JBL Professional Series

Model 4301BE Energized Broadcast Monitor

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Accurate, uncolored reproduction from 45 Hz to 15 kHz, ±3 dB

Built-in power amplifier (0.05% THD)

98 dB SPL at 1 metre at full rated power

Components: 200 mm (8 in) low frequency loudspeaker, 36 mm (1.4 in) high frequency direct radiator

High frequency level control behind removable grille

Oiled walnut enclosure

A self-contained amplifier/monitor loudspeaker system designed for broadcast applications, the 4301BE delivers the accuracy, efficiency, and flexibility required by modern broadcast technology. With home listeners increasingly aware of sound quality, accurate monitoring has become absolutely essential.

The 4301BE is energized by a built-in amplifier specifically designed to complement the characteristics of the system's transducers and dividing network. The extraordinarily clean output signal, in combination with the inherent efficiency of the 4301BE drivers, produces a sound pressure level of 98 dB in a typical 1.8 x 3 x 2.4 metre (6 x 8 x 10 foot) broadcast booth, accurately and without distortion.

Its compact size and smooth reproduction make the 4301BE ideal for use in mobile recording, broadcasting, or editing applications, or anywhere space is at a premium. Further, the 4301BE can bridge a line-level output from a mixing board or broadcast audio console and thereby substitute for the lower-quality monitor amplifier often provided in such installations.

Low Frequency Loudspeaker

The 200 mm (8 in) low frequency loudspeaker, purpose-built for the compact enclosure, avoids the compromises usually associated with smaller drivers. The 50 mm (2 in) diameter copper voice coil and 1.3 kg (2⅞ lb) magnetic assembly have been designed for the maximum power handling capacity and efficiency consistent with the desired bandwidth. The magnetic assembly incorporates JBL's unique SFG (Symmetrical Field Geometry) design for significantly reduced second harmonic distortion. The cone and compliance have been carefully selected for the best definition and low frequency bandwidth, and the cone itself has been integrally stiffened to reduce the possibility of break-up and distortion. The result is clean, tight bass under even the most severe operating conditions.

High Frequency Direct Radiator

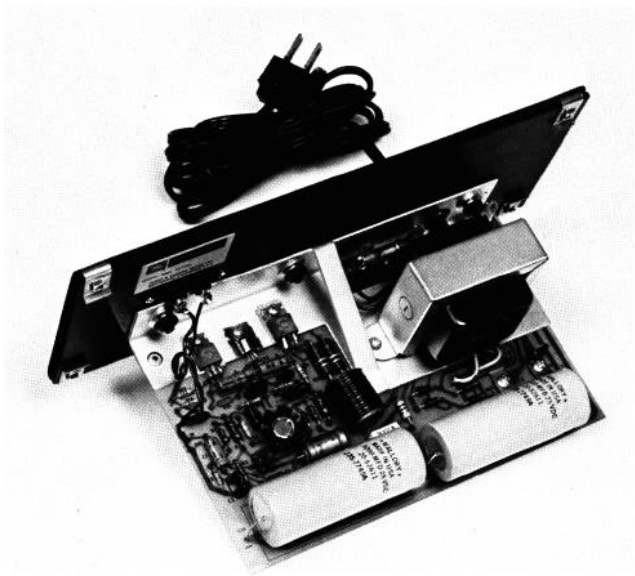
A 36 mm (1.4 in) direct radiator – designed for clarity, power handling capacity, and smooth response – provides the 4301BE's open, crisp treble performance. A large 16 mm (⅝ in) copper voice coil yields high efficiency and accurate, well defined transient reproduction, while the small cone diameter and center dome ensure wide dispersion. The sloping area surrounding the driver provides an uninterrupted surface from the cone to the baffle, eliminating the possibility of reflection or diffraction effects.

Frequency Dividing Network

The network in the 4301BE was developed for use with these drivers in this specific enclosure. Conjugate circuitry controls the low frequency loudspeaker impedance for smooth midrange response. A continuously variable control allows the relative level of the high frequency driver to be adjusted to suit listening preferences and room conditions.

Amplifier

A conservative, reliable design, the built-in amplifier offers completely symmetrical, full-complementary circuitry and wide bandwidth to preserve faithful reproduction of complex musical waveforms. It is ideally suited to the loudspeakers it drives, and extremely clean (0.05% THD at full rated power).



