

Step 3 – Create a Good Work Environment



The value of creating a good work environment is left out of many books on color management. Just a few simple tasks are needed to create a good environment for working with color. Studio photographers will recognize some of these tasks. They mostly involve providing good lighting and reducing the presence of distracting colors. These tasks don't involve complex software or tools, yet they are often overlooked. Without a good work environment and good lighting, all the expensive elements of color management are merely wasted.

The Effect of Environment on Color

Color is a strange phenomenon. When I ask students, "What is color?" they often respond, "The wavelength of light." This answer is close, but not really true. The exact same wavelength of light shown in two different environments may appear as two different colors. The intensity, mix of other colors, saturation, and presence of other colors in the surrounding environment can all affect the apparent color regardless of the light wavelength. In fact, color is a much more perceptive phenomenon than a physical one; it happens largely in our brains. This leads to all the complex implications of how the brain actually sees – a subject for a different book. For now, it is important to comprehend that the surrounding environment impacts how a color appears.

A simple example is one of simultaneous contrast. When a color is placed adjacent to a gray field, the gray appears to take on the complementary color. Look carefully at the image of the gray/green color band below. It is merely an image of a band of vibrant green adjacent to a band of flat middle gray. For most, there appears to be a region of subtle red in the gray band where it meets the green band – your brain is adding red to contrast with the vibrant green. Interestingly, this is often red rather than magenta since the brain uses a slightly different color wheel than photography, resulting in slightly different contrasts.



The easiest way to deal with the effects of adjacent colors is simply to remove as much color as possible from the surrounding environment. Make your image-editing environment as colorless as is practical. (Sorry to all you vibrant color lovers; put them into your images, not your editing environment.)

The Environment Matters

The environment in which you edit your images affects how the colors appear. I have seen magnificent labs with the best color management equipment eviscerated by brightly saturated walls making accurate color correction impossible. Creating a good work environment could be the most important, and most overlooked step in color management.

There is no need to go overboard and paint everything 18% gray; just remove intense, distracting colors from your environment.

A Typical (Bad) Digital Darkroom Work Environment



Here are the basic elements for a good working environment for color management.

Room Lighting

Reflected color is a combination of the room lighting color on an object and the actual color of the object. Lighting color is an essential element that affects the final color of an object. When color editing, you also need to keep in mind the color of your room lights.

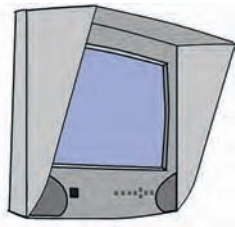
Don't turn your room lights off completely, though; image editing should take place in a dim room, rather than a dark room. Since your monitor is fairly bright, were you to work in a completely dark room, your eyes would need to adjust too much every time you turn away from the monitor, leading to fatigue and an inability to see color or detail clearly.

Dim the lights so they don't overwhelm the light of your monitor or your proofing light. If you have a window in your digital darkroom, install some good blinds to moderate the effect of outdoor light. Remember, natural light can be very bright and changes color significantly throughout the course of a day. Rather than blacking out my windows, I cover them with good quality white blinds that block 90% of the daylight, but can be opened when I want to proof my images in "daylight."

I still use tungsten lights for my room lights. I use one 100 watt bulb in one fixture that bounces the light off a white ceiling. A 100 watt bulb is bright enough to light a modest-sized room. And bouncing the light off the ceiling creates an even light. Another reason I use the 100 watt bulb is to see how my prints look under good tungsten lights - the lighting used in most homes.

Many people suggest using weaker tungsten bulbs such as 40 watt bulbs. These are okay, but remember, dim tungsten bulbs can be very yellow in color. Others suggest cool white fluorescent bulbs or other near-daylight balanced bulbs. Just pick a room light that doesn't have a particularly strong color cast and that is dim enough to make working in front of your monitor comfortable. Next, we'll talk about preventing room lights from [reflecting off](#) the monitor, as well as adding a proofing light.

Use a Monitor Hood



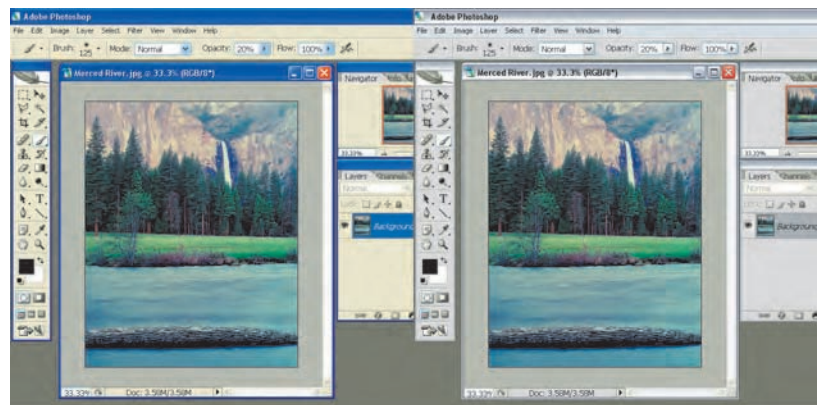
A monitor hood is effective at blocking room light

