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## PANTONE® COLORVISION™ Spyder™ Getting Started

Dear Valued Customer,

As more and more graphic and print professionals use a computer to produce their work, we at Pantone Inc. believe that it is important that we offer essential products involved in digital color management workflows.

Committed to providing the most advanced color solutions possible, we have partnered with ColorVision Inc., a Datacolor company, to provide affordable digital color control to graphic artists and designers, photographers and printers. The two companies will offer a new PANTONE® COLORVISION™ Spyder™ product line, offering exclusive product bundles for photo, design, Web and pre-press applications.

Moreover, the new product line addresses a need by providing professionals with accurate, reliable, repeatable and consistent color performance for all critical applications over time and from work station to work station.

The two core products, PhotoCAL™ and OptiCAL™ provide monitor calibration using the Spyder™, an all-digital, seven filter colorimeter that supports both LCD and CRT monitors. Based on customers' needs, the Spyder with PhotoCAL is designed for color enthusiasts while the Spyder with OptiCAL targets color professionals.

With the growing importance of color in all phases of communication, advertising, direct marketing and the Web, we are convinced that both you and your customers will greatly benefit from the new partnership.

The enclosed Product Specification sheets detail the benefits of the new Spyder product line, along with product numbers.

We will be glad to assist you in your marketing and sales efforts.

Best regards,

Ginna Namnum  
Marketing Product Manager  
Pantone, Inc.

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The Spyder™ with OptiCAL/PhotoCAL and all Spyder Suites include five basic components:

- Spyder Colorimeter
- OptiCAL/PhotoCAL software
- Adobe® Photoshop® Elements
- PANTONE Swatch Libraries for Adobe Photoshop Elements
- PANTONE COLORVISION pocket guide

PRODUCT #	PRODUCT NAME
GEUSB100	PANTONE® COLORVISION™ Spyder with PhotoCAL (CRT version)
GEUSB101	PANTONE® COLORVISION™ Spyder with OptiCAL (CRT version)
GEUSB102	PANTONE® COLORVISION™ Spyder with PhotoCAL (CRT/LCD version)
GEUSB103	PANTONE® COLORVISION™ Spyder with OptiCAL (CRT/LCD version)
GPUSB108	PANTONE® COLORVISION™ Spyder Photo Suite (CRT/LCD version)
GPUSB109	PANTONE® COLORVISION™ Spyder Photo Suite Pro (CRT/LCD version)
GPUSB110	PANTONE® COLORVISION™ Spyder Web Suite (CRT/LCD version)
GPUSB111	PANTONE® COLORVISION™ Spyder Web Suite Pro (CRT/LCD version)
GPUSB112	PANTONE® COLORVISION™ Spyder Designer Suite (CRT/LCD version)
GPUSB113	PANTONE® COLORVISION™ Spyder Textile Suite (CRT/LCD version)
GPUSB114	PANTONE® COLORVISION™ Spyder Master Suite (CRT/LCD version)
GPUSB115	PANTONE® COLORVISION™ Spyder Printer Suite (CRT/LCD version)
GSX101	PANTONE® COLORVISION™ PhotoCAL (CRT/LCD version)
GSX102	PANTONE® COLORVISION™ OptiCAL (CRT/LCD version)
GSX103	PANTONE® COLORVISION™ ProfilerPLUS™
GSX104	PANTONE® COLORVISION™ ProfilerPRO™
GSX105	PANTONE® COLORVISION™ Doctor™
GSX106	PANTONE® COLORVISION™ DoctorPRO™

**All Spyder bundles work in the following way:**

**Basic Components:**

- Spyder™ Colorimeter
- OptiCAL/PhotoCAL
- Adobe Photoshop Elements
- Swatch Libraries for Adobe Photoshop
- pocket guide



**+ / or**

**Software:**

- ProfilerPLUS
- ProfilerPRO
- Doctor
- DoctorPRO



**+ / or**

**PANTONE products:**

- PANTONE® ColorWeb® Pro 2.0
- PANTONE® solid in RGB guide
- PANTONE® formula guide
- PANTONE® TEXTILE Color Chooser





