

ECLIPSE

CD Player



Owner's Manual

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IMPORTANT: Please read this entire manual before using this product. Installation and operating instructions inside.

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Congratulations!

Thank you for selecting the **MOON Eclipse** CD Player as a part of your hi-fi reproduction system. This CD Player has been designed to offer state-of-the-art high-end performance in an elegant package, while retaining all the sonic hallmarks on which Simaudio has made its reputation. We have spared no effort to ensure that it is among the finest CD players available. We have been building high performance audio equipment for over 20 years, and the know-how gained through our cumulative experience is an important reason why **MOON** components are so musically satisfying.

Your new CD Player is a true balanced differential design, whereby each of the two channels' audio signal paths incorporates separate and identical circuitry for both the positive and the negative signal.

The performance of your **Eclipse** will continue to improve during the first six weeks of use. This is the result of a "break-in" period required for the numerous high quality electronic parts used throughout this CD player.

Please read this manual thoroughly to acquaint yourself with this product's features prior to using it. We hope you enjoy listening to the **MOON Eclipse** CD Player as much as the pride we have taken in creating this fine audio product. We understand the power and emotion of music and build our products with the goal of reproducing these elusive qualities.

Congratulations 3

Introduction

Your **MOON Eclipse** CD Player incorporates many significant design features to achieve its "world class" level of performance. This is an abbreviated list of the more important features:

A custom **proprietary toroidal transformer design** with lower magnetic, electrical and thermal loss, yielding an improved power transfer and lower regulation factor, resulting in increased current speed and better dynamics.

Fully **balanced differential** digital and analog circuitry.

Separate digital and analog power supplies housed in an external chassis connecting to the main unit via a specially shielded DB15 cable.

Eight stages of DC voltage regulation.

Top loading CD drawer mechanism for improved stability and long term reliability.

Philips CD-Pro 2 transport mechanism mounted with a double action suspension using traction and damping devices.

Custom designed disc clamping system.

BurrBrown DF1704 digital filter with 8X oversampling and four precision matched 24-bit **BurrBrown PCM1704U-K** "Digital To Analog" converters.

Internal upsampling which achieves a 24-bit/352.8kHz level of resolution.

A very accurate 5PPM digital clocking sytem.

A capacitor-free signal path using a DC servo circuit and proprietary 6db/octave analog filter.

Pure copper circuit board tracings with extremely low impedance characteristics.

Separate digital and analog audio circuitry mounted on a single circuit board, each with their own respective ground plane, which minimizes signal path lengths and eliminates any potential for interference and signal degradation.

Extremely **rigid chassis construction** to minimize the effects of external vibrations.

Accurate matching of the finest high quality electronic components in a **symmetrical** circuit design.

Designed to be **powered up at all times** for optimal performance.

Low operating temperature for a longer than normal life expectancy.

Introduction 4

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<u>Unpacking and Warning!</u>

The MOON Eclipse CD Player and the accompanying external power supply should both be removed from their box with care.

The following accessories should be included inside the box with your cd player:

- ✓ AC power cable
- ✓ DB15 cable to connect the CD Player to the external power supply
- ✓ CD Clamp
- ✓ 'FRM' Full Function remote control with three 'AAA' batteries (USA and Canada only)
- ✓ 4 Pointed screw-on tips (for the CD Player's legs)
- ✓ This owner's manual
- ✓ Warranty card (USA and Canada only)

As soon as the CD Player and its power supply are safely removed from its box and placed down, perform a thorough physical inspection and report any physical damage to your dealer immediately. We suggest that you keep the original packaging, and that it should be stored in a safe, dry place in case you're required to transport the preamplifier. The customized packaging is specially designed to protect the CD Player from potential damage that can arise when shipping such a product.

WARNING! A



To reduce the risk of fire or electric shock, do not expose this product to rain or moisture. Do not attempt to "lift the ground" by removing the ground pin from the AC cable. Make sure that your household electrical wiring supports proper AC grounding techniques before plugging in this product. Keep the heat sinks and top cover free of dust to allow for proper heat dissipation. Never expose this product to extreme temperatures. Always connect the audio signal path cables prior to connecting the AC mains.

CAUTION!

No user-serviceable parts inside. Do not remove top cover, as severe electrical shock may result.

IMPORTANT!

Make sure that your local AC voltage complies with the unit's label. Damage caused by plugging thus amplifier into an AC receptacle of the wrong voltage will not be covered by warranty.

