

How To Use This Manual

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Printing:

While optimized for onscreen viewing, the pages of this manual are formatted for printing on 8 1/2" x 11" and A4 sized paper, giving you the option to print the entire manual or just a specific page or section.

To Exit:

From the Menu bar at the top of your screen, select: File > Quit.

Icons Used In This Manual

These icons describe the type of information being given:



Important Info: This icon refers to an important step that must be followed.



Tech Note: This icon refers to tips to help maximize performance.



Caution! This icon indicates a potential hazard, and gives tips on how to avoid them.

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FCC Information

Information For Users

Any changes or modifications made to this device which are not expressly approved by LaCie are prohibited and may void the user's authority to operate this equipment.

General Information Statement

This device complies with Part 15 of the FCC Rules. Operation of this device 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.
- This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment causes, 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. There is no guarantee, however, 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 then on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

FCC Compliance Statement For United States Users

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 dealer or an experienced radio/TV technician for help.



Changes or modifications not expressly approved by the manufacturer could void the authority of the user to operate this equipment.

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.

For European Users



This product conforms to the requirements of EC Directives 73/23/EEC and 89/336/EEC.

Declaration of Conformity / Déclaration de Conformité / Erklärung zur Einhaltung von Produktnormen:
Sequel Imaging, Inc.

25 Nashua Road, Londonderry, NH 03053-USA

Product Name/ Designation / Produktname:

Sequel Imaging

Model Number / Numéro de modèle / Modelnummer:

Digital Control

Conforms to the following Product Specifications / Satisfait aux spécifications produit suivantes / Den folgenden Produktspezifikationen entspricht:

EMC: EN 60950 / EN 55022:1994 Class B / EN 61000-4-4:1995 / EN 55024:1998 / EN 61000-4-5:1995 EN 61000-4-2:1995 / EN 61000-4-6:1996 / EN 61000-4-3:1996 / EN 61000-4-11:199

For Japanese Users



This product conforms to the requirements of the Japanese Regulation VCCI V-3/99.05 Class B for Conducted and Radiated Disturbance.

Brand Name: Sequel Imaging

Part Number: 36.88.32

Type: Eye One Display

Power Requirements: DC via Host PC

1. Introduction

Enter the LaCie blue eye pro color management solution. The LaCie blue eye colorimeter and LaCie blue eye pro software deliver precise color control for monitors, allowing for calibration of the three red, green and blue gains of the monitor individually, and then creating an ICC profile of the monitor.

These profiles provide a description of the monitor's individual characteristics, measuring the gamma, white point and luminance. Profiles created with a colorimeter and software, such as those created by the LaCie blue eye, are more accurate and help programs like Adobe PhotoShop display images properly.

Graphic professionals working in color-managed environments will be able to adjust every monitor in their image chain, allowing them to evaluate images and perform real-time edits with assured accuracy. A properly calibrated and profiled monitor also allows for "soft-proofing," because the image is verified, which saves time and money. Your monitor will display the images as they were intended.

1.1. What Your LaCie blue eye pro Can Do

- Automatic Hardware Calibration with the LaCie 300 Series:

White Point Temperature – 5,000 to 9,500 K, in increments of 500 K

Gamma – 1 to 3, in increments of 0.1

Brightness – Maximum, Absolute or Percentage settings

- Manage your color with ICC profiles for comparison between target environments
- Integrate into Apple ColorSync and ICC-compatible environments, such as Adobe Photoshop, Illustrator and InDesign and QuarkXPress



2. Your LaCie blue eye pro

2.1. Minimum System Requirements

Mac Users

- Mac OS 10.1.x or greater
- Power PC processor
- 128MB RAM
- USB port
- Video card with a DVI port
- LaCie 300 Series Monitor

Windows Users

- Windows XP or 2000
- DVI graphics board
- USB port
- LaCie 300 Series monitor

2.2. Package Contents

Your LaCie blue eye pro should include the following:

- LaCie blue eye
- Cable weight
- Ambient Light Diffuser
- LaCie Color Utilities CD-ROM, with User's Manual and Calibration Software
- LaCie blue eye pro Quick Install Guide

3. Color Management

The digital age has brought about many important gains for color-conscious professionals, whether they work in fields such as graphic design, pre-press, video or digital photography. With these improvements, though, new challenges arose. One of those issues confronting professionals is the variability of the reproduction of color from one monitor to another.

Every monitor has its own color characteristics. In order to effectively deal with this variability in monitor “personalities,” it’s important to have a means of controlling, or managing, this difference. The most effective color management solution for monitors involves using a piece of hardware (the LaCie blue eye) and software (the LaCie blue eye pro) to adjust and control the color among different monitors.

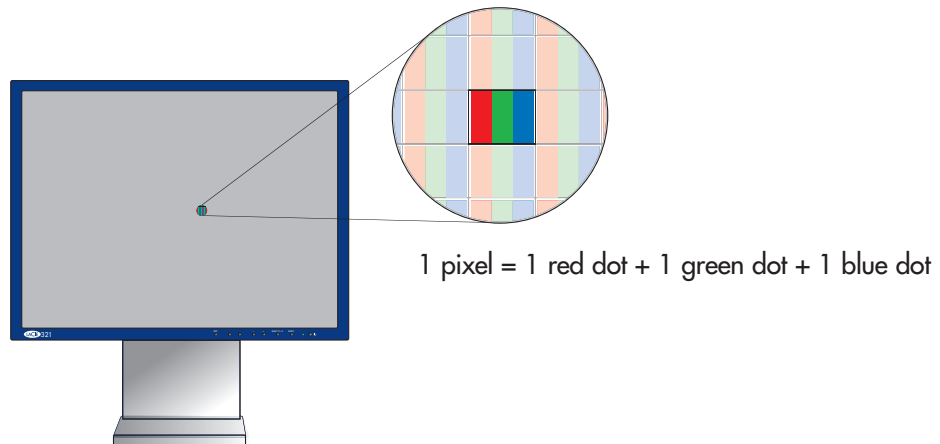
To implement color management, it is essential to properly calibrate and create custom, individual profiles for all your monitors. Once a monitor has been calibrated and a profile has been created, the profile then communicates with the operating system and the application software to ensure that images are displayed accurately.

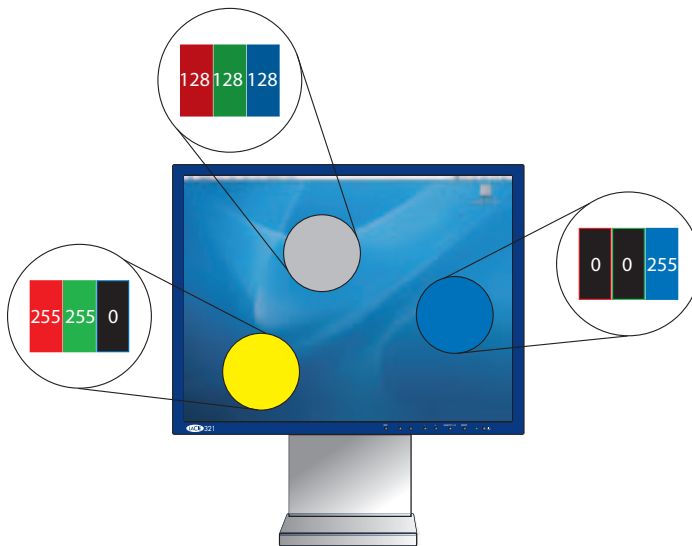
This section will help to explain how color is created and how the LaCie blue eye pro utilizes calibration and profiles to help you implement your color management solution.

3.1. Basic Issues With Monitor Color Rendering

Human perception of color is the result of the addition by our brain of the stimuli received from three types of nerve cells located in our eyes that are sensitive to the red, green and blue areas of the color spectrum. This is why the method used in a computer monitor to reproduce color is for each pixel to be composed of three dots that respectively emit red, green and blue light.

3.1.1. Monitors Create Color With The Three Primaries – Red, Green And Blue





The intensity of the light emitted by the red, green and blue dot in each pixel is set as a function of three values commonly called R,G and B. The R, G and B of a given pixel can be set as any integer value from 0 to 255.

