

WARNING

You are cautioned that any changes or modifications not expressly approved in this document could void your authority to operate this equipment.

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION:

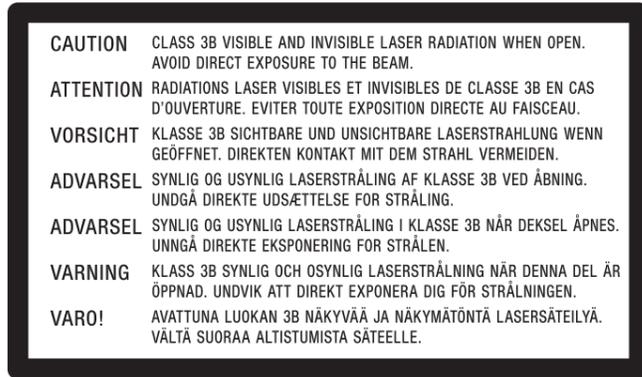
As the laser beam in the CRX320AE is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

The use of optical instruments with this product will increase eye hazard.

The use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This label is located on the top of the drive unit enclosure.

Dieses Etikett befindet sich an der Oberseite des Laufwerksgehäuses.



The CD-RW/DVD-ROM drive is classified as a CLASS 1 LASER PRODUCT. The CLASS 1 LASER PRODUCT label is located at the top of the enclosure.

Bei diesem CD-RW/DVD-ROM-Laufwerk handelt es sich um ein Laser-Produkt der Klasse 1. Das Etikett mit der Aufschrift LASER KLASSE 1 PRODUKT befindet sich auf der Oberseite des Gehäuses.



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KLASS 1 LASER APPARAT

FCC Compliance:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note:

If you have any questions about this product, you may call the telephone number listed in the "Product and Support Information" section. The telephone number below is not for customer service, but for official purposes only.

Declaration of Conformity	
Trade Name:	SONY
Model No.:	CRX320AE
Responsible Party:	Sony Electronics Inc.
Address:	16450 W. Bernardo Dr., San Diego, CA 92127 U.S.A.
Telephone No.:	858-942-2230
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:	
(1) This device may not cause harmful interference, and	
(2) This device must accept any interference received, including interference that may cause undesired operation.	

이 기기는 가정용으로 전자파 적합등록을 한 기기로서 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

기기의 명칭 (모델명) : CRX320AE
 인증받은자의 상호 : SONY KOREA
 제조년월일 : 별도표시
 제조자/제조국가 : SONY CORPORATION/CHINA

CE Sicherheitsbestimmungen

Diese Ausrüstung erfüllt die Europäischen EMC-Bestimmungen für die Verwendung in folgender / folgenden Umgebung(en):

- Wohngegenden
 - Gewerbegebiete
 - Leichtindustriegebiete
- (Diese Ausrüstung erfüllt die Bestimmungen der Norm EN55022, Klasse B.)

- Power-Burn and conformed are trademarks of Sony Corporation.
- Pentium is a registered trademark of Intel Corporation.
- Microsoft, MS, MS-DOS and Windows are registered trademarks of Microsoft Corporation.
- Other system and product names used herein are registered trademarks or trademarks of their respective manufacturers, although the TM and ® marks are not used in the text.

Before using this device, be sure to read the end-user license agreements for the software provided with your computer.

- Our product warranty is valid only when the supplied accessories (including software) are used in the specified or recommended system environment, in accordance with the documentation, and applies only to the CD-RW/DVD-ROM drive. Our customer service and user support apply only under these product warranty conditions.
- Please note that we cannot accept responsibility for failure of the computer or other devices, incompatibility with special hardware, operating problems caused by improper installation of software, loss of data, discs or other accidental or incidental damage that might occur when using this product.
- The guarantee and user support for this product are valid only within the countries or sales regions specified on the warranty card.
- Copyright laws prohibit the copying in part or in full of the supplied software and documentation, or loaning the software, without obtaining permission of the copyright holder.
- We cannot accept responsibility for any direct or indirect financial damage or loss of profit that might occur when using the supplied software.
- The supplied software can only be used with this product.
- Specifications of the supplied software may be changed without notice in the interest in product improvement.

CD-RW/DVD-ROM Drive

Product Information

Included Documents

- Warranty card
- Product Information (this document)

CRX320AE

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Printed in China

P/N: 7819901067A

Precautions for Use

Operation and storage conditions

Avoid using or storing the drive in a hot or humid location, or where it might be subject to severe vibration or direct sunlight.

On transportation

If the drive is to be shipped while installed in a PC, remove any disc beforehand.

Avoiding condensation problems

As much as possible, avoid sudden temperature changes. Do not attempt to use the drive immediately after moving it from a cold to a warm location, or raising the room temperature suddenly, as condensation may form within the drive. If the temperature changes suddenly while using the drive, stop using it but keep the power on for at least an hour.

