Studio Monitors

JBL PROFESSIONAL IS THE PROUD RECIPIENT OF THE 2005 TECHNICAL GRAMMY® The National Academy Of Recording Arts and Sciences Presented the 2005 Technical GRAMMY® Award to JBL Professional for Continual Mastery and Innovation in Concert, Studio, Cinema and Broadcast Sound and Monitors to Ensure Exacting Standards for the Most Accurate Sonic Experience.

JBL has more experience in designing and building transducers for professional studio monitors than any other company. We not only use the latest engineering and design equipment, but also the most important test deviceof all, the human ear. We believe in physics, not fads, so while other companies pick parts off somebody else's shelf, we create our components from scratch. And by utilizing 60 years of experience in transducer design, we create the perfect transducer for each system.

In the great tradition of JBL Studio Monitors, we are pleased to offer the LSR6300 Series and the new LSR4300 Series—the latest in transducer and system technology combined with recent breakthroughs in research and development to provide a more accurate studio reference. The Linear Sp atial Reference (LSR) philosophy is based on a set of design goals that carefully cont rol the overall performance of the system in a variety of acoustic spaces. Instead of focusing on a simple measurement such as on-axis frequency response, JBL measures systems in a field 360 degrees around the speaker and engineers the entire system to ensure off-axis response reflected to the mix position is also smooth and accurate. Then JBL goes a step further to overcome problems caused by low frequency room modes which plague mix engineers. A JBL first, the RMC[™] Room Mode Correction system is included in the LSR6300 and LSR4300 Series monitors. The RMC system includes everything needed to analyze LF problems and restore accuracy at the mix position.

STUDIO MONITORS

key features The LSR Series

- LINEAR SPATIAL REFERENCE DESIGN
- In the second secon
- MOUNTING POINTS FOR INDUSTRY STANDARD MOUNTING HARDWARE
- BALANCED AND UNBALANCED INPUTS WITH +4 dBU, -10 dBv SENSITIVITY
- EXCELLENT ON- AND OFF-AXIS PERFORMANCE
- HIGH SPL CAPABILITY

The JBL LSR6300 and LSR4300 Series go "beyond accurate" all the way to "stunning" by incorporating features which reduce the effect of problems in the room. We start with JBL transducer and network technologies that provide ultra-flat response and exceptional dynamic range. Then we incorporate features that help to overcome the contributions of the room. So even if you work in a small home studio, you'll have clear sound at the mix position. All LSR models are engineered for use in the most demanding production environments. With JBL's LSR6300 Series and the new LSR4300 Series, mixing is a pleasure.

It takes more than an accurate speaker system to have accurate response at the mix position. Problems in the room dramatically color what you hear at the mix position. Walls and corners can affect response. And standing waves at the mix position can lead you to misjudge bass content. As a result, a speaker which measures flat in an anechoic chamber may "tell you a different story" in the room. The key to accuracy is tackling the effect of boundaries, standing waves and reflections. In developing the LSR Series, JBL examined each problem in the environment and created the perfect solution. Even if you work in a small control room, an LSR system will provide smooth accurate response at the mixer's chair.

LSR (Linear Spatial Reference Technology) Much of what you hear at the mix position is

reflected—not direct sound. Linear Spatial Reference Technology ensures mid and high frequency response of our speakers is neutral at the mix position. The exact geometry of the waveguide, the interaction of the woofer and tweeter, and the network are designed to provide an accurate listening window of \pm 30 degree horizontal, \pm 15 degree vertical. As a result, the reflected sound that reaches the mix position is smooth and accurate.

RMC[™] (Room Mode Correction)

Room modes or standing waves can mislead you give you a false impression of low frequency content in the mix. JBL is first to supply a complete solution for identifying and overcoming the negative effect of room modes. The LSR 6328P, 6312SP and all LSR4300 models are equipped with RMCTM, JBL's ingenious Room Mode Correction System. The LSR6300 RMC Calibration kit includes everything needed to identify room modes and set the LSR6300 series on-board parametric equalizer. JBL engineers took the RMC solution one step further by equipping the LSR4300 Series speakers with an automated analyzer and corrective filter. Both systems dramatically improve low frequency performance at the mix position.

