Fotospeed
Custom ICC Profile
TEST CHART
PRINTING INSTRUCTIONS

INTRODUCTION

One of the prime concerns of many photographers when producing inkjet prints in the ability to reproduce on paper what is seen on screen. The main reason for this is the simple, but little known fact, that all printers interpret colour differently. Each one has a built-in generic profile that it uses to describe the colour it should produce. This is built in by the manufacturer and, in reality, is a 'guess' at what the printer should do. The guess is often wrong.

A profile is essentially a description (a label or tag) of the characteristics of a device. For instance, each time you take a picture with a digital camera it will embed a profile within each image file. This (input) profile will be sRGB or (much better) Adobe RGB 1998. This profile is a description of the colour within that image file, which is a known international standard.

In order to ensure that the colour description is carried through to the printer an output profile needs to be built for each paper that is used on a particular inkjet printer using a particular inkset. An output profile will deliver known, consistent colour to your inkjet printer. This is done by converting the colour values in the input profile accurately to the output profile ensuring that the original colour description is maintained; much like a translation between 2 languages.

Building an output profile is a simple process. However, like most things in life, particularly computing, the process must be set up correctly. The first step in this process is to print a test chart that will be used to create the profile. The test chart is the first building block to creating accurate printer output. It is essential that it is printed using the correct procedure. This is not difficult to do but, if you are unfamiliar with colour management, it can easily be done incorrectly. If printed incorrectly then the subsequent output profile will be incorrect. Following the instructions will ensure that the test chart printing process is carried out correctly and you will be guaranteed consistent, accurate colour each and every time you create a print. This will increase your enjoyment as well as saving time and money in reduced waste of paper, ink and time.

In order for an output profile to work correctly it is essential that the colour management (Color Control) within the printer is switched off. If left on it will conflict with your custom profile resulting in inaccurate colour reproduction. There are many different printers on the market today and many of them use different methods of switching off the colour management within them. Not having experience of them all, we therefore do not know the specific methods they all use. However, we do have experience of some and can therefore give specific instruction on how to set those printers up. Fortunately, these are the most commonly used at this time. For those that we cannot describe it will be your responsibility to ensure that the colour management is disabled.

In order for an output profile to work it must be able to convert from an input profile, as mentioned earlier. In order for an input profile to be available you must use a graphics program that is capable of colour management. The best and most used by digital photographers are Adobe Photoshop or Adobe Elements. Therefore the procedure that will be described for producing the output profile will be using Photoshop. The process in Adobe Elements, which is similar, will also be covered.

It is essential that the test charts are printed correctly so please ensure that you follow the instructions precisely. If you provide an accurate test chart then you will be given an accurate profile. Equally, remember that garbage in = garbage out

If you are new to profiling and colour management it is recommended that you read the accompanying document 'Colour Management in Photoshop & Elements' It gives a basic introduction to profiling with a recommendation on setting up your colour policies to enable accurate colour management.

Print the test chart on each paper that you want profiled, complete the Booking Form and post the chart to the address shown at the bottom of the Booking Form.

PLEASE READ THE INSTRUCTIONS CAREFULLY

__Preparation__

Carry out a nozzle-check to ensure that all nozzles are firing correctly and there are no gaps in the printed pattern. Clean if necessary.

__Instructions for Photoshop Users__

Open Photoshop (or Elements).

Open the test chart TC9.18 RGBi1_iO

Notes:
1. Versions earlier than 6 do not support colour management.
2. If you are using more than one graphics package it is recommended that you use Photoshop for colour management.
3. If you use a program other than Photoshop ensure that it is capable of colour management.

If your Photoshop 'Color Policies' are set up correctly a 'Missing Profile' dialog box will appear on screen.

Select 'Leave as is (don't color manage)'.

If this dialog box does not appear, close the file down and set your color policies. If you are unsure about the way to go about that read the accompanying 'Colour Management' document. Once your Color Policies are set up you can re-open the Test Chart.
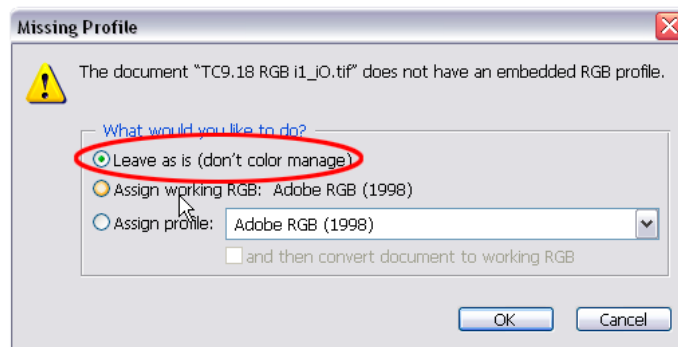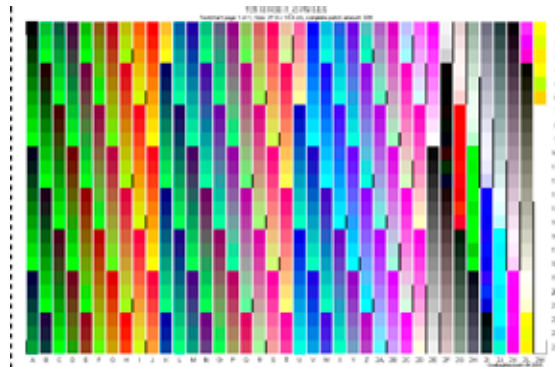
The image will appear on screen in landscape format. You now have 2 options: Either rotate the image to portrait format or leave it as it is and ensure your printer is set to print landscape. If you leave the chart in landscape format then forget to change your printer setting to landscape only half the chart will be printed. The full chart is required in order to be able to measure all the colour patches.

