LG

External

Blu-ray Disc Rewriter

Owner's Manual

English

Français

Español

Português

To enjoy fully all the features and functions of your product, please read this owner's manual carefully and completely.

BE08LU20

CAUTION : The laser used in the External Blu-ray Disc Rewriter can damage your eyes.
Do not attempt to open the cover.
To reduce the risk of electric shock, do not remove the cover (or back).
There are no user-serviceable parts inside.
Refer servicing to qualified service personnel.

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

WARNING : To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture

Industry Canada requirement

This class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC COMPLIANCE STATEMENT

Note : 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 Authorized Service Center for help.

• FCC WARNING
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

• This External Blu-ray Disc Rewriter is for use only with UL listed personal computers that have installation instructions detailing user-installation of card cage accessory.

This product is manufactured to comply with the radio interference requirements of EMC Directive 2004/108/EC, and Low Voltage Directive 2006/95/EC.

CAUTION : CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.

ADVARSEL : KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.

ADVARSEL : KLASSE 3B SYNLING OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPENS. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING : KLASSE 3B SYNLING OCH OSYNLIG LASERSTRÅLNING NÄR DENNAL DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.

VARO! : KURSSI 3B NÄKYVÄ JA NÄKYMÄTÖN AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEN.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT
CLASE 1	PRODUCTO LÁSER
CLASSE 1	PRODOTTO LASER

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- DVD Logo is a trademark of DVD Format/Logo Licensing Corp., registered in U.S., Japan and other countries.
- BD Logo is a trademark registered in U.S., Japan and other countries.
- The company names and product names written in this manual are trademarks or registered trademarks of the respective companies.

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Package contents

Item	Quantity
A. External Blu-ray Disc Rewriter	1
B. USB 2.0 converter cable	1
C. AC Power Adapter (with Power supply cable)	1
D. eSATA Cable	1
E. eSATA Bracket	1
F. Software CD	1
G. Manual	1

Introduction

Thank you for purchasing the LG External Drive.

Features

- eSATA & Universal Serial Bus (USB) 2.0 interface
- Buffer Under Run error protection technology
- Emergency eject support
- Bear media loading with power eject.
- CD-R/RW, DVD-R/RW/+R/RW/+/-R DL, DVD-RAM, BD-R/RE(SL/DL) read and write compatible, CD Family, DVD-ROM and BD-ROM read compatible.
- Supports region playback control Phase II.
- Supports LightScribe Direct Label Printing Technology.
- To achieve maximum Record & Write speed your system may require data to be copied first to the computer's hard drive rather than directly from another source disc or drive.

Cautions

System meeting the following requirements is needed in order to use USB 2.0 operation with this drive.

- Computer that is equipped with a USB 2.0 – compliant USB connector or PCI adapter card, and on which the USB 2.0 EHCI (Enhanced Host Controller Interface) driver software [1] has been installed.

  [1] The USB 2.0 EHCI driver software is supplied with currently available PCI adapter cards that conform to USB 2.0. Further, Microsoft has released the USB 2.0 EHCI driver software for Windows XP, therefore it is also possible to use this driver software with Windows XP.
  If you want to know in detail, please contact your USB 2.0 adapter dealer or consult your PC manufacturer, or consult the Microsoft Corporation Web site.

- **Please note:** Certain software (i.e. particularly those including Video playback) may require a considerably increased specification PC to give acceptable results. While this Blu-ray Disc Rewriter can read DVD-video or BD-MV(BD-ROM) discs, decoding them to display on your pc's monitor requires separate MPEG, H.264 or VC-1 decoding that is done by separate hardware (either an MPEG, H.264 or VC-1 decoder card or MPEG, H.264 or VC-1 decoding done by your video card), or separate software that you install to do MPEG, H.264 or VC-1 decoding. For further details, refer to the documentation that comes with MPEG, H.264 or VC-1 software.

System requirements

Operating Environment

This unit can be operated in the system environment explained here.