Unpacking and Warning

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CD Drive Locking Mechanism

The **MOON Eclipse** uses a CD drive mechanism that must be locked down before transporting the unit and unlocked before playing any compact discs. This locking system is operated by two screws.

Unlocking the transport

Place the **MOON Eclipse** CD Player on a soft surface (i.e. carpet) and carefully turn it so that it rests on its side. Locate the two (2) locking screws, the heads of which will be immediately apparent. Using your fingers, unscrew the heads in a counter-clockwise motion and remove them. Store these screws in a safe and easy to remember location for future use. Playing a compact disc with the transport locking screws installed will result in significantly diminished sonic performance.

Locking the transport

It is not necessary to lock the CD drive mechanism if you only need to move the player around your home. For this scenario, please move the unit with great care, making sure it is not tipped over on its side or that it receives any sudden shocks. If you must transport the CD player under any other conditions, it is crucial that the two locking screws be re-inserted to ensure that the player is not damaged during transport. Gently tighten the screws in a clockwise motion until they are fully inserted. Do not over tighten, otherwise the transit screws may damage the CD drive and suspension.

CD Drive Locking Mechanism

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Installation Tips

Both the **MOON Eclipse** CD Player and its external power supply should be placed on rigid surfaces to prevent any accidents such as falling over. It is highly recommended that each unit sit on its own dedicated shelf. They should both be placed in a location with empty space around them for proper heat dissipation. You should never place another component on top of either unit. As well, you should avoid placing them near a heat source or inside a closed cabinet that is not well ventilated. This could compromise the CD Player's performance and reliability.

Although well shielded, the power supply chassis should not be placed too close to source components sensitive to EMI, such as turntables, phono preamplifiers and the Eclipse CD Player.

Once you have decided on a location for the **Eclipse**, you should install the four (4) pointed screw-on tips onto the cones of the CD Player chassis. These tips will easily scratch most surfaces, therefore it's advisable to follow these instructions:

- 1) Place your Eclipse on a soft surface (i.e. carpet) and carefully turn it so that it rests on its side.
- 2) Screw one tip onto each of the four cones.
- 3) Carefully move the chassis to it's pre-determined location.

Included with these tips is a small metal rod, intended for final adjustments (if necessary) by simply threading it through the tiny hole of each of these tips and then gently turning. These adjustable screw-on tips serve two purposes: Mechanical grounding of the chassis and compensation for surfaces that aren't perfectly level.

Since household dust is an excellent insulator of heat, we suggest that you clean both of the curved side-mounted heat sinks on a regular basis. A smooth nylon brush with long bristles (ie. paint brush) is recommended for this task.

You should make all of your audio signal connections prior to making the AC connection between the **Eclipse** power supply and the AC wall outlet.

Finally, if you have not used a CD player before, you may be unaware that compact discs are very easily damaged, and must be kept very clean. Always store them in their jewel cases. Dirty or finger-marked discs will reproduce music poorly. Moreover, the player may even mute parts of a track, or be unable to find some tracks. If you need to clean a CD remember to use a soft lint-free cloth, using a radial action (i.e. starting from the center and aiming towards the edges). Do not attempt to clean a compact disc using a rotating motion.

Installation Tips 7

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Connecting the Eclipse Power Supply

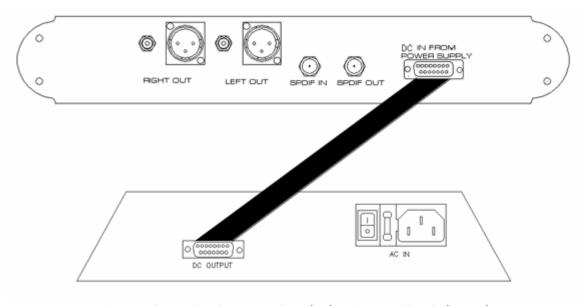


Figure 1: Connecting the Moon Eclipse (top) to its Power Supply (bottom)