DO NOT CHANGE THE PHYSICAL SIZE OF THE IMAGE

It will fit on 1 sheet of A4 paper

The procedure from this point on will vary depending upon whether you are using Photoshop or Elements and which version of the appliction you are using. All variations will be covered. Additionally, the procedures for setting the printer correctly will differ depending upon which printer you are using and whether you are a PC or Mac user. Procedures with Epson and Canon printers will be covered.

The test chart cannot be printed via Adobe Lightroom. It is not possible to open a file within that application without a profile being embedded. It is essential that a profile is not embedded into the test chart, therefore Lightroom cannot be used.

Procedure for Photoshop 6, 7 and CS

Select **File** > **Print with Preview**.

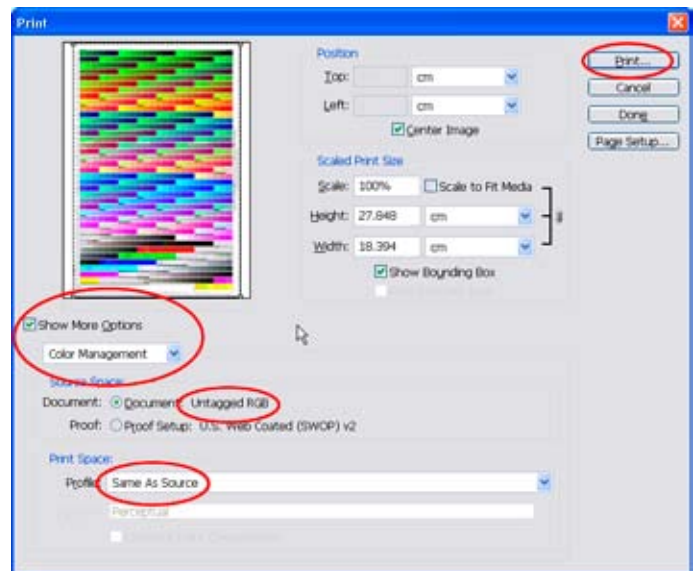Ensure the **Show More Options** box is checked.

In the Drop-down box immediately below 'Show More Options' ensure that **Color Management** is selected.

The '**Document**' should be labelled as **Untagged RGB**.

In the '**Print Space**' ensure the '**Profile**' is **Same as Source**.

Click the **Print** button.

Go to the Printer Section. (Page 5)

Procedure for Photoshop CS2

Select **File > Print with Preview**.

Ensure **Fewer Options** shows on the button towards the top right.

Ensure **Color Management** is showing in the drop-down box immediately below the image of the Test Chart.
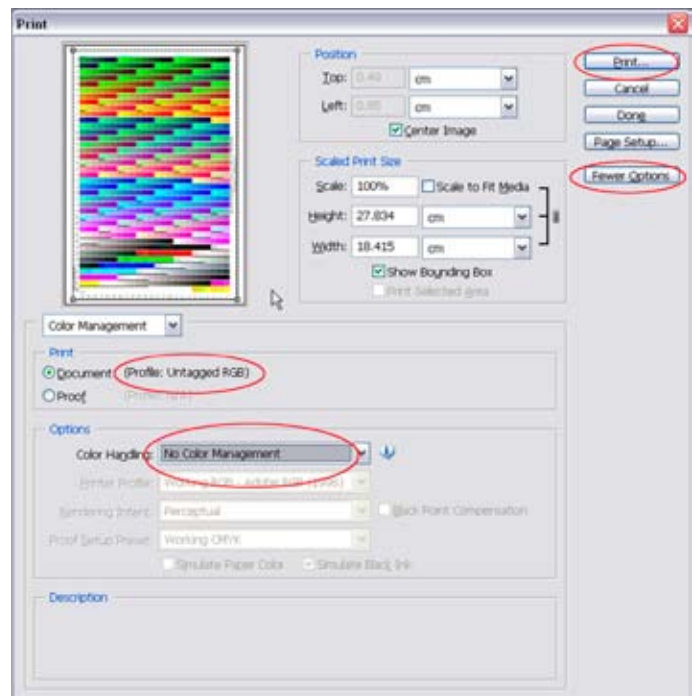
The 'Document' should show as **Untagged RGB**.