System requirements	• CPU : Pentium D 3.2 GHz or higher (Recommended Core 2 Duo E6300 or higher.) • O/S : Windows XP (Home / Professional / Media Center Edition) with SP2/ Windows Vista (X86, X64)/ Windows 7 • RAM : 1GB or more • HDD : 30GB or more of available space (60GB for Blu-ray Disc authoring)
Interface	USB 2.0 or eSATA port
Recommended media manufacturer	**BD-R** : Mitsubishi Kagaku Media, Maxell, TDK. **BD-RE** : Mitsubishi Kagaku Media, Maxell, Sony, Panasonic. **DVD-R** : Maxell, Mitsubishi Kagaku Media, Taiyo. **DVD-RW** : JVC, Mitsubishi Kagaku Media. **DVD+R** : Mitsubishi Kagaku Media, Verbatim. **DVD+RW** : Mitsubishi Kagaku Media, Verbatim. **DVD±R DL** : Mitsubishi Kagaku Media, Verbatim. **DVD-RAM** : Maxell. **CD-R** : LG, Mitsubishi Kagaku Media, Verbatim, Taiyo Yuden TDK. **CD-RW** : LG, Ricoh, Mitsubishi Kagaku Media, Verbatim.

* Compatibility problem in write/read function may occur with media depending on the media manufacturing quality.
* There may be some cases when motion picture playback is not smooth depending on bit rate.

• Playing Blu-ray Movies *NOTICE*

	Driver	**Graphic Card**		**Monitor**		
		Interface	HDCP *2	Interface	HDCP	Resolution
Analog	AACS *1 Compliant	VGA (D-SUB)	Not required	VGA (D-SUB)	Not required	1024x768 or more (Recommended : 1920x1080)
Digital		DVI or HDMI	Compliant	DVI or HDMI	Compliant	

Due to copyright protection features, certain requirements must be met in order to playback BD movies on a computer. When using digital video connections, the monitor and graphics card must support High-bandwidth Digital Content Protection (HDCP). Note that most monitors and graphics cards currently don't support HDCP. But, most High Definition TVs and multimedia monitors do support HDCP. Refer to the PC or graphic card maker's web site to see if your card supports HDCP. Some video cards that currently support HDCP:

- nVIDIA: GeForce 7800 GTX 512 / 7900 GT / 7900 GX2 / 7900 GTX / 7950 GX2 / 8600 GS / 8600 GT / 8600 GTS / 8800 GTX or higher with 256MB min memory.
- ATI: Radeon® X1950/ HD2300/ HD2400/ HD2600 series or higher with 256MB min memory.

*1 Graphic card driver shall meet AACS compliance criteria. Please consult your graphics card vendor for proper driver solution.

*2 HDCP (High Bandwidth Digital Content Protection): Required to view pre-recoded Blu-ray Discs which are copy protected.

Important precautions

Follow these precautions when handling the drive or discs.

Precautions

Please note that the manufacturer of this equipment does not offer any warranty against data loss due to inappropriate installation, handling, direct or indirect damages. Please note that the manufacturer will bear no responsibility for direct or indirect damages (including lost data)caused by the use of this product or its malfunction.

Please backup(copy) all important data as protection against data loss.

Installation

Avoid placing the drive in a location subject to:

- high humidity
- high temperature
- excessive dust
- mechanical vibration
- direct sunlight

Operation

Don't move the drive suddenly from a cold place to warm one.
Condensation may cause abnormal operation.
Make sure to remove the disc before moving the drive to prevent the possible damage to the disc.
Prevent foreign objects, such as liquids or metal, from entering the drive and in the case a foreign object enters the drive, please consult the dealer where the drive was purchased.
Don't interrupt the electric power while the drive is operating.
While drive is operating, don't move the drive or give a shock to the drive, since it can cause damages to the disc.
Please pay attention to handling Electrostatic Sensitive Devices, you may use anti-static products such as wrist straps, heel straps, mats to protect your body from electrostatic.