<b>Components</b>	<b>Bundles</b>									
	Spyder w/PhotoCAL	Spyder w/OptiCAL	Spyder Photo Suite	Spyder Photo Suite PRO	Spyder Web Suite	Spyder Web Suite PRO	Spyder Designer Suite	Spyder Textile Suite	Spyder Master Suite	Spyder Printers Suite
Spyder w/PhotoCAL	■		■		■					
Spyder w/OptiCAL		■		■		■	■	■	■	■
Adobe Photoshop Elements	■	■	■	■	■	■	■	■	■	■
PANTONE Swatches for Adobe Elements	■	■	■	■	■	■	■	■	■	■
PANTONE pocket guide	■	■	■	■	■	■	■	■	■	■
ProfilerPLUS			■	■						
ProfilerPRO								■	■	
PANTONE ColorWeb Pro 2.0					■	■				
PANTONE solid in RGB guide					■	■				
PANTONE TEXTILE Color Chooser								■		
PANTONE TEXTILE Color Guide								■		
PANTONE formula guide designer edition							■			
PANTONE ultimate survival kit										■

The Spyder product line offers a wide variety of products that cover the needs of the following users:

**Color Enthusiasts:**

- Photo Series
- Designer Series

**Color Professionals:**

- Pre-Press Series
- Photo Series
- Designer Series

	<b>Color Enthusiast</b>		<b>Color Professional</b>		
	Photo Series	Designer Series	Photo Series	Designer Series	Printer Series
Spyder w/PhotoCAL	■	■			
Spyder w/OptiCAL			■	■	■
Spyder Photo Suite	■		■		
Spyder Photo Suite PRO		■		■	
Spyder Web Suite				■	
Spyder Web Suite PRO				■	■
Spyder Designer Suite				■	
Spyder Textile Suite				■	
Spyder Master Suite			■	■	■
Spyder Printer Suite					■

# USERS

## Color Enthusiasts: Photo and Designer Series

The Prosumer Digital Photographer  
2 Million+ in U.S.  
They have a real job, but are an avid photographer. Have a PC or MAC at home with a photo-realistic printer, and are comfortable using entry level image editing software like Adobe Photoshop Elements.



### Color Professional: Photo Series

The Professional Photographer  
150,000+ in U.S.  
They are professional photographers or advanced amateurs. They own several SLR and medium format cameras, a collection of glass, a studio lighting system, and at least one high resolution digital camera. Accurate color is not a luxury, it is fundamental to their success.

## Color Professional: Designer Series

The Professional Designer  
720,000+ in U.S.  
They are professional designers, creatives or art directors. They use a PC or MAC to do their job and have profound knowledge of software like Adobe Photoshop, Illustrator®, Freehand® and QuarkXPress™. Color management tools are essential for their success.



### Color Professional: Printer Series

The Professional Graphic Artist  
300,000+ in U.S. (ad agencies, service bureaus, independents)  
They are pre-press people, graphic artists, managers and printers. They are involved in creative and technical stages of a project where quality is a key issue. For them, accurate color in the final output is a must.

## Software:

### ProfilerPLUS

ProfilerPLUS software is a simple-to-use plug-in for Adobe Photoshop that creates quick scanner-based CMYK and RGB profiles for color printers, PostScript printers and RIPs.

- Uses most any flatbed scanner to read your printout
- Functions entirely within Photoshop as a plug-in
- Excellent for color lasers and wide format inkjets

### DoctorPRO

DoctorPRO software is a simple-to-use plug-in for Adobe Photoshop that edits all types of RGB and CMYK ICC output profiles.

- Functions entirely within Photoshop as a plug-in
- Turns the Photoshop familiar and precise toolset into a powerful profile editor
- Edits all types of RGB and CMYK ICC output profiles
- Apply the same set of adjustments to a series of existing profiles

### ProfilerPRO

- Profiles RGB printers, PostScript printers and RIPs
- Works with a variety of spectrophotometers and colorimeters
- Functions entirely within Photoshop as a plug-in
- Includes DoctorPRO software, also as a Photoshop plug-in for the most flexible profile editing available
- Includes ProfilerPLUS software for quick, scanner-based profiles
- Offers a powerful set of profile editing tools

**Q: Why Calibrate a Monitor?**

**A: The short answer is relatively simple...**

In today's color-critical workflows, even brand new monitors need calibration.