In the 'Options' box select **No Color Management**.

This is the only time you should select the 'No Color Management' option. When printing your own images you should always select 'Let Photoshop Determine Colors' and then the correponding printer profile.

Click the **Print** button.

Go to the Printer Section. (Page 5)

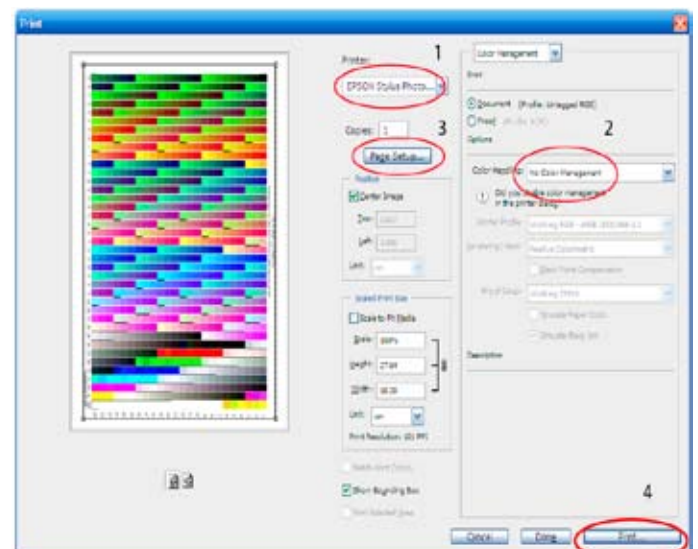
Procedure for Photoshop CS3

Select **File > Print**

Ensure the correct printer is selected, indicated by (1) in the picture on the right. (If you have more than one printer)

Select **No Color Managemenent**, indicated by (2) in the picture on the right.

Select **Page Setup**, indicated by (3) in the picture on the right.

Go to the Printer Section (Page 5) to set your printer correctly.

When you come back to this dialog box click Print then Print at the next dialog box.

Procedure for Adobe Elements
(Versions 3, 4)

Ensure that your Color Policies are set correctly, in accordance with the accompanying document '**Colour Management in Photoshop & Elements**'.

Open the test chart **TC9.18 RGBi1_iO**.

If your '**Color Policies**' are set correctly a '**Missing Profile**' dialog box will appear on screen.

Select '**Leave as is (don't color manage)**'.

The image will appear on screen in landscape format. You now have 2 options: Either rotate the image to portrait format or leave it as it is and ensure your printer is set to print landscape. If you leave the chart in landscape format then forget to change your printer setting to landscape only half the chart will be printed. The full chart is required in order to be able to measure all the colour patches.

DO NOT CHANGE THE PHYSICAL SIZE OF THE IMAGE
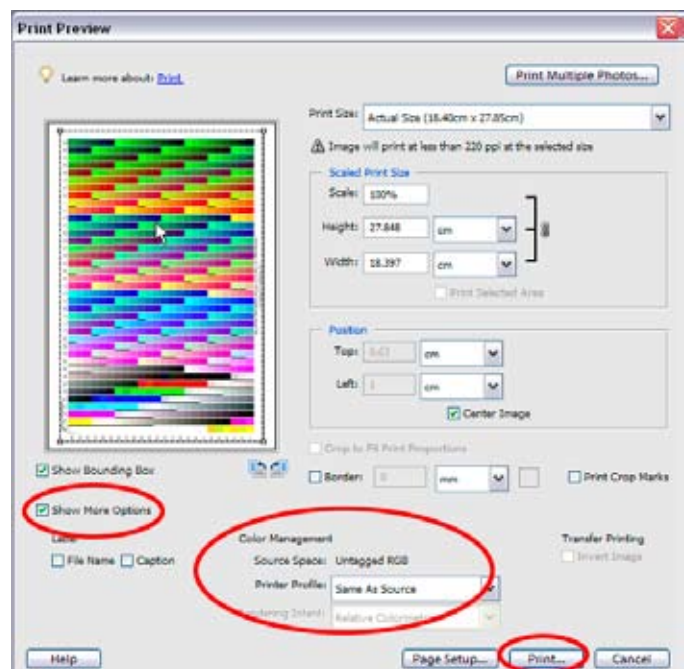It will fit on 1 sheet of A4 paper

Once you have determined the preferred orientation of the paper select **File > Print**.

Ensure the **Show More Options** box is checked.

