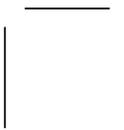


# Elicit-R

Integrated amplifier





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## INTRODUCTION

The **Elicit-R** is built to the highest standard and designed to deliver the best possible audio performance whilst remaining simple to use and easy to setup.

Our recent development work in amplifier design circuitry has allowed us to further advance the **Elicit-R** performance by using new and improved power amplifier circuits (based around the hugely successful Rega Brio-R amplifier) combined with FET II discrete line pre-amplifiers and a programmable stepped attenuator volume control.

The **Elicit-R** includes a high quality, built in, moving magnet phono stage which can be switched off by the user if so required. A simple switch on the rear panel switches to a secondary input socket at line level. This socket can be used with any line level product, however, the circuit has dedicated isolation making it ideal for an external phono stage such as the Rega Aria MM/MC.

These features coupled with Polypropylene capacitors (used throughout the signal path), improved power supplies, increased output power to 100 Watts per channel, all housed in a brand new custom Rega designed case, combine to give the best performance Elicit to date.

## DESIGN INNOVATION

Our time, effort & money has been spent on developing the circuit and construction, utilizing the highest specification of components throughout. As part of the design we have included useful features such as the switchable phono input, to enable the new **Elicit-R** amplifier to be used in a wide combination of systems and have avoided superfluous gadgets such as tone controls or a headphone socket as they can obstruct the signal path and degrade the sound quality.

The **Elicit-R** amplifier further advances the performance of the Elicit II by combining the Brio-R power amplifier circuit, the Elicit II FET discrete line pre-amplifier circuit and a stepped attenuator volume control. Improvements have also been made to the Brio-R power amplifier circuit which includes better power supplies and an increase in the output power to 100Watts per channel.

The **Elicit-R** has been built to Rega's high standards of reliability and quality to ensure many years of musical enjoyment. The primary function of an amplifier is to boost and equalize the low level signal generated by a phono cartridge, CD player or other source component to a level that can drive the loudspeakers. It is vital that the amplifier achieves this whilst minimising distortion, as this would directly affect the music.

## DESIGN INNOVATION continued

A few extravagantly priced, exotic, high-end amplifiers have used volume controls with a few dozen switched resistors to alter volume levels. The **Elicit-R** uses a custom chip which contains 1024 resistors which alter volume and simultaneously retain correct input impedance. Only the resistors operate in the audio/music circuit. The programmed control and volume encoder are entirely separate so the analogue music quality is not affected.

### POWER AMPLIFIER TECHNOLOGY

The output amplifier used in the **Elicit-R** and **Brio-R** was born after extensive research by our engineers to develop a low source impedance emitter follower Class-A driver stage. This is based around a complementary pair of 150w Sanken Darlington output transistors. The technical and sonic improvement gained by the use of low impedance drivers is well known, however, it can feature high standing currents in the driver stage when using standard transistor configurations. By combining the low impedance driver with the Sanken Darlington transistors (with their imbedded thermal bias network running at a lower standing current), this combination forms a complementary emitter follower emulating Class-A conditions with good thermal stability and lower standing currents in the driver stage.

## INSTALLATION & VENTILATION

The **Elicit-R** amplifier will work well on most surfaces, such as a shelf or a table, provided there is sufficient air around the heat sinks to prevent overheating. If using a turntable, avoid magnetic interference by positioning the amplifier as far away from the turntable as the tonearm lead will allow. If possible, place it to the left of the turntable. Keep other equipment away from the amplifier. Due to the layout of **Rega's** amplifier circuit designs, they are virtually unsusceptible to electro magnetic interference, and by virtue of the case, emit practically no electro magnetic radiation. However, placing any electronic equipment, such as sensitive phono amplifiers close together may impair the performance of one or both items. **Never** stack other hi-fi components on top of the **Elicit-R**.

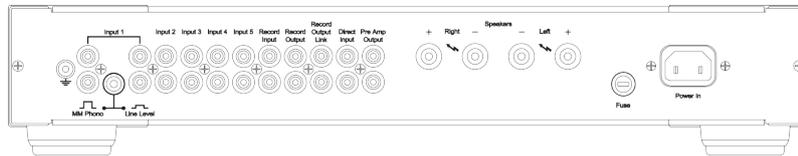
**Do not touch the heat sinks**



**They can become very hot.**

The heat produced by the **Elicit-R** amplifier is dispersed via the heat sinks mounted on either side of the product. Please ensure the side section is always exposed to allow for sufficient airflow resulting in adequate cooling of the amplifier. If the **Elicit-R** is driven at high volume for a long period it will become quite warm. This is entirely acceptable and as long as there is sufficient ventilation the amplifier will continue to work normally. **Never** place the amplifier on carpets, rugs or bedding. Do not force objects into the unit's ventilation openings above or below the sides.