All monitors display color differently and none of them display color that will match the color from your output device. Monitor calibration controls the display's color so it is accurate, repeatable and relevant to your workflow.

**A: The long answer is more complex but nevertheless relevant.**

Monitors out of the box have a natural bluish tint. This tint (or cast) may, however, look neutral because your eyes will automatically adapt to make the brightest area in your field of vision appear white. Nonetheless, the color of white on your monitor and the color of white displayed on your video output or reflected from your printed output probably do not match. Therefore, an image displayed on your computer monitor probably does not match the final output of that image.

By calibrating your monitor and utilizing a profile of the monitor in conjunction with a profile of your output device (which we will get into later), you can change the color displayed on the monitor to match the color of your final output.

**First, a little background.**

To intelligently discuss the characteristics of color, in particular the color of white, color scientists have defined a color measurement scale to quantify the color characteristics of light. This scale uses degrees Kelvin (K) as its unit of measure. It is often referred to as color temperature. If we were to measure

the white of a new monitor, we'd probably find a Kelvin color temperature measurement of around 9300°K (a 9300°K white is considered very blue). Now, the color temperature of a printed output is defined by the light that is used to illuminate it. Daylight, which is considered to be a neutral illuminant, has a color temperature of approximately 6500°K. Compared to 9300°K, 6500°K is a much less blue color temperature. The standard color temperature for viewing booths in the printing industry is 5000°K. This is downright yellow when compared to 9300°K! This is just one of the reasons why an image displayed on a monitor does not look the same as when it is printed.

Another characteristic relevant to monitor calibration is Gamma. Gamma is used to describe the transition of brightness from black to white for a device. Gamma values range from about 1.0 to 3.0 but in practice tend to be between 1.8 and 2.2. The lower the gamma value for a device, the brighter the midpoint of images will look on, or coming from, that device. Conversely, the higher the Gamma value the darker the midpoint will look.

The Gamma of a CRT (cathode-ray tube) monitor is naturally about 2.5 but this will change from monitor to monitor and even on the same monitor over a period of time.

It will also change depending on what type of computer system (Macintosh, PC, SGI) to which the monitor is connected and what video graphics card is being used to drive it. Consequently, the only way to determine the actual Gamma of your monitor is to measure it.

The Gamma of a printer is a little different. It is related to the amount of dot gain inherent in its paper/ink combination. The term "dot gain" actually covers two printing phenomena; the spreading of the ink dots as they are mechanically laid onto paper and the optical effects of the paper itself which cause a more than expected amount of light to be absorbed by the ink.

The net effect of both phenomena is that the midtones of the printed image become darker.

### **Enough background!! Tell me why my clients need to calibrate their monitor?**

With all of the variances between monitors and their degradation of display quality over time, the only way to ensure consistency of images displayed is by calibration.

Even the best, most expensive monitors will drift over time. By recalibrating the monitor, you will be bringing the monitor back to a known standard.

Further, by calibrating all monitors in a workflow to this same standard, every monitor, new, old, model X or manufacturer Y, will display the same images the same way. Otherwise, every time you look at an image, or move it from one machine to another, there will be a risk that some unknown hardware change may be causing the image to be displayed differently.

### **What about matching what you see on your screen to the printed output?**

Monitor calibration is the cornerstone for achieving this. Just as you may linearize your imagesetter so that you get consistent output, monitor calibration linearizes your display so that the color judgments you make today will be the same color judgments you make a month from now. And, with the advent of color management systems such as ColorSync and ICM, profiles of the calibrated display can be used to transform images from the display's RGB to the printer's CMYK color space. If you want to create a profile for

your inkjet or color laser printer, Profiler PLUS, Profiler PRO and Doctor PRO will allow you to produce in-house proofs simulating your commonly used output devices. Actually you can be able to simulate any device for which you have an ICC profile. They can now be close representations of your contact proofs, eliminating multiple and expensive iterations. The result, color consistency from device to device, across platforms and across technologies.

