

**MODEL**

**ER 550LX**

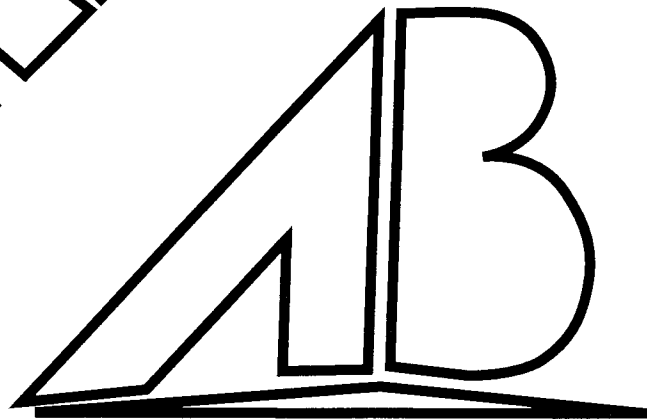
**ER 1250LX**

**ER 2050LX**

**ER 2500LX**

**ER 4000LX**

# OWNERS MANUAL



**INTERNATIONAL**

Serial # \_\_\_\_\_

Date of Purchase# \_\_\_\_\_



**ER550LX, ER1250LX, ER2050LX, ER2500LX, ER4000LX**

**GENERAL**

AB International amplifier products are designed to deliver uncompromised performance in continuous duty commercial and professional audio applications.

The following operating instructions cover the installation and operation of the **PRECEDENT SERIES II AMPLIFIERS**. New owners are encouraged to read the entire contents prior to placing amplifiers into service.

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## INTRODUCTION

To assure absolute long term reliability, the output section of each channel incorporates multiple Motorola Power Transistors, which provide two times the amplifier's rated power in watts of dissipation per channel. The output stage is arranged in a fully-complementary format for class AB/2 operation. The bias current is evenly distributed among all output devices. Bias thermal compensation is accomplished by thermally mating a bipolar semiconductor junction to the heat-producing output device. Triple diffused, high-power driver transistors are employed along with high-speed, high-voltage silicon annular devices for the predriver and inverter stages. Utilization of these components provide the required separation of Ft break points for absolute stability. Fully complementary drive and loading are utilized throughout. Only 20dB of negative feedback is used to reduce forward transfer distortion to minimum levels. VI type energy limiters are incorporated for short circuit protection of the amplifier. Due to the unusually large, safe operating area of output stage, the limiters do not actuate until driving a forty-five degree reactive load of under 2 ohms at full power.

## ENHANCED RAIL TECHNOLOGY

The Precedent Series II features ENHANCED RAIL TECHNOLOGY "E\*R\*T" circuitry. The latest advancement by AB International allows our amplifiers to perform with clearer and richer sound, separating it from the competition. High DC rails, with properly matched power transformer and high storage low ESR filter capacitors, enable our amplifiers to deliver high level, accurate music power. With E\*R\*T circuitry they consume 30% less AC power and are 20% lighter than competitive amplifiers using conventional power supplies.

## STUDIO REFERENCE AND STEREOPHILE SOUND QUALITY

For many years, AB International has been manufacturing high-quality good sounding amplifiers. Most of our products have been designed for the professional touring and contractor installation markets. Quickly our customers found our amplifiers have a clean sound quality, and they started referring our amplifiers to recording studios. Since then we have added Thermal Bias tracking circuitry, high-quality signal path capacitors, custom low ESR power supply storage capacitors, increased damping factor and faster slew rate, all giving a richer sound quality!

## FIVE STAR PROTECTION

The Professional Multichannel Series incorporates a Three Year Five Star protection plan featuring the following unprecedented circuitry.

- VI energy limiters are incorporated for short circuit protection.

- If an extremely low impedance exists, a current sensing circuit will reduce the output to prevent amplifier overdrive.
- If an abnormally high AC line voltage is present or an excessive voltage surge appears, the amplifier will detect the situation and turn itself off.
- If an unlikely DC situation occurs, DC sensing circuits will trigger the amplifier channel and turn it off.
- Thermal sensors are installed in each channel to prevent an over temperature condition.
- "Soft Clip" Circuitry has been incorporated for added protection to prevent hard clipping from improper use.

