First question: what is an ICC profile?

In colour management, an ICC profile is a set of data that characterizes a colour input or output device, or a colour space, according to standards promulgated by the **I**nternational **C**olor **C**onsortium (ICC). Profiles describe the colour attributes of a particular device or viewing requirement by defining a mapping between the device source or target colour space.

Second question: how will an ICC profile benefit me?

If you are using an Canon printer with Canon inks and Canon paper, Epson printer with Epson inks and Epson paper, then the default ICC profile that can be downloaded from the paper manufactures website will often be fine. If like most people you change one or more of these variables then the default becomes incorrect. By using an ICC Profile for your particular Printer, Ink and Paper combination you will then print the correct colours because the profile is telling the printer how it needs to alter its ink usage to achieve a perfect print.

A generic profile is a quick way to put you in the position to trial the paper/printer/ink combination and is immeasurably better than using no ICC Profile.

Most paper manufactures/suppliers will usually supply you with a custom printer profile. The requirement is to for you to print one or more colour patches using the settings, which will be described below, post the print/s and usually on the same day of receipt the custom profile will be e-mailed to you.

Third question: what about profiling my monitor/screen?

Having used an ICC Profile for your paper/printer/ink combination you have colour managed your printer. In order to find the same colours coming from your printer as they appear on your monitor screen, then it is necessary to create a profile for your monitor. Monitor calibration is done through using a piece of hardware that have in recent years become very affordable, many camera clubs have this equipment for loan to its members.

Fourth Question: how do I install an ICC profile?

If you are running Mac OS
Save the profile from your email application on to your desktop. Then in the Finder (the smiling Mac icon on the left of your dock) hold the Alt key down and go to the Go menu and down to Library. Then open the ColorSync folder, and then Profiles. Drag/copy the profile to into that folder.

If you are running Windows
On most PC systems you can just right-click on the profile where ever you have saved in on your hard disc and select Install Profile from the menu. You can also manually move the file to: C:\Windows\System32\Spool\Drivers\Color

- your applications may have to be restarted in order to 'see' the new profile.
- it is also a good idea to make a safe copy of your profile - just in case!
- do not rename the profile as it will still appear in application menus with the name Permajet gave it.
- the profile can be used in Photoshop, Lightroom, Photoshop Elements and other applications. Consult your software manual for advice if using a different editing programme.

This is where your image editing programme will look for the profile.

The way Permajet ICC Profiles are named: At PermaJet they label all of their Generic profiles in the following way:

NOTE: Profiles may appear in Upper or Lower case, the profile version may be designated by either a # symbol or a V, and this will have no bearing on your output.

Manufacturer	Ink Set	Printer	Ink Variation	Paper	Media	Profile Version
APJ	KC	2400	PK	Gloss	PGPP	V1

Example: APJ_KC2400PK_GLOSS_PGPP_#1 or apj_kc2400pk_gloss_pgpp_v1

If you have a bespoke profile made, it will be labelled like this:

Manufacturer	Customer	Ink Set	Printer	Paper	Paper Media	Profile Version
APJ	A N Other	KC	2400	Gloss	PGPP	V1

Example: APJ_ANOTHER_KC2400PK_GLOSS_

Manufacturer:

APJ refers to PermaJet, when locating profiles in Photoshop; they are listed alphabetically, as such all your PermaJet profiles will be together and towards the top of the list.

A N Other: This is usually your name.

Ink Set: Is an abbreviation of the Ink Set, e.g. KC refers to PermaJet K-Chrome Ink. Where the profile is made for original ink cartridges, the abbreviation will be OEM rather than the specific manufacturer Ink Set name.

Printer: This will usually be a slight abbreviation, e.g. "Epson Stylus Photo R2400" will be referred to as "2400".

Ink Variation: Where there is a choice of different inks within an Ink Set to load into your Printer, this will specify which one the profile has been made for, e.g. "PK" refers to Photo Black and "MK" refers to Matt Black. Please note, there won't always be a choice for Ink Variation and this information will not always be listed.

Paper: This will refer to the PermaJet paper you are using. These abbreviations will not always be the same as profile names are limited in characters, however they should be obvious.

Media Setting: This is the media setting the profile has been made for; you MUST select the same media setting in your printer properties. These will be an abbreviation of the media setting and should always be easily apparent, e.g. WCRW refers to "Watercolour Paper Radiant White".

Profile Version: Will be largely irrelevant to you, you will probably only need this if you are in contact with their technical department and are experiencing technical difficulties.

PLEASE NOTE: Although all abbreviations should be apparent, if you are unsure please call or email their technical department.

Ilford Profile Naming Explanation

To use your selected profile correctly you will need to make a note of the profile 'name' for use during printing. It is made up in the following way:
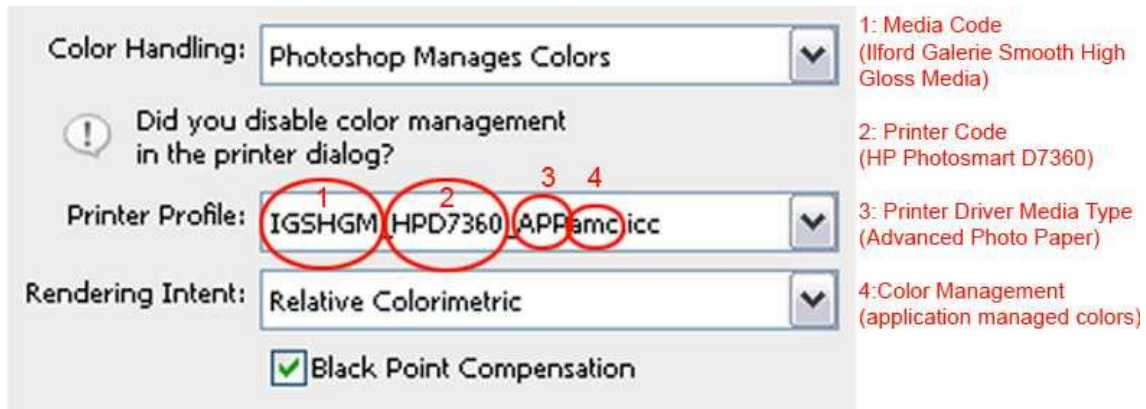
Typical name examples:

Desktop	Large Format >A3+
Epson: **IGGFS13_EPR2400_PSPPn**	**IGSGP11_EPP11880_PGPP250n**
Canon: **IGCPP9_CANiP5300_PPP1n**	**IGSFAC_CANiPF8100_CMmmo**

Using ICC Profiles Practically

To use your ICC Profile, you will need to follow some simple steps within image editing software and your printer settings. With an image loaded, go to the "File" menu and select "Print" (Windows Ctrl+P), (Mac Command+P)

This will launch a new window that will vary slightly depending on your image editing software.

Printing from Adobe Photoshop Lightroom and Adobe Photoshop Elements will be dealt with as separate sections.

Adobe Photoshop CC used for illustration

Printing Using an Epson Printer

This illustration below is the default window which is showing that the 'Printer Manages Colors', we this needs to change so that the image editing programme controls the printing using a profile that has been installed for the paper type being printed.
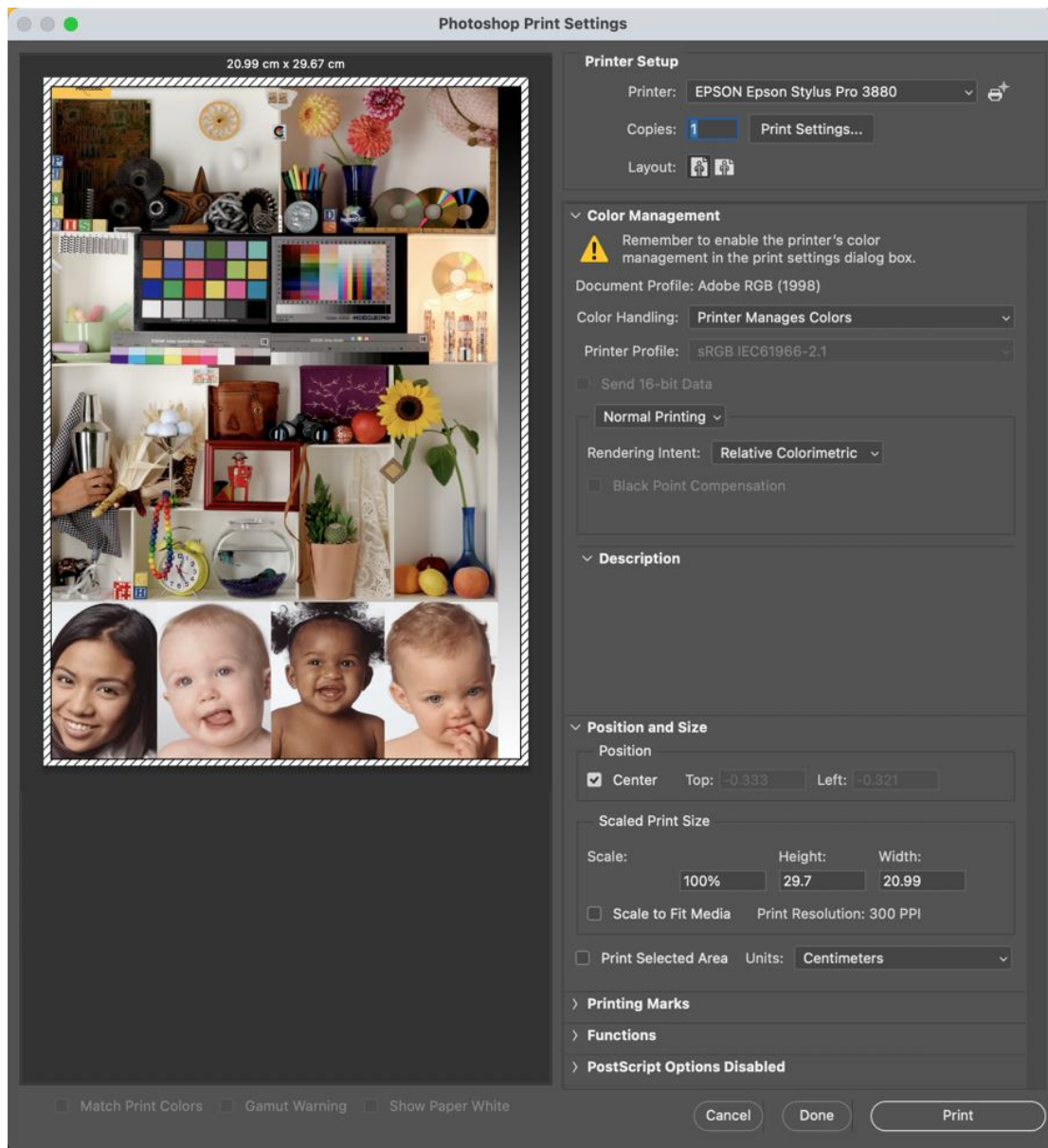
This printer's custom profile was set up with the paper type set to 'Premium Photo Paper Semi-Gloss (PPPSG)' so that is the paper type which should be chosen when using the custom profile.

During the process of setting up the printer, the printer's own printer driver has to be disabled to allow Photoshop to manage the colours. See the next diagram below.