What-You-See-Is-What-You-Print.

### **What if the final output isn't a printer?**

Many industries will never see a printer in their workflow. These would include animators, film/video houses, medical imaging and Web designers. Each of these particular industries demand specific display characteristics that match their workflow needs. Animators may use a specific tonal response curve to match the output of film recorders; web designers will usually design in a sRGB standard; film and video professionals will use PAL, SECAM or NTSC standards. The point is, everyone who uses a monitor will have a particular standard that his/her monitor will have to match. Monitor calibration is the only way to get these monitors to match a workflow specific standard.

### **Now I know why. But HOW do you calibrate?**

The solution: Spyder with PhotoCAL or Spyder with OptiCAL, the definitive standard for monitor calibration and profiling software. Spyder with OptiCAL can make color temperature and gamma curve adjustments, allowing your

easy

monitor to match the industry standard that applies to your own workflow. Spyder with either OptiCAL or PhotoCAL can also generate ICC profiles of your monitor to work in conjunction with Apple's ColorSync protocols. And you can even get all monitors in your workflow to agree and display color in a similar fashion.

Are you happy with what you see on screen? Usually the answer is "no". For most, using the monitor to judge color is unthinkable. Have you asked (or been asked), "Why doesn't my output match what I see on my screen?"

If so, then the new Spyder™ product line is something you should consider. With proper calibration, you can turn the unthinkable into an everyday reality.



## Spyder with OptiCAL

OptiCAL requires virtually no startup time or user training, delivering precise, repeatable results in a few easy steps. First, the unique PreCAL precalibration utility shows you how to use your monitor's own color controls and the chosen sensor to adjust the display color temperature before calibrating. You'll be starting with the widest range of color your monitor is capable of producing. Next, you'll select a target for gamma and color temperature, attach the sensor to the face of the monitor, and click on a button marked calibrate. OptiCal does the rest! You know you're getting the most from your monitor.

OptiCAL easy-to-follow steps:

1. Choose your desired gamma and color temperature.  
OptiCAL allows you to select a gamma (tone response) of 1.8 or 2.2 and a color temperature of 5000°K or 6500°K. These choices are the most common standards for working on images viewed on Macintosh or images viewed on either television or Windows-based systems.
2. Press the Precalibration button.  
Press the Precalibration button an OptiCAL unique pre-calibration feature. PreCAL helps you get the most from your monitor. By using your display's own color controls and the Spyder sensor, you will adjust monitor color temperature as closely as possible to either 5000° or 6500°. By completing this step first, you maximize your monitor's range and its potential to match larger color gamuts. In other words, you will enjoy precise color in the widest range your monitor is capable of producing.

OptiCAL™

3. Attach the sensor to the screen.

The Spyder features the convenience of USB communication. No external power sources, no rebooting. Just plug and play.

Its eight sensors and seven long-pass edge filters allow the Spyder to more closely match the human eye response than three and four-filter colorimeters.

4. OptiCAL does the rest!

Watch as OptiCAL quickly measures your display's characteristics, calibrates precisely to your selected standards and creates a new profile.

5. Save your new profile.

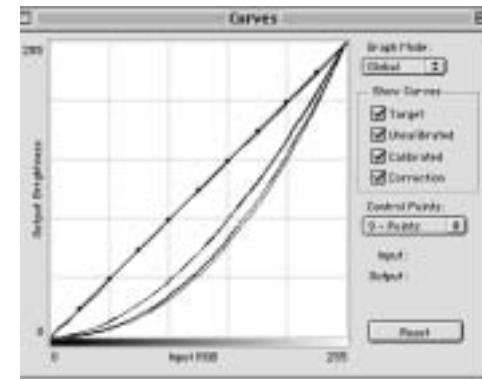
OptiCal gives you the option of creating a ColorSync ICC Profile and an Adobe Monitor Setup Profile after the calibration step has been completed. The ICC Monitor Profile is used in combination with other ICC Profiles in a softproofing workflow within Adobe Photoshop and other ColorSync-aware applications.