In the '**Color Management**' area the Source Space should show as '**Untagged RGB**'. In the Printer Profile drop-down box you should select **Same as Source**.

Click the **Print** button.

Go to the Printer Section. (Page 5)

Adobe Lightroom

Adobe Lightroom cannot be used to print the test chart. The program automatically embeds a profile into any document that is opened without a profile. There is no way that a file can be opened within Lightroom without a profile being embedded. It is essential that a profile is not embedded into the test chart, therefore this program cannot be used.

Lightroom can, however, be used to print an image using a profile. Instructions on the procedure to use are shown on page 10.

Printer Section

The procedure from this point onwards differs between Mac and PC users as well as differing between printer models and makes.

Procedures for Epson and Canon printers will be covered for both Mac and PC platforms.

Mac OSX Users

The following procedures are common to both Epson and Canon printers.

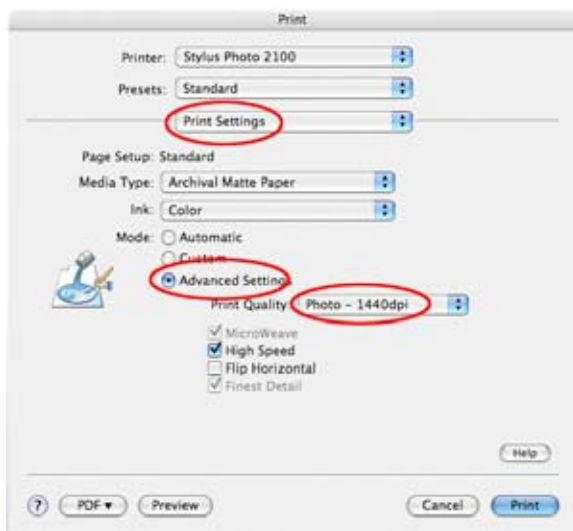At the 'Print' dialog box ensure the correct printer is selected - if you use more than one.
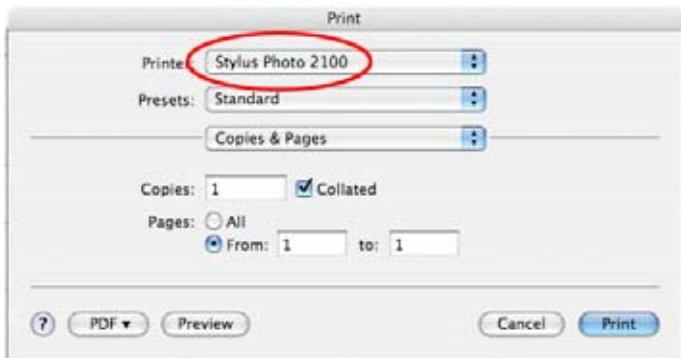
Once the correct printer is selected, click the **Copies & Pages** drop-down box.
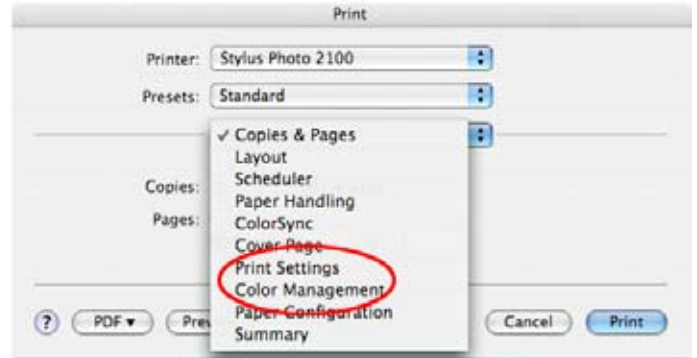
Click **Print Settings**.

Select **Mode** > **Advanced Settings**.

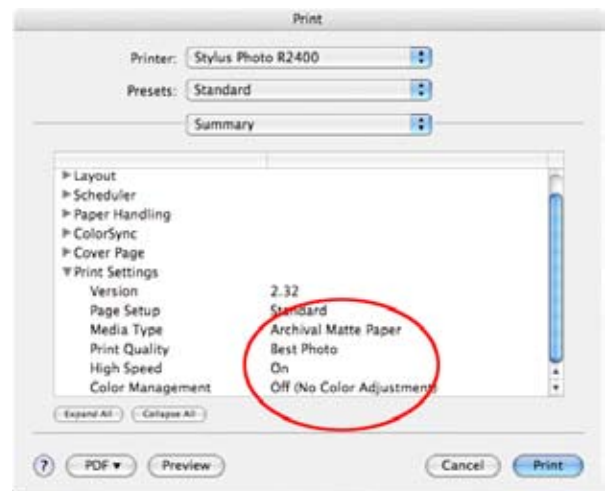Select **Print Quality** > **Photo 1440dpi**.