- 1. There is one connection that must be made between the **MOON Eclipse** CD Player and its separate power supply as shown above in Figure 1; Using the supplied DB15 cable, connect the end, with the male pin socket, to the plug labeled "DC Output" located on the rear panel of the power supply. Connect the other end of the cable, with the female socket, to the plug labeled "DC in From Power Supply" located on the rear panel of the CD player. To secure the connections, use your fingers to carefully turn each of the two (2) poles on both ends of this cable in a clockwise motion until you can no longer turn them, making sure not to over tighten. Do not attempt to modify the length this cable its specifically designed for optimal performance.
- 2. Connect the supplied AC power cable to the IEC receptacle, located on the rear panel of the CD player's power supply chassis. Alternatively, if you wish, you may use a dedicated high-performance AC cable designed for CD players. Ensure that the AC wall outlet you use has a functioning ground. For the best sonic performance, it is preferable that you plug your MOON Eclipse CD Player directly into a dedicated AC outlet and avoid using an extension cord.
- 3. In order to obtain the maximum performance from your audio system, we strongly recommend that the detachable power cord not come into physical contact with any of the interconnect cables in your system. In the event that this can't be avoided, you should ensure that any cables coming into contact with each other are crossed at ninety degree angles to minimize the contact area.

Loading A Compact Disc

Conventional CD players utilize a clamping system to secure the disc which has a large contact area and relatively firm downward pressure, coupling the disc firmly to the platter. Very early in the development of the **MOON Eclipse** CD player, it became clear to the engineers at **Simaudio** that minimizing disc vibration yielded a large improvement in sound reproduction. Our tests determined that the main source of disc instability was the transport motor.

The clamp design on the **Eclipse** is optimized through the use of both a strong magnet and special damping material. The combination of these elements provides the right amount of force needed to compensate for the large acceleration of the disc required to start, stop and locate tracks, while keeping the level of force low enough so that the sound is not degraded, as would be the case if the disc was rigidly coupled to the motor, with its inevitable induction of vibration.

For the **Eclipse** to operate reliably, it is important to ensure that the surface of the transport platter and the inside of the clamp are free of any dust, or other debris. Otherwise, the disc may slip. Even if the slippage is very slight, it may make it difficult or even impossible for the drive to locate specific tracks on the compact disc.

To load a compact disc into the **Eclipse**, push the top drawer loading mechanism fully open and remove the disc clamp using a slight tilting action. Don't deposit the clamp onto a dusty or dirty surface: minute fragments of magnetic elements (i.e. particles from a file or other metallic objects) are easily picked up and difficult to remove. Examine the inside of the clamp regularly for this type of debris. A small piece of blue-tac provides the most effective method for removing any such debris. **Do not misplace the clamp: the Eclipse will not operate without it and its unique design makes it expensive to replace**.

Having removed the clamp, place the compact disc on the platter. Replace the clamp by centrally locating it on the platter. This is best achieved by holding the clamp a few millimeters above the platter and then letting it drop into position. Close the loading mechanism by gently pulling the top drawer back towards you. The action of closing the loading mechanism with a clamped disc inside will result in the **Eclipse** reading the disc's table of contents; The disc's total number of tracks will appear in both the front panel and top panel display windows; As well, the total playing time of the disc will appear in the front panel display window. Occasional failure may result if small pieces of debris accumulate on the platter, preventing the disc from sitting perfectly level. Clean the platter with your fingers.

Opening the top drawer loading mechanism at any time will mute the output, stop the disc from rotating, turn off the laser pick-up, and cause the compact disc's table of contents to be erased from the **Eclipse**'s memory buffer.

Loading a Compact Disc

Top Panel Controls

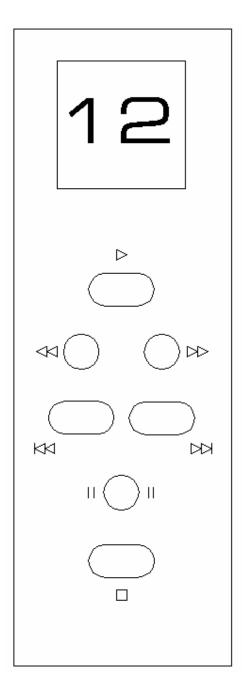


Figure 2: Top panel of Eclipse CD Player

Located at the top of this control panel is a small display window which indicates the track currently being played. When a compact disc is first loaded into the **Eclipse** and its table of contents is read, the total number of tracks will appear in the display.

Press ▶ to begin playing a disc. Pressing ▶ while the track is already playing will result in the current track to start playing again from the beginning.

Press \blacktriangleleft or \Rightarrow to scan backwards or forwards through the track that is currently playing. The scanning speed will increase the longer the button is pressed. As well, the output level is reduced to protect against damage to your loudspeakers.