- A pixel set to R=255, G=255, B=0 has its red and green dots emitting at maximum intensity and the blue dot not emitting at all. The result is an intense yellow.
- A pixel set to R=128, G=128, B=128 has its three dots emitting red, green and blue lights at a medium intensity. The combined result is that this pixel is perceived as an intermediate gray.
- A pixel set to R=0, G=0, B=255 has its red dot and its green dot emitting no light and its blue dot emitting blue light at its maximum intensity. The resulting pixel is globally perceived as emitting an intense blue.

3.1.2. RGB Values Are Device-Dependent

As we noted earlier, every monitor has its own individual settings for reproducing the RGB, because monitor manufacturers make very different choices as to the components that are used in their monitors. This leads to very strong differences between the color produced by any given RGB settings on separate monitors.

Besides the different components, there are also several reasons for this variation. On a TFT, for instance, here are some of the most important factors that come into consideration:

- the color filters used to create the dots of each pixel
- the nature of the backlights
- the light transmittance characteristics of the liquid crystal technology used in the display
- the brightness, contrast and other settings used on the monitor
- the age of the monitor

With this in mind, moving back to our example about the RGB setting to produce blue. We know that we're getting the color blue, but is the color of blue being displayed accurate? One particular monitor could display the blue as akin to sky blue, another as Navy Blue, and another as another shade of blue. And this the case for all colors, not just blue.

Because the color that is actually produced by a given RGB setting is not necessarily the same from one monitor to another, color scientists say that RGB values are device-dependent.

3.1.3. The Consequences Of Device Dependency

The direct consequence of this is that a given image (for instance a digital photograph) will not necessarily appear the same on two separate monitors. One may often observe color shifts, loss of contrast or loss of detail.

As a result, considerable inefficiencies can appear in professional workflows. When receiving a picture from its photographer, the news agency may have the impression that some color correction needs to be performed on the photograph, even though it may already have been done by the photographer before sending the picture to the agency. The same problem can occur when a printer receives digital art included in their customer's document. The colors displayed on the printer's monitor may not be identical to the ones displayed at the customer site.

3.2. Monitor Calibration And Device Profiles

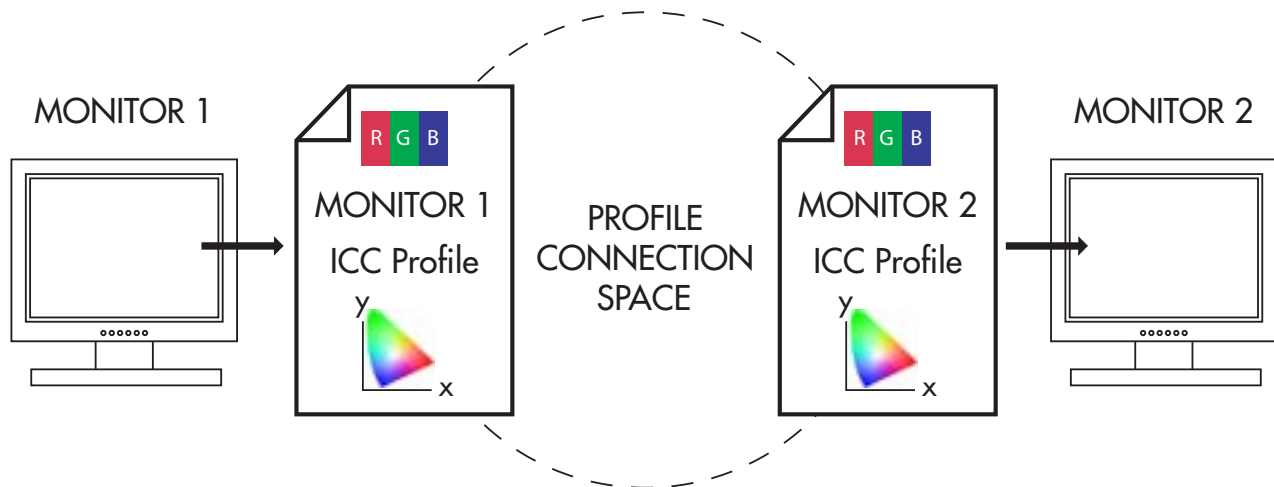
The LaCie blue eye pro implements a convenient solution to these problems. It entails two steps:

Step 1

The monitor is set to a calibrated state that is described in terms of its Brightness, Gamma and White Point Temperature. This allows the color-conscious professional to knowingly choose the range of colors that will be displayed on the monitor; and in particular to be certain that the colors displayed on the monitor correspond to a standard environment.

Step 2

An ICC (International Color Consortium) monitor profile is created and systematically embedded in the artwork produced from the professional's workstation. The ICC profile acts as a translator between RGB values and absolute colorimetric measurements that are expressed in a scientific color model such as CIELAB or Yxy.



ICC Profiles form the links in your image chain between device-dependent monitors and the device-independent PCS.

By taking into account the translation mechanisms contained in the ICC profile, another computer monitor (or any other device, such as a printer, for example) can reproduce the exact same absolute colors even though its components, settings and aging may be significantly different. The benefit is that both professionals see the same colors, and that there is no color shift across the workflow.

3.2.1. Monitor Calibration

The calibration process allows the professional to influence the range of colors displayed. The main settings that influence the range of colors displayed are the following:

The **Gamma Curve**. This curve determines the characteristics of the absolute colors associated with all the RGB values between the white point and the black point. It expresses the intensity of the light emitted by each of the RGB dots for each of the intermediary values between 0 and 255. The shape of the gamma curve in particular determines the level of detail and contrast that are displayed on the monitor. A practical way of describing this curve is through the use of a numerical value that describes its slope.

The **White Point**, i.e. the characteristics of the color displayed by the RGB value: R=255, G=255, B=255. These characteristics are often summarized with the term White Point Temperature, because scientists have developed a model where a given body brought to a certain temperature emits light of a given color. This temperature is expressed in degrees Kelvin (°K). Common White Point Temperature settings in the pre-press workflow are 5000 K and 6500 K. To influence White Point Temperature, it is necessary to adjust the respective intensities (also called gains) of red, green and blue light that are emitted by the RGB value of (255, 255, 255).

The **Luminance** controls the overall brightness of the monitor.

With the LaCie blue eye pro, you can fine-tune all of these factors and target the Brightness, Gamma and White Point Temperature settings of your choice. The sensor that is included is an advanced device that measures the light emitted by your monitor and expresses it in absolute colorimetric terms.



3.2.2. Device Profiles

Device profiles are the most important part of the color management puzzle, because without an ICC profile within your image chain, you can't implement color management.

Profiles serve three very important functions:

- They describe what color the RGB pixel values actually represent.
- They relate device-dependent RGB values to device-independent CIELAB/Yxy values.
- They contain data to convert between the RGB value that each device produces, and the CIELAB/Yxy number value.



Tech Note:

- CIELAB refers to the Commission Internationale de l'Eclairage, and L= the "lightness"; A= the position of a color on a red-green axis; and B= the position of a color on a yellow-blue axis.
- Yxy refers to a specification where a color is specified by its x and y co-ordinates on a chromaticity diagram graph.

4. Installing Your LaCie blue eye pro

4.1. Installing The LaCie blue eye pro Software

Mac Users:

Insert the LaCie Color Utilities CD-ROM into your computer's CD or DVD drive. Once the disc appears on your desktop, double-click the **disc icon** to open the LaCie Color Utilities CD-ROM. From this folder, click on the **LaCie blue eye pro installer icon**. Follow the on-screen instructions to begin the installation process. If you don't have administrator privileges, click on the **User Install button**, and if you have administrator privileges, click on the **Admin Install button**. By clicking on the **User Install button**, the LaCie blue eye pro program folder will be created and placed in the User/Applications folder. By clicking on the **Admin Install button**, the LaCie blue eye pro program folder will be created and placed in the main Applications folder. You may need to enter your Administrator name and password to proceed.

Please refer to your Apple User's Manual for information about Administrator rights and privileges.

Windows Users

Insert the LaCie Color Utilities CD-ROM into your computer's CD or DVD drive. Follow the on-screen instructions to install the software. Once installation is complete, go into Programs and launch the LaCie blue eye pro software.