Now you can enjoy reliable and cost effective remote proofing regardless of platform. Available for Macintosh, Windows and SGI, OptiCal gives you superior on-screen color consistency throughout your entire production environment, in-house and off-site, and permits informed color decisions to be made at any point in the workflow. You can match each monitor to a target file or to a profile of a "control" monitor. The OptiCal information window verifies calibration accuracy by the numbers, and a colorimeter window precisely defines on-screen color values. You'll have as much information as you want right at your fingertips.

### The OptiCAL Professional Tool Set

OptiCAL includes a full set of tools to give your professional color production department what it needs to make the color right. Every time!

Curves -- The Curves window displays the Uncalibrated state of the monitor, the Target selected for Gamma, the Correction applied to achieve calibration, and the final Calibrated curve. This information gives excellent feedback on the accuracy of the calibration and its success in maximizing the range and brightness of your display.



Information -- The Information window gives exact data on the Uncalibrated, Target and Calibrated monitor. Included are data for Display Brightness, in Candelas; White Point (Color Temperature) in CIE xy; Phosphors in CIE xy; the Delta E deviation of the calibrated monitor's color temperature, and the Delta E deviation of the calibrated Red, Green and Blue gamma curves from the specified target.

PhotoCAL™

## Spyder with PhotoCAL

PhotoCAL requires no startup time or user training, appearing as a calibrator plug-in within Mac Monitors and Sounds control panel, and as an application wizard for Windows. By following PhotoCAL prompts, the user can quickly measure current monitor display characteristics, calibrate to a selected tone response (gamma) and color temperature, then create a precise ColorSync profile of the monitor in its calibrated state. The new profile can be renamed and saved, with the option of becoming the monitor default profile.

PhotoCAL easy-to-follow steps make precise and reliable calibration a breeze.

1. Choose your desired gamma and color temperature.

PhotoCAL allows you to select a gamma (tone response) of 1.8 or 2.2 and a color temperature of 5000K or 6500K. These choices are the most common standards for working on images viewed on Macintosh or images viewed on either television or Windows-based systems.

2. Press the Precalibration button.

Press the Precalibration button, a PhotoCAL unique pre-calibration feature. PreCAL helps you get the most from your monitor. By using your display's own color controls and the Spyder sensor, you will adjust monitor color temperature as closely as possible to either 5000° or 6500°. By completing this step first, you maximize your monitor's range and its potential to match larger color gamuts. In other words, you will enjoy precise color in the widest range your monitor is capable of producing.

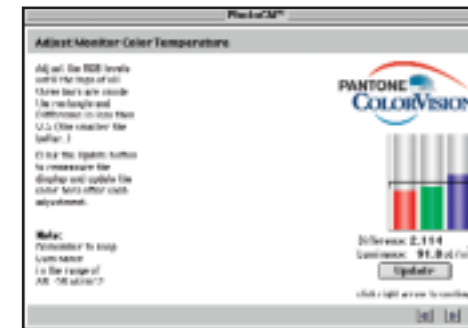
3. Attach the sensor to the screen.

The Spyder features the convenience of USB communication. No external power sources, no rebooting. Just plug and play. Its eight sensors and seven long-pass edge filters allow the Spyder to more closely match the human eye response than three and four-filter colorimeters.

4. PhotoCAL does the rest!

Watch as PhotoCAL quickly measures your display's characteristics, calibrates precisely to your selected standards and creates a new profile.

5. Save your new profile.



Name your new profile and make it the default profile for your system if you'd like. Since PhotoCAL/Spyder interfaces easily with other ColorSync and ICM-compliant color management tools, you are now ready for softproofing in ColorSync-aware applications such as Adobe PhotoShop 5.0 or 5.5, Illustrator 8.0 or QuarkXpress 4.0.

