DIGITAL TECHNOLOGY GROUP

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Digital Technology Group, Inc.
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800.681.0024
Tampa, FL

DTG Digital Color Learning Guide
Soft Proofing

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The following instructions will help you understand the concept and practice of soft proofing as well as step you through how to soft proof through different applications.

General Philosophy & Overview

The most frequent tech support phone call we take here at DTG begins with the words..."my print doesn't match my monitor". While getting prints to exactly MATCH a monitor is impossible, there's no reason that we can't achieve a very close perceptual match.

When viewing an image on a monitor you are looking at that image displayed through transmissive light. When viewing a printed image you are viewing it with reflected light. These yield two very different perceptions to our eyes and brains. That's why "matching" a print to a monitor can be challenging. The solution is a process called soft proofing.

Soft proofing is the process of using your calibrated and profiled monitor, combined with printer/media ICC profiles, to preview how an image (or document) is going to look on printed output.

What is needed?

A few things are needed for soft proofing besides your computer's monitor or display...

1) A monitor calibrator. This is a piece of hardware, combined with software, that calibrates your monitor to a known standard. It also produces an ICC profile for your monitor which describes to applications (like Photoshop) how your monitor displays color.

2) ICC Profiles for your printer and media (paper, canvas, etc.) combinations. These can be "canned" profiles from manufacturers, your own custom profiles you've created if you own profiling equipment, or custom profiles from DTG's extensive ICC profile library.

3) Software applications that support soft proofing. An application must have the ability to combine your image or document profile, with your monitor profile, and your output profile. The good news is that most of the professional color applications and RIPs allow this including Photoshop, Illustrator, Lightroom, and Mirage.

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Working Environment.

The environment around you while working on, and viewing images can have a fairly large impact on how you see color on your monitor. Here are a few recommendations for your environment if you have the flexibility to control it.

It is best to color correct images in a darker room with lights off and no ambient light around you. If you need some light to work, its best to have it be "window" light from the outside. If you work in an office where you can't turn off the lights just try to keep the amount of light from ambient lights to a minimum.

It's also best to have the walls around you be white or as neutral as possible. Colorful walls, especially if they are in your peripheral vision can alter or contaminate your perception of colors on your screen. This "contanimation" effect will be more pronounced in a brighter room.

Finally (and unfortunately - hah!), it needs to be understood that being under the influence of caffeine and alcohol both affect our ability to see color accurately. They can change our ability to judge contrast as well as color.

Dedicated Graphics Monitors vs Regular Monitor with Calibrator.

DTG sells what we call "Graphics Monitors" that come with calibrators as well as monitor calibrators by themselves for your existing monitor or display. Graphics monitors have a couple of advantages. They are the best in terms of performance including color gamut and tonal range. They also have whats called direct hardware calibration. This means that the calibration system that ships with the monitor has direct communication and control of the monitor's high resolution internal look up table (LUT). When using a standard monitor and 3rd party calibrator, the calibration takes place using the computer's 8-bit video card which is ok, but not nearly as precise as a graphics monitor with direct hardware calibration.

