

PROFESSIONAL

Model CDR600 User Guide

Compact Disc Recorder

marantz®

ADDENDUM to user guide for CDR 600

1. Page 7, clause 14

Box "IMPORTANT"

The cordset advised to be used for units set to 220/230V (Europe except UK) should comply with following specifications (instead of those mentioned in the IFU):

Use a cordset consisting of a minimum 18 AWG HO5VVF and grounding type attachment plug, rated 16 A, 250 V.

2. Page 7, clause 14

Subclause "replacing the mains fuse"

The rating of the fuse for the European setting shall read as:

T315 mA (slow blow fuse) Wickman 19195 for 220/240 (Europe).

3. Page 7, clause 14

Box "NOTE!"

For CDR 610 this clause is not valid.

CDR 610 has 2 versions with different delivery positions:

CDR 610/01 : 220V / T315 mA Wickman 19195

CDR 610/06 : 120V / T 600mA Wickman 19198

4. Page 9

"BEFORE RECORDING"

Because of the internal reaction time of the Compact Disc Recorder, there will always be a delay between receiving audio data and writing subcode data.

In the case of an automatic track increment from a digital source, the delay is typically 160 msec, maximum 300 msec.

In the case of an automatic track increment from an analog source, the delay is typically 60 msec, maximum 100 msec.

NOTE !

Automatic track increment in the digital recording mode is only possible with CD format data. When dubbing from DAT or other digital formats, start-ID information may not be recognized by Compact Disc Recorder.

4. Page 10

SYNCHRONIZED RECORDING (REC SYNC)

When current software, the Compact Disc Recorder does not transmit record-sync start data properly approximately 8 percent of the time.

At this time, it is not advisable to rely on this feature for important recordings.

DANGER
INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.

**CLASS 1
LASER PRODUCT**

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GB**U.K.**

This Compact Disc recorder complies with radio interference requirements as laid down in EC regulations.

F**France**

Cet appareil satisfait aux prescriptions de la CE en matière de déparasitage radio.

D**Deutschland**

Dieses Gerät entspricht den Funkentstörvorschriften der Europäischen Gemeinschaft.

Hiermit wird bescheinigt, daß dieses Gerät in Übereinstimmung mit den Bestimmungen der Amtsblattverfügung 1046/1984 funkentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

NL**Nederland**

Deze Compact Disc-recorder voldoet aan de radiostoringseisen zoals deze door de EG zijn opgelegd.

E**España**

Es necesario que lea cuidadosamente su instructivo de manejo.

Este aparato cumple las normas para interferencias de radio establecidas por la CE.

Este aparato lleva los elementos antiparasitarios necesarios para cumplir con las normas que se establecen en el Anexo 5 del Reglamento sobre Perturbaciones Radioeléctricas e Interferencias aprobado por el Real Decreto 138/1989 (B.O.E. de 9 de Febrero 1989).

I**Italia**

Questo apparecchio risponde alle esigenze imposte dalle normative della C.E. circa le interferenze radio.

NORME DI SICUREZZA

Questo apparecchio corrisponde alle norme di sicurezza VDE 0860 e quindi alle norme internazionali IEC 65 risp. le CEE 1.

L'apparecchio è conforme al DM-04-1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

DK**Danmark**

Denne apparat overholder det gældende EF-direktiv vedrørende radiostøj.

ADVARSEL

Uosynlig laserudstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

S**Sverige****MÅRK**

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

Klass 1 laserapparat**SF****Suomi****Varoitus**

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuus luokan 1 ylittävälle näkymättömälle lasersäteilylle.

Luokan 1 laserlaite**Klass 1 laserapparat****CDN****Canada**

English: This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Français: Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le Règlement sur le Brouillage Radioélectrique édicté par le Ministère des Communications du Canada.

MEX**Mexico****NOM**

Es necesario que lea cuidadosamente su instructivo de manejo.

**NOM**

The Model and Serial Number will be found on the base of the set. Please record these in the space provided below.

MODEL NUMBER: _____

SERIAL NUMBER: _____

This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.

1. **Read Instructions** - All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** - All operating and use instructions should be followed.
5. **Water and Moisture** - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool, etc.
6. **Carts and Stands** - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A.  An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. **Wall or Ceiling Mounting** - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization** - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.  AC Polarized Plug
12. **Power-Cord Protection** - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** - The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** - An outdoor antenna should be located away from power lines.
15. **Nonuse Periods** - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry** - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service** - The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
18. **Servicing** - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING
TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user of the presence of uninsulated 'dangerous voltage' within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

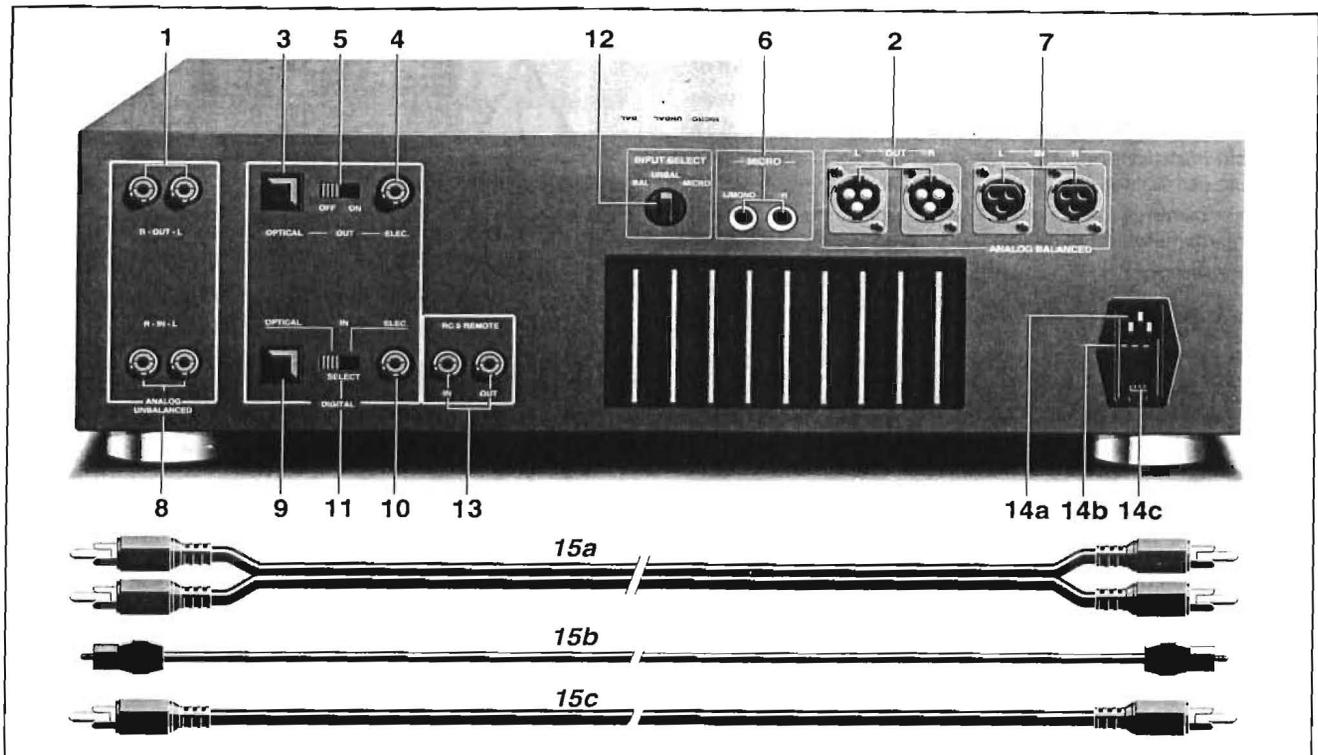
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

