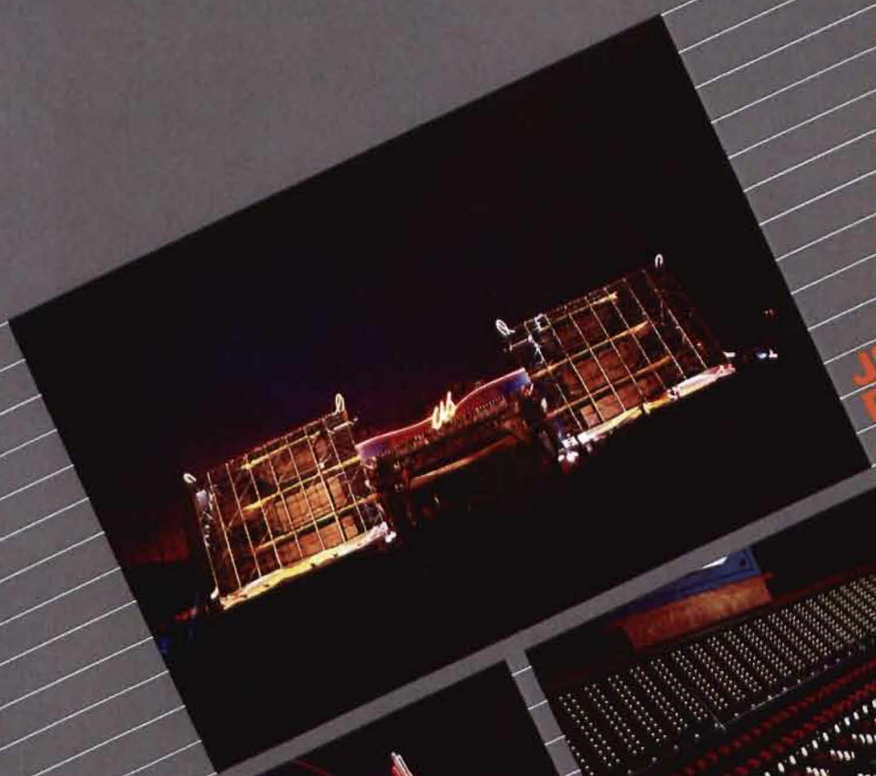


JBL PROFESSIONAL SERIES

Index

On the cover:
Top: The US Festival, Glen Helen Regional Park, San Bernardino County California. **Lower left:** JBL Theater Sound Systems make the most of today's advanced cinema sound techniques. **Lower right:** Top recording studios rely on the accuracy of JBL monitor loudspeakers. Photo courtesy of Cherokee Studios, Los Angeles, California.

This catalog contains JBL's current Professional Series loudspeaker systems, components and electronics. They reflect the very latest developments in acoustic and electronic engineering, and will provide the performance, durability and versatility required of professional installations.

Measurement Specifications

Frequency response and sensitivity are measured on axis in a hemispherical free field environment. Frequency response is quoted as the upper and lower frequencies within which the variation is not greater than the specified limits. Frequency range specifies the upper and lower usable frequency limits of the transducer or system, normally the 10 dB down or half-loudness points of the response.

Horn and lens distribution patterns indicate the inclusive angle through which output is not more than 6 dB below on-axis response at the selected frequencies.

All quoted operational characteristics are based on actual production units, not laboratory prototypes.

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.

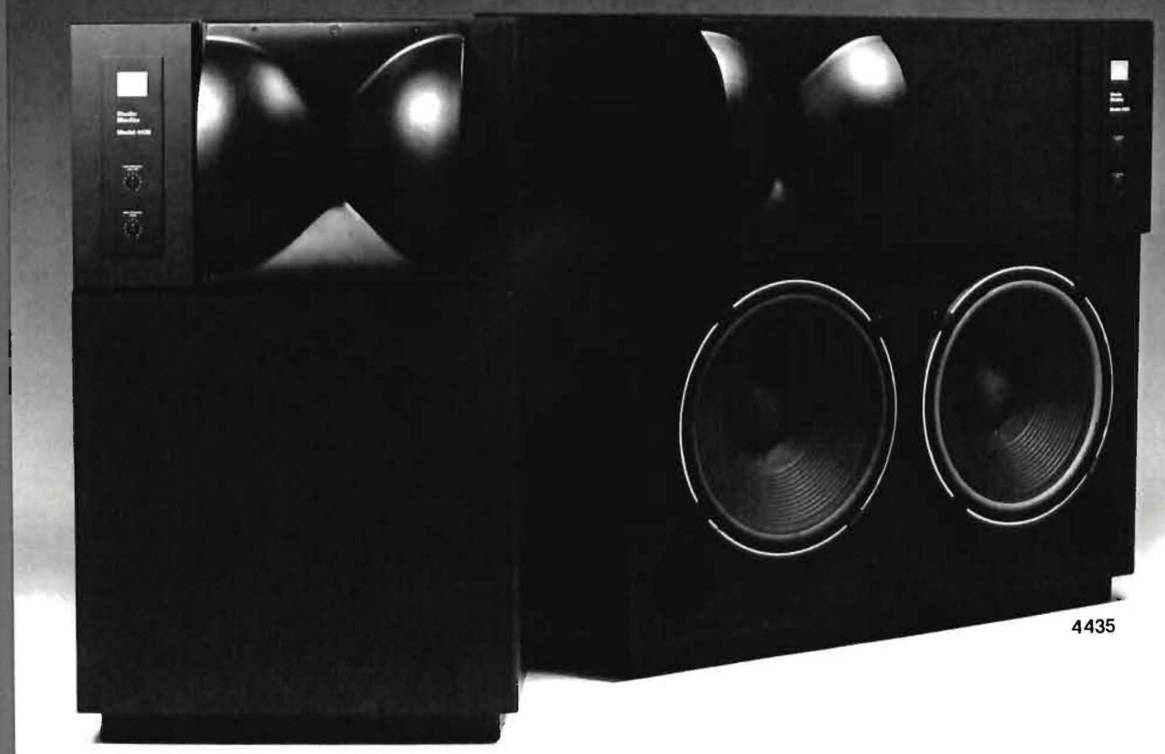
Power Handling Specifications

Power handling of studio monitors and crossover networks is tested with filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB per octave rolloff below 40 Hz and above 5000 Hz with a peak-to-average ratio of 6 dB), for two hours duration. This standard provides a stringent simulation of program material, resulting in a conservative specification for power capacity.

High frequency compression drivers are tested with pink noise input having a 6 dB crest factor, with a high-pass filter set at the specified lower limiting frequency, for a period of two hours. E Series and Professional Series individual cone transducers are tested with a sine wave input signal swept within a range of approximately one octave below to one octave above minimum impedance. Constant amplifier voltage is adjusted to provide stated power into rated nominal impedance and units are required to sustain this performance continuously for one hour without any sign of damage or change in performance characteristics.

Power handling capacities of individual transducers and component systems are also described in terms of continuous program power, which is twice continuous sine wave or pink noise power. Expressed another way, continuous program power is 3 dB greater than continuous tested power and is a conservative expression of the transducer's ability to handle normal speech and music program material.

Work is in progress to correlate sine wave input to the proposed Audio Engineering Society (AES) standard, which calls for power handling to be expressed in terms of two-hour exposure to one decade of pink noise with 12 dB slopes and a 6 dB peak-to-average ratio. The decade used begins at the manufacturer's lowest recommended operating frequency, and power is calculated according to minimum impedance. At the time of this printing, individual drivers tested according to the AES standard criteria meet or exceed the ratings shown for continuous sine wave power capacity.



4435

4430

4401

4411

STUDIO MONITOR LOUDSPEAKER SYSTEMS

4430 and 4435 Bi-Radial Studio Monitors These two models represent a significant new approach to two-way monitor design. The incorporation of the unique JBL Bi-Radial horn* in a monitor loudspeaker provides constant vertical and horizontal polar coverage, control of the reverberant field, flat power response, image stability, and coherent sound. Practical benefits of this design include stable imaging over a wide range of horizontal positions, allowing considerable latitude in physical placement. The wide vertical response, identical to the horizontal, includes both standing and seated listeners within the coverage angle. The coverage angle of the horn is wide, 100° by 100°, but very tightly controlled, and it matches the coverage angle of the low frequency driver at the crossover frequency. Both on-axis and off-axis pressure response are flat. The horn's rapid flare rate reduces second harmonic distortion, and its reduced depth puts its driver in the same acoustic plane as the low frequency driver.

The two models differ chiefly in their low frequency capabilities. The two 380 mm (15 in) low-frequency drivers of the 4435 provide greater bass output than is provided by the single 15-inch bass driver of the 4430. Both models use an improved compression driver featuring a diaphragm with a three-dimensional diamond-pattern suspension†. The surround offers an extended frequency response normally associated with more exotic but less reliable materials. The 4430 and 4435 are finished in oiled walnut with dark blue grilles.

*U.S. Patent #4,308,932. Foreign patents pending.
†U.S. Patent #4,324,312. Foreign patents pending.

4401 Studio Monitor, 2-way 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. Its exceptionally flat direct-field response also makes the 4401 an excellent choice for use as a console-mount secondary monitor. A 25 mm (1 in) high frequency dome radiator exhibits outstanding linearity over its full operating range and the 170 mm (6½ in) low frequency driver provides unusually smooth frequency response, superior transient response, and extremely low distortion. The 4401 is finished in oiled walnut with a dark blue grille. To simplify wall or console mounting, this monitor may be ordered with the optional JBL MC4401 cradle mount, made of rugged steel.

4401 Components

4411 Control Monitor, 3-way The successor to the legendary JBL 4311, the new 4411 control monitor has been designed specifically to meet the demands of digital and advanced analog recording. Mirror-imaging improves the stereo perspective, and the drivers are arranged in a close cluster to permit close-in monitoring. The mid and high frequency level controls are raised for convenience in making level adjustments, and the controls are calibrated to provide settings for both a flat direct-field pressure response and a rising axial response that produces a flatter power response. The system utilizes a 300 mm (12 in) low frequency loudspeaker, a 130 mm (5 in) midrange loudspeaker, and a 25 mm (1 in) high frequency dome radiator, working together to deliver the optimum in performance.

The 4411 is finished in oiled walnut with dark blue grille.

4411 Components

4430 Components

4435 Components

Model	Frequency Response	Power Capacity[1]	Nominal Impedance	Sensitivity[2] 1 W, 1 m (3.3 ft)	Crossover Frequencies[3]	LF Enclosure Volume, Net	Exterior Dimensions (Height x Width x Depth)	Shipping Weight
4401	70 Hz - 18 kHz (−3 dB)	60 W	8 Ω	88 dB SPL	2.5 kHz	11 L 0.4 cu. ft	375 mm x 238 mm x 183 mm 14¾ in x 9⅜ in x 7³⁄₁₆ in	16 kg 35 lb
4411	45 Hz - 18 kHz (−3 dB)	150 W	8 Ω	90 dB SPL	1 kHz 4 kHz	40 L 1.5 cu. ft	597 mm x 362 mm x 327 mm 23¼ in x 14½ in x 12⅞ in	27 kg 52 lb
4430	35 Hz - 16 kHz (−3 dB)	300 W	8 Ω	93 dB SPL	1 kHz	140 L 5 cu. ft	908 mm x 556 mm x 400 mm (480 mm deep w/horn) 35¾ in x 21⅞ in x 15¾ in (18⁹⁄₁₆ in deep w/horn)	79.5 kg 175 lb
4435	30 Hz - 16 kHz (−3 dB)	375 W	8 Ω	96 dB SPL	1 kHz	280 L 10 cu. ft	908 mm x 965 mm x 435 mm (515 mm deep w/horn) 35¾ in x 38 in x 17⅛ in (20²⁷⁄₃₂ in deep w/horn)	114 kg 250 lb

1 Rating based on test signal of filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB per octave rolloff below 40 Hz and above 5 000 Hz with a peak to average ratio of 6 dB) two hours duration.

2 Sensitivity measured with an input averaged from 500 Hz to 2.5 kHz, with controls set for flattest response.

3 The lowest crossover frequency specified refers to operational characteristics with the network set for conventional passive operation, and is also the recommended crossover frequency for bi-amplification.


4312
4301B
4345
4355

STUDIO MONITOR LOUDSPEAKER SYSTEMS

4301B Broadcast Monitor, 2-way JBL's 4301B monitor is designed primarily for the broadcast control room and edit booth, and has achieved wide acceptance in home studios, remote recording and quality control areas. Smooth, wide range response and low distortion are obtained from a 200 mm (8 in) low frequency and a 36 mm (1.4 in) high frequency loudspeaker. A high frequency level control is provided on the front baffle. Finished in oiled walnut with dark blue grille.

4301B Components

4312 Control Monitor, 3-way A compact loudspeaker system designed for control rooms and other applications where space is restricted, the 4312 is the newest version in the 4310, 4311, 4311B line of succession. It is mirror imaged, and has a high resolution dividing network for improved transient definition. It utilizes a 300 mm (12 in) low frequency, 130 mm (5 in) midrange, and 36 mm (1.4 in) high frequency loudspeaker. Front panel controls above the grille permit convenient adjustment of midrange and high frequency levels. Finished in oiled walnut with black grille.