## CIRCUIT DESCRIPTION

The AB International PRECEDENT SERIES II MODELS, ER550LX, ER1250LX, ER2050LX, ER2500LX and ER4000LX, are professional two channel amplifiers. These compact instruments feature two independent channels with balanced input circuitry, mono bridging, individual channel level control, signal & clip indicators, soft clip speaker protection, ground lift, delay turn on, muting and protection shut off. The Model ER550LX features convection cooling and delivers 135w per channel into 8Ω, 225w per channel into 4Ω and 285w per channel into 2Ω, The Model ER1250LX features convection cooled with fan assist and delivers 270w per channel into 8Ω, 450w per channel into 4Ω and 650w per channel into 2Ω. The Model ER2050LX features fan cooling and delivers 420w per channel into 8Ω, 730w per channel into 4Ω and 1080w per channel into 2Ω. The Model ER2500LX features fan cooling and delivers 550w per channel into 8Ω, 900w per channel into 4Ω and 1250w per channel into 2Ω. The Model ER4000LX features fan cooling and delivers 800w per channel into 8Ω, 1300w per channel into 4Ω and 2000w per channel into 2Ω. These ratings are with all channels driven 20Hz to 20kHz.

## CONSTRUCTION

These amplifiers are designed on an all-modular concept permitting rigorous preassembly module testing and maximum service accessibility. Each functional module is fully tested before final assembly. Although components of the highest quality are used throughout, each amplifier is burned in, prior to shipment, at the worst case operating point to eliminate any possibility of component malfunction. All chassis components are precision machined from high quality aluminum and 14 gauge sheet steel stock. The entire package concept is directed toward maximum efficiency of space and structure, accounting for the compact size and light weight.

All AB International amplifiers are designed for mounting in a standard 19-inch equipment rack, or many of the 19-inch rack type portable cases available. The amplifiers require 7 inches of vertical panel space. Front panels

are machined from solid aluminum stock, with a black textured finish and sturdy rack mount handles.

Placement of the amplifier is not critical for normal operating, provided sufficient air flow is allowed to reach the heatsink array. If the unit is to be placed on a shelf, or a similar unenclosed area, allow four inches of clearance behind the fan air intake to permit air flow through the array. If the amplifier is to be mounted in an equipment rack or cabinet with heat producing equipment, be sure that environmental operating temperatures do not exceed 55°C (131°F). Should overheating occur because of inadequate ventilation, the temperature protection circuitry will automatically protect the amplifier. When a safe operating temperature is restored, the amplifier will return to normal operation.

## **INSTALLATION**

Because the amplifiers are capable of delivering high power from a relatively small physical package, considerable heat can develop in cabinets containing several components. A good rule of thumb to adopt is to provide forced air cooling in any enclosure containing four or more electronic components.

## **POWER CONNECTIONS**

The Professional Series power amplifiers are specified for operation from 120/240 Volt 50/60 Hz mains supply. **Amplifiers are prewired for the line voltage that is indicated on the power cord of the amplifier.** In new installations and portable sound systems, or any situation in which the mains power is suspect, it is wise to confirm appropriate voltage and line polarity **BEFORE** connecting the instrument to power sources.

## **THERMAL PROTECTION**

Certain conditions of operation (restricted airflow cooling, sustained high power operation into low impedance loads) can result in a rise in output device case temperature sufficient to affect the amplifiers performance. Should the heatsink reach 95°C, the output will automatically be disconnected from the load (loudspeaker) and will remain disconnected until the temperature drops below 95°C. The action of removing the load has the effect of eliminating output current. This, in turn, results in an immediate and rapid drop in temperature. The load will automatically be reconnected when the temperature drops below 95°C.

## **COOLING**

The Precedent Series II has a variety of cooling options to meet your needs. All Models, except the Model ER550LX, are equipped with a two level DC fan control circuit. The fan speed is determined by the amplifier heatsink temperature and the air flows from rear to front of the amplifier. At maximum speed, the fan system has a 220 CFM output to assure proper cooling under severe

conditions. The Model ER550LX is convection cooled. For the studio, home theater or applications that require extreme quietness, we offer convention cooling with fan assist at your request.

## **SOFT CLIP SPEAKER PROTECTION**

All AB amplifiers incorporate Soft Clip Speaker Circuitry. This circuitry prevents the amplifier from being driven into a hard clip state, which prevents speaker damage caused by the amplifier being over driven or driven into DC state.

## **SELECTABLE INPUT SENSITIVITY**

These models are equipped with selectable input sensitivity. The factory setting is 1v for rated output, but .775v and 1.5v are also available. If you would like to change the setting set by the factory, you may contact your AB International dealer or the factory for instructions.

## **CAUTION:**

This amplifier is a product of the most advanced technology and manufacturing techniques and is fully protected against overheating, input overload and shorted or mismatched loads. As is the case with any precision instrument, some care should be taken in the unit's operation. The following precautions should be noted and adhered to. Damage resulting from their omission is not covered under the terms of the warranty.

