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Changes

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, LaCie assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. LaCie reserves the right to make changes or revisions in the product design or the product manual without reservation and without obligation to notify any person of such revisions and changes.

Canada Compliance Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Federal Communications Commission Radio Frequency Interference Statement (FCC)

FC LaCie d2 Blu-ray
Tested to comply with FCC standards for home or office use

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

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 when the equipment is operated in a commercial environment. 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 correct the interference by one of the following measures:

✦ Reorient or relocate the receiving antennas.

✦ Increase the separation between the equipment and the receiver.

✦ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

✦ Consult the reseller or an experienced radio/TV technician for help.

Shielded cables and I/O cards must be used for this equipment to comply with the relevant FCC regulations.

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.

CE Manufacturer's Declaration for CE Certification

We hereby certify that this device is in compliance with both the EMC Directive (2006/95/EC) and the Low Voltage Directive (2004/108/EC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

Class B EN60950, EN55022, EN50082-1, EN61000-3-2

Class I Laser product

This equipment is certified to comply with DHHS Rule 21 CFR Chapter I, subchapter J in effect as of the date of manufacture.

This equipment is classified as a Class I Laser product and no hazardous laser radiation is emitted outside the drive.

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designed collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service, or the shop where you purchased the product.

CAUTION: Modifications not authorized by the manufacturer may void the user's authority to operate this device.

Health, Safety & General Use Precautions

The drive you have just purchased includes a laser diode device, which classifies it as a "Laser Class I" product. This laser is not dangerous for the user under normal operating conditions. However, we strongly advise you not to place any reflective objects in the disc loading system, due to the risk of exposure to laser emissions that may be reflected by such objects. Always follow the basic precautions listed below to use your LaCie drive safely and correctly. Respecting these guidelines will help to avoid the possibility of personal injury to yourself or others, as well as to prevent damage to your device and other computer equipment. These include, but are not limited to, the following precautions.

Health & Safety Precautions

✦ Read this User Manual carefully, and

follow the correct procedure when setting up the device.

✦ Do not look inside or place your hand over the open media tray. Never look directly or indirectly (with a mirror) at the laser diode, even when the device is not in operation. If you expose your eyes to the laser inside you drive, you risk damage or loss of your vision or other injury.

✦ Do not open your drive or attempt to disassemble or modify it. Never insert any metallic object into the drive to avoid any risk of electrical shock, fire, short-circuiting or dangerous emissions. Your drive contains no user-serviceable parts. If it appears to be malfunctioning, have it inspected by qualified LaCie service staff.

✦ Never expose your device to rain or use it near water or in damp or wet conditions. Never place containers on it containing liquids that may spill into its openings. Doing so increases the risk of electrical shock, short-circuiting, fire or personal injury.

✦ Make sure that the computer and drive are electrically grounded. If the devices are not grounded, there is an increased risk of electrical shock.

General Use Precautions

✦ Do not expose the drive to temperatures outside the range of 5° C to 40° C (41° F to 104° F) during operation. Doing so may damage the drive or disfigure its casing. Avoid placing your drive near a source of heat or exposing it to sunlight (even through a window). Inversely, placing your drive in an environment that is too cold or humid may damage the unit.

✦ Do not block the ventilation outlets on the rear of the drive. These help to keep your drive cool during operation. Blocking the ventilation outlets may cause damage to your drive and cause an increased risk of short-circuiting or fire.

✦ Always unplug the drive if there is a risk of lightning or if it will not be used for an extended period of time. Otherwise, there is an increased risk of electrical shock, short-circuiting or fire.

✦ Do not place heavy objects on top of the drive or use excessive force on its buttons, connectors and tray.

✦ Always place your drive in a horizontal position before using it. This LaCie drive has not been designed to be used in an upright position. Thismay result in damage to the device or data loss.

✦ Always remove the disc from the disc tray before transporting your drive. Otherwise, written data may be destroyed or the drive's internal components may be damaged.

✦ Never use excessive force on the disc loading system; discs should be inserted effortlessly into your drive. If you detect a problem, consult the Troubleshooting section and contact your after-sales department.

✦ Protect your drive from excessive exposure to dust during use or storage. Dust can build up inside the device, increasing the risk of damage or malfunction.

✦ Never use benzene, paint thinners, detergent or other chemical products to clean the outside of the drive. Such products will disfigure and discolor the front panel and casing. Instead, use a soft, dry cloth to wipe the device.

1. Introduction

Congratulations on your purchase of the LaCie d2 Blu-ray Drive. The LaCie Blu-ray Drive facilitates recording, rewriting and playback of High-Definition (HD) video and storing on a disc much larger amounts of data than ever before. Saving a 2-hour HD video to disc requires 23.3GB of storage capacity, so a Blu-ray drive is a necessity for anyone storing HD video. This state-of-the-art drive offers external flexibility and ease-of-use in our trusted, compact, sturdy d2 design and comes with the latest burning software.

Quick Links

Click a topic:

- ✦ Connecting Your LaCie d2 Blu-ray Drive
- ✦ Using Your LaCie d2 Blu-ray Drive
- ✦ Helpful Technical Information

1.1. Box Content

1. LaCie d2 Blu-ray Drive

2. Power supply kit

3. Hi-Speed USB 2.0 cable

4. FireWire 400 6-to-6-pin cable

5. FireWire 400 to 800 (6 pin to 9 pin) adapter cable

6. LaCie Software Utilities DVD-ROM (includes User Manual)

7. Quick Install Guide (Printed version)

IMPORTANT INFO: Please save your packaging. In the event that the drive should need to be repaired or serviced, it must be returned in its original packaging.
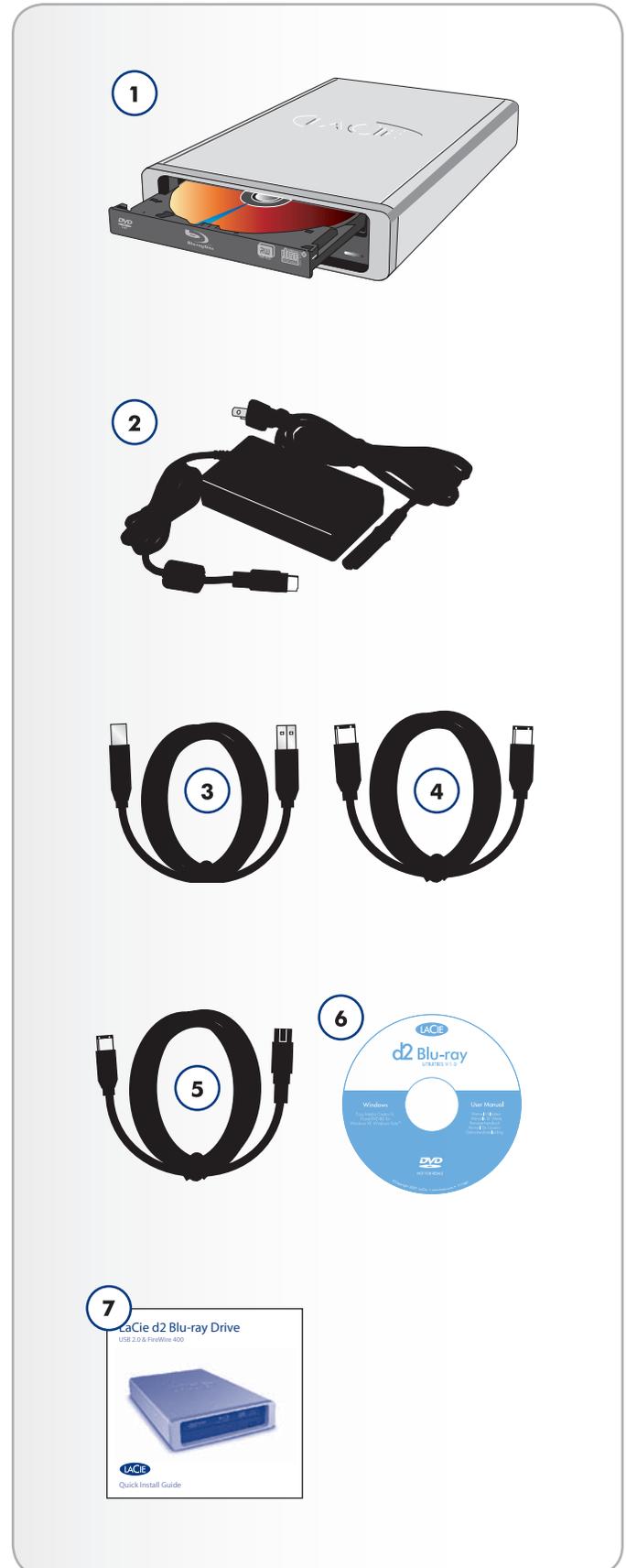
1.2. Minimum System Requirements

