

An Introduction to Colour Management

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What is Colour Management?

What is Colour Management?

The process of producing images on various output devices whilst maintaining colour accuracy.

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What is Colour Management?

The process of producing images on various output devices whilst maintaining colour accuracy.

It attempts to produce predictable colour within the limitations of the device in use (your printer and/or monitor).

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What is Colour Management?

RGB & CMYK are known as *device-dependent* or *device specific* colour models.

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What is Colour Management?

RGB & CMYK are known as *device-dependent* or *device specific* colour models.

The same set of RGB or CMYK numbers will produce different results on different devices without colour management.

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Why Do We Need Colour Management?

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Why Do We Need Colour Management?

- **Prints don't match what is on screen**

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Why Do We Need Colour Management?

- **Prints don't match what is on screen**
- **Prints have a colour cast**

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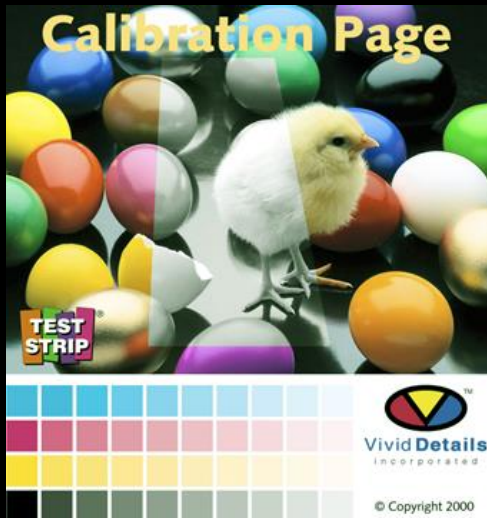
Why Do We Need Colour Management?

- **Prints don't match what is on screen**
- **Prints have a colour cast**
- **Colours differ between printers**

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Why Do We Need Colour Management?



Prints have a colour cast



Too Dark

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Why Do We Need Colour Management?

Without it you have:

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Why Do We Need Colour Management?

Without it you have:

Inconsistency

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Why Do We Need Colour Management?

Without it you have:

Inconsistency

&

Unpredictability

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Why Do We Need Colour Management?

Colour Management will ensure:

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Why Do We Need Colour Management?

Colour Management will ensure:

- **Consistent, accurate colour.**

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Why Do We Need Colour Management?

Colour Management will ensure:

- **Consistent, accurate colour.**
- **More enjoyment, less frustration.**

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Why Do We Need Colour Management?

Colour Management will ensure:

- **Consistent, accurate colour.**
- **More enjoyment, less frustration.**
- **Use of less ink (save money).**

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Why Do We Need Colour Management?

Colour Management will ensure:

- **Consistent, accurate colour.**
- **More enjoyment, less frustration.**
- **Use of less ink (save money).**
- **Use of less paper (save more money).**

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Why Do We Need Colour Management?

Colour Management will ensure:



- You will get the best results possible within the limitations of your printer.
- Matching colours.
- Neutral B&W prints if you are using a printer with 3 black inks.

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Device Dependent Colour

- **RGB numbers are dependent upon their method of reproduction.**

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Device Dependent Colour

- **RGB numbers are dependent upon their method of reproduction.**
- **Each RGB monitor will display the same RGB values differently.**

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Device Dependent Colour

- **RGB numbers are dependent upon their method of reproduction.**
- **Each RGB monitor will display the same RGB values differently.**
- **Each inkjet printer will produce different colours from the same RGB values.**

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Device Independent Colour

What is needed is a method of reproducing colour that is not dependent upon the device in use.

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Device Independent Colour

What is needed is a method of reproducing colour that is not dependent upon the device in use.

A controlled environment that allows colour reproduction accurately on any monitor and printer.

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Device Independent Colour

What is needed is a method of reproducing colour that is not dependent upon the device in use.

A controlled environment that allows colour reproduction accurately on any monitor and printer.

A profile can do all of the above...

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What is a Profile?

- **A description of the colour a device is capable of seeing, displaying or printing**



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What is a Profile?

