GET YOUR COLOR INTO GEAR

What Is Color Management? Ask a photographer and a videographer this question, and you'll get two very different answers.

WHILE THE PHOTOGRAPHER WILL TALK ABOUT color space, RGB vs. CMYK, monitor calibration and printer inks, the videographer will likely squint, grow thoughtful and ask, "Color management?" That's because the actual practice of color management is quite different in one or the other of these fields. The overall concept may be the same—maintaining consistent colors between viewing platforms—but in the video world, the array of available calibration devices and techniques can be not only overwhelming but potentially bank-breaking: vectorscopes, waveform monitors, production monitors, color and focus charts, time base correctors, process amps ... but how much of this is necessary? And why is color management so important?

Color for VIDEO

Am exero et, sequatet iureros nim quisl ilit at wisi. It alit diam, quam volor aliquam consent prat. By David Speranza

The first thing to realize is that no matter how expensive your computer monitor—and no matter how well calibrated—it will never reproduce the colors and brightness of your footage as accurately as a video monitor or television. The same goes for your camcorder's viewfinder and LCD screen. The color and contrast ranges of these devices are simply too varied.

But what happens if you use multiple cameras, where colors need to match from one camera to the next? Or if you plan to submit your work for distribution, requiring broadcast-safe colors? Or maybe you only want to burn a DVD that looks the same on your friends' televisions as it does on your computer. What's needed is some kind of unifying standard to keep the image both consistent and correct in its many forms.

A Balancing Act

The most basic form of color management is white balancing. This should be done, of course, before any footage is shot, and under a scene's particular type of lighting. This tells your camera's sensor how to reproduce white, providing a benchmark for all the other colors. The most accurate way to do this is by using a professional white balance card and the custom white balance setting on your camera. This not only creates color consistency from scene to scene, but is crucial for multi-camera setups.

To view your colors accurately, an external monitor is essential. A solid, low-end production monitor can be had for less than $500, but if your budget won't allow that, then a decent portable television will also work. This can be used both on set and in the editing suite; properly calibrated, it will offer a far more accurate view of your video's color and brightness range. An on-camera LCD monitor is also possible for run-and-gun productions, but the tradeoff is less color accuracy.

Color bars are the next step. Generated by either your camera or editing software, these are used to calibrate the monitor beforehand so that the scene you're shooting looks the same on screen as it does in front of the lens. Depending on your camera's manual controls, you can also adjust colors before they reach the monitor—ideal for matching color values between more than one camera, or for achieving a creative effect. Professional test charts can aid in this process, allowing you to calibrate color, grayscale, skin tone, and focus.

Lastly, be sure to record at least 30 seconds of color bars at the head of each tape: these will be referenced in post-production—the next round of color management.

Keeping It Legal

Color consistency needs to be maintained once the footage reaches your editing environment. The easiest way is to compare your recorded color bars with the bars generated by your NLE. Remember, a computer monitor's color space is different from a television's, so only a video monitor will accurately reproduce a scene's colors.

For more precise measurements, you can run the footage through a waveform monitor and vectorscope (software versions are included in Final Cut Pro and Premiere Pro). The former measures brightness, while the latter measures color saturation. These professional tools—which can also help calibrate cameras and monitors—are essential if you plan to show your final project anywhere but on a computer.

That's because broadcast industry standards require color and brightness levels to stay within a "legal" range. If footage falls outside those limits, you risk having your material rejected—or, at the very least, improperly presented. The vectorscope and waveform monitor allow you to analyze the levels in each shot, and tweak everything accordingly.

As you can see, video color management can open up an electronic rabbit hole of possibilities. But making sure the colors in your video are consistent from one platform to the next—from camera to editing to presentation—is key to producing the highest quality production.