

4401

STUDIO MONITOR



FEATURES:

Smooth, accurate response from 70 Hz to 18 kHz (± 3 dB)

88 dB SPL, 1 W, 1 m (3.3 ft)

Components: 170 mm (6½ in) low frequency loudspeaker, 25 mm (1 in) high frequency dome radiator

Oiled walnut enclosure

Optional steel cradle mount

The most compact of the JBL studio monitors, the 4401 is ideal for use as a main monitor in applications where space is at a premium. The tight driver cluster gives the 4401 outstanding coherency in the near field, making it also an excellent choice for a console-mount secondary monitor.

The 4401 shares the design philosophy of the larger JBL 4430 and 4435 monitors: smooth response over a wide coverage angle, with wide dynamic range and clear, open sound. Particular attention has been paid to the design of the dividing network and to the physical placement of the drivers. Each driver is the product of extensive research and testing, and each has been designed for optimum performance in the system.

JBL

HIGH FREQUENCY DOME RADIATOR

Today's recording techniques place a premium on high frequency accuracy and definition, and JBL has designed the 4401's high frequency dome radiator to meet these demands. The dome is formed of a lightweight phenolic material and coated with a microscopically thin layer of aluminum through a sophisticated vapor-deposition process. The hard dome construction provides smooth response with higher efficiency and acoustic output than a comparable soft dome. Additionally, the driver exhibits outstanding linearity over its full operating range — there is virtually no power compression.

LOW FREQUENCY DRIVER

The 4401 utilizes a low frequency driver specially designed for optimum performance in a compact enclosure. The 170 mm (6½ in) loudspeaker exhibits unusually smooth frequency response, superior transient response, and extremely low distortion. It features a die-cast aluminum frame for structural integrity under the most adverse operating conditions.

SYMMETRICAL FIELD GEOMETRY DESIGN

The loudspeaker's magnetic structure features JBL's unique Symmetrical Field Geometry (SFG) design to reduce second harmonic distortion to less than one tenth the level found in conventional designs. The cone is of laminated construction to achieve the desired combination of light weight and rigidity. The coating, and exclusive JBL formulation, adds a precise amount of mass and provides optimum damping characteristics. Carefully engineered suspension elements reduce DC offsets and an unusually long voice coil allows exceptional excursion linearity.

FREQUENCY DIVIDING NETWORK

The sophisticated dividing network contributes significantly to the overall performance of the system. The carefully chosen transition slopes and crossover point provide flat axial response and minimize off-axis variation, so that power response is also smooth. The design allows a more predictable interface of the 4401 and the studio environment. Stereo imaging also remains stable over a wider area.

To take full advantage of the inherently excellent transient response of the two drivers, JBL engineers applied a principle typically found only in active high frequency electronics. Polypropylene and polystyrene bypass capacitors are wired in parallel with the network's larger Mylar capacitors to reduce the hysteresis effects on the signal. This provides improved resolution of complex transient waveforms.

The network's iron-core and air-core inductors are carefully chosen for their high current capacity and low DC characteristics. A high frequency level control protrudes through the grille for individual adjustments to the spectral balance.

To simplify wall or console mounting, the 4401 may be ordered with optional cradle mounts manufactured of rugged steel.

SPECIFICATIONS:

SYSTEM:

Frequency Response (± 3 dB):	70 Hz to 18 kHz
Power Capacity ¹ :	60 W
Sensitivity:	88 dB SPL, 1 W, 1 m (3.3 ft)
Nominal Impedance:	8 ohms
Crossover Frequency:	2.5 kHz

LOW FREQUENCY LOUDSPEAKER

Nominal Diameter:	170 mm (6½ in)
Voice Coil:	38 mm (1½ in)
Magnetic Assembly Weight:	1.3 kg (3 lb)
Flux Density:	0.95 tesla (9,500 gauss)
Sensitivity ² :	89 dB SPL, 1 W, 1 m (3.3 ft)

HIGH FREQUENCY DOME RADIATOR

Nominal Diameter:	25 mm (1 in)
Voice Coil:	25 mm (1 in) copper
Magnetic Assembly Weight:	0.68 kg (1½ lb)
Flux Density:	1.4 tesla (14,000 gauss)
Sensitivity ³ :	89 dB SPL, 1 W, 1 m (3.3 ft)

GENERAL:

