

Basic steps to proper color-management in your studio

In today's digital workflow color management is imperative, but where do you start with the equipment you have available? Do you purchase a better monitor or just invest in a calibration device? There are a lot of questions to consider when properly color-managing your workflow. This article will take a look at a few of those questions and hopefully give you the answers you need to get more consistent print results.

Q. How do I get the color on my computer monitor to look like the print I get back from the lab?

A. This is the first question you should be asking. It's important to understand that the monitor is almost always the culprit when a print doesn't look like the image you're seeing on screen. Owning a good monitor and using a third party calibration device is the first step in getting your monitor to display your images more accurately.

Q. How does the age and condition of my monitor affect the image on screen?

A. If your monitor is more than 6 years old it may be nearing the end of its life as a useful editing tool. As monitors age they begin to lose their ability to hold calibration. The colors may drift in a few days or weeks after calibration and the screen may begin to wash out and lose detail in some of the tonal range. A newer monitor will also offer greater ability to be calibrated accurately vs. a dated model.

Q. Does it matter what type of monitor I am using?

A. Yes, this is the first step to having a color-managed workflow. A good LCD monitor is paramount in the quest for good calibration. Not every monitor out there has the dynamic range, contrast ratio and color adjustability necessary to get a good calibration. A good monitor for editing will have manual control over these variables as well as individual RGB control.

Q. So, how much should I spend?

A. When you really start to look at what the pros are using for photo editing you quickly realize how important this aspect of the workflow is. In many ways it's just as important as what camera you're using, so get ready to spend extra for a good monitor. In all my research I have not found a monitor that meets the high demands of color calibration for photo editing that costs much less than \$1,000. Some of the best are \$3,000 and higher. Yes, a good monitor can be had for \$700 or less, but most in this price range fall short of a truly accurate screen-to-print match.

Q. Who makes the best monitors for image editing?

I am currently using an Eizo Color Edge monitor as well as an Xrite Eye One system to calibrate. This combo has proven very accurate in producing high-quality prints that are a perfect match to what I am seeing on screen.

A few other highly recommended brands are: NEC, LaCie, and Wacom.

Q. So what's this calibration device you're talking about and do I need one?

A. A color calibration device, or colorimeter is used to "read" the color and brightness of your monitor. It will then create a profile for your specific monitor to ensure that you are getting an accurately displayed image. This calibration process needs to be done at least once every 3 months on a good monitor that will hold its color and brightness and even more often on cheaper monitors.

Keep in mind that using a calibration device on a poor quality monitor will not suddenly make it accurate. Many cheaper monitors cannot be calibrated correctly because they lack the inherent ability to be adjusted in this manner. A calibration device will only work to its fullest potential when used on a monitor that can handle the necessary adjustments.

As I mentioned earlier I am using the Xrite Eye One system, which can be purchased for under \$200. This brand seems to be the most widely used calibration unit out there. It's easy to use and I've always been very pleased with the results it's given me.

A few other recommended brands are: Colorvision Spyder and Huey.

Anyone of these devices can be purchased just about anywhere that sells photo equipment or supplies. As a lab we don't endorse any one retailer, but as a fellow photographer I would be glad to point out a few of my favorite places to purchase equipment if you want to give me a call.

Q. You say it's easy to calibrate. Are there any calibration settings Black River Image recommends?

A. Yes, the calibration process is fairly straightforward. The Xrite system uses a step-by-step wizard style interface that walks you through the calibration process.

There are several variables that you can manually set throughout the process. Here are the settings we recommend for a better match to our printing.

White Point: This variable is important in making sure the color isn't too yellow or too blue. If you set this number too high your prints will come back looking warmer than what you are seeing on screen and if it's too low your prints will come back looking cooler than what you see on screen. Keep in mind that the color of the print will also vary depending upon the color of the light you are viewing it under. **As a starting point this variable should be set to 5800k.** However, if you know the exact color temp of the viewing environment, then start with your white point set to that value.