Click the '**Print Settings**' drop-down menu.

Select **Color Management** and select **No Color Adjustment**.

Click the '**Color Management**' drop-down box.

Select **Summary** and check that the settings are as you have selected.

You can now, if you wish, save the settings.

Click in **Presets** and select **Save As**....

Enter a suitable name for the media being used. In future you can select the Presets drop-down box and select the setting you have just saved.

Note:

In OSX it is important to note that you should always select the Preset even if is showing the the drop-down box. Clicking on it 'activates' it.

Click **Print.**

PC Users - Epson Printers

(Models up to and including 2100)

Once you have clicked the 'Print' button in the **File** > **Print with Preview** Page in Photoshop (or the Print page in Elements) you will be taken to the Print dialog box.
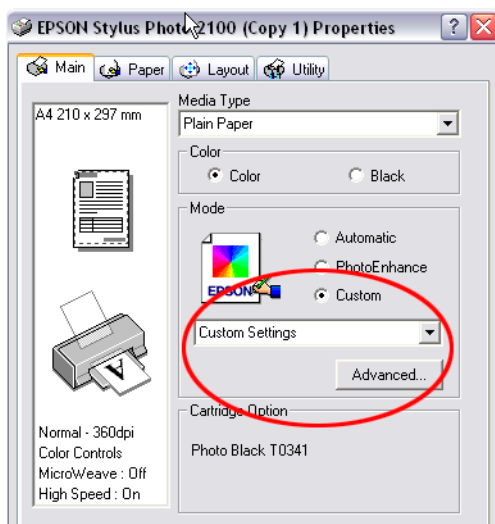
Select the correct printer, if you use more than one.

Click **Properties**.

CS3 user should note that this dialog box does not appear as the printer is selected in the File > Print page.

At the '**Main**' tab of the Properties box check the **Custom** button and select **Advanced**.

The settings shown below are the default settings. They show 'Color Controls' selected which means the printer is utilising the in-built Epson profile. Because you will be managing colour from your graphics application it is essential that this profile is disabled.

The settings shown below are what you should end up with.

Select an appropriate media setting for the paper being used.

Select 1440dpi as the print quality.

Although this is a recommended setting to get the best quality, if you usually print at a different dpi then that is what you should use when printing the test chart. The setting used here should be used subsequently when printing your final output.

Select **No Color Adjustment**. This switches off the in-built printer profile. *(Leaving 'Color Controls' on means you will be applying a profile to the test chart, which will provide incorrect information)*

Finally, you can **Save Settings**.

Click **OK** then **Print** at the next dialog box to carry on printing.
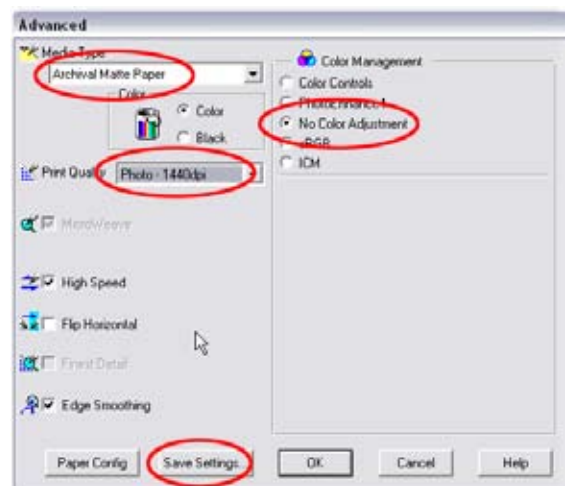
Once your settings are saved you can access them via the '**Properties** > **Custom**' button the next time you print.

Click **Custom** and any saved settings will be listed. The picture below shows settings for matt and gloss papers, which are probably all you will need as any gloss setting would be appropriate to a semi-gloss or lustre paper.
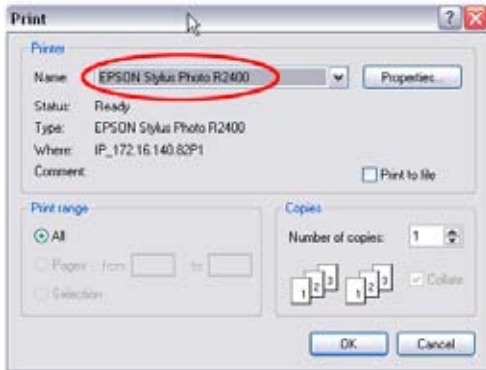
PC Users - Epson Printers
(Models subsequent to the 2100,)
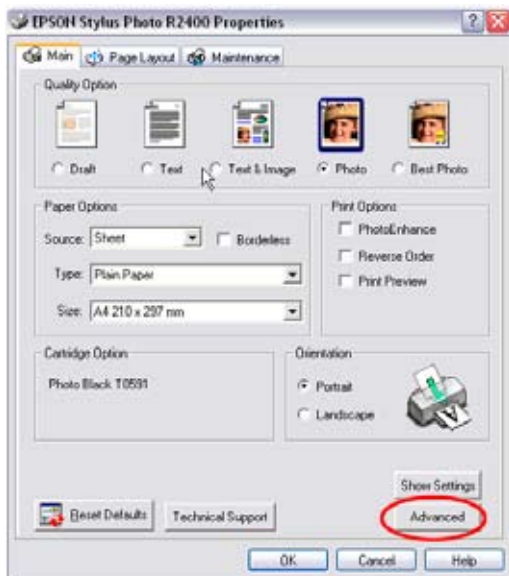## (R800/1800, R2400, R200/R300 etc)

