

LE8T-H FULL-RANGE TRANSDUCER



FEATURES:

- 50 W continuous program
 - 50 mm (2 in) edgewound aluminum voice coil
 - 35 Hz to 15 kHz response
 - 89 dB sensitivity, 1 W, 1 m
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Unique in both concept and execution, JBL Model LE8T-H offers uncolored, natural, wide-range performance superior to that of many two-way monitor systems. Because of its peak-free response and freedom from distortion, the LE8T-H is recommended for top quality distributed-speaker ceiling installations, in-line arrays, monitoring facilities, and music listening rooms. Unlike other 200 mm (8 in) loudspeakers, the JBL LE8T-H maintains substantially uniform efficiency through more than eight octaves. Its unique motor geometry of a short voice coil moving within a deep magnetic gap yields extreme low-

frequency linearity. The cone is a sandwich constructed of a layered proprietary composite. The pole piece is plated with a copper ring to counteract the inductance of the voice coil for increased high frequency output. A single LE8T-H can produce a sound pressure level greater than 93 dB at 3 m (10 ft) distance, not only at 500 Hz but at 50 or 5,000 Hz as well. Its frequency response and transparency cannot be approached by any other single loudspeaker.

The Model LE8T-H is unquestionably the finest 200 mm loudspeaker offered for professional applications. It is painstakingly crafted to traditional JBL standards of precision and will deliver exceptional performance year after year without special care or attention.



LE8T-H

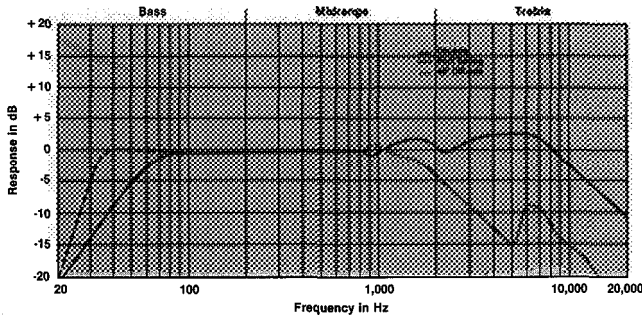
ARCHITECTURAL SPECIFICATIONS:

The low frequency transducer shall have a nominal diameter of 200 mm (8 in), overall depth not greater than 98 mm 3 7/8 in), and weigh at least 3.4 kg (7½ 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 50 mm (2 in) in diameter and shall be made of edgewound aluminum ribbon operating in a magnetic field of not less than 0.85 T (8,500 gauss). High frequencies shall be reproduced by a damped aluminum dome attached directly to the voice-coil former.

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 89 dB on axis and down no more than 2 dB 45 degrees off axis. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 6.2 newtons per ampere. The half-space reference efficiency shall be 0.5%. Usable frequency response shall extend from 35 Hz to at least 15 kHz. On-axis response, measured at a distance of 1.8 m (6 ft) or more under free-field conditions, shall be ± 3 dB from 40 Hz to 12 kHz. Acoustic loading shall further extend the low frequency response. Nominal impedance shall be 8 ohms. Rated power capacity shall be at least 50 watts normal program material.

The transducer shall be the JBL Model LE8T-H. 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 LE8T-H in a closed box of 28 L (1 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 of the loudspeaker in a typical application, mounted in a 85 L (3 ft³) enclosure with a 50 cm² (8 in²) port, 10 cm (4 in) long, tuning the enclosure to 35 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:	200 mm (8 in)
Rated Impedance:	8 ohms
Power Capacity ¹ :	50 W continuous program
Sensitivity ² :	89 dB SPL, 1 W, 1 m
Frequency Range:	35 Hz - 15 kHz
Recommended Enclosure	
Volume:	20-115 L (¾-4 ft ³)
Effective Piston Diameter:	152 mm (6 in)
Maximum Excursion	
Before Damage:	13 mm (½ in peak to peak)
Minimum Impedance:	6.2 ohms (±10% @ 25°C)
Voice Coil Diameter:	50 mm (2 in)
Voice Coil Material:	Edgewound aluminum ribbon
Voice Coil Winding Depth:	3.7 mm (0.145 in)
Magnetic Gap Depth:	1.19 mm (0.470 in)
Magnetic Assembly Weight:	2.8 kg (6 lb)
Flux Density:	0.85 T (8,500 gauss)
BI Factor:	6.2 N/A
Effective Moving Mass:	0.016 kg
Positive voltage on black terminal gives forward diaphragm motion	
Thiele-Small Parameters:	
f_s :	45 Hz
R_E :	5.5 ohms
Q_{ts} :	0.56
Q_{ms} :	4.0
Q_{es} :	0.65
V_{as} :	35 L (1.2 ft ³)
S_D :	0.018 m ² (28 in ²)
X_{ms} :	5.5 mm (0.22 in)
V_m :	99 cm ³ (6 in ³)
L_e :	0.3 mH
η_0 (Half space):	0.5%
P_e (Max):	25 W continuous sine wave
Mounting Information:	
Overall Diameter:	210 mm (8¼ in)
Bolt Circle Diameter:	194 mm (7 5/8 in)
Baffle Cutout Diameter	
Front Mount:	179 mm (7 1/16 in)
Rear Mount:	171 mm (6¾ in)
Typical Volume Displaced	
by Driver When Mounted	
in Enclosure:	1.5 L (0.05 ft ³)
Depth:	98 mm (3 7/8 in)
Net Weight:	3.4 kg (7½ lb)
Shipping Weight:	3.7 kg (8¼ 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 full range loudspeakers is based on a signal swept from 500 Hz to 2.5 kHz, rather than the conventional 1 kHz single frequency test signal. Usable sensitivity of the LE8T-H 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.