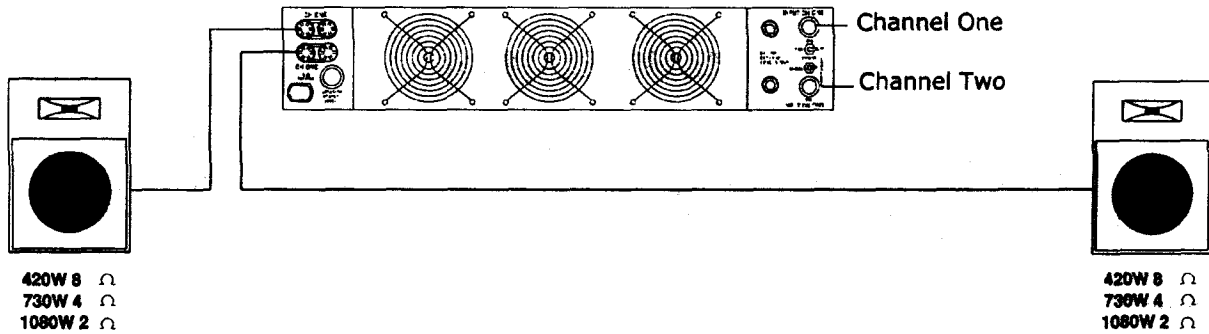
**DO NOT PARALLEL THE OUTPUTS OF ANY CHANNELS BY CONNECTING THEM TOGETHER OR PARALLELING THEM WITH ANY OTHER AMPLIFIER OUTPUT. UNDER NO CIRCUMSTANCES SHOULD THE AMPLIFIER BE OPERATED WITH THE COVER REMOVED. THERE ARE NO USER SERVICEABLE COMPONENTS INSIDE. AVOID POTENTIALLY DANGEROUS SHOCK HAZARDS, KEEP THE COVER CLOSED AT ALL TIMES!**

## **BRIDGED MONO OPERATION**

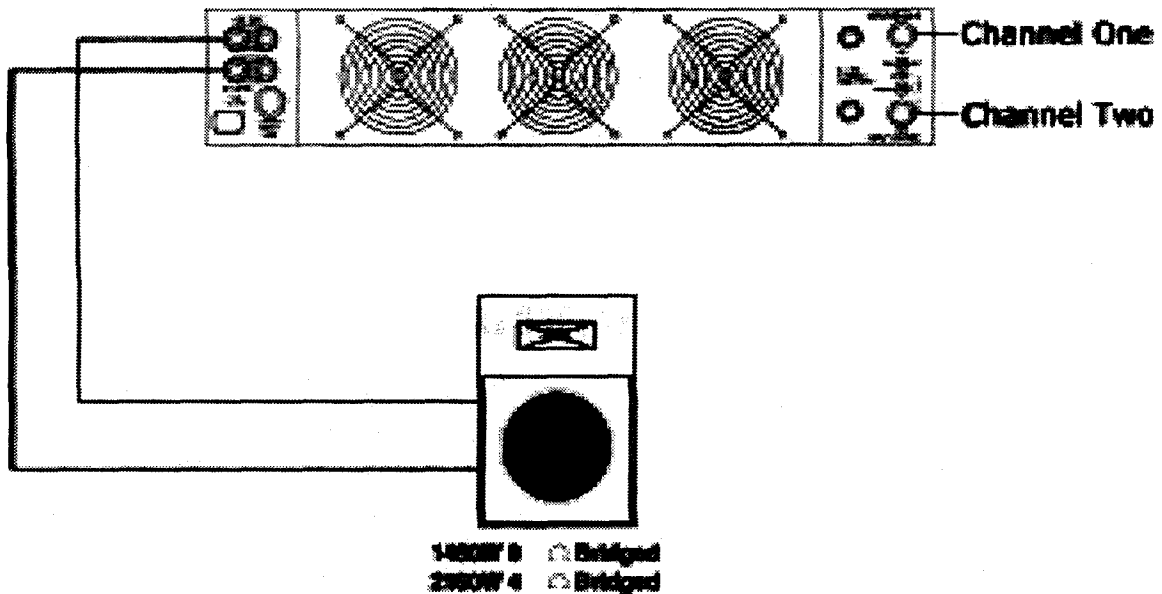
1. Set the INPUT SELECTOR SWITCH to BRIDGED.
2. Connect the input signal to Channel One or Channel Three input jack.
3. Connect the speaker load to the two red terminals of each channel. Confirm the (+) terminal of the speaker to the Channel One and the (-) to Channel Two.
4. DO NOT use the black terminals of either channel.
5. Assure the speaker impedance is 4 ohms or above.
6. Adjust the output level by turning both channels levels up or down equally.