AC Adapter

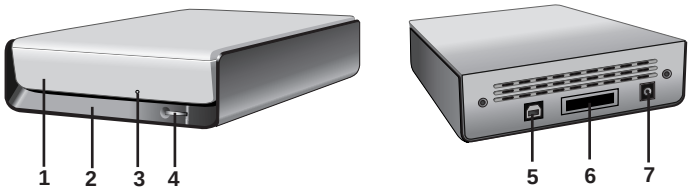
Don't plug in or remove the AC adapter using wet hands.
Don't damage the AC adapter by scratching, modifying, or bending its prongs.
Use only supplied AC adapter.
Don't disassemble the AC adapter.

Operation through a USB hub cannot be guaranteed.

When connecting with USB1.1 interface, picture and sound may be disrupted while watching DVD Video due to lack of data transfer speed.
For smoother playback of DVDs, high-speed USB 2.0 should be used.

Location and function of controls

This following is the general figure of the design of the drive. The drive's appearance and specifications may change without prior notice.



1. **Disc Tray**
2. **Drive activity indicator**
   The LED used to indicate the operation of External Blu-ray Disc Rewriter.
3. **Emergency Eject Hole**
4. **Open/Close button**
5. **USB Connector**
   This connector is used to connect to the USB converter cable.
6. **eSATA Connector**
   This connector is used to connect to the eSATA cable.
7. **Power Connector**
   This connector is used to connect to the AC Power adapter cord.

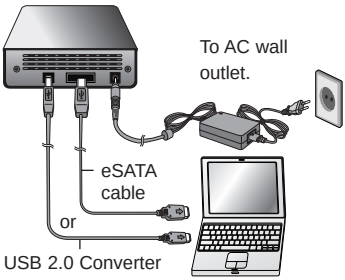
NOTE

- The machine does not have an ON/OFF switch. As soon as it is connected to the AC power, the power up sequence begins.
  The power supply cord is intended to serve as the main disconnect device. The power outlet shall be near the equipment and shall be easily accessible.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young Children should be supervised to ensure that they do not play with appliance.
- If the appliance is supplied from a cord extension set or an electrical portable outlet device, the cord extension set on electrical portable outlet device must be positioned so that it is not subject to splashing or ingress of moisture.

Installation

Hardware Installation

Connecting to computer



NOTES

- Make sure you have a personal computer with an open USB port or eSATA port before connecting the drive to your computer.
- Power for all device should be turn off before attaching the cables.

Connect the drive to the computer as shown in figure.

1. Connect the USB converter cable (or eSATA cable) to the External Drive.
2. Connect the other end of the USB converter cable (or eSATA cable) to your computer.
3. Connect the AC adapter plug to the power connector at the rear of the drive.
   Attach the AC adapter to the AC wall outlet.
4. When the computer is ready, confirm that the drive is detected. And then, insert the supplied software CD into the External Drive and install the software.

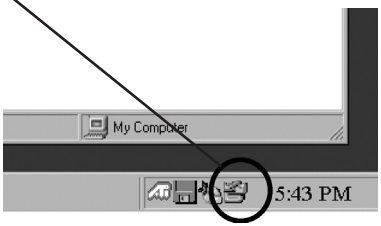
NOTES

- Please do not connect the AC adapter and USB 2.0 converter cable by any means other than specified above.
- For optimal performance, using the 'USB Booster Program' in the Software CD is recommended when you connect the USB cable.
- For optimal performance, using the SATA to eSATA Bracket is recommended when you connect your old Desktop PC.

Removing the USB converter cable

The drive supports the plug and play(not swap) function of Windows, and can be removed and inserted by performing the following operation.

1. Stop the application software being currently used.
2. Click the icon " " of the taskbar located on your screen's bottom right side.



3. Click "Safely Remove USB Mass Storage Device-Drive[x:]".
4. Click "Ok" and then remove the USB converter cable.

NOTE

Don't remove the USB converter cable when the busy indicator on the drive blinks, or during computer startup.

