

## Professional Series

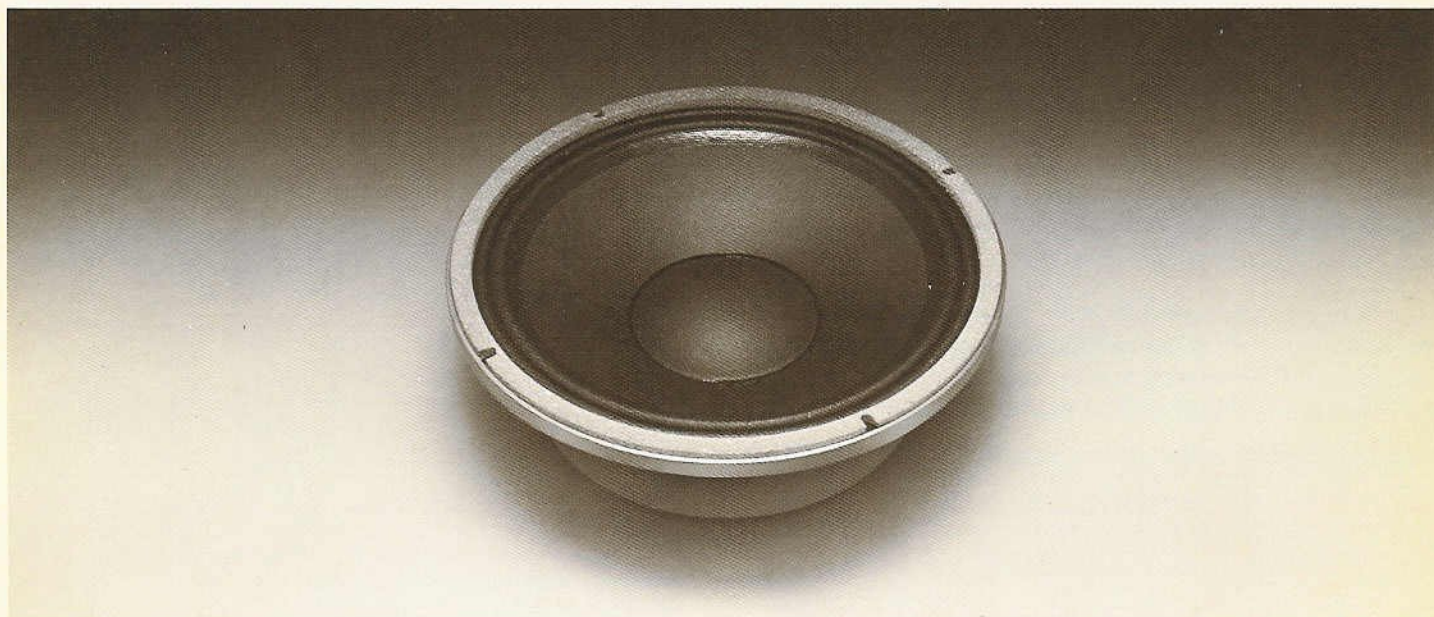
### Model 2202H 300 mm (12 in) Midrange/ Low Frequency Transducer

300 W continuous program

100 mm (4 in) edgewound copper ribbon voice coil

60 Hz-4 kHz response

99 dB sensitivity, 1 W, 1 m (3.3 ft)



The 2202H is a highly efficient, low frequency loudspeaker. Compared to other loudspeakers having similar sensitivity, its frequency response is unusually linear, varying only  $\pm 3$  dB from 150 Hz to 3 kHz. Its performance characteristics make it well suited for use as a small stage monitor loudspeaker, as a midrange driver in wide range sound reinforcement systems or as a low frequency driver in installations where mounting space is restricted.

A tough, double roll compliance increases power handling and reliability. This unique cone termination is completely passive so that sound quality remains virtually unchanged during sustained high power inputs. The cone, voice coil, and spider are assembled with state-of-the-art high-temperature adhesives, resulting in an exceptionally strong bond and greater structural integrity.

The magnetic assembly of the 2202H incorporates JBL's unique Symmetrical Field Geometry (SFG), which reduces second harmonic distortion to inconsequential levels. Each component is precisely machined to concentrate a maximum amount of magnetic energy in the voice coil gap.