# APPLICATIONS

## Two Way Stereo

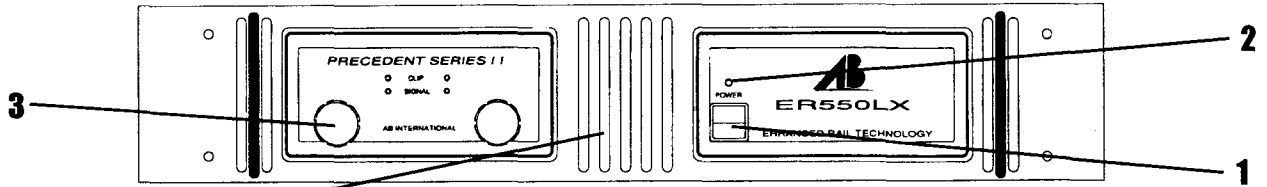


## Bridge Mode Operation



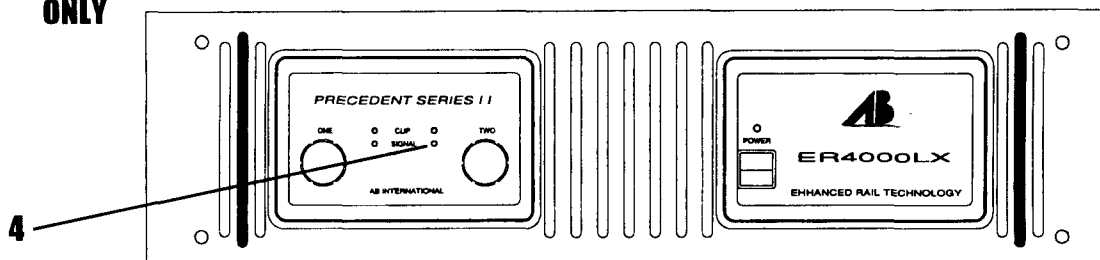
# PROFESSIONAL SERIES AMPLIFIERS FRONT AND REAR PANEL CONTROLS

## ER550 LX, ER1250 LX, ER2050 LX, ER2500 LX - FRONT

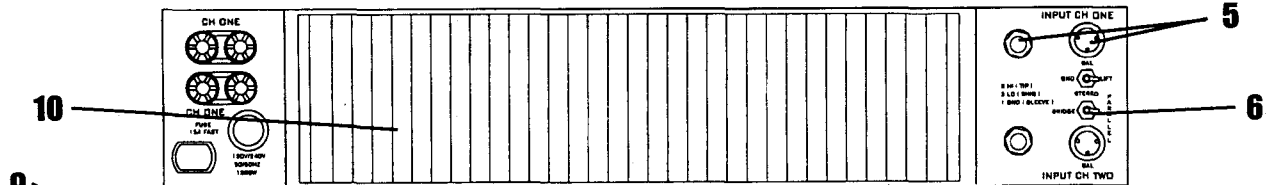


9  
ER1250 LX  
ONLY

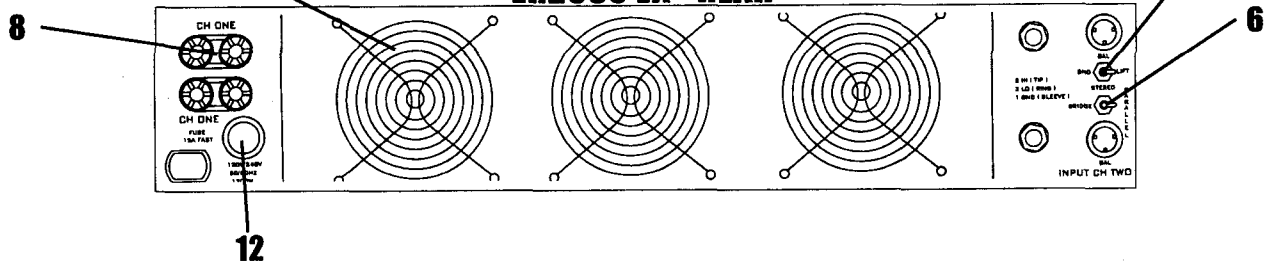
## ER4000 LX - FRONT



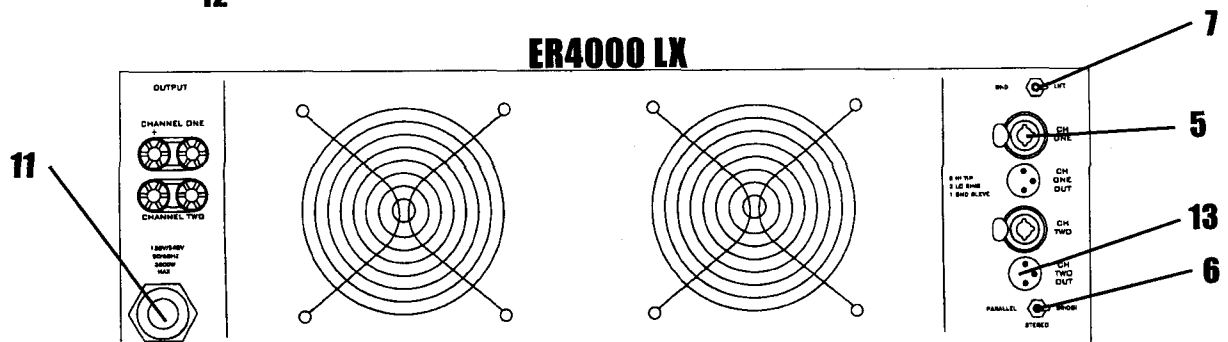
## ER550 LX - REAR ER1250 LX



## ER2050 LX - REAR



## ER4000 LX



## 1. POWER SWITCH / CIRCUIT BREAKER

To turn the Amplifier ON or OFF, press the upper or lower portion of this switch rocker. This switch is also a circuit breaker for the model ER4000LX.

## 2. POWER INDICATING LED

This LED, when illuminated, indicates that the amplifier is on.

## 3. LEVEL CONTROLS

Each channel has a separate low-noise, 41 click detent rotary level control. Rotate controls clockwise to increase level.

## 4. SIGNAL AND CLIP LED'S

Each channel has one signal present (green) and one clip (red) LED. The green LED will illuminate when there is signal present at that channel's output. The red LED will illuminate when the output level exceeds the rated output and the amplifier has gone into "SOFT CLIP" If this situation occurs, you should re-adjust the output level to prevent any possible speaker damage.

## 5. 1/4" JACK INPUT CONNECTIONS

Balanced and Unbalanced inputs can be accepted via the 1/4" jack. Balanced inputs are Tip = High, Ring = Low, Sleeve = Ground. Unbalanced inputs Tip = High, Sleeve = Ground. NOTE: The Balanced 1/4" jack parallels the XLR connector for easy daisy chaining of amplifier inputs.

### BALANCED XLR INPUT CONNECTIONS NEUTRIK "COMBO"

XLR input connectors are provided for the Balanced Input Circuit. Please note that Pin 1: Ground, Pin 2: High, Pin 3: Low.

## 6. INPUT SIGNAL SELECT SWITCH

1. **STEREO:** This is the amplifier's standard mode of operation, whereas channel inputs and outputs correspond directly.
