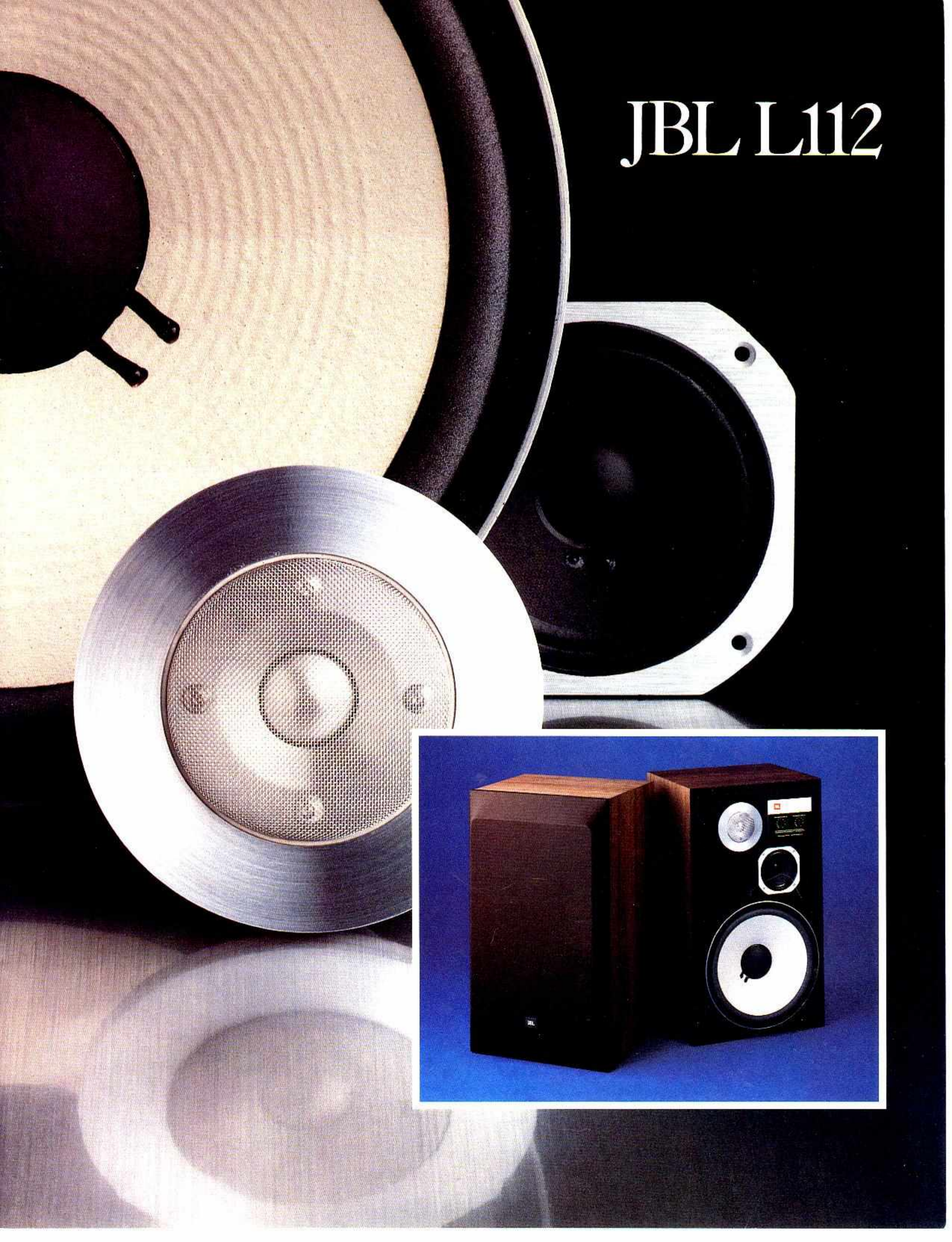
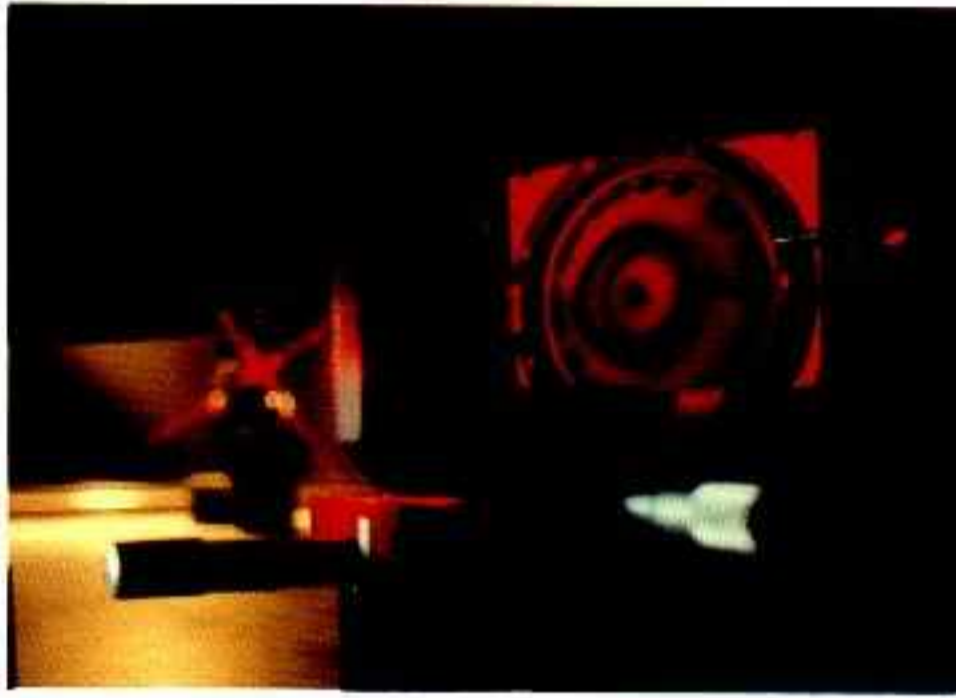