1.2.1. For Burning/Mastering

✦ FireWire (IEEE 1394) or USB 2.0-equipped computer

✦ Pentium 4 Dual Core 3.2GHz processor or higher, or PowerPC G5, or Mac Intel Core Duo processor

✦ 512MB of RAM minimum

✦ Windows XP with Service Pack 2, or Mac OS 10.5 or higher

1.2.2. For HD Video* Playback

✦ NVIDIA GeForce 7600GT/7900GT, ATI X1600 with latest driver

✦ Monitor Resolution of 1280x1024

✦ Windows operating system

• To play a protected BD movie in HD through a digital DVI or HDMI interface: HDCP GPU + HDCP ready display.

1.3. Views of the Drive

1.3.1. Front View

1. Media Tray – Open the tray by pressing the load/eject button, then place a BD/CD/DVD into the tray with the label facing up. Close the tray by pushing the load/eject button or pushing the front part of the tray. This drive hasn't been designed to accept media with cartidges.

2. Emergency Eject Hole – Insert a straightened paper clip (or similar object) and push to eject the tray if the load/eject button does not work. In normal operation, the eject button should always be used to unload the tray. If you must use the emergency eject hole, make sure the drive's power is turned off and wait until disc rotation has stopped.

3. Load/Eject Button – Push this button to open the media tray.
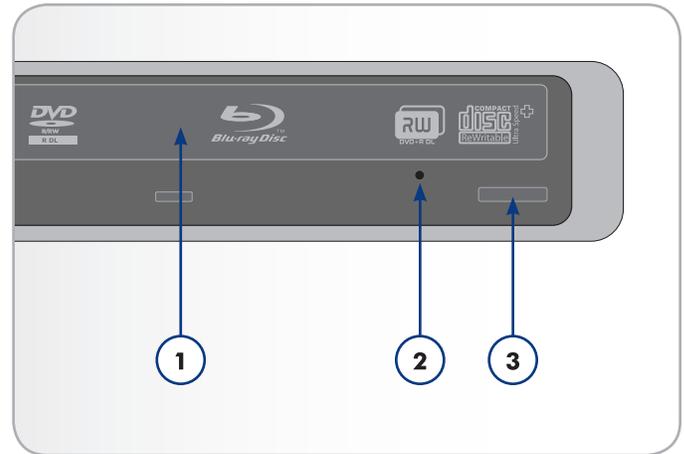
Fig. 01

1.3.2. Rear View

1. On/Off Switch – Turns the drive on and off.

2. Power Supply Connection – This is where you plug in the AC adapter supplied with the drive. See *2.2. Connecting the Power Supply* for more information.

3. Hi-Speed USB 2.0 Port – This is where you plug in the USB 2.0 cable furnished with the drive. See *2.3. Connecting via the USB 2.0 Interface Cable* for more information.

4. FireWire 400 Ports – This is where you plug in the FireWire 400 cables supplied with the drive. See *2.4. Connecting via the FireWire Interface Cable* for more information.
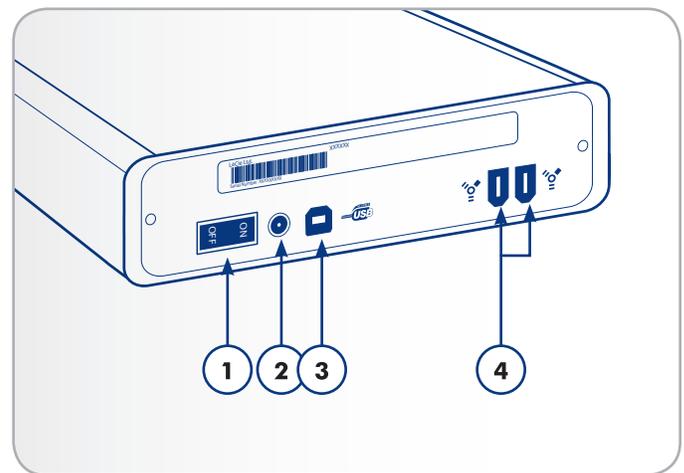
Fig. 02

1.4. Cables and Connections

1.4.1. Hi-Speed USB 2.0

USB is a serial input/output technology for connecting peripheral devices to a computer. Hi-Speed USB 2.0 is the latest implementation of this standard, and it provides the necessary bandwidth and data transfer rates to support high speed devices such as hard drives, CD/BD/DVD drives and digital cameras.

Please see *4.7. USB Questions & Answers* for more information on USB uses and capabilities.

Your LaCie Blu-ray drive will not work properly when connected to a USB 1.1 port.

TECHNICAL NOTE: If you require extra USB 2.0 ports you can purchase an expansion card from your LaCie reseller or from the LaCie Web site: www.lacie.com/addons

USB 2.0 Cables

Your LaCie drive is shipped with a Hi-Speed USB 2.0 cable. Although you can technically connect your drive via a USB 1.1 port, your LaCie Blu-ray drive must to be connected to a Hi-speed USB 2.0 port.

1.4.2. FireWire 400

FireWire 400, also known as IEEE 1394, is a high-speed serial input/output technology for connecting peripheral devices to a computer or to each other.

FireWire 400 is ideal for bandwidth-intensive applications, such as audio, video and graphics. Please see *4.6. FireWire Questions & Answers* for more information on FireWire.