Rather than work in a room with very dim lights to keep light off your monitor, you could place a monitor hood around your monitor. A monitor is sufficiently bright so that room lights are unlikely to change the appearance of most colors on the screen, but room lights can reflect off the screen and add some color.

A monitor hood is a quick and easy way to help your monitor work much better. Reflected light off your monitor is much like flare in your camera lens. Most expensive monitors designed specifically for color-managed environments come with a nice monitor hood. These are great, but it's quite easy to create a decent monitor hood on your own from black cardboard or foam core and some duct tape. (You should have duct tape in your camera bag.) The monitor hood should have pieces that cover the top and sides and stick out 6"-10" from the monitor. It should be big enough to ensure room light does not reflect off the monitor.

Set Your Computer's Desktop to Boring Gray

Another source of distracting colors in digital imaging are the colors set for the computer desktop. The bright blue color scheme default with Windows XP definitely can affect your ability to view the colors of your images accurately. It is preferable to set your computer desktop colors to something boring and gray.



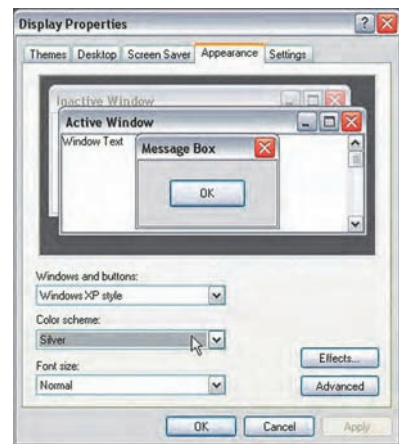
Desktop Image

The boring gray rule also applies to your nice desktop backgrounds. Get rid of them. In Windows XP you can hide your desktop background by merely maximizing Photoshop when editing images. This works fine, but you must remember to do it. In Mac OSX, remove the desktop background and let the desktop be gray.

Windows XP

In Windows XP, the easiest solution is to change the display color scheme to "Silver" which affords good neutral gray values for almost all the Windows controls.

- ▶ Go to your computer's desktop.
- ▶ Right-click on the computer desktop to bring up the context menu, and select **Properties**.
- ▶ Select the **Appearance** tab in the **Display Properties** dialog.
- ▶ Change the **Color Scheme** to **Silver**.
- ▶ Click on the **OK** button to accept this change.

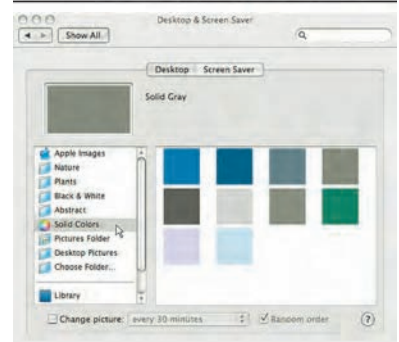
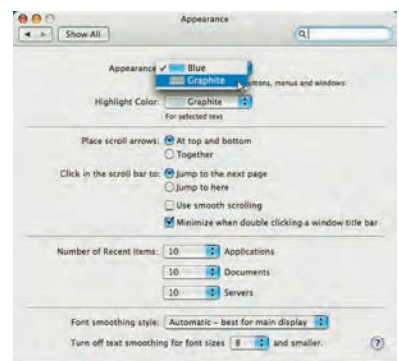
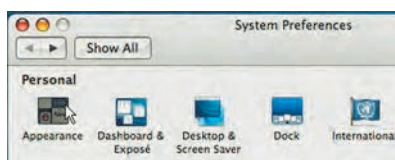


Mac OS X

- ▶ Select the **System Preferences** from the System (Apple) menu
- ▶ Select the option for **Appearance**.