This set complies with 21 CFR 1040.10 and with the FCC-Rules, Part 15

INSTALLATION



CONNECTIONS

ANALOG OUTPUTS:

1 ANALOG UNBALANCED OUT

For connection to an analog amplifier.

- Insert a red plug into the 'R' socket and the other plug into the 'L' socket.
- Insert the two other plugs into the corresponding sockets of the TAPE IN or DAT input of your amplifier. You can also use the CD, AUX or TUNER connection, but **never** the PHONO input! For this use a cinch lead with two cinch plugs on either end (**15a**).

2 ANALOG BALANCED OUT

For connecting the recorder to analog stereo equipment with balanced XLR plugs.

DIGITAL OUTPUTS:

These outputs supply a digital signal via an optical or electrical path; for this reason they can only be connected to an amplifier with an optical or electrical digital input, a Digital Analog Converter or a digital sound processor.

Never connect these sockets to a non-digital input of an amplifier such as AUX, CD, TAPE or PHONO!

3 DIGITAL OUT OPTICAL

- Pull out the protective plug from the socket.
- Connect one end of an optical lead (**15b**) to the socket **3**.
- Connect the other end to the optical input of the amplifier or of another piece of equipment.
- Press in the plugs until you hear a mechanical click.

4 DIGITAL OUT ELEC(trical)

Use here a cinch lead with one cinch plug on either end (**15c**).

5 OFF ON

For switching the digital outputs (**3** and **4**) on and off. **Only** use this switch if you connect the recorder to other digital equipment via one of the digital outputs.

ANALOG INPUTS:

6 MICRO

For connection of one (for mono recordings) or two (for stereo recordings) microphones.

7 ANALOG BALANCED IN

For connecting analog stereo equipment with balanced XLR plugs.

8 ANALOG UNBALANCED IN

For connecting any analog source (except PHONO) from which you wish to record.

DIGITAL INPUTS:

Never connect these inputs to a non-digital output!

9 DIGITAL IN OPTICAL

For connecting the recorder to a source which supplies a digital signal via an optical path and that has an optical digital output; e.g. a CD or CDV player. Connection takes place in the same way as via DIGITAL OUT OPTICAL (3).

10 DIGITAL IN ELEC(trical)

For connecting the recorder to a source which supplies a digital signal; e.g. a CD or CDV player. Connection takes place in the same way as via DIGITAL OUT ELEC(trical) (4).

11 SELECT

For switching on the optical (OPTICAL) or the digital (ELEC) input.

NOTE!

Selection of analog or digital input is made with the INPUT SELECT button (26) on the front of the recorder.

GENERAL CONNECTIONS:

12 INPUT SELECT

For selecting the analog inputs:
BAL – ANALOG BALANCED IN (7);
UNBAL – ANALOG UNBALANCED IN (8);
MICRO – MICRO (6).

13 RC5 REMOTE

- For connecting up the equipment when you are incorporating the recorder in a HiFi system with its own remote control system.
- For connecting the remote control receiver EM 2200, available as an accessory. **(Not available in the U.K.)**
- For connecting the recorder to a CD player with a CD REC SYNC function. See 'Synchronized recording' on page 10.

14 Mains socket (a)

- Insert the plug of the mains lead into the mains socket.
- Connect the other end to your mains supply via a **rim-earth wall socket!**

IMPORTANT!

- For units set at 100 V/120 V: use a UL listed cord set consisting of a minimum 18 AWG, type SVT or SJT three conductor cord, a maximum of 15-feet in length and a parallel blade, grounding type attachment plug, rated 15 A, 125 V.
- For units set at 230 V (domestic USA): use a UL listed cord set consisting of a minimum 18 AWG, type SVT or SJT three conductor cord, a maximum of 15-feet in length and a tandem blade, grounding type attachment plug, rated 15 A, 250 V.
- For units set at 220V/230 V - 240 V (Europe except U.K.): use a cord set consisting of a minimum 18 AWG cord and grounding type attachment plug, rated 15 A, 250 V. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed and marked HAR.

Mains fuse holder (b)

See 'Replacing the mains fuses'.

Voltage selector (c)

See 'Power supply setting'.

FITTING A MAINS PLUG (U.K. only)

The wires in the mains lead are coloured:
Blue - Neutral, Brown - Live and Green/Yellow - Earth.
As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- The Brown wire must be connected to the terminal which is marked with the letter L or coloured Red.
- The Blue wire must be connected to the terminal which is marked with the letter N or coloured Black.
- The Green and Yellow wire must be connected to the earth terminal which is marked with the letter E or \perp .