FireWire Cables

FireWire cables feature 6-to-6-pin and 6-to-4-pin cables (6-to-4 pin cable sold separately).
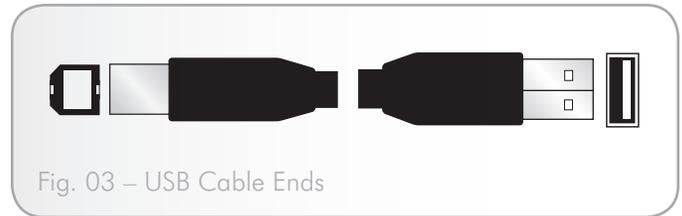
Fig. 03 – USB Cable Ends
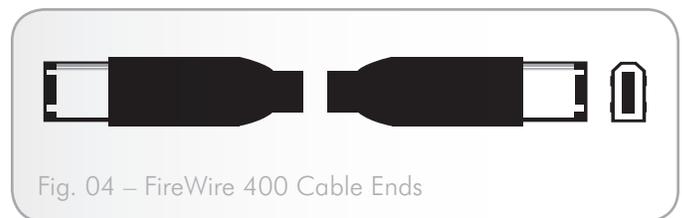
Fig. 04 – FireWire 400 Cable Ends

1.4.3. FireWire 800

FireWire 800, also known as 1394b, is an extra fast connection (up to 800Mbps) found on some Mac computers.

Your drive can be connected to a FireWire 800 port using a special 9-pin to 6-pin FireWire cable (included). This cable will allow you to connect your drive to your computer's FireWire 800 port.

IMPORTANT INFO: Connecting your LaCie Blu-ray drive to a FireWire 800 port will not increase its performance.

Fig. 05 – FireWire 800 to 400 Adapter Cable and Cable Ends

1.5. Blu-ray Technology

The precise blue laser that gives Blu-ray its name reads and writes smaller areas of information, allowing much more data to fit on a disk than red rays (used in standard CD/DVD burners), while maintaining superb HD picture quality.

The LaCie Blu-ray records BD-R/BD-RE/DVD±R single and Double layer/DVD±RW/CD-R/CD-RW, reads BD-ROM, DVD-ROM and CD-ROMs.

Blu-ray Disc abbreviations

Blu-ray Disc can be shortened down to "BD". BD-R are one-time writable Blu-ray media and BD-RE are rewritable. Both Blu-ray disc types come in two versions: single or double layer. As both layers are on the same side, the double layer discs are single-sided.

Blu-ray Disc video capacities

As with DVD, this depends on the usage of video bandwidth, the number of audio tracks and other authoring criteria. Furthermore, the choice of the codec also impacts playback time. On average:

On a single layer disc: 2 hours of HD Video = 135 minutes of HD using MPEG2 plus 2 hours of bonus material in standard definition quality OR 10 hours of broadcast-quality, standard definition video.

Using any of the advanced codecs, these numbers can even be significantly increased.

Manage Copies Across Home Networks

Pre-recorded Blu-ray discs incorporate a robust copy protection mechanism, which not only relies on implementation at the playback device, but which also includes precautions at the replicator level, which will be strictly controlled. Nevertheless, you will be able to copy a Blu-ray disc content to compatible devices throughout your home.

Disc durability

As the result of recent breakthroughs in hard coatings, Blu-ray discs offer much stronger resistance to scratches and fingerprints than other existing disc formats, resulting in high reliability for archiving.
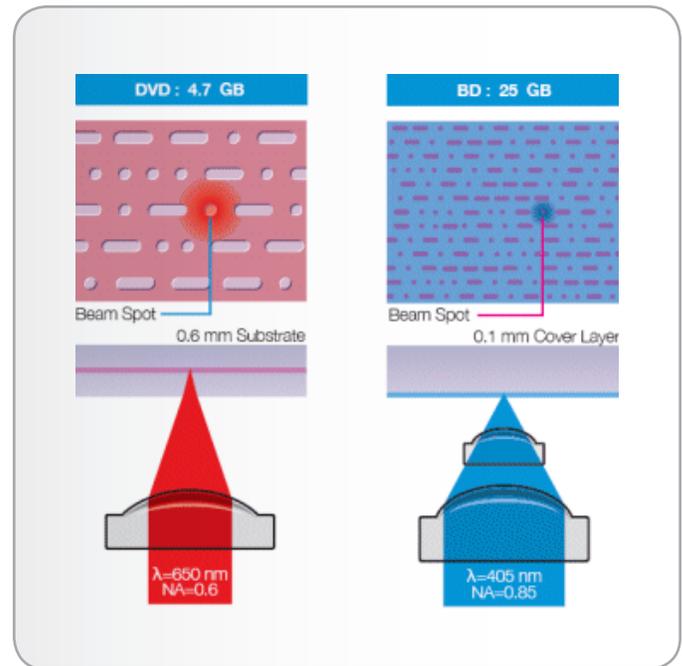
Fig. 06

Uses

The capacity of the Blu-ray discs will be particularly suitable for:

✦ High Definition television recording

✦ High Definition video distribution

✦ High Definition camcorder archiving

✦ Mass data storage

✦ Backup of workstations (the media can even be stored in a remote location)

✦ Transferring large files and entire projects from one computer to another

✦ Database storage

1.6. Supported Blu-ray/DVD/CD Formats

Format	Type of Disc	Write	Read	Write Speed	Read Speed	Capacity
Blu-ray	BD-RE (Single or double layer)	X	X	2x	8x	25/50GB
	BD-R (Single or double layer)	X	X	4x to 12x	8x	25/50GB
	BD-ROM (Single or double layer)	--	X	--	6x to 8x	--
	BD-R LtH	X	X	6x	6x	
DVD	DVD±R DL	X	X	8x	8x	8.5GB
	DVD±R	X	X	16x	16x	4.7GB
	DVD+RW	X	X	8x	8x	4.7GB
	DVD-RW	X	X	6x	8x	4.7GB
	DVD-ROM (Single and dual layer)	--	X	--	8x	4.7/8.5 GB
CD	CD-R	X	X	40x	40x	700MB
	CD-RW	X	X	24x	24x	650MB
	CD-ROM	--	X	--	40x	--

1.6.1. Blu-ray, DVD and CD Media Format Definitions

Your LaCie d2 Blu-ray DVD Drive will allow you to create, save and share your digital files. For an explanation of relevant acronyms, see *4.2. Acronyms*.

BD-R (Single or double layer)

Blu-ray Disc Recordable. A BD-R disc can be recorded once, and cannot be accidentally erased. BD-R is the ideal format for archiving valuable data or storing and distributing video material.

BD-RE (Single or double layer)

Blu-ray Disc Rewritable. A BD-RE disc can be recorded over and over again (good quality Blu-ray discs can be overwritten approximately 10,000 times). It offers extensive editing functionality on the disc. BD-RE is the ideal format for making sequential backups, or recording video for time shifting purposes.

BD-ROM

Blu-ray Disc Read Only Memory. A BD-ROM disc contains pre-recorded data. Although a BD-ROM may contain any form of data, most BD-ROM discs will contain movies in High Definition format, for playback on Blu-ray Disc players.

BD-ROM can be read on your computer using the LaCie d2 Blu-ray drive provided you own the appropriate playback software, compatible system, graphic card and monitor.

BD-R LTH

BD-R LTH ("low-to-high") is a write-once Blu-ray disc format that supports less expensive Blu-ray discs with an organic dye recording layer. The additional advantage of BD-R LTH is that many existing Blu-ray burners are compatible with this new format and no further investment in new technology is necessary.