4.2. Connecting The LaCie blue eye Colorimeter



Important Info: Before connecting the LaCie blue eye to your monitor:

- Clean the monitor to remove fingerprints and dust.
- Install the LaCie blue eye software (see section [4.1. The LaCie blue eye Software](#) for more information).

1) Remove the LaCie blue eye colorimeter from the protective case by applying downward pressure on the protective case, while holding the LaCie blue eye colorimeter with your other hand. You should hear a “click” noise whenever the LaCie blue eye colorimeter is removed or placed in its protective case.

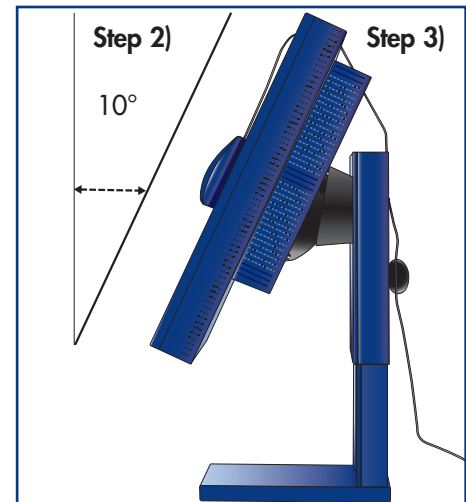
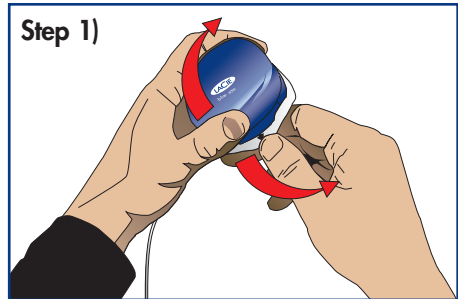
2) Incline the LaCie 300 Series Monitor by 10°.

3) Position the LaCie blue eye colorimeter and cable weight. The LaCie blue eye colorimeter should be flush against the monitor's screen.

4) Connect the LaCie blue eye colorimeter's USB cable to an available USB port on your computer.



Tech Note: You may attach the LaCie blue eye colorimeter to powered USB hubs.

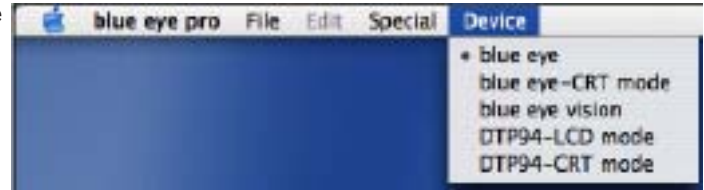


4.3 Using Another Colorimeter

LaCie blue eye pro supports a variety of colorimeters, including the following :

- LaCie blue eye
- LaCie blue eye vision
- Monaco Xrite DTP94
- GretagMacBeth eyeOneDisplay

The default device expected by LaCie blue eye pro is the LaCie blue eye colorimeter. If you are using another colorimeter, please select the appropriate device from the Device drop-down menu to enable the application to detect it. If you are using a GretagMacBeth eyeOne Display colorimeter please select the blue eye device.



5. Using Your LaCie blue eye pro Color Management Tools With Your LaCie 300 Series Monitor



Caution! BEFORE BEGINNING

- Make sure that your monitor has been powered on for at least one hour. This ensures that the monitor has had enough time to warm up and stabilize.
- Disable any screen savers.
- Delete or disable any competing profile programs you may have installed. These programs could compete for control of the display, and it is important that only one program is running at a time.
- If another profile program is installed and it has a startup utility that is used at your computer's boot time, this program will need to be deleted.
- Setup your work area in the way that you will use it after calibrating and profiling. Room lighting has an affect on the appearance of screen images.
- Tilt the monitor upwards 10° (with the axis measuring from the horizontal length of the bottom of the monitor). This helps to prevent unwanted light from affecting the results.

This chapter details how to use the LaCie blue eye pro software and LaCie blue eye colorimeter to calibrate your monitor and build a profile.

5.1. Calibrating Your LaCie 300 Series Monitor

Start by launching the LaCie blue eye pro application by double-clicking on its icon from your Applications folder. The LaCie blue eye pro main application window will then appear.



5.1.1. Setting Target Values

The initial window of the LaCie blue eye pro application invites you to provide your target values for your monitor's settings of **Gamma**, **White Point Temperature**, and **Luminance**, while also allowing you to navigate to other options, such as **Select Profile** and **Test & Report**. If you do not have known pre-set values, you may simply keep the default settings.

- **Gamma** can be set at any value between 1 and 3 in 0.1 increments. Please choose the gamma value that corresponds to your working environment.

- **White Point Temperature** can be set either through a preset value (From 5000 Kelvin to 9500 Kelvin in 500 K increments), or manually.

- **Luminance** can be targeted as an absolute value in cd/m² (candelas/meter²), or a predefined value expressed as a portion of the maximum luminance offered by the monitor.

If you would like to continue with the calibration process, once you have established your targeted values, go on to the next step by clicking on the **Next** button.

If you have calibrated the monitor before, you may load a previous profile by clicking on the **Select Profile** (please see section [5.3. Switching Colorimetric Environments](#) for more information) button.

If you would like to first test the current calibration of your monitor, click on the **Test & Report** (please see section [5.2. Evaluating The Calibration State Of Your LaCie 300 Series Monitor](#) for more information) button.



5.1.2. Calibration

The LaCie blue eye pro program creates a custom ICC profile of your monitor based on the information provided to the program by displaying color patches (which are measured by the LaCie blue eye colorimeter) and comparing them to the theoretical values to be displayed. Position the LaCie blue eye program screen so that the white circle is underneath the LaCie blue eye colorimeter, then press the **Start** button to begin the profiling process. By clicking on the **Settings** button, you will return to the **Target Settings** screen.



5.1.3. Saving The Profile

The **Save Profile** window will automatically appear. In this window, you can simply choose the default filename, or enter a custom filename for your profile to be saved under. The default profile filename contains the date of calibration, color temperature, gamma and luminance settings. With this practical format you can easily remember, at a future date, when your last calibration took place, and what the settings were.

Once you have chosen the profile's filename, click on the **Save Profile** button.

This file is stored in the **Home > Library > ColorSync** profile folder. In Windows 2000 the file is stored in: C:/WINNT/System32/spool/DRIVERS/COLOR/04.05.05-5000K-22-100%.icc
In Windows XP the file is stored on:C:/WINNT/System32/spool/DRIVERS/COLOR/04.05.05-5000K-22-100%.icc

Your new profile automatically becomes the current profile for your monitor settings.

After saving the profile you just created, you can exit the application by clicking on the **Quit** button. You also have the option of obtaining a detailed report regarding your monitor's calibration by clicking on the **Test&Report** button.



5.1.4. Calibration Report

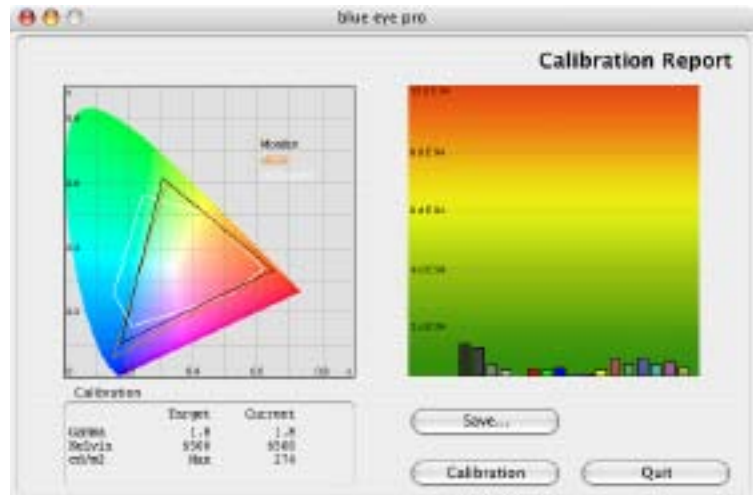
After you click on the **Test&Report** button, the following window appears and after you click on the **Start** button the colorimeter measures color patches of a series of different colors : Shades of gray, Red, Green, Blue, Cyan, Magenta, Yellow, and Pastel values to evaluate the quality of the calibration by comparing measured values with expected ones.