- **A description of the colour a device is capable of seeing, displaying or printing.**
- **Simply put, a profile is a label or tag that describes the colour of a particular image or device.**



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Colour Management System

The Colour Management System ensures that the colour description in an input colour space is transferred faithfully to an output device (your printer).

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Tagged or Untagged

An image or device can be in one of two states.

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Tagged or Untagged

An image or device can be in one of two states.

- **Tagged with associated profile**

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Tagged or Untagged

An image or device can be in one of two states.

- **Tagged with associated profile**
- Or**
- **Untagged with no associated profile**

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Profile Types

A profile can be one of two types:

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Profile Types

A profile can be one of two types:

Generic or Bespoke (custom)

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Profile Types

Generic

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Profile Types

Generic

- **A profile made for “a” printer rather than specifically for “your” printer/ink and paper.**

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Profile Types

Generic

- A profile made for “a” printer rather than specifically for “your” printer/ink and paper.
- **Readily available online as a quick fix**

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Profile Types

Bespoke (Custom)

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Profile Types

Bespoke (Custom)

- **A profile made specifically for your printer, ink and paper**

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Profile Types

Bespoke (Custom)

- **A profile made specifically for your printer, ink and paper**
- **By far the most accurate way to print and best of all its FREE from us!**

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How Does it Work?

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How Does it Work?



**Image
File
(Tagged)**

How Does it Work?



**Image
File
(Tagged)**



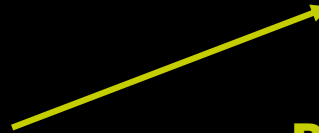
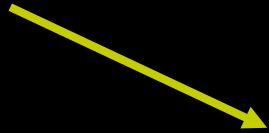
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How Does it Work?



**Image
File
(Tagged)**



**Profiled for
Printer/ink/paper**

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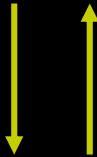
How Does it Work?



**Image
File
(Tagged)**



**Profiled for
Printer/ink/paper**



**Monitor
Calibrated**

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Connecting the Elements

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Connecting the Elements

**Colour Management workflow requires
4 elements**

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Connecting the Elements

Colour Management workflow requires 4 elements

- **Input profile (embedded in your image)**

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Connecting the Elements

Colour Management workflow requires 4 elements

- **Input profile (embedded in your image)**
- **Colour Management Module (Photoshop)**

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Connecting the Elements

Colour Management workflow requires 4 elements

- **Input profile (embedded in your image)**
- **Colour Management Module (Photoshop)**
- **Output profile (paper/ink/printer profile)**

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Connecting the Elements

Colour Management workflow requires 4 elements

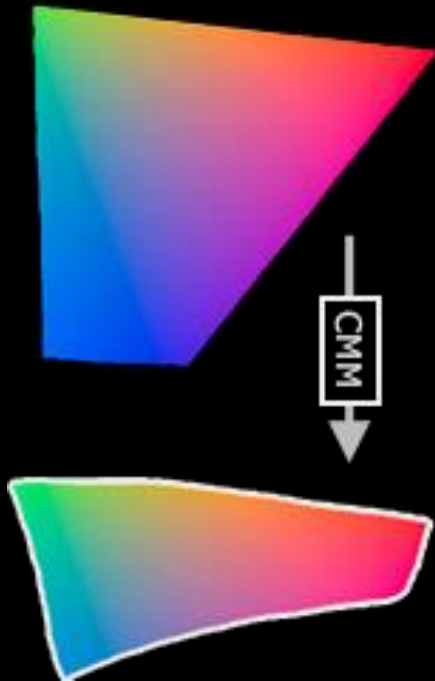
- **Input profile (embedded in your image)**
- **Colour Management Module (Photoshop)**
- **Output profile (paper/ink/printer profile)**
- **Rendering Intent (To handle out of gamut colours)**