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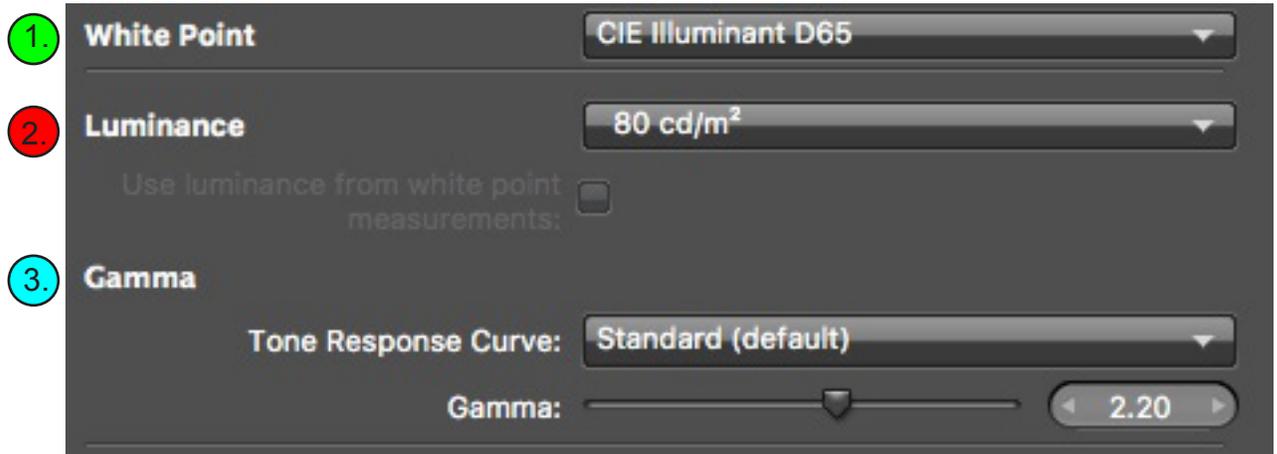
Calibration Settings.

There are three main settings in any monitor calibration software that need to be understood and set properly in order to achieve a good screen to print "match". These three settings are white point (color temperature), brightness (luminance), and gamma. Let's explain...

1. White point is the setting that controls the color temperature of white on your monitor. A higher number will look more blue, while a lower number will look more yellow or orange. The idea here is to set the white point of your monitor to match wherever you are viewing or judging your prints. If you have a custom viewing booth, many have controls for D50, D65, or tungsten. Generally speaking for matching prints on a printing press you would choose D50. For inkjet prints judged in daylight choose D65. Or many calibrators have the ability to measure the white point of your print viewing area. You can use that as a reference and choose to set the white point setting to match that area.

2. Brightness or luminance can be a bit tricky as well and can take a little trial and error to get set correctly. This setting is based on how bright or how dark your environment around you is when viewing images on your monitor. In a very bright room, we need to set the luminance on the monitor very high. In a very dark room we would set the luminance setting to a much lower setting. Here are some good "ballpark" settings...very bright room: Luminance 140, bright room: Luminance 120, moderately lit room: Luminance 100:, dark room: Luminance 80.

3. Gamma is the least controversial as the video and graphics industries have standardized on a gamma of 2.2 for monitors. So, set your Gamma setting in the calibration software to 2.2.

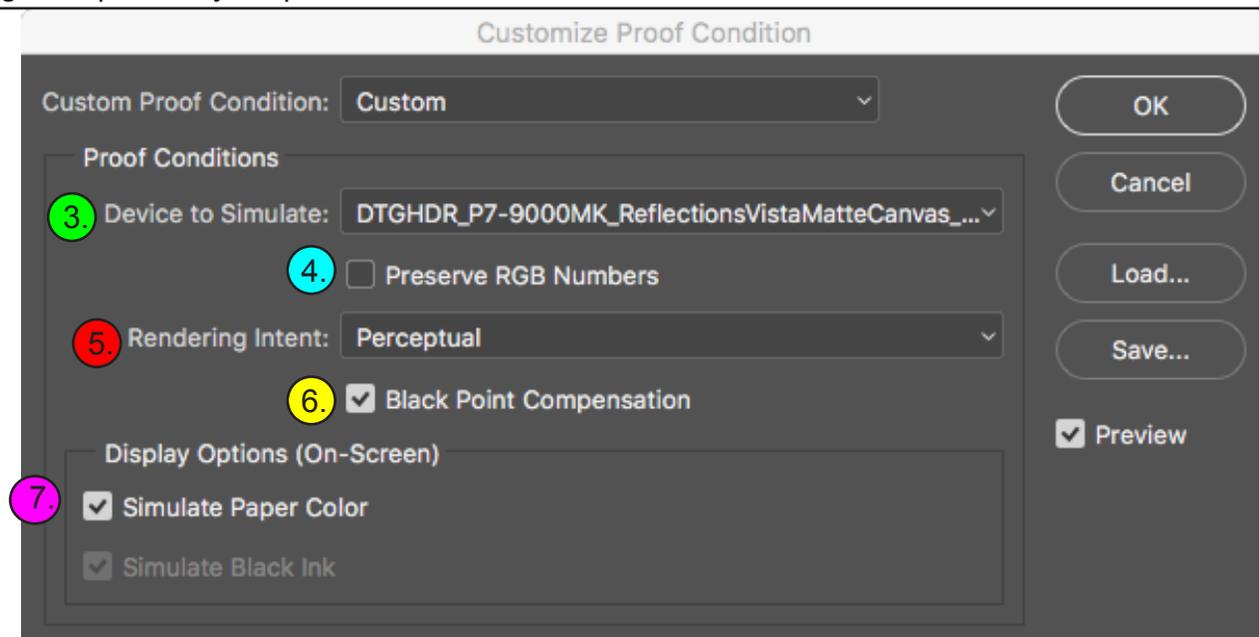*Display Settings from X-rite's i1 Profiler software.*