DVD+RW Discs

✦ Best suited for: backing up and archiving digital content.

✦ These discs are functionally similar to CD-RW and DVD-RW discs, but utilizes the same recording techniques as DVD+R.

✦ Incorporates the Direct Overwrite (DOW) system, allowing data to be written directly over existing data in a single pass.

DVD-RW Discs

✦ Best suited for: backing up and archiving digital content.

✦ These discs serve the same general purpose as CD-RW media, but with 4.7GB of space versus 650MB.

✦ Discs can be written and erased up to 1,000 times.

DVD+R Discs

✦ Best suited for: recording DVD videos, storing multiple photo albums and data DVDs under 4.7GB.

✦ These discs have the same write-once concept as CD-R me-

dia, but with 4.7GB of capacity versus 700MB for CD-R discs.

✦ DVD+R supports "lossless linking" and the combination of Constant Angular Velocity (CAV) and Constant Linear Velocity (CLV) recording techniques.

DVD-R Discs

✦ Best suited for: recording DVD videos, storing multiple photo albums and data DVDs under 4.7GB.

✦ These discs are also functionally similar to CD-R media, and have the same capacity as DVD+R discs.

✦ There are two types of DVD-R discs: DVD-R General, which are intended for home applications, and DVD-R Authoring, which are intended for professional DVD-Video development applications.

DVD+R DL and DVD-R DL (Double Layer) Discs

✦ Ideal for: recording high-quality DVD videos, backing up and archiving large data DVDs.

✦ These discs follow the DVD+ recording techniques, but with 8.5GB of capacity versus 4.7GB for DVD±R discs.

✦ With the increased capacity, it is now possible to increase the video bit rate for higher quality DVD videos.

CD-R Discs

✦ Best suited for: recording audio CDs, storing photos and for data CDs.

✦ Files can not be deleted from CD-R discs, and you cannot write over existing files on a CD-R disc.

CD-RW Discs

✦ Best suited for: passing medium sized files around an office or among students.

✦ Discs can be reformatted up to 1,000 times, and files can be written over.

✦ Most CD-ROM drives and audio CD players cannot read CD-RW discs.

For Best Recording Results

✦ Close all other open programs and disconnect from the internet

✦ Copy data to your hard drive first

✦ Check media speed rating

✦ Use media that is free of scratches and fingerprints

2. Connecting Your LaCie d2 Blu-ray Drive

There are three parts to connecting and turning on your LaCie d2 Blu-ray Drive.

The LaCie d2 Blu-ray drive can be connected to both Macintoshes and PCs; however bundled software vary depending on the model.

Step 1	*2.1. Installing the BD/DVD/CD Burning Software*
Step 2	*2.2. Connecting the Power Supply*
Step 3	*2.3. Connecting via the USB 2.0 Interface Cable*
	2.4. Connecting via the FireWire Interface Cable

IMPORTANT INFO: You can not have the FireWire and USB interfaces connected at the same time. If you would like to switch between interfaces, you must first unmount the drive.

2.1. Installing the BD/DVD/CD Burning Software

2.1.1. Installing the Recording Software

Insert your LaCie Utilities DVD-ROM into your DVD drive, and follow the instructions below that are based on each particular operating system. For more information about the various programs, please refer to the software's Help section.

Mac OS

Double click the LaCie Utilities DVD-ROM icon and then open the "Toast Titanium" folder. Drag and drop the Roxio Toast 10 Titanium application icon into the Applications folder on your hard drive.

Windows

Double click the LaCie Software Utilities DVD-ROM icon and then open the "Creator 10" folder. Double click the installer. and follow the on-screen steps.

Then, double click the Power DVD icon and follow instructions to complete installation.

Fig. 07

IMPORTANT INFO: Available software vary from one model to another. For a complete list of software, please check the packaging of your product or the label of the included DVD-ROM.

Available software include (depending on chosen model):

Recording software

- ✦ Toast 10 Titanium (Mac OS X)
- ✦ Creator 10 Suite (Windows)

Playback software

- ✦ Power DVD BD   Windows

LaCie reserves the right to include a higher version of these software or different software. Please check your product packaging for an exact list.

TECHNICAL NOTE: You will be prompted for the CD key the first time you use your application. The serial number for your copies of Toast 10 Titanium and Power DVD are located on the back of the DVD-ROM sleeve.

IMPORTANT INFO: Please check the LaCie website for software updates: www.lacie.com/support/drivers/dvd

2.2. Connecting the Power Supply

The power supply kit is composed of two cables: one cable (A) connects to the LaCie drive; and the other cable (B) connects to a power outlet, such as a wall outlet or a surge protector.

1. Connect Cable A to your LaCie Drive.

2. Connect Cable B to the Power supply brick (C).

3. Connect Cable B to a surge protector or wall outlet.

CAUTION: Only use the AC adapter supplied with your specific LaCie drive. Do not use a power supply from another LaCie drive or another manufacturer. Using any other power cable or power supply may cause damage to the device and void your warranty.

Always remove the AC adapter before transporting your LaCie drive. Failure to remove the adapter may result in damage to your drive and will void your warranty.

If your power supply gets damaged, a replacement can be purchased from the LaCie Web site at www.lacie.com/addons or from your local LaCie retailer.
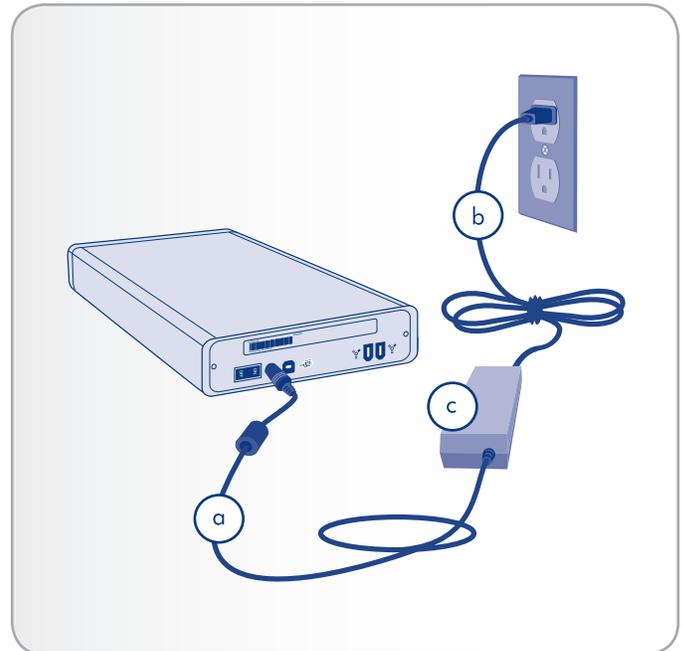

Fig. 08

2.3. Connecting via the USB 2.0 Interface Cable

IMPORTANT INFO: You can not have the FireWire and USB interfaces connected at the same time. If you would like to switch between interfaces, you must first unmount the drive.

1. Connect the Power supply cable (*2.2. Connecting the Power Supply*).

2. Connect the Hi-Speed USB 2.0 cable into the Hi-Speed USB 2.0 port on the back of the LaCie Blu-ray Drive. Turn the drive on using the on/off switch on the back.

