

SB-301

*Power Amplifier
Instruction Manual*



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Contents

Introduction	2
Design Philosophy	3
Unpacking.....	4
Placement & Ventilation.....	4
Care & Maintenance.....	5
Precautions	6
Front Panel Functions.....	7
Rear Panel Functions	8
Installation & Operation	11
Product Features	14
Loudspeaker Selection.....	15
Troubleshooting.....	16
Specifications	17
Index	18

All operational, technical and descriptive material in this publication is subject to change at any time without notice. For further product information or queries, please contact your Plinius dealer.

Plinius products are designed and manufactured by
Plinius Audio Limited, New Zealand.

Introduction

Congratulations on your decision to become the proud owner of this Plinius SB-301 MKII Power Amplifier.

This manual has been prepared to help you understand the operation of your amplifier, and to provide information about its design and the variety of ways it may be used.

We have designed and manufactured this amplifier to reproduce your favourite music faithfully and accurately. With a little care and a full understanding of the operating recommendations in this manual, your Plinius SB-301 MKII Power Amplifier will provide years of high-quality, trouble-free performance.

Please take the time to read this manual thoroughly before using your amplifier.

SERIAL NUMBER _____

FINAL TEST CERTIFIED BY _____

Design Philosophy

From a distance you can see that the design of the Plinius products is more than an applied styling exercise to the front panel. We have started from the ground up to produce a casing for our electronics that is unrivalled in its physical strength and visual simplicity.

Wherever possible we have reduced the number of parts needed and then invested massively in refining and producing the remaining parts to the highest quality achievable with state of the art computer controlled machines allied with expert craftsman. Examples of this approach include the hydraulically formed corners on the amplifiers giving much greater strength and the one piece housing for the remote control that looks, feels and genuinely is robust.

As with music that you are not familiar with, truly innovative new designs can take time to understand and enjoy. How often have you heard music that you were first unsure of, that over repeated listening, has become a firm favourite?

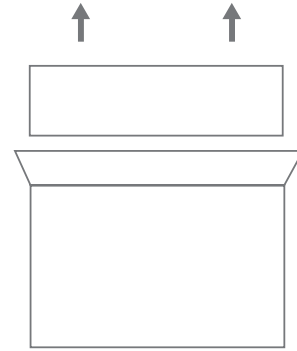
Our designs are fundamentally different to many other companies, and we hope that you will take the time to explore their unique character and qualities because we have not made them different simply to be different. We genuinely believe that their visual and tactile qualities do improve the experience of listening to music and that is our design goal!

The logo for Ross.S features the text "ROSS.S" in a bold, black, handwritten-style font. Below the text is a thick, black, horizontal brushstroke that tapers at both ends, giving it a dynamic, artistic feel.

Ross Stevens
DESIGN DIRECTOR

Unpacking

Open the box from the top and remove the accessories from the foam end caps. You may now proceed to lift the unit from the box. Once the unit is removed you can proceed with the removal of the foam end caps. These caps are designed to fit on the front and back of the unit for maximum protection. Retain the packaging for future transportation of this unit.



Placement & Ventilation

This Plinius product may operate at a moderately high temperature, especially during extended listening sessions. With this in mind, we recommend the following guidelines for placement and ventilation:

- The ideal location is upon a rigid stand, away from direct contact with any temperature sensitive materials, furniture or deep pile carpets.
- Ventilation through and around the amplifier should be kept unimpeded.
- Ensure heat vents (slots in the base and lid) are not covered or restricted in any way.
- Equipment racks should be of an open type with no closed side panels and no closed front or rear panels.
- Ensure a minimum of 400mm clearance on all sides of your Plinius unit to other equipment and the shelf above. Ensure the space between the chassis and shelf below the unit is unobstructed at all times.
- DO NOT place this unit in an enclosed cabinet.
- DO NOT stack other audio components on top of this unit.
- NOTE: This unit has been designed for use in moderate climates only, not for tropical conditions.

The design of this Plinius product incorporates a very high level of mechanical decoupling of the input and output. It can however still be influenced by acoustical feedback in the operating environment. The use of acoustic cones or a suitably spiked amplifier stand or table may further enhance the performance of this amplifier. Consult your Plinius dealer for further advice if required.