Handling discs

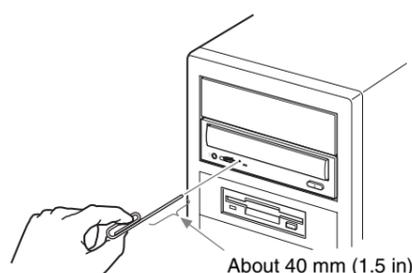
- Handle discs only by the edges. Never touch the recording surface.
- Do not affix labels on discs.



- Do not store discs in dusty, dirty or humid locations, in direct sunlight, or near heat-generating devices.
- To protect important data, always keep discs in their protective cases.
- Do not wipe writable discs to clean them before recording data. Instead, use a blower to remove any dust.
- Data may not record properly if a scratch or dust is present on the unrecorded area of writable discs. Use special care when handling.

Emergency Eject

If the tray does not open with the Eject button, turn the PC off and insert a thin tool (such as a straightened paper clip) into this hole to eject the tray manually.



CAUTION

Depending on the product you are using, the Emergency Eject Hole may be in a different location than illustrated above.

Introduction

This product offers the following features.

- ❑ An internal CD-RW/DVD-ROM drive with ATAPI (EIDE) interface for PCs.
- ❑ Writes up to 52× speed on CD-R disc media.
- ❑ Writes up to 32× speed on CD-RW disc media.
- ❑ Reads CD-ROM discs at up to 52× speed.
- ❑ With the Turbo Boost function, easily switch from the default 40× read/write speed to 52× speed.*
- ❑ Reads DVD-ROM discs at up to 16× speed.

* For details, see “Turbo Boost Function” below.

- ❑ Features “Power-Burn conformed” technology to prevent buffer under-run errors. “Power-Burn conformed” is used to refer to a CD-R/RW that uses CD-R/RW recording technology (ICs and/or firmware) other than Power-Burn, but provides performance equivalent to that of Sony original Power-Burn technology based on the Power-Burn concept.

Notes

- Writing speed may automatically be adjusted depending on the disc specified speed or disc conditions such as weight imbalance and eccentricity.
- 1× and 2× writing speed and discs are not supported.
- During startup, the drive may make a whirring noise due to balls contained in the ABS (Auto-Balance System) spindle motor. This is normal and does not indicate a drive malfunction.

System Requirements

This CD-RW/DVD-ROM drive can be used in systems with the following capabilities.

- ❑ CPU: Pentium II 400 MHz or higher is recommended.
- ❑ PC/AT-compatible PC
- ❑ OS:
 - Windows® 98 Second Edition
 - Windows® 2000 Professional
 - Windows® Millennium Edition
 - Windows® XP Home Edition
 - Windows® XP Professional
- ❑ 64 MB RAM or higher is recommended
- ❑ At least 1 GB available hard disk space
- ❑ One available EIDE (ATAPI) interface connection with DMA capability

- ❑ One empty 5-inch half-height drive bay
- ❑ One available internal +12 V/+5 V power connector

Notes

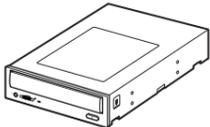
- The above system configuration is given as a minimum requirement for a system on which basic CD-RW writing performance can be obtained. In actual use, the requirements for the writing software and “Windows” also have to be taken into consideration. (Normally, these requirements will be higher than the above specifications.)
- The drive cannot be assured to operate properly if connected to an ATAPI interface adapter card (we cannot guarantee compatibility or offer user support).

Package Contents

Please verify that the package includes the following accessories with the drive when unpacking.

If any of these items appears to be missing or damaged, please contact your supplier.

- CD-RW/DVD-ROM drive



- Product Information (this document)
- Warranty card

Note

To guard against possible loss or damage, be sure to make a backup copy of the provided software disc on a CD-R disc or other media. The software disc is not sold separately.

Please Record Responsibly

Before copying anything onto a CD-R or CD-RW disc, make sure that you are not violating copyright laws. Most software companies allow you to make a backup or archive copy of software. Check your software license agreement for details.

Turbo Boost Function

The default CD-R and CD-ROM read/write speed of this drive is 40× speed. With a single touch, you can activate the Turbo Boost function, making the read/write speed 52× speed.

CAUTION

- On rare occasions, some discs may not be able to tolerate 52× speed, causing them to break. We recommend that you do not use deeply scratched, brittle, or other discs that may break at 52× speed.
- The Turbo Boost function does not increase read/write speed with CD-RW or DVD-ROM discs.

- 1 Insert a disc into the drive. The speed when you insert a disc is normally 40× speed.

- 2 Press the Eject button for five seconds.