Operation

Loading and ejecting a disc

Remember - AC adapter must be connected.
Make sure the power is turned on.

Loading a disc

1. Touch the Eject Button to open the Disc tray.
2. Load a disc. (Label facing up.)
3. Close the Disc tray.

Ejecting a disc

1. Touch the Eject Button to open the Disc tray.
2. Removing the disc.
3. Close the Disc tray after removing the disc.

Emergency Eject

This drive has a feature that allows the CD to be ejected manually in case of a drive failure or a power outage.

NOTE: Don't use this feature **except** in an emergency.

1) Turn the power OFF.
2) Poke a fine-tipped object (such as a straightened heavy duty paper clip) into the small hole above the eject button. The front door will pop open and the disk tray will come partway out.
3) Pull the front door to open it all the way, then grip the disc tray between thumb and forefinger and gently pull it straight out.

NOTE: Use this feature for an emergency purpose only. Using it excessively will cause malfunction.

* If you cannot get a good grip on the disc tray with your fingers, use a steel binder clip or spring clamp to pull it out.

Playing a music CD

Listening to sound

When connected to a computer, you can play audio CD's through your computer's audio system after setting Digital Audio mode.

Check your Windows or "Windows Media Player" manual for detail.

Playing DVD video and MPEG2 movie video

The drive must be connected to a computer, and basic installation already done. Install the 'PowerDVD' software to your PC.
Inserting the disc will automatically start installation. Follow the wizard.
After installation, remove the PowerDVD software and put it away for safekeeping.
Inserting a DVD Video disc into the drive and it will play automatically.

NOTES

- **DVD video region code:**
  Each region around the world has a different region number on the DVD video movies being sold in a region.
  The region code can be changed to other regions up to 5 times by using the software decoder (PowerDVD).
  If you change the region code 5 times, the drive will lock onto the last (5th change) region code, and cannot change the drive to another region code.
  This limitation is a requirement as licensees of DVD drive technology.
- **When connecting with USB1.1 interface, due to it's slow transfer time, picture and sound may be disrupted when trying to view a DVD movie.**

Appendix

Troubleshooting

If you are experiencing problems with the drive, verify the following items. Since the problem may be caused by a device other than the drive, check other things such as system settings or other software being used, etc. If you cannot resolve the problem after verifying these items, contact your dealer or our customer service department.

Problem	Possible Cause	Possible Solution
Cannot play a DVD, CD or BD in the drive or certain types of discs cannot be read in the drive.	1. The disc is not inserted correctly. 2. The disc is dirty. 3. The pick-up lens is dirty. 4. The disc is scratched or warped. 5. The disc uses a region code that cannot be played on the drive.	1. Reinsert the disc correctly. 2. Clean the disc surface. 3. Clean the pick-up lens. 4. Change the disc. 5. Refer to your system manual for help.
Disc tray cannot be opened	1. AC Plug is not connected to AC outlet.	1. Connect the AC plug tightly.
Drive is not detected by the system.	1. The USB 2.0 converter cable or eSATA cable is not properly connected.	1.Make sure USB 2.0 converter cable or eSATA cable is connected properly and re-install the device driver.
Drive will not play media or certain types of CD, DVD or BD media.	1. The disc doesn't match your system. Is the media disc the correct format for the type of system that you are using. 2. Virus possibility.	1. Check the disc format. (on a PC an ISO 9660 IBM compatible PC format as opposed to Apple/Mac HFS disc or UNIX disc formats will not function) 2. Has the Windows DVD-ROM software driver program been corrupted by a virus? Run a Virus Scan program and repair if possible.