4312 Components

4345 Studio Monitor, 4-way The 4345 studio monitor features JBL's powerful 460 mm (18 in) low frequency loudspeaker, a 250 mm (10 in) midrange driver, a high frequency compression driver with horn/lens assembly, and an ultra-high frequency transducer. The monitor exhibits exceptional clarity, transient response, and low distortion, and is intended for control room and mastering applications. The frequency dividing network can be switched to permit either conventional passive operation or biamplification. The systems are designed in mirror-imaged pairs. An internal steel brace will accept eye bolts for horizontal or vertical suspension. The finish is oiled walnut with a dark blue grille.

4355 Studio Monitor, 4-way JBL's largest monitor, the 4355 represents the ultimate in high acoustic output, broad bandwidth, definition, and efficiency. Designed for biamplification, the system consists of two 380 mm (15 in) low frequency loudspeakers, a 300 mm (12 in) midrange loudspeaker, a high frequency compression driver with horn and acoustic lens, and an ultra-high frequency transducer. The system's baffle is designed for mirror-imaged mounting of the transducers, to provide optimum source localization in use. The bottom panel is finished and the base is removable to facilitate inverted suspension by eye bolts anchored to an internal steel support. Oiled walnut finish; dark blue grilles.

Model	Frequency Response	Power Capacity[1]	Nominal Impedance	Sensitivity[2] 1 W, 1 m (3.3 ft)	Crossover Frequencies[3]	LF Enclosure Volume, Net	Exterior Dimensions (Height x Width x Depth)	Net Weight
4301B	45 Hz - 15 kHz (±3 dB)	60 W	8 Ω	88 dB SPL	2.5 kHz	30 L 1 cu. ft	483 mm x 291 mm x 286 mm 19 in x 11½ in x 11¼ in	12.7 kg 28 lb
4312	45 Hz - 15 kHz (-3 dB)	80 W	8 Ω	91 dB SPL	1.5 kHz 6 kHz	40 L 1.5 cu. ft	597 mm x 362 mm x 298 mm 23½ in x 14¼ in x 11¾ in	20 kg 46 lb
4345	32 Hz - 20 kHz (+3, −6 dB)	250 W below 290 Hz 150 W above 290 Hz	8 Ω	95 dB SPL	280 Hz[3] 1 kHz, 10 kHz	538 L 8 cu. ft	1096 mm x 766 mm x 458 mm 43⅛ in x 30⅛ in x 18 in	104 kg 229 lb
4355	31.5 Hz - 18 kHz (±3 dB)	400 W below 290 Hz 200 W above 290 Hz	4 Ω below 290 Hz 8 Ω above 290 Hz	96 dB SPL	290 Hz 1.2 kHz, 10 kHz	269 L 9.5 cu. ft	901 mm x 1223 mm x 458 mm 35½ in x 48⅛ in x 18 in	120 kg 265 lb

1. Rating based on test signal of filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB per octave rolloff below 40 Hz and above 5,000 Hz with a peak-to-average ratio of 6 dB), two hours duration.

2. Sensitivity measured with an input averaged from 500 Hz to 2.5 kHz with controls set for flattest response.

3. The lowest crossover frequency specified refers to operational characteristics with the network set for conventional passive operation, and is also the recommended crossover frequency for bi-amplification.


4680A
4622A
4623
4625
4627A
4602A


4695
4690A


4612

4602A Monitor Smooth, wide frequency response (50 Hz-15 kHz), uncolored reproduction, and high directivity make the 4602 an ideal stage monitor, acoustic instrument system, or small general purpose vocal reinforcement system. The system utilizes an E120 300 mm (12 in) loudspeaker, a 2402H high frequency ring radiator, and a specially designed crossover network.

4612 Compact Sound Reinforcement The most compact of our full range Cabaret Series systems, the 4612 offers wide, tightly controlled dispersion, extended frequency response (60 Hz-21 5 kHz), exceptionally high power capacity, and high efficiency The system utilizes two 200 mm (8 in) low frequency loudspeakers, a unique Bi-Radial* horn which provides constant coverage from its crossover point of 3 kHz to beyond 20 kHz, a constant area phasing plug, and an annular-ring diaphragm ferrite motor structure. The 4612 mini P A. system is ideal for any sound reinforcement application that requires a blend of outstanding performance and maximum portability

*U S. Patent #4,308,932. Foreign patents pending

4622A Lead Guitar The unmistakable JBL sound quality will satisfy even the most critical musician Two E120 300 mm (12 in) loudspeakers mounted in an enclosure engineered specifically for lead guitar work do the job the way it was meant to be done—with high accuracy and the ability to handle up to 300 watts continuous sine wave power.

4623 Acoustic Guitar/Vocal Reinforcement A 2402 high frequency ring radiator, an E130 380 mm (15 in) low frequency loudspeaker, and a specially designed crossover network create a system that is ideal for acoustic guitar or vocal reinforcement applications.

4625 Bass Guitar Pure, punchy bass at any sound pressure level· the product of a 380 mm (15 in) E140 low frequency loudspeaker performing in a carefully designed enclosure The combination of high efficiency and high power handling capacity allows the system to handle up to 200 watts continuous sine wave power.

4627A Keyboard Specially designed for organ and piano, the 4627 is characterized by extremely low distortion and a wide frequency range (35 Hz-20 kHz). An E145 380 mm (15 in) loudspeaker, a 2901B high frequency power pack, and a specially designed network provide high accuracy and outstanding definition. A rear terminal panel features switchable biamplification inputs

4680A Line Array JBL's remarkable 4682 line array housed in a Cabaret Series enclosure Four E110 250 mm (10 in) loudspeakers and a 2902 high frequency power pack (two 2402s and a network) deliver very natural sound—clean, crisp, and clear—over a wide frequency range of 55 Hz to 15 kHz

4690A High-Level Playback/Reinforcement Specifically engineered for high level, full range, music playback, the 4690 is a compact, two-way loudspeaker system that combines high efficiency, controlled dispersion, wide frequency response (40 Hz-20 kHz), and extremely low distortion The system utilizes an E140 380 mm (15 in) low frequency transducer, a titanium diaphragm high frequency compression driver, a high frequency exponential horn, and an advanced network. A rear terminal panel features switchable biamplification inputs. The 4690 may be used alone or in conjunction with 4695 subwoofers. The most rugged and versatile of the Cabaret systems, it is ideal for installation in night clubs, discotheques, theaters, or any application requiring high acoustic output and uncompromising sound quality

4695 Bass Guitar/Subwoofer Designed to deliver maximum levels of clean bass, the 4695 features JBL's massive E155 460 mm (18 in) loudspeaker, housed in an optimally tuned reflex enclosure. An outstanding full-range bass guitar system, the 4695 projects bass notes with incredible punch and clear, crisp overtones. The system's high efficiency, accuracy, and ability to handle full power (300 watts continuous sine wave) down to 30 Hz, also make it an ideal choice for subwoofer applications.

Model	Frequency Range	Power Capacity (Continuous Sine Wave)	Power Capacity (Continuous Program)	Nominal Impedance	Sensitivity 1 W, 1 m (3.3 ft)	Nominal Dispersion	Crossover Frequency	Enclosure Volume, Net	Exterior Dimensions (Height x Width x Depth)	Net Weight
4602A	50 Hz-15 kHz	150 W	300 W	8 Ω	103 dB SPL	40° Conical	3 kHz	42 L 1.5 ft³	508 mm x 406 mm x 374 mm 20 in x 16 in x 14 11/16 in	25.9 kg 57 1/4 lb
4612	60 Hz-21.5 kHz	200 W	400 W	8 Ω	97 dB SPL	100° Horizontal x 100° Vertical	3 kHz	28 L 1 ft³	470 mm x 546 mm x 260 mm 18 1/2 in x 21 1/2 in x 10 1/4 in	20 4 kg 45 lb
4622A	50 Hz-6 kHz	300 W	600 W	4 Ω	106 dB SPL	–	N/A	127 L 4.5 ft³	767 mm x 512 mm x 478 mm 30 3/16 in 20 1/8 in x 18 13/16 in	49 6 kg 109 1/2 lb
4623	50 Hz-15 kHz	150 W	300 W	8 Ω	105 dB SPL	40° Conical	3 kHz	127 L 4.5 ft³	767 mm x 512 mm x 478 mm 30 3/16 in x 20 1/8 in x 18 13/16 in	43.5 kg 90 lb
4625	40 Hz-2.5 kHz	200 W	400 W	8 Ω	100 dB SPL	–	N/A	127 L 4.5 ft³	767 mm x 512 mm x 478 mm 30 3/16 in x 20 1/8 in x 18 13/16 in	40 5 kg 89 1/2 lb
4627A	35 Hz-20 kHz	150 W	300 W	8 Ω	98 dB SPL	90° Conical	1.5 kHz	127 L 4.5 ft³	767 mm x 512 mm x 478 mm 30 3/16 in x 20 1/8 in x 18 13/16 in	49 2 kg 108 1/2 lb
4680A	55 Hz-15 kHz	300 W	600 W	8 Ω	105 dB SPL	60° Horizontal x 40° Vertical	3 kHz	142 L 5 ft³	1322 mm x 402 mm x 372 mm 52 1/16 in x 16 13/16 in x 14 5/8 in	62 1 kg 137 lb
4690A	40 Hz-20 kHz	200 W	400 W	8 Ω	103 dB SPL	60° Conical	1.5 kHz	127 L 4.5 ft³	767 mm x 512 mm x 478 mm 30 3/16 in x 20 1/8 in x 18 13/16 in	49 4 kg 109 lb
4695	30 Hz-2 kHz	300 W	600 W	8 Ω	100 dB SPL	–	N/A	283 L 10 ft³	1020 mm x 751 mm x 478 mm 40 3/16 in x 29 9/16 in x 18 13/16 in	64 5 kg 142 lb

4672A

4674A

4676A-1

4676A-2

Horn-Loaded Systems Systems with horn-loaded low frequency sections provide maximum midrange efficiency through the use of short front-loaded horns. Usable bass output is also extended through the use of a vented rear chamber.

4672A Perfectly suited for use in small halls, the 4672A is a compact, 2-way loudspeaker system that combines high efficiency, wide dispersion, and natural, uncolored sound quality. System components include a specially designed 380 mm (15 in) low frequency loudspeaker, high frequency compression driver and Bi-Radial* horn. All components are housed in an optimally tuned, horn-loaded enclosure.

4674A Designed for medium size environments, the 4674A delivers smooth, accurate full range sound reproduction. The low frequency components are identical to those in the 4672A. They are matched, however, with a larger, externally mounted Bi-Radial* horn and compression driver. The 4674A is recommended for those applications requiring high acoustic output and moderate system size.

4676A-1 The 4676A-1 is an extremely efficient, 2-way loudspeaker system that is engineered to provide high level acoustic output, extended frequency response, and low distortion. The system utilizes two 380 mm (15 in) low frequency loudspeakers housed in a long-throw horn enclosure for bass reproduction. A single compression driver and Bi-Radial* horn are used for high frequencies. The 4676A-1 is ideal for use in moderate to large rooms.

4676A-2 JBL's most massive standard sound system, the 4676A-2 is capable of producing extremely high sound pressure levels in even the largest rooms. The system consists of two horn enclosures, four 380 mm (15 in) low frequency loudspeakers, two high frequency compression drivers, and two 60° controlled-dispersion Bi-Radial* horns splayed horizontally to give 90° coverage. This unique array of components gives the 4676A-2 excellent power capacity, efficiency, and dynamic range.

*U.S. Patent #4,308,932. Foreign patents pending.

Specifications
Horn-Loaded Systems

Model	Frequency Range	Power Capacity (Continuous Pink Noise)[1]	Power Capacity (Continuous Program)	Sensitivity 1W, 1 m (3.3 ft)	Crossover Frequency[2]	Horizontal Beamwidth	Nominal Impedance	Exterior Dimensions (Height x Width x Depth)	Net Weight
4672A	45 Hz - 20 kHz	150 W	300 W	103 dB SPL	800 Hz	90°	8 Ω	914 mm x 762 mm x 606 mm 36 in x 30 in x 23⅞ in	62 kg 137 lb
4674A	45 Hz - 20 kHz	150 W	300 W	103 dB SPL	500 Hz	90°	8 Ω	1194 mm x 762 mm x 606 mm 47 in x 30 in x 23⅞ in	77 kg 170 lb
4676A-1	40 Hz - 20 kHz	300 W	600 W	106 dB SPL	500 Hz	90°	8 Ω	1686 mm x 1524 mm x 949 mm 66⅜ in x 60 in x 37⅜ in	141 kg 311 lb
4676A-2	40 Hz - 20 kHz	300 W	600 W	109 dB SPL	500 Hz	90°	8 Ω	2600 mm x 1524 mm x 949 mm 102⅜ in x 60 in x 37⅜ in	277 kg 610 lb

Components
Horn-Loaded Systems

Model	Low Frequency Drivers	High Frequency Drivers	High Frequency Horn	Frequency Dividing Network[2]	Accessories	Enclosure
4672A	2225H (1)	2425J (1)	2370 (1)	3110A	–	4560 BKA (1)
4674A	2225H (1)	2445J (1)	2380 (1)	3115A	–	4560 BKA (1)
4676A-1	2225J (2)	2445J (1)	2360 (1)	3152A	2506 (1)	4550 BKA (1)
4676A-2	2225H (4)	2445J (2)	2365 (2)	3152A 9375	2506 (2)	4550 BKA (2)

1. Rating based on test signal of filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB per octave rolloff below 40 Hz and above 5,000 Hz with a peak-to-average ratio of 6 dB), two hours duration.