JBL L112



JBL L112



Laser holography allows precise study of diaphragm motion.

The New State of the Art in Bookshelf Loudspeakers

The new JBL L112 is our most advanced bookshelf speaker system—a synthesis of technological expertise with musical understanding and traditional JBL craftsmanship. Whether called to reproduce the loudest rock chords or the most delicate flute passages, the L112 responds with sound so natural that there's no sense of a speaker at all—only the music.

The L112 began in JBL's advanced research laboratory. There, our engineers used computer analyses to establish optimum parameters for each driver and the enclosure. Laser interferometry helped us develop better designs through evaluation of transducers under operating conditions. In our anechoic chamber, we measured every conceivable performance characteristic with the most modern, sophisticated test equipment. But instruments simply measure; only human ears can pass final judgment on how music should sound, so we relied on extensive subjective listening evaluations to fine-tune the system. The final result of this design process is the L112—JBL's state of the art in bookshelf loudspeakers.

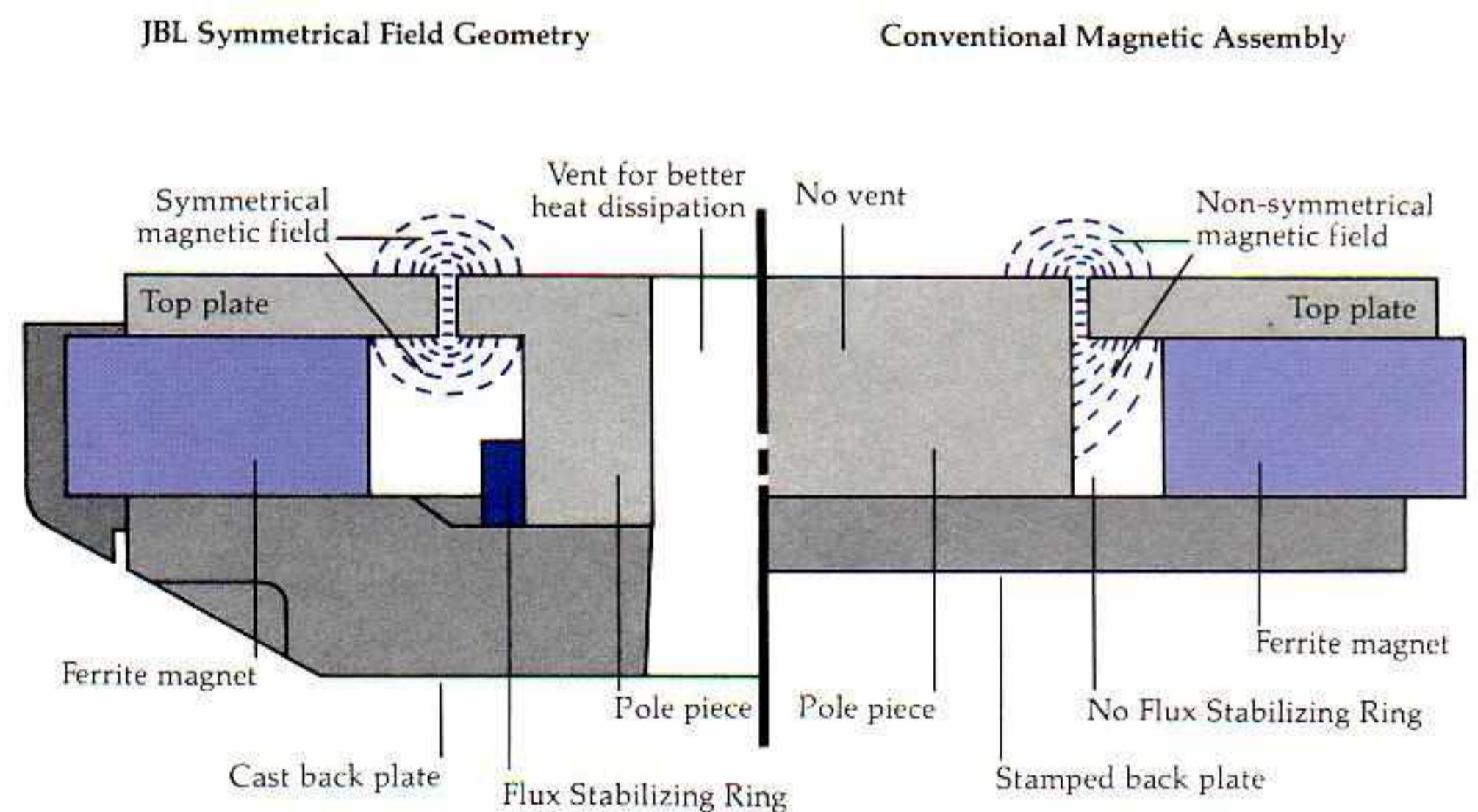
More High Frequency Detail from a New Dome Radiator

Designed specifically for the L112, the new high frequency dome radiator has the extraordinary ability to accurately reproduce the highest harmonics—the subtlest shadings of music—with depth. Yet it cleanly handles the loudest musical peaks with authority. In