

# Colour Management

*A basic explanation of how it works and what it can do for you.*

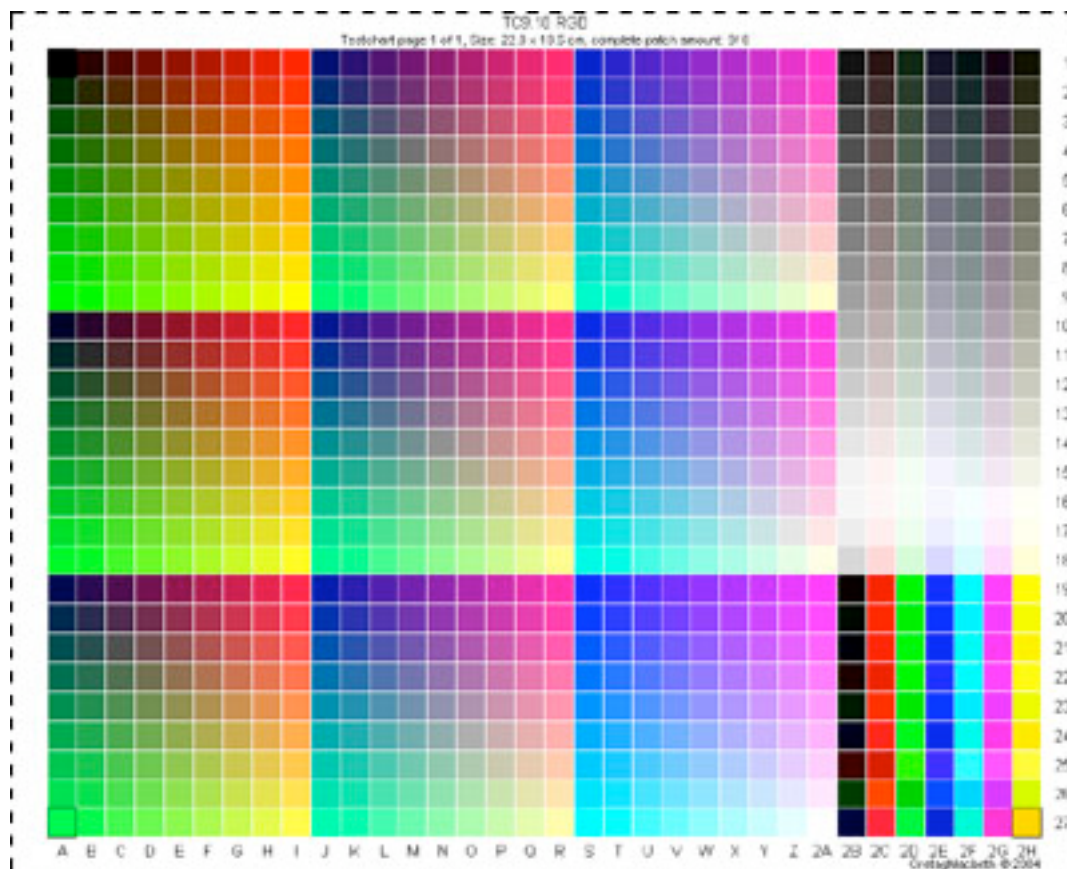
Colour management can be complicated...at first glance it appears an expensive, very dull and scary thing to have to get involved with. All of this can be true, but for a many people it need not be the case. £165 plus VAT, a little bit of familiarisation with nomenclature and equipment, and a modicum of perseverance can reap significant rewards.

The Holy Grail for most inkjet users is to be able to get on paper what they see on screen, accurately, first time, every time. You don't need to become an expert on colour management to achieve this, just a few hours effort and you will quickly claw back the costs involved from savings as a result of not wasting ink and paper on test strips and bad prints. You really can be in a position to simply hit print and walk away knowing that you will get the result you wanted and expected. Best of all no more frustrating hours wasted in front of the computer!

To achieve this requires the use of ICC profiles. ICC stands for Independent Colour Consortium, an organisation set up by suppliers of hardware and software for the graphic arts industries which has initiated the development and standardisation of a colour management system independent of suppliers and platforms....and it works. A profile essentially maps how a device interprets and subsequently represents colour data whether it is a monitor, printer, scanner, camera or other device. In order to achieve this is necessary to be able to compare how a device represents known colour values. These 'known colour values' are the industry's line in the sand, the cornerstone of colour management...Lab Colour.

Lab Colour is a colour space that theoretically describes all the colours that the human eye can see. It is a huge colour space that goes far beyond what any device can record or represent and so therefore there are no problems with gamut limitations. For what it's worth if you open Photoshop and click on MODE you will see the Lab Colour space listed there along with RGB and Grey scale etc.

The main things that cause variation from the Lab standard in what you see on your monitor or in your prints are: your monitor, your printer, the paper you print on and the ink you use. In order to colour manage your printing you will need two things ...a profile for your monitor and a profile for your printer. Profiles for these devices will allow the data coming from your computer to be reproduced accurately. To achieve this all we need to do is find out how each device actually represents a sample of known colour. We do this in the case of the printer by getting you to print out a colour test chart from a file of known colour values as shown below.



By doing this and analysing the result we can see how much your printer varies from the 'correct' reproduction of these given colours. We scan this chart using a Gretag Macbeth Spectrolino device and the data generated, from any variations from the known Lab Colour standard, are then compiled into a custom created piece of software. This new piece of bespoke software that provides these 'corrections' for every colour is your printer profile.



A similar procedure is followed with regard to a monitor profile. A colour sensitive instrument is hung in front of your monitor screen and the software supplied with it flashes a series of colours of known value at it. It reads the way that the monitor displays these colours and writes a profile for your monitor. This is automatically installed in the correct location in your computer operating system and the monitor can then be described as calibrated. The significant difference between generating printer and monitor profiles is that you will need to buy the device that generates the monitor profile as this should be renewed on a monthly basis. This is because unlike the elements that make up a print...the paper, ink and printer...the properties of a monitor change over time so regular calibration/profiling needs to be carried out.



So that's it....now we have a monitor and printer that are calibrated to the same standard ...therefore what you see on the screen will be what appears out of your printer.

There will always be limitations ...the most obvious one being that the image on your monitor is generated by transmitted light and the one in a print is generated by reflected light. There are also issues regarding colour space and gamut but soft proofing in Photoshop will allow you to preview these. Photoshop Help is the best source of information on this. However this is as far as many people ever need to go regarding colour management. Beyond keeping your monitor profiled, (unless you change one of the variables...a new monitor, different ink, paper or printer), you can simply get on with taking pictures and printing them...which is probably why you got into this in the first place!

There are many additional benefits to ICC profiling beyond that described above. The main ones are to do with workflow. For example,

if you require a commercial lab to produce prints for you...perhaps to a bigger size than you can manage on your own equipment, or onto a different material, then you can ask them for the profile of their output device/printer. Then by converting your image to their profile on your computer, because you will be both using a monitor calibrated to the same standard, (if your lab aren't take your business elsewhere!), you will be able to preview how your image will appear when they have printed it...and see any limitations or benefits of their output device, whether it is to a silver based material, thermal or inkjet print. Suddenly ICC profiling seems like a good idea doesn't it!