2. Due to standard motion picture industry recommendations, theater systems with large compression drivers are specified with 500 Hz crossovers. For high-power sound reinforcement applications, bi-amplification at 800 Hz is recommended.

4671

4673

4670A

4675

Direct-Radiator Low Frequency Systems
Systems with direct radiator low frequency sections provide the flattest possible response to the lowest usable octave These systems, while less efficient than the traditional horn-loaded low frequency designs, will require less equalization and will provide the smoothest response throughout the entire listening environment

4670A The 4670A offers outstanding performance in a very compact package. The specially designed slim profile enclosure is perfectly matched with two 380 mm (15 in) low frequency loudspeakers, an externally mounted compression driver, and a flat-front Bi-Radial* horn. The result is a system that delivers wide bandwidth, high efficiency, wide horizontal dispersion, and excellent dynamic range.

4671 The 4671 is ideally suited for use in smaller halls, due to its compact size A two-way direct radiator system, the 4671 offers smooth frequency response to the lowest octaves, uniform coverage, and natural, uncolored sound quality. System components, housed in an optimally tuned enclosure, include the 2225H 380 mm (15 in) low frequency loudspeaker, the 2425J high frequency compression driver, the 2370 flat-front Bi-Radial* horn, and the 3110A frequency dividing network.

4673 Designed for the medium-sized hall, the direct radiator 4673 system delivers smooth, deep and accurate full range sound reproduction with uniform coverage The low frequency loudspeaker is identical to that of the 4671. It is complemented, however, by the larger, externally mounted, 2445J compression driver and 2380 flat-front Bi-Radial* horn. The 4673 is perfectly suited for those applications that require high acoustic output from a moderately-sized system

4675 The 4675 provides smooth, clean sound with uniform coverage throughout the listening area It consists of a powerful direct radiator low frequency enclosure (a 4508 cabinet with two 380 mm (15 in) 2225J low frequency loudspeakers) and an externally mounted 2360 Bi-Radial* constant coverage horn and 2445J compression driver This design results in more uniform frequency response throughout the entire operating frequency range, constant directivity and uniform coverage within the included angle, a significant improvement in output capability, and a corresponding reduction in distortion. The addition of the 500 Hz crossover enables the 4675 system to avoid low frequency beaming effects. Delivering extremely high sound pressure levels throughout even the largest halls, the 4675 system is recommended when the ultimate in sound reproduction is required.

*U S Patent #4,308,932 Foreign patents pending

Specifications
Direct Radiator Systems

Model	Frequency Range	Power Capacity (Continuous Pink Noise)[1]	Power Capacity (Continuous Program)	Sensitivity 1W, 1 m (3.3 ft)	Crossover Frequency[2]	Horizontal Beamwidth	Nominal Impedance	Exterior Dimensions (Height x Width x Depth)	Net Weight
4670A	35 Hz-20 kHz	300 W	600 W	100 dB SPL	500 Hz	90°	8 Ω	1289 mm x 673 mm x 438 mm 50¾ in x 26½ in x 17¼ in	92 kg 203 lb
4671	40 Hz-20 kHz	150 W	300 W	97 dB SPL	800 Hz	90°	8 Ω	546 mm x 948 mm x 448 mm 21½ in x 37⅜ in x 17⅝ in	39 kg 85 lb
4673	40 Hz-20 kHz	150 W	300 W	97 dB SPL	500 Hz	90°	8 Ω	546 mm x 1054 mm x 448 mm 21½ in x 41½ in x 17⅝ in	50 kg 110 lb
4675	35 Hz-20 kHz	300 W	600 W	100 dB SPL	500 Hz	90°	8 Ω	1797 mm x 770 mm x 949 mm 70¾ in x 30⅜ in x 37⅜ in	98 kg 215 lb

Components
Direct Radiator Systems

Model	Low Frequency Drivers	High Frequency Drivers	High Frequency Horn	Frequency Dividing Network[2]	Accessories	Enclosure
4670A	2225J (2)	2445J (1)	2380 (1)	3152A	–	4508 (1)
4671	2225H (1)	2425J (1)	2370 (1)	3110A	–	4507 (1)
4673	2225H (1)	2445J (1)	2380 (1)	3115A	–	4507 (1)
4675	2225J (2)	2445J (1)	2360 (1)	3152A	2506 (1)	4508 (1)

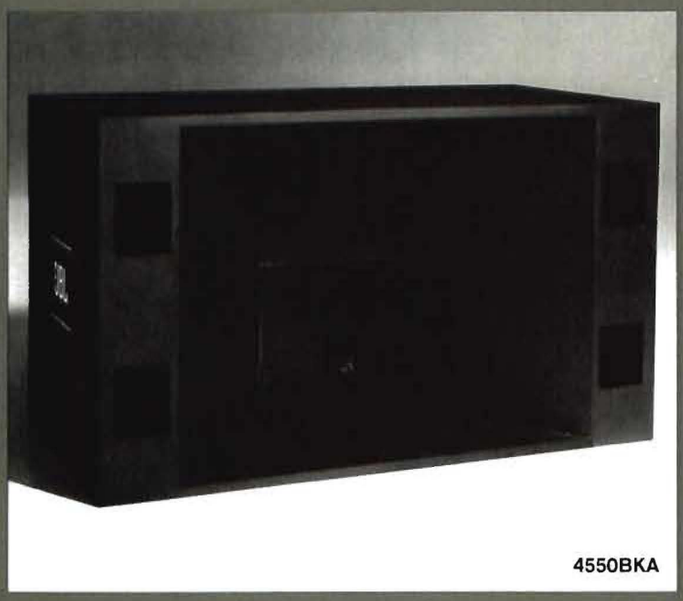
1. Rating based on test signal of filtered random noise conforming to international standard IEC 268-5 (pink noise with 12 dB per octave rolloff below 40 Hz and above 5,000 Hz with a peak-to-average ratio of 6 dB) two hours duration

2. Due to standard motion picture industry recommendations, theater systems with large compression drivers are specified with 500 Hz crossovers. For high-power sound reinforcement applications, bi-amplification at 800 Hz is recommended


4507


4508


4518


4550BKA


4560BKA

LOW FREQUENCY ENCLOSURES

JBL low frequency enclosures are ideal for theater and high power reinforcement applications. The 4507, 4508, and 4518 are designed primarily for fixed installations and are constructed of dense stock. The 4550BKA and 4560BKA are constructed of high quality void-free plywood, and are usable in both fixed installations and portable applications.

The baffle panels are fitted with threaded T-nuts to facilitate loudspeaker mounting; push-button input terminals are provided The finish is utility black.

4507 Bass Reflex For Single 380 mm (15 in) Driver The 4507 is a 140 L (5 cu ft) vented enclosure, tuned to 40 Hz, and designed for use as the low frequency component of a sound reinforcement/theater system or as an individual module for use in cluster design.

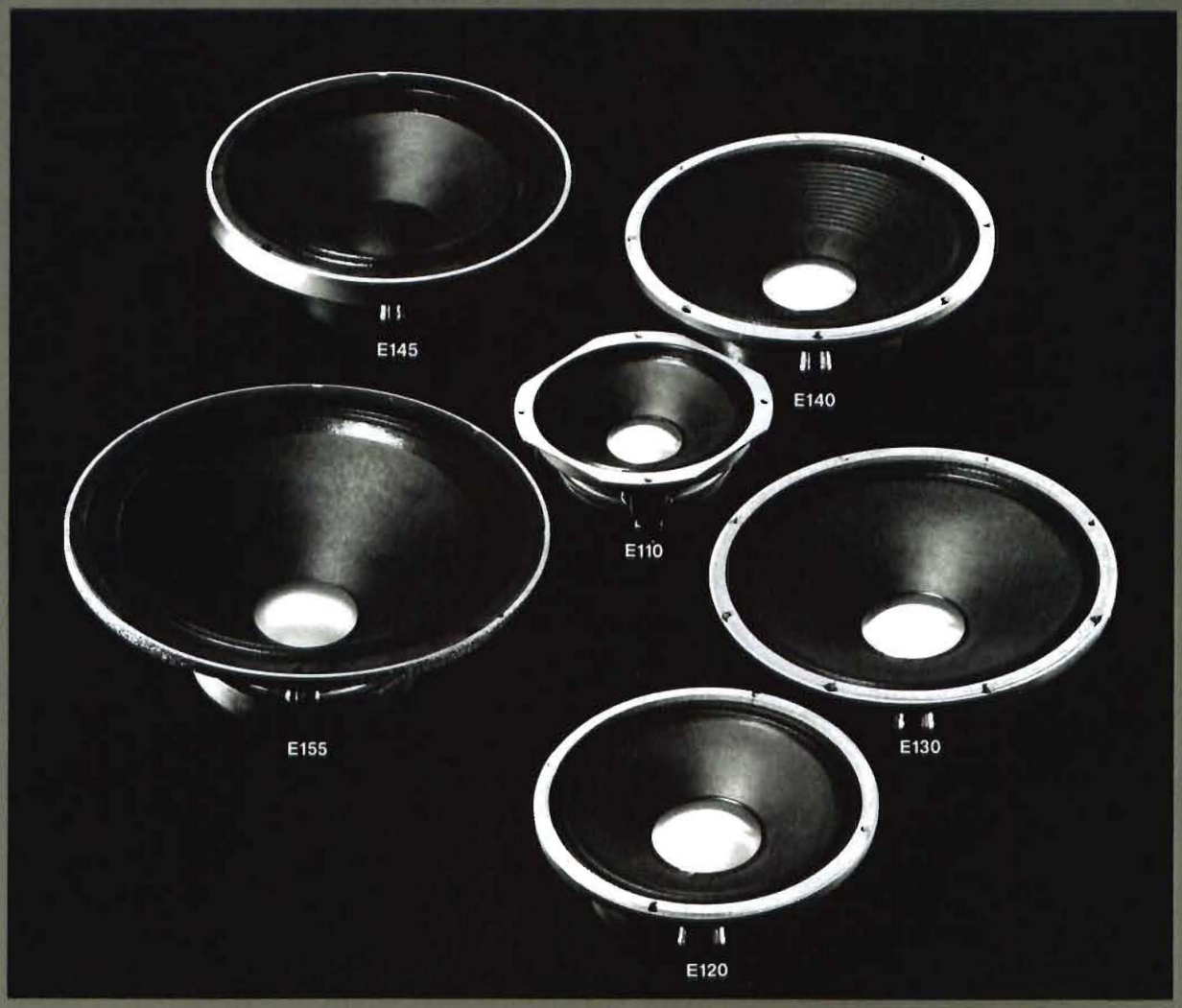
4508 Bass Reflex For Dual 380 mm (15 in) Driver The 4508 is a slim profile, 225 L (8 cu ft) vented enclosure that offers outstanding low frequency reproduction in a very compact package. Frequency response is usable to 35 Hz.

4518 Bass Reflex For Single 460 mm (18 in) Driver The 4518 is a 225 L (8 cu ft) vented enclosure, tuned to 30 Hz, and designed for sound reinforcement low frequency and subwoofer applications

4550BKA Front Loading Dual Driver. The 4550BKA is a long throw directional horn designed for use with two 380 mm (15 in) drivers below 800 Hz. Its combination front loaded horn and bass reflex enclosure extend usable frequency response down to 40 Hz. The enclosure's dispersion pattern at 800 Hz is 75° horizontal and 30° vertical.

