EPSON EXCEED YOUR VISION

The Epson RGB Printing Guide
Adobe Photoshop CC
Lightroom CC
Epson Print Layout
Affinity Photo

Contents

- Introduction
- Colour Management
- Resolution
- Workflow Steps
- Setting up Photoshop
- Printing
- Soft Proofing

Printing
 Photoshop CC
 Lightroom CC
 Epson Print Layout
 Affinity Photo

Introduction



Introduction

Thank you for downloading this document; we hope this gives you some insight into the world of printing with Epson

You no doubt own an Epson Photo or Prographics printer and are looking for the best way to reproduce your work on the world's best inkjet printers

The following document has been produced for owners of Epson printers to be able to gain an entry level understanding of the colour managed workflow. Professional operators have been using this technique for years

This document will guide you through the basic steps required for using the Epson printer driver correctly, covering a number of Epson printers

There is an incredible amount of information available these days on colour management that can be researched if you wish to further your knowledge

This version and subsequent releases will be Mac OS X 10.8.x and above, Windows 8 and above. There are similarities with the new operating systems and the old versions, that will not make this document hard to follow if you have not updated your operating system

Thank you again for using Epson printers and we hope you enjoy your time printing

The Epson Australia Technical Team

Colour Management



Colour Management

As mentioned in the introduction, there is a lot of information available these days on colour management. There is also a lot of misinformation, therefore research and guidance is the best way to wade through all of the data

The most important thing to remember is, if you are happy with the results your Epson printer is producing then you are doing the right thing and there is no need to change anything

If you are not happy with the results you are achieving then there may be some simple steps you are missing and this guide aims to help

Colour management is a complex subject that can take years to understand fully. This guide is not designed to answer all the questions, but rather provide a starting point of understanding

Colour managed printing is defined and executed well, *only* if a strict workflow is adhered too. If there is any deviation from the workflow then the results are unpredictable, therefore the workflow has some hard and fast rules

Resolution

Resolution

Correct resolution for printing can depend on a number of factors. Firstly do you have a Hi-Res file? Can your digital camera produce high enough resolution for printing. Has the file just been email to you for printing? In these cases there may not be enough resolution to achieve acceptable results.

The optimum resolution for Epson Photo printers is 360ppi (*Pixel Per Inch). This will yield the absolute best result. Remember this is optimum. In some cases, with larger files the processing power to reproduce an image of this resolution could significantly slow down your computer.

Epson's half-toning technology is designed to produce excellent quality at significantly lower resolution, in most cases indistinguishable from higher resolution files. Below is a list of recommended resolutions that will produce quality results.

360ppi (Optimum, for images with Text or very fine lines i.e. photo of a bridge with cables)

240ppi

180ppi

120ppi

Below these resolutions, results may become unpredictable.

^{*}The PPI pixels per inch, of a computer display is related to the size of the display in inches and the total number of pixels in the horizontal and vertical directions. This measurement is often referred to as DPI dots per inch, though that measurement more accurately refers to the resolution of a computer printer.

Workflow Setup

Workflow Steps

- .Monitor Setup
- 2. Viewing Conditions
- 3. Epson Printer
- 4. Epson Genuine Ink
- 5. Epson Media
- 6.ICC Profile*



Monitor Setup

The most frequently asked question is "Why don't my prints match what I see on screen?"

This is not the fault of the printer, as the printer can only do what it is told. If you adjust your image to suit your monitor and your monitor is displaying the incorrect colour then the printer can only reproduce the data that is sent to it

The most important step in the colour management workflow is the first one: a calibrated and profiled monitor. Consider your monitor as your window to the colour world, if the window is dirty or obscured then the results from the printer will be dirty or obscured

Now, most importantly your monitor cannot be correctly adjusted by eye. A correct result can only be achieved by using hardware calibration. There are a number of excellent affordable devices available on the market, some better than others, usually defined by price. Having said that any device is better than no device

If a calibration device is not available for any reason, there are also a number of Epson Professional Graphics Dealers that can calibrate your monitor. Please check the Epson website for a list of Pro Dealers. You do not have to be a Pro User to utilise their services

Prographics Dealers

http://www.epson.com.au/prographics/wheretobuy



Monitor Setup

Now that your monitor is calibrated and profiled correctly there is significantly more chance to produce the best results

The monitor should be checked at least every two to four weeks ensuring that viewing consistency is at an optimum. This again is a very important step

The type of monitor is also a question in point. It's unreasonable to expect a 10 year old CRT (Cathode Ray Tube) monitor to be able to produce correct results even when a hardware profiling device is used. This type of monitor would just be too old and have deteriorated too much for any usable quality

Most modern LCD (Liquid Crystal Display) monitors have a much better chance of displaying correct results, as with anything, quality is dictated by price and manufacturer

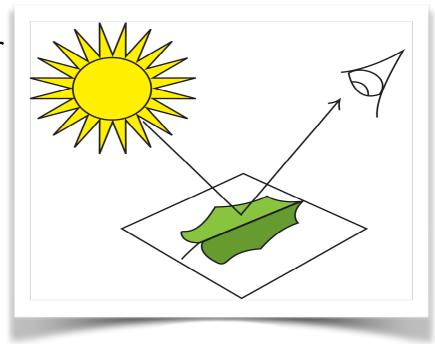
Viewing Conditions

The next step in the path to a colour managed workflow is the viewing conditions and this is probably the hardest aspect to control

In reality it is impossible to control our viewing conditions. The moment any light-source or environment changes, even in the slightest, the viewing conditions are changed, therefore you must have a realistic expectation of what your images will look like in your viewing environment

There are viewing light boxes available that have controlled lighting although this is not always a practical solution for viewing images in the real world

The colour event is dependent on three things: the Observer the light-source, the object. If one of these changes the whole colour event changes, therefore you can see that certain expectations need to be catered for



The Epson Printer

Epson have worked very hard over the years to produce devices that cater for the needs of Professionals, Enthusiasts and Amateurs alike. By listening to the needs of the rapidly expanding number of digital consumers, we research and develop the best possible solutions that produce the best results

Epson printers cover a large range of these requirements and we here at Epson Australia feel that our product has the ability to exceed the expectations that our users demand

There is minimal effort required for the user to set the printer up and obtain results straight away. Getting the best result just needs some forethought and adherence to the workflow laid out in this document

This RGB Printing Guide is for the current range of Epson Photo printer as of June 2015, in conjunction with Adobe's Photoshop CC, Adobe Lightroom CC, Epson Print Layout and Affinity Photo for Windows 8 and above and Macintosh OS X 10.8.x and above

Windows 7 and XP users should also be able to use this guide as there are similarities in the print drivers.

The guide is also only relevant with printers using Epson Genuine Ink, Epson Genuine Media and supplied or custom Epson ICC profiles

The Epson Printer

When installing the Epson printer, be sure to read all the relevant material and follow any installation instructions

When installing the drivers from the supplied disc the required ICC profiles for your Epson Photo Printer will install automatically on both the Windows OS and Mac OS. If for any reason the ICC profiles do not install, they are available on the Epson Australia website Support section. Visit www.epson.com.au

As you progress through this guide the understanding for what the ICC profile does and how you use it will become clear. We suggest you read this guide first then follow along with the instructions when you are ready to print

Epson Genuine Ink

Epson Genuine Ink has been formulated to produce not only the best result from your printer, it also protects your investment. Epson ink is the only ink designed to work correctly with the Epson print head technology and the very fine filtering and components that are needed to produce the best possible prints. The ink also sustains the life of the printer and feeds the print head the correct amount needed to accurately produce the right amount of prints per cartridge

When using substitute inks not only is there an exponential risk of damage to the printer's mechanical technology and operation, but the amount of prints can also diminish due to excessive wear caused by the substandard quality of cheap manufacturing techniques to produce cheap inks. The other factor is, most, if not all substitute ink manufacturers do not support their product and in most cases do not supply ICC profiles which are a major requirement of any workflow and will not quote susceptibility to contaminants or fading

Much of the Epson range of ink and media has been developed to resist contaminants and fading. There is an exceptional source of information on print permanence at www.wilhelm-research.com

Epson Media

Epson media works in conjunction with Epson Genuine Ink and Epson ICC profiles to deliver the optimum results

There is a large range of media available from Epson to suit everyone's needs. Certain printers in the Epson range have the ability to not only print on photo quality paper, but also fine art papers, canvas, matte media, adhesives, transfer paper and more

With the exception of a few media, Epson supplies ICC profiles to accommodate the way colour is represented on the media, producing amazing results. Epson media is also specifically developed to function correctly with the paper handling of the designated printer, to ensure no damage to any moving parts and correct feed through the device

Epson ICC Profiles

In colour management, an ICC profile is a set of data that characterises a colour input or output device, or a colour space, according to standards as formulated by the International Colour Consortium (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 and a *profile connection space* (PCS). This PCS is either CIELAB (L*a*b*) or CIEXYZ Mappings may be specified using tables, to which interpolation is applied, or through a series of parameters for transformations.

Epson's printer drivers are ICC compliant so that the optimum result is achievable. Using Adobe Photoshop, Lightroom, Elements, Affinity Photo, Epson Print Layout or other ICC compatible applications, along with a correctly profiled monitor and Epson's printer technology you can achieve top quality prints

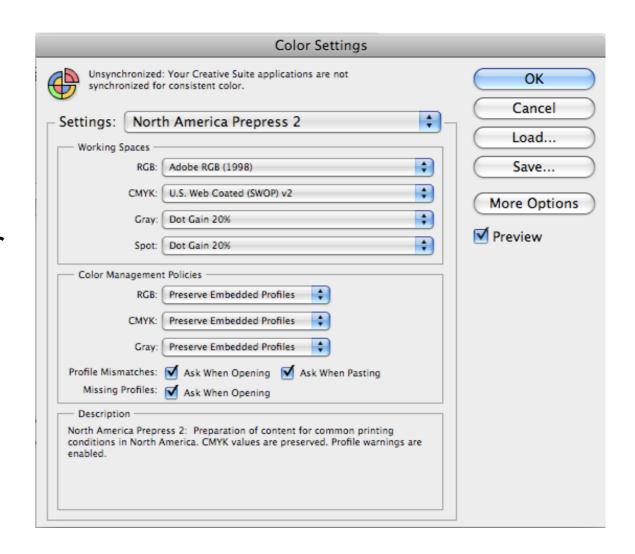
This guide will show how to select the profiles to attach them to the file for printing and also use them for displaying a representation of how the final printed image will look using the soft proofing facility in Photoshop, Lightroom, Affinity Photo and others.

The soft proofing function is the main reason that a correctly profiled monitor is required.