## REAR PANEL CONNECTIVITY



**Line Inputs 2 to 5** - The line inputs enable the connection of sources, such as a CD, DAC, tuner, DVD or Blu-ray player for use with an Audio Visual system. Inputs 2-5 can be used for a DAC, tuner (suitable for use with most types of AM/FM and DAB tuners) and can also be used as a CD input, suitable for use with any CD, Blu-ray and DVD source. All inputs (other than the Direct and Phono input) are at standard line level and can be used for any line level input.

**Pre-Amp Output** - The pre-amplifier can drive at least 5 power amplifiers, sub bass units etc. The pre-amplifier output uses RCA type (phono) connectors. The output level is 760mV with a line input level.

## REAR PANEL CONNECTIVITY

**Record Input and Output** - This is a line level input and output intended for use with a recording device such as a CD/DVD recorder, MD, tape cassette machine or sound card. Selecting the Record function on the amplifier front panel enables the input. This input is completely independent to inputs 1-5 and can be used to monitor the Record function and quality without affecting the source being recorded. The output is a Record signal and is the same signal as selected by the main input selector 1-5 and is not affected by the volume control.

**Record Output Link** - This output is in parallel to the Record output, and can be used to drive ancillary components like headphone amplifiers etc, when a signal unaffected by the volume control and selected by the main input selector is required.

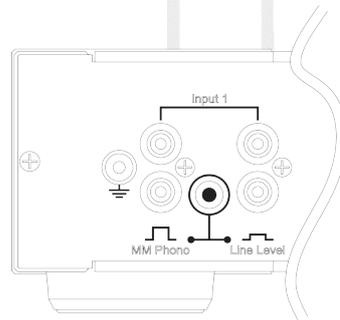
**Direct Input** - This input is routed directly to the power amplifier input with no volume control. The intended use is with multi channel systems, where the traditional two-channel system is used as the front speakers. This input can also be used with an external pre-amplifier if so desired. The sensitivity is 760mV for maximum output.

**CAUTION** : As this input has no volume control, if a source like a CD player is connected to this input, the speakers will be driven to their maximum. This could potentially damage the speakers.

## PHONO LINE INPUT (Input 1)

Input 1 can be used as a phono input for use with moving magnet (MM) or HIGH OUTPUT moving coil (MC) cartridges or as a line input (same specification as inputs 2-5). The switch sited on the back panel, in between the Input 1 sockets, selects the particular input required. If you are using input 1 as a phono input, the switch has to be in the 'out' position and the tonearm (phono) leads **must** be connected to the phono sockets on the left (looking at the back). If input 1 is being used as a line input, the switch has to be in the 'in' position and the line source **must** be connected to the phono sockets on the right (looking at the back).

The phono/line input 1 can be used as two separate inputs. These inputs are selected by the switch sited on the back panel. A typical example would be two turntables where one turntable is connected directly to the left phono sockets and the other is connected, (via a suitable phono amplifier) to the right line phono sockets. **Note:** The unit connected to the right line phono sockets can be any 'line level' source. However, if connecting an external phono stage (such as the Rega Fono or Aria), it is recommended to use this input as it incorporates isolated grounding to reduce noise and will improve performance.



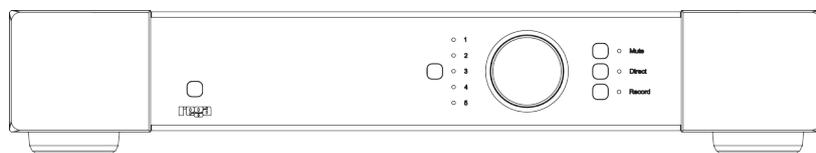
## PHONO LINE INPUT 1 / continued

If you are using an external phono pre-amplifier, similar to a Rega Fono MM or Aria, use the (line 1, button pressed 'in') input sockets on the right. **IMPORTANT** Do not connect a line level source or external phono amplifier to the phono sockets on the left, as this is a low-level, dedicated turntable & tonearm input. When using these inputs for the first time, turn the volume to minimum and gradually increase the level to make sure the signal is ok and not excessive, distorted or muddy sounding (which would be the case if the incorrect input has been used for a line level signal). Switching of line input 1 is performed by a high specification relay.

## EARTHING OF TONEARMS

For Rega turntables, earthing is achieved via the Phono socket ground so a separate earth is not necessary. However, if your tonearm needs to be earthed to the amplifier, the grounding tag may be connected to the grounding nut on the left hand side of the back panel. Please see the 'Rear Panel Connectivity' illustration found on page 5 of this manual.

## FRONT PANEL



**Powering Up** - Depressing the power switch to the left of the control panel turns on the amplifier. The Rega logo will illuminate red. After several seconds you may hear a gentle click, indicating that the switch-on relay has been released and the amplifier is ready for use. Always allow the **Elicit-R** to fully power down (indicated by the power switch LED extinguishing after 2-3 seconds) before switching on again, so that the self-test circuitry can complete its reset cycle.

**Input Selection** - The inputs are selected by firstly pressing the input selector switch, to the left of the input LED's, then turn the volume control knob to the required input. Pressing the input selector switch again will deactivate the input selection function. If left for more than five seconds the input selection function will automatically return to volume control. Alternatively this can be done via the remote handset.