Once you have clicked the '**Print**' button in the **File** > **Print with Preview** Page in Photoshop (or the Print page in Elements) you will be taken to the Print dialog box.

Select the correct printer, if you use more than one.

Click **Properties**.

At the '**Main**' tab of the Properties box select **Advanced**.

The settings shown at the top of the next column are the default settings. They show 'Color controls' selected which means the printer is utilising the in-built Epson profile. Because you will be managing colour from your graphics application it is essential that this profile is disabled.
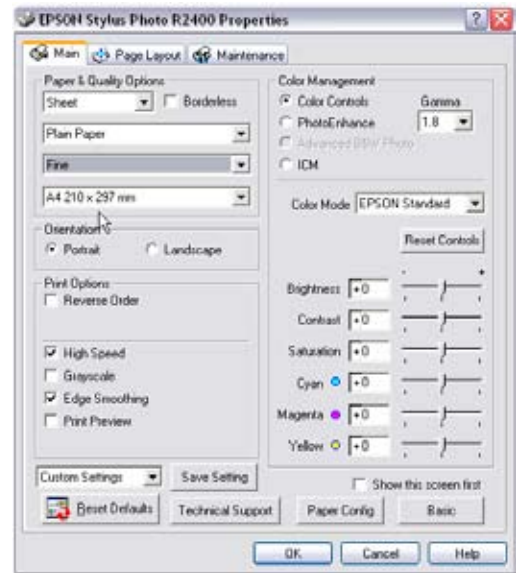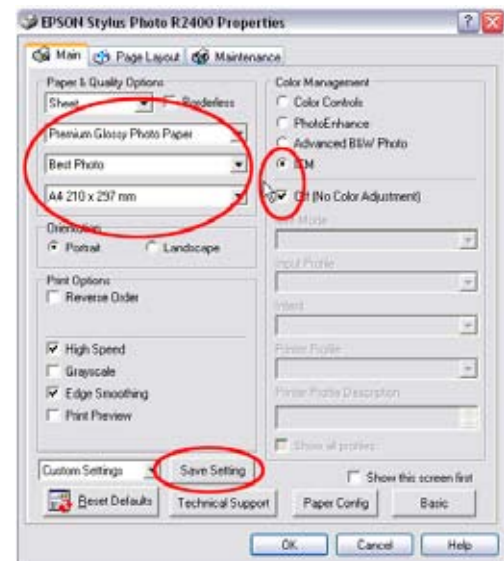
The settings shown below are what you should end up with.

Select an appropriate media setting for the paper being used.

Select Best Quality as the print quality.

Finally, you can Save Settings.

Once a setting is saved it can be accessed in the future without the need to visit the Properties > Advanced box. The Properties dialog box will show a new button (next to Best Photo) called **User**. Click that button and any saved settings will be listed.

The parameters within the Saved Setting include the media type, print quality, paper size and orientation. So if you use both A4 and A3 papers you will need to save individual settings for both sizes - and any others you may use.
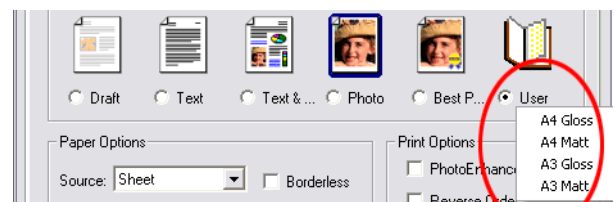
PC Users - Canon Printers

Once you have clicked the '**Print**' button in the **File** > **Print with Preview** Page in Photoshop (or the Print page in Elements) you will be taken to the **Print** dialog box.

Select the correct printer, if you use more than one.

Click **Properties**.

At the next Dialog Box ensure the **Main** tab is active.

