JBL®

PROJECT ARRAY™
FROM BEHIND THE SCENES
TO FRONT AND CENTER

THE SECRET OF CINEM

ATIC SOUND, EXPOSED.

You may never have seen anything like them. But you've been hearing something very much like them for years. Behind the screen at your favorite movie theater, and overhead in the rigging at major concert events, large vertical arrays of constant-directivity horns have long been instrumental in delivering the massive yet highly accurate sound that large audiences expect. Now JBL Project Array™ brings professional-venue-style speakers home for the first time.

Many of today's home theater speakers are simply consumer designs adapted for multichannel sources. But the high-performance Project Array loudspeakers are professional designs optimized for smaller venues. A Project Array-equipped home theater isn't just an ordinary home theater. It's a screening room that would please the most discerning of Hollywood moguls. If movies are an important part of your life, you'll appreciate the difference. More important, you'll enjoy the professionally inspired, audiophile-grade sound on a daily basis.

THE PROJECT ARRAY FORMULA: IN-YOUR-FACE HIGH- AND ULTRAHIGH-FR PLUS CLASSIC JBL BASS.

1940's

NYLON STOCKINGS, FILM NOIR, THE DAWN OF AUDIO. James B. Lansing leaves Western Electric (where he led the team that brought sound to the movies) to start JBL. First products: the D130, an innovative high-power, low-frequency transducer, and a high-frequency transducer that's still used by audio professionals more than 50 years later.

1950's

BLUE SUEDE SHOES, MCCARTHY, THE ELECTRIC GUITAR. As rock 'n' roll is born, JBL becomes the clear leader in studio and theater sound. Leo Fender chooses the D130 to amplify his electric guitars. And *LIFE* magazine calls the JBL Hartsfield the "dream speaker" for the amazing new world of hi-fi.

One (often-overlooked) key to realistic, full-spectrum dynamics and 360-degree imaging is constant directivity from a speaker system's high-frequency drivers. While bass and midrange frequencies can survive some interaction with walls and furniture, high and ultrahigh frequencies are greatly diminished by it, especially at high listening levels. The straighter the path from the high-frequency transducers to your ears, the better and more lifelike the sound.

JBL Project Array floorstanding loudspeakers employ advanced Aquaplas-treated high-frequency transducers and titanium-diaphragm ultrahigh-frequency drivers in an extremely dense and rigid freestanding horn.

The unconventional look of the horn assembly produces an equally unconventional sound: brilliantly clean highs – into the ethereal realm of 40kHz – delivered directly to a listener's ears. Coupled with a fast mid- to high-frequency compression driver in the time-honored JBL Professional tradition, Project Array brings a new level of dimensional accuracy to the tonal and dynamic realism JBL is justly famous for.

Project Array is the latest innovation of Greg Timbers, JBL's chief systems engineer, who has been behind many acclaimed and award-winning loudspeakers over the years, including the 4300 Series monitors and Project K2.®

EQUENCY SOUND,

1960's	1970's	1980's	1990's	TODAY
				
MUSCLE CARS, WOODSTOCK, SPACE. JBL introduces the legendary 4320. With a high-frequency compression driver and acoustic lens in a four-way configuration, it becomes the definitive studio monitor of the Space Age. And JBL becomes standard equipment at major rock concerts. Remember that little gathering at Woodstock? (We're with the band, man.)	**POLYESTER, WATERGATE, SATURDAY NIGHT FEVER.** By 1976, a Billboard survey ranks JBL studio monitors number one. And JBL Pro technology comes home with the L100, a consumer version of the 4300 Series, one of the best-selling speakers of the decade (and vastly better looking than the clothes of the era).	**MIAMI VICE, MASTERS OF THE UNIVERSE, MTV.** The Academy of Motion Picture Arts and Sciences chooses JBL components to introduce 70mm Dolby® stereo in showcase theaters. JBL introduces titanium diaphragms and Bi-Radial® horns in professional studio monitors.	**GEN X, DOT-COMS, DVD.** JBL's professional innovations come thick and fast: Vented Gap Cooling,™ Optimized Aperture™ horns, rapid-flare low-distortion compression drivers. JBL corners the THX® cinema market. And JBL near-field studio monitors lead in 5.1 and 7.1 sound mixing and mastering.	**WITH PROJECT ARRAY,** JBL introduces the first of an innovative new generation of high-performance loudspeakers that combine advanced compression drivers and direct radiation technology. Derived directly from JBL Professional systems in use in movie theaters and concert venues worldwide, Project Array speakers are built for the ultrahigh-frequency sampling rates of the newest digital sources, including SACD.™ And the unconventional design ensures that you'll actually hear all the nuances of the original performance.