In this diagram Color Handling has been changed so that Photoshop Manages Colors, also from the drop down the Printer Profile is chosen: the custom profile for this printer, the paper type, the inks used has been selected. It has the filename:

`APJ_THOMPSON_EPSONSTYLUSPRO3880_OEM_OYSTER271_PPPSG.icm'

The constituent parts of the filename:

- APJ relates to the custom profile creator, Permajet in this case
- THOMPSON, who the profile is created for with that person's name
- EPSONSTYLUSPRO3880 relates to the printer for which the profile is created
- OEM related to Original Equipment Manufacturer's inks
- OYSTER271 related to the Permajet printing paper type
- PPPSG relates to the paper type Premium Photo Paper Semi-Gloss this is set when creating the custom profile
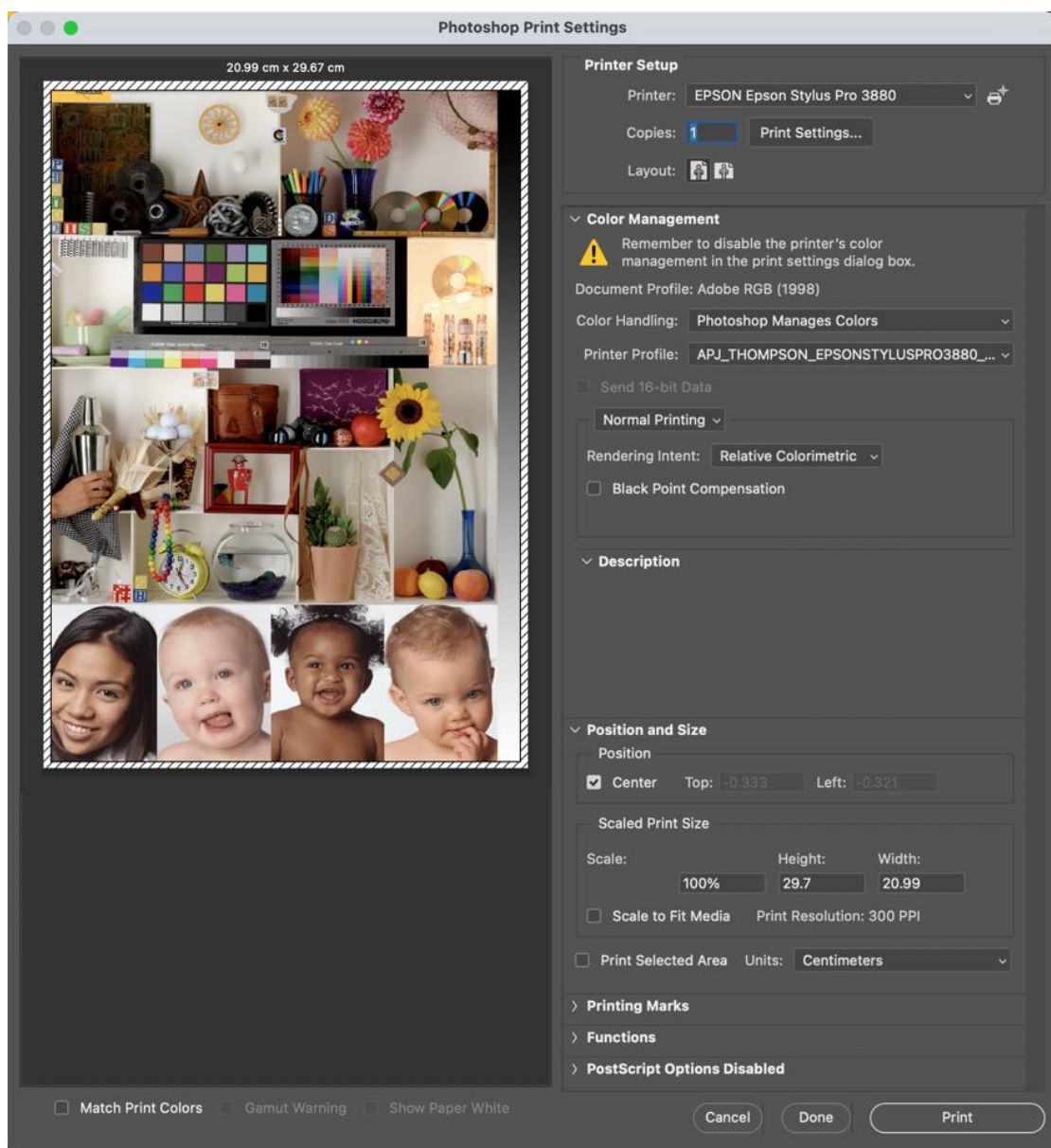
Click the radio button adjacent to 'Layout, the following menu will appear, from here choices are made with respect to paper size and the important one printer settings.:
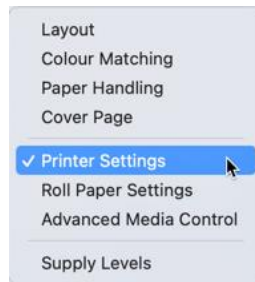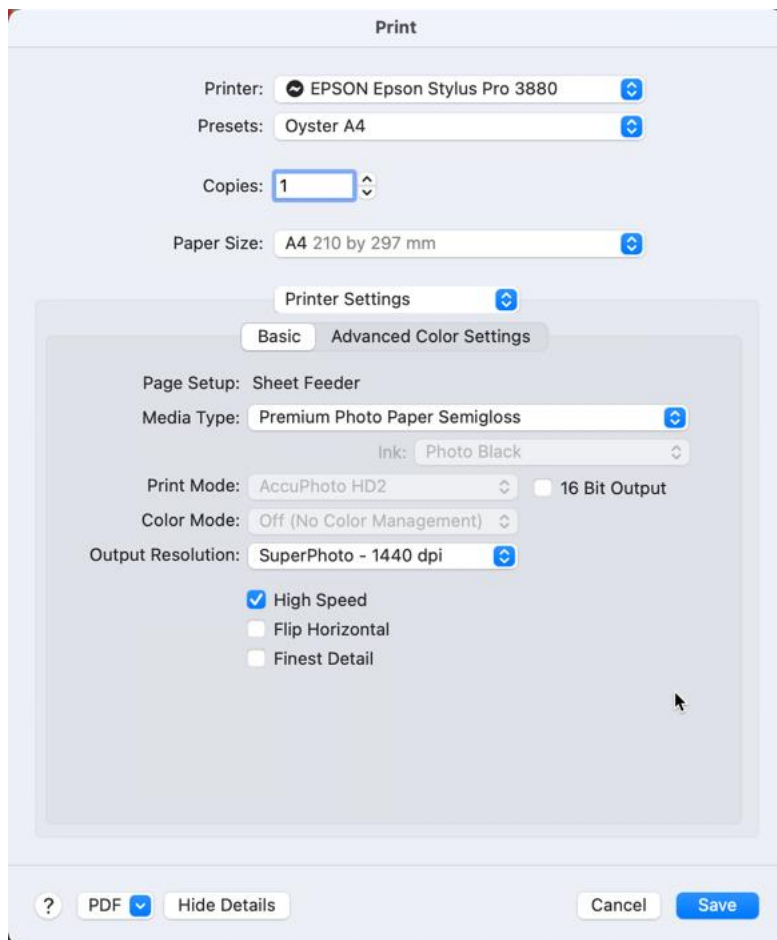
Click on the button 'Print Settings' the window shown below will appear:
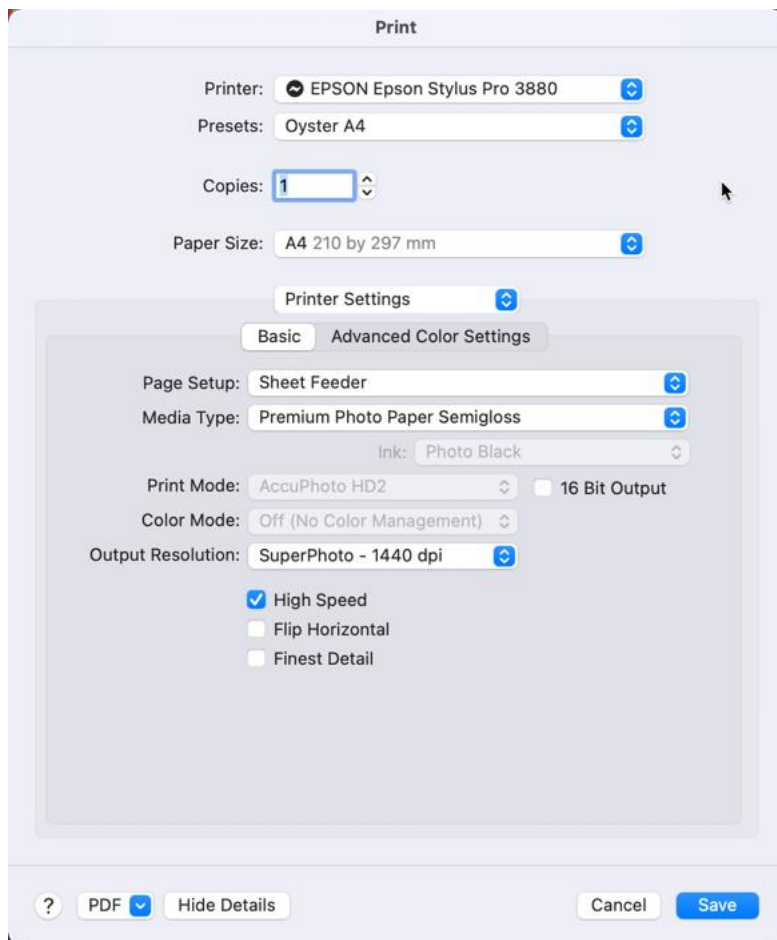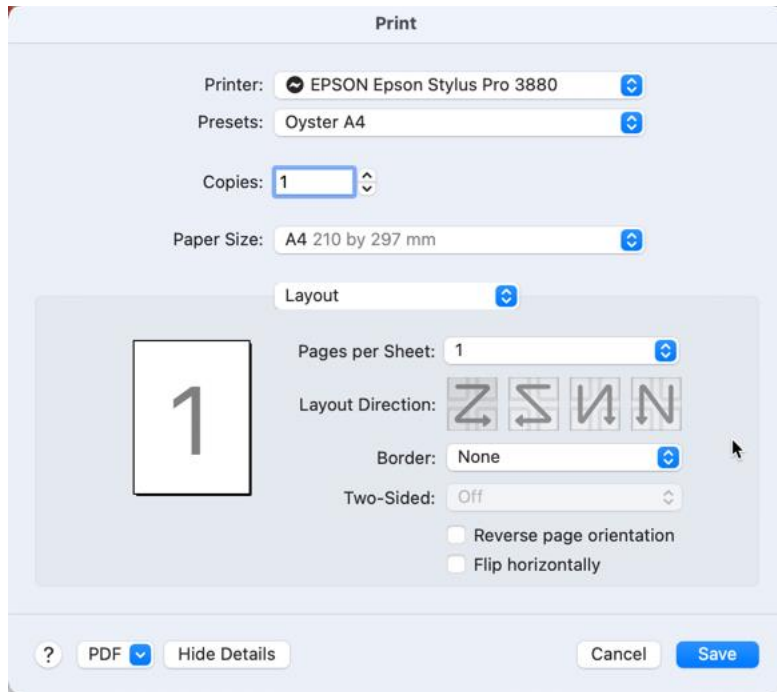
In the window which appears, shown above, click on the drop down adjacent to 'Printer Settings' to show this window, here settings are made for paper size, and media type, note that in Color Mode this is greyed out indicating that there is No Color Management it is off.