The following **Calibration Report** appears automatically.

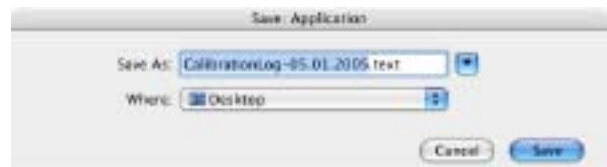
It shows :

- The Chromaticity Diagram (color gamut) of the monitor compared to the sRGB and ISO-coated gamut.
- The Delta-E of the measured color patches (these Delta-E values are calculated with the CIE94 method and therefore express perceptive color differences. The lower these Delta-E values, the better).
- The difference between the measured and targeted Gamma, White Point Temperature and Luminance.

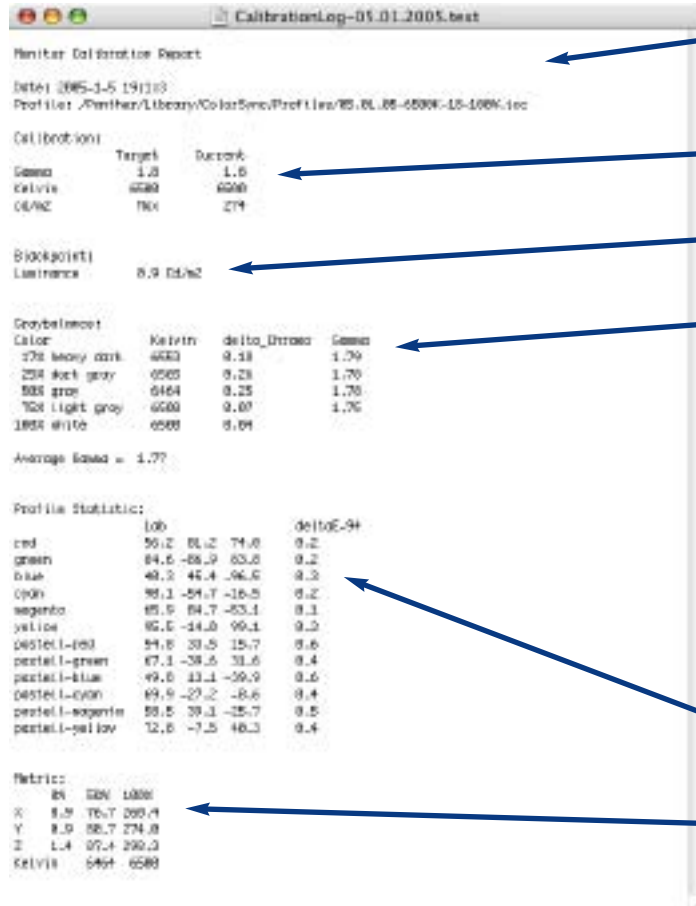


The combination of these three elements allows you to have an overall appreciation of the quality of the calibration.

The **Calibration Report** can be saved by clicking on the **Save** button. The following window then appears. After you have chosen a name and location to save the file, click on the **Save** button and the software then creates and displays a text file containing a detailed Monitor Calibration Report.



The Monitor Calibration Report text file has the following format :



These first lines indicate the date on which the calibration took place, the path of your saved profile on the system and its name (in this case 05.01.05-6500K-18-100%.icc).

These lines represent your calibration settings targets versus the results obtained.

This value represents the luminance of the black color displayed by the monitor.

This table summarizes the measurements taken of the grayscale displayed by your monitor. For each line, you will find :

- Color – the shade of gray measured
- Kelvin – the temperature of the measured color
- Delta Chroma – the chromaticity difference between the measured color and target color
- Gamma – the Gamma value of the curve on which the point belongs

Average Gamma – the average of the values given in the Gamma table

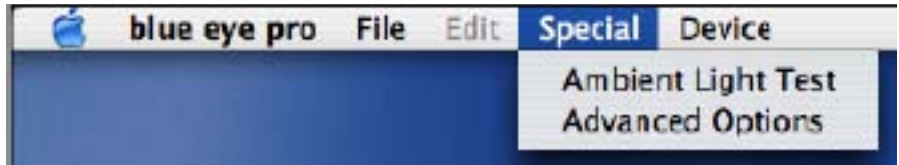
This is the average of the values given in the gamma column.

This table summarizes the L*a*b values of the measured color patches and their measured Delta-E (CIE94) values.

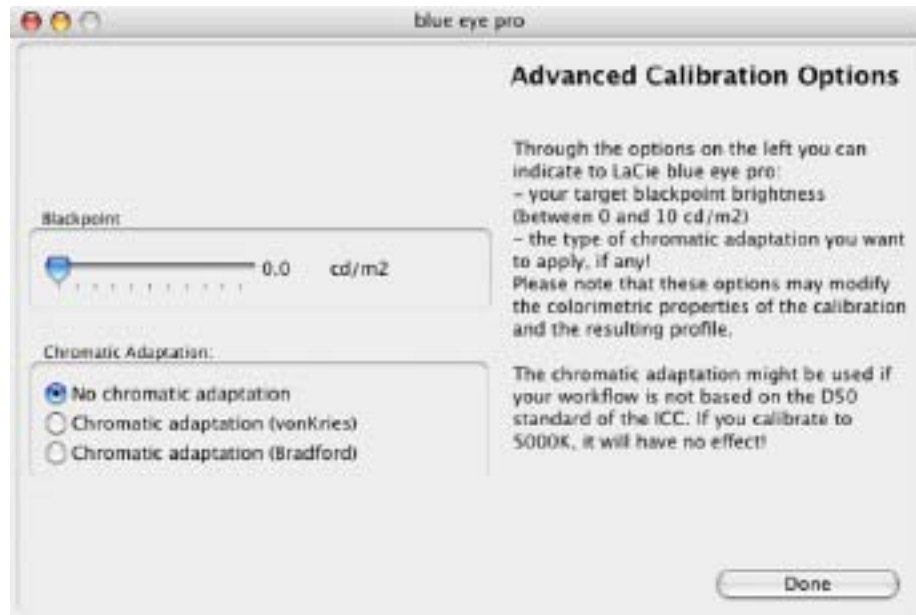
This table summarizes the XYZ values of the measured color patches for the Black, White and 50% Gray color patches, and their measured Color Temperature.

5.1.5 Advanced Calibration Settings

LaCie blue eye pro offers two advanced calibration settings that can be accessed through the Advanced Settings menu option. On Apple Macintosh click on the **Special** menu option and select the **Advanced Settings** menu option. On Microsoft Windows please right-click on the application bar and select the corresponding menu option.



The following window appears on your display. Please refer to the following sections for instructions on activating these settings. Once you are done click on the **Done** button which will take you back to the main application window of LaCie blue eye pro. When an Advanced calibration setting is activated, a corresponding remark is added to the main calibration window as a reminder. Please note that these advanced settings will increase certain deltaE values displayed in your Calibration Reports.



