performance specifications of a typical production unit shall be as follows:

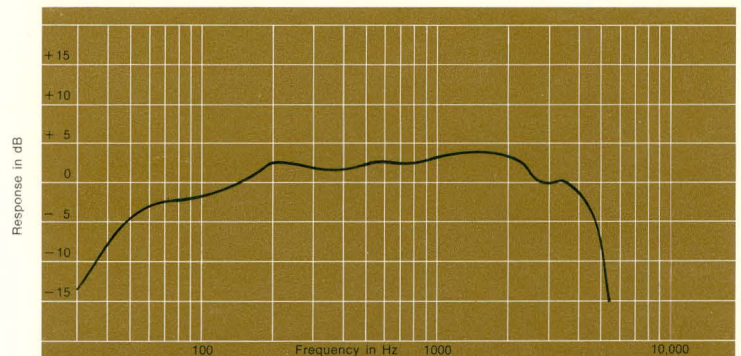
Measured sensitivity (SPL at 30 feet with one milliwatt input, warbled 100–500 Hz) shall be at least 52 dB on-axis and 50 dB 45° off-axis. As an indication of electromechanical conversion efficiency, the BI factor shall be at least  $2.25 \times 10^7$  dynes/abampere. Usable frequency response shall extend from 40–2000 Hz. On-axis response, measured at a distance of six feet or more under free field conditions, shall be  $\pm 3$  dB from 60 to 4000 Hz. Nominal impedance shall be 8, 16, or 32 ohms. Power capacity shall be a minimum of 100 watts normal program material.

The transducer shall be JBL Model 2220. Other loudspeakers will be considered for equivalency provided that submitted data from a recognized independent test laboratory verify that the above performance requirements are met.

## Specifications

Nominal diameter	15 inches
Nominal impedance	2220A — 8 ohms 2220B — 16 ohms 2220C — 32 ohms
Power capacity	100 watts continuous program
*Sensitivity	52.0 dB (30 feet, one mW, 100–500 Hz)
Frequency range	40–2000 Hz
Cone resonance	48 Hz
Voice coil diameter	4 inches
Voice coil material	Edgewound copper ribbon
Flux density	12,000 Gauss
Total flux	275,000 Maxwells
BI factor (2220A)	$2.25 \times 10^7$ dynes/abampere
Magnetic assembly	11 lbs.
Depth	5-7/8 inches
Baffle hole	14-1/8 inches (front mtg.) 13-1/2 inches (rear mtg.)
Net weight	14.25

\*NOTE: Because this transducer is normally used below 800 Hz, JBL has measured its sensitivity using a signal warbled from 100–500 Hz rather than the more common 1,000 Hz single frequency. Usable sensitivity of the 2220 may, therefore, be substantially greater than that of loudspeakers with higher published ratings.



Frequency response contour of Model 2220 in a closed box of six cubic feet internal volume. Measured response of a typical production unit, including all peaks and dips, does not deviate more than 2 dB from the above curve. Additional acoustic loading (horn or ported enclosure) will further extend bass response.

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