For 13 A plugs, conforming to BS 1363, use a 3 A fuse.
For other plugs, use a 5 A or lower rated fuse in the plug, adapter or at the distribution board.

POWER SUPPLY SETTING

- Check that the voltage selector (14c) on the rear of your recorder indicates the correct supply voltage.
- If not, you can set the recorder to the correct mains voltage yourself.
If your local mains supply will be changed to 230 V, the recorder should be set to 240 V.
When changing the voltage setting, it is also necessary to change the mains fuse to one of the correct rating.

Setting the mains voltage:

- Remove the plug from the wall socket before opening the fuse holder.
- Using a screwdriver, open the flap of the fuse holder.
- Remove the voltage selector.
- Turn the voltage selector until it shows the correct mains voltage.
- Refit the voltage selector.

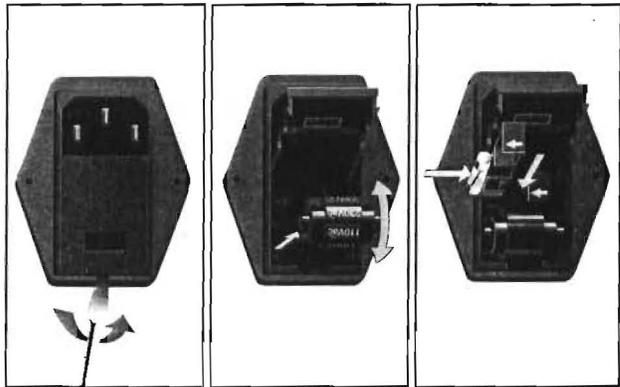
Replacing the mains fuse:

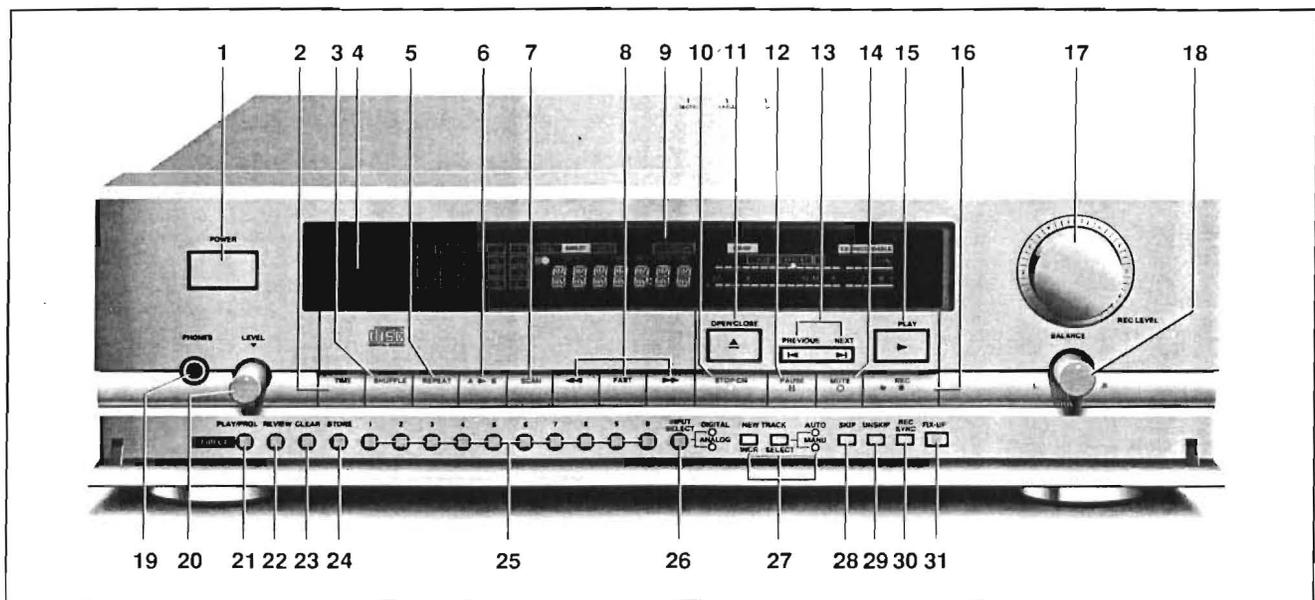
- Withdraw the fuse holders from the recorder.
- Remove the old fuses and replace with fuses of the correct rating:
 - T600 mA (slow blow fuse) Wickmann 19198 for 100/120 V (USA - Canada);
 - T630 mA (slow blow fuse) Wickmann 19195 for 100/120 V (Japan);
 - T315 mA (slow blow fuse) Wickmann 19198 for 220/240 V (Europe);

NOTE!

Delivery position is 220 V/ T315mA Wickmann 19195 in all cases!

- Refit the fuse holders and close the flap.