3. Attach the other end of the interface cable to an available USB port on your computer.

4. Your drive should now be ready for use. To verify that your drive is correctly installed and communicating with your computer, follow these steps:

Mac Users:

In the Finder menu, click on About This Mac, then More Info. This will open the Apple System Profiler. Your drive should be listed under the Hardware category.

Windows Users:

Right click your My Computer folder and select Properties. Click on General. Your drive should be listed.

TECHNICAL NOTE: Your drive must be connected to a USB 2.0 port to work. See *1.4.1. Hi-Speed USB 2.0*.

TECHNICAL NOTE: For more information on USB connections, see the following sections:

*1.4.1. Hi-Speed USB 2.0*

4.7. USB Questions & Answers
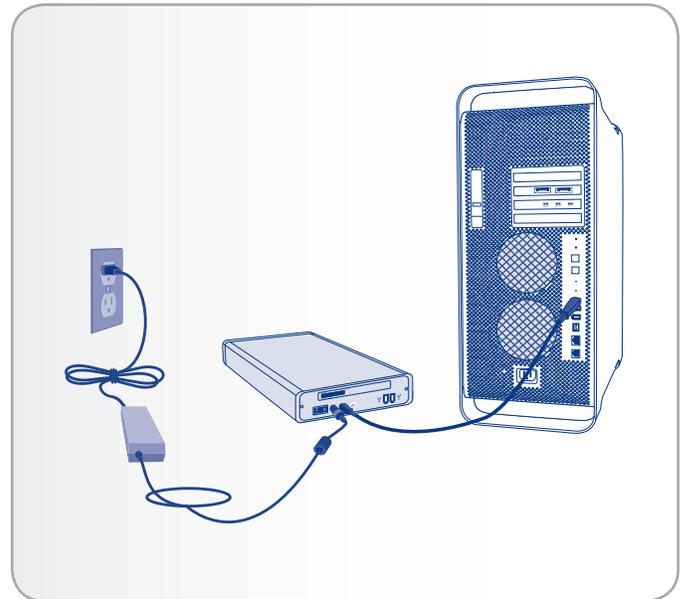
Fig. 09

2.4. Connecting via the FireWire Interface Cable

IMPORTANT INFO: You can not have the FireWire and USB interfaces connected at the same time. If you would like to switch between interfaces, you must first unmount the drive.

1. Connect the Power supply cable (*2.2. Connecting the Power Supply*).

2. Connect either the FireWire 400 cable or the FireWire 400 to 800 adapter cable into the FireWire 400 port on the back of the LaCie Blu-ray Drive. Turn the drive on using the on/off switch on the back.

3. If you connected the adapter cable, attach the other end to an available FireWire 800 port on your computer. If you connected the FireWire 400 cable, attach the other end to an available FireWire 400 port on your computer.

4. Your drive should now be ready for use. To verify that your drive is correctly installed and communicating with your computer, follow these steps:

Mac Users:

In the Finder menu, click on About This Mac, then More Info. This will open the Apple System Profiler. Your drive should be listed under the Hardware category.

Windows Users:

Right click your My Computer folder and select Properties. Click on General. Your drive should be listed.

TECHNICAL NOTE: For more information on FireWire connections, see the following pages:

1.4.2. FireWire 400

4.6. FireWire Questions & Answers

TECHNICAL NOTE: It is possible to connect your drive to a FireWire 800 port. The speed and functions of your Blu-ray drive will remain identical. Use the included FireWire 400 to FireWire 800 adapter cable.
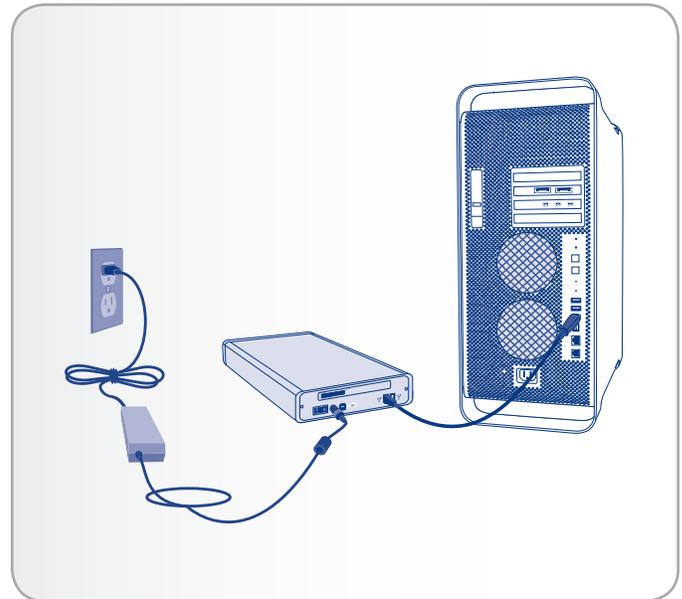

Fig. 10

3. Using Your LaCie d2 Blu-ray Drive

3.1. Inserting Discs

To insert a disc, push the Open/Close (A) button on your LaCie d2 Blu-ray Drive. When the disc tray opens, put the BD, DVD or CD media into the tray with the label side facing up. Make sure the BD, DVD or CD is correctly placed in the center of the disc tray. Push the Open/Close button (A) to close it.

Do not attempt to force the door open, you will damage the drive. The power must be on in order to open the drive (ie the blue button must be lit). The drive must be on a flat surface to work correctly.

To close your LaCie d2 Blu-ray Drive, press the Open/Close button on the front of the drive.

Pushing the media tray closed is not recommended.

CAUTION:

- ✦ Do not force the tray closed. You will damage the drive.
- ✦ Always remove discs before transporting the drive.
- ✦ Never move the drive while it is in operation.
- ✦ This drive is not compatible with cartridges.

Fig. 11

3.2. Accessing Discs

Mac Users

The BD, DVD or CD volume will appear as an icon on the Desktop. Click on the icon to access the contents of the BD, DVD or CD.

Windows Users

The BD, DVD or CD volume will appear in your My Computer folder. Click on the icon to access the contents of the disc.
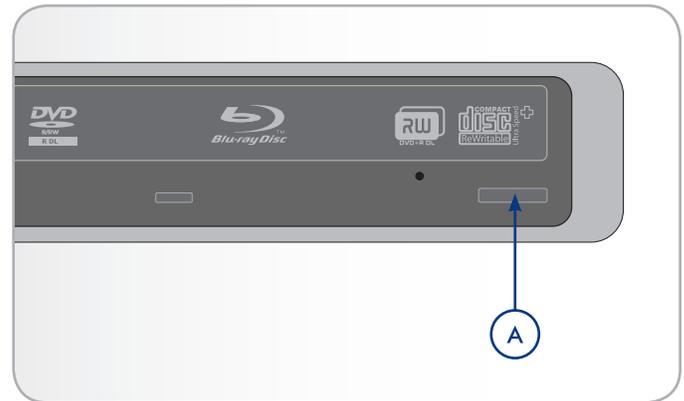
3.3. Ejecting Discs

Mac Users

1. Drag the DVD/BD/CD icon on the desktop to the Trash. The d2 Blu-ray DVD Drive's tray will then open.

2. Remove the DVD, BD or CD.

3. Gently push in the disc tray or push the load/eject button to close it.

Windows Users

1. Press the Open/Close button on the d2 Blu-ray DVD Drive.

CAUTION: Do not attempt to open the drive's disc tray or remove the disc while the unit is in use and being accessed by the computer. You may injure yourself, and damage the drive and/or your computer system. Do not transport the drive with the tray open or with a BD, DVD or CD disc inside it. Doing so may damage the drive and/or data stored on the disc, and will void your warranty.