Care & Maintenance

With simple care and maintenance your Plinius product can be kept looking and operating like new for many years to come.

MAINTAINING THE CONNECTORS

Exposed connectors such as the RCA connectors will be subject to environmental factors, and over time the surface may degrade. This can be greatly reduced by fitting readily available 'RCA caps' to reduce the effects of environmental elements on the RCA connectors. These RCA caps or RCA shorting caps can also provide sonic benefits. Connector cleaning products are also available to clean the RCA and cable connectors and frequent checks and cleaning will help maintain a good signal connection.

NOTE: Do not use RCA shorting caps on output connectors or power amplifier input connectors. Use RCA shorting caps on unused preamplifier stage input connectors only. Standard RCA shielding caps can be used on any unused input or output connectors.

MAINTAINING THE SWITCHES

Switches should be maintained by using each various switch setting periodically. Even if a switch or a switch setting is not used, it is a good idea to toggle small switches and turn rotary switches through the full range of the switch several times in succession to keep the contacts active. Performing this simple action will promote longevity of the switch contacts.

SURFACE CLEANING

From time to time you may wish to clean the surface of your Plinius equipment to remove dust, or any material build up from the atmosphere or on commonly used controls. Your Plinius product is made up of parts that have a hard anodised or a powder coat finish and will clean easily without being damaged.

Cleaning should be carried out using a soft cleaning cloth, dry or with either a small amount of water or a very mild surface cleaner, while observing the following guidelines:

- As a safety precaution, always switch the equipment off prior to cleaning
- Always use a cloth that is soft and clean
- Never use abrasives or polishing compounds anywhere on the unit
- Never apply liquid directly to the surface of the unit
- Use the cloth dry or with mild surface cleaners of either liquid or foaming type
- Apply only small amounts of cleaner to the cloth
- DO NOT rub the surface but wipe clean only. Excessive rubbing may dull powder coat or wear the screen printed text.

Precautions



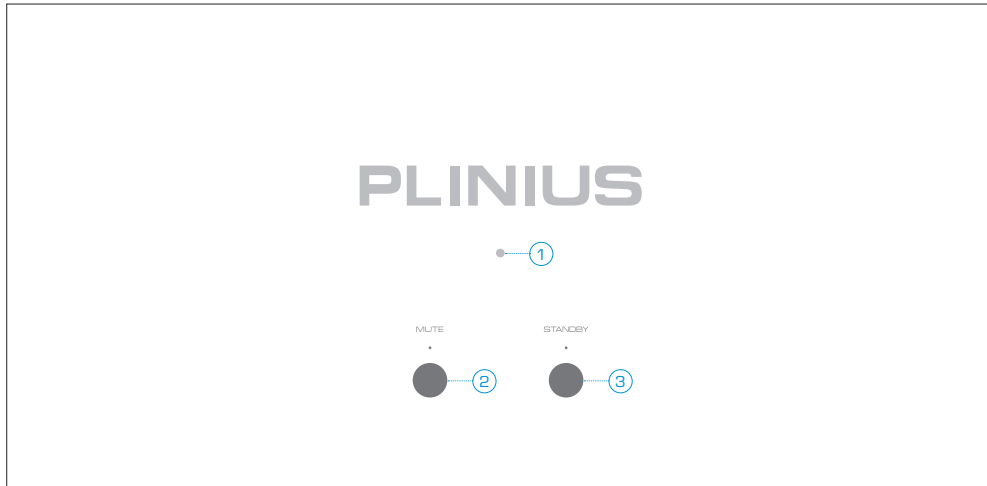
PLEASE TAKE SPECIAL NOTE OF THE FOLLOWING PRECAUTIONS BEFORE OPERATING YOUR NEW AMPLIFIER.

