

Getting Colour Right

We will talk about:

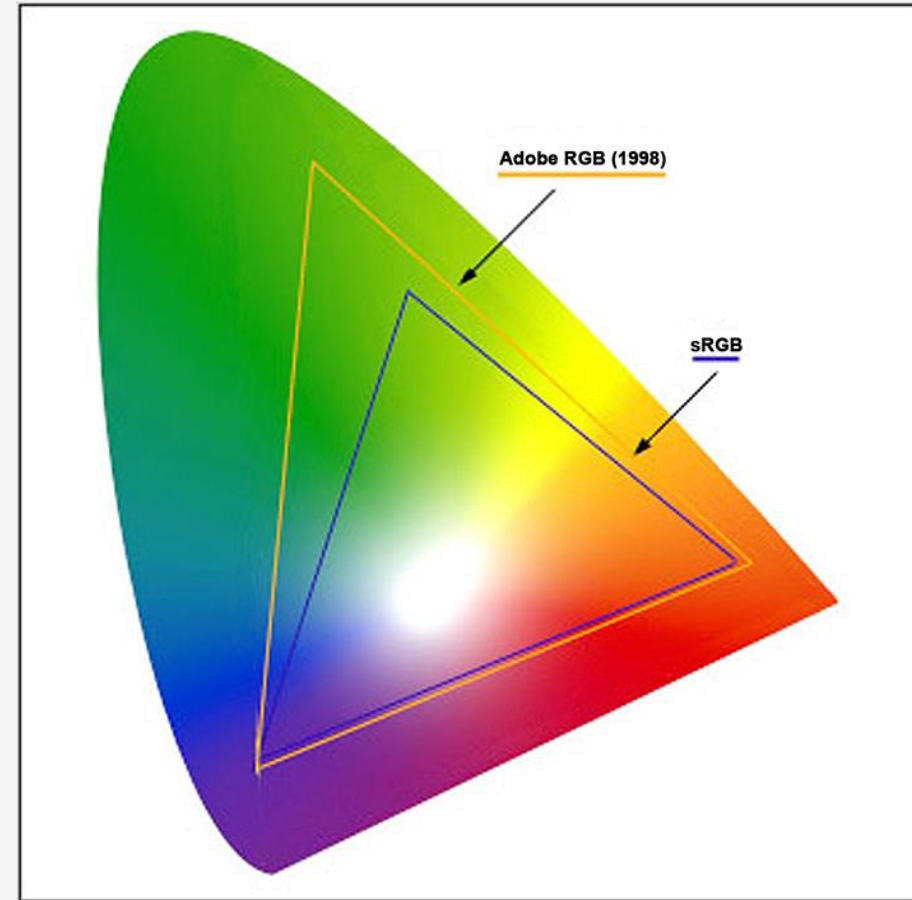
- Camera Colour Space
- sRGB
- Monitor calibration
- Viewing conditions
- Projection
- Printing

Colour Space. Colour Gamut

- Colour **gamut** is the actual complete range of colours that a specific device (like a camera sensor, monitor, or printer) can capture, display, or reproduce. It defines the boundaries of colour. If a colour falls outside that boundary, the device cannot show it and will shift or clip
- Colour **space** is a defined mathematical system used to measure and organise those colours
- We are primarily concerned about Colour Space and the standard space in the world of camera club photography is sRGB. Why ? Because it is the standard that devices such as projectors and printers assume is being delivered to them
- Professional systems and cinema colour spaces can be very much wider than the ones we as amateurs live with and it is extremely important that we don't set super wide colour spaces in our output digital images or in jpegs sent to printers unless we are absolutely sure that the receiving device can properly interpret the colour system

sRGB vs Adobe RGB

- Adobe RGB has a very much wider colour gamut than sRGB
- My camera allows the choice of both
- Does it matter which one I set in camera
 - If I store RAW, no it doesn't matter, colour space is set when the image is exported to jpeg
 - If I store jpeg images yes it matters because if the jpeg is created with Adobe RGB colour space and sent to a projector without being converted to sRGB, the projector will assume it is sRGB and the mdigital numbers for the Red, Green and Blue Channels will correspond to incorrect colours and incorrect luminance



sRGB

- sRGB (Standard Red Green Blue) is a colour space (a range of colours that a device can display or capture. sRGB was designed by HP and Microsoft to ensure that colours look the same across different screens, printers, and software.
- **sRGB** is the default colour profile for the World Wide Web, online photos, videos, projectors, consumer printers etc
- An image edited or viewed in the sRGB format looks similar when opened, displayed or printed on different devices
- A jpeg created using a different colour space than sRGB is likely to appear to have different colour or contrast than it did when edited
- Processing software may use a wider colour space but for compatibility with projectors and printers, the jpeg produced as a final image should use sRGB as the colour space
- sRGB is not the widest colour space by any means but it is the standard across devices

If you shoot JPEG in camera

Set the camera colour space to sRGB when your final use is mainly JPEG sharing, club projection or straightforward JPEG printing.

Typical camera menu:

Colour Space → sRGB or Adobe RGB

Why?

The camera embeds the colour-space information in the JPEG and the JPEG is then prepared for a widely compatible workflow.