developing this transducer, we utilized the capabilities of our fully equipped laser-optics laboratory. Highly detailed holograms (three-dimensional photographs) allowed us to study diaphragm motion and identify flaws that would have otherwise gone undetected (much the way X-rays aid a doctor). We used this knowledge in evaluating materials and construction techniques.

The high-frequency dome of the L112 is formed of a lightweight phenolic material, coated with aluminum by means of a vapor deposition process. The dome has the optimum combination of strength, mass, and rigidity, and a copper voice coil drives it over the full circumference for smooth, low-distortion response across its entire wide operating range.

SFG: Cleaner, More Powerful Bass

The 300 mm (12 in) low frequency transducer of the L112 utilizes JBL's unique SFG (Symmetrical Field Geometry) magnetic structure to produce deep, powerful, clean bass. The SFG innovations—the symmetrical magnetic field at the voice coil gap and the aluminum Flux Stabilizing Ring—dramatically reduce the second harmonic distortion found in conventional drivers. A powerful magnet and large 75 mm (3 in) voice coil give the driver high power-handling capability, further reduction of distortion, and outstanding transient response. The thick white coating on the cone is an exclusive JBL formulation that gives the cone the optimum mass and stiffness for flattest frequency response.



Cross-sections of the low frequency driver of the JBL L150 and of a conventional magnetic assembly.