3.4. Emergency Disc Ejection

In the event that a BD, DVD or CD cannot be ejected with the Open/Close button and the software is not controlling the drive, use the emergency eject operation to open the disc tray. First, switch off the Blu-ray drive and unplug the interface cable.

On the front of the drive is the Emergency Eject Hole (*Fig. 13*). Insert a small metal poker, such as an unbent paper clip, into the Emergency Eject Hole until the poker presses against the manual eject mechanism. You will feel the mechanism eject the disc tray. Only use this method when the Open/Close button is not working.

CAUTION: Make sure the d2 Blu-ray DVD Drive is off and the power unplugged before attempting the emergency ejection procedure.
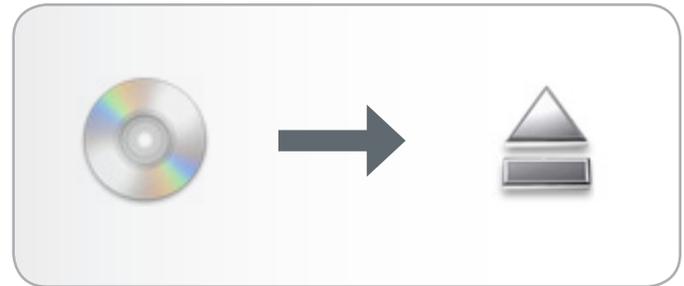

Fig. 12 - Mac Users

Fig. 13

4. Helpful Technical Information

4.1. File System Formats

When writing DVD±R/RW, BD-R/RE and CD-R/RW discs, you will have the option to assign the disc a particular file format (the way in which a computer names and organizes files for storage and to manage data exchange). There are essentially three file system formats to be concerned with when using a LaCie BD/DVD/CD Drive:

✦ Universal Disk Format (UDF)

✦ ISO 9660

✦ Mac OS Extended (also known as HFS+)

UDF – This specification, developed by Optical Storage Technologies Association, is the predominant file system that allows compatibility across various Blu-ray, DVD and CD applications, hardware platforms and computer operating systems.

ISO 9660 – This is the standard file system which allows media to be read on a Mac, PC or other major computer platform. Published by the International Organization of Standardization, this standard defines a file system for DVD-ROM and CDs. It supports Microsoft Windows, Mac OS and operating systems that follow the Unix specification, but doesn't support custom features of Mac file systems such as long file names or icon options. Microsoft created an extension to the format, called Joliet, which allows for Unicode file character names and file names up to 64 characters in length (twice as many as the ISO 9660 Level 2 and 3 specifications).

Mac OS Extended – Also known as HFS+, this is the file system used by Macintosh. If you will be using your disc only on Macs, this is the preferred file format.

Hybrid discs (Mac & PC) – Mac users can also choose to create hybrid discs which contain two partitions: one to be viewed by Mac users, one by Windows users.

4.2. Acronyms

BD	Blu-ray Disc
BDMV	Blu-ray Disc Video
BD-R	Blu-ray Disc Recordable Media
BD-ROM	Blu-ray Disc Read Only Media
BD-R LTH	Blu-ray Disc Low-to-High
CPS	Content Protection System
MPEG	Moving Picture Experts Group
BDAV	Blu-ray Disc, Audio Visual
BD-CPS	Content Protection System for Blu-ray Disc
BD-RE	Blu-ray Disc Rewritable Media
CCI	Copy Control Information
ECC	Error Correction Code

4.3. DVD±RW Writing Methods

Disc at Once (DAO) – A DVD writing process in which the entire DVD is recorded in one session, and data cannot be added after the recording is finished. Differs from the CD-R DAO method because the lead-in, data area and lead-out areas are all written sequentially.

Session at Once (SAO) – A writing process which is similar to DAO, where all of the information is written in one session, but SAO allows for the ability to begin another session and record at a later time. This mode allows for greater control of the recording process than Packet Writing (PW) or TAO, and more disc space can be utilized because there is no need for gaps between tracks.

Incremental Recording (IR) – A writing process that is similar to the Session at Once (SAO) CD-R writing method; files may be added directly to the DVD-R disc one recording at a time, instead of recording the files to a hard drive before writing the disc. The minimum recorded size, though, must be at least 32KB (even if the file to be recorded is smaller than that), and capacities and write speeds are decreased due to the overhead of combined lead-in/out areas and data. Also, the disc must be finalized before it may be played back by a drive other than the drive recording the disc.

Multi-Border Recording (MBR) – A writing process that is very similar to IR, MBR allows you to make an IR disc and then play the disc back on a device that recognizes this type of recording method. MBR creates a very short boundary zone around a recording session so a compatible player or DVD-ROM drive does not attempt to play beyond the border of the recorded area, instead allowing the unfinalized disc to be read by a player that supports this recording method.

Restricted Overwriting (RO) – With this method, if a disc has already been written to, new data segments can be randomly inserted anywhere within the recorded boundary. New data, however, can only be added to an area of the disc that has already been recorded over and from the point where the last session was stopped.

Packet Writing (PW) – A drag-and-drop writing process writing process that is very useful for data backup. Buffer underrun* is impossible in this mode, because the data is written in "packets" of a few KBs. Packet Writing is a CPU-hungry process because it constantly checks the available space on the disc.

TECHNICAL NOTE: *Buffer Underrun – The recording of a disc is a system-intensive application, and the rewritable drive needs a constant stream of data. A buffer underrun occurs when the stream of data to the rewritable drive is not fast enough to keep the rewritable drive's buffer full, causing the an error in the recording process. If this problem occurs often, turn down the recording speed.

	DAO	SAO	IR	MBR	RO	PW
CD	X	X				X
DVD	X		X	X	X	
BD-R				X		X
BD-RE		X				X

4.4. About BD/DVD/CD available capacity

There are important factors to consider when recording video, audio or data to CDs, DVDs or Blu-ray discs. The DVD media specification provides for two physical sizes: 4.7" (12cm) and 3.1" (8cm) (both are .47" (1.2cm) thick). Blu-ray and DVD discs are single-sided and can have one (SL) or two (DL) layers of data.

The amount of data or video that a disc can hold are dependent upon factors such as the amount of audio and the degree of compression of the data, video or audio. For example, a double-layer BD-R will store just over 4 hours of HD video using MPEG2, but it is possible to store up to 20 hours of broadcast quality standard definition video.

When media companies reference the amount of data that a disc can hold, they represent the total amount in terms of gigabytes (GB), or a billion bytes (1000 x 1000 x 1000 bytes). This number, though, is not the way in which a computer addresses the data; to a computer the value is binary and larger than a billion bytes – 1,073,741,824 (1024 x 1024 x 1024 bytes).