5.1.5.1 Blackpoint Adjustment Setting

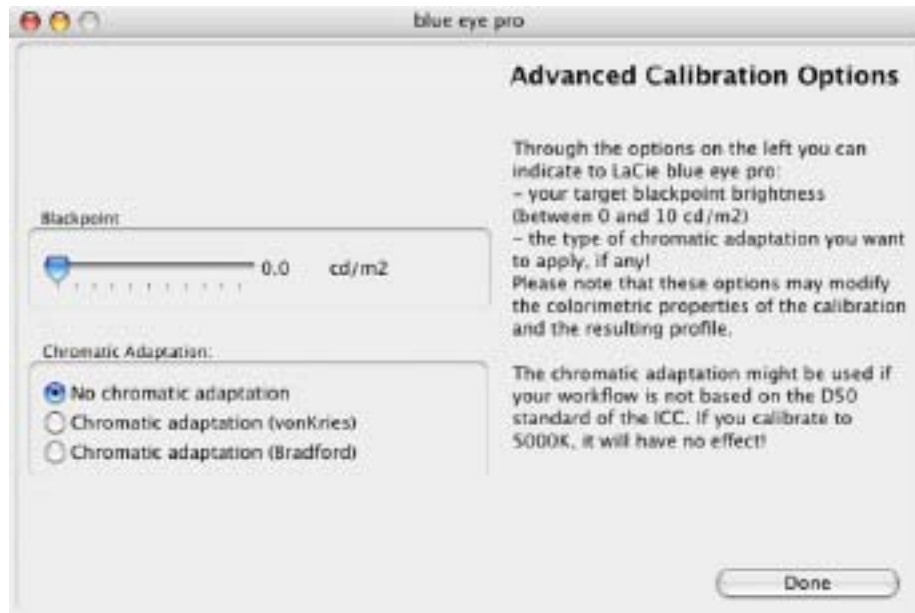
You may elect to increase the luminance of the color black. This can be useful to obtain a realistic rendering of your document in situations where you know that the paper and inks used when ultimately printing it may not allow a full black.

To increase the luminance of black, adjust the blackpoint slider to your desired value. This setting will be automatically taken into consideration when calibrating your monitor.

5.1.5.2 Chromatic Adaptation Setting

Some constraints in your color chain may force you to use a monitor White Point other than D50 (5000° Kelvin) while still targeting D50 paper prints. In this situation, you may perceive a difference between displayed colors and printed colors, due to the Chromatic Adaptation behavior of the human brain. Color scientists have devised methods to correct this impression. Two of these methods are Bradford and von Kries. When one of these methods is selected, the profiling process of LaCie blue eye pro will minimize this impression by slightly adjusting the chromaticity of your monitor.

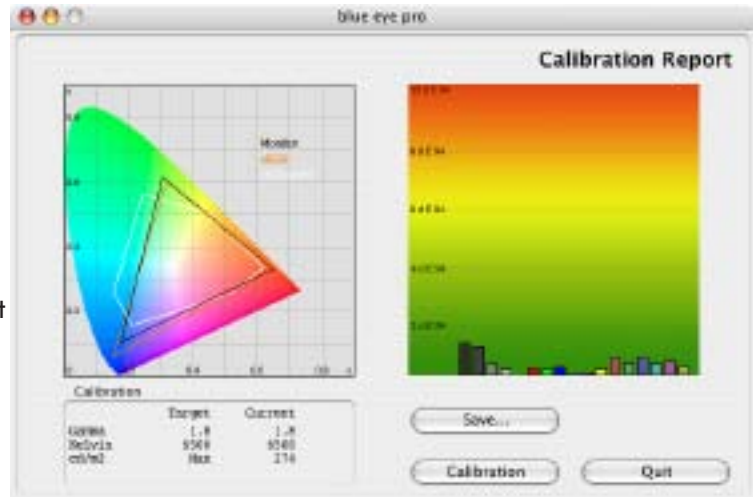
To activate this feature, please select your chosen chromatic adaptation method by clicking on the corresponding radio button of the **Advanced Calibration** settings window.



5.2. Evaluating The Calibration State Of Your LaCie 300 Series Monitor

Before beginning the calibration process, you have the opportunity to test your monitor's current settings for **Gamma**, **White Point** and **Luminance**. By clicking on the **Test&Report** button, you will be directed to place the LaCie blue eye Colorimeter onto your monitor. The blue eye pro software will display a sampling of colors to determine the current values of your monitor's **Gamma**, **White Point** and **Luminance**. At the end of the process, the LaCie blue eye pro software displays a Monitor Report window containing a chromaticity diagram of your monitor's current settings as well as its current **Gamma**, **White Point** and **Luminance**.

Further numerical data concerning your monitor's calibration state can be displayed and saved as a Calibration report. Please refer to section 5.1.4 for detailed information on interpreting this data and saving the Test report. The information helps you decide if it is necessary to recalibrate your monitor or, if the current monitor state is satisfactory, simply continue working with the monitor as is. To go into the Calibration process, press the **Calibration** button. If you are satisfied with the current monitor state, you can exit the application by clicking the **Quit** button.

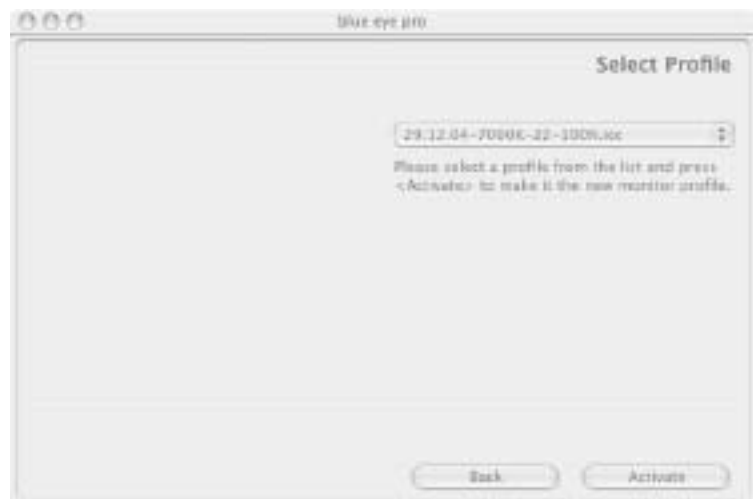


5.3. Switching Colorimetric Environments

From the main application window, the **Select Profile** button offers the possibility of easily switching from one colorimetric environment to another, for instance from D65 to D50, without re-calibrating the monitor or even manipulating the colorimeter. To take advantage of this possibility, two profiles corresponding to both of these environments must have already been created through the standard calibration process described in section [5.1. Calibrating Your LaCie 300 Series Monitor](#).

When you click on the **Select Profile** button, the window to the right appears:

To switch from your current colorimetric environment to another, select a new profile from the pull-down menu. Simply highlight the profile and click on the **Activate** button. The new monitor profile is activated and its associated settings are loaded in the monitor.



5.4. Analysing your Ambient Lighting Conditions

Your ambient lighting conditions can influence the way you perceive your monitor's colors. If your ambient lighting is too intense (for instance if your office's windows are not shaded) the contrast offered by your monitor may seem insufficient. If the ambient light has a dominant chroma (for instance if your light bulbs have a yellowish shade or if the walls of your office are painted with a saturated color), you may have the impression that your monitor also has a cast of the same color.

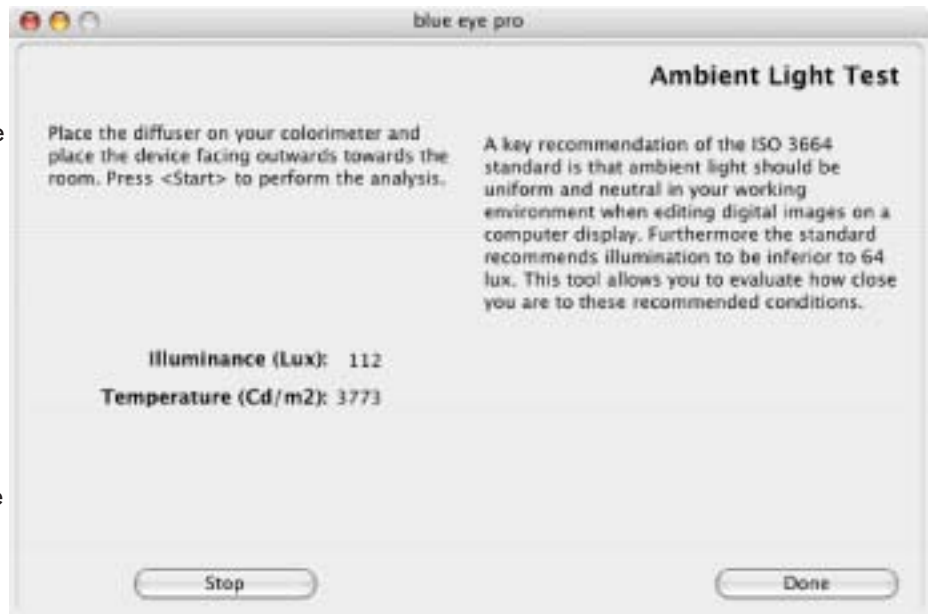
This is why ISO standard 6334 recommends that for color-critical work you make sure that your working environment's Ambient Light is neutral (no color cast) and subdued (less than 64 lux according to the standard). LaCie blue eye pro offers you an easy way to analyze your Ambient Lighting conditions.