**Mute** - The mute function mutes both the pre-amplifier and power amplifier speaker outputs.

## VOLUME CONTROL

The volume of the amplifier can be adjusted using the volume control knob on the amplifier and via the remote control handset. The volume level is controlled via a microprocessor which takes its information from the volume control knob digital encoder on the front panel or the remote control handset. The volume control has a resolution of 1dB per step, giving a total range of 80 steps over the available gain or volume range of 80dB. There is a calibrated LED display comprised of 20 LED's, which indicates the gain level or relative position of the volume control; this is calibrated in 4dB steps, across the total gain of the volume range. The left and right channels are matched and balanced within 0.2dB, ensuring a centrally placed soundstage no matter what the volume position. Turning the volume control counter clockwise two clicks, with all the LED's off, activates the software controlled mute within the volume control.

### LED DISPLAY DIMMER FUNCTIONS

To change the brightness of the volume control LED display, push the input selector (to the left of the input LED's) switch once. You are now in input selection and dimmer mode. Pressing the mute switch three times will step through the three different levels of display brightness. You have about eight seconds to make your selection using the Mute switch.

## THERMAL CUT-OUT & DC PROTECTION

If the amplifier reaches a temperature liable to cause internal electronic damage, a thermal protection sensor will shut the unit off. If this occurs there will be no sound emitted from the speakers. The unit should be turned off for at least 10 minutes to allow for cooling. After this period, the amplifier should automatically reset and continue to work normally. If it does not, turn the unit off for a longer period, allowing complete cooling of the amplifier before retrying.

**The thermal cutout should only occur with continuous high level driving of a difficult load. If it occurs under normal conditions, there could be a problem with insufficient airflow around the heat sinks or a fault with the loudspeakers. In this case it is advisable to contact your Rega dealer.**

One of the design requirements of the **Elicit-R** was to keep the capacitors in the signal path to a minimum to prevent unnecessary sound degradation at this crucial line level stage. In order to achieve this requirement, the output of both the pre and power amplifier are DC coupled. A servo control is applied to the pre-amplifier. In the unlikely event of a circuit failure causing any one of the above outputs to produce an excessive DC voltage, the DC protection will activate within milliseconds, protecting any connected device.

## OPERATING TEMPERATURE & SHORT CIRCUIT PROTECTION

### **Recommended Ambient operating temperature 5 to 35°C.**

Allow adequate air circulation around the heat sinks on the left and right hand sides, as these are the heat sinks for the power amplifier and will run hot with high listening levels. This unit is intended for use in moderate climates.

If in the event that the speaker leads are shorted, the fold back short circuit protection will protect the output stage from excessive currents. This protection circuit is not placed in the audio signal path and therefore does not affect sound quality.

**Warning:** To reduce the risk of fire, electric shock or product damage, do not expose the unit to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed upon it. **Do not** remove the case covers. There are no user serviceable parts inside.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

## REMOTE CONTROL



The Solaris system remote (supplied) is a system remote handset. It allows you to operate all the various remote controllable functions of this and many other Rega products. (Batteries included - 2 x AAA Alkaline)

RC CODE : Phillips RC5 system number 16 audio pre-amplifier.

## TECHNICAL SPECIFICATION

### **Power output**

105 Watts per channel into  $8\Omega$

127 Watts per channel into  $6\Omega$

162 Watts per channel into  $4\Omega$

### **Input sensitivity for 105 Watts into $8\Omega$**

**Line inputs (input 1 switch set to line) 1-5 and record** - 196mV load 10K

**Phono (input 1 switch set to phono)** - 2mV Load 47K in parallel with 220pF

**Direct input** - 760mV Load 50K

**Power amplifier gain** - 31.6dB

**Record output** - 196mV for rated inputs

**Pre-amplifier output** - 760mV for rated inputs

**Dimensions in mm** - W432 x H82 x D340

**Weight** - 13kg

## TECHNICAL SPECIFICATION

### Frequency Response at 80 Watts into 8 $\Omega$

**Line inputs** - 10Hz (-1dB) to 85KHz (-3dB)

**Phono input** - 15Hz to 85KHz (-3dB)

**RIAA accuracy** - better than +/-0.5dB 100Hz to 20KHz.

Direct 12Hz (0.5dB) to 95KHz (-3dB)

### THD+Noise at 1dB blow clip into 8 $\Omega$

**Direct input (Power amplifier)** - typically 0.003% at 1KHz (measurement bandwidth 22Hz to 22KHz)

**Line input** - typically 0.01% at 1KHz (measurement bandwidth 22Hz to 22KHz)

### Power Supply

AC supply 230V & 115V Nominal +/- 10%.

**Power Consumption** - 375 Watts.

230V / 20mm Fuse / T3.15AL

115V / 20mm Fuse / T6.3AL

OWNERS LOG

(1)

Owner.....

Date.....

Where purchased.....

(2)

Owner.....

Date.....

Where purchased.....

(3)

Owner.....

Date.....

Where purchased.....

Rega Research Ltd, exceptional Hi-Fi designed and made in ENGLAND.