Press ⋈ to search backward or ⋈ to search forward through the compact disc's table of contents for a specific track. When you've located the track number, press ➤ to begin playing that track. In the event that you initiate a forward or backward track search while a disc is already playing, the output signal will be muted during the search and the track you select (when you stop searching) will automatically start playing; you need not press ▶.

Press II to pause the compact disc currently playing. The disc will continue spinning and the laser will be suspended in its current position. Press pause a second time to resume playing of the disc. Pressing ▶ while the disc is paused will result in the laser going back to the beginning of the current track; since the disc is still paused, you will have to press II to resume playing the disc.

Press ■ to stop the compact disc from playing. The laser will return to the start position of the disc.

Top Panel Controls 10

Front Panel Controls

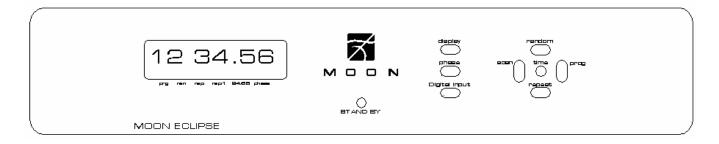


Figure 3: Front panel of Eclipse CD Player

The front panel will look similar to Figure 1 (above). The large digital display window indicates 1) the track number of the compact disc currently playing and 2) either the elapsed time of the current track, the elapsed time of the entire compact disc, or the remaining time of the entire compact disc. Which one of these three (3) times displayed will depend of "Time" button which is described later in this section. When a compact disc is loaded into the **Eclipse** and its table of contents is read, the total number of tracks and total playing time will appear in this window. On the bottom of the display window, from left to right, are six (6) indicator LED's that will illuminate as follows:

'Prg' - when a programmed selection is playing 'Ran' - when "Random" play mode is engaged

'Rep' - when repeat mode is engaged for the entire compact disc 'Rep1' - when repeat mode is engaged for one (1) specific track

'24/96' - when the "Digital Input" for an external digital source is in use

'Phase' - when the phase invert function is engaged

Each of these above functions is described on the following page of this section.

The "Stand by" button disengages the input section from the rest of the **Eclipse**'s circuitry and turns off the digital display. However, when in "Stand by" mode all digital and analog audio circuitry remains powered up to help maintain optimal performance. The blue LEDs on both the **Eclipse** and its power supply will remain illuminated when the **Eclipse** is in "Stand by" mode.

The "Display" button allows you to turn both digital displays, located on both the front and top panels, on and off. The sonic performance of the **MOON Eclipse** CD Player may improve slightly when the displays are turned off.

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Front Panel Controls (continued)

The "Phase" button inverts signal phase by 180 degrees. This is accomplished in the digital domain to maintain both the integrity of the audio signal and the shortest possible signal path. Since some compact discs are recorded out-of-phase, this function may result in a noticeable improvement in the realism of the sound.

The "Digital Input" button is used to select an external digital source which must be connected to the BNC S/PDIF digital input on the rear panel. The **MOON Eclipse** will then function as a Digital-to-Analog converter.

The "Random" button, when pressed, will play each of the tracks on a compact disc in a completely random order, as opposed to the sequential order as they appear on the disc.

Press the "Scan" button and the **Eclipse** will play the first ten (10) seconds of each individual track on the compact disc currently loaded into the player.

The "Time" button provides for three (3) different display modes in the aforementioned large digital display window. By default, the **Eclipse** will display the elapsed time of the track currently playing. Pressing the "Time" button once will display the elapsed time of the whole compact disc currently playing; Pressing "Time" again will display the time remaining on the whole compact disc (i.e. the length of material not yet played); Pressing "Time" again will return the display to the default of elapsed time of the current track.

The "Prog" button allows you to program a selection of tracks in the order that you wish to listen them. After loading a compact disc into the **Eclipse**, select the first track you wish to listen to, using the top panel controls (discussed in the previous section) and press "Prog". To program a second track, select it and press "Prog" again. Press this button after each selected track number. Once you've completed programming your track selection(s), the digital display window will show the number of tracks that have been programmed and their total time. To begin playing your programmed selection, simply press the ▶ button. Pressing ■ will only suspend the playing of the programmed selection. Pressing ■ a second time will clear your program selection from the **Eclipse**'s memory. As well, opening the top drawer at any time will also clear your program.