To perform this analysis please select the Ambient Light Analysis feature. On Apple Macintosh click on the Special menu bar and select the corresponding menu option. On Microsoft Windows please right-click on the application bar and select the corresponding menu option. The window to the right appears on your display.

Please adjust the Ambient Light Diffuser on the LaCie blue eye sensor and turn the sensor towards your office (back to the display), then click on the **Start** button.

The software will start analyzing the ambient lighting and will display Illuminance and Color Temperature values. The ISO 3664 standard recommends an Ambient Light that offers less than 64 lux Illuminance and has a neutral chroma. If you are working with a D50 (5000°Kelvin) White Point Temperature setting, for instance, it is recommended that your Ambient Light have a Color Temperature near 5000 degrees Kelvin. If you notice that either your Ambient light offers a higher Illuminance or a non-neutral Color Temperature, it may be useful to adjust your lighting until more standard values are attained. This can be achieved by changing your light bulbs, turning off your office lamps or reducing their intensity, shading any windows, and so on.

When you are satisfied with your Ambient Light Analysis, please click on the Stop and Done buttons. This will bring you back to the main application window of LaCie blue eye pro.



5.5. Accessing Key Monitor And System Information

LaCie blue eye pro offers you easy access to some key system and monitor information fields. To display this data, please click on About in the blue eye pro menu and the following window will appear, displaying the following information:

- Display model
 - Serial number of your display
- DDC Detect
 - Connection mode (VGA or DVI)
 - Resolution
 - Hours running
 - Device on Time
- Current Profile
 - Date of Creation of the profile



6. Using Your LaCie blue eye Color Management Tools With Another Monitor

LaCie blue eye pro also offers the possibility of calibrating other monitors than the LaCie 321, such as the LaCie photon19vision and photon20visionII. When the application is run on such a monitor, the calibration process is manual. The software will guide you through several steps that allow you to adjust Luminosity, Contrast, and individual RGB controls to set White Point Temperature and Gamma to your desired settings. The next chapter will guide you through this process.

When you run LaCie blue eye pro on a dual-monitor system, the software will automatically detect on which monitor the window is located and will run the appropriate calibration process (automatic or manual).



Caution! Before you begin to calibrate, ensure that the following conditions are met:

- Ensure that you have a copy of your monitor's User's Manual for OSD (On-Screen Display) reference, and to help determine factory presets and configuration.
- Make sure that your monitor has been powered on for at least one hour. This ensures that the monitor has had enough time to warm up and stabilize.
- Disable any screen savers.
- Delete or disable any competing profile programs you may have installed. These programs could compete for control of the display, and it is important that only one program is running at a time.
- If another profile program is installed and it has a startup utility that is used at your computer's boot time, this program will need to be deleted.
- Setup your work area in the way that you will use it after calibrating and profiling. Room lighting has an effect on the appearance of screen images.
- Tilt the monitor upwards 10° (with the axis measuring from the horizontal length of the bottom of the monitor). This helps to prevent unwanted light from affecting the results.
- If your monitor's OSD offers color adjustment mechanisms, set them as close to your targeted workflow settings as possible before launching the LaCie blue eye software.

6.1. Calibrating Your Monitor

6.1.1 Setting Target Values

The initial window of the application invites you to provide your target values for your monitor's settings of **Gamma**, **White Point Temperature**, and **Luminance**.

- **Gamma** can be set at any value between 1 and 3 in 0.1 increments. Please choose the gamma value that corresponds to your working environment.
- **White Point Temperature** can be set either through a preset value (From 5000 Kelvin to 9500 Kelvin in 500 K increments), or manually.
- **Luminance** can be targeted as an absolute value in cd/m² (candelas/meter²), or a predefined value expressed as a portion of the maximum luminance offered by the monitor.



Important Info:

Depending on the White Point Temperature target you choose, the software may lead you to diminish the gain associated with one or several of your monitor's three primaries: Red, Green, and Blue. This will reduce the global luminance of your monitor. It is therefore recommended to use a Brightness target that is slightly higher than the luminance you want to work with.

Although high Luminance settings can be attractive, they may result in fatigue for the user. If you are using a TFT monitor, high luminance settings may also reduce the lifetime of your monitor's backlights. If you use your monitor in a darkened environment, it may not be necessary to use high luminance settings after all.

Once you have established your targeted values, continue onto Step 2 by clicking on the **Next** button.

6.1.2. Brightness Adjustment

The **Brightness Adjustment** window will assist you in placing your monitor in the optimal range of brightness.

When in this range, two conditions are met:

- Full black and the darkest gray can be distinguished one from the other. This insures there is no loss of detail in the dark zones of your artwork.
- The darkest black remains black. This prevents any potential loss of contrast.

1) In your monitor's OSD, please choose the lowest possible value for Brightness.

2) Place the colorimeter over the (dark) measurement area and click **Start**.

3) You will now slowly increase the Brightness control in your monitor's OSD a few increments at a time. While you do this, the colorimeter constantly measures the actual luminosity of the monitor and displays it with the slider. As you increase the brightness of your monitor, the slider will move to the right towards the green area. When it reaches the green zone, a message will inform you the monitor is bright enough. You may then click on the **Next** button to go to the **Contrast Adjustment** window.



Tech Note: If you cannot reach the green zone after adjusting your monitor to its maximum brightness, move to the next step, [6.1.3 Contrast Adjustment](#), by clicking on the **Next** button.



Caution! Please do not modify your monitor's brightness setting after this stage. Doing so will force you to start the calibration and profiling process over.

6.1.3. Contrast Adjustment

The **Contrast Adjustment** window will assist you in placing your monitor in its optimal dynamic for your colors. The right contrast setting produces brighter colors through continuous tones, detailed shadows and highlights.



Important Info: If your monitor does not have an OSD control for contrast, move on to the next step, [6.1.4. White Point Adjustment](#), by clicking on the **Next** button.

1) Using your monitor's OSD, set your monitor to its highest contrast value.

2) Press **Start**.

3) Using the OSD, decrease your monitor's contrast value a few increments at a time. As you decrease the contrast of your monitor, the slider will move to the left towards the green area. When it reaches this green area, a message will inform you the monitor is correctly set. You may then click on the **Next** button to go to the **White Point Adjustment** window.



Caution! Please do not modify your monitor's brightness setting after this stage. Doing so will force you to start the calibration and profiling process over.



6.1.4. White Point Adjustment

The value of the **White Point Temperature** determines the actual color of white.



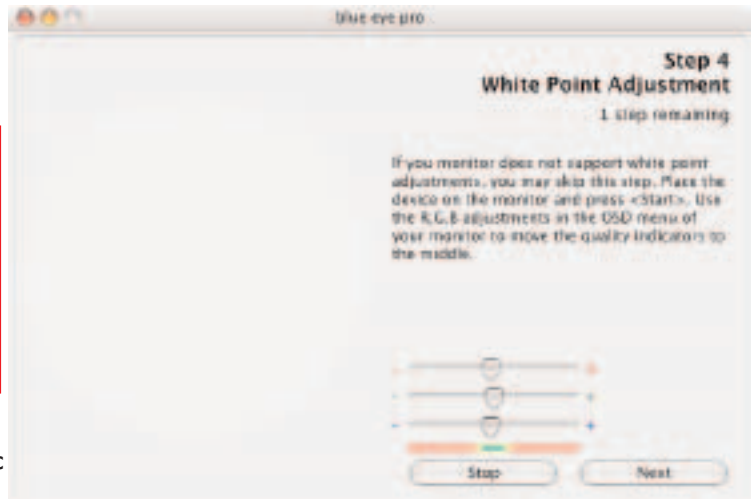
Important Info: Some monitors do not offer individual R, G, B settings. If your monitor does not offer these settings, check to see if your monitor's OSD settings let you choose a color temperature. If this is the case, choose the nearest value to your preferences. If your monitor does not offer this feature, click **Next** to skip this step.