Carbon Fiber Composite Cone Dual Magnetic Gaps Dynamic Brake Coil Neodymium Magnet – Aluminum Diecast Heatsink Dual Drive Coils

Differential Drive® Technology



LSR6332

Elliptical Oblate Spheroidal (EOS) Waveguide

Diecast Frame

Designed for a targeted listening window of \pm 30 degrees horizontally and \pm 15 degrees vertically, the EOS provides smooth response through the entire listening window within 1.5 dB of the on-axis response. The result: The listener, even far off-axis, can hear an accurate representation of the on-axis response.

Composite High Frequency Device

The 1" magnetically shielded dome high frequency device incorporates titanium and composite materials to improve transient response and reduce distortion. The result: By reducing distortion in the lower operating range where the human ear is most sensitive, listener fatigue is dramatically reduced.

500G Midrange Transducer

The midrange is a 2" neodymium motor with a 5-inch woven Kevlar™ cone. The powerful motor structure was chosen to support the low crossover point to the woofer. In order to achieve the goal of accurate spatial response, the crossover points match the directivity characteristics of the three transducers for optimum spatial response. The result: Absolute pinpoint accuracy.

Dynamic Braking

LSR6300 low frequency transducers are equipped with an electromagnetic braking coil that reduces the effects of extreme excursion with high transient material. This causes more linear compliance resulting in lower distortion, more accurate reproduction and increased reliability.

Built-in Boundary Compensation

With the advent of multi-channel production, space limitations may compromise the positioning of the speakers. JBL's powered LSR6300 models include boundary compensation switches and the LSR4300 RMC Systems includes filters to offset the increase in bass response, that occurs when the speaker is placed near a wall, in a corner or on a work surface.

Stunning Sound

Starting with application-designed and built transducers engineered for extremely accurate response and superb power handling, the stunning sound of the LSR Series Studio Monitors make long mix sessions a pleasure. The LSR6300 line* incorporates the single most significant advance in monitor history: JBL's patented Differential Drive Technology. Providing unparalleled performance, the woofer permanently dispels the notion that better linearity, higher power handling and greater dynamic accuracy are somehow unobtainable. JBL's Differential Drive uses two drive coils with twice the thermal surface area of traditional speakers. As a result, LSR6300 systems provide higher peak output with less spectral shift that causes monitors to sound different when driven at different power levels. All LSR Series speakers withstand the JBL loudspeaker torture test driven at full rated power for over 100 hours. Meeting higher standards than any other loudspeaker manufacturer, JBL's demanding test ensures that the LSR Studio Monitors give you accurate mixes year after year.

* (LSR6328P, LSR6332, LSR6312SP)

Reinforced mounting points on LSR speakers allow convenient positioning and installation of multi-channel surround systems for any mixing application, in any studio environment.

- LINEAR SPATIAL REFERENCE DESIGN
- In the second secon SYSTEM

LSR6300 Series

I SR6325P-1

The compact LSR6325P-1 provides exceptional performance for use in applications where accuracy is a must, but space is limited. With a 5.25" high-excursion woofer, 1" damped titanium composite tweeter, and 150 watts of amplification. it outperforms many larger systems. A boundary compensation setting adjusts response when used on workstation surfaces. When used with the LSR6312SP Subwoofer, the LSR6325P-1 is the heart of an exceptionally accurate yet space efficient full-range system.

I SR6328P

The LSR6328P is THE choice for stereo and multichannel music and post audio applications where accuracy and high SPL are required. With ruler-flat +1 dB/-1.5 dB response from 50 Hz to 20 kHz, low frequency extension to 36 Hz, boundary compensation and JBL's new RMC[™] system, the LSR6328P gives you exceptional low frequency performance in any room. The system is bi-amplified with a 250 Watt LF amplifier and a 120 Watt HF amplifier. Based around JBL's patented 8" Differential Drive® carbon-fiber woofer and a 1" titanium composite tweeter, the system produces smooth response and extraordinary SPL. Wall mounting provisions make the LSR6328P perfect

for installation in multichannel editorial rooms.