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Soft Proofing in Adobe Photoshop (Soft proofing in Adobe Illustrator is nearly identical)

1. Open your file in Photoshop.
2. From the View Menu choose...Proof Setup...Custom.
3. In Device to Simulate, choose the ICC profile that you are using to print. This is the profile combination of your printer and media.
4. Do NOT check the box "Preserve RGB Numbers".
5. Choose a Rendering Intent. Its usually best to choose either Perceptual or Relative Colorimetric. Make sure whichever you choose here, that you choose the same rendering intent when printing. See our document on Rendering Intents for more info.
6. Check Black Point Compensation.
7. Optional...checking the box "Simulate Paper Color". This setting will simulate the white point and ink density of the paper, affecting the overall apparence of the image on screen. However, with standard ICC profiles, it tends to make the image too "washed out" so we don't recommend checking this box. However, with DTG's HDR profiles, we recommend that you do check this box as our HDR profiles simulate the paper color and black density extremely accurately.
8. Click OK and you are now soft proofing your image in Photoshop.

Even though your image now looks different on screen, it's important to understand that Photoshop has not changed your actual file in any way. It's only "simulating" on screen how the image will print on your printer/media combination.

Customize Proof Condition

Custom Proof Condition: Custom

Proof Conditions

3. Device to Simulate: DTGHDR_P7-9000MK_ReflectionsVistaMatteCanvas_...

4. ☐ Preserve RGB Numbers

5. Rendering Intent: Perceptual

6. ☑ Black Point Compensation

Display Options (On-Screen)

7. ☑ Simulate Paper Color

☑ Simulate Black Ink

OK

Cancel

Load...

Save...