The illustration below is the window showing in Photoshop printing to an Epson Stylus Pro 3880 printer, showing that Photoshop is managing colours; printing is set to use a profile that has been installed for the inks and a custom Permajet Oyster paper to be printed on. All that is necessary now is for the printer to be powered on and loaded with the appropriate paper in the paper tray. Press the 'Print' button and you print should emerge looking very similar to the image you see in Photoshop on your screen.

Barry Thompson LRPS, CPAGB BPE4* – Nov 2021 – Rev D
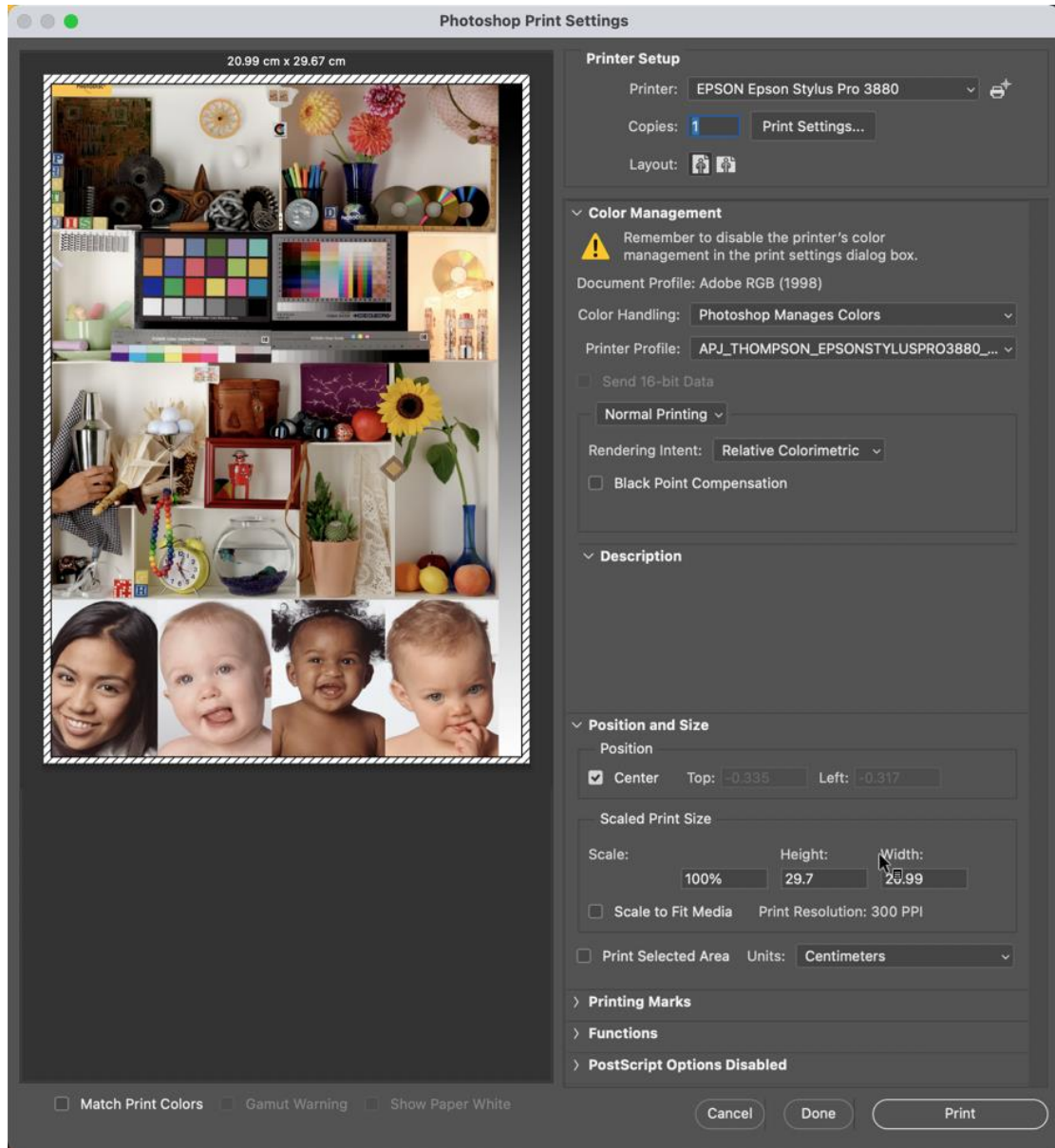
Adobe Photoshop Elements 10
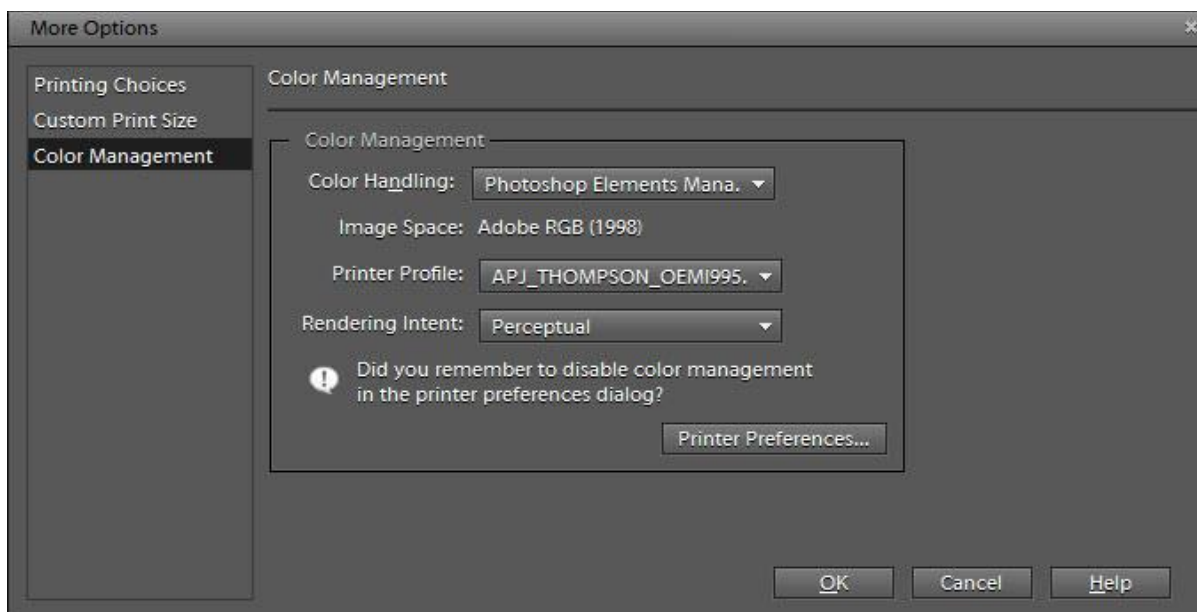
Printing Using a Canon Printer
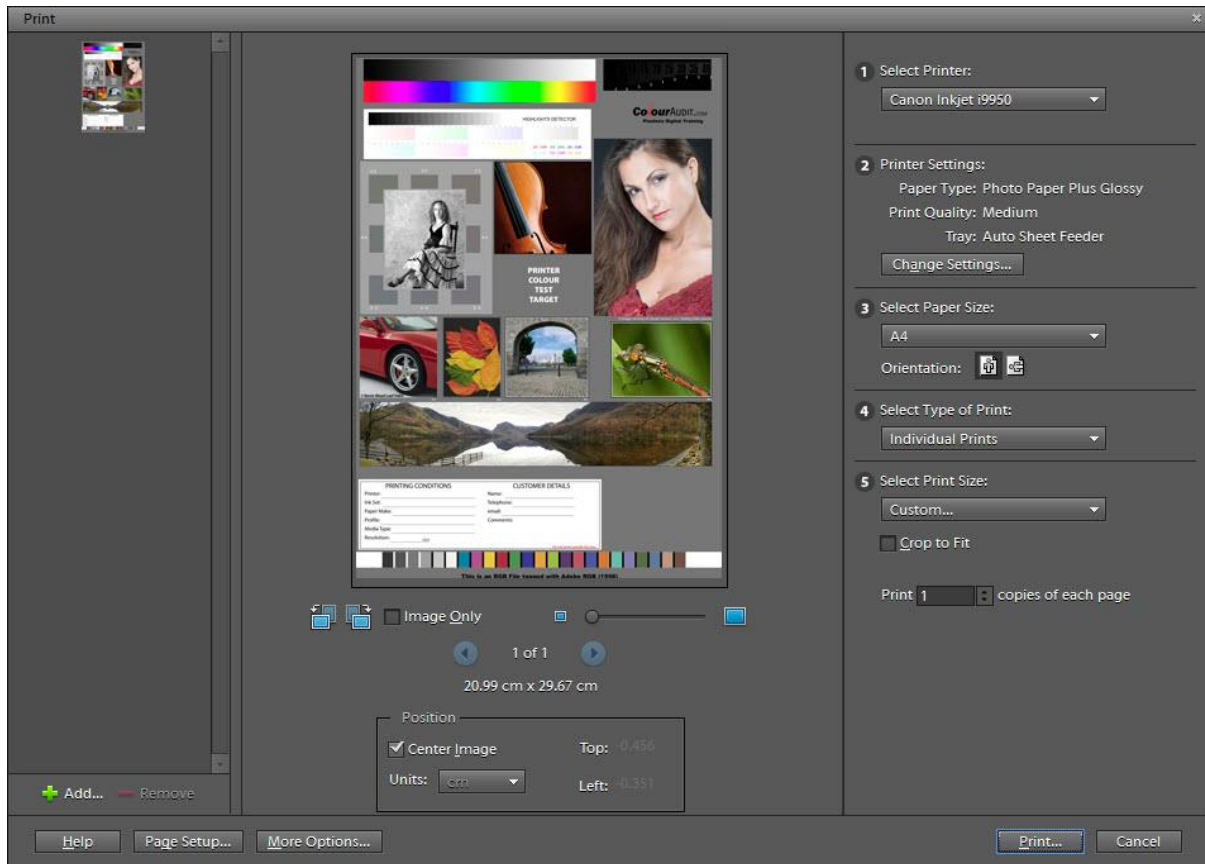
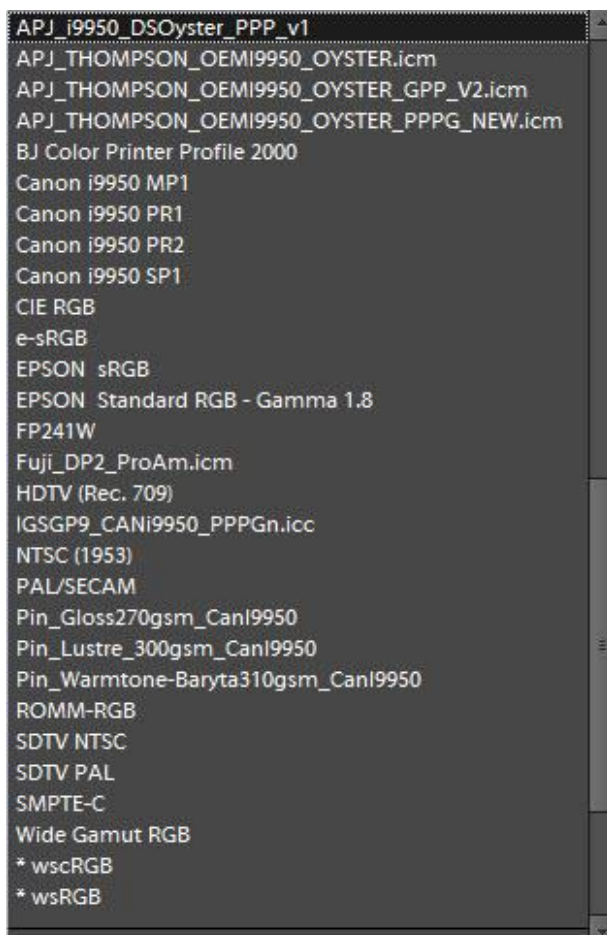Shown above is the print dialogue window where settings for the Canon printer are made.
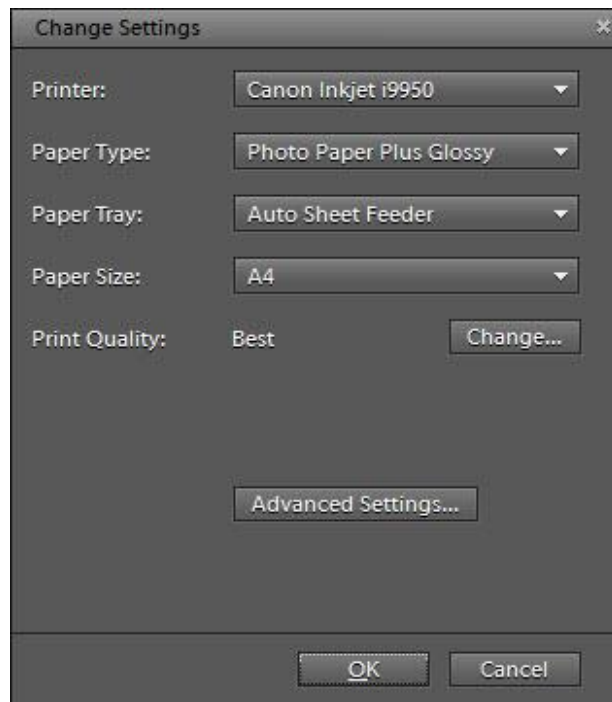
This is the Change Settings dialogue where the Printer, Paper Type, and Print Quality are chosen.