4560BKA Front Loading Single Driver. A long throw directional horn for use with a 380 mm (15 in) driver below 800 Hz, with usable response down to 45 Hz. The 4560BKA adds 6 dB to driver sensibility above 200 Hz Its dispersion pattern is 90° horizontal and 60° vertical at 800 Hz Provision is made for installation of a 2370 horn with a 2425 driver into the enclosure, along with the required dividing network

Model	Recommended Driver	Lowest Usable Frequency	Q		Net Bass-Reflex Enclosure Volume	Exterior Dimensions (Height x Width x Depth)	Net Weight (Without Drivers)
			500 Hz	800 Hz			
4507	2225	40 Hz	4	8	140 L 5 cu ft	546 mm x 775 mm x 448 mm 21½ in x 30½ in x 17⅝ in	26 kg 58 lb
4508	2225	35 Hz	6	10	225 L 8 cu ft	1060 mm x 667 mm x 464 mm 39¾ in x 26½ in x 17¼ in	49 kg 108 5 lb
4518	2240 2245	30 Hz	5	20	225 L 8 cu ft	1060 mm x 667 mm x 464 mm 39¾ in x 26½ in x 17¼ in	49 kg 108 5 lb
4550 BKA	2220, 2225 E140, E145	40 Hz	12	25	560 L 20 cu ft	914 mm x 1524 mm x 825 mm 36 in x 60 in x 32½ in	88 kg 195 lb
4560 BKA	2220, 2225 E140, E145	45 Hz	8 5	12	225 L 8 cu ft	914 mm x 762 mm x 606 mm 36 in x 30 in x 23⅞ in	41 kg 91 lb


E145
E140
E110
E155
E130
E120


2901B


2902A


2903A

MUSICAL INSTRUMENT/SOUND REINFORCEMENT LOUDSPEAKERS

JBL E Series loudspeakers are rugged, precision transducers designed for use in musical instrument amplification systems, sound reinforcement systems, custom line arrays, and a variety of general applications. They exhibit deep, solid bass; crisp, clear midrange; and brilliant high frequency performance. New materials and design techniques allow the E Series to outperform earlier JBL loudspeakers which, in their time, were considered to be the most powerful and reliable available.

E Series loudspeakers feature the sound quality and high efficiency that have become JBL hallmarks. When combined with improved power capacity to meet the demands of today's audio professional, the result can only be characterized by the initials JBL.

Specifications

Model	Primary Application	Nominal Diameter	Nominal Impedance	Power Capacity (Continuous) Program	Power Capacity (Continuous) Sine Wave[1]	Sensitivity[2] 1 W, 1 m (3.3 ft)	Half-Space Reference Efficiency[3]	Frequency Range	Voice Coil Diameter	Voice Coil Material	Magnetic Assembly Weight	Flux Density	Baffle Cutout Diameter Front Mount	Baffle Cutout Diameter Rear Mount	Depth	Net Weight
E110	Extended range reinforcement, guitar, electric piano, vocal, line array	250 mm 10 in	8 Ω	150 W	75 W	98 dB SPL	3.0%	60–8000 Hz	76 mm 3 in	Aluminum	4.7 kg 10¼ lb	1.05 T (10,500 gauss)	228 mm 9 in	222 mm 8¾ in	105 mm 4¼ in	5.4 kg 11⅞ lb
E120	Extended range reinforcement, guitar, electric piano, organ, vocal, midrange horn driver	300 mm 12 in	8 Ω or 16 Ω	300 W	150 W	103 dB SPL	8.6%	50–6000 Hz	102 mm 4 in	Aluminum	8.5 kg 18⅝ lb	1.35 T (13,500 gauss)	281 mm 11⅛ in	281 mm 11⅛ in	115 mm 4⅝ in	9.5 kg 20 lb
E130	(same as E120)	380 mm 15 in	8 Ω	300 W	150 W	105 dB SPL	8.6%	50–6000 Hz	102 mm 4 in	Aluminum	8.5 kg 18⅝ lb	1.35 T (13,500 gauss)	355 mm 13⅞2 in	343 mm 13½ in	137 mm 5½ in	10.1 kg 22¼ lb
E140	Electric bass low frequency reinforcement	380 mm 15 in	8 Ω	400 W	200 W	100 dB SPL	4.9%	40–2500 Hz	102 mm 4 in	Copper	8.5 kg 18⅝ lb	1.35 T (13,500 gauss)	355 mm 13⅞2 in	343 mm 13½ in	137 mm 5½ in	10.1 kg 22¼ lb
E145	Organ, synthesizer low frequency reinforcement	380 mm 15 in	8 Ω	300 W	150 W	98 dB SPL	4.3%	35–2500 Hz	102 mm 4 in	Copper	10.3 kg 22⅝ lb	0.95 T (9,500 gauss)	355 mm 13⅞2 in	343 mm 13½ in	160 mm 6¼ in	13.0 kg 28½ lb
E155	Electric bass, subwoofer low frequency reinforcement	460 mm 18 in	8 Ω	600 W	300 W	99 dB SPL	4.9%	30–2000 Hz	102 mm 4 in	Copper	8.6 kg 19 lb	1.15 T (11,500 gauss)	427 mm 16⅞16 in	422 mm 16⅝ in	184 mm 7¼ in	11.5 kg 25¼ lb

1. The continuous sine wave rating of power is the most stringent method currently used in the audio industry. It should be noted that many manufacturers use the term watts rms as a direct equivalent to the more meaningful watts continuous sine wave.

2. Input swept from 500 to 2500 Hz, within 1 dB, measured at 1 m (3.3 ft) with a 1 W input.

3. 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.

HIGH FREQUENCY POWER PACKS

2901B Musical Instrument/Reinforcement
Designed to augment musical instrument loudspeakers or PA columns, the 2901B increases treble response, giving voice and amplified musical instruments exceptional clarity and definition. Its acoustic output will match even the most efficient musical instrument loudspeaker. The 2901B consists of a 2425J titanium-diaphragm compression driver with a 2301 perforated plate horn/lens assembly that provides 90° conical dispersion for short and medium throw applications. The 3101A 1.5 kHz high pass network is equipped with a continuously variable control that allows matching output level to the bass loudspeaker or column. The 2901B can be connected in parallel with systems rated up to 300 W continuous sine wave at 4 Ω, 8 Ω, or 16 Ω. The driver/horn/lens assembly is 146 mm (5¾ in) at its maximum diameter and its total length is 292 mm (11½ in). Net weight of the 2901B is 6.8 kg (15 lb).

2902A Musical Instrument Reinforcement
The 2902A is included in the 4680 line array. Operating through a range of more than two octaves, the 2902A extends system response to 15 kHz. With the 2902A, voice and acoustic instruments sound exceptionally realistic; their harmonics are recreated precisely and with sharp definition. This power pack consists of a pair of 2402H ring radiators, a 3102 3 kHz high pass network having the required 18 dB per octave filter slope for driver protection, and a continuously variable level control.

The 2902A can be connected in parallel with systems rated up to 300 W continuous sine wave at 4 Ω, 8Ω, or 16 Ω. Net weight of the 2902A is 4.1 kg (9 lb).

2903A Musical Instrument/Reinforcement
The 2903A power pack consists of a 2402H ring radiator and a 3104 3 kHz high pass network with continuously variable level control. The 2903A will increase system high frequency output by as much as 10 dB, giving program material exceptional presence, clarity, and definition. Each 4690A system features precut mounting holes to simplify power pack installation. The 2903A may also be used to extend system response to 15 kHz with 40° conical nominal dispersion.


LE8T-H
2105


2202H
2118H


2220H
2225J
2235H


2245H
2240H

SPECIAL DUTY LOUDSPEAKERS

JBL Professional Series special duty loudspeakers are designed for use in custom line arrays, distributed source installations, and other similar sound systems. They are engineered to provide the sound quality and reliability needed to meet the most demanding audio applications

2105H 130 mm (5 in) Speech Range A powerful midrange loudspeaker providing high acoustic output, smooth response, and wide dispersion. Well suited for in-line arrays and ceiling installations, the 2105H is also useful as a midrange driver in medium efficiency monitor systems.

2118H/J High Power 200 mm (8 in) Midrange/Low Frequency The 2118H and 2118J provide smooth, low distortion midrange output for high quality sound reinforcement and studio monitor applications. Additionally, a single unit is capable of usable low frequency output to 70 Hz in a 14 L (½ cu ft) vented enclosure.

LE8T-H 200 mm (8 in) Full Range Natural wide range performance with peak free response and freedom from distortion through more than eight octaves distinguish the LE8T-H. Its frequency response and transparency cannot be approached by any other single loudspeaker. The LE8T-H can be used in distributed systems, as a single unit monitor, or in column array for moderate level, high quality reinforcement.

LOW FREQUENCY LOUDSPEAKERS

When housed in properly constructed enclosures, JBL low frequency loudspeakers exhibit exceptional efficiency and transient response, as well as the ability to handle sustained signals at high power levels without danger of mechanical damage or excessive distortion. To achieve these characteristics, each JBL low frequency loudspeaker is carefully manufactured to exacting quality standards.

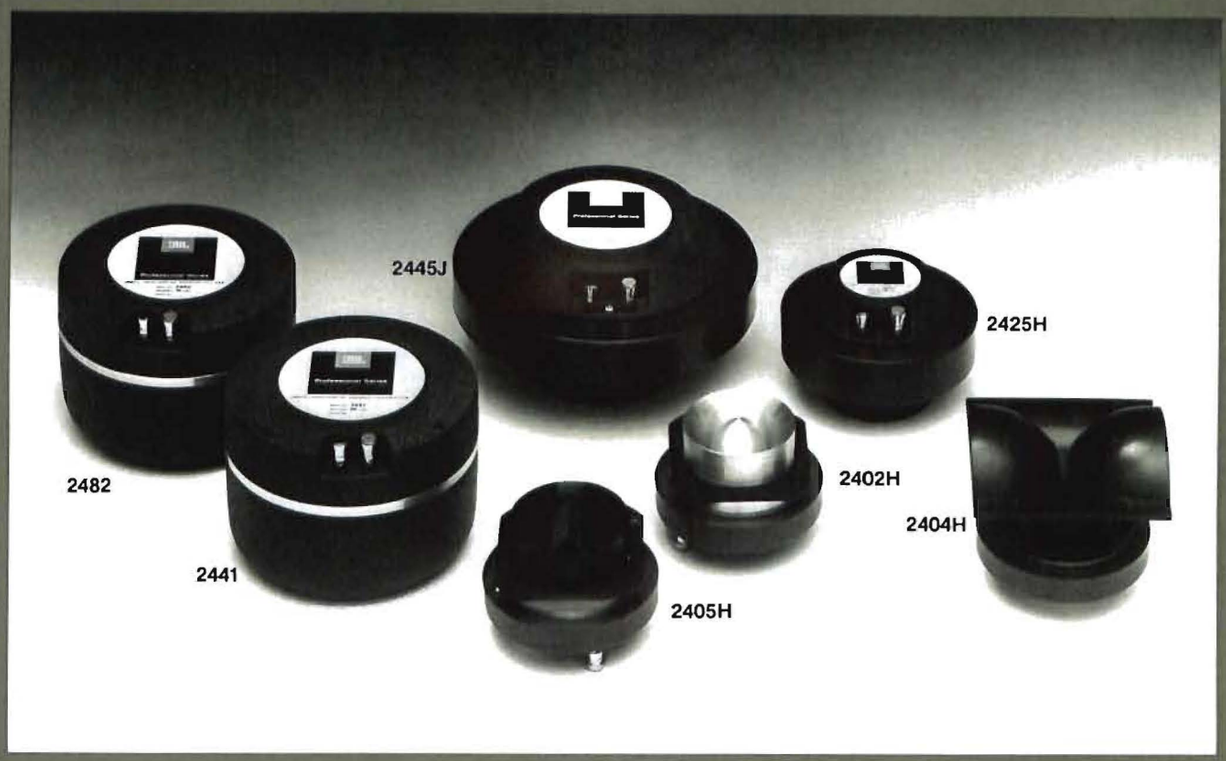
Each JBL low frequency loudspeaker has a 100 mm (4 in) edgewound copper voice coil, individually wound. The voice coil cone and spider are assembled with proprietary state of the art high temperature adhesives, resulting in exceptionally strong bonds and greater integrity than is possible with other commonly used adhesives. The Symmetrical Field Geometry magnetic structure greatly reduces speaker distortion while increasing power capacity and efficiency.