WELCOME TO THE W

THE PROJECT ARRAY PROVING GROUNDS.

ALFRED HITCHCOCK THEATER
UNIVERSAL CITY, CALIFORNIA

AMC THEATERS
LOCATIONS THROUGHOUT USA

EDWARDS CINEMAS
LOCATIONS THROUGHOUT USA

GRAND OLE OPRY
NASHVILLE, TENNESSEE

THE KENNEDY CENTER
WASHINGTON, D.C.

MANN'S CHINESE THEATER
HOLLYWOOD, CALIFORNIA

SAMUEL GOLDWYN THEATER
BEVERLY HILLS, CALIFORNIA

UNITED ARTISTS THEATRES
LOCATIONS THROUGHOUT USA

SYDNEY OPERA HOUSE
SYDNEY, AUSTRALIA

VIRGIN CINEMAS
LOCATIONS THROUGHOUT JAPAN

WINSTON THUNDERDOME
USA

ORLD OF PROFESSIONAL SOUND.

JBL leads the world in the design and manufacture of professional audio equipment. JBL is how movie soundtracks and music recordings are created, mixed and mastered. JBL is how audio professionals work with sound, and how the rest of the world hears it. Live or recorded, indoors or out, JBL has set the standard of realism for more than 50 years. Now Project Array brings the JBL Pro Sound home. With the technologies professionals are accustomed to, and the uncompromised quality they insist upon, Project Array is home entertainment to delight the most critical listeners, including those who listen for a living.

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A Message From Greg Timbers, JBL's Chief Systems Engineer

I've long been a fan of compression-driver systems. They have a speed and effortlessness unmatched by direct-radiator systems. Current hardware is very low in distortion, has smooth frequency response and can be designed to have very smooth, consistent directivity patterns. However, I've always felt that as good as the three-dimensional image provided by these systems was, it could be even better.

Since many of the best-sounding direct-radiator systems have minimal baffle areas, particularly around the mid- and high-frequency drivers, it was reasonable to conclude that minimizing baffle area and diffraction around a horn might improve imaging and frequency response. This is the major design concept behind Project Array. The horn has been oriented to minimize width, and to position the diffraction slot within the horn in the vertical plane. Next, the top of the LF enclosure has been cut away so that the horn is nearly freestanding. The horn enclosure is minimal and heavily windswept – again, to minimize diffraction. The final major feature is the capability of the horn to be moved forward or back without creating baffle discontinuities. This allows the horn HF and LF drivers to be lined up in the depth direction to achieve the best time behavior over a large frequency range. This also allows the drivers to be "in polarity" in addition to "in phase" at the crossover point. The sum total of these main features is a loudspeaker system with the speed and dynamics of a compression-driver system, but with the smoothness and imaging of the best direct-radiator and panel systems.

The industrial design of the system was quite a challenge. Having established a number of important criteria regarding the relative location and packaging of each transducer, it became necessary to consider a less conventional design. The LF enclosure needed to be heavy, solid and vibration-free. In addition, it needed to allow the horn module to sit as low as possible to reduce the center-to-center distance between the LF and HF drivers. The horn itself is molded from a high-density resin material, using an extremely thick wall section. This makes the horn heavy and acoustically inert. The horn is mounted directly to the top of the LF enclosure in a rigid manner. Experiments during development revealed that decoupling the horn from the LF enclosure adversely affected the three-dimensional image. The horn enclosure is molded in structural foam, again with a thick wall section.