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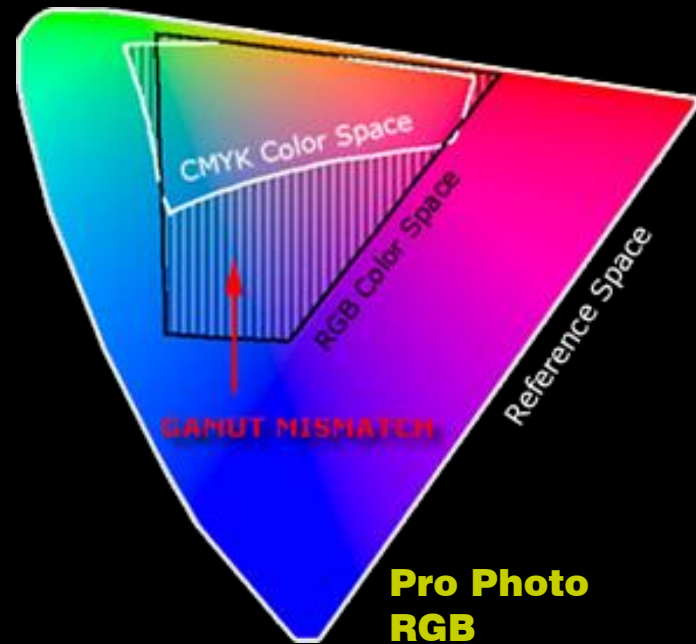
Rendering Intent

**Adobe RGB 1998 Colour Space
(Your Image)**



**CMYK Colour Space
Destination (Printer)**

**Rendering Process
(Image - Printer)**



Rendering Intent



**The beach ball represents
the colour captured**

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Rendering Intent



**The beach ball represents
the colour captured**

**The basketball
represents the size
of the colour space
most printers can
encompass**

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Relative Colorimetric



Relative colorimetric will clip any colours outside the printers capability and will only print the colours within its capability.

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Perceptual



Perceptual will squeeze any colours outside your printers capabilities and match it with the nearest colour that it is capable of printing.

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Perceptual



Perceptual will squeeze any colours outside your printers capabilities and match it with the nearest colour that it is capable of printing.

For that reason, for printing we recommend the use of Perceptual.

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Difference between Calibration and Profiling

**The difference between Profiling and
Calibration**

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Difference between Calibration and Profiling

The difference between Profiling and Calibration

Profiling does not physically change your image – It simply describes the colour to your output device (your printer).

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Difference between Calibration and Profiling

The difference between Profiling and Calibration

Profiling does not physically change your image – It simply describes the colour to your output device (your printer).

Calibration changes a devices physical properties. It adjusts the colours to a set space of colours.

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Monitor Calibration

- **Performs the task of both calibrating and profiling the monitor.**

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Monitor Calibration

- **Performs the task of both calibrating and profiling the monitor.**
- **These are readily available, we would recommend the Xrite Eye One.**

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Monitor Calibration

- **Performs the task of both calibrating and profiling the monitor.**
- **These are readily available, we would recommend the Xrite Eye One.**
- **Leave your screen on for 15 minutes before calibrating your monitor to ensure colours are stable.**

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Monitor Calibration

- **Most Monitor Calibration devices are fairly automated.**

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Monitor Calibration

- **Most Monitor Calibration devices are fairly automated.**
- **You may be asked to adjust the colour and brightness of your monitor.**

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Monitor Calibration

- **Most Monitor Calibration devices are fairly automated.**
- **You may be asked to adjust the colour and brightness of your monitor.**
- **Once scanned, a profile will be made and saved onto your computer.**

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Monitor Calibration

- **Most Monitor Calibration devices are fairly automated.**
- **You may be asked to adjust the colour and brightness of your monitor.**
- **Once scanned, a profile will be made and saved onto your computer.**
- **It is recommended to re-calibrate every 4-6 weeks.**

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Monitor Calibration



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Monitor Calibration

Why should you calibrate your monitor so regularly?

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Monitor Calibration

Why should you calibrate your monitor so regularly?