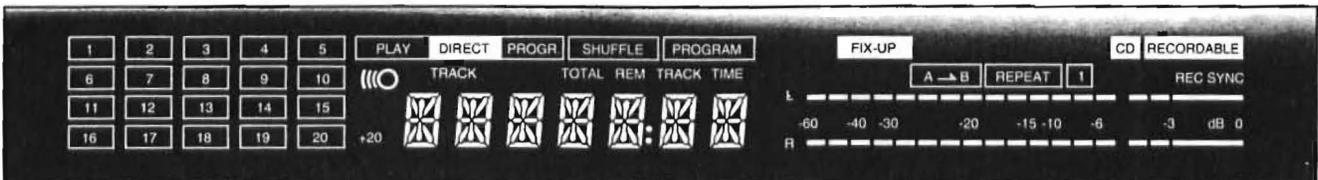


FRONT OF PLAYER

- 1 **POWER** – Switching on and off.
- 2 **TIME** – Selecting the time information you want to see.
- 3 **SHUFFLE** – Playing in random order.
- 4 **IR SENSOR** – Receives the signals from the remote control.
- 5 **REPEAT** – Repeating play.
- 6 **A > B** – Setting the starting and stopping point of a passage to be repeated.
- 7 **SCAN** – Automatically playing the beginning of each track.
- 8 **<< and >>** – Fast search to a particular passage during play. When used in conjunction with **FAST**, the search speed is increased.
- 9 **Display** – Informs you about the functioning of the recorder.
- 10 **STOP/CM**
 - Stopping play/recording.
 - Erasing a programme (CM = Clear Memory).
- 11 **OPEN/CLOSE** – Opening and closing the CD compartment.
- 12 **PAUSE** – Interrupting play/recording.
- 13 **PREVIOUS and NEXT**
 - Selecting another track during play.
 - Selecting a track to start play with.
 - Selecting tracks when compiling a programme.
- 14 **MUTE** – Making a silent recording.
- 15 **PLAY**
 - Starting play.
 - Starting recording from recording-stand-by mode.
 - Returning to the beginning of a track (REPLAY).
- 16 **REC(ord)** – Setting the recorder in recording-stand-by mode.
- 17 **REC(ording) LEVEL** – Adjusting the recording volume when making an analog recording.
- 18 **BALANCE** – Adjusting the balance of the volume between the left and right channel when making an analog recording.
- 19 **PHONES** – Connecting headphones.
- 20 **LEVEL** – Adjusting the volume when listening with headphones.
- 21 **DIRECT PLAY/PR(o)G(ram)** – Direct programming or immediate selection and playback of track numbers.
- 22 **REVIEW** – Checking a programme.
- 23 **CLEAR**
 - Erasing track numbers you do not wish to include in a programme.
 - Erasing track numbers from a programme.
- 24 **STORE**
 - Storing tracks in a programme.
- 25 **1-0 digit keys**
 - Selecting another track during play.
 - Selecting a track to start play with.
 - Selecting tracks when compiling a programme.
- 26 **INPUT SELECT** – Selecting between digital or analog input (See also 'Installation').
- 27 **NEW TRACK**
 - **SELECT** – Selecting between automatic (**AUTO**) or manual (**MANU**al) numbering of (track) numbers while recording.
 - **INCR**(ement) – Manual numbering of (track) numbers.
- 28 **SKIP** – Skipping unwanted passages or tracks.
- 29 **UNSKIP** – Unskipping of skipped passages or tracks.
- 30 **REC SYNC** – Synchro start of the recorder and a CD(V) player.
- 31 **FIX UP** – Storing a recording (Fixing a recorded CD).

REMOTE CONTROL

- The buttons on the remote control have the same functions as the corresponding ones on the recorder.
- **RANDOM** = SHUFFLE.
- **TRACK** = PREVIOUS and NEXT.
- **SEARCH** = << and >>.
- The life of the batteries of the remote control is around one year. For replacement only use batteries of the type RO3, UM4 or AAA.



DISPLAY

- 1-20 track number indicator** – Shows the number of tracks on the CD(R).
- +20** – Lights up when there are more than 20 tracks on the CD(R).
- PLAY DIRECT** – Lights up when the recorder is set to the direct play mode.
- DIRECT PROGR(am)** – Lights up when the recorder is set to the direct programming mode.
- SHUFFLE** – Lights up when the tracks are played in random order.
- PROGRAM** – Lights up when a programme is being stored.
- FIX UP** – Lights up when you store a recording permanently.
- CD** – Lights up when a conventional CD is loaded.
- CD RECORDABLE** – Lights up when a recordable CD (CDR) is loaded.
- (OO)** – Lights up when the recorder receives a command from the remote control.
- TRACK** – Indicates:
 - what track is being played/recorded;
 - the number of tracks on the CD(R) or in a programme.
- TRACK TIME** – Indicates the elapsed/recorded playing time of the track being played/recorded.
- REM(aining) TRACK TIME** – Indicates the remaining playing time of the track being played or the remaining recording time of the track being recorded.
- TOTAL REM(aining) TIME** – Indicates the remaining playing time of the CD or a programme or the remaining recording time of a (recordable) CD (CDR).
- TOTAL TIME** – Indicates the total playing time of the CD or a programme or the total recorded time on a (recordable) CD.
- A-B REPEAT** – Lights up when a passage is repeated.
- REPEAT** – Lights up when you repeat a CD or programme.
- REPEAT 1** – Lights up when you repeat a track.
- REC SYNC** – Lights up when a synchronized recording is being made.
- Recording/reproduction level**
 - RECORDING** – Lights up when CD(R)'s contents list is being scanned.
 - OPEN** – Lights up when you open the CD-compartment.
 - CLOSE** – Lights up when you close the CD-compartment.
 - SCAN** – Lights up when the first 10 seconds of each track are played.
 - ERROR** – Lights up if you make a mistake when operating the player.
 - NO DISC** followed by **LOADED** – Lights up if you try to start playback or recording without a CD(R) in the CD compartment.
 - NO CDR** – Lights up if you try to make a recording on a conventional CD.

RECORDING

- You can record from any CD(V) player and from any analog source. You can also record sound from different sources on the same CDR (= recordable CD). A digital recording will be of the same quality as the original.
- Once a recording has been made it **cannot** be erased; it is however possible, provided the recording has not yet been stored permanently (FIX UP), to skip over unwanted passages, tracks etc. The passages/tracks remain on the CDR, but are skipped over when it is played. You can also add to the recording at any time.
- As long as a recording has not yet been stored permanently (fixed up), the CDR can only be played on a CD recorder. Once a recording has been stored permanently (fixed up) on the CDR, it can be played on any CD recorder as well as on any CD(V) player.
- You can make unlimited copies of CDRs you have recorded yourself (both analog and digital).

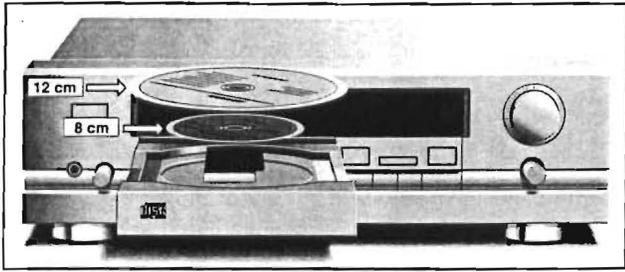
NOTE!

