

Profiling Displays

Your monitor is a very powerful and vital tool for color management provided that it's of professional quality, calibrated and profiled. You can select color builds, edit images color and contrast, retouch images, and soft proof to match output.

Displays

The quality of your monitor should be your first consideration. The older large style CRT's (cathode-ray tube) are being phased out and are being replaced by the flat panel LCD (liquid crystal display). CRTs were the only choice when looking for a good quality graphics monitor but that is no longer the case as the quality of LCDs has greatly improved and they are becoming as affordable as CRTs. They also last longer, take up much less space and are bright enough to use in a well lit room. Your monitor must meet certain brightness and color range criteria. Cheaper office monitors are not designed for color and their contrast and image sharpness fall short. The age of your monitor also plays a factor especially with CRTs. A CRT that has been used for about 5,000 hours (3 years, 8 hours per day) will loose its brightness and color consistency and can no longer be calibrated (brought to a known state.)

Display profiling options

There is a widespread belief that profiling a monitor using software only is effective. We do not agree because using software only will force you to rely on your ability to judge a series of patterns which is subjective. Subjective criteria not only affect the accuracy of the profile but also its consistency. To profile your monitor, we recommend that you use hardware and software. The hardware, either a colorimeter or a spectrophotometer is the eye, a device that reads the color emitted from the monitor and feeds it back to the software. The colorimeter is a less expensive puck-like device that can only be used to calibrate monitors. The spectrophotometer is more expensive but also more versatile because it can also be used to create print profiles.



Figure 40

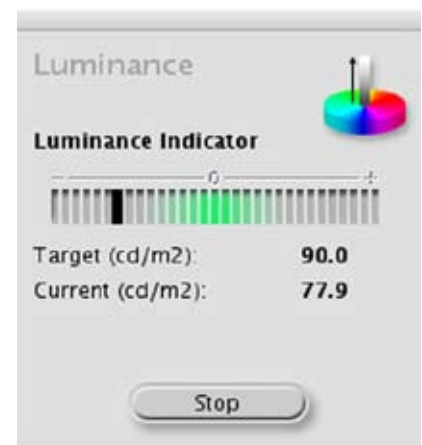


Figure 41

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Display calibration process

Today's monitor profiling packages are easy to use because they come with clear step-by-step instructions that guide you through the process.

The first step is to select the target gamma and white point for the calibration. To comply with the industry standard and have consistency between monitors, make the follow selections:

- Gamma (contrast) - 2.2
- White point (color of absolute white of your monitor) 6500 kelvin

Then you adjust your display to its optimum settings to reach the target gamma and white point. The software will direct you to make those adjustments. Place the colorimeter on the monitor and let it read the screen, giving you visual feedback that lets you know when you have reached the optimum setting. This is where CRTs and LCD really differ. CRTs can make more adjustments since there are red, green and blue "guns" that can be adjusted, as well as brightness and contrast controls. LCDs usually have just a brightness control. Current versions of the recommended software is intelligent enough to know which type of monitor you are calibrating and will only ask you to make the adjustment that are available

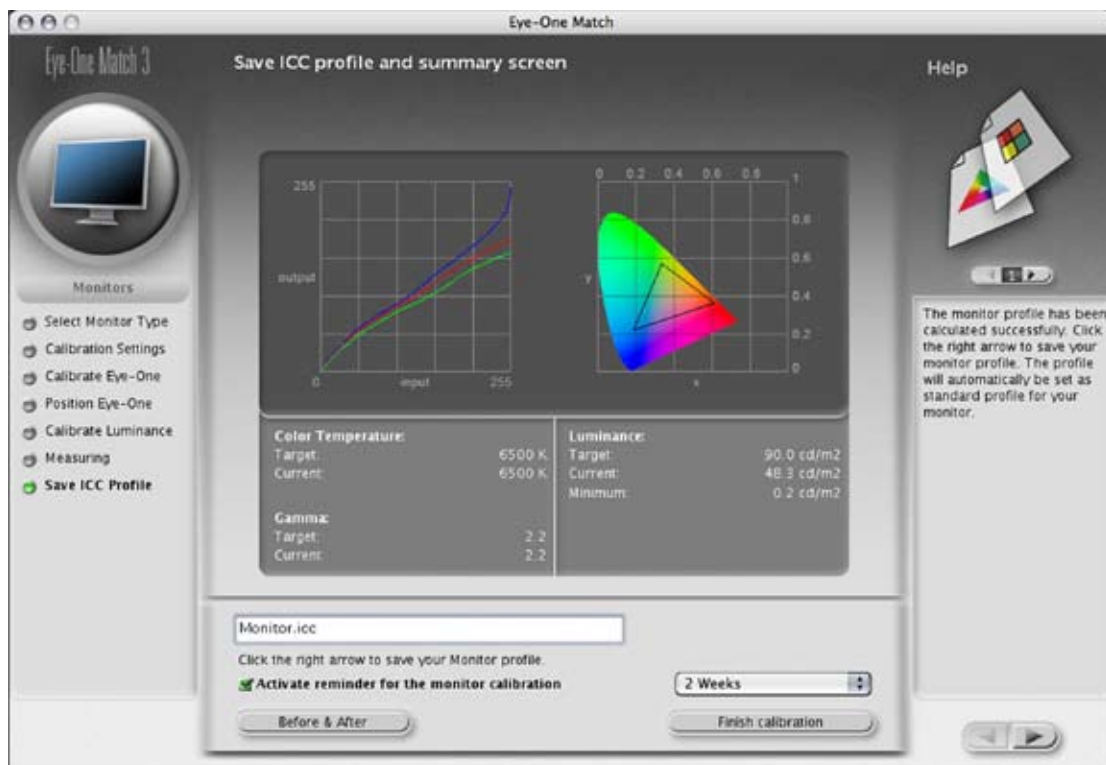


Figure 42

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Once your display is calibrated, you are ready to build the profile. The software will display a set of colors that are read by the instrument. The information is sent to the software, the profile is created and you will be asked to name and save it. You will also be given some feedback about the quality of the profile or the ability of your monitor to display color accurately. The Monaco software does a particularly good job because it also tracks your profiles over time.

Note: Remember to keep your profile name consistent (e.g. Monitor.icc) if you're using QuarkXPress, or you will have to change your monitor color settings each time.

Be sure to activate the monitor calibration reminder before you finish. If the monitor is a CRT you select every week and if it is a LCD select once a month. Most monitor profiling programs will automatically activate and save you profile once you click OK. They need to be located in the **User or Hard drive/Library/Colorsync/Profiles** folder to be enabled.