Photoshop Setup

Photoshop Setup

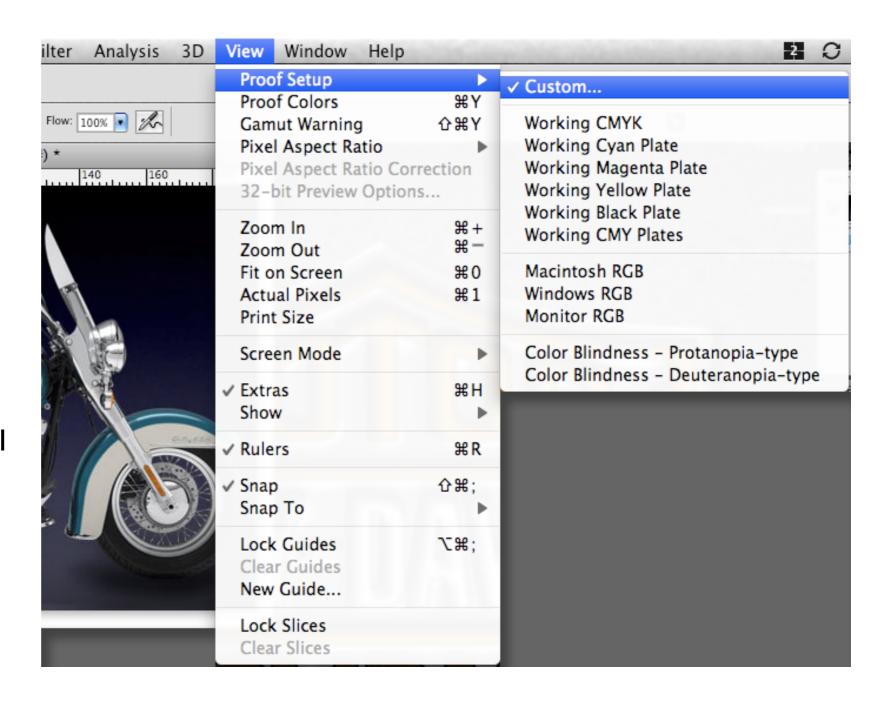
- Setting up Photoshop correctly is the first step in the workflow
- Go to Edit>Color Settings
- Select either Adobe RGB or sRGB for the RGB working space*
- Do not select the monitor profile in the RGB space as that is incorrect



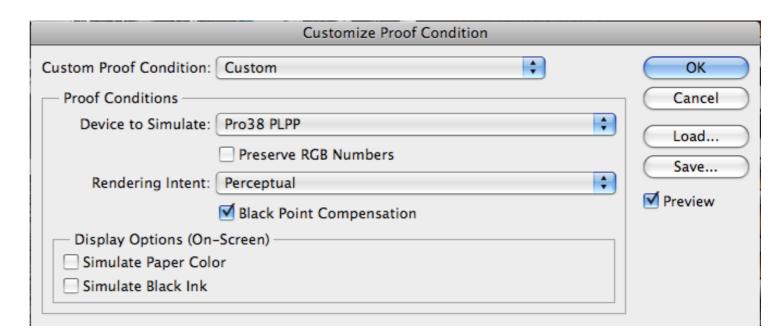
^{*}The only setting of concern is the RGB Work Space. Epson printers produce the best results through the Epson Driver when RGB data is used. If CMYK data is required then a postscript RIP would produce better results. This Guide is based on the Epson Driver and RGB data only

- One of the main reasons for having the monitor display the correct colour is Soft Proofing
- This is the ability to use the media ICC profile as a virtual overlay on the image and simulate the result from the printer
- Without calibrating and profiling the monitor this procedure is void
- Soft proofing will, in the grand scheme save money on ink and paper due to the fact that your final image will be represented on screen
- Although the representation on screen will be very good, there needs to be a certain amount of subjectivity, allowing for things like ambient light to play a part in the representation
- Again monitor profiling and soft proofing is the best control for your images prior to printing

- Soft Proofing is accessed via the View>Proof Setup menu
- Select Custom
- This is the same on all platforms



- Select the correct media profile
- Select the required Rendering Intent
- Select the Preview and turn on and off to see what effect the profile has in the image in Photoshop





Preview OFF

Preview ON

Subtle differences may be seen in the Hue or Saturation of the image.

This will be much more noticeable when soft proofing using a matte media as they have a smaller colour gamut

- Once the Soft Proofing is checked the image may need some minor adjustments to suit your requirements
- The only thing to keep in mind is, if the colours are slightly muted due to the media type you are printing on, adding saturation to the image to boost the colour will not work
- The media has a defined colour gamut therefore over saturating the image will only produce unacceptable results
- If more saturation of colour is required, then trying a different media with a glossier surface allowing a wider colour gamut will work
- Custom profiles can also expand the colour gamut slightly but remember different media have defined limits of achievable colours

Adobe Photoshop CC

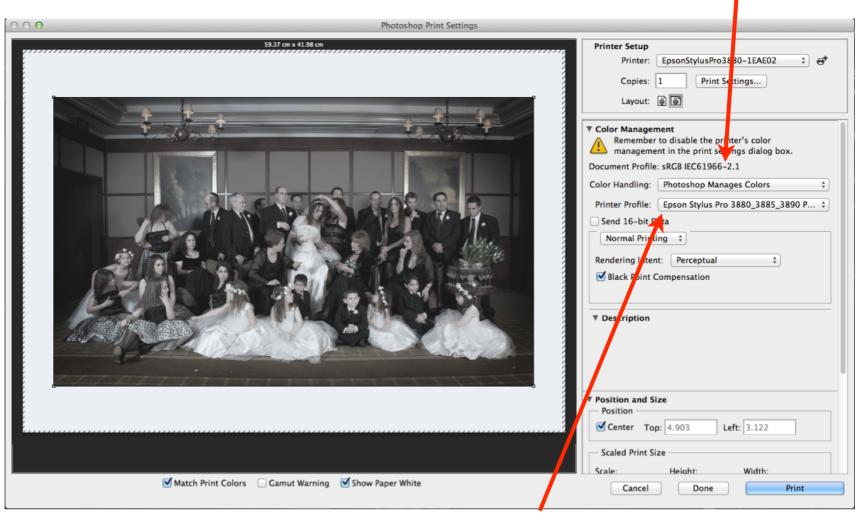
Prographics Printers Mac OS X

Adobe Photoshop CC

Mac OS X

Select Photoshop Manages Color

- Selecting Photoshop
 Manages Colours allows
 access to the paper
 profiles
- Select the correct profile that matches the printer and paper being used
- Select the required
 Rendering Intent* and keep Black Point
 Compensation checked
- Select Print Settings



Media Profile selection

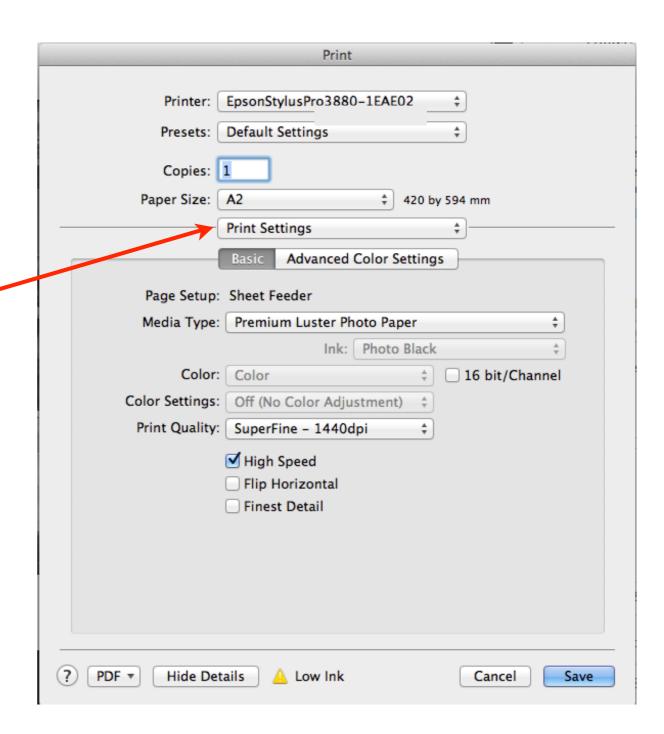
*The easiest way to choose a rendering intent is, (bright colourful pictures) select Perceptual.

For subtle muted tones choose Relative colorimetric.

Checking results with soft proofing will be discussed later

Mac OS X

Select the Print Setting

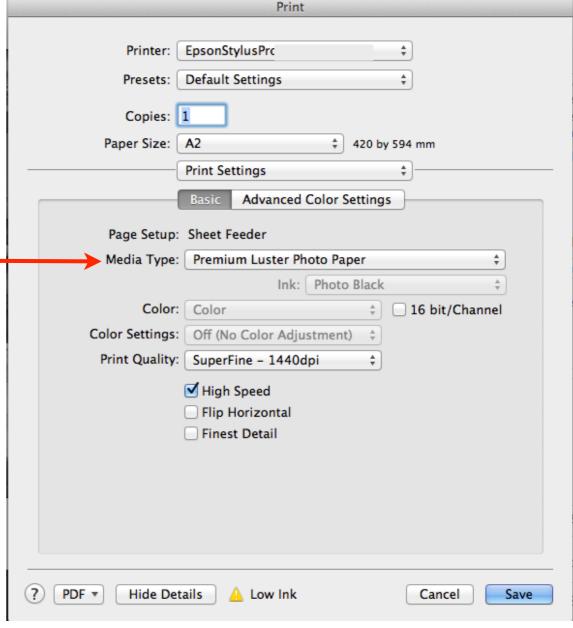


Mac OS X

Select the Media Type to match what is in the printer

Color and Color Setting are selected automatically

Print



*By selecting Off (No Color Adjustment) the profile describes the colour to the driver When not using a profile, colour has no meaning to the driver