2. **BRIDGED:** This mode is used to obtain the highest power output levels possible from the amplifier. Channels 1&2 may combine to form a single high power mono output. See **Bridge Mono Operation.**
3. **PARALLEL:** The input signal is applied to Ch One with Ch Two receiving the same signal as Ch One.

## 7. GROUND/LIFT SWITCH

The GROUND/LIFT is provided to eliminate ground loops, between this amplifier and a pre-amplifier, that can occur in certain installations.

## 8. OUTPUT CONNECTIONS

Output connections are via five-way binding posts, identified as to polarity with red and black terminals. We suggest the use of dual banana plugs as a convenient and reliable method of hook-up. They allow rapid removal for polarity reversals. This feature is often necessary in the check out and adjustment of multi-element bi-amplified and tri-amplified sound systems. Heavy Class II wire may be used by unscrewing the large plastic portion of the output terminal and inserting the wire into the hole provided. **Note: It is extremely important when making wire connections that no wire stand or end touches an adjacent terminal!**

## 9. AIR INTAKE

Temperature activated DC fans are provided with fan guards to protect from large debris getting inside the amplifier. Note! Air passageways must be clean at all times to assure proper amplifier cooling. A periodic maintenance schedule is recommended depending on environmental conditions.

## 10. HEATSINK

Model ER550LX has convection cooled heat sink, leaving room for proper heat dissipation.

## 11. AC POWER CORD

The amplifiers are prewired at the factory for the voltage indicated on the rear panel of the amplifier.

## 12. AC FUSE HOLDER

The fuse holder contains the Primary AC FUSE. The fuse should only be replaced with one of the same type. If the fuse continues to blow out, stop replacing the fuse and refer to a qualified person for servicing.

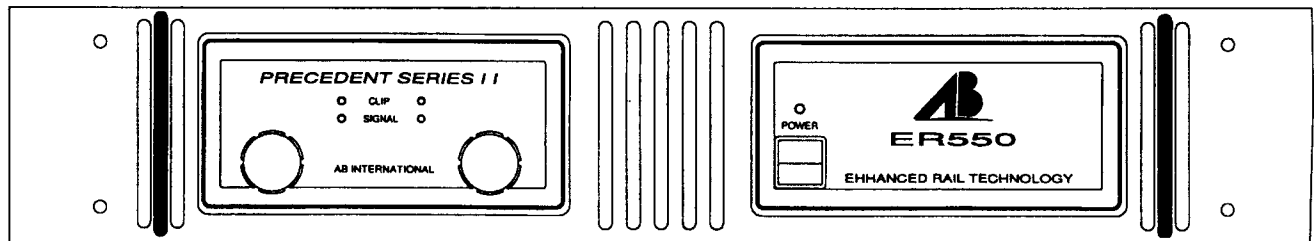
## 13. XLR MALE OUT

This provides a parallel balanced line level signal output.