**Spyder™ with PhotCAL/OptiCAL:**

**Measuring Functions** - CIE-XYZ

**Receiver** - Eight silicon photodetectors; Seven filtered sensors; Single neutral luminance sensor

**System Response** - Closely matches CIE 1931; Standard Observer curves (x<sub>l</sub>, x<sub>2l</sub>, y<sub>l</sub>, z<sub>l</sub>)

**Spectral Range** - 400-700 nm

**Dynamic Range** - 0.1-200 cd/m<sup>2</sup>

**Measuring Aperture** - 12 mm

**Refresh Rate** - 40-150 Hz

**Accuracy (Y > 10 cd/m<sup>2</sup>)** - Luminance: ± 4%; (D65) - Chroma: ±.005 x,y

**Inter-Instrument Consistency** - Luminance: ± 1% Y; Chroma: ±.005 x,y

**Linearity (Y)** - ± 2% over entire range

**Communication Interface** - Universal Serial Bus (USB)

**Dimensions** - 79 mm diameter x 37mm height

**Weight** - 134 grs

**Temperature Range** - Operating: + 10° to + 35° Storage: - 20° to + 50° C

**Humidity Range** - 30% to 60% non-condensing

**Both Spyder™ with OptiCAL and PhotoCAL require a USB connector. If your computer does not have one, we recommend the following USB Adaptors:**

1) Belkin™ - USB Serial Adapter ...

Fully compatible with Windows 95 Rev. B, Windows 98, Windows Me, and Windows 2000.

2) Belkin USB Serial Adapter for the iMac/Mac ...

For iMac and Mac OS8.x and up (also works with Windows98/2K PCs, drivers in Windows). Latest iMac/Mac.

3) Keyspan™ High Speed USB Serial Adapter for Windows ...

Smaller size suitable for laptops (it weighs just 2 oz.), the adapter draws its power from the USB connection so no power adapter is required.

4) Macally™ PCI to USB card ...

Mac OS 9.0; Windows 98SE, Windows 2000, Windows ME; any Macintosh with an available PCI slot, any Pentium 266 MHz PC or equivalent with an available PCI slot.

**1) Problem: My serial number will not work.**

**Solution:**

- Verify the user is using the correct serial number for that product. To do so, simply have the user read to you the name of the product on the serial number. Then have the user read to you the window title that is asking for the serial number. See if the two match the program they are trying to run.
- Verify the serial number is for the correct Operating system (Mac or Windows). This applies to software releases of OptiCAL prior to 3.1 and PhotoCAL prior to 2.2. Serial numbers for releases of software after these versions work on both Mac and Windows platforms.
- Verify the user is inputting the dashes in with the numbers.

**2) Problem: I did not get a serial number with my product.**

**Solution:**

Have the user contact the company from which they made the purchase.

**3) Problem: My Spyder is not being recognized by my Windows system**

**Solution:**

- Make sure the user has the Spyder plugged directly into the USB port on the back of the machine. Do not let the user plug the Spyder into a hub or keyboard or monitor. The USB port to be used must be on back of machine.
- Check the device manager to verify the Spyder is being seen by the system. If so check to see if the Spyder has a yellow question mark or exclamation mark. If so, double-click the name and then click on update or reinstall

driver. Please make sure the user has the OptiCAL or PhotoCAL disk in the drive. When prompted, specify the location of the driver then click on Browse. Browse to the user's CD-ROM drive; and double click on it. Then double-click on Drivers, Then double-click on Spyder. Then simply click next a few times until you get to a screen that says, "Please wait while Windows builds a driver information database. Then click finish.

- Check to see if the user has a Wacom tablet plugged in and, if so, have the user unplug it.
- Check to see if the user has a CD burner and, if so check to see if the user uses Adaptec CD software for it. If they do, have the user disable this software in the Close Programs manager. Look for anything that might represent Adaptec or Create CD and then highlight it and click End Task. If you don't know how to get to the Close Program manager, simply hold down Ctrl+Alt+Delete at the same time and quickly release.

If all else fails, suggest the purchase of a USB PCI card that contains the Lucent Technologies chipset on it. This card can be found at either Best Buy™ or CompUSA™. There may be other stores but these are the two that we are aware of at this time.