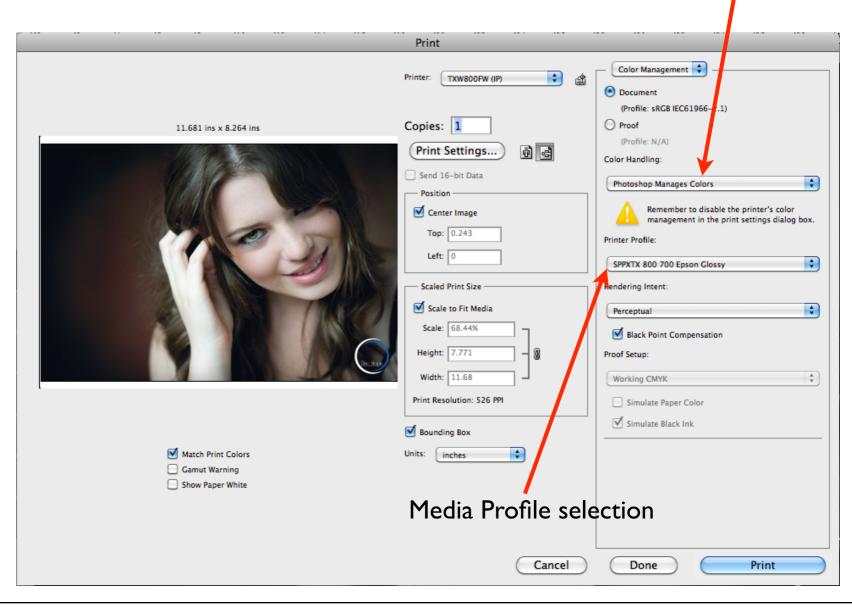
Consumer Printers Mac OS X

Adobe Photoshop CC

Mac OS X

Select Photoshop Manages Color

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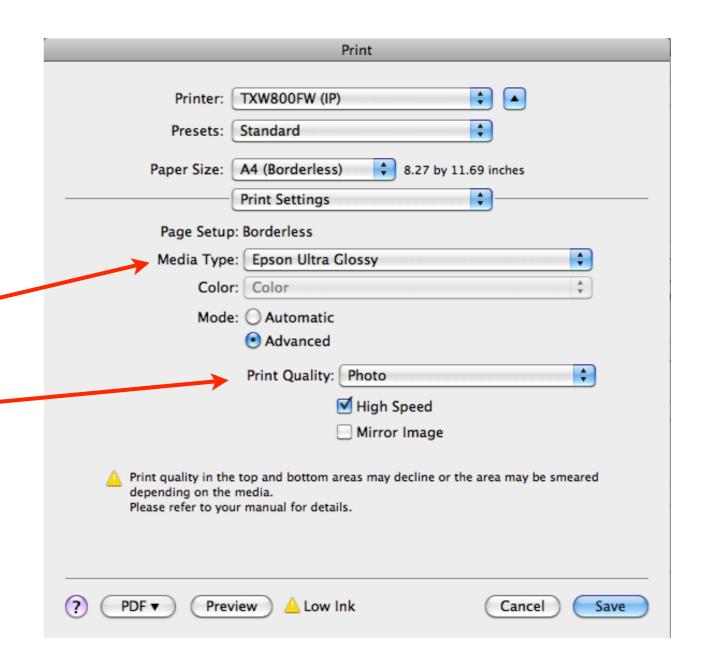
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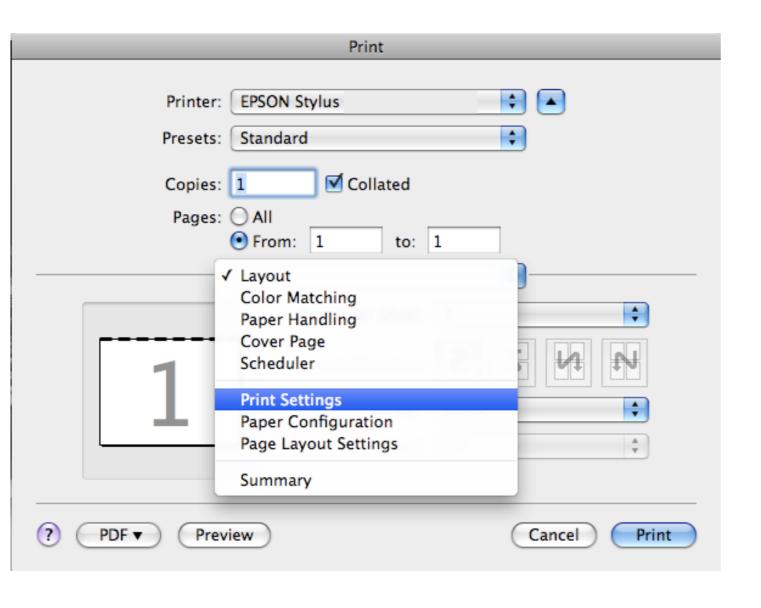
Mac OS X

 Select the Select Media Type

Select Print Quality



Mac OS X

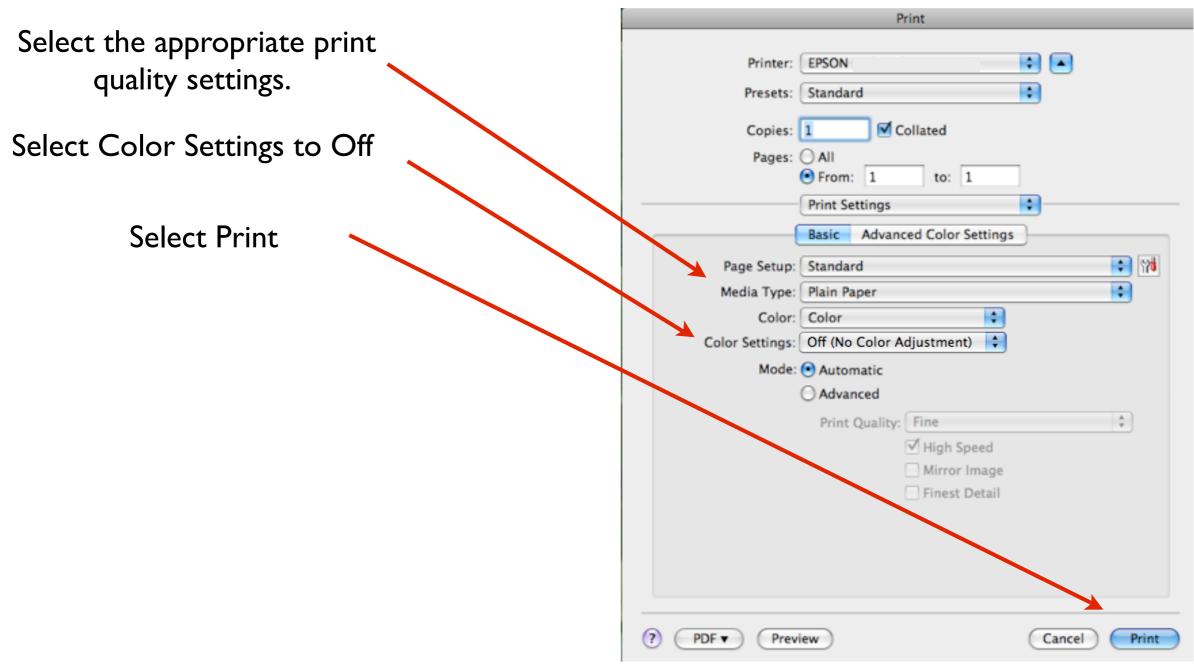




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IF YOUR PROPERTIES BOX LOOKS LIKE THIS CLICK HERE OR GO TO PAGE 31

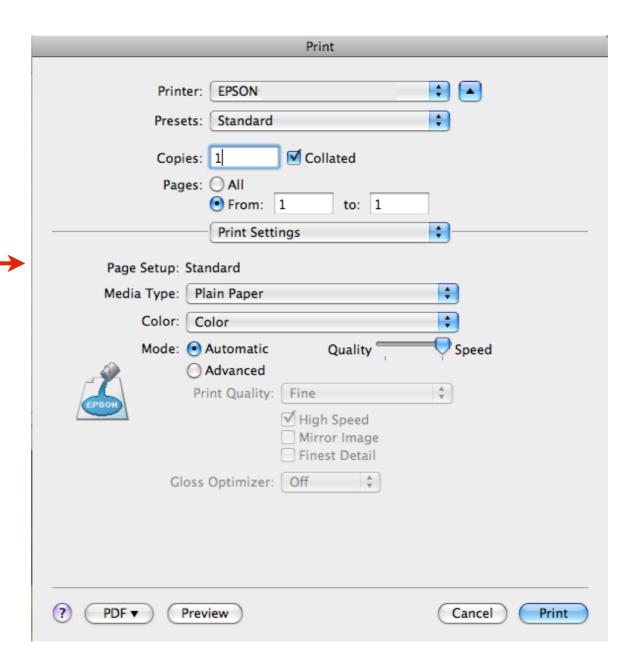
Mac OS X



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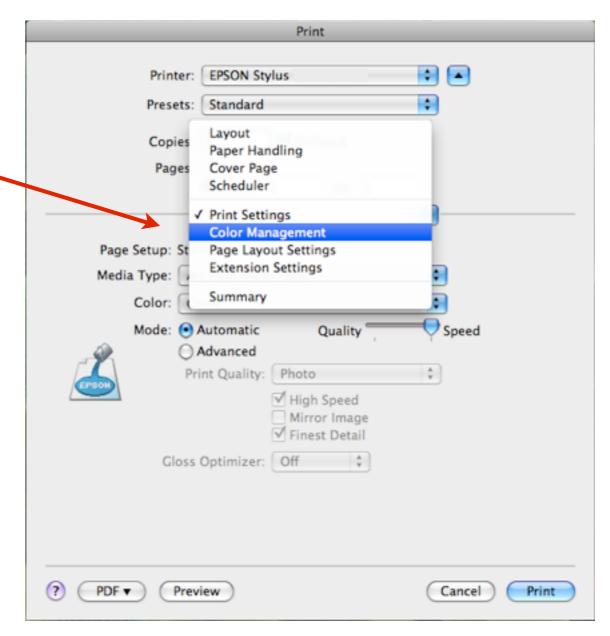
Mac OS X

Select the appropriate print quality settings.

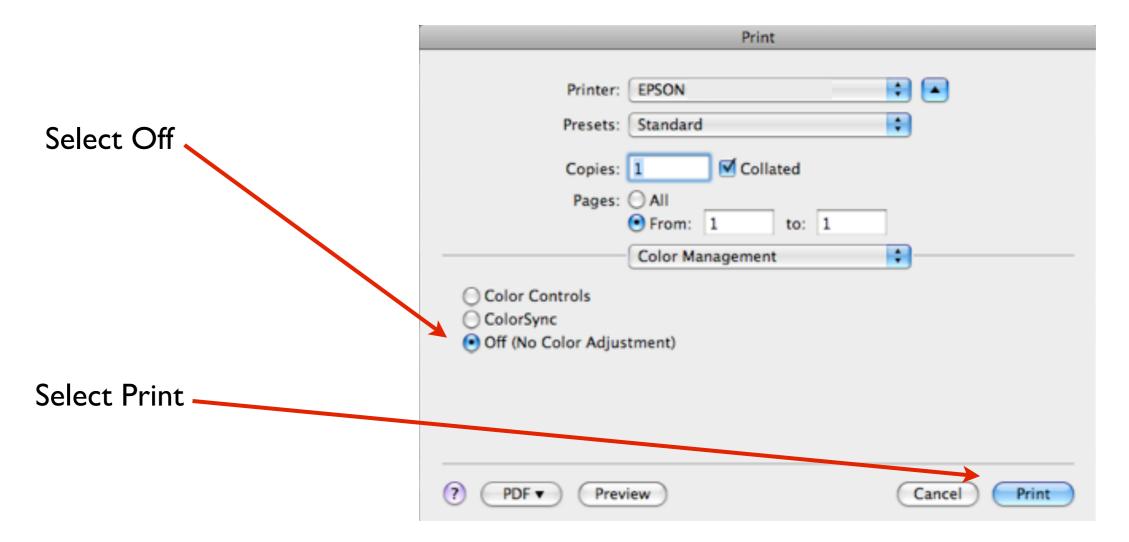


Mac OS X

Select Color Management



Mac OS X



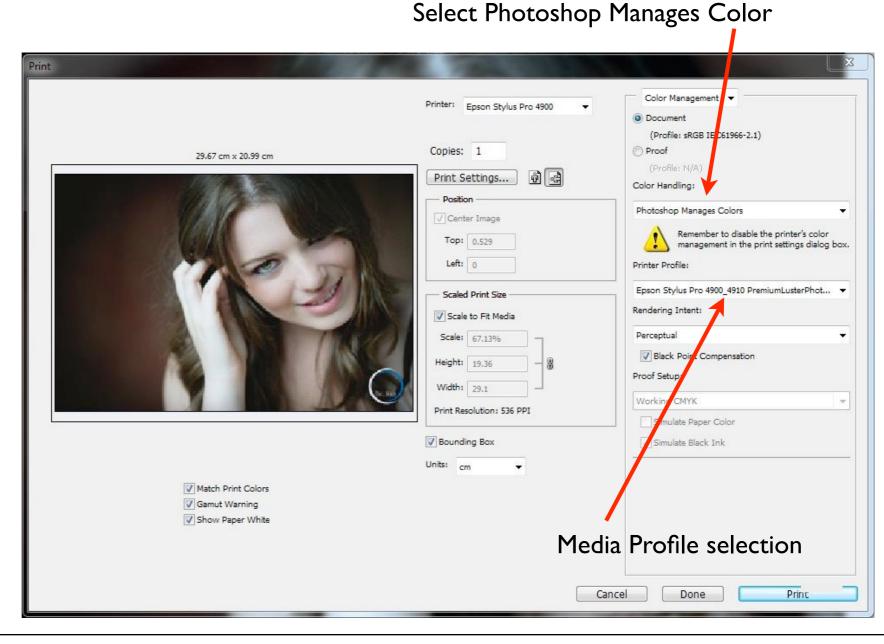
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Prographics Printers Windows