The New Dividing Network—Higher Resolution for Better Transients

A new frequency dividing network gives the L112 superior transient response, so that music retains the full clarity and total impact of the original source. We achieved this through creative application of a principle typically found only in active high frequency electronics, a principle that greatly improves the resolution of complex musical waveforms. Additionally, unlike many other designs that operate only the transition frequencies, the sophisticated L112 network controls each driver throughout its operating range. Such total control smoothly blends the output of the drivers, with no perceptible shift from one to the next; the overall sound is coherent, as if produced by one (extremely wide range) transducer rather than three.

The network is mounted on a heavy duty printed circuit board to assure reliability. Level controls on the front baffle (behind the removable grille) permit adjustment of midrange and high frequency response to suit individual taste or room acoustics.

Superb Midrange Definition

The 130 mm (5 in) midrange driver, housed in an isolated subchamber to prevent interaction with the low frequency transducer, delivers clear, accurate reproduction. The combination of a stiff cone and large 22 mm (7/8 in) voice coil gives this driver excellent transient response, the ability to respond accurately to the onset, the initial attack, of a musical note. Good transient response is necessary for natural-sounding reproduction of *any* music, and especially important if recordings of such instruments as cymbals or piano are to convey the realism of the live performance. Because music has more energy in the midrange than in the bass or treble regions, the midrange driver was designed to have substantial reserve dynamic range for reproducing program peaks without strain or distortion.

Mirror-Imaged for More Realism

Much of the excellence of the L112 lies in its superb stereo imaging, the accurate re-creation of the spatial characteristics of the original performance. To ensure this imaging regardless of speaker placement or room acoustics, the L112 is designed in mirror-imaged pairs. Without this feature, its imaging would tend to follow the configuration of the drivers—the different frequencies would seem to originate from different places rather than from one source. Mirror imaging balances the left configuration with the right, keeping the image stable and centered. Heard through the L112s, good recordings sound three-dimensional, exhibiting accurate left-to-right and front-to-back placement of instruments and voices.

The enclosure typifies the fine furniture design that has made JBL a leader in the industry. The L112 makes a dramatic visual statement; side panels are veneered in American black walnut, oiled and hand rubbed to a lustrous finish that enhances the beauty of the natural grain structure. Detail work is obvious; materials are skillfully selected and carefully prepared; joints are expertly closed; scratches, dents and gluelines are non-existent.

The three-dimensional grille is a stretch material that is acoustically transparent. JBL engineering thoroughness extends to the grille mounting; the protruding baffle permits the grille frame to be mounted flush, eliminating any diffraction effects that could color the sound.



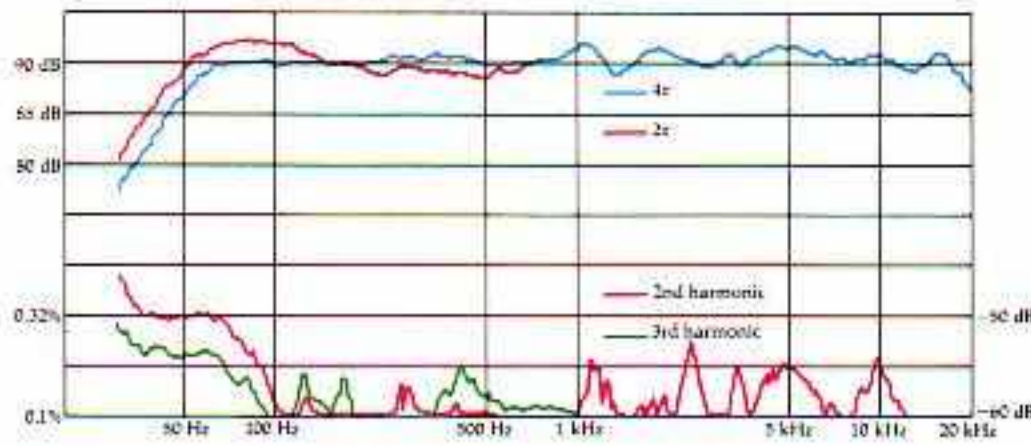
The L112 Enclosure—Strength and Beauty

A tightly constructed, non-resonant enclosure is important to any loud-speaker system and especially important to such a robust system as the L112. For maximum strength and resistance to vibration, the enclosure panels are cut from dense, acoustically superior 19 mm (3/4 in) or 25 mm (1 in) compressed wood. All joints are hand-fitted and heat-cured. A fiberglass lining absorbs unwanted resonances, and a ducted port provides the proper acoustic loading for the low frequency transducer.