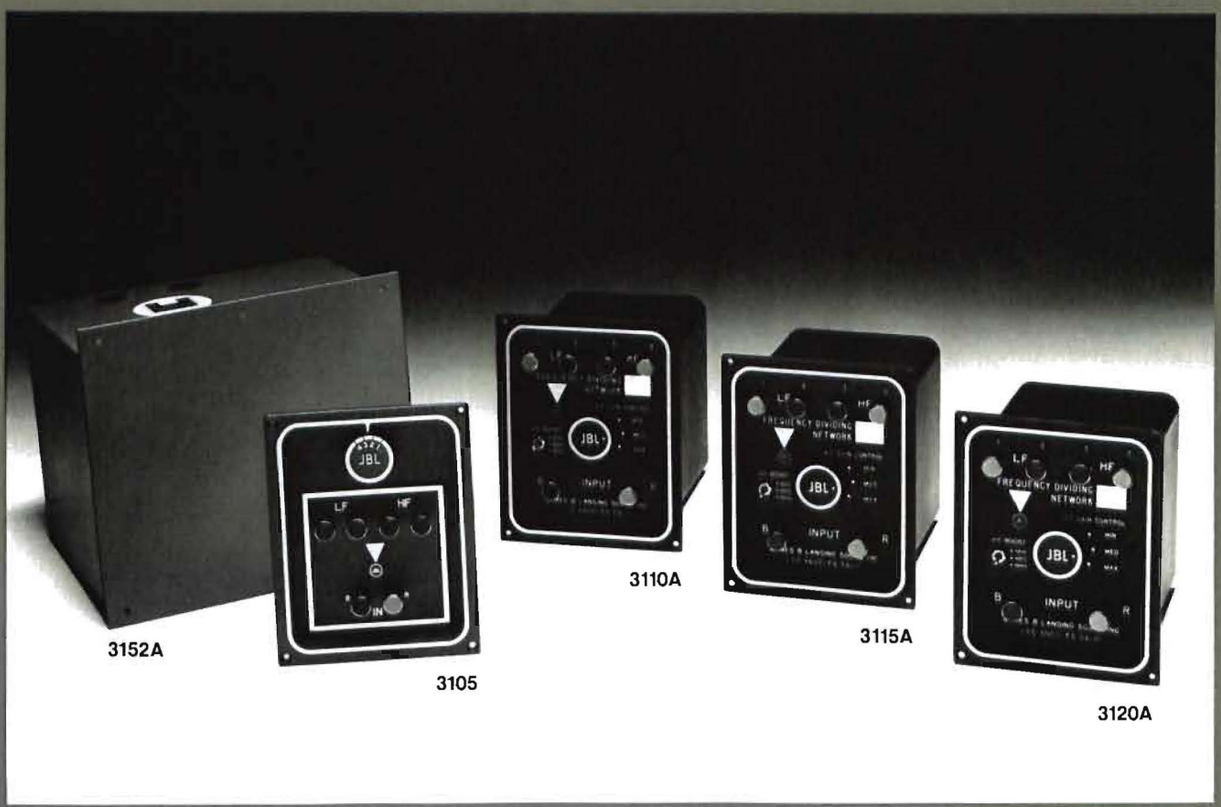
A rigid cast frame maintains the precise mechanical alignment and will not warp or bend under shipping and mounting stress.

Each JBL low frequency loudspeaker is designed for a specific application, and will deliver exceptional performance and long life when used as intended

Model	Primary Application	Nominal Diameter	Nominal Impedance	Power Capacity (Continuous) Program	Power Capacity (Continuous) Sine Wave	Sensitivity 1 W, 1 m (3.3 ft)	Half Space Reference Efficiency[3]	Frequency Range	Voice Coil Diameter	Voice Coil Material	Recommended Enclosure Volume	Depth	Net Weight
2105H	Speech range midrange	130 mm (5 in)	8 Ω	50 W	25 W	94 dB SPL[1]	1.2%	300 Hz - 15 kHz	22 mm ⅞ in	Copper	6 L 0.2 cu ft	45 mm 1¾ in	1.2 kg 2⅝ lb
LE8T-H	Full range, extended bass	200 mm (8 in)	8 Ω	50 W	25 W	89 dB SPL[1]	0.5%	35 Hz - 15 kHz	51 mm 2 in	Aluminum	20 - 115 L ¾ - 4 cu ft	98 mm 3⅞ in	3.4 kg 7½ lb
2118H, J	High power, midrange/ low frequency	200 mm (8 in)	8 Ω (H) 16 Ω (J)	200 W	100 W	97 dB SPL[1]	2.1%	70 Hz - 7 kHz	51 mm 2 in	Copper	7 - 21 L ¼ - ¾ cu ft	98 mm 3⅞ in	3.4 kg 7½ lb
2202H	High power, midrange/ low frequency	300 mm (12 in)	8 Ω	300 W	150 W	99 dB SPL[2]	6.0%	60 Hz - 4 kHz	110 mm 4 in	Copper	57 - 113 L 2 - 4 cu ft	114 mm 4½ in	9.4 kg 20½ lb
2220H, J	High efficiency low frequency	380 mm (15 in)	8 Ω (H) 16 Ω (J)	200 W	100 W	101 dB SPL[2]	8.7%	40 Hz - 2 kHz	100 mm 4 in	Copper	85 - 285 L 3 - 10 cu ft	139 mm 5½ in	10.4 kg 22⅞ lb
2225H, J	High power low frequency	380 mm (15 in)	8 Ω (H) 16 Ω (J)	400 W	200 W	97 dB SPL[2]	3.5%	30 Hz - 2 kHz	100 mm 4 in	Copper	85 - 285 L 3 - 10 cu ft	137 mm 5½ in	10.1 kg 22¼ lb
2235H	Medium efficiency extended bass	380 mm (15 in)	8 Ω	300 W	150 W	93 dB SPL[2]	1.3%	20 Hz - 2 kHz	100 mm 4 in	Copper	85 - 285 L 3 - 10 cu ft	137 mm 5½ in	10.1 kg 22¼ lb
2240H	High power low frequency	460 mm (18 in)	8 Ω	600 W	300 W	98 dB SPL[2]	5.0%	30 Hz - 2 kHz	100 mm 4 in	Copper	140 - 340 L 5 - 12 cu ft	191 mm 7½ in	13.6 kg 30 lb
2245H	Medium efficiency extended bass	460 mm (18 in)	8 Ω	600 W	300 W	95 dB SPL[2]	2.1%	20 Hz - 2 kHz	100 mm 4 in	Copper	225 - 450 L 8 - 16 cu ft	191 mm 7½ in	13.6 kg 30 lb

1. Sensitivity is measured with an input swept from 500 Hz to 2.5 kHz.
2. The sensitivity rating of JBL low frequency loudspeakers is based on a signal swept from 100 Hz to 500 Hz, rather than the conventional 1 kHz single frequency test signal since these transducers are normally used below 800 Hz. Usable sensitivity of these low frequency loudspeakers therefore may be substantially greater than that of loudspeakers with higher published ratings.
3. 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.


2445J
2425H
2482
2402H
2404H
2441
2405H


3152A
3105
3110A
3115A
3120A
LF
HF
FREQUENCY DIVIDING NETWORK
INPUT

HIGH FREQUENCY DRIVERS

JBL compression drivers utilize high-energy magnets housed in heavy assemblies, and large diameter edgewound ribbon voice coils. Wide range compression drivers utilize pure titanium diaphragms for the optimum combination of fidelity, reliability, and extended high frequency response. Ultra-high frequency units feature aluminum alloy diaphragms for exceptional bandwidth; high power drivers utilize phenolic diaphragms capable of withstanding the significantly greater amounts of stresses in applications requiring high power at low frequencies.

2402H, 2404H, 2405H Ultra-High Frequency The 2402H is ideal for applications requiring directivity, penetration, and wide bandwidth. Its dispersion pattern is 40° conical at 10 kHz. The 2404H is equipped with a unique Bi-Radial* horn which provides constant 100° X 100° dispersion from 3 kHz to 20 kHz. The 2405H provides smooth response and exceptionally wide dispersion, even at extremely high frequencies. The dispersion pattern for the 2405H is 140° X 40° at 10 kHz.

2425, 2441, 2445 Wide Range These units feature JBL patented[1] diamond-pattern surrounds for smooth, extended high-frequency response. A shorting ring deposited on the circumference of the center pole piece of the 2425 maintains uniform impedance through the highest frequencies. The 2425 and 2445 are equipped with a unique titanium diaphragm structure; it can last virtually forever if not overdriven. The popular 2441 features an aluminum alloy diaphragm that is pneumatically drawn to shape to minimize stresses that cause fatigue and subsequent failure.

2482 High Power Maintaining accuracy at high output levels, this compression driver utilizes a phenolic impregnated linen diaphragm and edgewound ribbon voice coil to provide maximum power capacity and conversion efficiency. The 2482 is capable of generating extremely high sound pressure levels while delivering crisp, natural reproduction of speech.

1 U.S. Patent #4,324,312. Foreign patents pending.
*U.S. Patent #4,308,932. Foreign patents pending.

Model	Horn Mouth Dimensions or Throat Diameter	Nominal Impedance	Power Capacity (Continuous)[1] Program	Pink Noise	Sensitivity[2] 1 W, 1 mm (3.3 ft)	Sensitivity[3] on 25 mm (1 in) Plane Wave Tube	Frequency Range	Lowest Recommended Crossover Frequency	Diaphragm Material	Voice Coil Diameter	Voice Coil Material	Magnetic Assembly Weight	Flux Density	Diameter	Depth	Net Weight
2402H	79 mm 3⅛ in diameter	8 Ω	40 W	20 W	110 dB SPL	–	2.5 kHz 15 kHz	2.5 kHz	Aluminum	44 mm (1¾ in)	Aluminum	1.5 kg 3¼ lb	1.75 T (17,500 gauss)	98 mm 3⅞ in	83 mm 3¼ in	2 kg 4½ lb
2404H	130 mm x 130 mm 5⅛ in x 5⅛ in	8 Ω	40 W	20 W	105 dB SPL	–	3 kHz - 21.5 kHz	3 kHz	Aluminum	44 mm (1¾ in)	Aluminum	1.9 kg 4⅛ lb	1.75 T (17,500 gauss)	98 mm 3⅞ in	128 mm 5 in	2.2 kg 5 lb
2405H	79 mm x 18 mm 3⅛ in x 23/32 in	8 Ω	40 W	20 W	105 dB SPL	–	6.5 kHz 21.5 kHz	7 kHz	Aluminum	44 mm (1¾ in)	Aluminum	1.5 kg 3¼ lb	1.75 T (17,500 gauss)	98 mm 3⅞ in	83 mm 3¼ in	2 kg 4½ lb
2425H, J	25 mm 1 in	8 Ω (H) 16 Ω (J)	70 W @ 800 Hz 100 W @ 1.2 kHz	35 W @ 800 kHz 50 W @ 1.2 kHz	110 dB SPL	117 dB SPL	800 Hz 20 kHz	800 Hz[4]	Titanium	44 mm 1¾ in	Aluminum	4.5 kg 10 lb	1.7 T (17,000 gauss)	146 mm 5¾ in	102 mm 4 in	5 kg 11 lb
2441	49 mm 2 in	16 Ω	70 W @ 500 Hz 150 W @ 1 kHz	35 W @ 500 Hz 75 W @ 1 kHz	111 dB SPL	118 dB SPL	500 Hz 18 kHz	500 Hz	Aluminum	102 mm 4 in	Aluminum	10.8 kg 23¾ lb	1.8 T (18,000 gauss)	178 mm 7 in	136 mm 5⅜ in	11.3 kg 24⅞ lb
2445J	49 mm 2 in	16 Ω	100 W @ 500 Hz 150 W @ 1 kHz	50 W @ 500 Hz 75 W @ 1 kHz	111 dB SPL	118 dB SPL	500 Hz 20 kHz	500 Hz	Titanium	102 mm 4 in	Aluminum	13.2 kg 29 lb	1.9 T (19,000 gauss)	235 mm 9¼ in	131 mm 5 1/16 in	13.6 kg 30 lb
2482	49 mm 2 in	16 Ω	120 W	60 W	111 dB SPL	118 dB SPL	300 Hz 6 kHz	300 Hz	Phenolic	102 mm 4 in	Aluminum	10.8 kg 23¾ lb	1.7 T (17,000 gauss)	178 mm 7 in	136 mm 5⅜ in	11.3 kg 24⅞ lb