Adobe Photoshop CC

Windows

- Selecting Photoshop
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 Compensation checked
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For subtle muted tones choose Relative colorimetric.

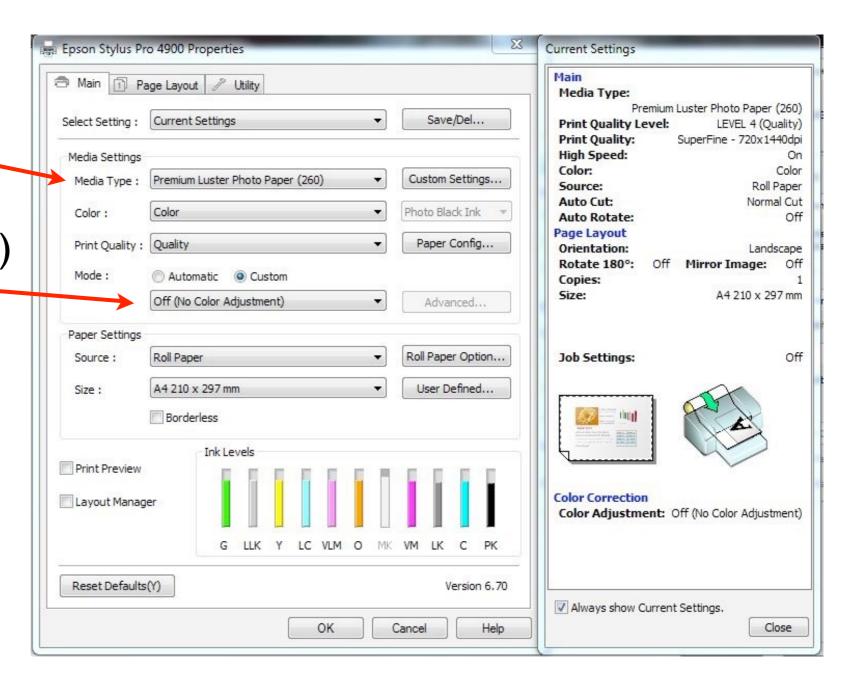
Checking results with soft proofing will be discussed later

Windows

Select the MediaType

 Check Off (No Color Adjustment)

Select OK



Adobe Photoshop CC

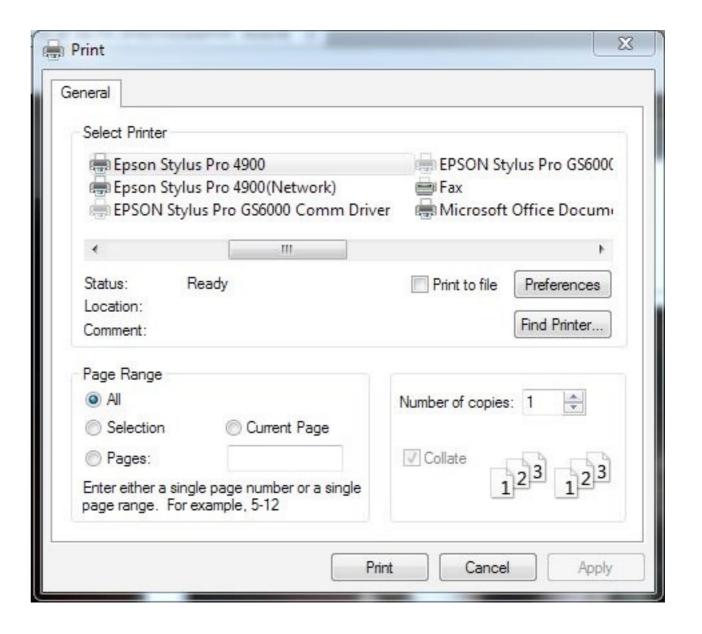
Windows

Color Management * Printer: Epson Stylus Pro 4900 Document (Profile: sRGB IEC61966-2.1) O Proof Copies: 1 29.67 cm x 20.99 cm Print Settings... ੂੰ ਵੀ Color Handling: Photoshop Manages Colors √ Center Image Remember to disable the printer's color Top: 0.529 management in the print settings dialog box. Epson Stylus Pro 4900_4910 PremiumLusterPhot... ▼ Scaled Print Size Rendering Intent: ✓ Scale to Fit Media Perceptual Scale: 67,13% ▼ Black Point Compensation Height: 19.36 Proof Setup: Width: 29.1 Working CMYK Print Resolution: 536 PPI Simulate Paper Color ▼ Bounding Box ✓ Simulate Black Ink Units: cm ▼ Match Print Colors ✓ Gamut Warning ▼ Show Paper White Done Print

• Select Print

Windows

Select Print



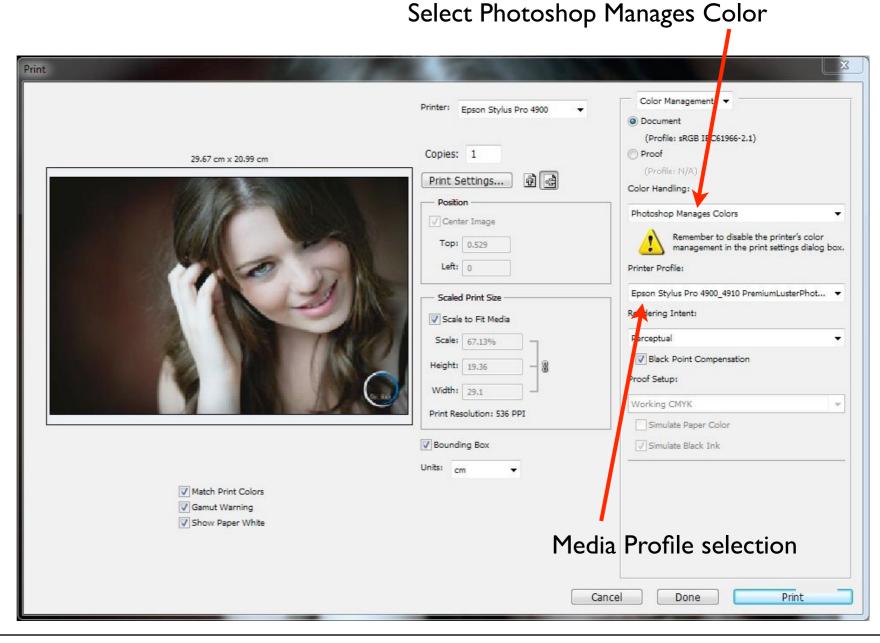
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Consumer Printers Windows

Adobe Photoshop CC

Windows

- Selecting Photoshop
 Manages Colors allows
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- Select the correct profile that matches the printer and paper being used
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 Rendering Intent* and keep Black Point
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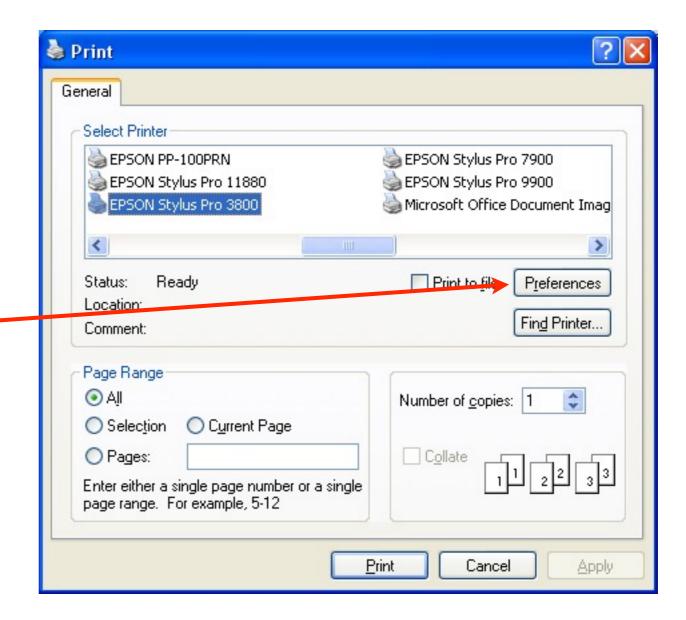
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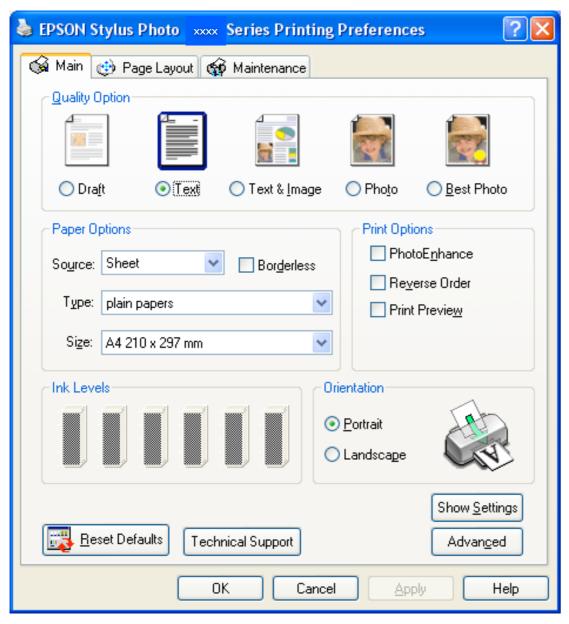
Checking results with soft proofing will be discussed later