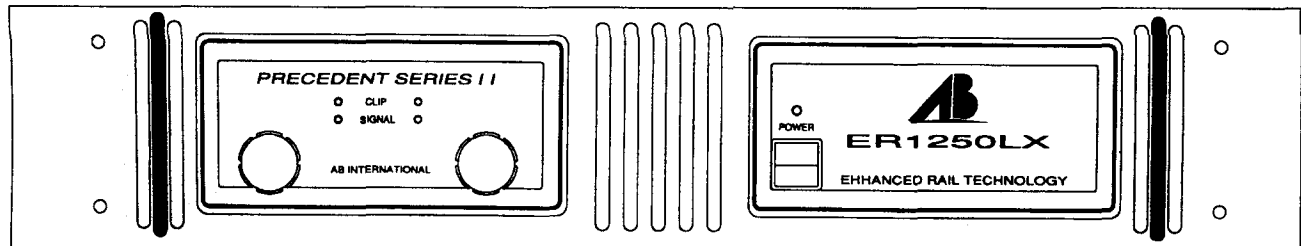
## AB MODEL ER550LX SPECIFICATIONS

Type:	Four Channel audio amplifier
Power Output :	135 Watts per channel 8 ohms
All Channels Driven	225 Watts per channel 4 ohms
20Hz to 20k80	285 Watts per channel 2 ohms
.1% distortion	450 Watts bridged mono 8 ohms
(120 VAC)	570 Watts bridged mono 4 ohms
Gain:	26dB
Control and Indicators	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Power Supply:	Power supplies. 40,000uf Toridal Transformer
Special Feature:	"Soft Clip" speaker protection, Stereophile filter caps
Cooling:	Convection cooled.
Crosstalk:	-86 dB
Damping Factor:	500:1 at 1kHz
Slew Rate:	Closed-loop, greater than 40V per micro second
Freq. Response:	Plus/minus .5dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD or IM, 0.01% to rated output, 20 Hz to 20kHz (typically 0.02 percent)
Hum and Noise:	105 dB below rated output (unweighted, 20kHz bandwidth)
Input Sensitivity:	Selectable, .775v,1.0v,1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (Balanced & Unbalanced); (2) XLR female receptacles (Balanced),
Output Connectors:	Dual 5-way binding posts
Mains Input:	1000W 10A/5A 100/240 VAC 50/60Hz
Dimensions:	3 1/2"H , 19"W , 13 1/2"D behind panel=
Weight:	24 lbs. (10.91 Kg)



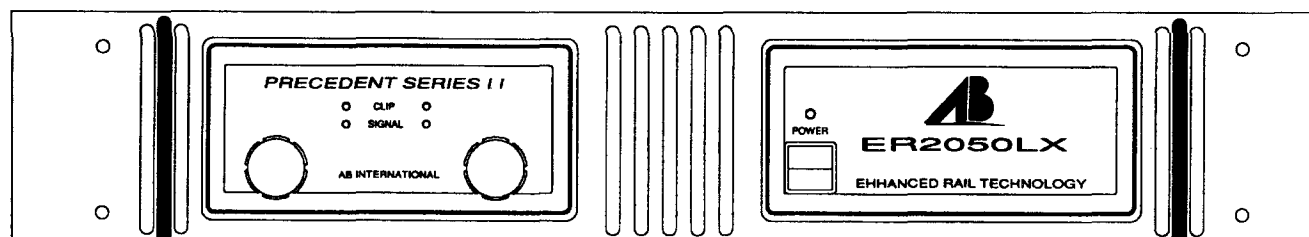
## AB MODEL ER1250LX SPECIFICATIONS

Type:	Four Channel audio amplifier
Power Output :	270 Watts per channel 8 ohms
All Channels Driven	450 Watts per channel 4 ohms
20Hz to 20k80	650 Watts per channel 2 ohms
.1% distortion	900 Watts bridged mono 8 ohms
(120 VAC)	1300 Watts bridged mono 4 ohms
Gain:	28dB
Control and Indicators	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Power Supply:	Power supplies. 40,000uf Toridal Transformer
Special Feature:	"Soft Clip" speaker protection, Stereophile filter caps
Cooling:	Convection cooled with Internal Fan assist.
Crosstalk:	-86 dB
Damping Factor:	600:1 at 1kHz
Slew Rate:	Closed-loop, greater than 40V per micro second
Freq. Response:	Plus/minus .5dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD or IM, 0.01% to rated output, 20 Hz to 20kHz (typically 0.02 percent)
Hum and Noise:	105 dB below rated output (unweighted, 20kHz bandwidth)
Input Sensitivity:	Selectable, .775v, 1.0v, 1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (Balanced & Unbalanced)
Output Connectors:	Dual 5-way binding posts
Mains Input:	1200W 10A/5A 100/240 VAC 50/60Hz
Dimensions:	3 1/2"H , 19"W , 13 1/2" D behind panel
Weight:	26 lbs. (11.81 Kg)