The combination of this powerful magnetic structure, a rugged cone assembly and 200 mm diameter edgewound copper ribbon voice coil enable the 2202H to achieve its 300 W continuous program power capacity, exceptional sensitivity, and smooth acoustic output.

**JBL**



# Model 2202H-300 mm (12 in) Midrange/Low Frequency Transducer

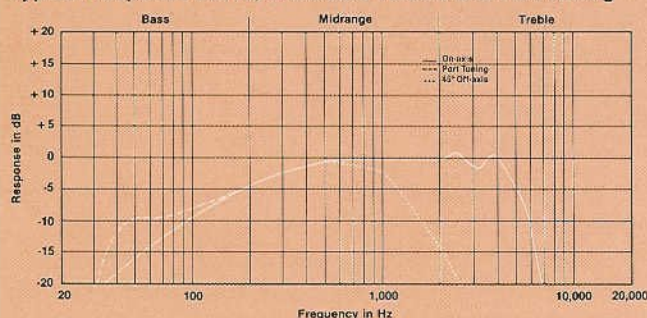
## Architectural Specifications

The low frequency transducer shall have a nominal diameter of 300 mm (12 in), overall depth not greater than 121 mm (4¾ in), and weight at least 9.4 kg (20½ 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 kHz) shall be at least 99 dB on axis. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 22.5 newtons per ampere. The half-space reference efficiency shall be 6.0%. Usable frequency response shall extend from 60 Hz to 4 kHz. On-axis response, measured at a distance of 1.8 m (6 ft) or more under free-field conditions, shall be  $\pm 3$  dB from 150 Hz to 3 kHz. Acoustic loading shall further extend the low frequency response. Nominal impedance shall be 8 ohms. Rated power capacity shall be at least 300 watts normal program material.

The transducer shall be the JBL Model 2202H. 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 of the 2202H in a closed box of 57 L (2 ft³) 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. The dashed curve represents the response with an 80 cm² (12.5 in²) port, 18 cm (7 in) long, tuning the enclosure to 40 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.

## Specifications

Nominal Diameter	300 mm	12 in
Rated Impedance	8 ohms	
Power Capacity <sup>1</sup>	300 W continuous program	
Sensitivity <sup>2</sup>	99 dB SPL, 1 W, 1 m	
Frequency Range	60 Hz - 4 kHz	
Highest Recommended Crossover Frequency	1200 Hz	
Recommended Enclosure Volume	57-113 L	2-4 ft³
Effective Piston Diameter	280 mm	10.25 in
Maximum Excursion Before Damage	17.5 mm	1½ in peak to peak
Minimum Impedance	7.7 ohms	$\pm 10\%$ @ 25°C
Voice Coil Diameter	100 mm	4 in
Voice Coil Material	Edgewound copper ribbon	
Voice Coil Winding Depth	11.0 mm	0.435 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	22.5 N/A	
Effective Moving Mass	0.050 kg	
Positive voltage on black terminal gives forward diaphragm motion		

## Thiele-Small Parameters

$f_s$	50 Hz	
$R_e$	5.5 ohms	
$Q_{ts}$	0.16	
$Q_{ms}$	3.5	
$Q_{es}$	0.17	
$V_{as}$	89 L	3.1 ft <sup>3</sup>
$S_D$	0.053 m <sup>2</sup>	82.5 in <sup>2</sup>
$X_{max}$	3.5 mm	0.14 in
$V_D$	185.5 cm <sup>3</sup>	11.4 in <sup>3</sup>
$L_e$	1.1 mH	
$\eta_0$ (Half space)	6.0%	
$P_e$ (Max)	150 W continuous sine wave	

## Mounting Information

Overall Diameter	311 mm	12¼ in
Bolt Circle Diameter	294 mm	11⅞ in
Baffle Cutout Diameter		
Front Mount or Rear Mount	280 mm	11⅞ in
Typical Volume Displaced by Driver When Mounted in Enclosure	4 L	0.15 ft³
Depth	121 mm	4¾ in
Net Weight	9.4 kg	20½ lb
Shipping Weight	9.9 kg	21⅞ lb

<sup>1</sup>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.

<sup>2</sup>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 2202H may be substantially greater than that of loudspeakers with higher published ratings. The half-space reference efficiency percentages will give a consistent method for comparison of E series, Professional Series, and competitive loudspeakers in low-frequency applications.



**Professional Division**

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