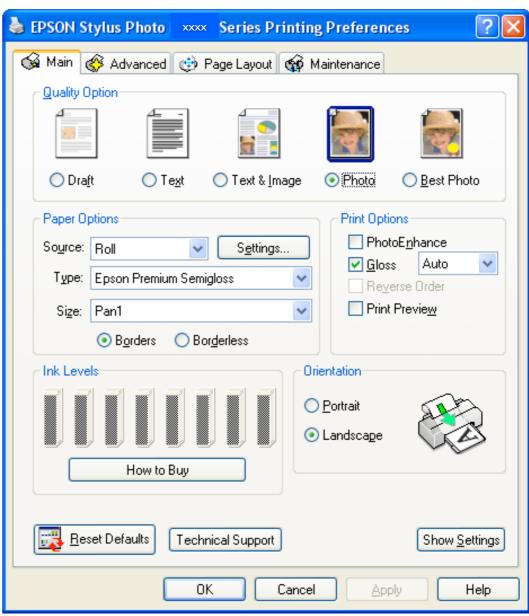
Printing Windows

Select the Preferencesbutton



Windows

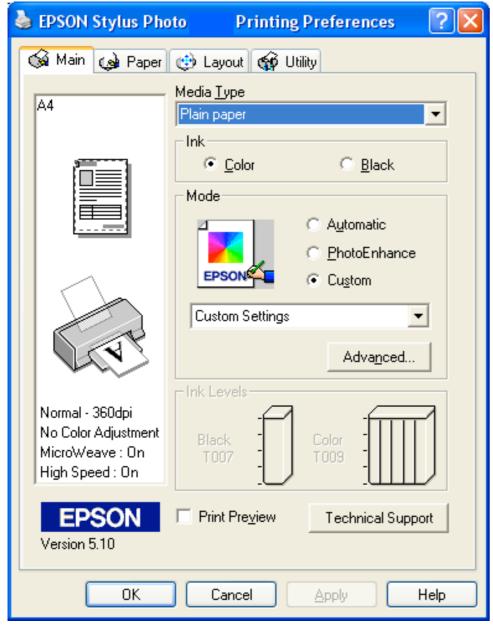


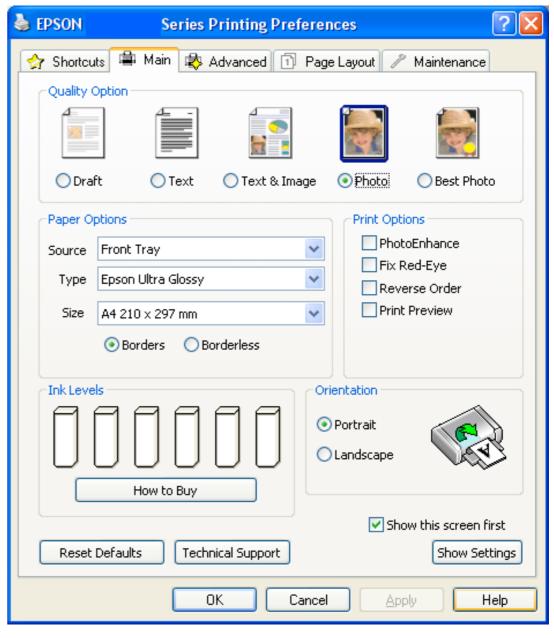


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Windows





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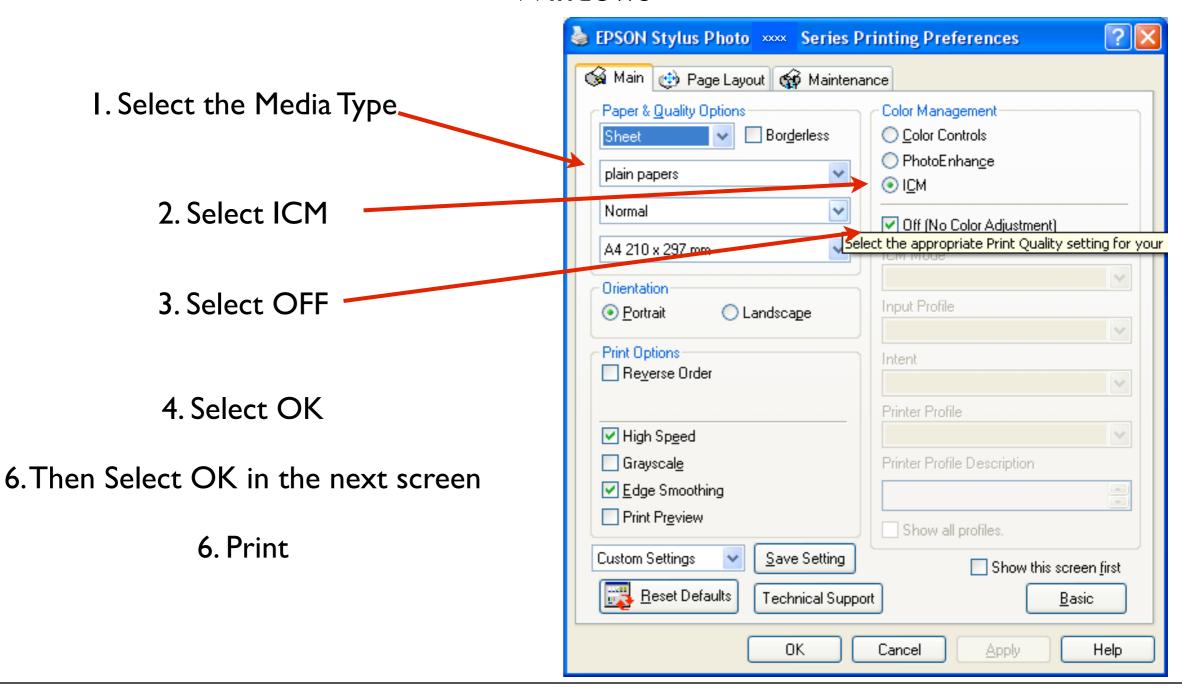
CLICK HERE OR GO TO PAGE 48

CLICK HERE OR GO TO PAGE 50

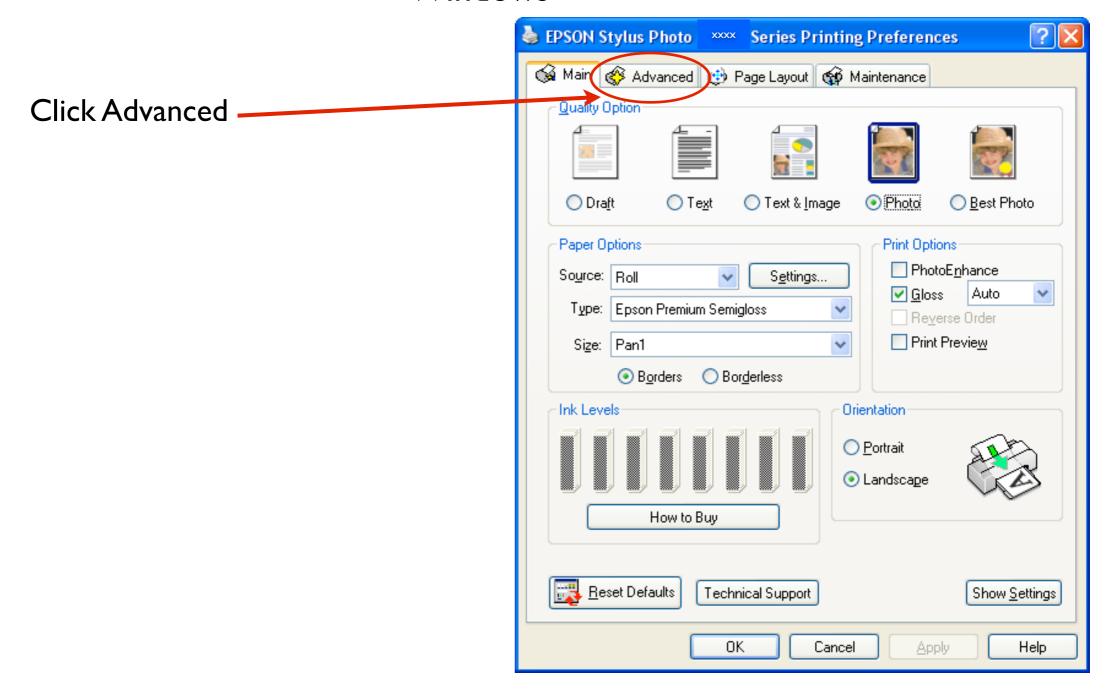
Windows

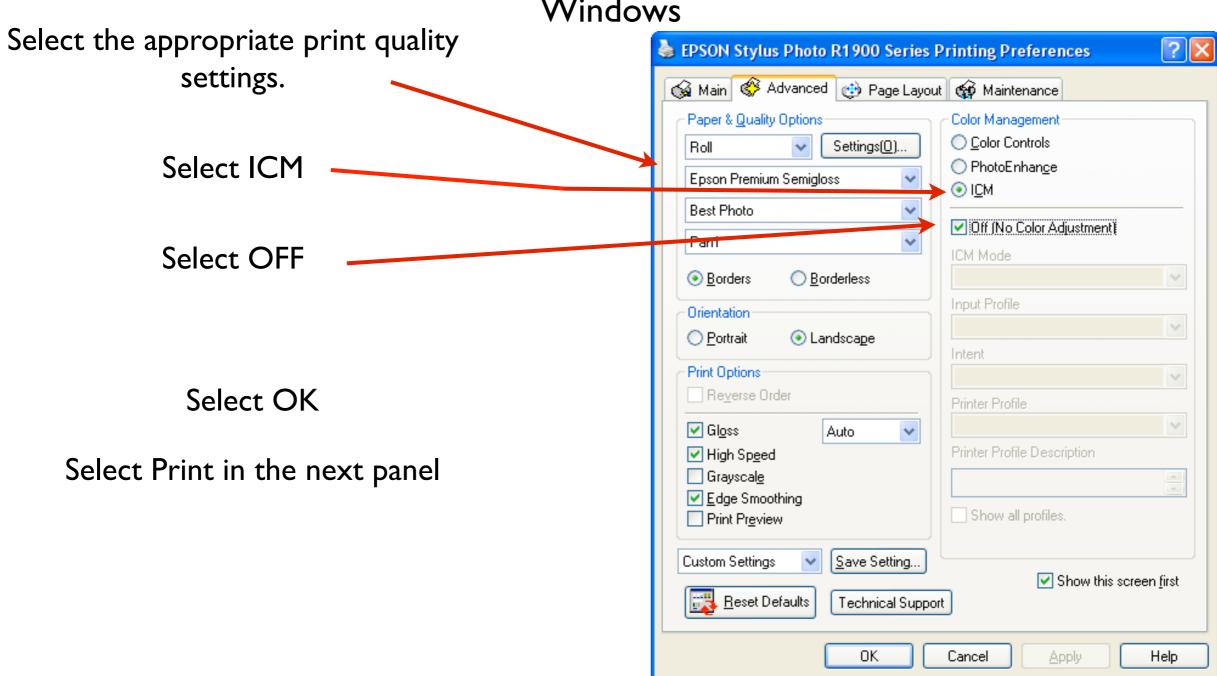
? X EPSON Stylus Photo xxx Series Printing Preferences Main 😁 Page Layout 🙀 Maintenance Quality Option Text O Draft Text & Image O Photo Best Photo Print Options Paper Options PhotoEnhance Source: Sheet Borderless Reverse Order Type: plain papers Print Preview Click Advanced Size: A4 210 x 297 mm Ink Levels Orientation Portrait Landscape Show Settings <u>R</u>eset Defaults Technical Support Advan<u>c</u>ed OΚ Cancel Apply Help