- The Plinius SB-301 MKII Power Amplifier can deliver in excess of 300 watts into 8 ohms. This amplifier is also capable of a very large peak current delivery.
- The Plinius SB-301 MKII Power Amplifier is capable of generating heat that could have an adverse effect on other electronic equipment, furniture, etc.
- This amplifier is of direct-coupled design, and offers no protection from preamplifiers that have a high DC component at their outputs.
- This amplifier operates at hazardous voltage levels. There are some alterations that may be made by you, the owner. However, we recommend that any work requiring removal of the lid be referred to a suitably qualified and experienced service technician.
- DO NOT leave flammable material on the amplifier whilst running, as this could pose a serious fire risk.
- DO NOT attempt to connect any input of this amplifier to its own outputs.
- DO NOT earth any output terminal or connect any of these terminals together without following the instructions in this manual or seeking qualified assistance.
- DO NOT place this amplifier in any position where liquids, or any foreign material may accidentally enter it.
- DO NOT connect any voltage source, short circuit, earth/ground or appliance (other than suitable high fidelity loudspeakers) to the amplifier output terminals.
- DO NOT expose the unit to dripping or splashing.
- DO NOT place objects filled with liquids on the unit, e.g. vases.
- DO NOT place sources of naked flame on the unit, e.g. candles.

Some preamplifiers, processors, CD players etc, produce large switching pulses when switched on causing a loud click through the loudspeakers. For this reason, turn on all other equipment in your system before turning on your Plinius SB-301 MKII, or ensure that the amplifier is in STANDBY. You will not experience this phenomenon with Plinius preamplifiers.

Front Panel Functions

The front of the Plinius SB-301 MKII Power Amplifier incorporates all the facilities you will require on a daily basis.



1. POWER LED

An LED in the centre of the front panel indicates the power is on. When first switched on, the display will vary in brightness until the initialisation sequence is completed, after which the LED remains lit.

2. MUTE SWITCH

It is not recommended practice to interfere with the input cables while the amplifier is switched on and connected to the loudspeakers, so a Mute button is fitted to interrupt the input signal. This allows you to connect and disconnect the input cables without the necessity of turning the amplifier off, or to mute the signal momentarily when desired.

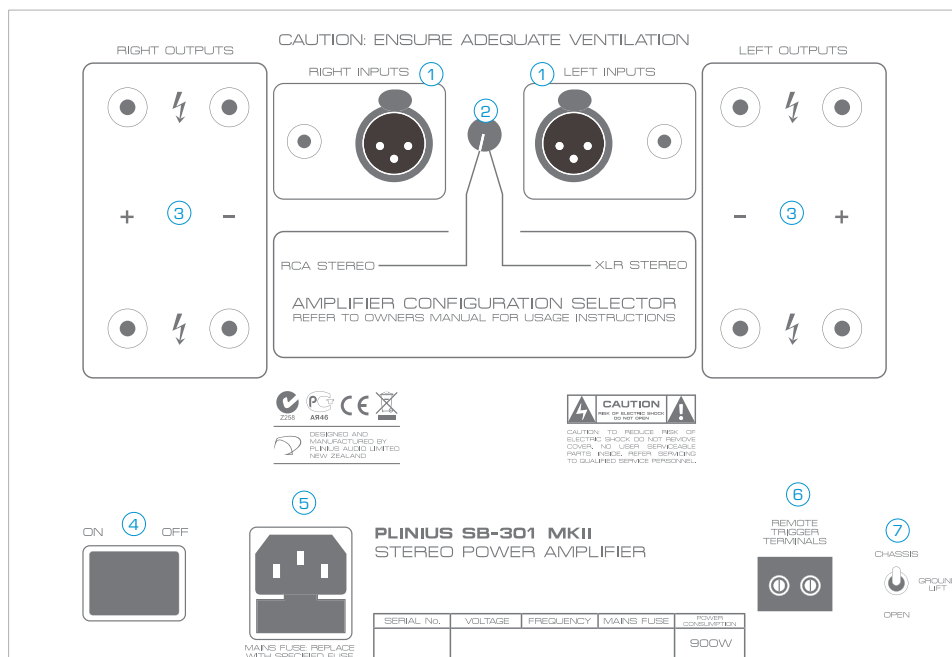
3. STANDBY SWITCH

The standby switch operates the mute and low bias functions simultaneously to enable the unit to be switched into a low bias power saving mode while keeping the amplifier circuitry active. The amplifier is then ready for use and requiring only a few minutes of warm-up before the very best of the amplifier's sonic qualities may be experienced. In Standby mode the LED is ON.