☑ Preview

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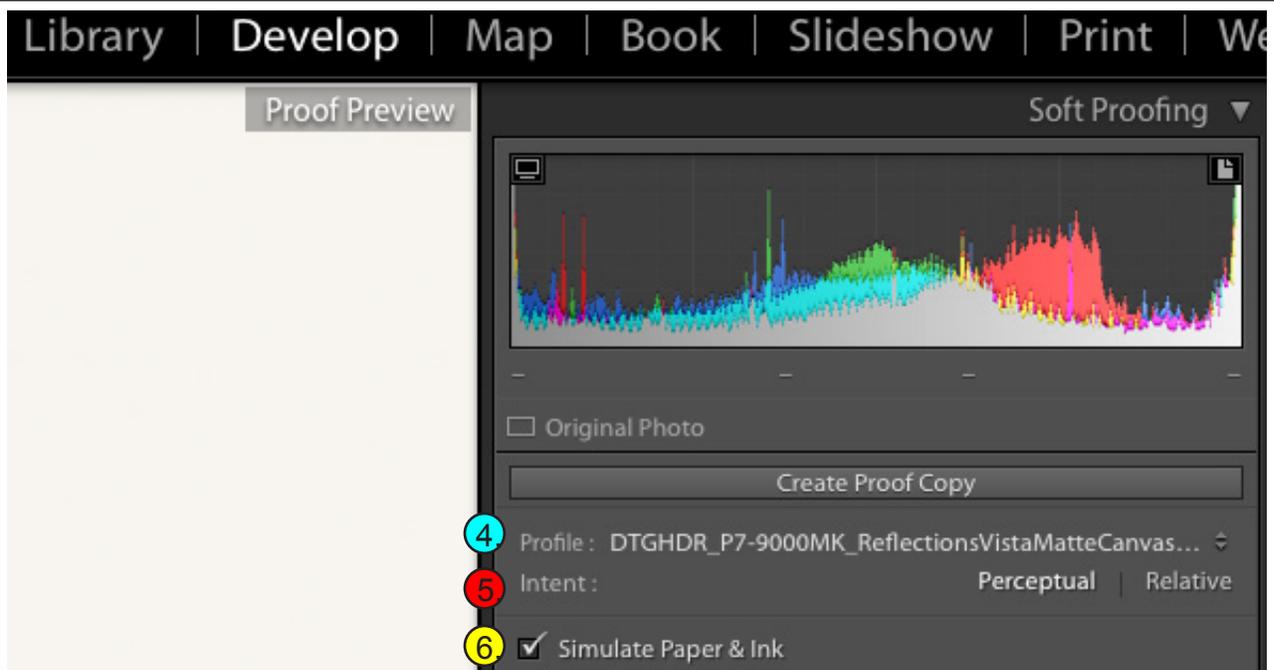DTG Digital Color Learning Guide
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Soft Proofing in Adobe Lightroom

1. Select the file you want to work with in Lightroom.
2. Click the Develop Tab (as you normally would to edit images).
3. From the View Menu choose...Soft Proofing...Show Proof.
4. Click on the profile list & choose the ICC profile that you are using to print. This is the profile combination of your printer and media. You may need to choose "other" and then select the profile from the additional list.
5. Choose a Rendering Intent. Make sure whichever you choose here, that you choose the same rendering intent when printing. See our document on Rendering Intents for more info.
6. Optional...checking the box "Simulate Paper & Ink". This setting will simulate the white point and ink density of the paper, affecting the overall apparence of the image on screen. However, with standard ICC profiles, it tends to make the image too "washed out" so we don't recommend checking this box. However, with DTG's HDR profiles, we recommend that you do check this box as our HDR profiles simulate the paper color extremely accurately.