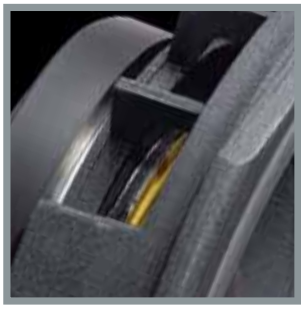
The woofer section and high-frequency horn section are acoustically joined by a sophisticated crossover network. The low-frequency and high-frequency sections of the network are located on separate circuit boards mounted in different places within the enclosure to minimize interference between the different filter sections of the crossover. The acoustic-crossover slopes are all 4th order (24dB/octave), and the horn-module location has been optimized in the depth location for minimum time error over a large frequency range.

The 880 Array (center channel) has been designed to have the same timbral and phase behavior as the tower systems. This is essential in a multichannel setup, to ensure proper decoding of the source material, which was most likely mixed using identical speakers at all positions. Five (or seven) identical speakers are the best way to re-create the sound space that the authors of the recording intended. Unfortunately, the size and cost of five front speakers are often problematic. A large center speaker is also a major problem for anything but a perforated front-projection screen. Designing a compact yet powerful dedicated center speaker is quite a challenge, particularly when the other models in the lineup perform so well. Obviously, using identical or similar transducers is very important. It's also necessary to match frequency response, directivity response, distortion characteristics and phase response. In the case of the Project Array Series, all four models have been optimized to work with each other in any combination of front, center and rear.

We feel the new Project Array Series exemplifies the best of JBL's tradition and heritage, while clearly taking advantage of our ultramodern research and development facility. We hope you'll enjoy every minute of listening.

Regards,
Greg Timbers
JBL Chief Systems Engineer

AQUAPLAS-TREATED ALUMINUM HIGH-FREQUENCY COMPRESSION DRIVER. A neodymium motor and an edge-wound voice coil of Kapton®-encapsulated aluminum wire drive a 3-inch Aquaplas-treated aluminum dome mounted in a rigid, constant-directivity horn. It's how Project Array loudspeakers deliver the three-dimensional imaging of high-end professional systems.



THE

880 ARRAY.
True cinematic sound from a bookshelf speaker? Absolutely. With unique vertical horns to deliver the distinct ultrahigh- and high-frequency sounds that are often compromised in lesser systems, Project Array bookshelf speakers bring a new level of realism to home entertainment.

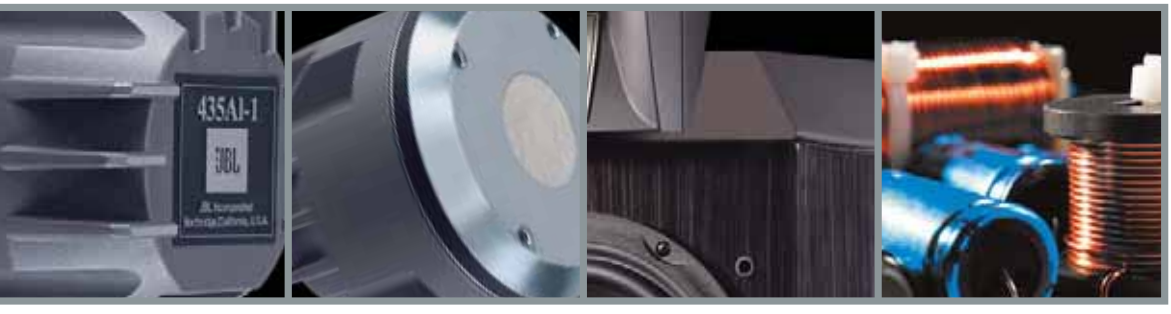
AN ARRAY OF PROFESSIONAL TECHNOLOGIES.

TITANIUM ULTRA-HIGH-FREQUENCY COMPRESSION DRIVER. An edge-wound voice coil, attached directly to a 1-inch titanium diaphragm and driven by a 2-inch neodymium motor assembly, delivers uniform response out to 40kHz. The constant-directivity horn maintains a consistent dispersion pattern of 60 degrees x 30 degrees.