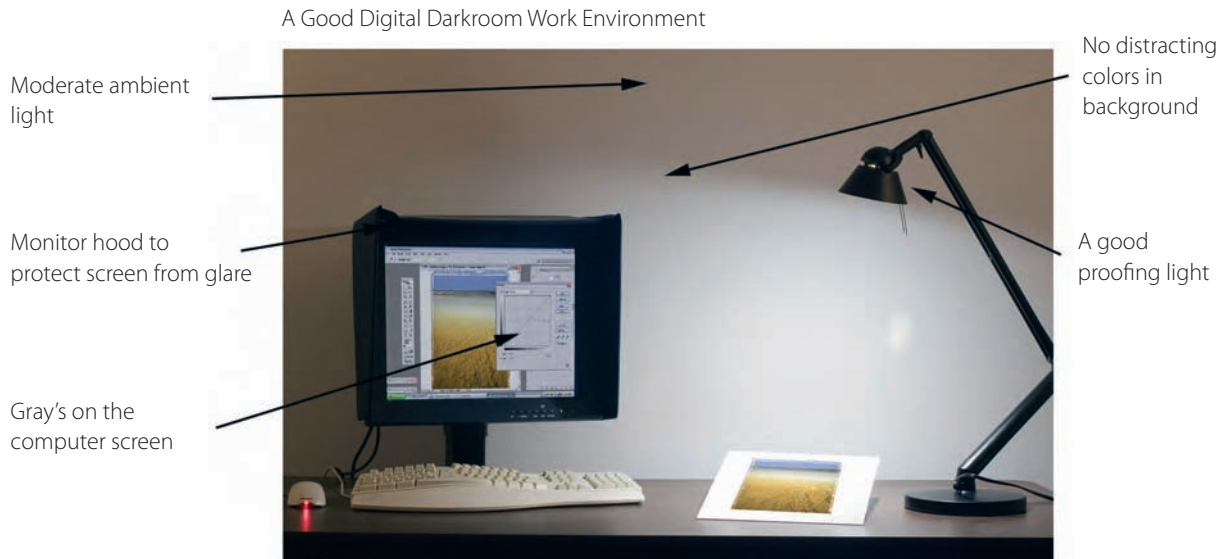
In the **Appearance** dialog:

Change the **Appearance** option to **Graphite** Return to the main **System Preferences** page and select **Desktop & Screen Saver**. Set the Desktop to a solid gray color.



Remove Distracting Colors from Your Environment

You also should remove any strong, distracting colors from your working environment. This task may seem a bit too much. I'm not saying you should get overly hardcore about your room colors. Just remove any strong distracting colors such as bright, saturated images from the walls. It is best if your walls are not colored, since wall colors can dominate your field of vision. Paint your walls a boring color if practical or place a boring background behind your computer if your wall colors are bright.



Proofing Light

The last, essential task for creating a good working environment is to get a good quality proofing light. Obtaining a good proofing light is another element typically overlooked in color management, but is just as essential as creating a good work environment. Using a poor proofing light is the most common reason for discrepancies between the image on your monitor and the image in your prints.

The proofing light is the light that is used to evaluate the quality of your prints and compare these to the image on your monitor. Your monitor will be calibrated to match a particular viewing light. A proofing light must be bright, like your monitor, and have a color temperature similar to the calibrated color of your monitor - close is usually good enough.

I recommend you purchase one of three proofing lights: GTI PDV viewing lights, Solux lights, or halogen lights.

GTI PDV viewing lights are industry standard lights for press work. These are calibrated to provide precisely colored D50 light. D50 is the

industry standard for color printing in the US. (Interestingly, it is inherited from color slide film and is not necessarily the best color for proofing fine art images.) GTI PDV lights range in cost from \$700 to \$1000 and come in various sizes. The unit should include a dimmer that allows you to adjust the brightness to match your monitor. Use a GTI PDV light if you are doing professional work to be printed on a press, including most magazine work, or any other work where your client will be expecting the images to match under a D50 light. Although they are expensive, investing in this type of proofing light will save you a lot of bother when you have your work printed.



GTI PDV Viewing Light

Solux (www.solux.net) sells a number of good lights that provide daylight balanced light, although some are not precisely traditional D50 balanced lights. I recommend the Solux 4700K light since it actually provides excellent D50 lighting. These lights are much more cost-effective for a good daylight color balance than the more professional lights. A complete Solux desk lamp can be purchased for around \$200, or you may purchase individual Solux bulbs to place in your own fixtures.



Halogen bulbs provide a light that is bright and slightly warmer than daylight. Halogen lights are commonly used in art galleries and provide a light closer in color to lights used in homes. I recommend halogen lights for proofing prints to be viewed in homes or commercial spaces. In general, halogen lights are very good for proofing most fine art work, but you may wish to adjust the calibration of your monitor to better match your halogen light.



I place my proofing light adjacent to my computer monitor so I can proof my prints and easily compare them to the image on the screen. I can also see how my prints will look under tungsten lights and in natural daylight by moving the print under my room lights or by moving it outdoors.