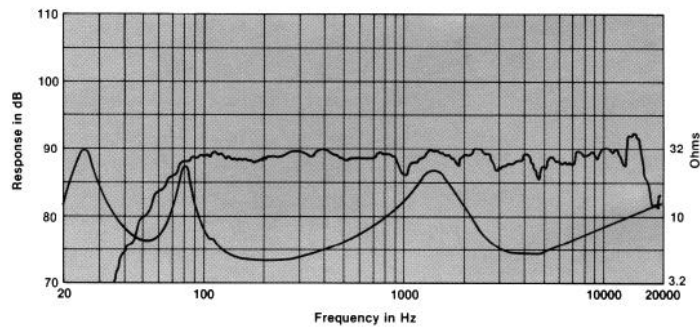
Finish:	Oiled walnut
Grille Color:	Dark blue
Optional Equipment:	MC 4401 Speaker Cradle for free standing use or wall mounting
Dimensions:	375 mm x 238 mm x 183 mm deep 14½ in x 9½ in x 7¼ in deep
Shipping Weight (Pair):	16 kg (35 lb)

¹Rating based on test signal of filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB/octave rolloff below 40 Hz and above 5000 Hz with a peak-to-average ratio of 6 dB), two hours duration.

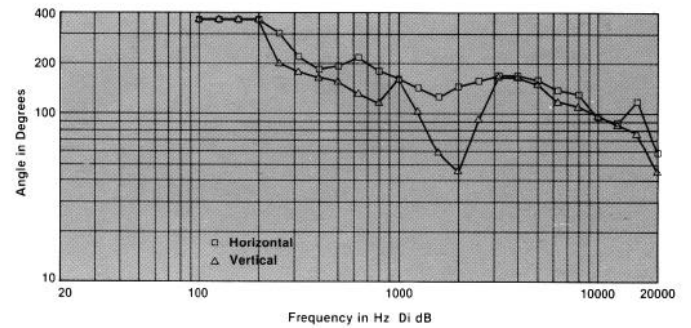
²Averaged from 100 Hz to 500 Hz within 1 dB.

³Averaged above 3 kHz within 1 dB.

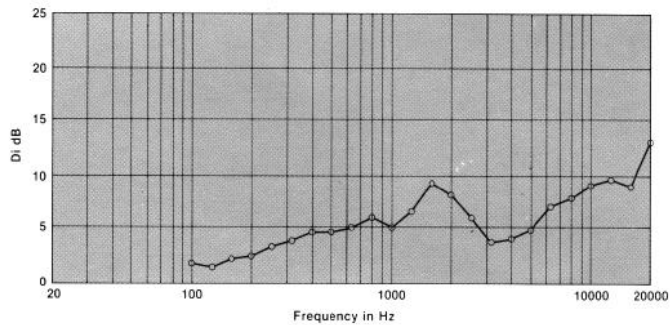
Frequency Response at 1 W, 1 meter; Impedance



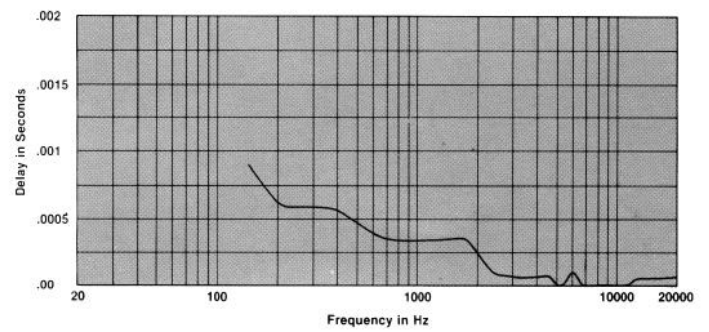
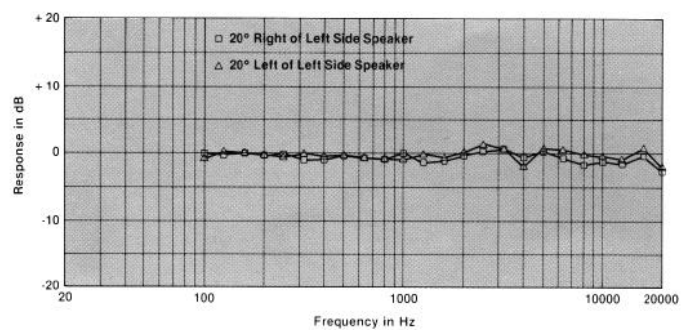
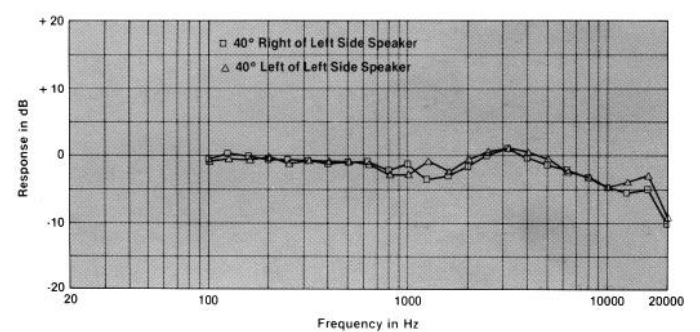
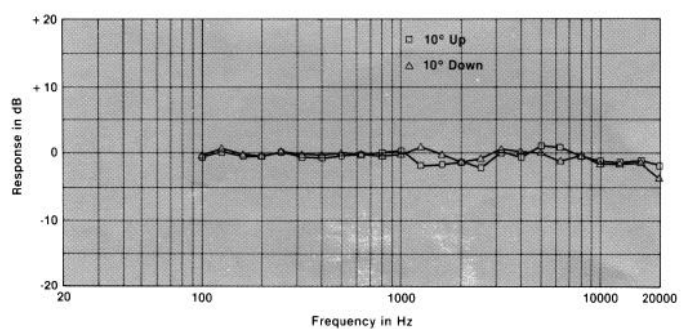
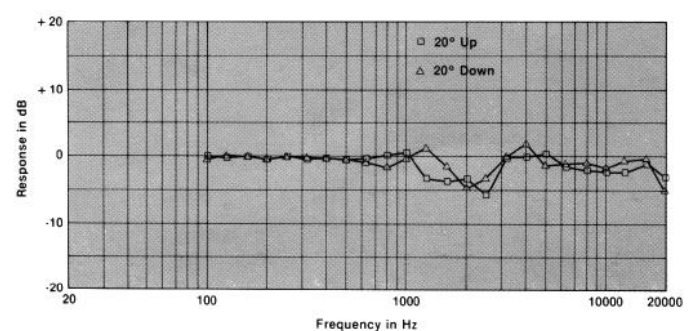
Beamwidth (—6 dB) vs. Frequency