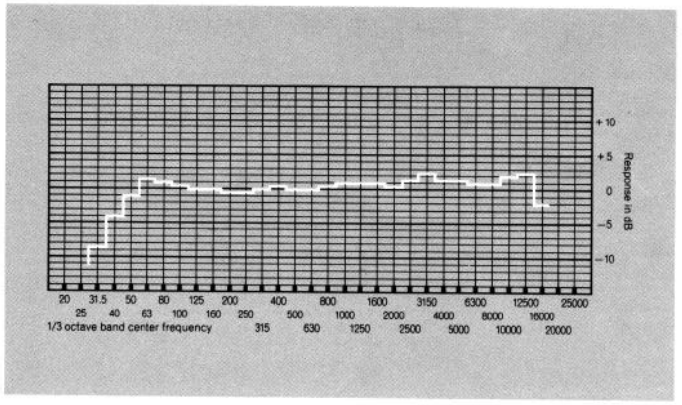
Enclosure

The 4301BE enclosure has been designed for maximum strength and resistance to vibration. All panels are cut from 19 mm (¾ in) dense compressed wood, superior to solid wood in its acoustic properties, and all joints are hand-fitted and wood-welded. The four side panels are veneered with solid American black walnut and feature a hand-rubbed oil finish. A ducted port extending through the baffle panel provides proper loading for the low frequency loudspeaker.

Test Conditions

The accompanying graph and specifications were compiled from measurements made under carefully controlled conditions. The loudspeaker system was mounted flush in the center of a large, flat baffle in a non-reverberant environment. Laboratory-standard condenser microphones were suspended in a spherical pattern around the acoustic center of the system, sufficiently distant to be out of the near field, so that data taken would reflect the total output of the combined transducers. All test equipment was checked and calibrated before tests were conducted.

Bandwidth On-Axis

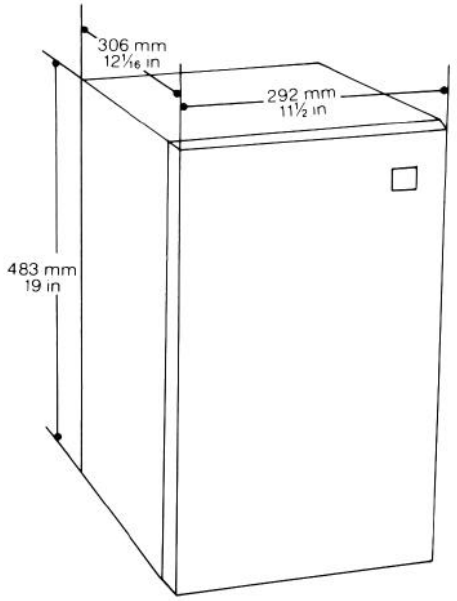


Frequency response of the 4301BE taken with ⅓-octave band pink noise. Measured response of a typical production system averaged through an inclusive arc of 30° vertically and horizontally does not deviate more than 3 dB from the above curve.

Loudspeaker system components of the 4301BE Energized Broadcast Monitor.

Specifications

Loudspeakers		
Frequency Response		
Sine wave, on-axis	45 to 15,000 Hz, ±3 dB	
⅓-octave band (400 Hz reference)	−3 dB at 50 Hz 0 dB at 1200 Hz +2 dB at 12 kHz	
Polar response	No less than −6 dB at 90° horizontal and vertical to 10 kHz	
Distortion		
½ power, 86 dB SPL/ 10 feet (3.0 m), single frequency	0.5% or less third harmonic generation from 100 to 15,000 Hz	
Amplifier		
Input Sensitivity	0.5 V	
Power Output	10 W continuous sine wave	
Total Harmonic Distortion		
at rated output at 1 W	0.05% or less 0.02% or less	
Signal to Noise Ratio (rated output)	better than 90 dB	
Power Requirement	120 V AC, 50/60 Hz	
Power Consumption	15 W (full power)	
System		
Crossover Frequency	2500 Hz	
Finish	Oiled walnut	
Grille	Dark blue fabric	
Enclosure Volume	28 litres	1 cubic foot
Enclosure Dimensions	483 mm x 292 mm x 306 mm deep 19 in x 11½ in x 12⅛ in deep	
Net Weight	13.5 kg	29 lb
Shipping Weight	14.5 kg	32 lb



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.