- As soon as you press PLAY to start a recording, the other recorder functions (except MUTE, NEW TRACK, TIME and STOP/CM) will temporarily be switched off to prevent the recording being interfered with.
- Under no circumstances should you switch off the power during recording as this will damage the CDR.

BEFORE RECORDING

- Check whether your recorder, the amplifier and the source from which you are going to record are connected to each other via the correct inputs and outputs.
- Press POWER to switch the recorder on.
- **RECORDING** lights up.
- Select the sound source from which you wish to record, on your amplifier; the selected source will be indicated on the display.
- If no connection has been made and DIGITAL INPUT is selected, then **NO LOCK** will light up.
- Select automatic (AUTO) or manual (MANUAL) (track) numbering with the NEW TRACK buttons.
- **AUTO**: every recorded track is automatically assigned a serial number on the CD.
 - If you are recording from an analog source, recording is automatically stopped if the audio output signal from both channels is below – 60 dB for longer than 30 seconds.
 - If you are recording from a digital source, then recording is stopped if the pause between two tracks is longer than 6 seconds.
- **MANUAL**: with the INCR(ement) button you can assign a serial number to the tracks yourself. You can also store more (track) numbers (from the same sound source) under the same serial number. If, however, you interrupt (PAUSE) or stop (STOP/CM) the recording, a serial number will be assigned automatically to the next recording.
- Open the CD compartment by pressing OPEN/CLOSE.
- **UP/BATE** lights up, followed by **OPEN**.

- Insert a recordable CD, **printed side up** and close the compartment.



- **CLOSE** lights up and the display will show the number of recorded tracks and the total recorded time.
- **OPC** will light up if the CDR is loaded for the first time; the recorder then adapts the power of the laser to this particular CDR (**OPC** = Optimum Power Calibration).
- Press **RECORD** to set the recorder to the recording/stand-by mode.
- The **RECORD** indication (red led above the button) starts flashing; **FULL** lights up if the CD is full.

ANALOG RECORDING

- Select **ANALOG** with the **INPUT SELECT** button.
- You can now record from any analog source. You can also make an analog recording from a digital source, for example from a digital CD which you have recorded yourself. In this case ensure that the CD player and the recorder are connected with each other via the **analog** inputs and outputs.
- Allow the source from which you wish to record, to play.
- Set the volume with **REC(ording) LEVEL** so that the LEDs in the display light up during passages with an average volume of up to -10 dB.
- An excess of up to -3dB is normal during peaks.
- Differences between the left and right channel can be corrected with the **BALANCE** control.
- Press **PLAY** to start recording.
- The track being played/recorded is always shown under **TRACK** and on the number indicator, and its elapsed playing/recording time is shown under **TRACK TIME**.
- When automatic track numbering (**AUTO**) is selected, recording will stop automatically after the last track. When manual track numbering (**MANUAL**) is selected, you must stop recording by pressing **STOP/CM**.
- If you do not yet wish to store the recording permanently (**FIX UP**), you can remove the CDR and add to the recording at any time or skip unwanted passages and/or tracks.
- If you do not wish to record anything else on the CDR you can store the recording permanently by pressing **FIX UP** and then **within 2 seconds REC(ord)**.
- **FIX UP** lights up; the recording will now be stored. The time needed for this will be counted down on the display.
- The recording has now been stored on the CDR and can **no longer** be changed.
- Press **OPEN/CLOSE** to open the CD compartment and take out the CDR.
- Press **POWER** to switch the recorder off.

DIGITAL RECORDING

- Select **DIGITAL** with the **INPUT SELECT** button.
- You can now record from any (digital) CD(V) player.
- You do not need to set the recording level; the signal is taken over exactly from the original.
- Press **PLAY** to start recording.
- The track being played/recorded is always shown under **TRACK** and on the number indicator, and its elapsed playing/recording time is shown under **TRACK TIME**.
- When automatic track numbering (**AUTO**) is selected, recording will stop automatically after the last track. When manual track numbering (**MANUAL**) is selected, you must stop recording by pressing **STOP/CM**.
- If you do not yet wish to store the recording permanently, you can remove the CDR and add to the recording at any time or skip unwanted passages and/or tracks.
- If you do not wish to store anything else on the CDR, you can store the recording permanently by pressing **FIX UP** and then **within 2 seconds REC(ord)**.
- **FIX UP** lights up; the recording will now be stored. The time needed for this will be counted down on the display.
- The recording has now been stored on the CDR and can **no longer** be changed.
- Press **OPEN/CLOSE** to open the CD compartment and take out the CDR.
- Press **POWER** to switch the recorder off.

SYNCHRONIZED RECORDING (REC SYNC)

If the recorder is connected via the **RC5 REMOTE** sockets to a CD(V) player with a **REC SYNC** function you can synchronize the start of recording and playback.

NOTE!

This function is only possible when the **PAUSE** mode of the CD player is cancelled by pressing the **PAUSE** button again!

- Press **REC SYNC** on the recorder.
- **REC SYNC** lights up.
- Press **RECORD** to set the recorder to the recording/stand-by mode.
- Press **PLAY** on the recorder.
- Playback and recording will start at the same time.
- When automatic track numbering (**AUTO**) is selected, recording will stop automatically after the last track. When manual track numbering (**MANUAL**) is selected, you must stop recording by pressing **STOP/CM**.

RECORDING A SILENT PASSAGE (MUTE)

- Press **RECORD** to set the recorder to the recording/stand-by mode.
- Press **MUTE**.
- A 3-second pause will now be recorded.
- The pause time will be counted down on the display.

RECORDING VIA (A) MICROPHONE(S)

- Connect a microphone with a 6.3 mm jack plug to the **MICRO L/MONO** socket if you wish to make a mono recording.
- Connect one microphone with a 6.3 mm jack plug to each of the **MICRO** sockets (**L/MONO** and **R**) if you wish to make a stereo recording.
- Select **ANALOG** with the **INPUT SELECT** button (27) on the front of the recorder.
- Set the **INPUT SELECT** switch (12) on the rear of the player to **MICRO**.
- You can now record your voice.
- Adjust the recording volume using the **RECORD LEVEL** button.