LSR6325P-1

FREQUENCY RESPONSE LOW FREQUENCY EXTENSION AMPLIFIER POWER (LF/HF) SPL (CONTINUOUS/PEAK¹) LONG-TERM M AXIMUM POWER DRIVERS (LF, MF, HF) SENSITIVITY SYSTEM IMPEDANCE **CROSSOVER FREQUENCIES** HF ADJUSTMENT INPUTS MAGNETIC SHIELDING MOUNTING CAPABILITY $(H \times W \times D)$ NET WEIGHT (each)



LSR6328P

LSR6325P-1
70 Hz - 20 kHz (+1, -2 dB)
-10 dB : 48 Hz
100 W/50 W
106 dB/109 dB
5.25 in/1 in
96 dB/1m
2.3 kHz
+1.5 dB/-1.5 dB
XLR, RCA
Yes
Yes
Dark Graphite
269 x 173 x 241 mm
(10.6 x 6.8 x 9.5 in)
7.7 kg (17 lb)
1

LSR6332

If you need a larger monitor with high SPL, for mid-field, soffit or behind the screen applications, the LSR6332 is your choice. This three-way nonpowered system can handle 200 watts continuous pink noise/800 watts peak and will generate 112 dB SPL at 1 meter. The LSR6332 incorporates a 12" neodymium Differential Drive dual coil woofer, 5" Kevlar™ midrange speaker and 1" titanium composite tweeter. The system is exceptionally flat. +1 dB/ -1.5 dB from 60 Hz to 22 kHz with LF extension to 35 Hz. User features include a -1 dB HF level setting, and dual 5-way binding posts for bi-wire capability.

THX pm3® APPROVED

INTEGRATED MOUNTING POINTS



LSR6332

LSR6332 60 Hz - 22 kHz (+1, -1.5 dB) -10 dB : 35 Hz 200 W cont/800 W peak 12 in/5 in/1 in 93 dB/2.83V/1 m (90 dB/1 W/1 m) 4 ohms 250 Hz/2.2 kHz -1 dB **Dual 5-Way Binding** Yes Yes Dark Graphite 635 x 394 x 292 mm (25 x 15.5 x 11.5 in) 20.4 kg (45 lb)

PATENTED DIFFERENTIAL DRIVE® TECHNOLOGY



LSR6300 SERIES 2004 WINNER

I SR6312SP

The LSR6312SP powered subwoofer is based on a 12" woofer with JBL's patented neodymium Differential Drive and 260 watts of power. An integral bass-management system provides all the features you need for today's multi-format surround production including: LCR and Direct LFE inputs, summed output for chaining multiple subwoofers, -4 dB alignment setting, and JBL's new RMC Room Mode Correction system. RMC Calibration Kit included.



RMC[™] (Room Mode Correction) Calibration Kit The LSR6328P and LSR6312SP Subwoofer are equipped with RMC-JBL's ingenious method of zeroing-out bass problems at the mix position caused by room modes. A built-in 1/10th octave parametric equalizer allows you to correct problems below 100 Hz. The RMC Calibration Kit gives you everything you need to identify problematic room modes and tune your system. The LSR6325P-1 and LSR6332 enjoy the benefits of RMC when used in a system with the LSR6312SP Subwoofer.