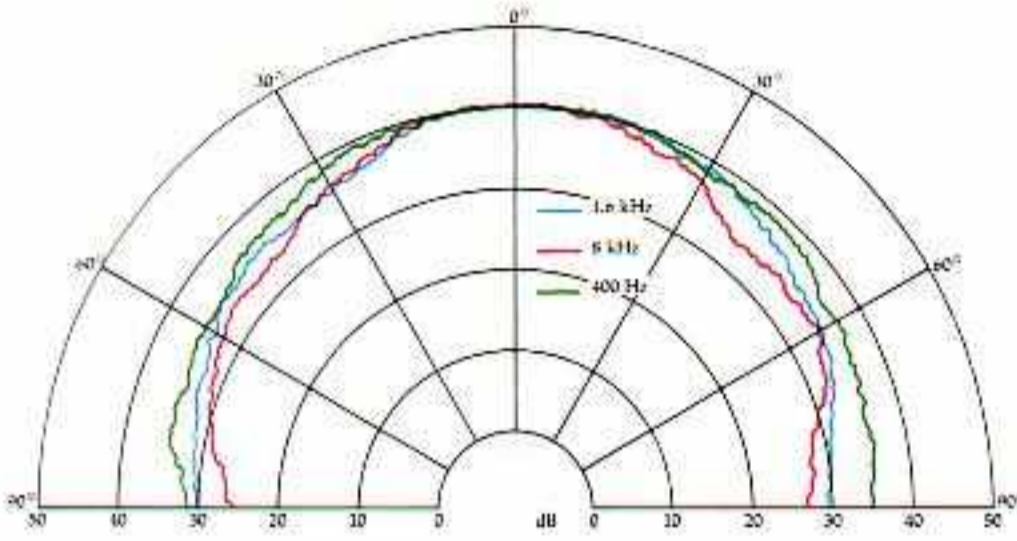


Power Capacity

The L112 will produce sound at comfortable listening levels when driven by an amplifier having an output of as little as 10 watts continuous sine wave per channel. However, the L112 combines high efficiency with high power capacity, and an amplifier delivering up to 300 watts continuous sine wave per channel can be recommended. Such an amplifier has the reserve power necessary for accurate reproduction of transients, which can reach momentary peaks equivalent to ten times the average power level.