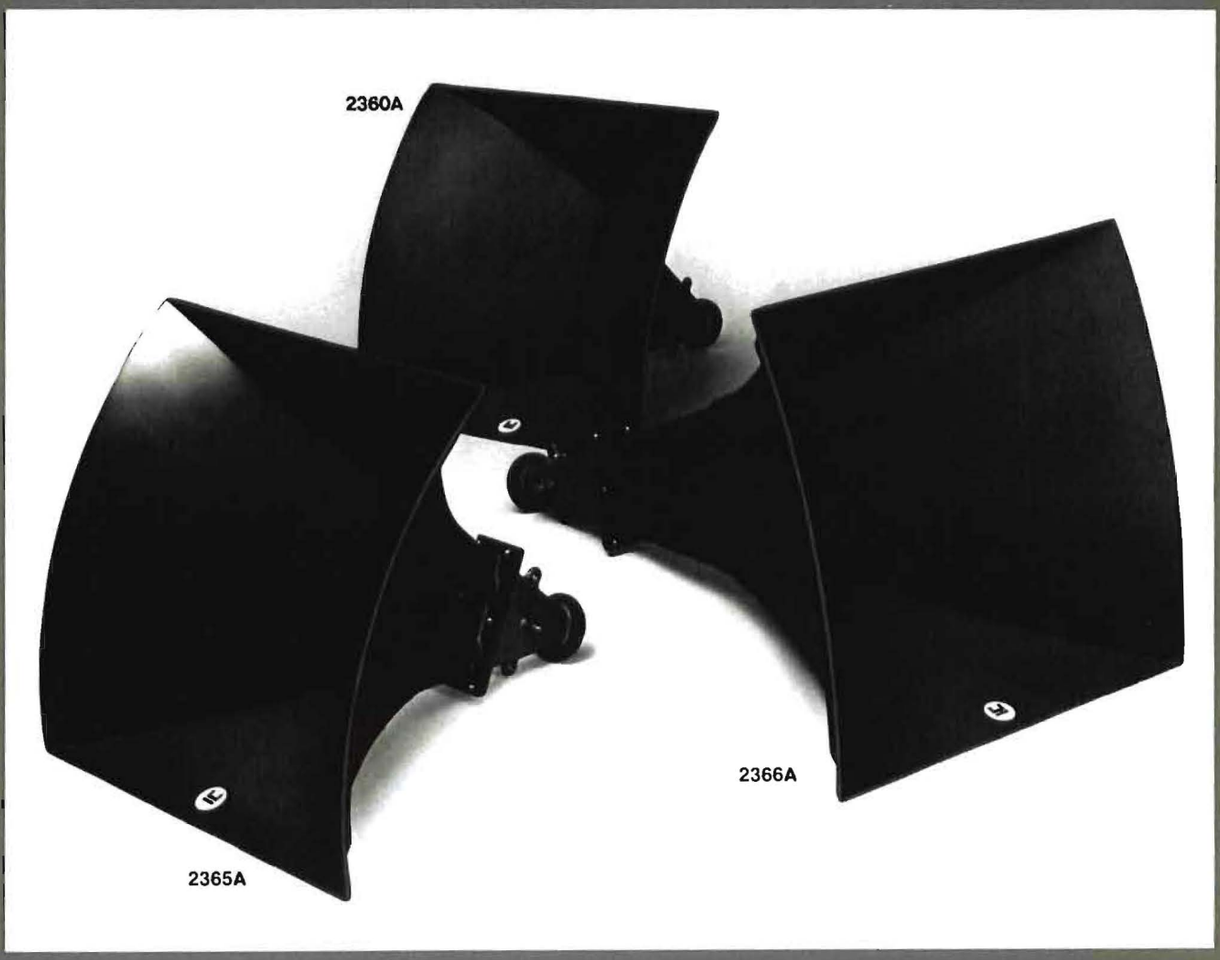
1. Continuous program is defined as 3 dB greater than continuous pink noise and is a conservative expression of the transducer's ability to handle normal speech and music program material. Continuous pink noise power ratings are tested with pink noise input having a 6 dB crest factor, with a high-pass filter set at the specified lower limiting frequency for two hours duration.
2. Measured sensitivity of the 2402H and 2404H represents the SPL achieved with an input signal swept from 5 kHz to 20 kHz. Sensitivity of the 2405H is measured with a signal swept from 7 kHz to 20 kHz. The other drivers are measured on-axis from the mouth of a horn with a Q of 6.3 averaged in the 2 kHz octave band. See the specifications on pages 23 and 25 for the sensitivity of the drivers when used with JBL high frequency horns.
3. As specified by recognized standards organizations, the sensitivity of a compression driver is measured with the driver coupled to a terminated tube. The JBL sensitivity rating represents the SPL in a 25 mm (1 in) terminated tube, using a 1 mW input signal (0.126 V into 16 Ω, 0.089 V into 8 Ω) swept from the lowest recommended crossover frequency to 2.5 kHz. The sensitivity rating with a 1 W input would be 30 dB greater.
4. A 2425 can be used to 500 Hz, however, power capacity will be reduced in the region between 500 Hz and 800 Hz.

FREQUENCY DIVIDING NETWORKS

JBL high level, passive frequency dividing networks are intended for use with any high and low frequency driver combination. They use 12 dB per octave parallel L-C circuits with additional conjugate elements to cancel the inductive reactance of the low frequency loudspeaker. Highest quality components are used throughout – non-inductive non-polarized capacitors; individually calibrated low-loss inductors, and heavy duty switches and resistors. High frequency shelving of networks crossing over below 7 kHz is accomplished with tapped autotransformers rather than conventional pads. In addition to switchable high frequency attenuation, the 3110A, 3115A, and 3120A include a unique three-position high frequency equalization control that allows the user to adjust the response contour as well as optimize the crossover response. The 3152A is a high power network designed primarily for theater, auditorium or reinforcement installations; the others are for general applications.

	Dividing Networks[1] Crossover Frequency	Power Capacity (Continuous Program)	Impedance Low Frequency	High Frequency	High Frequency Attenuation
3105	7 kHz	70 W	16 Ω	8-16 Ω[2]	Continuously variable
3110A	800 Hz	300 W	8 Ω	16 Ω	6-8-10 dB switch
3115A	500 Hz	300 W	8 Ω	16 Ω	0-3-6 dB switch
3120A	1.2 kHz	300 W	8 Ω	16 Ω	6-8-10 dB switch
3152A	500 Hz	600 W	8 Ω	16 Ω	0-2-4-6-8 dB strap

1. General application networks (models 3105, 3110A, 3115A, and 3120A), mount in a 108 x 140 mm (4¼ in x 5½ in) cut-out. High power networks (model 3152A) are usually mounted outside the enclosure and require an area 210 mm x 192 mm (8¼ in x 7½ in) for mounting.
2. The 3105 is optimized for a 2402H, 2404H, or 2405H installed in a system with any 16 ohm JBL compression driver.




2370


2380


2385

BI-RADIAL CONSTANT COVERAGE HORNS

Models 2360A, 2365A, 2366A JBL Bi-Radial* horns are designed to provide uniform on and off-axis frequency response from below 500 Hz[1] to beyond 16 kHz. The horns' unique geometry and relatively tall vertical mouth dimensions ensure precise vertical, as well as horizontal, beamwidth control throughout the rated frequency band. Since both horizontal and vertical coverage patterns remain essentially constant, horn performance may be easily predicted for any given frequency or orientation. Cluster design, therefore, is simplified and the need for horn overlapping is minimized. Typical cluster performance problems such as lobing and comb filter effects are virtually eliminated.

Computer-aided design techniques were used to derive the horn contours in the horizontal and vertical planes. Utilizing sidewall contours based on a polynomial power series formula, the horn design yields smooth response, low distortion, and even coverage. This design avoids the problems normally associated with horns that feature sharp flare transitions and flat sidewalls. The Bi-Radial compound flare configuration of the horn provides constant coverage over defined, solid angles.

The 2360A is a short-throw horn with nominal coverage angles of 90° x 40°. The 2365A is a medium-throw design with nominal coverage angles of 60° x 40° and the 2366A is a long-throw horn with 40° x 20° coverage. All three feature 795 mm (31⅜ in) square mouth dimensions to further simplify cluster design. In addition, the 2360A and 2365A are identical in length.

Each Bi-Radial constant coverage horn is supplied with a cast aluminum throat that will accept 49 mm (2 in) throat diameter compression drivers. Drivers with 25 mm (1 in) throat diameters may be mounted if a proper horn throat adaptor is installed. Mounting tabs are provided on all four sides of the supplied horn throat and are located just behind the combined horn/driver center of gravity.

1. Full horn loading extends to 350 Hz. Care should be taken, however, not to exceed the recommended low frequency limit of the driver.

*U.S. Patent #4,308,932. Foreign patents pending.

Horn Model	Throw	Nominal Coverage	Horizontal Coverage Angle Degrees (−6 dB) Average Range	Vertical Coverage Angle Degrees (−6 dB) Average Range	Directivity Factor (Q) Average Range	Directivity Index (DI)	Usable Low Frequency Limit	Minimum Recommended Crossover Frequency Using 2441, 2445	Using 2482
2360A	Short	90° H x 40° V	93° (+9° −13°) 500 Hz - 16 kHz	46° (+13° −15°) 500 Hz - 16 kHz	12.3 (+7.5, −4.3) 500 Hz - 16 kHz	10.8 dB (+2.2, −1.7 dB)	300 Hz	500 Hz	350 Hz
2365A	Medium	60° H x 40° V	66° (+11° −9°) 500 Hz - 16 kHz	46° (+11° −15°) 500 Hz - 16 kHz	19.8 (+9.0, −5.8) 500 Hz - 16 kHz	12.9 dB (+1.7, −1.7 dB)	300 Hz	500 Hz	350 Hz
2366A	Long	40° H x 20° V	47° (+17° −10°) 500 Hz - 16 kHz	27° (+5° -7°) 1 kHz - 16 kHz	45.9 (+16.0, −12.9) 1 kHz - 16 kHz	16.5 dB (+1.4, −1.3 dB)	200 Hz	500 Hz	300 Hz

Horn Model	1 Watt/1 Meter Axial Sensitivity[1]	Overall Dimensions (with throat attached) Mouth H x Mouth W x L	Net Weight	Shipping Weight[2] Horn	Throat
2360A	113 dB SPL	795 mm x 795 mm x 815 mm 31⅜ in x 31⅜ in x 32⅛ in	12.2 kg 27 lb	26 kg 57.4 lb	4 kg 8.8 lb
2365A	115 dB SPL	795 mm x 795 mm x 815 mm 31⅜ in x 31⅜ in x 32⅛ in	11.3 kg 25 lb	26.6 kg 58½ lb	2.6 kg 5.8 lb
2366A	118 dB SPL	795 mm x 795 mm x 1390 mm 31⅜ in x 31⅜ in x 54¹¹⁄₁₆ in	16.3 kg 36 lb	32 kg 70½ lb	3 kg 6.8 lb

1. Axial Pressure Sensitivity. Measured on axis in the far field with 1 watt input (4.0 volts RMS, 16 ohms) and referenced to 1 meter distance using the inverse square law. Listed sound pressures represent an average from 630 Hz to 4 kHz using the model 2441 or 2445 driver.

2. Horn and horn throat are shipped together, but packed separately.

FLAT-FRONT BI-RADIAL HORNS

Models 2370, 2380, 2385 JBL compact flat-front Bi-Radial* horns are designed to provide excellent on and off-axis frequency response in the horizontal plane. The 2370 has a 90° horizontal x 40° vertical nominal coverage pattern, with uniform on and off-axis frequency response in the horizontal plane from 630 kHz to beyond 16 kHz. The horn's small vertical mouth dimension was chosen to allow a gradual narrowing of the vertical coverage pattern with increasing frequency. This provides acoustic equalization of the frequency response of the horn in the horizontal plane and compensates for the falling off power response of all compression drivers. Should constant vertical pattern control be required, two or more 2370s may be stacked to restore full vertical Bi-Radial performance. An integral throat will accept any JBL compression driver having a 25 mm (1 in) throat diameter; the flat front design of the horn allows flush mounting on enclosure baffles.

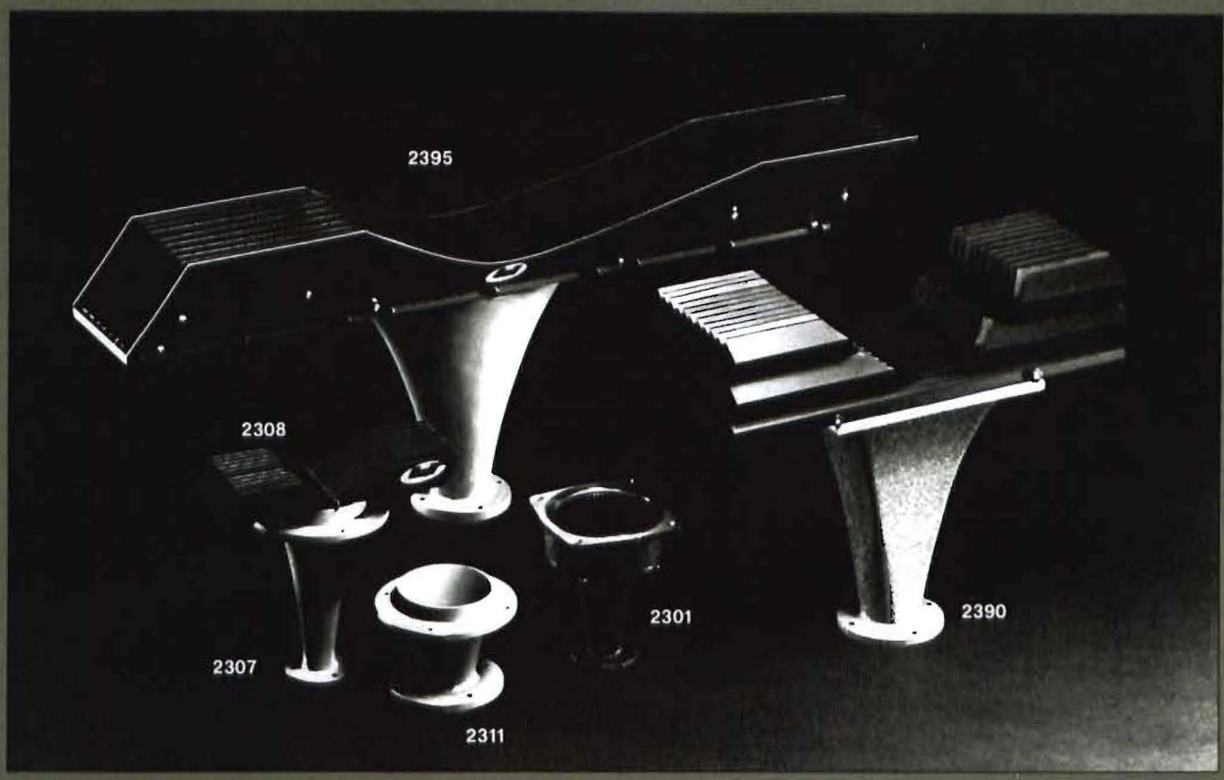
The 2380 and 2385 horns are designed for flush cabinet-mounting or compact cluster application. Offering optimal horizontal coverage, as well as constant directivity within the constraints of their mouth size, the 2380 and 2385 have much in common with our larger Bi-Radial* horns. The 2380 and 2385 are usable to 500 Hz, and they will accept the 49 mm (2 in) diameter throat 2441, 2445, or 2482 compression driver. With the addition of the 2327 adaptor, they will also accept the 25 mm (1 in) throat 2425 driver.