During this phase of the calibration process, the LaCie blue eye colorimeter constantly measures the colorimetric characteristics of white as displayed by your monitor. To reach your target **White Point Temperature**, you will adjust the relative quantities of Red, Green and Blue used by your monitor to create white.

To do this, you will sequentially increase or decrease the R, G, and B gain settings of your monitor, using the OSD.

- 1) Press the **Start** button.
- 2) Identify which of the settings need to be decreased by looking at the three sliders. The slider that needs to be reset first will be the setting whose slider is furthest away from the center. Reduce or increase this setting's gain by decreasing its gain using your monitor's OSD. The corresponding slider should move to the center towards the green area. When it reaches this green area, this setting is correct.
- 3) Repeat the above steps on the next two sliders until all of the R, G, and B sliders have reached the green area. Your monitor's RGB gains are now set according to your target **White Point Temperature**.

Once the **White Point Temperature** has been set, click on the **Next** button to continue onto the last step.



6.1.5. Creating A Profile



Caution! Do not modify your monitor's OSD settings, or you will have to restart the entire calibration process.

During this process, ensure that nothing disrupts the measurement: the LaCie blue eye colorimeter should remain aligned on the measurement area at all times and no other window should appear on the monitor.

After completing steps 6.1.1. through 6.1.4., the LaCie blue eye program will finish calibration by creating a custom ICC profile of your monitor based on the information provided to the program by displaying color patches (which are measured by the LaCie blue eye colorimeter) and comparing them to the theoretical values to be displayed. Press the **Start** button to begin the profiling process.



6.1.6. Saving The Profile

Once Step 5 is complete, the **Save Profile** window will automatically appear. In this window, you can simply choose the default filename, or enter a custom filename for your profile to be saved under. The default profile filename contains the date of calibration, color temperature, gamma and luminance settings. With this practical format you can easily remember, at a future date, when your last calibration took place, and what the settings were.

Once you have chosen the profile's filename, click on the **Save Profile** button. Your new profile automatically becomes the current profile for your monitor settings.



Important Info: The correctness of the ICC profile depends on your monitor's OSD settings. If at any time you need to change them, you will need to rebuild a profile. Likewise, if you want to change your monitor's settings (to move to a different White Point, for instance) you will need to rebuild a profile.

6.1.7. Calibration Report

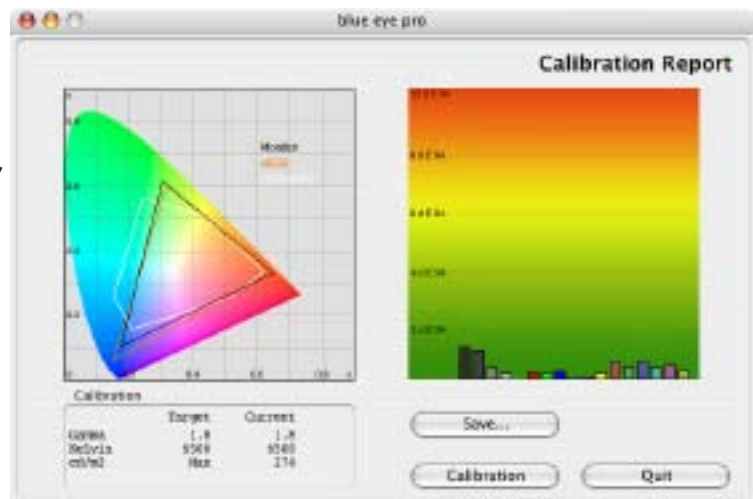
Now that your monitor has been calibrated, you can run a test to verify the quality of the calibration. The LaCie blue eye software will measure the quality of the color correction performed by the ICC profile you have built. The process is the same as described in section [5.1.4. Calibration Report](#).

6.2. Test And Report

In the main window of your application you also have the opportunity to test your monitor's current settings for **Gamma**, **White Point** and **Luminance**. To do this, simply click on the **Test&Report** button and the following window will prompt you to place the LaCie blue eye colorimeter onto your monitor. The application will display a sampling of colors to determine the current values of your monitor's **Gamma**, **White Point** and **Luminance**.

At the end of the process, the blue eye software will display a chromaticity diagram of your monitor and lists your monitor's current settings for **Gamma**, **White Point** and **Luminance**.

Based on this information you can easily decide if it is necessary to recalibrate your monitor or, if the current monitor state is satisfactory, simply continue working with the monitor as is. To go into the calibration process, press the **Calibration** button. If you are satisfied with the current monitor state, you can exit the application by clicking the **Quit** button.

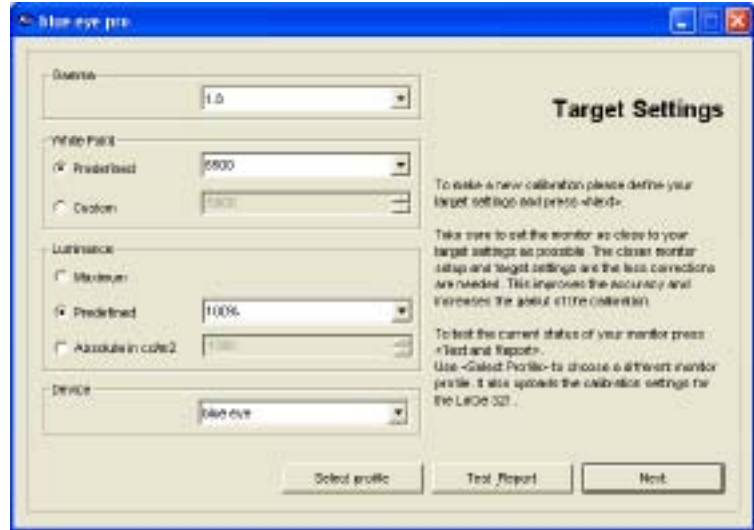


7. Using Your LaCie blue eye pro with Windows

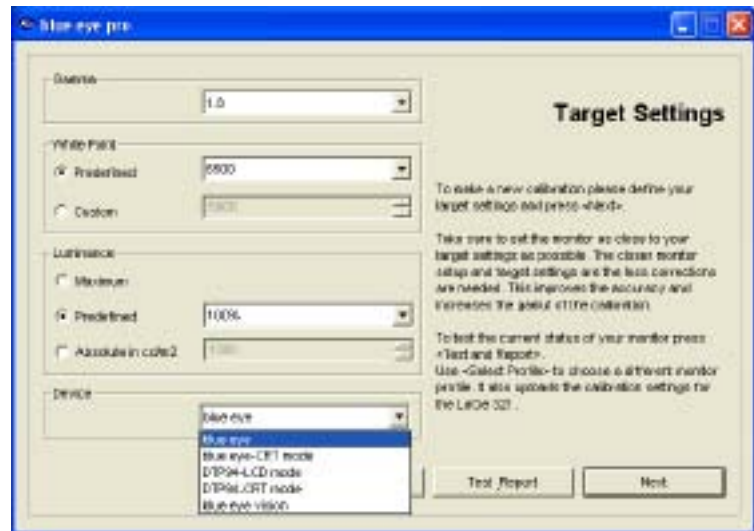
The calibration and profiling process of LaCie blue eye pro is identical on Microsoft Windows systems and on Macintosh systems. Apart from the following two user-interface differences, please refer to the corresponding Macintosh chapters of this manual.

Choosing your calibration device

The main application window, to the right, allows you to choose the calibration device to be used.