50



^{*}By selecting Off (No Color Adjustment) the profile describes the colour to the driver When not using a profile, colour has no meaning to the driver





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Windows

? X EPSON Stylus Photo xxx Printing Preferences Main 🚱 Paper 🔥 Layout 🙀 Utility Media <u>T</u>ype Plain paper • -Ink Color ○ Black Mode: Click Advanced Custom Custom Settings Advanced... -Ink Levels-Normal - 360dpi No Color Adjustment MicroWeave: On T009 T007 High Speed: On **EPSON** ☐ Print Preview Technical Support Version 5.10 OΚ Apply Cancel Help

Windows

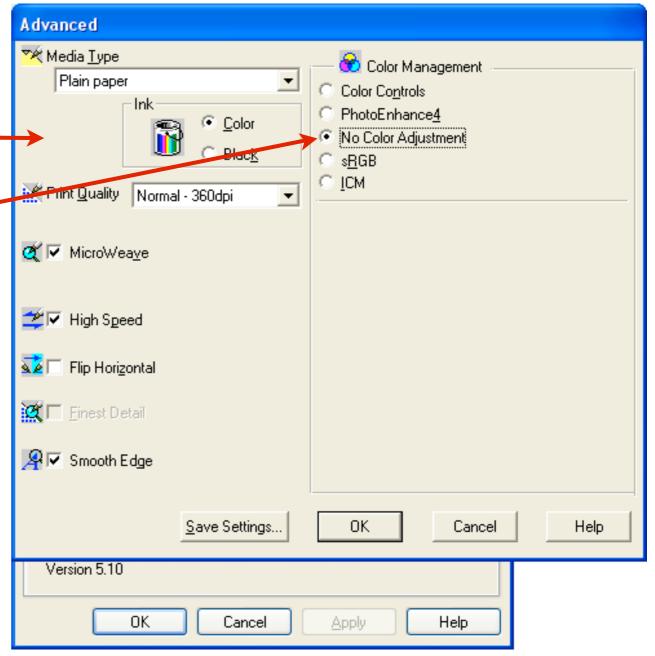
Select the appropriate print quality settings.

Select No Color Adjustment

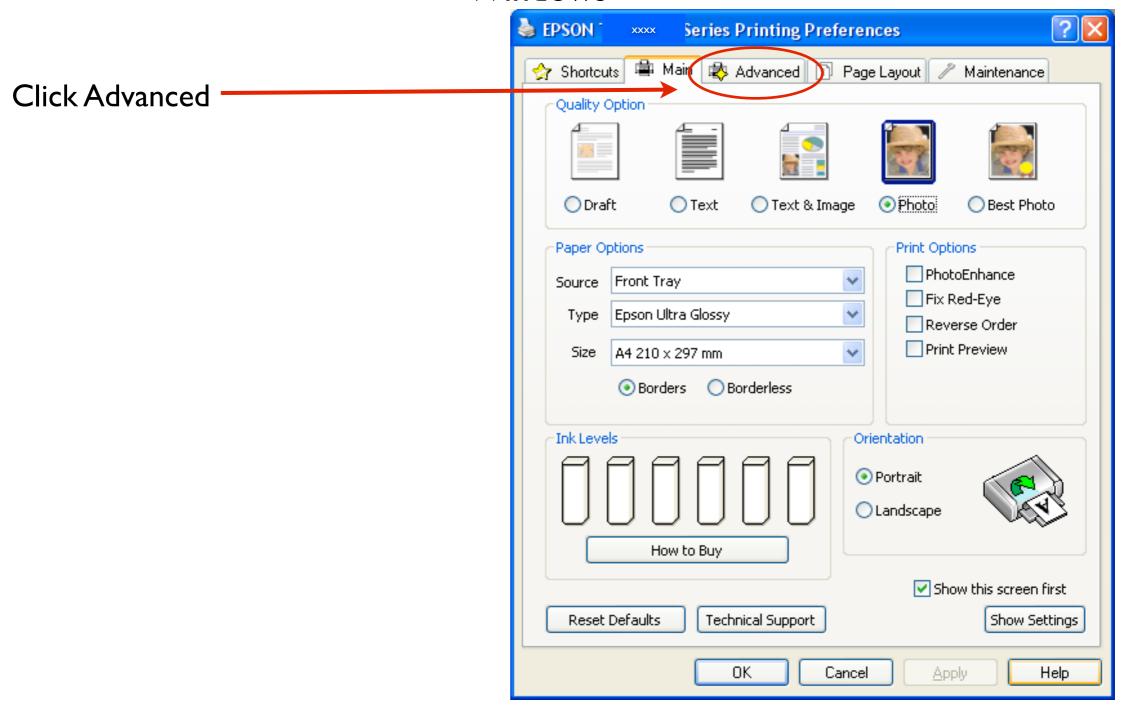
Select OK

Then Select OK in the next screen

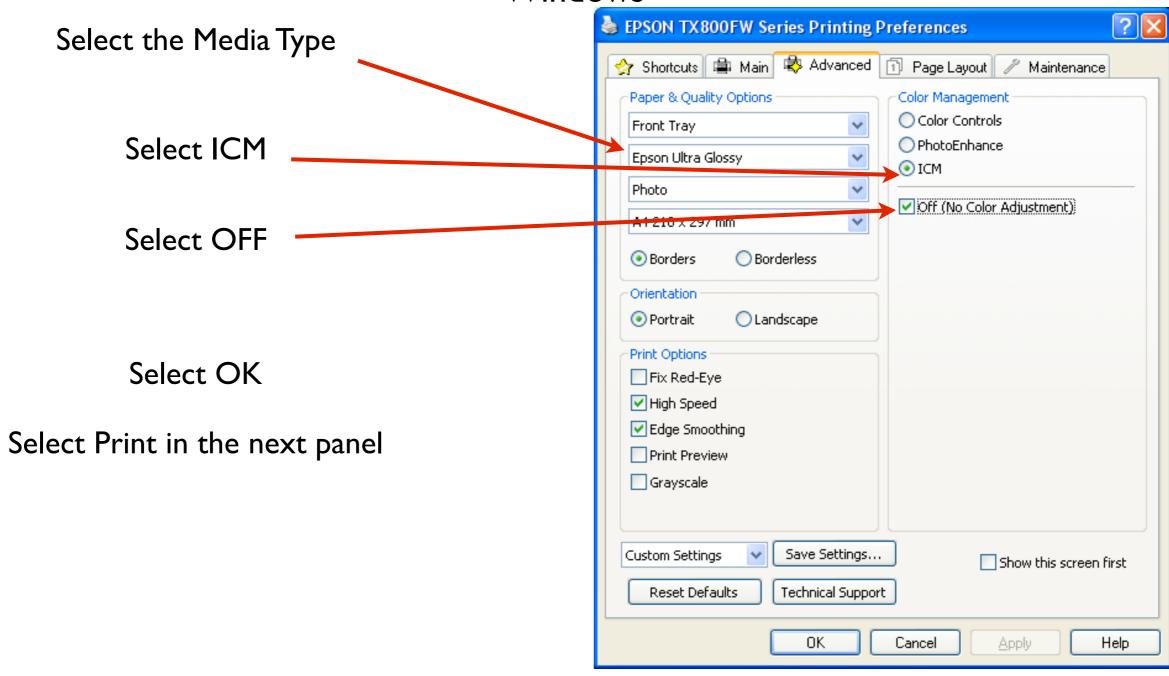
Select Print



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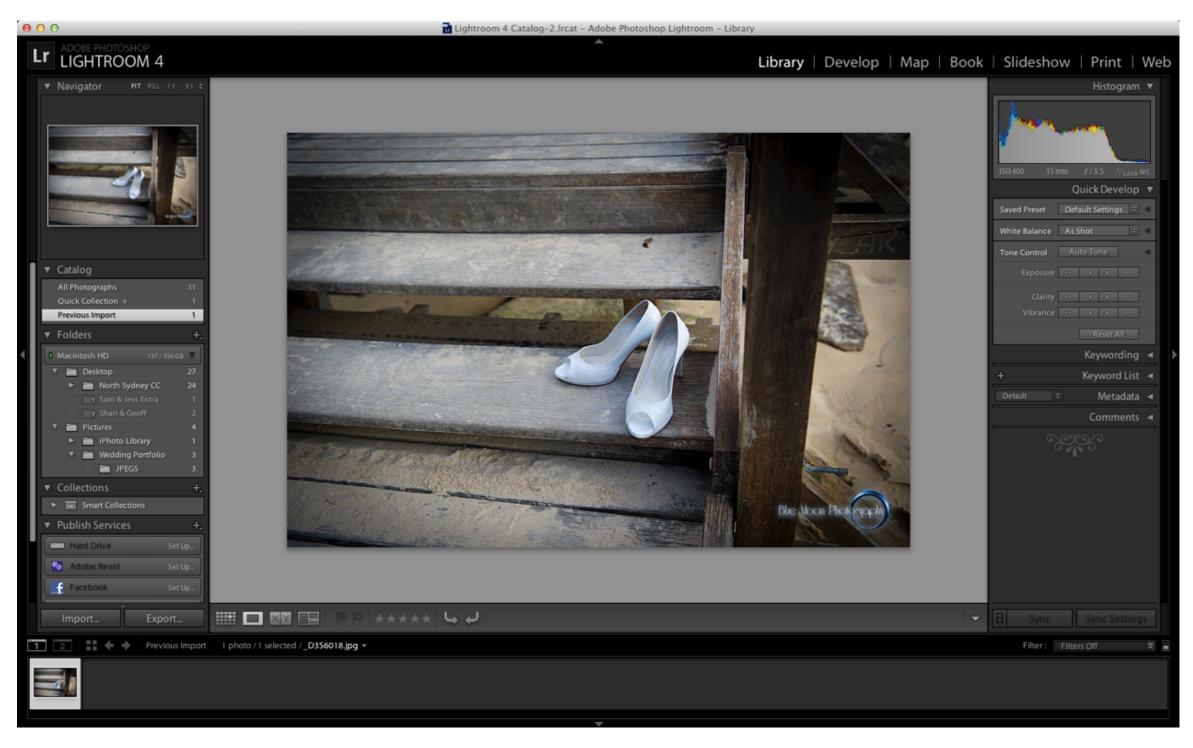