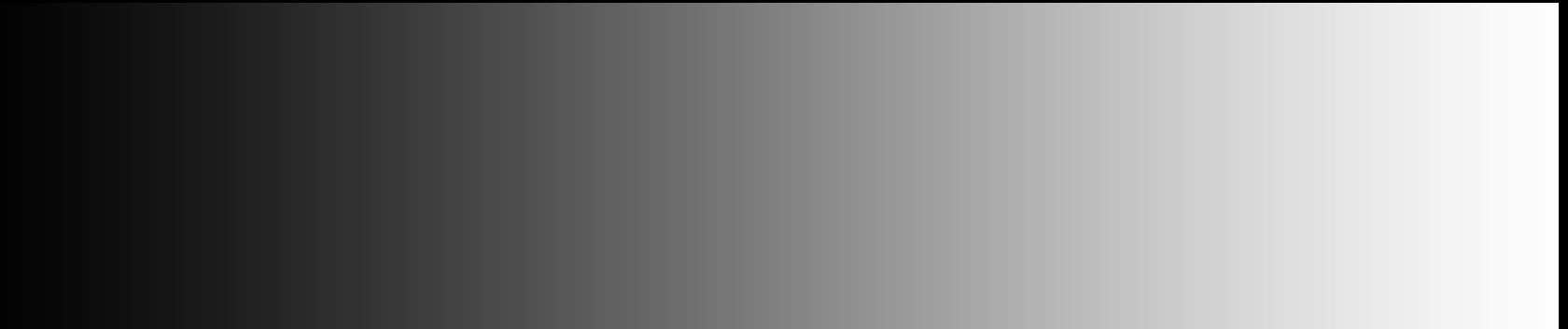
A good analogy of calibration is that it is like a watch or barometer, the setting will drift over a period of time and will need to be brought back into line.

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Check Monitor Profile

- **Open a gradation like below in Photoshop**

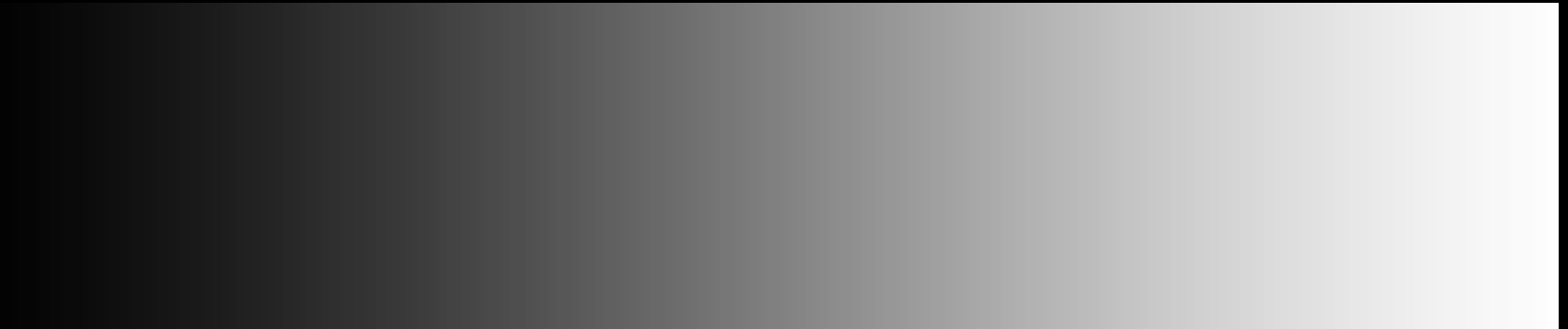


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Check Monitor Profile

- **Open a gradation like below in Photoshop**
- **If calibrated correctly the gradation should be neutral, and have a smooth gradation of blacks through to white.**



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Monitor and printer harmony

- **Even though your monitor has been calibrated and your papers have been profiled your print may still be printing “dark.”**

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Monitor and printer harmony

- **Even though your monitor has been calibrated and your papers have been profiled your print may still be printing “dark.”**
- **Monitors are projected light**