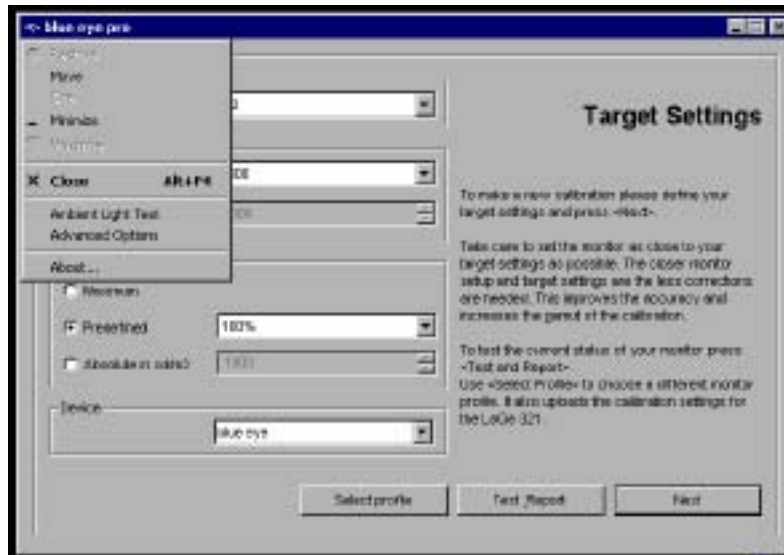


The default choice is the LaCie blue eye. When using an alternate device, please select the appropriate device in the drop-down menu. When using a GretagMacBeth eyeOne device please select the 'LaCie blue eye' option as the LaCie blue eye colorimeter uses the same driver.



Accessing Ambient Light Analysis, About menu and Advanced Calibration settings

These three features of blue eye pro can be accessed by right-clicking on the application bar of the LaCie blue eye application.



Please select the appropriate feature from the drop-down menu and the corresponding window will appear on your screen. Please refer to the corresponding chapters of the Mac section of this manual for detailed instructions on using these features.

8. Troubleshooting

In the event that your LaCie blue eye pro software or hardware 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 page, where the most recent software updates will be available.

If you need further assistance, please contact your LaCie reseller or LaCie Technical Support (see [8. Contacting Customer Service](#) for details).



Tech Note: Manual Updates

LaCie is constantly striving to give you the most up-to-date, comprehensive User's 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 manual does not reflect the configurations of the product that you purchased, please check our Web site for the most current version available.

The Problem	Questions To Ask	Possible Solutions
Issues with the LaCie blue eye colorimeter.	Is the LaCie blue eye colorimeter being recognized?	Verify that the LaCie blue eye colorimeter is connected to your computer through a USB port; also verify that the proper device has been selected in the Device menu of the blue eye pro software.
	Can the LaCie blue eye colorimeter be connected to the USB port on Apple keyboards?	Yes, the Apple keyboard provides a sufficient amount of power for the colorimeter.
	Can the LaCie blue eye vision calibrator be used with the LaCie blue eye pro software?	Yes, the LaCie blue eye vision calibrator can be used with the LaCie blue eye pro software. Please refer to section 4.3. Using Another Colorimeter for more information.
Issues regarding the calibration of monitors other than the LaCie 300 Series Monitor.	Is the process for calibrating a monitor other than the LaCie 300 Series Monitor the same?	No, the calibration process is different. Please refer to section 6. Using Your LaCie blue eye pro Color Management Tools With Another Monitor for full instructions and additional information.
	Can LaCie photon monitors be calibrated in DVI or VGA mode with the LaCie blue eye pro software?	Yes, but the calibration process will be manual. Please refer to section 6. Using Your LaCie blue eye pro Color Management Tools With Another Monitor for full instructions and additional information.
Issues regarding the Select Profile Module.	Why don't all of the saved ICC profiles appear in the drop-down menu of the Select Profile module?	The drop-down menu displays the last 49 profiles created using the LaCie blue eye pro. If you have created more than 49 profiles, you will need to erase or move the older and/or un-used profiles to a folder other than the Colorsync folder (Library > Colorsync > Profiles).
	Can the Select Profile module be used without the colorimeter connected?	Yes, a saved profile can be loaded without having the colorimeter connected.
Compatibility issues.	Is the LaCie blue eye pro software compatible with Mac OS 9?	No, the LaCie blue eye pro software is only compatible with Mac OS 10.1 and later.

The Problem	Questions To Ask	Possible Solutions
<p>Various Issues</p>	<p>When starting the calibration process, why is the following error message displayed?</p> <p>Why, depending upon what is being displayed, does the brightness setting vary or sometimes suddenly change?</p> <p>Does the monitor need to be re-calibrated if the OSD settings were altered?</p> <p>Can the LaCie 300 Series Monitor be calibrated while connected through an ADC port?</p>	<div data-bbox="815 224 1477 407" data-label="Image"> </div> <p>This message is prompted when the LaCie 300 Series Monitor is connected to the computer via the VGA/D-SUB interface. The monitor can still be calibrated, but it will only be semi-automatic and several important steps will be skipped as a result. To take full advantage of the automatic calibration process, connect the LaCie 300 Series Monitor to the computer via the DVI cable and connection.</p> <p>Ensure that the Autobright function of the LaCie 300 Series Monitor has been turned off [this function is located in the Brightness/Contrast menu of the LaCie 300 Series Monitor's On-Screen Display (OSD)]. In order to verify whether or not the Autobright function is inactive, press the > button on the LaCie 300 Series Monitor's front panel. Next, press the Select button to enter the Brightness/Contrast menu and then press the > button twice to highlight the AutoBRT icon. If the function is active, press the Select button again and then press the + button to de-activate the function. Press the Exit button to leave the On-Screen Display menu. If you happened to calibrate your monitor with this function enabled, it is recommended that you re-calibrate your monitor.</p> <p>No, simply select your previous profile from the Select Profile module. Please see section 5.3. Switching Colorimetric Environments for more information.</p> <p>Yes, but you will need to use an ADC to DVI converter cable.</p>

9. Contacting Customer Support

Before You Contact Technical Support

1) Read the manuals and review the [Troubleshooting](#) section.

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

If you still can't get your LaCie device to work properly, contact us via the provided Web link. Before contacting us, make sure that you are in front of your computer and that you have the following information on hand:

- Your LaCie device's serial number
- Monitor brand and model
- Video card brand and model
- Operating system(Mac OS) and version
- Computer brand and model
- Names of CD or DVD drives installed on your computer
- Amount of memory installed
- Names of any other devices installed on your computer

LaCie Technical Support

LaCie Asia, Singapore and Hong Kong

Contact Us At:

<http://www.lacie.com/asia/contact>

LaCie Belgium

Contact Us At:

<http://www.lacie.com/be/contact/>

LaCie Denmark

Contact Us At:

<http://www.lacie.com/dk/contact/>

LaCie France

Contact Us At:

<http://www.lacie.com/fr/contact/>

LaCie Italy

Contact Us At:

<http://www.lacie.com/it/contact/>

LaCie Netherlands

Contact Us At:

<http://www.lacie.com/nl/contact/>

LaCie Spain

Contact Us At:

<http://www.lacie.com/es/support/request>

LaCie Switzerland

Contact Us At:

<http://www.lacie.com/chfr/contact>

LaCie USA

Contact Us At:

<http://www.lacie.com/contact/>

LaCie Australia

Contact Us At:

<http://www.lacie.com/au/contact/>

LaCie Canada

Contact Us At:

<http://www.lacie.com/caen/contact/> (English)

LaCie Finland

Contact Us At:

<http://www.lacie.com/fi/contact>

LaCie Germany

Contact Us At:

<http://www.lacie.com/de/contact/>

LaCie Japan

Contact Us At:

<http://www.lacie.co.jp>

LaCie Norway

Contact Us At:

<http://www.lacie.com/no/contact/>

LaCie Sweden

Contact Us At:

<http://www.lacie.com/se/contact/>

LaCie United Kingdom & Ireland

Contact Us At:

<http://www.lacie.com/uk/support/request>

LaCie Grand Export

Contact Us At:

<http://www.lacie.com/intl/contact/>

10. Warranty

LaCie warrants your device 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 device.

This warranty is void if:

- The device was operated/stored in abnormal use or maintenance conditions;
- The device is repaired, modified or altered, unless such repair, modification or alteration is expressly authorized in writing by LaCie;
- The device was subjected to abuse, neglect, lightning strike, electrical fault, improper packaging or accident;
- The device was installed improperly;
- The serial number of the device is defaced or missing;
- The broken part is a replacement part such as a pickup tray, etc.
- The tamper seal on the device 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 device 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 device.

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 devices 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