Windows



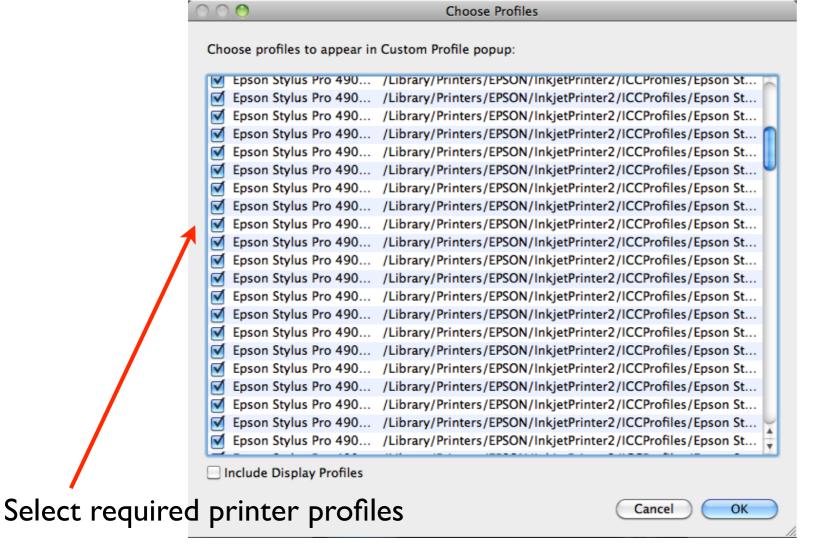
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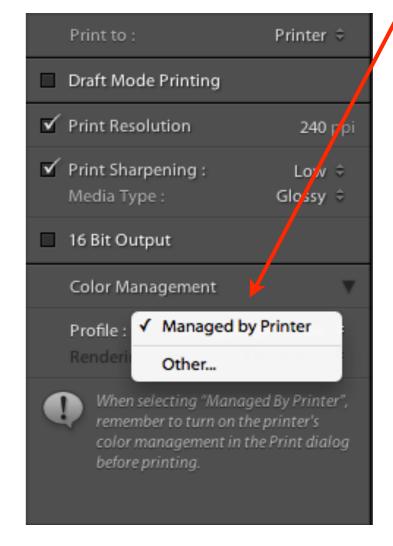
- Adobe Lightroom CC is another excellent software package for image management and editing
- Being a colour managed enabled package, makes it another alternative to Photoshop for printing to Epson Printers using a colour managed workflow
- As mentioned throughout this document, following a workflow is the best way to be predictable with your colour output



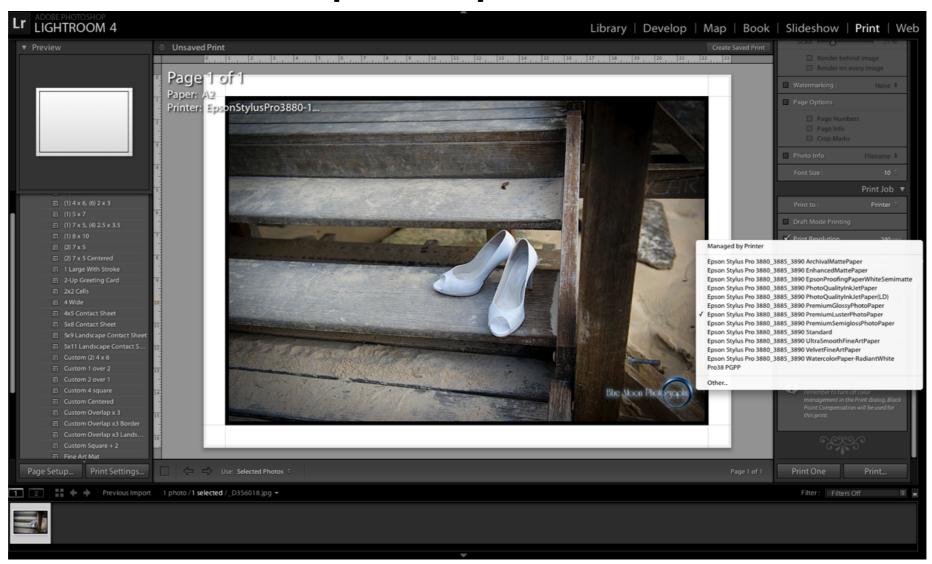
 Once the printer is selected the printer profiles need to be chosen

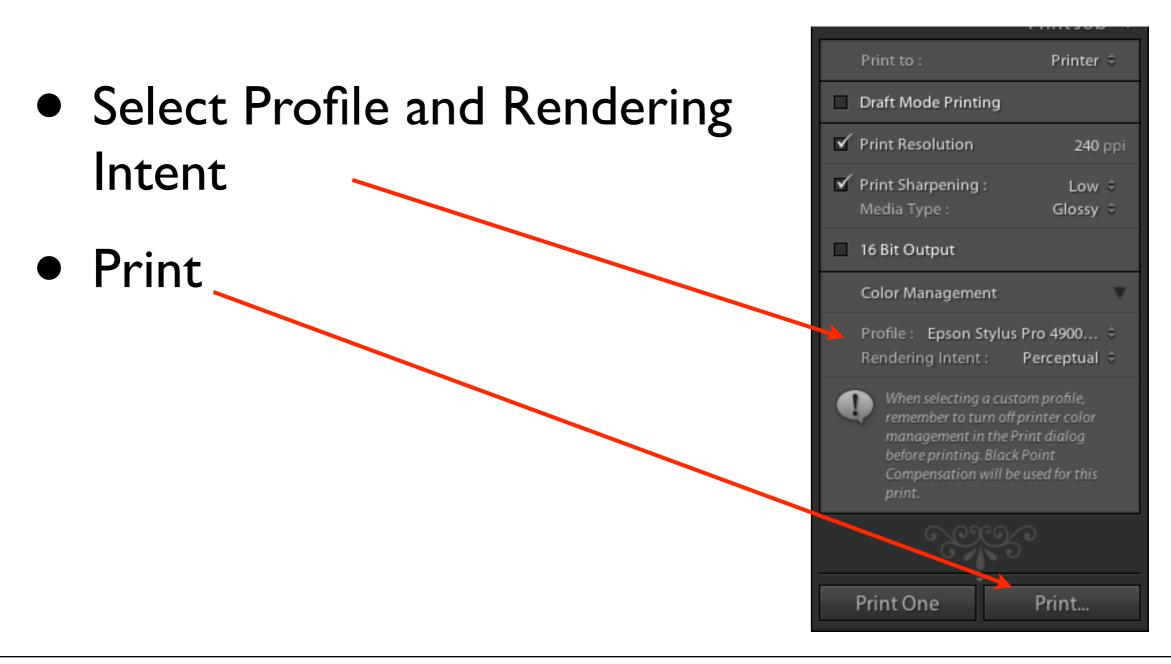
Choose "Other" from the Profile Menu





 The selected profiles are now available, choose the required profile





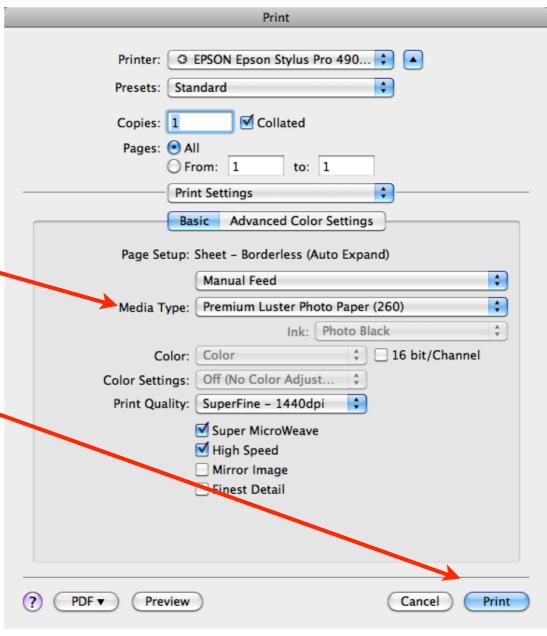
*The easiest way to choose a rendering intent is, (bright colourful pictures) select Perceptual.

For subtle muted tones choose Relative colorimetric.

Checking results with soft proofing will be discussed later

Mac OS X

Select Correct MediaTypePrint



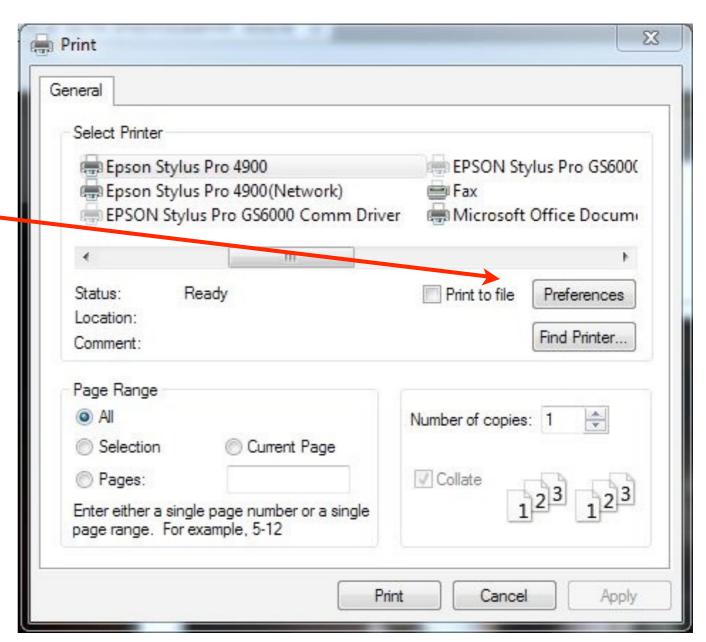
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Mac OS X

SelectPreferences



^{*}The easiest way to choose a rendering intent is, (bright colourful pictures) select Perceptual.

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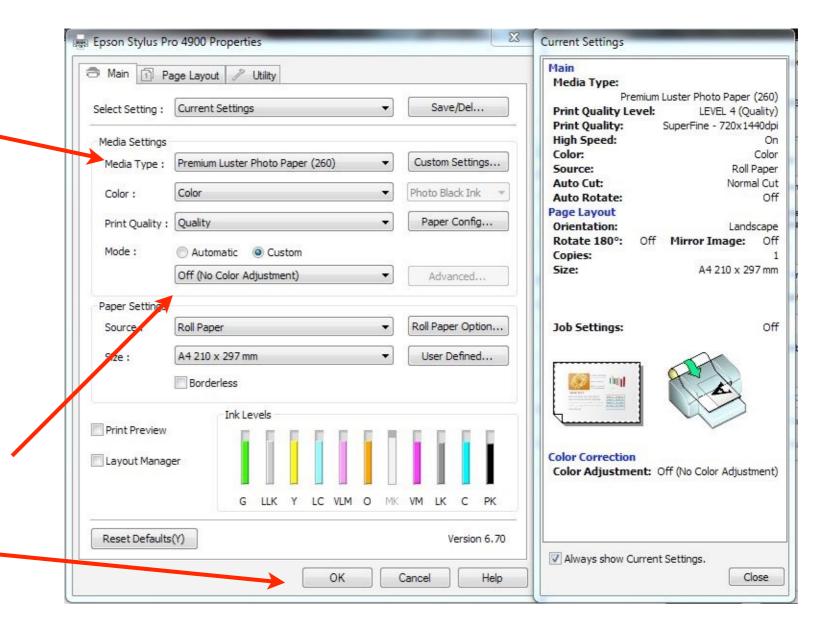
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Windows

SelectCorrectMedia Type

Off (No Color Adjustment

Select OK



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For subtle muted tones choose Relative colorimetric.