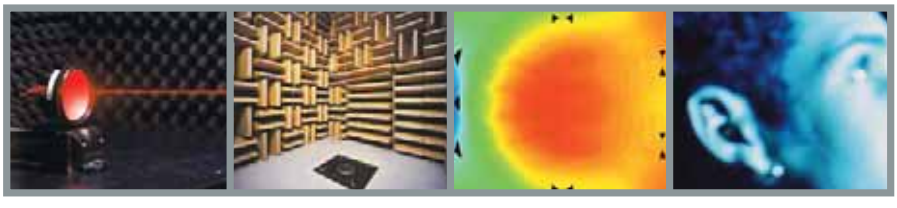
CLASSIC JBL LOW-FREQUENCY DRIVER. The LE14H-3 is the latest in an acclaimed series of JBL Professional woofers dating back to the 1960's. It employs a massive 4-inch ferrite magnet and an edge-wound copper voice coil to drive an essentially inert Aquaplas-coated pulp-cone assembly. It's built to play loud and long, like the professional it is.

UNIQUE ENCLOSURE. A trapezoidal low-frequency internal enclosure is constructed of heavily braced 1- and 1-1/2-inch MDF. A raised-top cavity minimizes diffraction from the exposed high-frequency horn. And brass spikes couple the external enclosure to the floor. JBL speakers are known for their rugged construction, and Project Array's is no exception.

UNIQUE SYSTEM INTEGRATION. The Project Array crossovers use 4th-order acoustic transitions, ultralow-loss inductors and polypropylene capacitors. The high and ultrahigh crossovers are located on a separate board in a different section of the enclosure to minimize crosstalk with the low-frequency crossover.



GAUNTLET OF PERFORMANCE STANDARDS.



REAL-TIME FFT LASER VIBROMETRY. Measuring the infinitesimal is (or should be) an audio engineer's stock in trade, and the more precise the measurement tools, the better the result. JBL engineers use lasers to test the performance characteristics of various transducer materials and laminates, to find those least likely to produce unwanted resonances during peak audio passages. It's exacting work, but JBL insists on it.

ACOUSTICALLY PERFECT ANECHOIC CHAMBERS. Imagine a room so sonically inert that sound reflections can't happen. Such a room is costly to produce, but it's the only way to conduct ultra-precise measurements of a loudspeaker's primary output. JBL has invested in new anechoic chambers to improve our understanding of how materials, coatings and manufacturing techniques affect loudspeaker performance.

MULTIAXIS ANALYSIS. Suppose, just suppose, that your TV room isn't perfectly shaped. Is your queen-size convertible sofa going to hamper the nearly perfect output of your Project Array system? The answer lies in a complex combination of literally thousands of on- and off-axis audio responses, which we've precalculated for myriad situations. Rest assured, Project Array speakers have been optimized for real-world rooms filled with real-world furniture.

THE MOST SOPHISTICATED INSTRUMENTS OF ALL. Trained or untrained, professional or amateur, the human eye and ear are (and will always be) the final arbiters of sight and sound. And for all our technology, we are still reliant on them. Project Array has passed stringent tests in all types of home environments – which is why we can confidently predict how you'll feel when you experience the system for the first time. Probably some variation of "awesome."

PROJECT ARRAY, BY THE NUMBERS.