Black Point - CD/m²: This variable determines the luminance or brightness of your monitor. If this variable is set too high your monitor will display the image too brightly and the print will come back dark. If this variable is set to low your prints will come back too bright and blown out. Most calibration devices have the default black point set at 120 for LCD monitors. I feel that this is still too high for a good match to print. **We recommend setting this variable to 100.** I also recommend ordering some test prints to check your settings after the initial calibration. A black point of 100 may be a good place to start, but this setting will vary a bit from screen to screen. You may need to adjust this value up or down depending on your monitor's inherent brightness.

Gamma: This variable determines the base point for proper conversion of color and brightness between your computer and monitor. This setting used to depend on whether you were editing on a Mac or a PC. Older Mac OS uses a gamma value of 1.8 while windows used 2.2. **Currently both Mac and PC recommend a gamma setting of 2.2. This only applies to Mac if you are on OS X 10.6 Snow Leopard.**

Q. Now that I have this calibration thing figured out what should I use to edit my images?

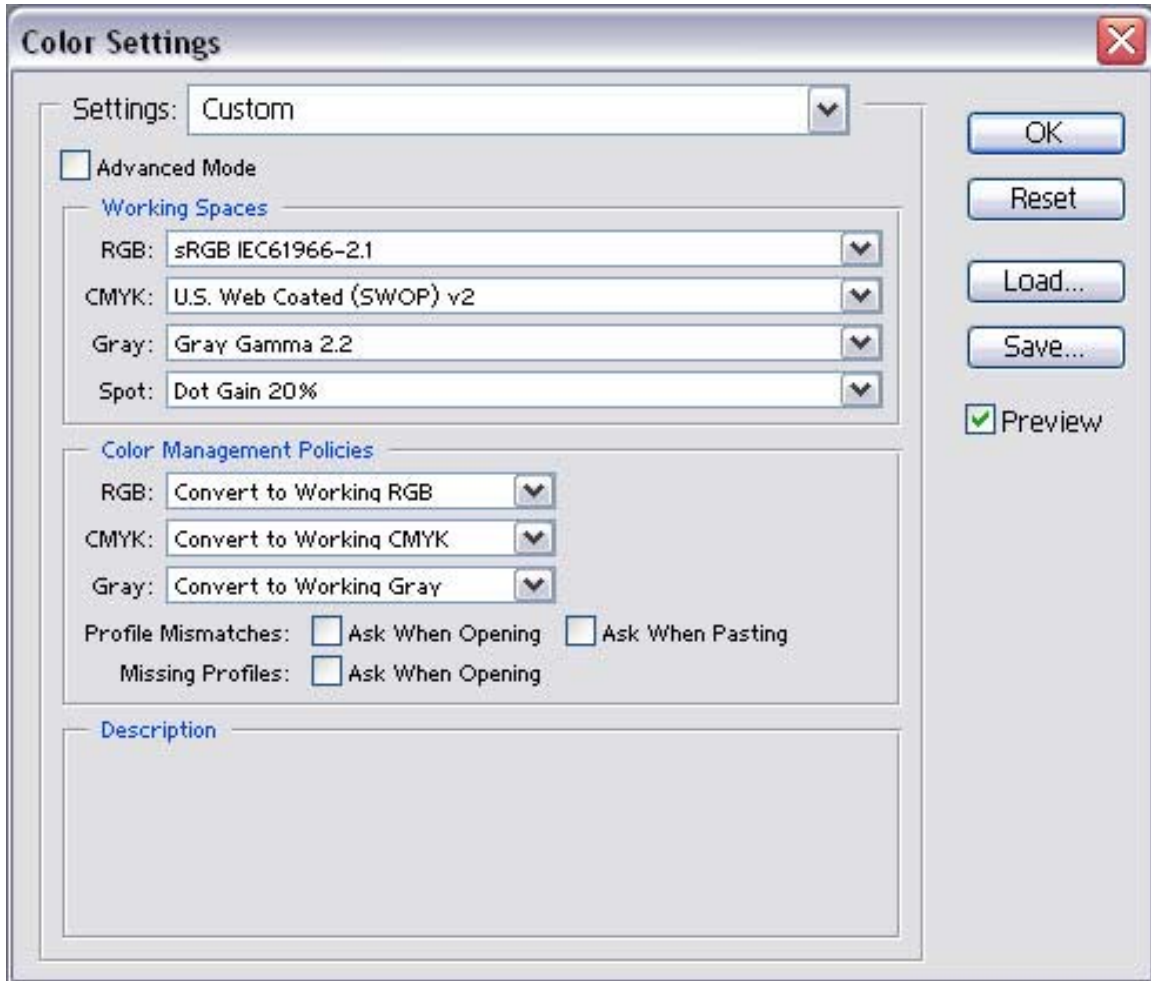
A. This may depend on how extensive you want to edit or retouch your images. Adobe makes some of the best editing suits out there. For starters you might want to try Adobe Photoshop Elements. This program can be had for less than \$100 and contains many of the tools you would use as a photographer.