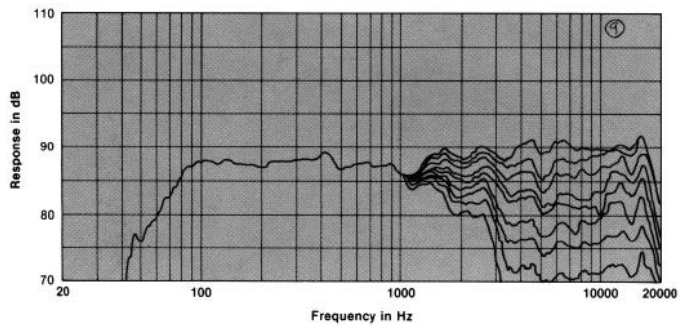
Directivity vs. Frequency



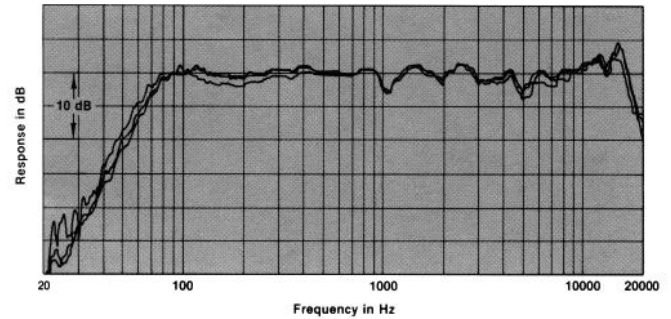
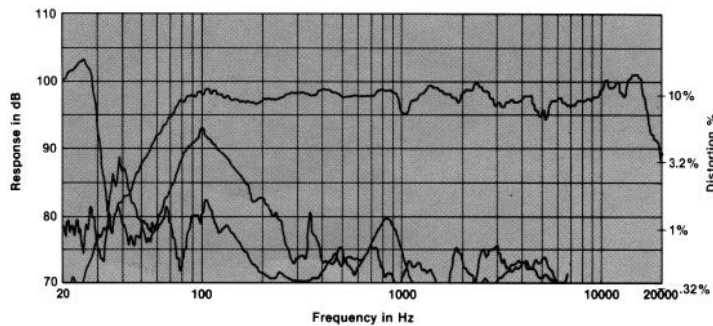
Delay vs. Frequency

Horizontal off-axis Response (normalized to on-axis)
 $\pm 20^\circ$ Horizontal $\pm 40^\circ$ HorizontalVertical off-axis Response (normalized to on-axis)
 $\pm 10^\circ$ Vertical $\pm 20^\circ$ Vertical

Control Range, Mid



Power Compression at 85, 95, 105 dB

Distortion vs. Frequency 10W
Distortion Raised to 20 dB

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.