When the amplifier powers up from start, it will automatically go into Standby and disconnect the speaker outputs. The standby switch or remote trigger can be used to take the unit out of Standby and begin listening. NOTE: The Standby mode will override mute. When taken out of standby the unit will return to the previous state.

Rear Panel Functions

This panel incorporates all the terminals for connecting the input signals from your preamplifier and output to the loudspeakers and mains supply. Be sure that you understand your system's requirements fully before you make any connection to this amplifier.

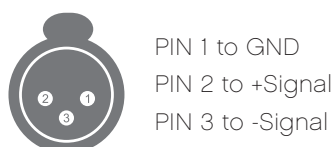


1. INPUT TERMINALS

Input terminals for your Plinius SB-301 MKII Power Amplifier are easily accessible and fitted near the top centre area of the rear panel.

RCA INPUTS: These standard RCA terminals are for use with unbalanced signals from most signal sources such as audio preamplifiers.

XLR BALANCED INPUTS: XLR connectors fitted to this amplifier are for use with balanced line signals from audio preamplifiers. Balanced signals are carried via a three way cable that connects all three pins at each end of the interconnect cable. The XLR input pin configuration used in all Plinius products is as follows:



NOTE: Because of the way balanced XLR inputs are configured it is not possible to connect both XLR and RCA at the same time.

2. AMPLIFIER CONFIGURATION SELECTOR (ACS)

The Amplifier Configuration Selector (ACS) is a unique switching method that exploits all of the operational features of your Plinius SB-301 MKII Power Amplifier. By using this switch it is possible to operate your amplifier with either balanced or unbalanced signals.

The ACS switch options are:

- **RCA STEREO:** This option provides a stereo output via both left and right output channels from a stereo signal connected to both left and right input RCA inputs.
- **XLR STEREO:** This option provides a stereo output signal from a balanced stereo input signal connected to both the left and right XLR inputs.

BALANCED/UNBALANCED SIGNALS

Balanced or unbalanced input options will depend on the type of signal available from your preamplifier or other equipment. The Plinius SB-301 MKII provides both options to allow you to choose the most suitable preamplifier for your purposes. Plinius preamplifiers offer both balanced and unbalanced output options.

Balanced line is normally used to transmit signals in a professional environment. Because balanced line effectively reduces or eliminates noise pick-up by the system cabling, it has become increasingly more important in high-quality domestic high fidelity systems.

Unbalanced leads such as single ended, RCA or coaxial are common and are used in the majority of audio signal systems. The terminal plug and socket are most commonly called RCA and can be found on your Plinius SB-301 MKII for use as the standard input terminals for both left and right inputs.

3. OUTPUT TERMINALS

Output connections for the loudspeakers are provided on the left and right hand side of the rear panel. Two parallel pairs of binding posts for each channel are fitted – these provide ease of use with bi-wiring and multiple cables requiring a large contact area.

4. MAINS SWITCH

This heavy-duty rocker switch in the centre of the panel turns the Mains/Line Power to the amplifier ON or OFF. An LED in the centre of the front panel indicates that the power is on. When first switched on the power LED will vary in brightness for ten seconds – this is an initialisation sequence, after which the power LED remains lit. The amplifier draws a moderately high current when switched on. Despite the "Soft Start Circuit" within the amplifier reducing current demand on the mains as the amplifier is switched on, it is not good practice to rapidly turn the Mains switch on and off repeatedly.

5. MAINS POWER CORD IEC CONNECTOR

This connector is where the mains supply cable from your wall connects to the

amplifier. You will notice that a fuse holder is mounted within this connection, and it holds a mains fuse to provide surge and overload protection for your amplifier.