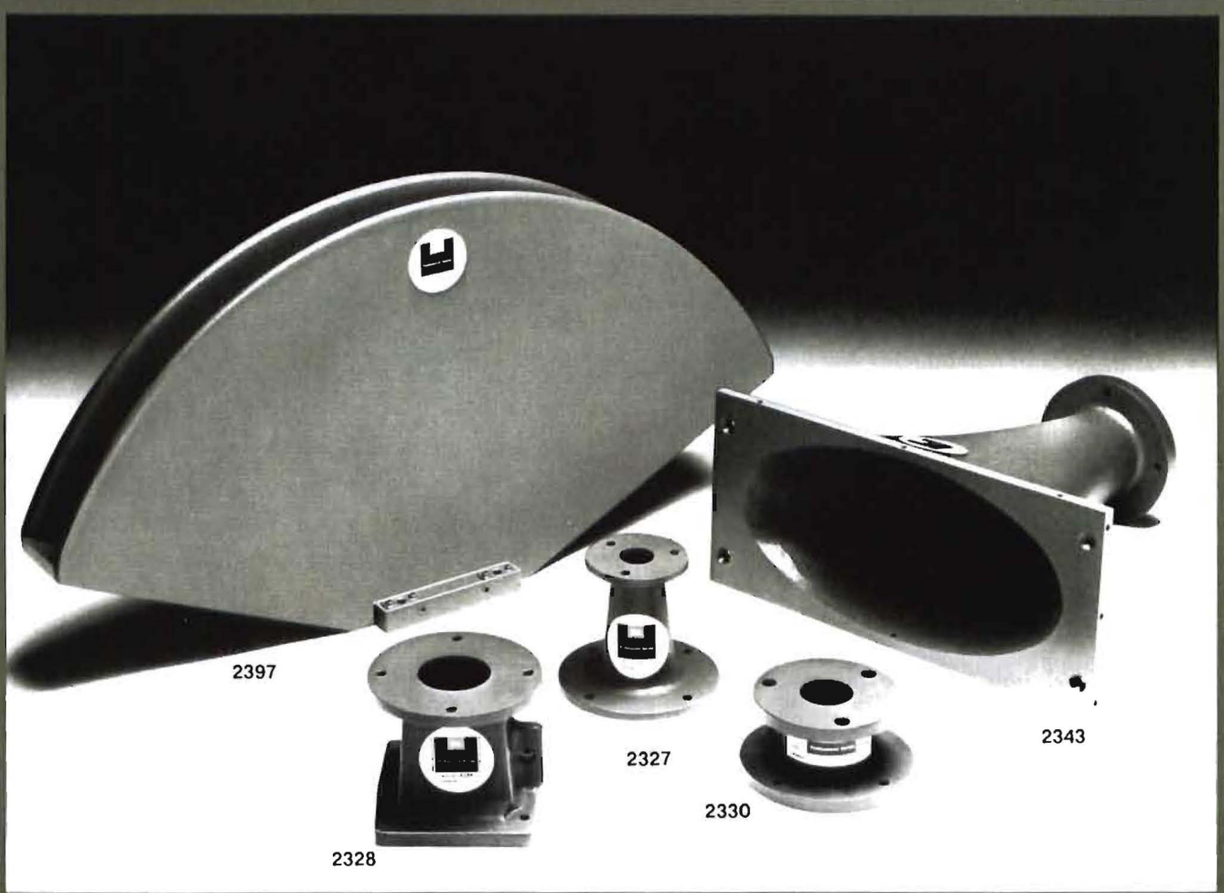
*U.S. Patent #4,308,932. Foreign patents pending.

Horn Model	Throw	Nominal Coverage	Horizontal Coverage Angle Degrees (−6 dB) Average Range	Vertical Coverage Angle Degrees (−6 dB) Average Range	Directivity Factor (Q) Average Range	Directivity Index (DI) Average	Usable Low Frequency Limit	Minimum Recommended Crossover Frequency
2370	Short	90° H x 40° V	90° (+10° −15°) 630 Hz - 16 kHz	40° nominal at 4 kHz, narrowing from 110° at 1 kHz to 20° at 16 kHz	12.2 (4 kHz)	10.9 dB	500 Hz	630 Hz
2380	Short	90° H x 40° V	100° (+23° −23°) 500 Hz - 16 kHz	40° (+11° -11°) 2 kHz - 16 kHz	10.7 (+1.3, −2.5) 1 kHz - 16 kHz	10.3 (+1.0, −1.4) dB	400 Hz	500 Hz
2385	Medium	60° H x 40° V	70° (+20° −15°) 500 Hz - 16 kHz	40° (+11° −11°) 2 kHz - 16 kHz	19.0 (+6, −7) 1 kHz - 16 kHz	12.8 (+2.0, −2.0) dB	400 Hz	500 Hz

Horn Model	1 Watt/1 Meter Axial Sensitivity[1]	Throat Size	Overall Dimensions (with throat attached) Mouth H x Mouth W x L	Net Weight	Shipping Weight
2370	110 dB SPL	25 mm (1 in)	173 mm x 445 mm x 174 mm 6¹³⁄₁₆ in x 17½ in x 6²⁷⁄₃₂ in	1.4 kg 3 lb	2.3 kg 5 lb
2380	112 dB SPL	49 mm (2 in)	279 mm x 445 mm x 236 mm 11 in x 17½ in x 9³⁄₃₂ in	3.6 kg 8 lb	5 kg 11 lb
2385	114 dB SPL	49 mm (2 in)	279 mm x 445 mm x 236 mm 11 in x 17½ in x 9³⁄₃₂ in	3.6 kg 8 lb	5 kg 11 lb

1. Axial Pressure Sensitivity, measured on axis in the far field with 1 watt input (4.0 volts RMS, 16 ohms) and referenced to 1 meter distance using the inverse square law. Listed sound pressures represent an average from 1 kHz to 4 kHz using the model 2425 or 2445 driver.


2395
2308
2307
2311
2301
2390


2397
2328
2327
2330
2343

HIGH FREQUENCY HORN/LENS ASSEMBLIES

Wide dispersion, uniform frequency response and soft edge patterns make JBL horn/lens assemblies particularly well suited for high quality music reproduction and for short throw sound reinforcement applications of 10 m to 20 m (30 ft to 60 ft).

2301 Horn/Lens The 2301 consists of a series of circular perforated plates providing a conical distribution pattern, and is intended for applications in which the length of throw does not exceed 10 m (30 ft)

2307 Exponential Horn The 2307 projects an 80° horizontal and 45° vertical pattern when combined with the 2308 lens. The combination constitutes a 2391 horn/lens assembly.

2308 Lens A 250 mm (10 in) slant-plate lens for use where the length of throw does not exceed 10 m (30 ft). The 2308 is used with a 2307 horn

2311 Exponential Horn Identical in performance characteristics to the 2307, but accommodates 49 mm (2 in) JBL drivers. When combined with the 2308, the assembly constitutes a 2392 horn/lens.

2343 Elliptical Mouth Exponential Horn A compact-sized horn, the 2343 is ideal for custom multi-way sound reinforcement systems. It features a 60° by 30° dispersion pattern and is made for use above 800 Hz

2390 Horn/Lens The complex appearance of the lens used in the 2390 is the result of folding the plates to reduce depth. The lens requires a baffle to function properly in the crossover region. It consists of a 2309 horn and a 2310 lens

2395 Horn/Lens The 2395 provides an exceptionally wide pattern, does not require a baffle and is provided with brackets for free-standing installation on top of enclosures

2397 Diffraction The 2397 provides an exceptionally wide, controlled pattern for applications in which a lens is not desirable. The waveform is conducted through six internal exponential passages into a common bell. Constructed of dense wood, the 2397 is noted for its smooth, transparent sound character. It has been used with great success in custom-designed studio monitors

HORN ADAPTORS

2327 Adaptor Tapered for 49 mm (2 in) horn entry to 25 mm (1 in) driver. May be used in reverse with some loss above 8 kHz Length: 105 mm (4⅛ in).

2328 Horn Throat Required to mount a 49 mm (2 in) JBL driver on the 2397 horn. Length: 98 mm (3⅞ in).

2330 Adaptor Tapered to mount a 49 mm (2 in) JBL driver on a horn having a 36 mm (1.4 in) entry. Length: 60 mm (2⅜ in).

Model	Type	Dispersion Pattern (Horizontal x Vertical)	Crossover Frequency	Sensitivity[2] 1 W, 1 m (3.3 ft)	Q 2 kHz Octave Band	Entry Diameter Or Throat Required[3]	Dimensions (Height x Width x Depth)	Baffle Cutout Diameter	Net Weight
2301	Perforated Plate	90° Conical	1.2 kHz	109 dB SPL	4	25 mm 1 in	146 mm (5¾ in) diameter x 173 mm (6¹³/₁₆ in) length	133 mm 5¼ in	1.4 kg 3⅛ lb
2308[1] Lens	Slant Plate	80° x 45°	–	–	3.2	–	156 mm x 254 mm x 63 mm 6¼ in x 10 in x 2½ in	–	0.5 kg 1 lb
2307 Horn	Exponential	–	1.2 kHz	108 dB SPL	–	25 mm 1 in	156 mm (6¼ in) diameter x 216 mm (8½ in) length	108 mm 4¼ in	1.1 kg 2½ lb
2311 Horn	Exponential	–	1.2 kHz	108 dB SPL	–	49 mm 2 in	156 mm (6¼ in) diameter x 117 mm (4⅝ in) length	108 mm 4¼ in	0.9 kg 2 lb
2390	Folded Plate	100° x 45°	800 Hz[4]	107 dB SPL	3.6	49 mm 2 in	–	152 mm x 259 mm 6 in x 9 in	5 kg 11 lb
2309 Horn	–	–	–	–	–	–	191 mm x 267 mm x 305 mm 7½ in x 10½ in x 12 in	–	–
2310 Lens	–	–	–	–	–	–	178 mm x 505 mm x 118 mm 7 in x 19⅞ in x 4⅝ in	–	–
2395	Slant Plate	140° x 45°	800 Hz[4]	108.5 dB SPL	3.6	49 mm 2 in	381 mm x 914 mm x 476 mm 15 in x 36 in x 18¾ in	Free-standing brackets supplied	11.6 kg 25½ lb
2343	Exponential	60° x 30°	800 Hz	113 dB SPL	16	51 mm 2 in	162 mm x 346 mm x 305 mm 6⅜ in x 13⅝ in x 12 in	–	3.2 kg 7 lb
2397	Diffraction	140° x 60°	800 Hz	108 dB SPL	2.5	2328	95 mm x 660 mm x 340 mm 3¾ in x 26 in x 13⅜ in	–	4.4 kg 9¾ lb

1 The 2308 is used with a 2307 or 2311 exponential horn

2 Sensitivity is the SPL measured on axis with an input signal swept from the lowest recommended crossover frequency to 2.5 kHz, with the JBL 2425 or 2445 driver. Sensitivity of the 2307 and 2311 is quoted with the 2308 lens in place

3 The entry diameter of a horn indicates the corresponding horn mouth diameter of the JBL compression driver that will bolt directly to the unit without adaptors. The 2328 throat will accept one 49 mm (2 in.) JBL driver. The 2327 adaptor can be bolted to the throat if it is desirable to substitute 25 mm (1 in.) JBL drivers. The 2327 can also be used to reduce the 50 mm (2 in.) entry of the 2390 or 2395 to accommodate 25 mm (1 in.) JBL drivers.

4 Operation of the 2390 or the 2395 down to 500 Hz is feasible in motion picture sound systems or in applications where vertical pattern control is not essential provided a baffle is used in the vertical plane

5234A

7510A

7510A
(Shown with optional modules installed)

7510-02 Module

ELECTRONIC FREQUENCY DIVIDING NETWORK

5234A Dual Channel The JBL electronic frequency dividing network is designed for studio monitor or sound reinforcement applications. The 5234A can be used for biamplification of two independent two-way systems or to tri-amplify one three-way loudspeaker system.

Performance and operational characteristics feature a continuously variable high frequency shelving control for each channel, unity gain in the pass band, 12 or 18 dB per octave filter slopes, unbalanced low impedance outputs, less than 0.01% THD at +18 dBv, and a signal/noise ratio greater than 90 dB.