Even though your image now looks different on screen, it's important to understand that Lightroom has not changed your actual file in any way. It's only "simulating" on screen how the image will print on your printer/media combination.
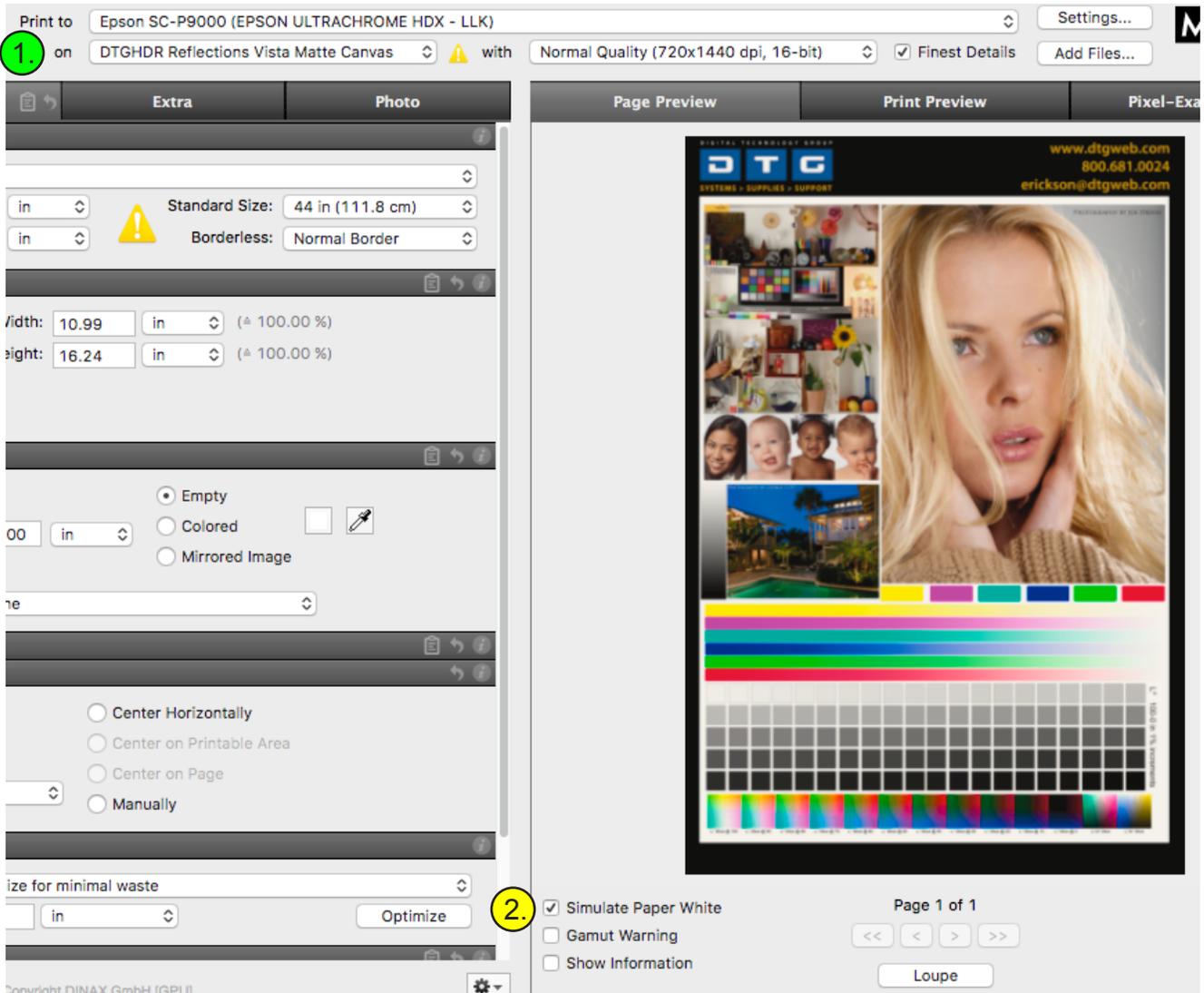
Library | **Develop** | Map | Book | Slideshow | Print | We

Proof Preview   Soft Proofing ▼

☐ Original Photo

Create Proof Copy

4 Profile : DTGHDR_P7-9000MK_ReflectionsVistaMatteCanvas... ⬍

5 Intent :   Perceptual | Relative

6 ☑ Simulate Paper & Ink

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Soft Proofing in Mirage

Mirage is a little unique in that it automatically soft proofs when you launch it. Below we will describe the options.

1. Open your file in Mirage. As mentioned above, Mirage automatically soft proofs based on the media you select from the list next to the word "on". When you select a different media from this list, Mirage will automatically update the screen to "soft proof" to the new media selected.

2. Select the "Simulate Paper White" check box towards the bottom of the screen.

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Conclusion

By using a calibrated monitor, custom ICC print profiles, and implementing soft proofing, you will dramtically improve your digital color workflow. Being able to preview in image, on-screen, before printing will not only save you time but also save you money by eliminating or reducing reprints.

DTG has been providing color management solutions and support since 1998. At DTG you can purchase this equipment and software as well as contact us for pre-sales consultation on all of your digital color and printing needs. If you have any questions at all please don't hesitate to contact DTG at 800.681.0024.