CALLING UP OTHER TIME INFORMATION (TIME)

- Press TIME whenever you want to know the remaining playing/recording time of the track being recorded (REM TRACK TIME).
- Press TIME again if you wish to know the remaining playing/recording time of the entire CDR (TOTAL REM TIME).
- Press TIME again if you wish to return to the elapsed playing/recording time indication (TRACK TIME).

INTERRUPTING RECORDING (PAUSE)

- Press PAUSE.
- The track number will now be incremented automatically.
- Press PLAY to restart recording.

STOPPING RECORDING (STOP/CM)

- Press STOP/CM.
- Playback and recording will stop.

SKIPPING UNWANTED PASSAGES, TRACKS ETC. (SKIP)

As long as a recording has not been stored permanently (FIX UP), you can pass over unwanted passages and tracks with SKIP. The passages/tracks remain on the CDR, but are skipped when it is played on *your CD recorder*. If the CDR is played back from a CD *player* the skipped passages/tracks remain audible. Every skipped passage/track can be reinserted and then skipped again, as required. For each CDR you can skip and/or reinsert a passage or a track a maximum of 20 times.

NOTE!

- Under no circumstances should you switch off the power during skipping/unskipping as this will damage the CDR.
- The last 3 seconds of the last recorded track will only become audible during play as soon as the recording is stored permanently (FIX UP).

Skipping a track

- In STOP mode, key in the track number you wish to skip.
- Press SKIP **within 2 seconds**.
- SKIP lights up and the RECORD indication (red led above the button) starts flashing.
- The track number disappears from the track number indicator.
- At this point you can still cancel the skipping by pressing STOP/CM.
- Press RECORD **within 2 seconds**.
- The track will be skipped during playback (from your CD recorder).

Unskipping a track

- In STOP mode, key in the track number you wish to unskip.
- Press UNSKIP **within 2 seconds**.
- UNSKIP lights up and the RECORD indication starts flashing.
- The number lights up on the track number indicator.
- At this point you can still cancel the unskipping by pressing STOP/CM.
- Press RECORD **within 2 seconds**.
- The track has now been unskipped.

ERROR lights up if you try to unskip a track that has not been skipped before.

Skipping a passage

- During play press A-B at the beginning of the passage you wish to skip.
- A- lights up.
- Press A-B again at the end of the passage.
- A – B REPEAT lights up.
- The passage between points A and B will now be replayed continuously.
- At this point you can still cancel the skipping by pressing A-B, REPEAT, STOP/CM or PLAY.
- Press SKIP.
- SKIP and VERIFY light up and the RECORD indication starts flashing.
- A – B REPEAT lights up.
- Play will now be repeated (three times) from 5 seconds before point A until 5 seconds after point B, in the course of which the skipped passage will be muted.
- At this point you can still cancel the skipping by pressing STOP/CM or PLAY.
- Press RECORD.
- SKIP and RECORD light up.
- The passage will be skipped during playback (from your CD recorder).
- Play continues from point B.

To find the starting and stopping quickly, you can use the <<▶▶>> buttons.

Starting and stopping point of a passage must be within the same track

Unskipping a passage

- During play press A-B at the beginning of the passage you wish to unskip.
- A- lights up.
- Press A-B again at the end of the passage.
- A – B REPEAT lights up.
- The passage between points A and B will now be replayed continuously.
- At this point you can still cancel the skipping by pressing A-B, REPEAT, STOP/CM or PLAY.
- Press UNSKIP.
- UNSKIP and VERIFY light up and the RECORD indication starts flashing; the passage will now be replayed for three more times.
- At this point you can still cancel the skipping by pressing STOP/CM or PLAY.
- UNSKIP ON lights up.
- Press RECORD.
- UNSKIP and RECORD light up.
- The passage has now been unskipped.
- Play continues from point A.

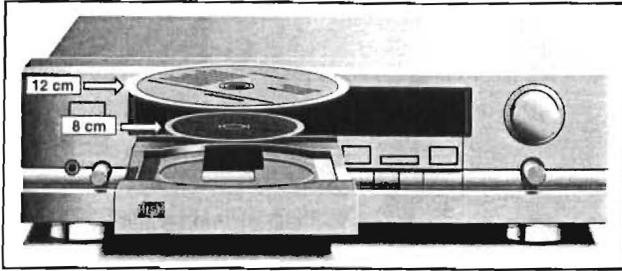
To find the starting and stopping quickly, you can use the <<▶▶>> buttons.

Starting and stopping point of a passage must be within the same track

PLAYBACK

PLAYBACK (PLAY)

- Press POWER to switch the recorder on.
 - **RECORDING** lights up.
- Open the CD compartment by pressing OPEN/CLOSE.
 - **OPEN** lights up.
- Insert a CD, **printed side up** and close the compartment.



- **CLOSE** lights up and the number of tracks and the playing time (or the remaining recording time) of the CD are shown on the display.
- Press PLAY to start playback.
 - You can also press PLAY immediately after inserting the CD; the compartment then closes automatically.
- The number indicator shows how many tracks are on the CD; when a track has been played its number disappears.
- The track being played is always shown under TRACK and its elapsed playing time is shown under TRACK TIME.
- Play stops after the last track.
- Press OPEN/CLOSE to open the CD compartment and take out the CD(R).
- Press POWER to switch the recorder off.

You can interrupt playback by pressing PAUSE. Press PAUSE to restart.

If you press PLAY **during play**, the current track starts again from the beginning.

You can stop playback by pressing STOP/CM or OPEN/CLOSE.

CALLING UP OTHER TIME INFORMATION (TIME)

- Press TIME whenever you want to know the remaining playing time of the track being played (REM TRACK TIME).
- Press TIME again if you wish to know the remaining playing time of the entire CD (TOTAL REM TIME).
- Press TIME again if you wish to return to the elapsed playing time indication (TRACK TIME).

SELECTING ANOTHER TRACK DURING PLAY (1-0)

- Key in the desired number (numbers consisting of two figures must be keyed in **within 2 seconds**).
 - The music stops and a moment later the selected track begins to play.

You can also select the number by using NEXT or PREVIOUS.

SEARCHING FOR A PASSAGE DURING PLAY (<< and >>)

- Hold << down to search backwards to the beginning.
- Hold >> down to search forwards to the end.