The crossover frequency is selected by inserting an accessory printed circuit card into each channel's circuitry. A card is supplied which converts a crossover channel to a unity gain audio distribution amplifier having one input and two outputs. A programmable high pass filter removes subsonic energy below the lowest usable speaker frequency.

Panel finish is dark gray semi-gloss baked enamel. The unit mounts in one EIA standard rack space. Net weight and dimensions are 1.8 kg (4 lb); 44 mm x 483 mm x 194 mm deep (1¾ in x 19 in x 7⅝ in deep).

Crossover Cards for the 5234A

Model	Use
51-5130[1]	Blank Card, Unloaded 18 dB/O
51-5132	500 Hz 18 dB/O
51-5133	800 Hz 18 dB/O
51-5145	For use with the 4345 or 4355 Studio Monitors
52-5120[1]	Blank Card, Unloaded 12 dB/O
52-5121	250 Hz 12 dB/O
52-5122	500 Hz 12 dB/O
52-5123	800 Hz 12 dB/O
52-5124	1.2 kHz 12 dB/O
52-5125	5 kHz 12 dB/O
52-5127	7 kHz 12 dB/O
52-5130	For use with the 4430 or 4435 Studio Monitors
52-5140	For use with the 4343 or 4350 Studio Monitors

1. The blank cards are etched with a circuit requiring installation of resistors and capacitors to construct crossovers for other frequencies.

SPECIAL PURPOSE ELECTRONICS

7510A Automatic Microphone Mixer The JBL 7510A is a flexible, solid-state microphone mixer that is designed to eliminate typical mixer shortcomings. It combines exceptionally low distortion, low noise, flat frequency response, and wide input dynamic range. Providing up to 24 program-actuated input channels, the 7510A's output level is automatically adjusted to provide a constant margin of gain before feedback, regardless of how many microphones are active. The unit also features adjustable threshold and release time, as well as an extremely fast attack to guard against turn-on problems.

Each input channel of the 7510A can be switched to a continuously actuated mode, an automatic program-actuated mode, or an automatic override mode. In the automatic mode, the level-sensing circuitry of the 7510A utilizes a zero-crossing detector and an ultra-fast rise time to produce completely inaudible turn-on; there are no clicks or pops, and the beginning of words or musical notes are not chopped off. The combination of program-actuated microphones and output level correction offers a constant margin against feedback, difficult to accomplish with a conventional mixer or a compressor/limiter. Manual gain riding is never necessary.

The 7510A is a modular, rack-mountable unit with space for six plug-in modules, each containing full electronics, controls, and connections for four balanced microphone inputs. The 7510A is supplied with four inputs installed. The front panel is fully labeled for the maximum of 24 input channels; unused input positions are covered by blank panels. The mainframe is fully wired, making it easy to install additional modules at any time. The monophonic output section includes a large VU meter, a master gain control, and a balanced +4 dBm (ref. 600 ohm) output with a male XL-type connector. Each input channel has a multi-function direct output ¼-inch phone jack, providing a normal through connection between the booster amplifier output and the summing busses.

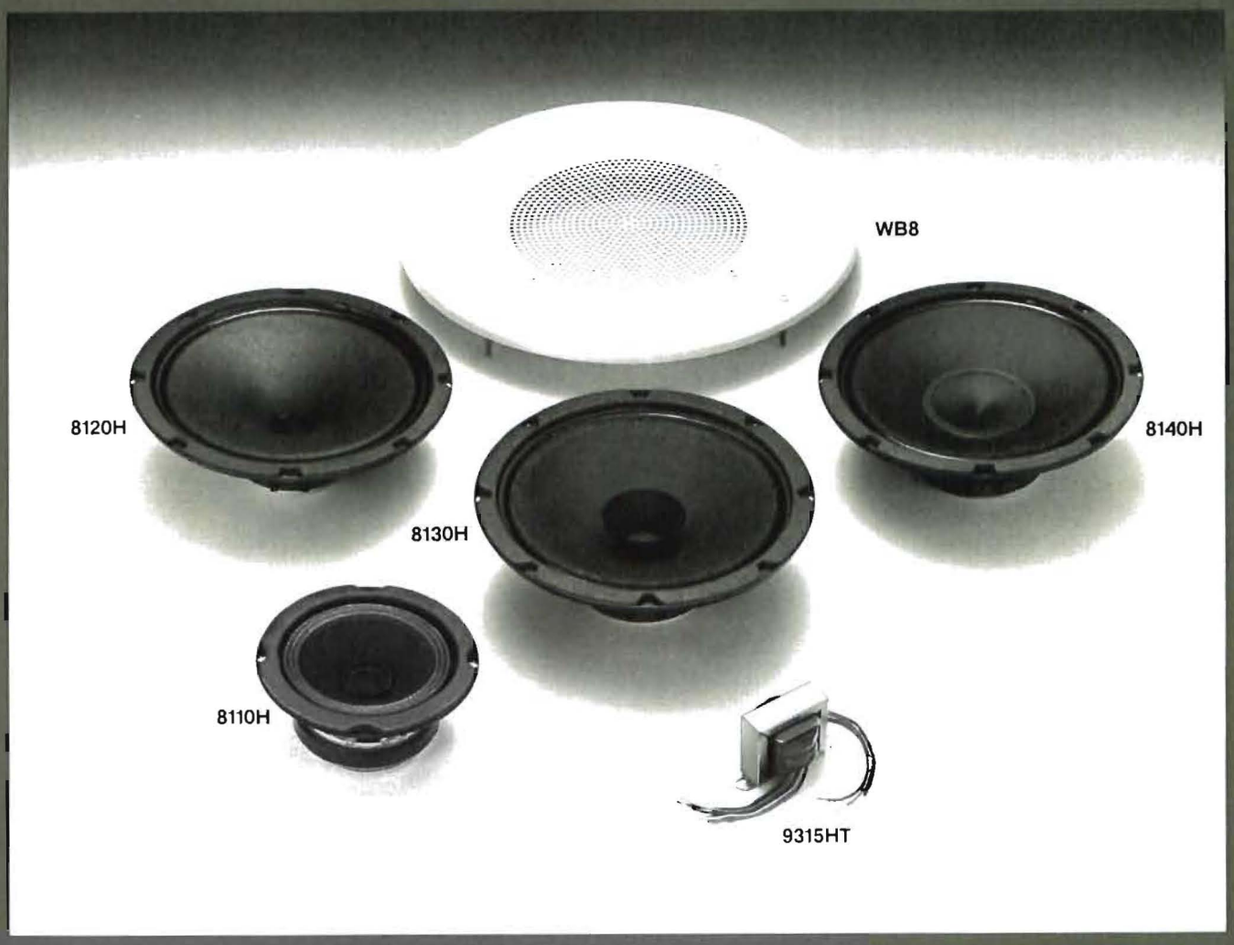
Each plug-in module of the 7510A has a 15 pin remote control connector for providing external gain adjustment of 49 dB for the preamplifier stage of each of four balanced inputs. When the gain adjustment is properly adjusted, it provides the best combination of headroom versus noise between the low output of a dynamic microphone to the high output of a tape recorder. The remote control connector has provisions for providing TTL level on/off logic for each of the four channels. This on/off logic provides a suitable means for switching speakers on and off, starting and stopping a tape recorder, or switching other external equipment—all by activating an associated input channel.

Other features of the 7510A include built-in 48 volt phantom power with on/off switch for condenser microphones and a master gain control for the output level. Input gain for each input may be varied from mic level to line level signals, such as tape recorders or a return for the direct outputs sent to a signal processor.

The JBL Model 7510A is an ideal choice as the main mixer in private or public meeting rooms, courtrooms, houses of worship, restaurants, small clubs, and other similar installations. In addition, it is also an excellent tool for the sophisticated recording studio, theater, concert sound reinforcement, and broadcast facility.

Model	Gain	Maximum Output Level	Frequency Response	Total Harmonic Distortion	Equivalent Input Noise[1]	Panel Finish	Dimensions (Height x Width x Depth)	Mounting
7510A	Microphone 83 dB	+24 dBm	20 Hz-20 kHz +0, −0.5 dB	0.02%	−130 dBv	Semi-gloss baked enamel dark gray	133 mm x 483 mm x 292 mm 5¼ in x 19 in x 11½ in	3 EIA standard rack spaces

1. 20 kHz bandwidth


WB8
8120H
8140H
8130H
8110H
9315HT

INDUSTRIAL SPEAKERS

8110H, 8120H, 8130H, 8140H Industrial Series Loudspeakers 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. The unique 8140H Co-Motional™ coaxial loudspeaker features a high frequency tweeter cone which is directly attached to the low frequency woofer cone, thereby eliminating the diffraction problems normally associated with post or strap mounted coaxial type designs. 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.

Specifications

Model	Nominal Diameter	Rated Impedance	Power Capacity[1] (Continuous Program)	Sensitivity[2] 1 W, 1 m (3.3 ft)	Frequency Range	Voice Coil Diameter	Magnet Weight	Depth	Net Weight
8110H High Compliance Full Range Loudspeaker	100 mm 4 in	8 Ω	40 W	92 dB SPL	50 Hz - 18 kHz	25 mm 1 in	283 g 10 oz	53 mm 2 13 in	925 kg 2 lb
8120H Full Range Loudspeaker	200 mm 8 in	8 Ω	30 W	96 dB SPL	30 Hz - 18 kHz	19 mm ¾ in	142 g 5 oz	70 mm 2 75 in	65 kg 1 4 lb
8130H Dual Cone Full Range Loudspeaker	200 mm 8 in	8 Ω	40 W	97 dB SPL	30 Hz - 20 kHz	25 mm 1 in	283 g 10 oz	74 mm 2 90 in	1 kg 2 2 lb
8140H Co-Motional™ Coaxial Loudspeaker	200 mm 8 in	8 Ω	40 W	97 dB SPL	30 Hz - 20 kHz	25 mm 1 in (LF)	283 g 10 oz	74 mm 2 90 in	1 kg 2 2 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 Sensitivity measured with an input swept from 500 Hz to 2 5 kHz

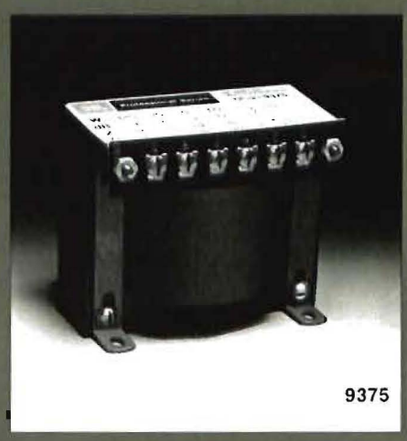
MA15

MA 25

MC4401

2505

2506



9375

ACCESSORIES

MA15 Loudspeaker Mounting Kit The MA15 simplifies front mounting of JBL 380 mm (15 in) loudspeakers and permits a degree of latitude in the diameter of the mounting cut-out. The kit consists of sealing gaskets, four cast clamps and four mounting screws with T-nuts. The clamps and mounting hardware can also be used for JBL 300 mm (12 in) and 460 mm (18 in) loudspeakers, but it will be necessary to adjust the sealing gaskets specifically for such applications. Two MA15 kits should be used to mount the 460 mm (18 in) loudspeakers, due to the unit's additional mass. The MA15, however, cannot be used to mount an E145 380 mm (15 in) loudspeaker since the clamps will not fit the unit's frame.

MA25 Horn/Lens Mounting Kit The MA25 is designed to allow external mounting of a JBL 2390 horn/lens assembly. The kit includes mounting brackets, baffle, and all required mounting hardware.

MC4401 Mounting Cradle An optional cradle mount manufactured of rugged steel, the MC4401 may be used to simplify wall or console mounting of the model 4401 studio monitor.

2505 Adjustable Horn Mount A cast iron rear mount for orientation of any JBL high frequency horn having a 49 mm (2 in) throat. The 2505 attaches at the 4-bolt flange of the horn and is held in place by the same bolts that secure the horn to the driver. The 2505 is 330 mm (13 1/16 in) high and allows adjustment of driver height in 25 mm (1 in) increments. The base mounts on a horizontal surface with mounting holes spaced 235 mm (9 1/4 in) apart. The 2505 is furnished standard with the 2395 horn/lens.

2506 Mounting Bracket The 2506 mounting bracket is designed for use with the 2360 and 2365 Bi-Radial® horns in JBL theater systems, as well as in other applications requiring horn mounting on a flat surface.

9375 100 W Line Matching Transformer The 9375 is a 100 W impedance-matching autotransformer. It allows matching 4 Ω, 8 Ω, 16 Ω and 32 Ω loads in any combination. As an example, a 9375 may be used to match two 16 Ω high frequency drivers to a 16 Ω network. Frequency response is 30 Hz to 16 kHz, +0, −1 dB, and total harmonic distortion is less than 1% in any configuration.

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

15K 63884 7-84 JBL/harman international