**4) Problem: When launching OptiCAL or PhotoCAL, the system says No sensor detected.**

**Solution:**

- Make sure the Spyder is plugged in
- Please reference the above step in problem #2

**5) Problem: When starting OptiCAL or PhotoCAL the user gets either the error, “ This video card is not supported” or “This video card does not support gamma correction”.**

**Solution:**

- Go to [http://www.colorcal.com/software\\_upgrades.html](http://www.colorcal.com/software_upgrades.html) and download the OptiCheck 1.4 Windows installer. Then have the user run this software on the system in question.
- Have the user go to the manufacturer’s Web site for the video card they own and download the latest driver for that particular card.
- If the software tells the user that this card is not supported, then recommend a new video card. (Some recommendations are ATI, Matrox, Nvidia, Number 9, and Voodoo, just to name a few. Most cards made within the last year should be just fine.)

If the user is told by the software that this card is supported then try the following:

- If the user is on Windows 2000 make sure the user is logged in as Administrator or as a user with Administrator privileges.
- If under Windows NT 4.0 make sure the user is logged in as Administrator.
- If there is more than one video card in the Windows system, then the user will need to ignore this error. (PLEASE NOTE: Dual video card configurations are unsupported in OptiCAL and PhotoCAL and should be discouraged for Monitor Calibrations.)

**6) Problem: Starting Windows NT and the user gets a Run time error upon boot-up.**

**Solution:**

Take the OptiCAL or PhotoCAL start-up icon out of the Windows Startup folder on the task bar and place it on the desktop. (Click on start, click on programs, click on start-up, right mouse click on OptiCAL or PhotoCAL and click Cut. Then go to desktop and right mouse click and click Paste.) Make sure the user double clicks on this icon each time the system is restarted or the monitor correction will not be applied.

**7) Problem: When starting OptiCAL or PhotoCAL, the System freezes.**

**Solution:**

- Unplug the Spyder and wait for error codes and click ok to them.
- Reboot the system.
- Check to make sure the user does not have a Wacom tablet connected.
- Check to make sure the user has disabled the Adaptec software for his CD burner if he has one.
- Make sure the user has not plugged the Spyder into a hub or keyboard.
- Check to make sure the user has plugged the device directly into the back of the machine. (Front USB ports have a tendency to not provide enough power for our Spyder. Therefore, it is recommended that you plug it directly into the back of the machine.)
- Make sure the user has not disabled video card functions in Windows using MSConfig or turned off hardware acceleration in Display Properties. If so, have the user re-enable all video card functions.

If the systems, either Mac or Windows, continue to lock-up then make sure the user does not have a Virus Protection program. And if so, have the user uninstall the product, reboot, disable the virus protection program, reinstall and Reboot.

**8) Problem: When installing OptiCAL or PhotoCAL the user is told this system does not support the minimum system requirements.**

**Solution:**

- Verify the user is in at least 640 x 480 screen resolution.
- Verify the user has at least 24 million colors selected in the monitor control panel.

**9) Problem: Windows NT: Video card is not supported**

**Solution:**

Only a limited number of cards are supported because NT4 doesn't provide the same color management support that is available in 95, 98 and 2000.

Under NT4, the following are supported:

Matrox - all cards

Number Nine - Imagine 128

NVidia - GeForce 256

ELSA - Synergy II

**10) Problem: Every time I restart my computer, I lose my calibration that I just did.**

**Solution:**

- Verify Adobe gamma loader.exe is out of the startup folder in Windows.
- Verify Adobe gamma loader is out of the startup group in Mac Extensions manager.
- Verify there is not a third party software installed that loads other monitor calibration profiles upon startup.

- Verify OptiCAL Startup or PhotoCAL Startup is in the startup folder for Windows.
- If it is not, then reinstall the product.
- Verify OptiCAL Startup or PhotoCAL Startup is in the startup group in Extensions manager.
- If it is not, then reinstall the product.

**11) Problem: Windows throws up an error about a missing .dll file when launching the OptiCAL or PhotoCAL software.**

**Solution:**

- Have the user turn off the virus protection software.
- Uninstall OptiCAL or PhotoCAL.
- Reboot.
- Turn off virus protection software.
- Make sure Spyder is not plugged in.
- Install OptiCAL or PhotoCAL.
- Plug Spyder in.
- Reboot.