Select an appropriate media type

Select '**Print Quality**' **High**.
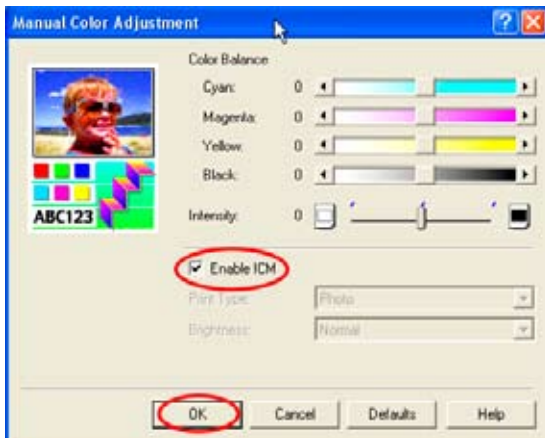
Select '**Color Adjustment**' as **Manual**.

Click **Set.**

Click **OK**.

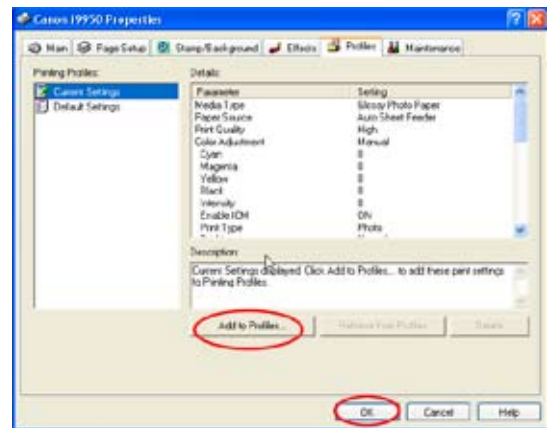At the next Dialog Box select **ICM**.

Click **OK**.

You can now, if you wish, save these settings as a 'Profile'. However, do not get confused with the profile that Fotospeed will create for you. This 'Profile' is what Canon call your 'saved printer settings'.

At the Properties dialog box select the '**Profiles**' tab.

Select **Add to Profiles** and click **OK**.

Select a name for the 'Profile'.

Add a description, if you wish.

Click **OK**
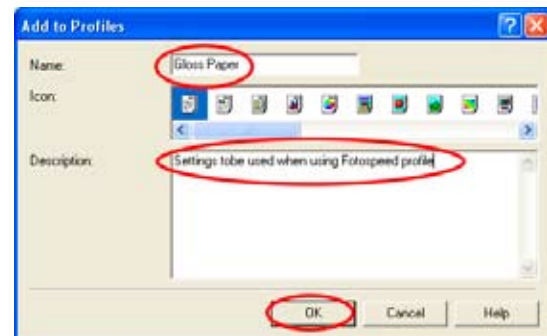
The 'profile' you have just saved now shows in the list on the left. You will probably only need to set and save 2 different 'profiles', 1 for gloss/semi gloss papers and one for matt. You then just need to select whichever one you need from the list. This saves the requirement to manually make the settings each time you print.

<u>Summary</u>

Your test chart will probably look oversaturated and dark. This is normal as you have printed it without any colour controls being applied either in your graphics package or the printer. The over saturation is usually more apparent on Epson printers than on Canon or HP.

To confirm that you have printed the chart correctly, answer the following questions.

1.   Did the chart open as an Untagged RGB File?

2.   Did you leave it as an Untagged RGB file? (Leave as is - Don't color manage)

3.   Did you switch off the colour management controls in the printer?

4.   Do the colours on the output chart look the same as they do on screen, other than possibly oversaturated? If   they look difference then it could well be that one or more of your nozzles is not firing correctly. This will provide   incorrect information which will result in an incorrect profile.

If you can answer yes to the above questions then the chart is printed correctly. Prepare to enjoy your printing.

Once your test chart is printed on each paper that you want profiled, complete the Booking Form and post both, in a card stiffened envelope, to:

> Fotospeed
> Unit 6b
> Park Lane Industrial Estate
> Corsham
> Wiltshire
> SN13 9LG

It is recommended that you put a piece of copy paper between any charts printed on gloss and lustre papers to reduce the possibility of them sticking together in transit. The card stiffened envelope with ensure that the chart(s) arrive in good condition. The postman has been known to fold unstiffened envelopes rendering the charts unusable.

Please use the Booking Form for all your profiling requirements, whether you have submitted them previously or not. They provide the information needed to label the profile without having to resort to searching through files.

Your profile will be named using the following convention:

1FS_PaperName_PrinterName&Inktype_YourSurname&Initial.

Profiles are stored in:

> Mac OSX - Users/YourNameHardDrive/Library/Colorsync/Profiles
> Windows - C:/Windows/System32/Spool/Drivers/Color

Profiles are listed numeric-alphabetically. Using 1FS(Fotospeed) at the beginning ensures that all your profiles (if you have more than one) are listed at the top together.

You will receive your profile(s) with installation instructions and an Evaluation Print which can be used to check profile accuracy. Install and use the profile(s) in accordance with the instructions provided.