The Busy indicator blinks twice and the speed switches to 52× speed. (The Turbo Boost function is active.)

Notes

- When you want to write at 52× speed, insert the disc into the drive, activate the Turbo Boost function, and then start writing to the disc.
- When writing with the Turbo Boost function, the Busy indicator blinks more rapidly than usual. (About twice as fast as when writing at the default write speed.)
- When you open the disc tray, the speed reverts to its default of 40× speed.
- The Turbo Boost function does not guarantee a 52× write speed. Depending on the condition of the disc you are using, the speed may be lower.

Specifications

Compatible discs

CD-R	CD-RW
CD-ROM	CD-ROM XA
CD-DA ¹⁾	CD Extra (CD+)
Video CD	CD TEXT
Photo CD	
DVD-ROM	DVD-Video
Disc diameter	12 cm
	8 cm (for horizontal use only)

¹⁾ This product is designed to playback discs that conform to the Compact Disc (CD) standard. Recently, various music discs encoded with copyright protection technologies are marketed by some record companies. Please be aware that among those discs, there are some that do not conform to the CD standard and may not be playable by this product. When you use this unit as an audio CD player, please use compact discs with the following mark.



Writing Systems

Track-at-once	Disc-at-once
Session-at-once	Packet writing

Drive

Data transfer rate

CD-ROM	Up to 7800 KB/s (52× speed) ^{2) 3)}
DVD-ROM	Up to 22160 KB/s (16× speed) ³⁾

Access time

Average random stroke	CD-ROM	120 ms
	DVD-ROM	140 ms

²⁾ When using the Turbo Boost function.

³⁾ The maximum data transfer rate depends on the capabilities of the host PC.

Please note that specifications and appearance may be subject to change without notice.

Buffer under-run error protection

Power-Burn
conformed technology

Operating Environment

5 to 40 °C

Power and Miscellaneous

DC +5 V	1.5 A
DC +12 V	1.5 A

Size

Approx. 145.8 × 41.3 × 165 mm (W×H×D) (excluding front bezel)

Weight

Approx. 0.9 kg (drive only)

Interface

Drive interface

ATAPI (EIDE)-compliant

Drive Inquiry

SONY CD-RW CRX320EE

Buffer capacity

2 MB

Laser specifications

Type

CD: RLD78PZW4

DVD: RLD65MZZT2

Wavelength

CD: 784 ± 5 nm

DVD: 655 +5/-10 nm

Output power

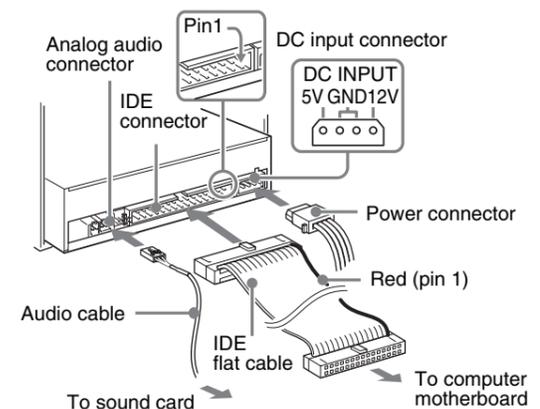
CD : 120 mW (CW)

230 mW (Pulse)

DVD : 10 mW

Connecting the Cables

- Connect one end of the audio cable to the ANALOG AUDIO connector on the drive, and the other end to the audio input connector on your PC.
- Connect the IDE flat cable to the IDE connector on the drive.
- Connect an unused power connector from the PC power supply to the DC input (power input) connector on the drive.



CAUTION

- The red side of the IDE flat cable indicates the pin 1 conductor. Verify that the pin 1 side is connected to pin 1 on the motherboard.
- The power connector must be inserted with the inclined side upwards.
- If no spare power connector is available, a “Y” adapter is necessary.
- It is not necessary to connect the audio cable if your PC supports digital playback.
- Using the wrong type of cable with this product can cause it to malfunction. Follow the instructions when connecting the product.

Product and Support Information

Sony Site Information (As of November, 2004)

Product purchased in Europe:*

<http://www.sonydigital-link.com/OSD/>

* Local Web sites for computer peripheral products

Technical Support

Please consult the above sources before calling with questions about using this product, or with technical questions about the drive or the supplied software. If using telephone or e-mail support, please have the following information available:

- Model number: **CRX320AE**
- Serial number
- Date and place of purchase
- Computer maker and model number
- Computer specifications (CPU speed, memory size, OS version, etc.)
- Writing software used (version, etc.)

Local technical support is only available in the specified sales regions. The customers in these regions should be provided with a warranty card for this product. For contact information, refer to the warranty card.

Note that technical support conditions may vary according to the locality, and that charges and/or limited service may apply in some regions.