6. REMOTE TRIGGER TERMINALS

In order to integrate more effectively into a home theatre or multimedia system, the Plinius SB-301 MKII has remote trigger terminals fitted to the rear panel. By connecting a processor with a remote trigger signal to these terminals, the SB-301 MKII can be put in and out of Standby by the processor to which it is connected. When in Standby the amplifier draws less current and will operate at minimum temperature. The output relays are also open, disconnecting the loudspeakers. This may be of advantage in a multi-amplifier and/or remote installations. Polarity of the connections to the remote trigger is not important.

7. GROUND LIFT SWITCH

This switch is located adjacent to the Mains Input Socket, and allows the signal ground to be disconnected from the chassis. In some installations a hum loop may exist due to duplicate ground paths from different equipment. Use this switch to remove the connection from 0V to ground thus allowing some flexibility in your particular set-up. Note that when using Balanced XLR inputs, the ground lift switch should always be set to 'chassis'.

Installation & Operation



WARNING: RISK OF ELECTRIC SHOCK. TERMINALS MARKED WITH ⚡ SHOULD BE CONSIDERED HAZARDOUS LIVE AT ALL TIMES.

This amplifier operates at hazardous voltage levels. We recommend that any work requiring removal of the lid be referred to a suitably qualified and experienced service technician. DO NOT place this amplifier in any position where liquids or any foreign material may accidentally enter it.



PLEASE READ & UNDERSTAND THE PRECAUTIONS WITHIN THIS MANUAL FOR PLACEMENT & OPERATION OF THIS PRODUCT.

CONNECTIONS

Connections to your Plinius SB-301 MKII should be made in the same order as they are listed in this section. DO NOT attempt to connect your Plinius SB-301 MKII until you have read and fully understood these instructions. Although these instructions refer to the connection of a preamplifier, the SB-301 MKII can also be safely installed into multimedia systems by following the same installation guidelines. Should you require any further assistance, please contact your Plinius dealer.



IMPORTANT: DO NOT POWER UP YOUR AMPLIFIER UNTIL YOU HAVE CONNECTED YOUR INPUT/OUTPUTS CORRECTLY FOR YOUR SYSTEM.

PREAMPLIFIER INPUTS

Connect your preamplifier to the input of the Plinius SB-301 MKII using suitable single-ended RCA or Balanced XLR interconnect cables only. If using single-ended RCA inputs, connect your Preamplifier to the RCA inputs on the back of the Plinius SB-301 MKII. Make sure you connect the red coded cable to the red RIGHT RCA input, and the black (or white) cable to the black LEFT RCA input. Also make sure the RCA connectors are a snug fit and are inserted all the way in.



PREAMPLIFIER



SB-301 MKII INPUTS

For XLR input connection, make sure you connect the RIGHT XLR input and LEFT XLR inputs to the right and left outputs from your Preamplifier respectively. Use the Amplifier Configuration Selector switch to select RCA STEREO if you are using unbalanced RCA inputs or to select XLR STEREO if you are using balanced XLR inputs. NOTE: DO NOT connect XLR and RCA at the same time, use only one or the other.

LOUDSPEAKER OUTPUTS

The connection of your loudspeakers to the output posts of the Plinius SB-301 MKII must be made by an 'instructed person' or by ready made loudspeaker cables only.

Connect your left loudspeaker (ie. the one on your left when seated in your normal listening position) to the left output terminals, ensuring that the red positive (+) terminal on the amplifier is connected to the red positive (+) terminal on your loudspeaker. Do the same with the black or negative (-) terminals. Repeat this process for the right outputs.



TERMINATION QUALITY

Quality of the connections must be examined to ensure that high performance trouble free operation is enjoyed. Check that the connections are tight but do not over tighten. If bare wires are used make sure that no loose strands of wire short cross the other terminals or the amplifier chassis. When using plugs such as bananas, be sure to use good quality plugs with a firm fit.

BI-WIRING

Bi-wiring uses two pairs of loudspeaker cables for each channel loudspeaker. You will notice that the rear panel of your Plinius SB-301 MKII has two pairs of output terminals for this purpose. Be sure to follow correct practises for stereo and mono configurations when using bi-wiring.