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Monitor and printer harmony

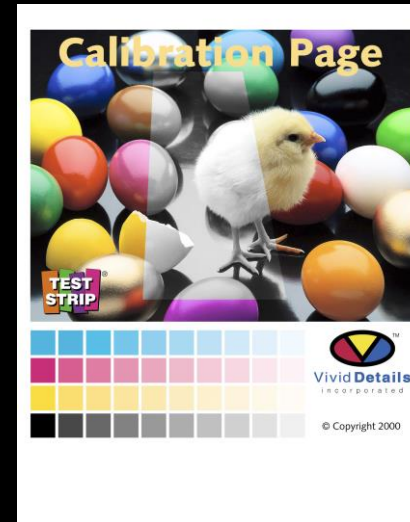
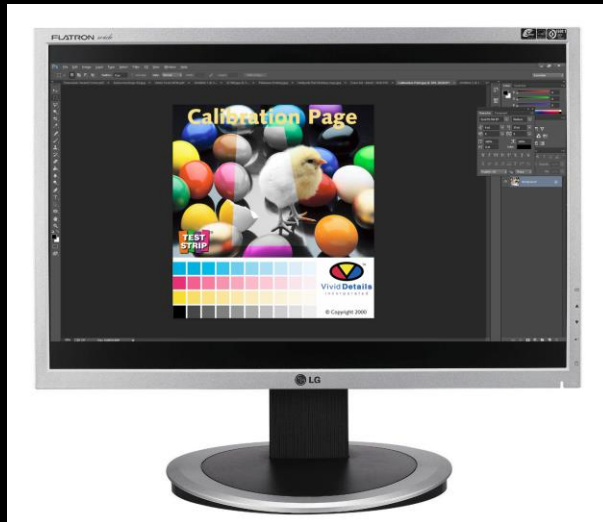
- **Even though your monitor has been calibrated and your papers have been profiled your print may still be printing “dark.”**
- **Monitors are projected light**
- **Papers are viewed under reflected light**

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Monitor and printer harmony

- **Using our calibration page, adjust the brightness until your monitor matches your print out.**



Soft Proofing

What is Soft Proofing?

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Soft Proofing

- **Most printers are not able to reproduce the colours that a monitor displays.**

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Soft Proofing

- **Most printers are not able to reproduce the colours that a monitor displays.**
- **It allows you to view the colours that the printer is capable of producing**

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Soft Proofing

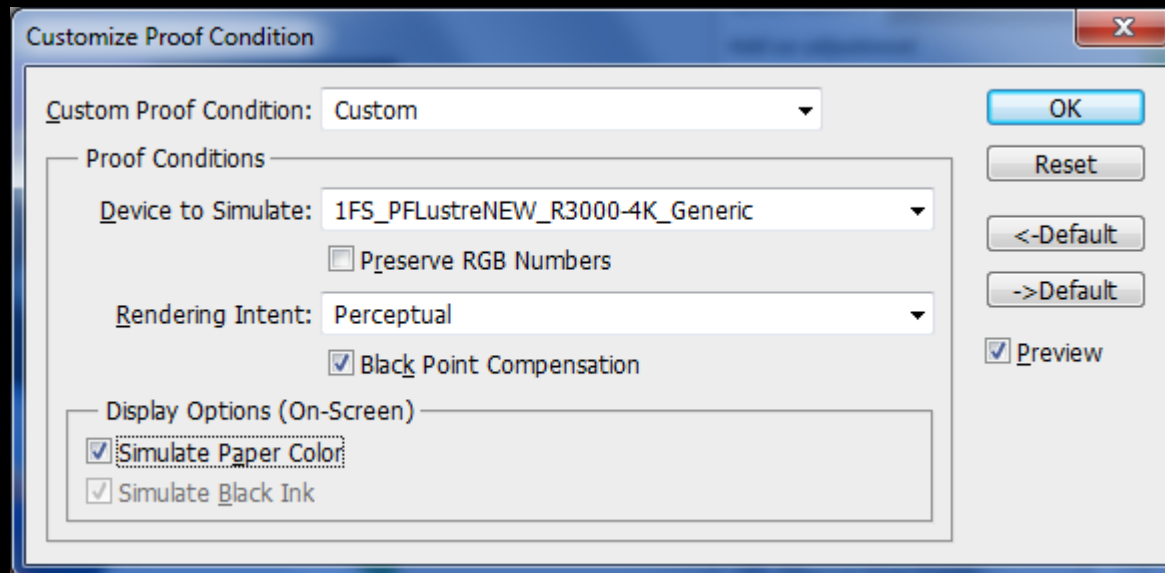
- **Most printers are not able to reproduce the colours that a monitor displays.**
- **It allows you to view the colours that the printer is capable of producing**
- **You can then adjust the image on screen knowing that what you see will come out on your paper.**