Printing Pictures Using Your Profile

The procedure to be followed when printing your pictures is very similar to the procedure you used when printing the test chart, with a couple of significant differences.

First, you must ensure that your image file has an embedded profile. Where it was essential that the test chart did not have an embedded profile it is now essential that your image file does.
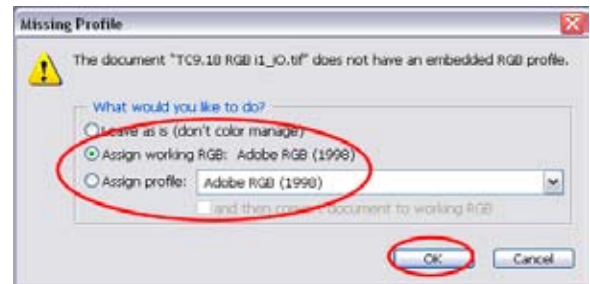
If you are importing a file that does not have an embedded profile, your previously set up Color Policies will ensure that it will be trapped giving you the opportunity to embed one. The '**Missing Profile**' dialog box will open and you can then apply your Working Space profile. Once this is embedded it will stay with the file.

Once you click **OK** the file will open.

As previously select **File** > **Print with Preview**.

CS3 users should select **File** > **Print**

The second significant procedural difference is applied on this dialog box. The '**Document**' will show the embedded profile.

The dialog box on the right vshows the settings in Photoshop CS2 but the procedures for Photoshop 7 and CS as well as Elements are similar.

In the '**Options**' area you should select **Let Photoshop Determine Colors**. This then activates the '**Printer Profile**' drop down box where you should select the profile that Fotospeed has created for you. if you have more than one profile then you will obviosly select the one appropriate to the particular paper you intend printing on.

The '**Rendering Intent**' drop-down box is also now accessible. By default it should show the rendering intent that you selected when you were setting your Photoshop Color Policies. You can, if you wish change it but do not use anything other than 'Perceptual' or Relative Corimetric'. The other 2 intents listed are inappropriate to photography.
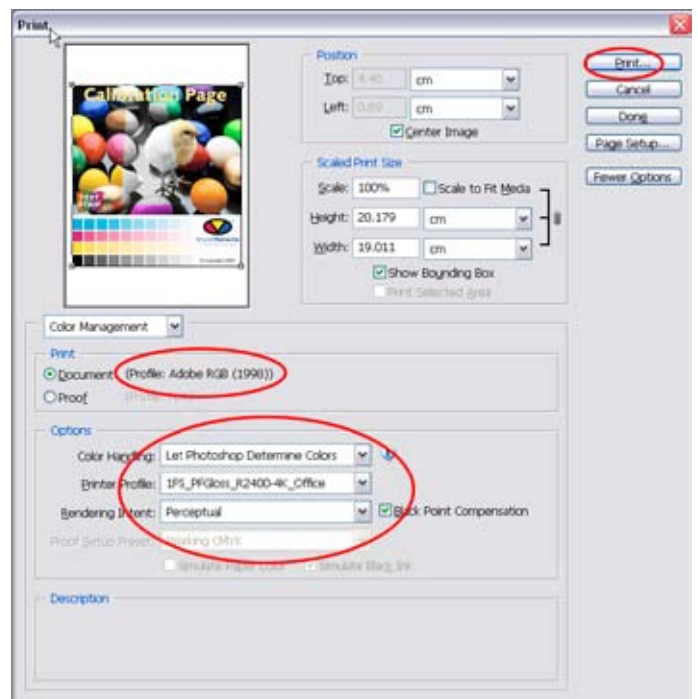
You have now set a 'Source' profile and a 'Destination' profile and your colour management is now in place. The procedure from this point onwards is exactly the same as it was when you printed the test chart; ensuring you switch off the colour controls in the printer. If you saved any settings previously you can now just select those saved settings ensuring that the correct elements are in place.

In Photoshop versions prior to CS2 and in Elements click in the 'Print Space' (where you previously selected 'Same as Source') and select the printer profile.

Printing from Lightroom

To print from Lightroom go to the Print module. The options to select are down the right hand side of the screen. Towards the bottom of that list is the 'Color Management' tab. If you have not printed from Lightroom previously the default option will show as 'Managed by Printer'. Clicking the arrow on the right will show a second option - 'Other'. If Lightroom is able to locate your profiles folder then they will be listed above 'Other'. If nothing else is listed you will need to 'activate' them to make them available for Lightroom. Click 'Other' and the contents of your Profiles folder will be displayed. On the left hand side of this list will be a column of boxes. Tick whichever profiles you want Lightroom to have access to then click OK at the bottom of the 'Choose Profiles' box. The profiles will now be accessible from the Color Management tab.

ENJOY YOUR PRINTING