4.5. About compression standards

Most of the Blu-ray Video material and all the DVD-Video materials are compressed using MPEG2 codec. The acronym MPEG stands for Moving Picture Expert Group, which worked to generate compression specifications under ISO. What is commonly referred to as "MPEG video" actually consists at the present time of three finalized standards, MPEG1, MPEG2, MPEG4 which was finalized in 1998 for Very Low Bitrate Audio-Visual Coding.

HD Video, with full-motion video and multi-channel sound (multi-lingual soundtracks, surround sound, etc.), is a data-hungry application.   MPEG2 compression allows you to fit a full-length feature film in HD, plus bonus material, on just one disc. MPEG4 AVC (H.264) and VC-1 are two other HD video compression standards which can match the best possible MPEG2 quality at up to half the data rate. But they are not not much used by the professional video industry yet.

Indication of bit rates for HD Video:

✦ MPEG2 = 21Mbits/s

✦ MPEG4 (H.264) = 8Mbits/s

✦ VC-1(WMV9) = 8 Mbits/s

4.6. FireWire Questions & Answers

What is FireWire /IEEE 1394?

A serial bus used to connect external computer and consumer electronic devices to computers and consumer electronic consoles.

What does IEEE 1394 mean?

"1394" is an abbreviation of IEEE 1394, the name given to this highperformance serial bus. IEEE (the Institute of Electrical and Electronic Engineers) is the name of the engineering corps that developed this standard. The 1394 refers to the 1,394th standard that the IEEE has produced.

What is the relationship between IEEE 1394, FireWire, iLink and DV?

These four names all refer to the same interface:

- ✦ IEEE 1394 – the name of the standard, used in the computer industry.
- ✦ FireWire – the brand name used by Apple.
- ✦ iLink – the brand name used by Sony.
- ✦ DV – logo used by video camcorder manufacturers.

What can the FireWire interface be used for?

With its high data transfer rates, FireWire is a great interface for consumer electronics, like BD, DVD and CD recorders, external hard drives and video devices, such as digital camcorders, because it has an extremely large bandwidth and supports two types of data transfer (anyschronus and isochronous) which help to guarantee the transfer of time-critical data.

FireWire is also a point-to-point interface, meaning that a FireWire device can transmit data to another FireWire device without having to go through a computer. This lets several computers share a given device, and also allows up to 63 devices to be daisy-chained to the same FireWire bus (with a max of 16 devices on one branch). To daisy-chain, connect your one FireWire drive directly to the computer, then connect another FireWire drive to the first FireWire drive.

Does my computer have a FireWire port?

Some Macs and most recent PCs come with FireWire or i-Link interfaces. If your computer doesn't include a FireWire interface, an extension card can be purchased from your LaCie reseller or from the LaCie website www.lacie.com/addons

Will my LaCie Blu-ray work faster if connected to a FireWire 800 port ?

No. Your LaCie Blu-ray drive can be connected to a FireWire 800 port (adapter cable included) but the speeds will remain identical.

4.7. USB Questions & Answers

What Are The Benefits Of The USB Interfaces?

- ✦ Cross-platform: All recent Macintoshes and PC include USB ports.
- ✦ "Hot Swappable": No need to shut down or restart your computer when adding or removing a USB device. Plug it in and its ready.
- ✦ Automatic configuration: Once your device is connected, your computer recognizes the device and configures the software (Windows XP and 2000).
- ✦ Daisy-Chaining: with USB ports on your computer, you can connect up to 127 peripherals using hubs.
- ✦ Easy Installation: One standardized port and plug combination makes it simple to connect.

Will Hi-Speed USB 2.0 Devices Work on USB 1.1 Hubs And Vice Versa?

You can use your Hi-Speed USB 2.0 devices with USB 1.1 hubs, but the peripherals will be limited to USB 1.1 performance levels.

For more information about the USB interface, please visit:

www.lacie.com/technologies

4.8. Choosing between FireWire and USB

If your computer supports both interfaces, we advise you to use the FireWire interface. FireWire technology allows for daisy chaining of drives (i.e. you can connect the peripherals to each another) which avoids the use of a hub. Furthermore, sustained data transfer rates are usually higher with FireWire.

4.9. Data Transfers

Data transfers are the flow of data that accomplishes a task, usually related to moving data from storage to computer RAM or between storage devices. During data transfers, it's best to wait before launching other applications on the same FireWire or USB port. Anomalies may arise with computers that have FireWire or USB controllers that do not conform to OHCI (Open Host Controller Interface) standards. In any other configurations, we cannot ensure 100% correct operation. Due to this, you may encounter hanging problems. If this happens, proceed as follows:

1. Make sure that the FireWire or USB cable is connected tightly and securely on both ends of the cable, from the drive to the computer. If you are using a FireWire or USB cable other than the one supplied with your LaCie drive, check that it is FireWire (IEEE 1394) certified.

2. Check that the power supply and ground connection are seated properly.

3. Disconnect your computer's FireWire or USB cable. Wait 30 seconds. Reconnect.

TECHNICAL NOTE: *Controller - This is a component or an electronic card (referred to in this case as a "controller card") that enables a computer to communicate with or manage certain peripherals. An external controller is an expansion card which fills one of the free slots (i.e. PCI or PCMCIA) inside your PC and which enables a peripheral (i.e. DVD/RW drive, Hard Drive, scanner or printer) to be connected to the computer. If your computer is not equipped with a FireWire controller card, you can purchase an external controller through LaCie. Contact your LaCie reseller or LaCie Technical Support (*6. Contacting Customer Support*) for more information.

5. Troubleshooting

In the event that your LaCie d2 Blu-ray Drive is not working correctly, please refer to the following checklist to find out where the problem is coming from. If you have gone through all of the points on the checklist and your drive is still not working correctly, please have a look at the FAQs that are regularly published on our Web site – www.lacie.com. One of these FAQs may provide an answer to your specific question. You can also visit the drivers pages, where the most recent software updates will be available.

If you need further assistance, please contact LaCie Technical Support (see *6. Contacting Customer Support* for details).

5.1. Manual Updates

LaCie strives to give you the most up-to-date, comprehensive user manuals available on the market. It is our goal to provide you with a friendly, easy-to-use format that will help you quickly install and utilize the many functions of your new device.