Specifications

Interface	USB 2.0 & eSATA			
General	Supported Discs		BD-ROM (SL/DL), BD-R (SL/DL), BD-RE (SL/DL), DVD-ROM (SL/DL), DVD-R (SL/DL), DVD-RW SL, DVD-RAM, DVD+R (SL/DL), DVD+RW, CD-ROM Mode-1, Mode-2 data disc, CD-ROM XA, CD-I, Photo-CD Multi-Session, Video CD, CD-Audio Disc, Mixed mode CD-ROM disc (data and audio), CD-Extra, CD-Text, CD-R, CD-RW	
	Dimensions (WxHxD)		163x50x260mm	
	Weights		About 1.5Kg	
Write/Read speed	Media		Write	Read
	BD-R (SL/DL)	USB	2x, 4x, 6x	6x / 6x max.
		eSATA	2x, 4x, 6x, 8x	8x / 8x max.
	BD-ROM (SL/DL)	USB	-	6x max.
		eSATA	-	8x max.
	BD-R (SL L to H)		2x	4x max.
	BD-RE (SL/DL)		2x	4.8x max.
	DVD-R		2x, 4x, 8x, 12x, 16x	16x max.
	DVD-R DL		2x, 4x	8x max
	DVD-RW SL		1x, 2x, 4x, 6x	10x max.
	DVD-RAM		2x, 3x, 5x	5x max.
	DVD+R		2.4x, 4x, 8x, 12x 16x	16x max.
	DVD+R DL		2.4x, 4x	8x max.
	DVD+RW SL		2.4x, 4x, 6x, 8x	10x max.
	CD-R		8x, 16x, 24x, 32x, 40x, 48x	48x max.
	CD-RW		4x, 10x, 16x, 24x	40x max.
	CD-ROM		-	48x max.
	CD-DA		-	40x max.
Performance	Data transfer rate Sustained		BD-ROM: 287.72 Mbits/s (8x max.) DVD-ROM: 22.16 Mbytes/s (16x max.) CD-ROM: 7200 Kbytes/s (48x max.)	
	Average Access (1/3 stroke)		BD-ROM:180ms(Typical) DVD-ROM: 160ms(Typical) DVD-RAM: 180ms(Typical) CD-ROM: 150ms(Typical)	
Buffer capacity	4 Mbytes			
	MTBF		100,000 Power On Hours	
Environmental Level	When operating		Temperature: 5 to 40 C	Humidity: 15% to 85%
	When not operating		Temperature: -30 to 60 C	Humidity: 10 % to 90%
Electrical	Power		DC 12V	

*1 The disc of the cartridge type is not supported.
*2 BD-RE: The disc of version 1.0 is not supported.
*3 DVD-RAM 12X media: Not supported to write.
*4 There might be some cases when this drive can not satisfy the best performance depending on the conditions of the disc, the drive, and the recording format.
- The maximum data transfer rate varies according to the performance capabilities of the PC.
- For the sake of periodic improvements, specifications and appearance are subject to change without notice.
- We have taken all possible measures to assure the quality of our products, but we cannot be responsible for the consequences if defect occurs.

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Caution!

The disc rotates at high speed in the drive unit. Use of worn, damaged, or non-standard discs can adversely affect the drive and cause the disc to shatter or crush while in use.
Disc crush can only occur when you use a damaged disc in the drive. It is an extremely rare occurrence, but there are steps which can be taken to prevent it.

Always check your discs before inserting them into the drive.

1. **Take care not to use worn, cracked, damaged, warped or poor quality discs, as this may cause damage to your drive.**
2. **Check the clear plastic on the center of the disc, cracks here are the main cause of disc crush.**
3. **Do not play discs which are a non-standard (I.e. non-circular)shape, such as heart shaped discs, or discs in the shape of a business card.**

How can you keep your discs from becoming damaged?

1. **When not in use, remove discs from the drive.**
2. **Keep discs in the packaging supplied with them and out of direct sunlight and away from heat sources.**

Excessive vibration or a sudden jolt to the drive during operation may cause a malfunction.
Avoid exposing the drive to sudden changes in temperature as it may cause condensation to collect inside the drive.

Please visit www.lgservice.com and install the automatic firmware download program, “LG ODD Online F/W update.” This program will automatically check for new firmware releases and download them. It is also included on the software discs that accompany our drives.

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