PHASING (OR POLARITY)

It is important to achieve good stereo imaging in your listening room. By observing the wiring instructions above, each power amplifier/loudspeaker combination should be in phase. If you experience poor stereo image and/or a lack of bass, check that the loudspeaker wiring has been connected correctly. We recommend that you use one of the easily obtainable 'test discs' to help you ensure both phasing and channel orientation are correct. If in doubt, consult your Plinius dealer for advice.

To achieve a sound performance that is correctly aligned to your room, make sure all of the leads carrying signals for the right channel loudspeaker are connected to the right input to the amplifier from your preamplifier or CD player etc. Signals for the left channel should be wired in a similar fashion.

CONNECTING THE MAINS SUPPLY

Firstly, check that the mains supply voltage printed on the rear of this amplifier is similar to the mains supply voltage in your area. If in doubt, please consult your Plinius dealer. Mains supply power connection is via the plug-in lead supplied with your Plinius SB-301 MKII.

Check the wall outlet is switched OFF, then connect the local mains plug end of the lead to the wall outlet. Check the SB-301 MKII is switched OFF, and connect the IEC end of the cable to the IEC socket at the back of the SB-301 MKII. With the cord fully connected, switch the wall outlet ON.

Now that your Plinius SB-301 MKII is configured correctly, switch the power switch on the rear panel to ON. The display LED will cycle in brightness for approximately ten seconds as the internal circuitry stabilises. Use the MUTE switch on the front panel to take the unit out of MUTE and you can now enjoy your new Plinius SB-301 MKII Power Amplifier.

NOTE: This unit must be connected to a mains socket outlet with a protective earthing connection. The wall outlet socket or SB-301 MKII mains switch must be accessible at all times in case of emergency.

WARM-UP PERIOD

You will find that the Plinius SB-301 MKII will become noticeably 'purer' in sound after being on for a period of time. We recommend waiting at least 24 hours before expecting the best quality of sound reproduction from your amplifier.

Product Features

ERROR DETECTION

The Plinius SB-301 MKII Power Amplifier has in-built error detection. This will function under the following conditions:

- When the amplifier is overdriven/clipped
- If any internal fuse is damaged.

Should either of these circumstances arise the amplifier will disconnect both channels and mute the input. This condition will remain until the input signal level is reduced or the damaged fuse replaced. When error detection is triggered the power LED will turn off and the mute LED will pulse. The internal error LED (located towards the front of the circuit board in the top cavity of the amplifier) will also light.

FUSE PROTECTION

When any internal fuse is damaged one or more fuse warning LEDs will light. These LEDs are under the amplifier lid located near the centre of the main circuit board with the rail fuse holders. If any of the internal fuse LEDs are glowing ensure that your amplifier is switched OFF and disconnected from the mains supply. The lid of the amplifier will need to be removed and the fuse adjacent to the lit LED should be replaced. Replace them with the same type only.



IMPORTANT: DO NOT FIT A FUSE WITH A HIGHER RATING.

NOTE: that fuse failure may indicate a severe problem. Check all speakers and speaker cables for damage etc. Should the amplifier continue to exhibit rail fuse failure, contact your Plinius dealer.

MAINS/LINE FUSE

A Mains/Line fuse is fitted within the IEC Mains/Line socket on the rear of the amplifier. A small drawer at the bottom of this socket may be removed (after the IEC plug is removed) by levering it out with a flat blade screwdriver. The fuse fitted should be rated as specified on the rear panel.

In the unusual event that this fuse should blow, you must first establish the cause of this failure (such as power surges, damaged mains cable etc) before replacing the fuse with one of the same rating and type.



IMPORTANT: DO NOT FIT A FUSE WITH A HIGHER RATING.

NOTE: Fuse failure may indicate a severe problem. Should the amplifier continue to exhibit mains fuse failure contact your Plinius dealer.

Loudspeaker Selection

Your Plinius SB-301 MKII Power Amplifier is designed for use with high fidelity loudspeakers. It should not be used to operate any other type of appliance or equipment.