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The More Options dialogue where the settings for Photoshop Elements Manages Colors and Paper Profile are chosen.

During the process of setting up the printer, the printer's own printer driver has to be disabled to allow Photoshop Elements to manage the colours. In the Canon i9950 this is the process to be adopted.

Clicking Printer Preferences in the More Options dialogue will bring up the window shown below:

Click the radio button adjacent to 'Manual' then click the tab marked 'Set'.
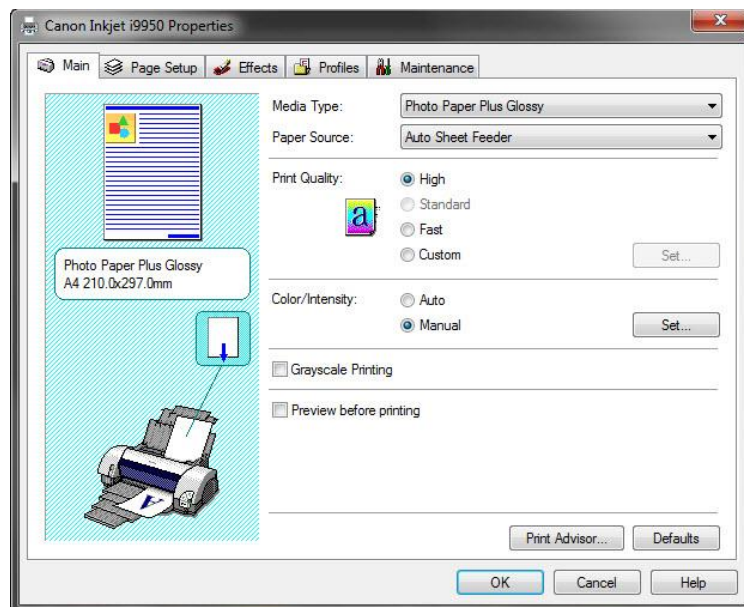
In the window which appears, shown below, click on the drop down adjacent to 'Print Type' and select 'None'. This disables the printer driver in this printer. Click OK then OK again in the 'Canon Inkjet i9950 Properties' window.
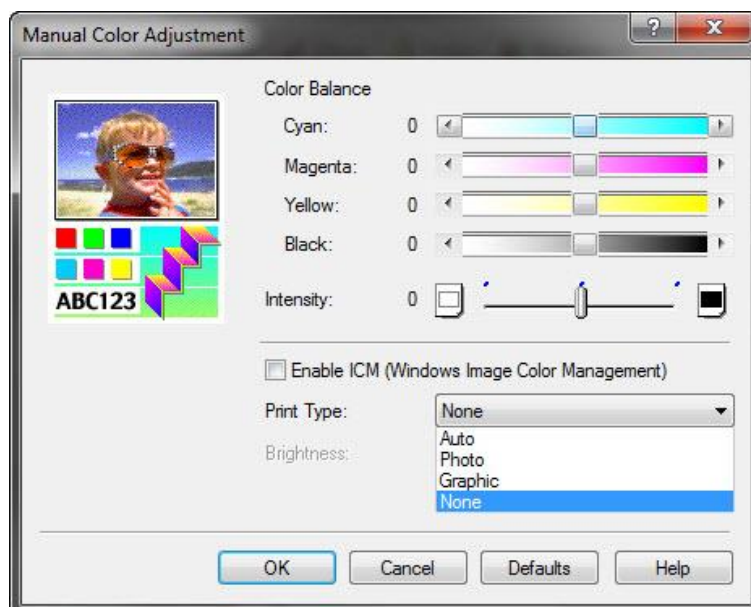
Click OK a couple of times to return to the Print dialogue box. All that is necessary now is for the printer to be powered on and loaded with the appropriate paper in the paper tray. Press the 'Print' button and you print should emerge looking very similar to the image you see in Photoshop Elements on your screen.