**12) Problem: After calibration on Windows the profile that was created does not show up under the Display Properties – Settings – Advanced – Color Management as the default monitor profile or does not show up at all.**

**Solution:**

- Verify the user saved the profile at the end of the procedure.
- Verify the profile is in the correct systems directory.

- In Windows 95, 98 and ME, it can be located in the following directory:  
c:\windows\system\color
- In Windows NT it can be found in the following directory:  
c:\WINNT\system32\color
- In Windows 2000 it can be found in the following directory:  
c:\WINNT\system32\spool\drivers\color

If the user has ever gone into any of the directories specified above and manually deleted a profile, then the user will need to manually add the profile to the color management tab in display properties and then set it as default every time the user recalibrate. What has happened: by deleting files out of the above folders causes a registry corruption from which Windows cannot recover. Either reinstalling Windows or finding a third party registry clear and repair can rectify this.

**13) Problem: On Mac using PhotoCAL, I go into the monitor's control panel and then to Color to calibrate my monitor but the PhotoCAL software does not appear as a selection under the calibrate button.**

**Solution:**

Make sure the user has:

- version 3.x of ColorSync installed on the system.
- not arbitrarily disabled the ColorSync extension.
- not arbitrarily disabled the monitor's control panel extension.

If the user has virus protection software then uninstall PhotoCAL, reboot, disable the virus protection software, reinstall PhotoCAL and Reboot.

If using a third party USB card, be sure you have also installed the USB system software for that card.

**14) Problem: I cannot get my luminance on my monitor up to 85 to 95 candelas per meter squared (c/m2).**

**Solution:**

- If the user has separate RGB gun control on their monitor, then have the user go through the three gun adjustment again and push all three color bars up the same amount until the user gets a luminance between 85 and 95.
- Once accomplished then have the user adjust the guns one-by-one until the color bars are in the rectangular outline while keeping an eye on the luminance.
- Make sure the Spyder is plugged directly into the back of the machine's USB ports.
- If the user does not have separate RGB gun controls, make sure they are adjusting the Contrast level of their monitor up until it reaches the desired range between 85 and 95.
- If the user has done the above steps and the monitor is under two years old, then it is recommended the user contact the manufacturer to arrange for warranty repair.
- If the monitor is older than three years, then it is said to be the monitor is failing and should not be used for color critical work.
- If the monitor is an Apple Studio Display, then please see the installed Readme file found in the Installed path of the OptiCAL or PhotoCAL directory for "Calibration of an Apple Studio Display".

**15) Problem: After calibration my monitor looks yellowish.**

**Solution:**

- Make sure all ambient light is blocked out of the room as much as possible

- (i.e., turn off all lights and shut out the windows, if any).
- If the user has used PreCAL, make sure the user has got the luminance level between 85 and 95.
  - Make sure the color bars are in the middle of the rectangular outline
  - Make sure the difference is lower than .25.
  - If the user does not have RGB gun control but has Color Temperature Presets, make sure the user has selected the same color temperature they selected on their monitor is the same selection they make in OptiCAL or PhotoCAL.
  - If the user does not have any color controls on the monitor then suggest to have the Spyder be returned for replacement by way of RMA # (Return Merchandise Authorization number).

**16) Problem: After calibration my monitor looks reddish**

**Solution:**

Please try steps in problem number 15.

**17) Problem: When using OptiCAL in Standard mode, my images look too bright.**

**Solution:**

- Have the user turn off all lights and block all windows, if any.
- Make sure the user has selected a color temperature range between 5000° and 6500° on both the monitor and the software package.
  - Suggest calibration in Precision mode. (This calibrates both black and white luminance in a numerical format taking the human eye out of the

equation. This is the preferred method of calibration.)

**18) Problem: When installing the Spyder onto my Windows machine and then running the OptiCAL or PhotoCAL software, it locks up my system.**

**Solution:**

Purchase a USB PCI 4 Port card that contains the Lucent Technologies chipset on it. You can find this board from Best Buy or CompUSA. Then install it into your system. Suggest professional installer does the install if your user sounds like a newbie to computers.