

# Industrial Series

## JBL 8110H

**100 mm (4 in) High Compliance  
Full Range Loudspeaker**  
**283 g (10 oz) nominal magnet weight**  
**25 mm (1 in) voice coil diameter**  
**92 dB sensitivity**  
**40 W continuous program power capacity**  
**50 Hz–18 kHz frequency range**



JBL industrial series loudspeakers are designed for a variety of distributed sound applications including noise masking, paging, and music reproduction. The speakers offer wide dispersion, excellent power capacity, and unmatched intelligibility. Additionally, the speakers may be ordered in a wide range of configurations to match the requirements of virtually any installation.

Each speaker features a rugged frame fabricated of heavy-gauge steel as well as a cold-formed back plate that improves magnetic circuit performance. Aluminum voice coil forms are utilized for improved power handling and reliability. Supplementing the loudspeakers are the 9315HT high quality dual voltage transformer and the WB8 white metal ceiling baffle.

Built to traditional JBL standards of quality and precision, the loudspeakers are subjected to stringent environmental tests to ensure that the materials and adhesives will stand up to long-term use under even the most adverse conditions.



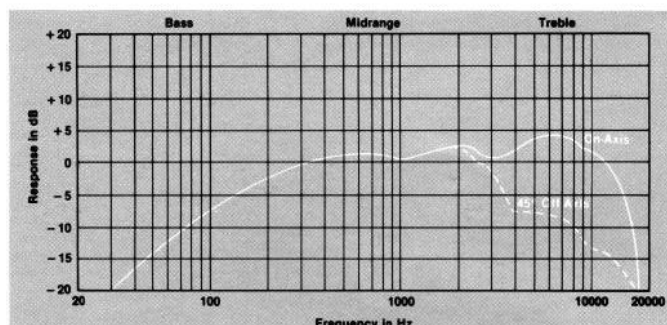
# Model 8110H High Compliance Full Range Transducer

## Architectural Specifications

The loudspeaker shall have a nominal diameter of 100 mm (4 in), overall depth not greater than 53 mm (2 1/8 in), and weigh at least 0.925 kg (2 lb). The magnetic assembly shall utilize a ferrite magnet with a nominal weight of 283 g (10 oz). The voice coil shall be 25 mm (1 in) in diameter and shall be made of two layers of round copper wire operating in a magnetic field of not less than 1.1 T (11,000 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 500 Hz - 2.5 kHz) shall be at least 92 dB on axis and 91 dB 45 degrees off axis. As an indication of electromechanical conversion efficiency, the BI product shall be 6.1 newtons per ampere. The half-space reference efficiency shall be 0.84%. Usable frequency response shall extend from 50 Hz to 18 kHz. On-axis response, measured at a distance of 1.8 m (6 ft) or more under hemispherical free-field conditions, shall be  $\pm 4$  dB from 200 Hz to 10 kHz. Acoustic loading shall further extend the low frequency response. Nominal impedance shall be 8 ohms. Rated power capacity shall be at least 40 W normal program material.

The transducer shall be the JBL Model 8110H. 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 8110H taken in a hemispherical free-field environment. Measured response of a typical production unit, including all peaks and dips, does not deviate more than 4 dB from the above curve. Additional acoustic loading will further extend bass response.

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	100 mm	4 in
Rated Impedance	8 ohms	
Power Capacity <sup>1</sup>	40 W continuous program	
Sensitivity <sup>2</sup>	92 dB SPL, 1 W, 1 m	
Frequency Range	50 Hz - 18 kHz	
Frequency Response ( $\pm 4$ dB)	200 Hz - 10 kHz	
Effective Piston Diameter	97 mm	3.8 in
Maximum Excursion		
Before Damage	6 mm	1/4 in peak to peak
Minimum Impedance	8 ohms $\pm 10\%$ @ 25°C	
Voice Coil Diameter	25 mm 1 in	
Voice Coil Material	Round copper wire (two layers)	
Voice Coil Winding Depth	5.3 mm	.21 in.
Magnetic Gap Depth	6.4 mm	.25 in
Magnetic Assembly Weight	0.8 kg	1 3/4 lb
Flux Density	1.1 T	11,000 gauss
BI Factor	6.1 N/A.	
Effective Moving Mass	4.2 g	

Positive voltage on left terminal gives forward diaphragm motion (as viewed from the rear of the transducer, terminals at top).

### Thiele-Small Parameters

$f_s$	95 Hz	
$R_e$	7.2 ohms	
$Q_{ts}$	0.40	
$Q_{ms}$	2.2	
$Q_{es}$	0.49	
$V_{as}$	5 L	0.18 ft <sup>3</sup>
$S_D$	.0073 m <sup>2</sup>	11.3 in <sup>2</sup>
$X_{max}$	2 mm	0.080 in
$V_D$	14.6 cm <sup>3</sup>	0.9 in <sup>3</sup>
$L_e$	0.1 mH	
$\eta_o$ (Half space)	0.84%	
$P_e$ (Max)	20 W continuous sine wave	

### Mounting Information

Overall Diameter	129 mm	5.06 in
Bolt Circle Diameter	119 mm	4.69 in
Baffle Cutout Diameter		
Front Mount	117 mm	4.60 in
Rear Mount	106 mm	4.19 in
Depth	53 mm	2.13 in
Net Weight	0.925 kg	2 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>Sensitivity measured with an input swept from 500 Hz to 2.5 kHz.

**Please note:** the 8110H speaker and 8110HT speaker with transformer are bulk-packed in quantities of 16 and must therefore be ordered in multiples of 16 only.

**JBL**

JBL Incorporated  
8500 Balboa Boulevard, P.O. Box 2200, Northridge, California 91329 U.S.A.

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