LSR6312SP

LSR6312SP 28 Hz - 80 Hz (-6 dB) -10 dB : 26 Hz 260 W 112 dB/115 dB 200 W cont/800 W peak 12 in 96 dB/1 W/1 m 80 Hz XLR, 1/4 in Yes Yes Dark Graphite 394 x 635 x 292 mm (15.5 x 25 x 11.5 in) 22.7 kg (50 lb) RMC Calibration Kit Included with LSR6312SP

FINISH DIMENSIONS

¹ Calculated using average 1 watt/1 meter sensitivity and peak amplifier output

LSR6328P

-10 dB : 36 Hz

250 W/120 W

108 dB/111 dE

8 in/1 in

96 dB/1m

1.7 kHz

+1 dB/-1 dB

Dark Graphite

406 x 330 x 325 mm

(16 x 13 x 12.5 in)

17.7 kg (39 lb)

XLR, 1/4 in

Yes

Yes

50 Hz - 20 kHz (+1, -1.5 dB)

STUDIO MONITORS

- LINEAR SPATIAL REFERENCE DESIGN
- AUTOMATED RMC[™] ROOM MODE CORRECTION
- SUPPLIED WIRELESS REMOTE CONTROL AND LSR4300 CONTROL CENTER SOFTWARE
- HARMAN HIQNET[™] NETWORK FOR SYSTEM CONTROL
- MOUNTING POINTS FOR INDUSTRY-STANDARD MOUNTING HARDWARE
- EXCEPTIONALLY ACCURATE IN ANY MIX ENVIRONMENT

key features LSR4300 Series



LSR4326P





Introducing the new JBL LSR4300 Studio Monitors featuring RMC[™] Room Mode Correction. The first studio monitors with powerful network intelligence built into each speaker specifically designed to deliver an accurate mix in any room, the LSR4300s are the ultimate monitor for modern production studios. The LSR4300 models feature stunning JBL sound, provide accurate mixes in any workspace, and are priced well within the reach of any studio. The first "self-aware" monitoring system, they're the ideal choice for music, post, broadcast, stereo and surround sound production.

ACCURACY

JBL's next generation automated RMC[™] Room Mode Correction system incorporates a powerful analyzer into each speaker that measures and automatically compensates for problems caused by low frequency standing waves and proximity to boundaries. This creates a stunningly clear and articulate sound stage enabling reliable mixes that translate faithfully to the outside world.



System calibration is accomplished by simply plugging the LSR4300 calibration microphone into the speaker and pushing a button.

NET WEIGHT (each)

12.7 kg (28 lb)

CALIBRATION & CONFIGURATION

Truly putting technology to work, system calibration is accomplished by simply plugging the LSR4300 calibration microphone into the speaker and pushing a button. The results are a revolution in professional mixing: a calibrated listening environment where the monitors truly work in harmony with the room. LSR4300 System with Harman HiQnet™ Network allows centralized control of all system settings using the LSR4300 elegant front panel controls, supplied infrared remote control or computer software.

The LSR4300 Series systems can be configured with up to eight main speakers in any desired mix of 6" and 8" models and two subwoofers. The system is automatically aligned so the sound arriving at the mix position from all speakers is balanced even in rooms with space limitations.

LSR4326P

The LSR4326P is a bi-amplified system with 6" woofer and 1" silk-dome tweeter.

LSR4328P

The LSR4328P is a bi-amplified system with 8" woofer and 1" silk-dome tweeter.

LSR4312SP

The LSR4312SP is a 450 watt, powered 12" subwoofer with automated RMC* and powerful features for stereo and surround sound production including bass management of the L, C, R, LS, RS channels with adjustable crossover points* plus a dedicated LFE (Low Frequency Effects) inputs.