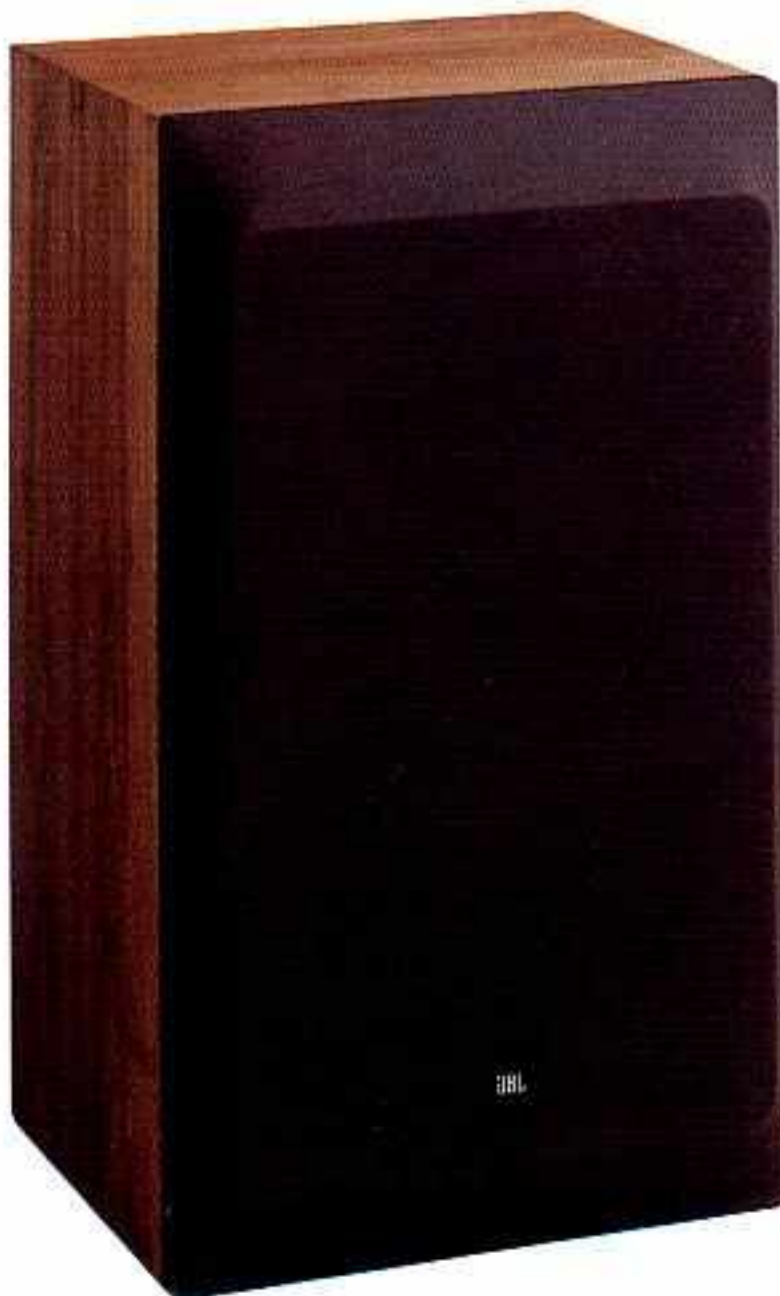
Frequency response of the L112, measured on-axis at 1 metre with a 1-watt input in a hemispherical free-field (2π) and free field (4π) environments. Response in a room will vary, depending on room acoustics and system placement. The lower curves show 2nd and 3rd harmonic distortion levels.



Horizontal dispersion of the L112 at low, mid, and high frequencies. This uniform sound distribution pattern results in excellent imaging.

Crafted in the U.S.A.

Every step in the design and construction of the JBL L112, from the initial computer calculations to final packing, is done in our own Northridge, California, facility. We have complete, modern factories for transducer and furniture manufacturing, an extensively equipped scientific engineering laboratory, and a complete chemical laboratory. Much of our tooling was designed and built especially for us because none was available that met our specifications. We have more test equipment devoted exclusively to quality control than many speaker companies have in their entire engineering departments. At JBL we control all the variables, so we don't have to compromise our design goals.



Specifications

System

Maximum Recommended Amplifier Power	300 watts per channel
Nominal Impedance	8 ohms
Crossover Frequencies	1.1 kHz, 3.7 kHz
System Sensitivity	89 dB SPL, 1 W, 1 m (3.3 ft)

Low Frequency Loudspeaker

Nominal Diameter	300 mm 12 in
Voice Coil	76 mm (3 in) copper
Magnetic Assembly Weight	4.7 kg 10 1/4 lb
Flux Density	1.05 tesla (10,500 gauss)
Sensitivity ¹	89 dB SPL, 1 W, 1 m (3.3 ft)

Midrange Loudspeaker

Nominal Diameter	130 mm 5 in
Voice Coil	22 mm (7/8 in) copper
Magnetic Assembly Weight	0.74 kg 1 5/8 lb
Flux Density	1.4 tesla (14,000 gauss)
Sensitivity ²	91 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	0.9 kg 2 lb
Flux Density	1.4 tesla (14,000 gauss)
Sensitivity ³	89 dB SPL, 1W, 1m (3.3 ft)

General

Finish	Oiled walnut
Grille Color	Brown ⁴
Dimensions	622 mm x 362 mm x 333 mm deep 24 1/2 in x 14 1/4 in x 13 in deep
Shipping Weight	25 kg 55 lb

1. Averaged from 100 to 500 Hz, within 1 dB.
2. Averaged from 1 kHz to 3 kHz, within 1 dB.
3. Averaged above 5 kHz, within 1 dB.
4. Rust or tan grilles are available separately.

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.



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