If you shoot RAW, the camera's JPEG colour-space setting does not limit the RAW sensor data in the same way; the colour space is normally chosen during RAW processing/export.

Why calibrate your monitor?

An uncalibrated monitor can be too bright, too dark, too warm or too cool.

This can lead you to:

- over- or under-expose your edits
- make blacks too deep or shadows too open
- add too much or too little saturation
- correct a colour cast that is not really in the image

You may end up “fixing” a problem created by the monitor.

Calibration is more than a colour profile

A proper hardware calibration sets a known viewing standard.

Typically this involves:

- a monitor measurement device (colorimeter)
- target brightness / white point / gamma
- creates a monitor profile used by colour-managed software

The importance of a low light editing room

Your eyes adapt to the surrounding light.

If the room is bright:

- the monitor may appear too dim
- you may brighten images unnecessarily

If the room is very dark:

- the monitor can appear excessively bright
- shadows and contrast may be judged incorrectly

A dim, neutral and consistent environment makes judgement easier.

Important for Projected Images

Ignoring colour space may mean that your image has a poor quality and incorrect colour when projected

Check your camera (Especially if you save and use jpegs)

Make sure the image is exported in sRGB, then the projector will reproduce your image much as it looked on your calibrated monitor.

If you are using an uncalibrated monitor, good luck You will need it.

If you are printing your image:

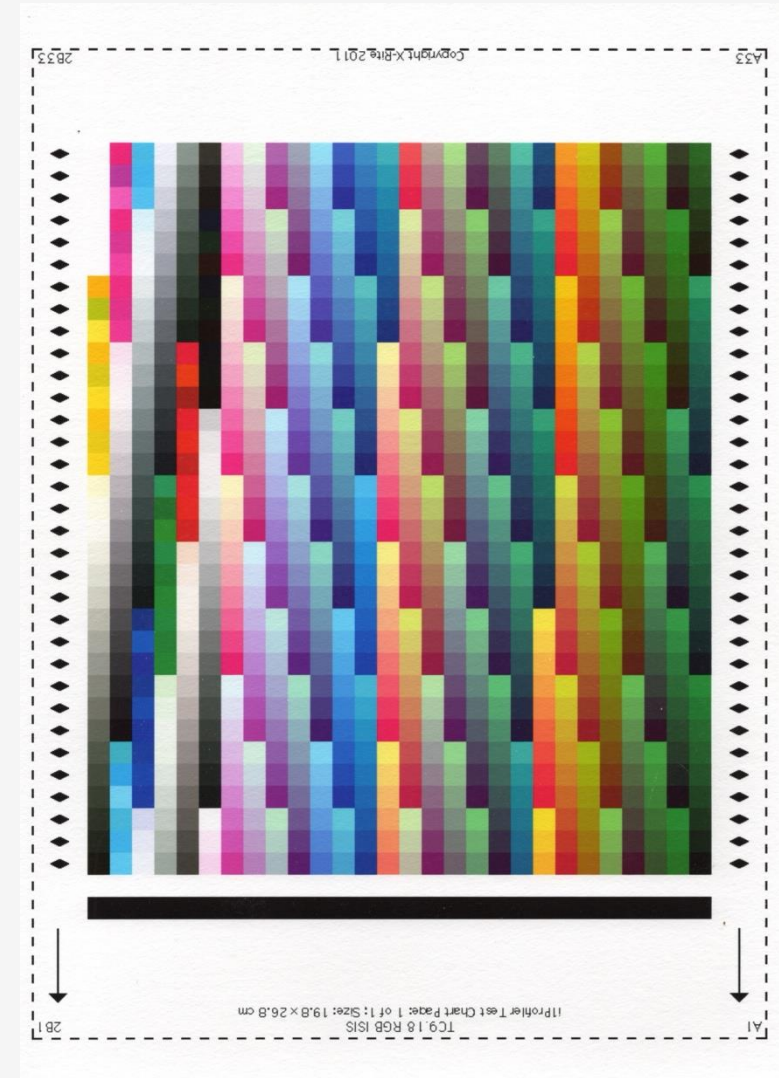
Printer Profiles

To get the best possible quality print use the correct profile for the printer / paper you are using

- Different papers each have different requirements for quantity of ink and mix of inks
- Choose a paper manufacturer such as Permajet, Marrutt, Pinnacle etc who will provide free custom profiles for your printer
- Default standard profiles can be used but for highest quality a custom profile is best

Printer Profiles

- For each different printer paper used, a standard profile test chart page is produced with all the profiling turned off in the print module.
- The print is sent to the paper manufacturer who scans the page and sends back a printer profile that will enable your printer to print to it's optimum quality on that paper
- Generic profiles can be used and may produce good results
- For optimum results, get paper profiles. They are generally free other than the postage cost to send the print to the paper manufacturer



Points to Take Away with you

1. Calibrate your monitor with a measurement device such as Datacolour Spyder
2. Edit with room lighting dim and neutral
3. Screen free from distracting reflections
4. Camera set to sRGB if shooting final JPEGs (Doesn't matter if shooting RAW)
5. RAW workflow: edit in wide colour space but export JPEGs as sRGB
6. JPEG printing: make sure jpeg was created using sRGB (Camera)
7. Club projection: submit sRGB JPEG
8. If you print at home, arrange a custom profile for each different paper type