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How to Soft Proof

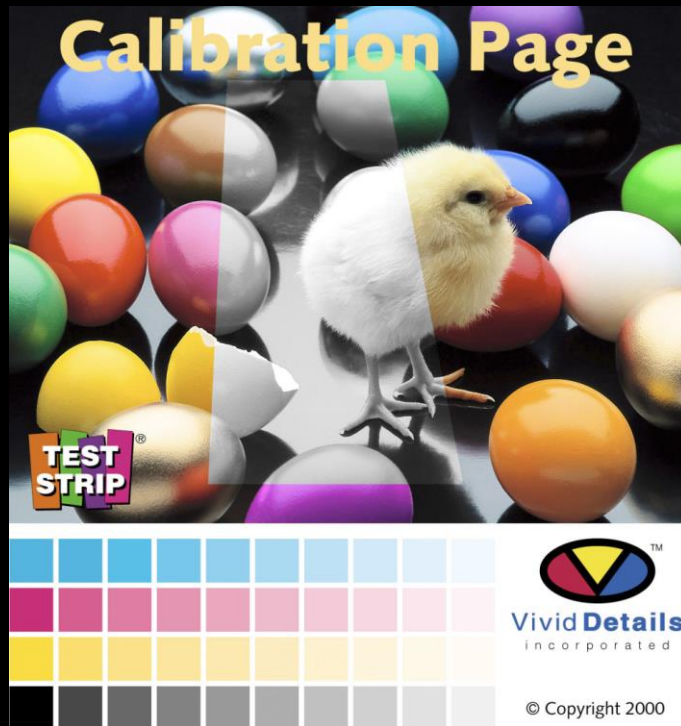
- go to "View > Proof Setup > Custom... (see below)



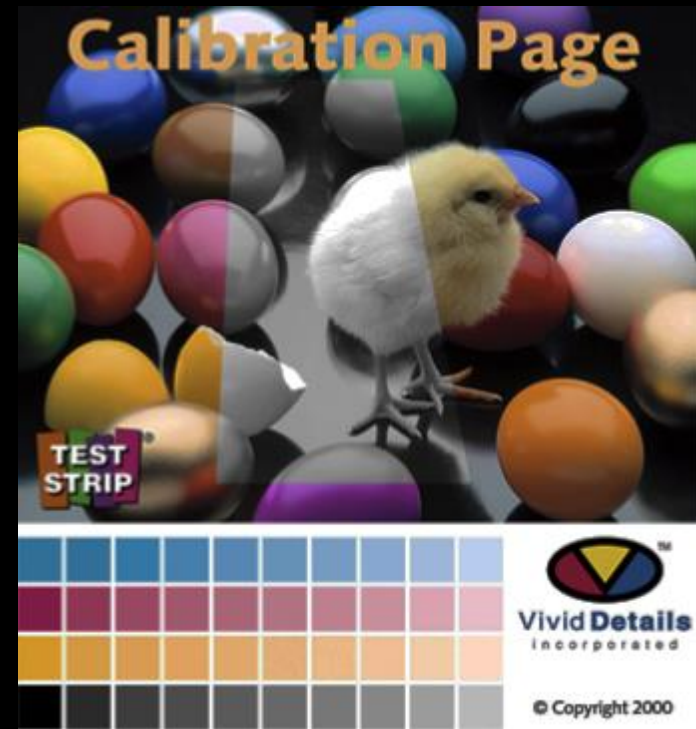
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How to Soft Proof



Without Soft Proofing



With Soft Proofing

Log Me In

- **If you are still unsure we offer a service called Log Me In**

Log Me In

- **If you are still unsure we offer a service called Log Me In**
- **With your permission we can remotely take control of your computer.**

Log Me In

- **If you are still unsure we offer a service called Log Me In**
- **With your permission we can remotely take control of your computer.**
- **We can set your settings and save them for you.**