*When used in a system with LSR4326P or LSR4328P

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	LSR4326PLIONS	LSR4328P	LSR4312SP	LSR4300Accessory Kit *
FREQUENCY RESPONSE	± 1.5 dB:55 Hz – 20 kHz -3 dB:47 Hz – 22 kHz -10 dB:39 Hz – 32 kHz	± 1.5 dB:50 Hz – 20 kHz -3 dB:43 Hz – 22 kHz -10 dB:35 Hz – 32 kHz	27 Hz - 250 Hz (-6 dB) -3dB:29 Hz -10 dB:24 Hz	Includes: • LSR4300 Calibration Microphone
AMPLIFIER POWER (LF/HF)	150W/70W	150W/70W	450W	and mic clip
SPL (CONTINUOUS/PEAK ¹)	106 dB / 112 dB	106 dB / 112 dB	116 dB / 125 dB	Remote Control
DRIVERS (LF/HF)	6.25" 436H / 1" 431 G; Self-Shielded Neodymium Motor Structures	8" 438H / 1" 431G; Self-Shielded Neodymium Motor Structures	12" 432G; Self-Shielded	LSR4300 Control Center Software USB Cable
SENSITIVITY(+4dBU, -10 dBV)	94 dB/1m	94 dB/1m	94 dB/1m	- USB Cable
INPUTS:ANALOG	XLR, ¹ /4" Balanced, +4 dBU, -10 dBV	XLR, ¹ /4" Balanced, +4 dBU, -10 dBV	XLR, ¹ /4" Balanced, +4 dBU, -10 dBV, LFE +10 dB Gain	LSR4300
DIGITAL	AES/EBU XLR, S/PDIF RCA	AES/EBU XLR, S/PDIF RCA	AES/EBU XLR IN, OUT; S/PDIF RCA IN, OUT	Seaving sound and revelutionary imalignese to analyze and correct the problems is any soon.
DIGITAL PROCESSING	24 Bit, 96 kHz	24 Bit, 96 kHz	24 Bit, 96 kHz	
DATACONNECTIONS	Harman HiQnet™ Network, USB, RMC Mic	Harman HiQnet Network, USB, RMC Mic	Harman HiQnet Network, USB, RMC Mic	
MAGNETIC SHIELDING	Yes	Yes	Yes	
MOUNTING CAPABILITY	Yes	Yes	No	
FINISH	Dark Graphite	Dark Graphite	Dark Graphite	B Beau Computer Minimum Computer Voltagem Official Official
DIMENSIONS (H x W x D)	387 x 236 x 262 mm (15.25 x 9.3 x 10.3 in)	438 x 267 x 269 mm (17.25 x 10.5 x 10.6 in)	501 x 406 x 495 mm (19.75 x 16 x 19.25 in)	A C C I S S O R Y K I T

29.5 kg (66 lb)

13.1 kg (29 lb)

¹ Measured using 6dB crest factor pink noise in free space at 1 Meter C weighted

* Included in the LSR4326P/PAK and LSR4328P/PAK

EASE v4.2

EASE v4.2 is an acoustic simulation software program designed for the Windows operating system that provides sound system designers an invaluable tool for predicting the performance of a sound system in a given venue. The software program is primarily geared toward large-room acoustics (churches, stadiums, arenas, theaters, etc.) and with additions to v4.2 offers valuable tools for smaller environments such as Privacy indexes for office spaces, etc.



It includes numerous acoustical design and analysis tools for Contractors,

Engineers and Acoustical Consultants, and with the new Vision module offers greatly

improved visual rendering capabilities with the ability to add light sources and import surfaces, making it very desirable for the Architectural world. All features of EASE 4.2 are available as a block, or as partial options. As before, licensing is effected by means of a License Key; however, contrary to the procedure known from version 4.0, this can be obtained directly via the Internet immediately after installation of the program. Program updates can be downloaded directly from the Internet, as well.

Special features of EASE 4.2 for Windows:

- Enhanced user-friendly windows for menus and working surfaces allow direct access to the various program modules and program parameters
- Ample Speaker Data format of 5 Degrees and 1/3-Octave resolution, higher resolutions of up to 1 Degree and 1/24-Octave bandwidth can be stored in DLLs and used for calculations
- Introduction of complex Speaker Data including magnitude and phase, direct reading of measured impulse responses in all common measuring-file formats (TEF20, MLSSA, WAVE, MF)
- Provision of Speaker-DLLs for Line-Arrays
- Cluster calculation modules for speaker assemblies for far-field applications, DLLs for near-field and far-field calculations
- Data format of wall materials expanded to include diffusion coefficient
- Improved and simplified entering of room data, no limitation of model components, newly developed DXF import from AutoCAD 3D volume models, and entering of textures
- Simplified Room Modeling thanks to new Tools like expanded Extrude function and Object definition for partial models