If your user manual does not reflect the configuration of the product you purchased, please check our website for the most current version of the user manual.

www.lacie.com

Problem	Question	Solution
The drive is not recognized.	Is the drive's power on?	Check to see that all of the power cords are properly connected and that the switch on the rear of the drive is turned on. If you are using a surge protector, make sure that it is switched on, too.
	Does an icon for the drive appear on the computer (a disc must be inserted in the drive)?	PC: Check for an icon on our My Computer folder (a disc has to be inserted in the drive) . Mac: The icon should appear on your desktop. If not, verify that the drive is recognized by the computer in your System Profiler (from the Finder, click on the Apple and select About this Mac/More info).
	Are all of the cables connected securely and correctly?	Make sure that all the steps in 2. Connecting Your LaCie d2 Blu-ray Drive have been followed correctly. Examine the connections carefully to ensure that all the cables are inserted in the correct orientation and in the correct location.
	Are both ends of the FireWire or USB cable connected and properly seated?	Check both ends of the FireWire and USB cable. Disconnect them, wait 10 seconds, and reconnect them. If the drive is still not recognized, restart your computer and try again.
	Are the FireWire or USB drivers installed correctly and enabled?	To check drivers, right click your My Computer folder, select the Hardware tab, and click on Device Manager. If your device is not listed, recheck the cables and try the other troubleshooting solutions listed here. If you cannot see the device, recheck the cables and try the other troubleshooting solutions listed here.
The drive is not recognized.	Is there a conflict with other device drivers or extensions?	Consult LaCie Technical Support. See 6. Contacting Customer Support for more details.
	Try using the eject function of the software program that you are using.	
	Check if the drive is seen by the computer.	PC: Right-click My Computer and select Properties. Select the Hardware tab and then Peripheral Manager (may be listed under "Games & Audio Devices"). If your drive isn't listed, recheck the cables and try the other troubleshooting tips listed here. If you see a yellow exclamation mark in the Peripheral Manager, then the drivers may have been installed incorrectly. To fix this problem, follow these steps: a. Insert the LaCie Utilities DVD-ROM into your computer's disc drive. b. In the Peripherals Manager, choose the Drivers tab and select Update. c. From the Welcome screen, choose Manual Update and then location: DVD-ROM. Mac: Click on the Apple icon in the finder bar and select About this Mac. Select More Info... The Apple System Profiler will launch and will list your internal and external peripherals.

Problem	Question	Solution
The drive's media tray will not open.	Has a running software program locked the eject function?	To check, disconnect the USB or FireWire cable, then reconnect and press the Open/Close button. If the disc will still not eject, go to *3.4. Emergency Disc Ejection* for more instructions on how to eject your media.
The drive automatically ejects a disc when you try to record on it, or the drive is not writing to BD/DVD/CD correctly.	Is the disc already full?	PC: Verify the contents of the disc by using your recording software or viewing its contents at File > Get Info. If you've checked and it still won't record, try recording on a new blank disc. Mac: Select the disc icon and press Cmd+I.
	Does the drive support the format of the disc you have inserted?	Check *1.6. Supported Blu-ray/DVD/CD Formats* for the disc formats supported by your drive.
	Do I need a new (HD) TV to play Blu-ray Disc?	No. Pre-recorded Blu-ray Disc titles will play on any standard definition TV set, even if the video was encoded in High Definition. Likewise, a Blu-ray Disc recorder can also record standard definition video, for example from regular TV broadcasts or camcorders.

6. Contacting Customer Support

Before You Contact Technical Support

1. Read the manuals and review section *5. Troubleshooting*.

2. Try to isolate the problem. If possible, make the drive the only external device on the CPU, and make sure that all of the cables are correctly and securely attached.

If you have asked yourself all of the pertinent questions in the troubleshooting checklist, and you still can't get your LaCie drive to work properly, contact us at www.lacie.com. Before contacting us, make sure that you are in front of your computer and that you have the following information on hand:

Information	Where to Find Information
LaCie d2 Blu-ray Drive serial number	Located on a sticker at the back of drive or on the original packaging
Macintosh/PC model	
Operating system version	Mac users: Click on the Apple icon in the menu bar and select About This Mac.
Processor speed	Windows users: Right click My Computer and select Properties > General.
Computer memory	
The brands and models of other internal and external peripherals installed on your computer	Mac users: Click on the Apple icon in the finder bar and select About This Mac. Select More Info… The Apple System Profiler will launch and will list your internal and external peripherals. Windows users: Right click My Computer and select Properties > Hardware.
Type of media used when problem occurred	

6.1. LaCie Technical Support Contacts

LaCie Asia, Singapore, and Hong Kong
Contact us at:
http://www.lacie.com/asia/contact/

LaCie Australia
Contact us at:
http://www.lacie.com/au/contact/

LaCie Belgium
Contact us at:
http://www.lacie.com/be/contact/ (Français)

LaCie Canada
Contact us at:
http://www.lacie.com/caen/contact/ (English)

LaCie Denmark
Contact us at:
http://www.lacie.com/dk/contact

LaCie Finland
Contact us at:
http://www.lacie.com/fi/contact/

LaCie France
Contact us at:
http://www.lacie.com/fr/contact/

LaCie Germany
Contact us at:
http://www.lacie.com/de/contact/

LaCie Italy
Contact us at:
http://www.lacie.com/it/contact/

Japan – ELECOM CO., LTD.
Contact us at:
http://www.lacie.com/jp

LaCie Netherlands
Contact us at:
http://www.lacie.com/nl/contact/

LaCie Norway
Contact us at:
http://www.lacie.com/no/contact/

LaCie Spain
Contact us at:
http://www.lacie.com/es/contact/

LaCie Sweden
Contact us at:
http://www.lacie.com/se/contact

LaCie Switzerland
Contact us at:
http://www.lacie.com/chfr/contact/ (Français)

LaCie United Kingdom
Contact us at:
http://www.lacie.com/uk/contact

LaCie Ireland
Contact us at:
http://www.lacie.com/ie/contact/

LaCie USA
Contact us at:
http://www.lacie.com/contact/

LaCie International
Contact us at:
http://www.lacie.com/intl/contact/

7. Warranty Information

LaCie warrants your drive against any defect in material and workmanship, under normal use, for the period designated on your warranty certificate. In the event this product is found to be defective within the warranty period, LaCie will, at its option, repair or replace the defective drive. This warranty is void if:

✦ The drive was operated/stored in abnormal use or maintenance conditions;

✦ The drive is repaired, modified or altered, unless such repair, modification or alteration is expressly authorized in writing by LaCie;

✦ The drive was subjected to abuse, neglect, lightning strike, electrical fault, improper packaging or accident;

✦ The drive was installed improperly;

✦ The serial number of the drive is defaced or missing;

✦ The broken part is a replacement part such as a pickup tray, etc.

✦ The tamper seal on the drive casing is broken.

LaCie and its suppliers accept no liability for any loss of data during the use of this device, or for any of the problems caused as a result.

LaCie will not, under any circumstances, be liable for direct, special or consequential damages such as, but not limited to, damage or loss of property or equipment, loss of profits or revenues, cost of replacement goods, or expense or inconvenience caused by service interruptions.

Any loss, corruption or destruction of data while using a LaCie drive is the sole responsibility of the user, and under no circumstances will LaCie be held liable for the recovery or restoration of this data.

Under no circumstances will any person be entitled to any sum greater than the purchase price paid for the drive.

To obtain warranty service, call LaCie Technical Support. You will be asked to provide your LaCie product's serial number, and you may be asked to furnish proof of purchase to confirm that the drive is still under warranty.

All drives returned to LaCie must be securely packaged in their original box and shipped with postage prepaid.

IMPORTANT INFO: Register online for free technical support: www.lacie.com/register

Note to Australian Customers

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Contact us:

LaCie Australia, 458 Gardeners Road Alexandria, NSW 2015 AUSTRALIA.

Phone: 02 8063 3711

Email: info.au@lacie.com

For fast technical support, create a support ticket after registering your product at http://www.lacie.com/au/register.