The "Repeat" button performs three (3) functions: Pressing "Repeat" once will result in the entire disc being played again once it has reached the end of the final track. Pressing "Repeat" a second time will result in the track currently playing being repeated again once it has ended. To cancel this mode, simply press the "Repeat" button a third time. Finally, if you have created a program of selected tracks, pressing "Repeat" once will result in your entire program repeating itself once it has completed its cycle; Pressing "Repeat" a second time will result in the current track from your program being played again once it has ended; Pressing "Repeat" a third time will terminate the "Repeat" mode.

Front Panel Controls 12

Rear Panel Connections

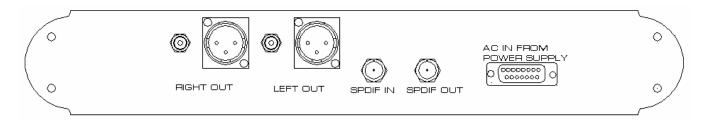


Figure 4: Rear panel of Moon Eclipse CD Player

The rear panel will look similar to Figure 4 (above). On the left side there are two (2) stereo pairs of analog audio outputs: One pair is single-ended (unbalanced) inputs on RCA connectors and the other pair are balanced XLR connectors. We strongly recommend that you use the balanced XLR connectors on your **Eclipse** to maximize its level of performance:

When using an unbalanced interconnect, the audio signal runs through both the center wire and the shield/ground wire. Any noise picked up by this interconnect (ie. nearby magnetic fields such as an AC power cord) will be reproduced by the amplifier and heard through the loudspeakers. Conversely, a balanced interconnect has three separate conductors; one for the ground and two for the actual signal. These two signals are identical except that one is 180 degrees out of phase with the other. For example, when one conductor is carrying a signal of +4 Volts, the other will be carrying a signal of -4 Volts. When these two inverted signals on a balanced line are input into a differential preamplifier such as the **MOON P-5**, any noise picked up by the interconnect will be eliminated since a differential circuit amplifies only the difference between these two signals: Noise on a balanced interconnect will be equal on both conductors and therefore not be processed.

On the right side of the rear panel are two BNC connectors: One labeled "S/PDIF in" is intended for use with an external digital source whereby the **Eclipse** will function as a digital-to-analog converter. The other labeled "S/PDIF out" is intended for use when **Eclipse** will function as a digital transport and digital signal processing will be handled externally by a surround processor like the **MOON Attraction**. Finally, on the far right side is the DB15 connector for the DC input from the external power supply.

These rear panel connectors have been chosen because they provide the best possible connections for your unit. A poor contact will degrade the signal substantially, and plugs and sockets should all look clean and free of dirt and corrosion. The easiest way to clean them is to remove the cables from their sockets and push them back in again. This procedure requires that your CD player and the rest of your components be completely turned off. Not heeding this warning may result in serious damage to your equipment. Special contact cleaning fluids and enhancers should not be used, as they deposit a difficult to remove residue which degrades the performance of your components.

Rear Panel Connections

Operating the Eclipse

Turning on your MOON Eclipse for the first time

Prior to turning this CD Player on for the first time, make sure that every cable is properly connected to avoid any problems. Then turn on your CD Player in the following manner:

- 1) Flick the main rocker switch labeled "POWER" to the '1' (on) position on the rear of the power supply. The blue LED on the front of the power supply will indicate that the power supply is on.
- 2) The blue LED on the front of the **Eclipse** indicates that it is correctly connected to the power supply. Press the push button labeled "Stand by" on the **Eclipse**, and the digital display will show 'no disc'. You are now ready to load a compact disc and begin listening to music.

On and Off Sequence

To avoid having any annoying noises (ie. "thumps" and "pops") emanate from your speakers when powering your **Eclipse** on or off, you should

- 1) Always power up your **Eclipse** CD Player before powering up your preamplifier and/or amplifier.
- 2) Always power down your **Eclipse** after powering down your preamplifier and/or amplifier.

We recommend that you leave your **MOON Eclipse** CD Player powered up at all times to maintain optimal performance. In the event that you plan to be away from your home for a few days, powering off the CD Player may not be a bad idea. Once fully "broken-in", please keep in mind that your **Eclipse** will require several hours of playing time before it reaches its peak performance after you've powered it up again.