Be certain that your loudspeakers can handle most of the rated output power of this amplifier. You may find loudspeaker specifications confusing or misleading, so you should discuss this with your audio dealer prior to purchase. As a general rule, the use of high power (200 Watt RMS or greater) loudspeakers is recommended and desirable. However, our experience indicates that medium to low power loudspeakers (100 to 200 Watt RMS) are quite often suitable for use on this amplifier, provided the volume is maintained at a level where no distortion is audible.

Impedance of the loudspeaker load is important to ensure the rated performance of this amplifier. If you have doubts about the impedance of your loudspeaker configuration, we recommend you speak to your Plinius dealer.

Troubleshooting

NO SOUND FROM THE UNIT

If the unit is not reproducing audio take the following steps:

- Check the preamplifier is correctly connected to an appropriate input on the unit.
- Check the source is playing, and not paused or muted. If it has adjustable volume, check this is at the usual output level.
- Check the preamplifier is set to select the correct source input. Adjust the source selector for the correct source component.
- Check the volume. Turn the unit volume on the preamplifier up to a point just below the normal listening level. DO NOT turn the volume up to maximum in case the sound begins to come through the speakers.
- Check the unit is not in Standby. If the Standby LED is ON this indicates the unit is in Standby mode. The Standby LED should be OFF for operational mode.
- Check the unit is not in Mute. If the Mute LED is ON this indicates the unit is in Mute mode. The Mute LED should be OFF for operational mode.

SOUND IS QUIET OR DISTORTED

If the sound is quiet or distorted a rail fuse may have failed. While the unit is ON look through the ventilation slots in the top cover. A Red LED being on will indicate a fuse failure. If the fuse has failed, see Fuse Protection in the Product Features section of this manual.

NOTE: If the unit immediately or repeatedly suffers rail fuse failure, there may be a major problem and you should contact your Plinius dealer.

POWER FAILURE

The unit may have suffered mains fuse failure.

- Check the mains fuse and replace if needed. Refer to the Product Features section for further information.

NOTE: If the unit immediately or repeatedly suffers mains fuse failure, there may be a major problem and you should contact your Plinius dealer.

Specifications

POWER

310 watts continuous per channel into 8 ohms.
Both channels driven from 20Hz to 20kHz at
less than 0.2% total harmonic distortion.

FREQUENCY RESPONSE

20Hz to 20kHz ± 0.2 dB
-3dB at 70 kHz

DISTORTION

Typically $<0.05\%$ THD at rated power
0.1% THD and IM worst case prior to clipping

CURRENT OUTPUT

100A short duration peak per channel.
Fuse protected

RISE TIME

Typically 5 μ s

PHASE RESPONSE

+0° at 20Hz and -14° at 20kHz

HUM AND NOISE

100dB below rated output 20Hz to 20kHz,
A weighted

INPUT IMPEDANCE

47k ohms

GAIN

RCA Inputs: 32dB
Balanced Inputs: 38dB

POWER/CURRENT CONSUMPTION

900W
1.6A (370W) Class AB Idle
0.2A (46W) Standby

DIMENSIONS

Height: 220mm (8.75")
Width: 500mm (19.75")
Depth: 455mm (18")
Weight: 38kg (83lb)

Index

ACS (Amplifier Configuration Selector).....	9
Balanced Signal.....	9
Bi-wiring	12
Care & Maintenance.....	5
Display LED.....	7
Error Detection	14
Front Panel Layout.....	7
Fuse Protection.....	14
Ground Lift Switch.....	10
IEC Power Connector	9, 13
Input Terminals.....	8, 11
Loudspeaker Impedance	15
Loudspeaker Power	15
Mains/Line Fuse.....	14
Mains Supply Connection	13
Mains Switch	9
Mute Switch.....	7
Operating Temperature.....	6
Output Terminals	9, 12
Phasing.....	12
Placement	4
Rail Fuses	14
RCA Stereo Input.....	8, 11
Rear Panel Layout.....	8
Remote Trigger	10
Safety Precautions	6
Serial Number	2
Standby Switch.....	7
Terminations	12
Troubleshooting.....	16
Unbalanced Signal.....	9
Ventilation.....	4
XLR Stereo Input	8, 11
Warm-Up Period.....	13

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