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Adobe Photoshop Lightroom Classic

Printing Using an Epson Printer

This is not a treatise on how to print from Lightroom only the basics will be covered giving an idea of how to use a profile in the printing process.

Looking at the basics of printing:

> 1) Go to the Print module (Mac OS Option + Command + 6), (Windows OS Ctrl+Alt+6)
>
> 2) Click the Page Setup button in the lower-left corner of your screen.
>
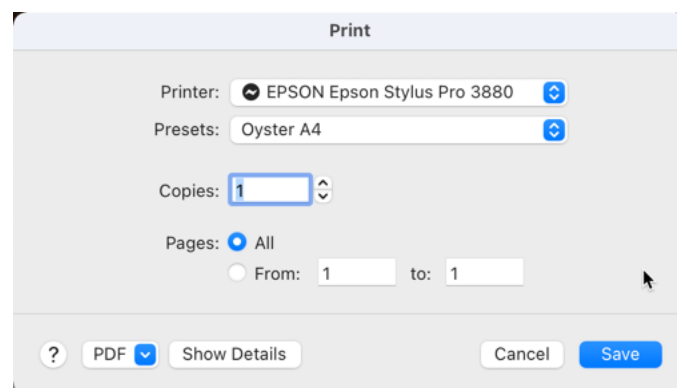> The Page Setup button goes to the printer setup dialogue, shown below.
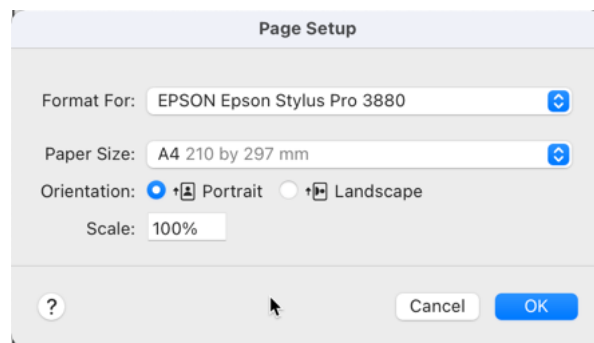
> A better name for the button would be *Print* Setup.
>
> 3) Select your printer in the Name menu.
>
> 4) Select a paper size in the Size menu.
>
> 5) Select an orientation, Portrait or Landscape.
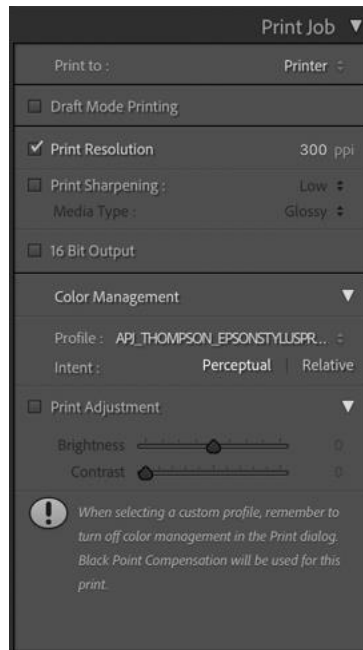>
> Click OK
>
> The next task is performed in the **Print Setup** window shown below selecting the number of copies.
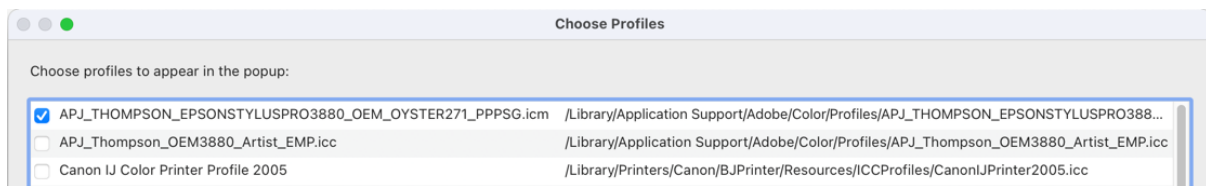

Select the Printer Profile

> 1. Ensure you are in the Print module.
> 2. Click the Print Job panel on the lower-right side of your screen, shown below. In the Print to: select Printer, Select the print resolution to an appropriate number, 300ppi in this example.

3. Use the Profile menu to select the profile for the **printer *and* paper** that you're using.

For example— here we are using an Epson, the printer/paper profile has been created using the setting of Photo Paper Plus Semi-Gloss for the Permajet Oyster paper. The ICC profile to select in this case is the one shown ticked in the Printer Profile Box shown below:

Printer Profile Menu

When all of the settings have been made, check that the image to be printed is set on the page with the appropriate borders. All that is necessary now is for the printer to be powered on and loaded with the appropriate paper in the paper tray. Press the 'Print' button shown below and in the Print dialogue box that appears click OK and you print should emerge looking very similar to the image you see in Lightroom.