For RAW conversion and batch processing I recommend Adobe Lightroom. With this software you can adjust one image and then apply those adjustments to many images after that one for a fast and simple workflow. There are also some excellent presets available from other photographers out there that will help enhance your images. One such photographer is Spence Boerup who has several Lightroom preset packages available on his website www.presetopia.com.

If you need the best in extensive photo retouching and editing then there's really only one that leads the industry. Of course I'm referring to the full version of Adobe Photoshop. The current version is CS4 (Creative Suite 4) and will offer you all the tools necessary to do in-depth design, color correction, retouching, and enhancement. The full version of Photoshop isn't as intuitive as Elements and will require some dedication from the user to master the basics of what this program offers. The rewards in learning Photoshop are really endless. Similar to the presets available for Lightroom there are also Actions available for Photoshop. These actions can be installed in Photoshop and applied to one image or an entire folder of images with just a few clicks of the mouse. There are Photoshop actions available for sale all over the Internet and even a few free ones. There are several free action posts at our forum www.blackriverlanding.com. Feel free to join us over there for lots of great advice, tools, and tips on how to use Photoshop more effectively.

A few other highly recommended editing programs are: Gimp (free at gimp.org), Picasa (free from Google), and Pictocolor Correct Photo (super easy one click editing).

Regardless of what editing software you use there are a few things that you can set to ensure that your program is also displaying the colors correctly. Make sure you are editing in the sRGB color space. You can check this in Photoshop by going to Edit -> Color Settings. Your color setting should look like this...



Also, be sure your images are in the RGB color mode. This also applies to black and white images. We cannot print an accurate black and white print from a Grayscale image.

Q. Do I need an ICC profile to make get an accurate print to screen match.

A. We do offer ICC profiles that are designed for creating a soft proofing setup in Photoshop. These profiles are not meant to be attached to a file and will have no effect on the image itself even if attached to the file. They are meant to create a way to proof the image as though you were seeing it on the paper it will be printed on. Once you have the proofing view turned on you can then compensate for any variance in the image by further adjusting it in Photoshop.

You can download these ICC profiles from the product spec guide next to each product or from a list in our Learning Center. Once they are downloaded onto your computer you will need to copy them into a folder in Windows.

For Windows install in this folder:

WINDOWS -> system32 -> spool -> drivers -> color

For Mac install in this folder:

Library -> colorsync -> profiles

Once these ICC profiles are copied into the correct folder on your computer you can then access them in Photoshop and save them as proofing profile.

To do this open Photoshop and click on View -> Proofset -> Custom

In the profile drop down menu choose the profile you want to use. Next put a check mark in the box marked Preserve Color Number and leave the other boxes empty. Now click save and give it a name that corresponds with the type of paper you are profiling and then click save (For instance "BRI Metallic" for metallic paper).

Now the option for BRI Metallic will show up at the bottom of the View -> Proofset menu and when you click that option you will see the color and contrast shift to more closely match that of metallic. You can toggle between that and your sRGB working profile by clicking ctrl+Y.

Please keep in mind that these ICC profiles will only be accurate if you are first calibrated for neutral monitor display as mention in the section of this article regarding monitor calibration.

Q. Where can I direct further questions regarding this article?

A. If you have more questions regarding camera settings, calibration, or editing I would love to hear from you. Give me a call or email me. jason@blackriverimaging.com