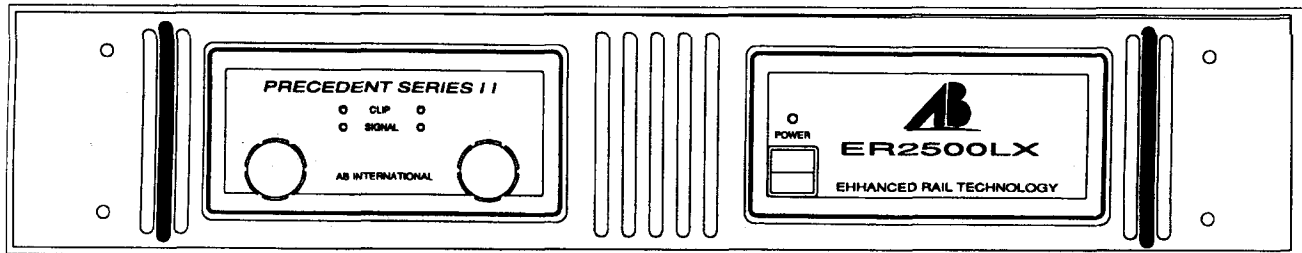
## AB MODEL ER2050LX SPECIFICATIONS

Type:	Four Channel audio amplifier
Power Output :	420 Watts per channel 8 ohms
All Channels Driven	730 Watts per channel 4 ohms
20Hz to 20k80	1080 Watts per channel 2 ohms
.1% distortion	1460 Watts bridged mono 8 ohms
(120 VAC)	2160 Watts bridged mono 4 ohms
Gain:	34dB
Control and Indicators	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Power Supply:	Power supplies 40,000uf Toroidal Transformer
Special Feature:	"Soft Clip" speaker protection, Stereophile filter caps
Cooling:	Fan cooled
Crosstalk:	-86 dB
Damping Factor:	600:1 at 1kHz
Slew Rate:	Closed-loop, greater than 40V per micro second
Freq. Response:	Plus/minus .5dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD or IM, 0.01% to rated output, 20 Hz to 20kHz (typically 0.02 percent)
Hum and Noise:	105 dB below rated output (unweighted, 20kHz bandwidth)
Input Sensitivity:	Selectable, .775v,1.0v,1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, balanced and unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (balanced & unbalanced)
Output Connectors:	Dual 5-way binding posts
Mains Input:	1800W 100/240 VAC 50/60Hz 15A/10A
Dimensions:	3 1/2"H , 19"W , 15"D behind panel
Weight:	34 lbs. (15.45Kg)