If you reach the end of the last track and release >>, play will resume a few seconds before the end of the disc.

At this search speed sound is audible.

Fast search for a passage:

- Press FAST.
- Press << or >> again.

At this search speed no sound is audible.

SCANNING A CD (SCAN)

- Press SCAN before or during play.
 - If the CD compartment was open, it will now close.
 - **SCAN** lights up and the first 10 seconds of each track are played in turn.
- When the player reaches a track which you wish to hear in full, press SCAN again.

STARTING WITH A PARTICULAR TRACK (1-0)

- Set the player to the direct play mode (PLAY DIRECT) using DIRECT PLAY/PR(o)G(ram).
- Key in the required number (numbers consisting of two figures must be keyed in **within 2 seconds**).
 - Play starts from the selected track.

You can also select the number by using NEXT or PREVIOUS and then pressing PLAY.

PLAYING THE CD IN RANDOM ORDER (SHUFFLE)

- Press SHUFFLE before or during play.
 - If the CD compartment was open, it will now close.
 - SHUFFLE will light up and all the tracks will now be played in a random order.
- Press SHUFFLE again if you wish to return to normal play.

During random play NEXT, PREVIOUS can be used.

If you press REPEAT, the tracks will be repeated in a different order each time.

REPEATING A PASSAGE (A > B)

- During play press A > B at the required starting point.
 - A – lights up.
- Press A > B again at the required stopping point.
 - A – B REPEAT lights up.
 - The passage between points A and B will now be replayed continuously.
- Press A > B again if you wish to return to normal play.

To find the starting and stopping points quickly, you can use the << >> buttons.

Starting and stopping point of a passage must be within the same track

REPEATING THE ENTIRE CD (REPEAT)

- Press REPEAT before or during playback.
 - REPEAT lights up and the CD will now be repeated continuously.
- Press REPEAT *twice* to stop the CD being repeated.

REPEATING A TRACK (REPEAT)

- Press REPEAT *twice* before or during playback.
 - REPEAT 1 lights up and the track will now be repeated continuously.
- Press REPEAT again to stop the track being repeated.

It is possible to programme in three ways:

ADD-IN PROGRAMMING: you store in the recorder's memory the tracks which are to be played and their order. Up to 20 tracks can be stored in this way. If you exceed the maximum of 20 tracks, **FULL** will light up.

TAKE-OUT PROGRAMMING: you erase the track numbers you do not want to hear. Up to 20 tracks can be erased. If you exceed the maximum of 20 tracks, **FULL** will light up. In this way you can store as many tracks as there are on the CD.

DIRECT PROGRAMMING: every number you **key in**, will be **directly** included in the programme. Up to 20 tracks can be stored in this way. If you exceed the maximum of 20 tracks, **FULL** will light up.

NOTE!

Once you are programming in one of the two ways, you can **no longer** switch to the other way.

ADD-IN PROGRAMMING (STORE)

- Key in the first required number (numbers consisting of two figures must be keyed in **within 2 seconds**).
- Press STORE **within 2 seconds**.
- PROGRAM lights up; the number is now stored in the recorder's memory.
- Store the other tracks required in the same way.
- Each time you store a track, the number of tracks and the playing time of the programme will be shown under TRACK and TOTAL TIME.
- The track number indicator always shows which tracks have been stored.

You can also select the numbers by using NEXT or PREVIOUS and then store them by pressing STORE **within 7 seconds**. You can also store the tracks **during** play; as soon as you have stored the first number, play continues with the programmed track numbers.

TAKE-OUT PROGRAMMING (CLEAR)

- Key in the required required number (numbers consisting of two figures must be keyed in **within 2 seconds**).
- Press CLEAR **within 2 seconds**.
- The number disappears from the track number indicator; it has now been erased.
- Erase the other tracks you do not wish to hear in the same way.
- Each time you erase a track, the remaining tracks and their playing time will be shown on the display.
- The track number indicator always shows which tracks remain for inclusion in your programme.

You can also select the numbers by using NEXT or PREVIOUS and then clear them by pressing CLEAR **within 7 seconds**. You can also erase the tracks **during** play.

DIRECT PROGRAMMING (1-0)

- Set the player to the direct *programming* mode (DIRECT PROG) using DIRECT PLAY/PR(o)G(ram).
- Every track number you now key in will be **directly** included in the programme.
- Key in the required numbers.
- Each time you key in (= store) a track number, the number of tracks and the playing time of your programme will be shown under TRACK and TOTAL TIME.

- The track number indicator always shows which numbers have been stored.

You can also store the tracks **during** play; as soon as you have entered (= stored) the first number, play continues with the programmed track numbers.

STORING A PROGRAMME USING SCAN

- Press SCAN before or during play.
- SCAN lights up.
- The first 10 seconds of each track are played in turn.
- Now you can compile your programme:

Add-in

- Press STORE at each track you wish to include in the programme.
- The programmed numbers appear on the track number indicator.

Take-out

- Press CLEAR at each track you do **not** wish to include in the programme.
- The erased numbers disappear from the track number indicator.

CHECKING THE PROGRAMME (REVIEW)

- Press REVIEW prior to, during or after programmed play.
- REV (iew) lights up.
- All the numbers appear in the programmed sequence under TRACK.

NO PROGRAM lights up if no track numbers have yet been stored.

PLAYING THE PROGRAMME (PLAY)

- Press PLAY.
- Playback starts with the first number of the programme.

All buttons can be used during programmed play. Search for a particular passage is only possible within the track being played.

ERASING A PROGRAMME (STOP/CM or OPEN/CLOSE)

- Press STOP/CM twice or, if the CD has already stopped, just once; you can also press OPEN/CLOSE straight away.
- The programme has now been erased.

ERASING A TRACK FROM THE PROGRAMME (REVIEW)

- Enter the track number you wish to erase or press NEXT or PREVIOUS until the number appears under TRACK.
- Press CLEAR.
- The number disappears from the number indicator; it has now been erased.

ADDITIONAL INFORMATION

LISTENING WITH HEADPHONES (PHONES)

- Connect headphones with a 6.3 mm jack plug to the PHONES socket.
- The sound level is adjusted with the LEVEL control.