	1400 ARRAY 3-WAY, 14" (350mm) FLOORSTANDING	1000 ARRAY 3-WAY, 10" (250mm) FLOORSTANDING	800 ARRAY 3-WAY, 8" (200mm) BOOKSHELF
Ultrahigh-Frequency Transducer	045Ti 1" (25mm) Pure-titanium compression driver with aluminum edge-wound voice coil and 2" (50mm) neodymium motor assembly, mounted in a SonoGlass® constant-directivity horn	045Ti 1" (25mm) Pure-titanium compression driver with aluminum edge-wound voice coil and 2" (50mm) neodymium motor assembly, mounted in a SonoGlass® constant-directivity horn	045Ti 1" (25mm) Pure-titanium compression driver with aluminum edge-wound voice coil and 2" (50mm) neodymium motor assembly, mounted in a SonoGlass® constant-directivity horn
High-Frequency Transducer	435AL-1 3" (75mm) Aquaplas-treated aluminum-dome compression driver with aluminum edge-wound voice coil and neodymium motor assembly, mounted in a vertical SonoGlass® constant-directivity horn	175Nd-3 1-3/4" (45mm) Aquaplas-treated titanium-dome compression driver with aluminum edge-wound voice coil and neodymium motor assembly, mounted in a vertical SonoGlass® constant-directivity horn	175Nd-3 1-3/4" (45mm) Aquaplas-treated titanium-dome compression driver with aluminum edge-wound voice coil and neodymium motor assembly, mounted in a vertical SonoGlass® constant-directivity horn
Low-Frequency Transducer	LE14H-3 14" (350mm) Aquaplas-treated pulp-cone driver with rubber surround and massive ferrite motor assembly with 4" (100mm) copper edge-wound voice coil, mounted in a trapezoidal enclosure	Array 10 10" (250mm) polymer-treated pulp-cone driver with rubber surround, 1-1/2" (38mm) copper edge-wound voice coil and ferrite motor assembly, mounted in a trapezoidal enclosure	Array 8 8" (200mm) polymer-treated pulp-cone driver with rubber surround, 1-1/2" (38mm) copper edge-wound voice coil and ferrite motor assembly, mounted in a trapezoidal enclosure
Sensitivity (2.83V/1m)	89dB	89dB	88dB
Frequency Response (–3dB)	32Hz – 40kHz	35Hz – 40kHz	55Hz – 40kHz
Max. Recommended Amplifier Power	300 Watts	200 Watts	200 Watts
Crossover Frequencies	750Hz, 8kHz	900Hz, 8kHz	1000Hz, 8kHz
Nominal Impedance	8 Ohms	8 Ohms	8 Ohms
Port	4" (100mm) Flared	3-3/8" (86mm) Flared	2" (50mm) Flared
Dimensions (H x W x D)	46-1/2" x 15-1/2" x 19" (1181mm x 394mm x 483mm)	43-1/2" x 12-1/4" x 17" (1105mm x 311mm x 432mm)	29-1/4" x 10-3/4" x 14" (743mm x 273mm x 356mm)
Weight (each)	115 lb (52kg)	70 lb (32kg)	40 lb (18kg)

SPECIFICATIONS.

880 ARRAY 3-WAY, DUAL 8" (200mm) CENTER	1500 ARRAY 15" (375mm) 1000-WATT FRONT-FIRING SUB
045Ti 1" (25mm) Pure-titanium compression driver with aluminum edge-wound voice coil and 2" (50mm) neodymium motor assembly, mounted in a SonoGlass® constant-directivity horn	N/A
435AL 3" (75mm) Aquaplas-treated aluminum-dome compression driver with aluminum edge-wound voice coil and neodymium motor assembly, mounted in a vertical SonoGlass® constant-directivity horn	N/A
Dual Array 8C 8" (200mm) polymer-treated pulp-cone drivers with 1-1/2" (38mm) copper voice coils wound on an aluminum former and ferrite motor assemblies, mounted on angled baffles in independent trapezoidal enclosures	W1500H 15" (375mm) pulp-cone driver with rubber surround and massive ferrite motor assembly with 4" (100mm) copper edge-wound voice coil, mounted in a trapezoidal enclosure
90dB	N/A
70Hz – 40kHz	25Hz – 400Hz, variable
200 Watts	N/A
1000Hz, 8kHz	40Hz – 140Hz HP
8 Ohms	N/A
N/A	4" (100mm) Flared
12-1/4" x 28-3/4" x 11" (311mm x 730mm x 279mm)	23" x 19-1/2" x 19" (584mm x 495mm x 483mm) 21" (533mm) Deep with grille
46 lb (21kg)	125 lb (57kg)

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PRO SOUND COMES HOME™

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