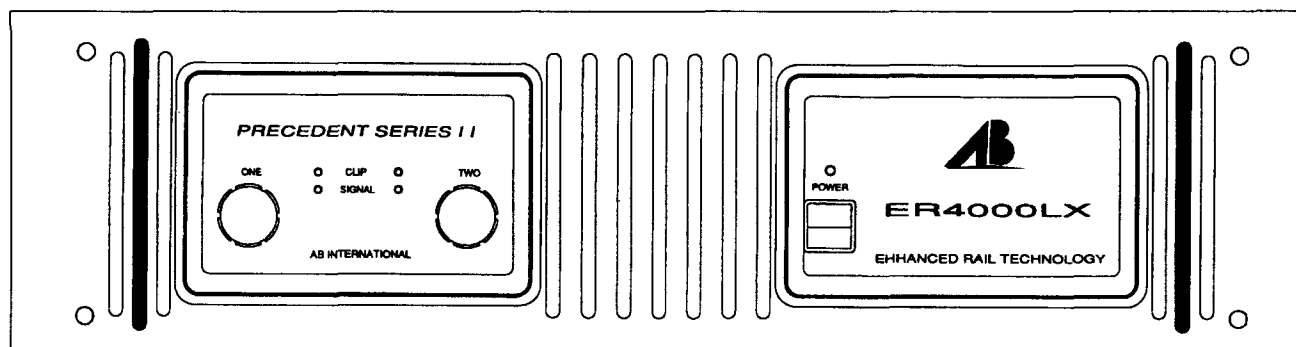
## AB MODEL ER2500LX SPECIFICATIONS

Type:	Four Channel audio amplifier
Power Output :	550 Watts per channel 8 ohms
All Channels Driven	900 Watts per channel 4 ohms
20Hz to 20k80	1250 Watts per channel 2 ohms
.1% distortion	1800 Watts bridged mono 8 ohms
(120 VAC)	2500 Watts bridged mono 4 ohms
Gain:	36dB
Control and Indicators	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Power Supply:	Power supplies 80,000uf Toridal Transformer
Special Feature:	"Soft Clip" speaker protection, Stereophile filter caps
Cooling:	Fan cooled
Crosstalk:	-86 dB
Damping Factor:	800:1 at 1kHz
Slew Rate:	Closed-loop, greater than 40V per micro second
Freq. Response:	Plus/minus .5dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD or IM, 0.01% to rated output, 20 Hz to 20kHz (typically 0.02 percent)
Hum and Noise:	105 dB below rated output (unweighted, 20kHz bandwidth)
Input Sensitivity:	Selectable, .775v,1.0v,1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, balanced and unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (balanced & unbalanced)
Output Connectors:	Dual 5-way binding posts
Mains Input:	2000W 100/240 VAC 50/60Hz 15A/10A
Dimensions:	3 1/2"H , 19"W , 15"D behind panel
Weight:	39 lbs. (17.73 Kg)



## AB MODEL ER4000LX SPECIFICATIONS

Type:	Four Channel audio amplifier
Power Output :	800 Watts per channel 8 ohms
All Channels Driven	1300 Watts per channel 4 ohms
20Hz to 20k80	1800 Watts per channel 2 ohms
.1% distortion	2600Watts bridged mono 8 ohms
(120 VAC)	3600 Watts bridged mono 4 ohms
Gain:	39dB
Control and Indicators	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch
Turn-On Delay:	3 second, solid state activated
Power Supply:	Power supplies 120,000uf
Special Feature:	"Soft Clip" speaker protection, Stereophile filter caps
Cooling:	Fan cooled
Crosstalk:	-86 dB
Damping Factor:	1000:1 at 1kHz
Slew Rate:	Closed-loop, greater than 40V per micro second
Freq. Response:	Plus/minus .5dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD or IM, 0.01% to rated output, 20 Hz to 20kHz (typically 0.02 percent)
Hum and Noise:	105 dB below rated output (unweighted, 20kHz bandwidth)
Input Sensitivity:	Selectable, .775v,1.0v,1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, balanced and unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (balanced & unbalanced); (2) XLR female receptacles (balanced),
Output Connectors:	Dual 5-way binding posts
Mains Input:	2400W 100/240 VAC 50/60Hz 20A/10A
Dimensions:	5 1/4"H , 19"W , 16 1/2"D behind panel
Weight:	61 lbs. (27.51 Kg)



**AB INTERNATIONAL  
ELECTRONICS, INC.**



**PROFESSIONAL  
SOUND EQUIPMENT**

**LIMITED WARRANTY**

All AB International electronic components receive careful inspection and thorough testing prior to shipment from the factory and are warranted, to the original purchaser, to be free from defects in material and workmanship and to meet or exceed all performance specifications applicable at time of manufacture. AB International will provide, without charge, necessary parts and labor to correct operation for a period of 36 months from date of original purchase provided that the defective system is returned, freight prepaid to such location as may be specified by AB International. The warranty coverage of any AB International product is contingent upon its purchase from an authorized AB International dealer. The AB international warranty is nontransferable.

Warranty coverage will not be extended to any AB International product on which the serial number has been removed or defaced or on which repair has been attempted by any person or agency not authorized by AB International or if in the sole opinion of AB International the system show evidence of tampering, abnormal or unreasonable abuse, accident or operation without regard for the restrictions specified in the instructions which accompany the system. AB International further reserves the right to readjust prices or other design parameters and specifications without incurring the responsibility for modifying previously purchased systems.

AB International specifically excludes from this warranty any responsibility for consequential damages.

To obtain warranty service, you must take the product, or deliver the product prepaid, to an authorized AB International service facility.

This warrant does not cover any damage due to accident, misuse, abuse or negligence. This warranty is valid only in the United States and Puerto Rico.

***Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. AB International shall not be liable for any incidental or consequential damages for breach of any express or implied warranty on this product, except to the extent prohibited by applicable law, any implied warranty or merchantability or fitness for a particular purpose on this product is limited in duration to the duration of this warranty.***

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For the name of your nearest AB International service facility, contact: AB International at (916) 783-7800

**AB INTERNATIONAL ELECTRONICS, INC.  
1830-6 Vernon Street, Roseville, CA 95678**