



ArtSure NEWS

Making sure your customers have at least a basic understanding of how digital colour management works can save everyone a lot of time and frustration. **James Tenute** of Guild award winning Canadian print studio Photohop runs through some key concepts

COLOUR MANAGEMENT refers to the use of processes and technologies to maintain colour consistency while reproducing a photograph or a work of art. Achieving a colour match between what is viewed on the monitor, or an original work of art, and what is eventually printed is a complex task.

All the devices, applications and materials used throughout the workflow play a key role in controlling the colour accuracy and consistency necessary for optimal results.

COLOUR SPACE OR GAMUT

A colour space simply describes the range of colours, or gamut, that a camera can see, a printer can print, or a monitor can display. Colour spaces used for editing such as; ProPhoto, Adobe RGB or sRGB, are device-independent. They also determine a workable colour range. Their design allows you to edit images in a controlled, consistent manner.

Gamut: The gamut describes the range of colours that can be reproduced and processed by devices such as a monitor or a printer. The expression "out-of-gamut" means that the colour cannot be shown accurately on the target device, for example when a printer cannot convert or produce a colour that is shown on the monitor.

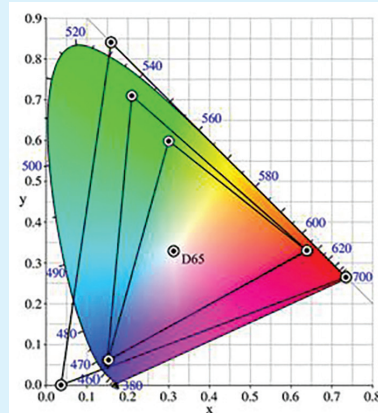
RGB: Red, Green, Blue is a monitor's native colour space and the system for capturing and displaying colour images electronically. All TV, computer and electronic displays create a colour using these three primary colours. The coloured horseshoe in Figure 1 represents visible colour. The smallest triangle is the range of colours in sRGB, the middle is Adobe RGB and the largest is ProPhoto RGB.

sRGB is the 'standard' of the web and most photofinishers. Designed in 1996 by Microsoft and HP, sRGB has the smallest spectrum of colours of the primary colour spaces. sRGB was primarily designed for the computer industry as a way to standardise colours on monitors and printers. Most cameras use the sRGB colour space when saving an image. Only higher end cameras have the option to save in either sRGB or Adobe RGB.

Adobe RGB was designed in 1998. It was created in response to the growing computer graphic arts sector looking for a way to duplicate the spectrum of colours created by the CMYK printing process. Adobe RGB offers a wider range of available colours than sRGB, so it wasn't long before it led to widespread adoption by photographers.

ProPhoto RGB was created by Kodak in 2003. ProPhoto RGB started its life out as ROMM RGB. Built from the ground up as a colour space to supplant all the colours visible in Ektachrome slide film, ProPhoto RGB has one of the largest colour gamuts out there. Designed by photo experts for photography, ProPhoto duplicates most of the humanly visible colours that occur in the real world, surpassing Adobe RGB, and sRGB colour spaces.

Figure 1: sRGB/Adobe RGB/ ProPhoto/Melissa RGB



The coloured horseshoe represents visible colour. The smallest triangle is the range of colours in sRGB, the middle is Adobe RGB, the largest is ProPhoto RGB.

Melissa RGB is another Adobe-defined colour space. Melissa RGB utilises the ProPhoto colour spectrum and applies the Gamma curve from sRGB, providing the best of both colour spaces. It is only used inside Lightroom for manipulating RAW files. Although you cannot select another working colour space while processing in Lightroom, you can select an appropriate colour space when exporting.

TAGGING

Most cameras will tag an image with the colour space when saved as a jpeg at the time of capture. Sometimes this information can get lost through editing and saving images in different formats. It's important that when editing in a different colour space than is native to the image, you make sure you tag the image with a colour space before submitting your images for printing.

D-MAX

D-Max stands for maximum density. It indicates the deepest black a paper and ink combination can produce. The higher the D-Max value, the better. A D-Max of 2.0 is considered excellent and approaches that of traditional photo processing materials. The goal is to achieve the best all-around quality given different display conditions. For instance, a glossy print under glass can have more reflection than a matte print. However, the attributes of the glass might cause a perceived loss of black density. It is important to take this into account when choosing a paper.

ICC (INTERNATIONAL COLOUR CONSORTIUM) PROFILES

An ICC Profile is a colour management industry standard that helps specify the attributes of imaging devices (digital cameras, scanners, monitors, printers). These profiles contribute to the rendering of colours, resulting in a more accurate print.

ICC Profiles are similar in function to colour spaces in that they define a finite range of colours. However, unlike colour spaces, they define the range of real colours an output device (such as a printer) can produce, making them an integral part of a professional printing workflow.

ICC Profiles are a necessity for any colour-controlled workflow. They not only give you a good idea of what your output will look like when soft proofing, but they definitively tell the device how to render the colours when the ICC Profile is applied.

With a good image editor application such as Photoshop and a correctly calibrated monitor, an appropriate ICC Profile created for a specific printer and paper combination will allow you to soft proof your images.

James Tenute is co-owner with Cindy Woodman of Photohop, a custom, large format, digital photo and fine art printer, art framing studio and online gallery in Alberta, Canada. Photohop was the winner of the Guild's Digital Printer of the Year Award in 2016

ArtSure Digital print quality you can trust

Call Louise Hay to discuss ArtSure participation on 020 7381 6616 or louise@fineart.co.uk fineart.co.uk