Operating The Eclipse

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Remote Control Operation

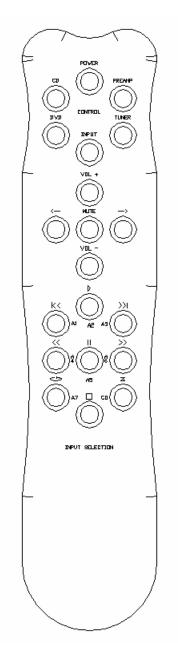


Figure 5: FRM Remote Control

The **MOON Eclipse** CD Player uses the **'FRM'** full function, all aluminum remote control (figure 5). It operates on the Philips RC-5 communication protocol and is can be used with other Simaudio MOON components such as the P-5 and P-3 Preamplifiers, AIR FM Tuner and both the i-5 and i-5080 integrated amplifiers.

The 'FRM' remote uses three AAA batteries (included). To install them, use the supplied Allen key to remove the three screws located on the back plate; insert the batteries in the correct direction and then screw the back plate back into place.

To operate the **Eclipse** with this remote control, you must first press the button labeled 'CD' on the top left corner.

The lower section of the 'FRM' has nine (9) buttons, eight (8) of which operate the Eclipse. All of these functions are available on either the top panel or front panel of the CD Player. Please refer to these aforementioned sections for a more detailed description of each of these buttons:

- ▶ Play the compact disc loaded into the player
- Skip to the previous track on the disc
- M Skip to the next track on the disc
- ← Scan backwards through the current track of the disc
- II Pauses the player
- >> Scan forward through the current track of the disc
- > Repeat the entire disc or the current track
- Stop playing the current track

Specifications

	75VA 22.5VA 8,000μF Philips CD-Pro 2 20,000μF BurrBrown DF1704 BurrBrown PCM1704U-K (4) 20Hz - 20kHz +0/-0.2dB 5Hz - 56kHz +0/-3dB < 0.003% < 0.005% > 112dB > 114dB @ full output 50V/μs > 110db < 1.6dB to below -112 dBFS < 10 picoseconds RMS 1 pair XLR S/PDIF BNC S/PDIF BNC S/PDIF BNC 4.0 Volts 2.0 Volts 25Ω 000 75Ω @ 0.5 Volts All Aluminum Full-Function (FRM) 17″ full-size chassis 18 Watts 120V / 60Hz or 240V / 50Hz 4A short fast blow / 2A short fast blow 47 lbs / 21 Kgs
Balanced Input and Output Pin Assignment: Pin 1 Pin 2 Pin 3	Positive

Specifications 16

Service and Warranty

(U.S.A and Canada only)

Please take the time to complete and mail the warranty card supplied with your **MOON Eclipse** CD Player. This card is necessary to activate your full warranty, as well as allowing you to receive information on new products and services. Alternatively, you may visit our website **www.simaudio.com** and go to the "warranty registration" section where you can register on-line.

If you experience a problem with your **Eclipse**, contact your dealer first. Most often, problems are merely minor oversights that are easily solved, and this will save you both the time and the cost of shipping the amplifier back to us. If your dealer is not able to diagnose the problem, please feel free to contact our service department. If required, service must be performed by a **Simaudio Ltd.** authorized center such as your national distributor. In order to prevent any damage during transport, the **Eclipse** must be packed with all of its original internal materials and shipped in the original box. **Please keep your box and shipping materials.**

MOON Eclipse CD Players are guaranteed against defective materials and workmanship for a period TWO (2) years, parts and labor, to the original owner, with the exception of the CD drive mechanism. The Philips CD drive is guaranteed for ONE (1) year, parts and labor to the original owner. Upon receiving your registration card (either by mail or via our on-line warranty registration), this warranty is immediately upgraded to TEN (10) years, parts and labor to the original owner only, with the exception of the Philips CD drive which is guaranteed for THREE (3) years, parts and labor to the original owner only. Additionally, your Eclipse must be purchased from an authorized MOON dealer to qualify for warranties. These warranties are voided in the case of accident, or if the unit was tampered with, somewhere other than at an authorized Simaudio service center. This warranty is valid only in Canada and USA. In other countries, the warranty conditions are defined and limited only by the local distributor.

Simaudio Ltd. limits its liability to the repair or replacement of the **MOON Eclipse** CD Player. **Simaudio Ltd.** cannot be held responsible for any damages caused to any other equipment, whatever the circumstances and/or causes arising thereof.

<u>Canada</u> Simaudio Ltd.

95 Chemin Du Tremblay, Unit 3 Boucherville (Québec) J4B 7K4 USA Simaudio USA 100 Walnut Street, Door 13 Champlain, NY 12919

Tel. (450) 449-2212 Fax (450) 449-9947

E-mail: service@simaudio.com

Service and Warranty

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