MAINTENANCE

The CD(R)s

- Never write on the printed side of a CD(R).
- Do not attach any stickers to the CD(R).
- Keep the shiny surface of the disc clean. Use a soft lint-free cloth and always wipe the disc in a straight line from centre to edge.
- Never use cleaning agents for conventional records.
- Detergents or abrasive cleaning agents should not be used either.

The recorder

- A chamois leather slightly moistened with water is sufficient for cleaning the recorder.
- Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.

FAULTS AND THEIR LIKELY CAUSES

If a fault occurs, run through the points listed below before taking your recorder for repair. Check whether:

- condensation has formed on the lens of the laser due to a dramatic change in temperature; this will disappear automatically after some time;
- the CD(R) has been inserted correctly with the printed side up and that there is a CD(R) in the compartment;
- the CD(R) is dirty, badly scratched or warped;
- the recorder has been connected to the PHONO socket of the amplifier.

If the fault remains, try to clear it by switching the recorder off and on again.

If this also fails to help, consult your dealer.

Under no circumstances should you repair the recorder yourself, as this will invalidate the guarantee!

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Analog unbalanced outputs

Output voltage:2 Vrms, \pm 1,5 dB
 Output resistance:200 ohms
 Amplitude linearity:max. \pm 0,1 dB (20 Hz - 20 kHz)
 Phase non linearity:max. \pm 0,5°
 Signal-to-noise ratio:min. 90 dB
 Dynamic range (-60 dB):92 dB
 Total harmonic distortion + noise:min. 86 dB
 Outband attenuation:min. 60 dB above 25 kHz
 Channel separation:min. 88 dB
 Muting during random access:min. 90 dB
 Load impedance:100 K. ohms/100 pF

Analog balanced (XLR) outputs

Output voltage:3 Vrms, \pm 0.1 dB
 Unbalance:max. 0.2 dB (typ. 0 dB)
 Output impedance:100 ohms
 Amplitude linearity:max. \pm 0,5 dB (20 Hz - 20 kHz)
 Signal-to-noise ratio:min. 86 dB (BW = 20 kHz)
typ. 90 dB (BW = 20 kHz)
min. 92 dB (A-weighted)
 Dynamic range:min. 86 dB (1 kHz)
typ. 88 dB (1 kHz)
min. 85 dB (20 Hz - 20 kHz)
 Total harmonic distortion + noise:min. 82 dB (1 kHz)
typ. 85 dB (1 kHz)
min. 80 dB (20 Hz - 20 kHz)
 Channel separation:min. 90 dB (1 kHz)
typ. 100 dB (1 kHz)
min. 85 dB (20 Hz - 20 kHz)
 Muting during random access:min. 86 dB (BW = 20 kHz)
 Low level linearity:0 dB (at -90 dB)

Analog balanced in/balanced out (XLR in/ XLR out)

Input sensitivity:3 Vrms for max. level (0 dB on disc)
0,475 Vrms for ref. level (-16 dB on disc)
 Input impedance:47 K
 Unbalance:max. 0,85 dB
 Amplitude linearity:max. \pm 0,5 dB (20 Hz - 20 kHz)
 Signal-to-noise ratio:min. 80 dB (BW = 20 kHz)
typ. 85 dB (BW = 20 kHz)
min. 85 dB (A-weighted)
 Dynamic range:min. 80 dB (1 kHz)
typ. 82 dB (1 kHz)
min. 80 dB (20 Hz - 20 kHz)
 Total harmonic distortion + noise:min. 80 dB (1 kHz)
typ. 82 dB (1 kHz)
min. 78 dB (20 Hz - 20 kHz)
 Outband attenuation:min. 60 dB above 25 kHz
 Channel separation:min. 80 dB (1 kHz)
typ. 85 dB (1 kHz)
min. 75 dB (20 Hz - 20 kHz)
 Low level linearity:0 dB (at -90 dB)

Electrical digital output

Output level:0.5 Vpp
 DC level:max. 0.05 V
 Load impedance:75 ohms

Optical digital output

Standard Toslink system

Headphone output

Output voltage:0 - 6.5 Vrms (no load)
 Output resistance:120 ohms
 Load impedance range:8 - 2000 ohms
 Output power:0 - 74 mW into 32 ohms (typ. 58 mW)
0 - 57 mW into 600 ohms (typ. 49 mW)
0 - 107 mW into 120 ohms (typ. 88 mW)
 Phase non linearity:typ. \pm 0.45°
 Signal-to-noise ratio:typ. 92 dB (into 600 ohms)
 Dynamic range (-60 dB):typ. 90 dB (into 600 ohms)
 Total harmonic distortion + noise:typ. 88 dB (into 600 ohms)
 Channel separation:min. 65 dB (into 600 ohms)

Recording performance

1 inputs:

Analog sensitivity:0.5 V (impedance 100 K. ohms)
 Microphone sensitivity:2 mV (impedance 10 K. ohms)
 Digital:according to the standard digital input

2 input selection:

Toggle function for analog/digital switching (front).
 Analog selection by a 3 position switch (backside).

3 recording level adjustment:

Analog input:manual, 2 rotary potentiometers for level and
balance
 Microphone input:manual, attn.
 digital output:no adjustment required

Overall audio performance (record and playback):

Digital in - digital out (electrical and optical): full-digital reproduction

Analog in - analog out:

Amplitude linearity:max. \pm 0.1 dB
 Phase non linearity:typ. 2°
 Signal-to-noise ratio:typ. 89 dB
 Dynamic range (-60 dB):typ. 90 dB
 Total harmonic distortion + noise:typ. 84 dB
 Outband attenuation:min. 60 dB above 25 kHz
 Channel separation:min. 86 dB

Power supply

Mains voltage and frequency: see the voltage selector (14 c) on the rear of the player
 Power consumption:40 W at nominal voltage
 Safety requirements:IEC 65

Cabinet

Material/finish:metal and polystyrene with decorative trim
 Dimensions (w x h x d):420 x 137 x 347 mm
(16 4/8" x 5 3/8" x 13 4/8")
 Weight:9.5 kg (10.6 lbs) approx.

Subject to modification