- Room Visualization by high-definition rendering technique and with textures
- New Hide Option as 3D Rendering by means of lighting appliances
- New room-acoustical calculating module AURA based on CAESAR (University of Aachen) offers new and expanded tools and indexes not available in v3.0
- 2D and 3D Mapping of all room-acoustical measures according to ISO 3382 with due application of the expanded Wall Material data base (absorption and diffusion)
- New Ray-Tracing options in AURA, like Echogram and AURA-Response
- Better visualization of impulse response computations
- New Predicted Tail computation for obtaining a complete impulse response
- Expanded features of off-line and online (real time) Auralization in EARS
- Real time auralization remains possible without additional hardware and in dual channel operation
- Storage capacity limited only by the actual hardware layout
- EASE Speaker Lab module with GLL device creation for array and cluster modeling, allowing more accurate virtual importing into base.
- All versions can be purchased with 2 licenses (full versions include 5 seats) for reduced cost.

EASE 4.2 for Windows is totally compatible with EASE 3.0 and is capable of reading all EASE loudspeaker and projectdata files and of converting them into the new format. Current EASE 3.0 users will be able to upgrade to version 4.2 for a nominal upg rade charge. A Pentium-III-Processor with 1000 Hz or more is re commended as a minimum not only for meeting the requirements of auralisation. EASE is supplied on CD-ROM and requires at least 128 MB of RAM plus 150 MB of available hard disk space (without database, which requires 100 MB additionally).

LikeVersion 4.0, EASE 4.2 is a 32-bit program capable of functioning with the operating systems Windows 98/NT/2000/XP.Windows 95 can no longer be recommended, since it requires special adjustments and ServicePackages.All features of EASE 4.0 were included in the new version.

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Section:

06

JBL AUDIO ENGINEERING FOR SOUND REINFORCEMENT

by John Eargle and Chris Foreman

This book comprehensively covers all aspects of speech and music sound reinforcement. It is divided into four sections: Section 1 provides the tutorial fundamentals that all audio engineers will need, discussing subjects such as fundamentals of acoustics, psychoacoustics, basic electrical theory and digital processing. Section 2 deals with the fundamental classes of hardware that the modern engineer will use, such as loudspeaker sys tems and components, microphones, mixers, amplifiers and signal processors. Special at tention is given to digital techniques for sys tem control and to audio signal analysis. Section 3 deals with the basics of sys tem design, from concept to final realization. It covers topics such as basic sys tem type and speech intelligibility, si tesurvey, user needs analysis and project management. Section 4 discusses

individual design areas, such as sports facilities, large-scale tour sound systems, highlevel music playback, systems for the theater, religious facilities, and other meeting spaces. The book is written in an accessible style, but does not lack for ample amounts of technical information. JBL and HPro brand products are prominently feature as examples to illustrate the principles and applications. Available at bookstores and on line.

JBL LIMITED WARRANTY

09409

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The JBL Warranty on professional loudspeaker products (except for enclosures) remains in effect for five years from the date of the first consumer purchase. JBL amplifiers are warranted for three years from the date of the original purchase. Enclosures and all other JBL products are warranted for two years from the date of the original purchase.

Your JBL Warranty protects the original owner and all subsequent owners as long as: A.) Your JBL product has been purchased in the Continental United States, Hawaii or Alaska. (This Warranty does not apply to JBL products purchased elsewhere except for purchases by military outlets. Other purchasers should contact the local JBL distributor for warranty information.) and B.) The original dated bill of sale is presented whenever warranty service is required.

Except as specified below, your JBL Warranty covers all defects in material and workmanship. The following are not covered: Damage caused by accident, misuse, abuse, product modification or neglect; damage occurring during shipment; damage resulting from failure to follow instructions contained in your Instruction Manual; damage resulting from the performance of repairs by someone not authorized by JBL; claims based upon any misrepresentations by the seller; any JBL product on which the serial number has been defaced, modified or removed. JBL will pay all labor and material expenses for all repairs covered by this warranty.

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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