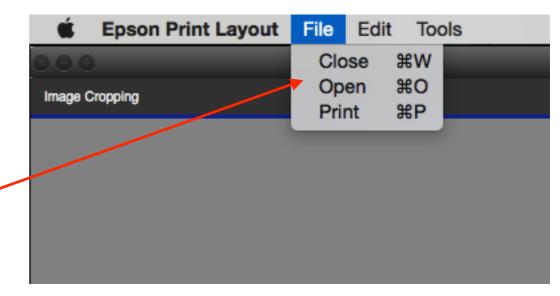
Checking results with soft proofing will be discussed later



- Epson have released a new print software package Epson Print Layout
- This is available to download from the Epson Australia Website

- This package is easy to use and integrates with Nikon NX-i software to offer a complete image and printing workflow
- It is a standalone application that makes printing to an Epson printer quick and easy

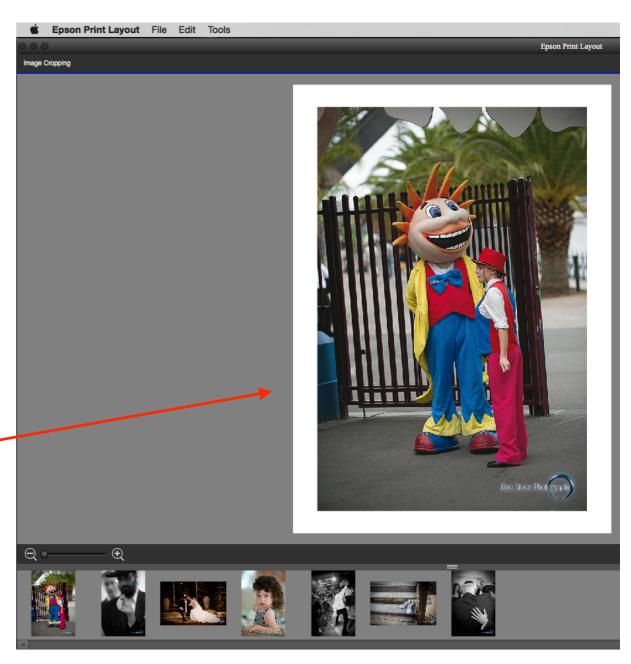
- Currently there is limited printer support
- The models supported are: P-800, P-600, R3000, R2000
- Although older printers are able too be operated when using Mac OS X they are currently not officially supported
- The Windows version of this software only, currently supports the printers listed above

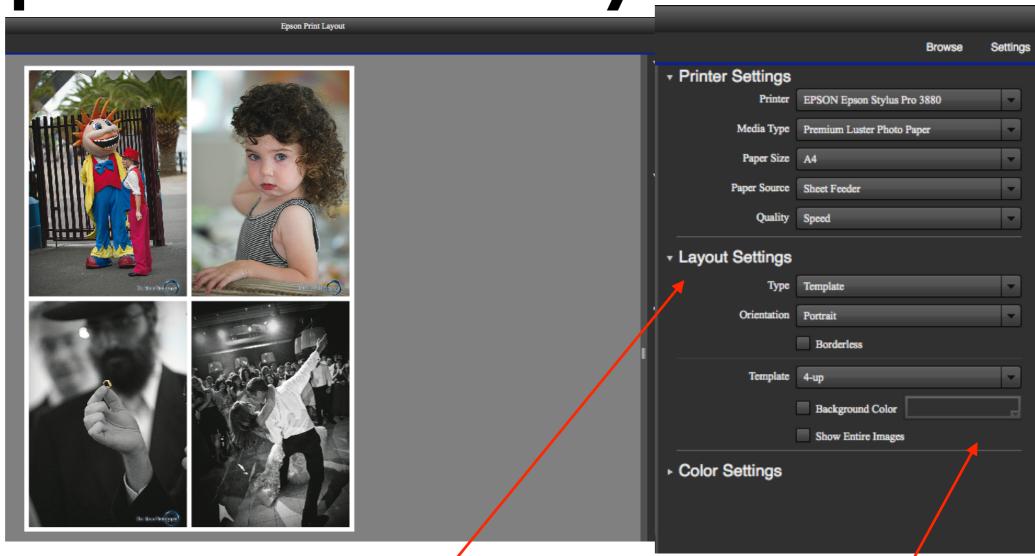


- Select File>Open
- This imports all the images you require into the File Browser



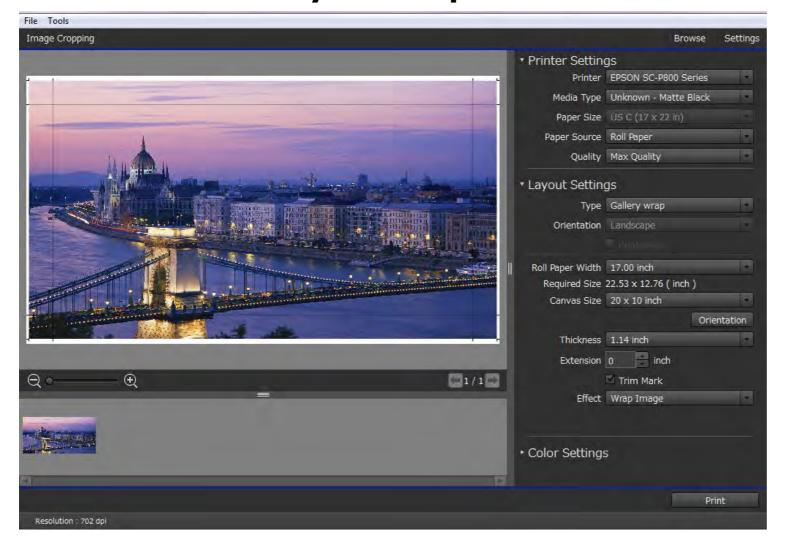
- Select the required Image to print
- This will fill the Image Preview
 Screen





Templets can also be created in Layout
 Settings for printing multiple images with custom colour backgrounds

The Epson Print Layout can be setup for Gallery Wraps



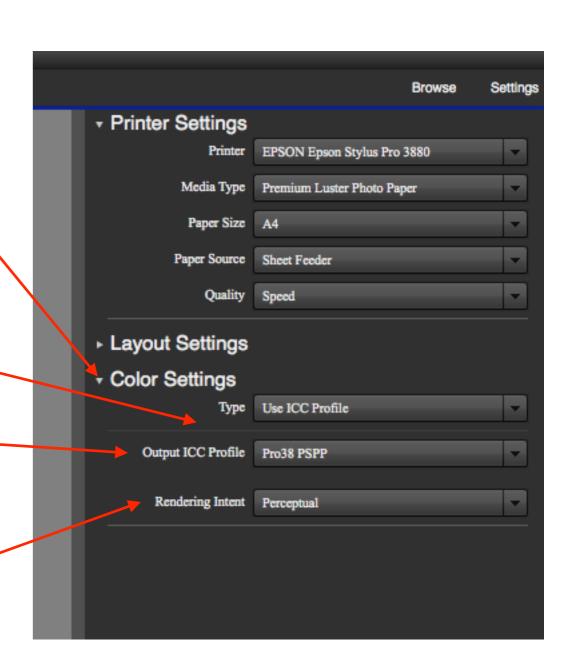


Gallery Wrap Styles



 When Printing from Epson Print Layout go to Color Settings

- Select Use ICC Profile
- Select the required Profile to match the media and Epson Printer
- Select the Rendering Intent

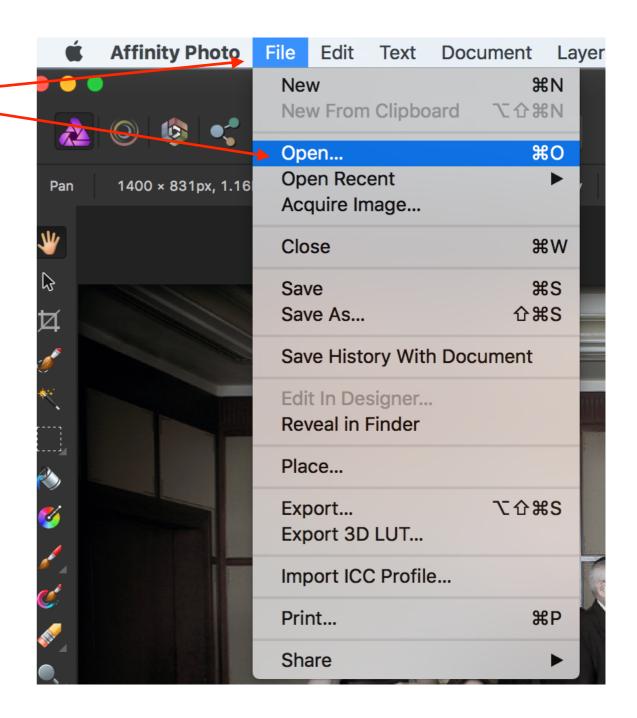


- Once the layout is correct and the colour management is setup
- Select Print

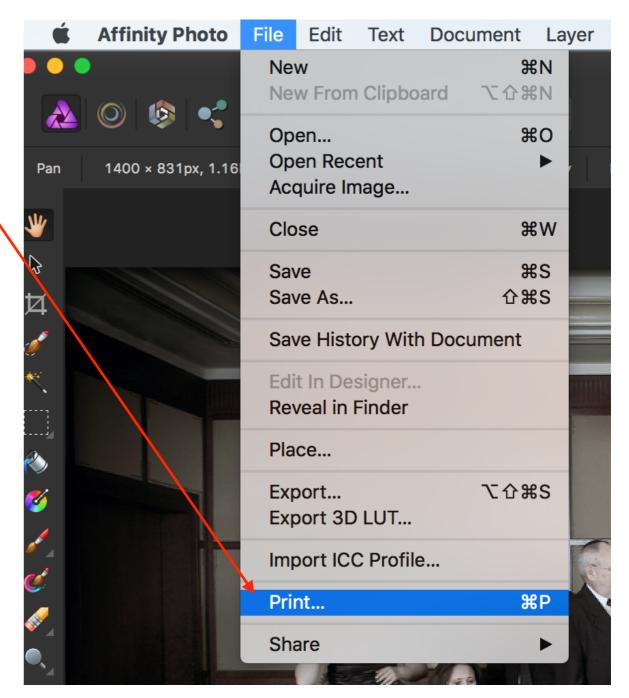


- Over the last 12 months Affinity Photo has been made available for OSX on the Mac App Store
- This is an excellent photo editing suite that has no subscription service, it's a one off purchase
- Currently this is only Mac based, although a Windows version is slated
- Affinity Photo is one of the best image editing application available
- Printing with Affinity Photo is as easy as any other package

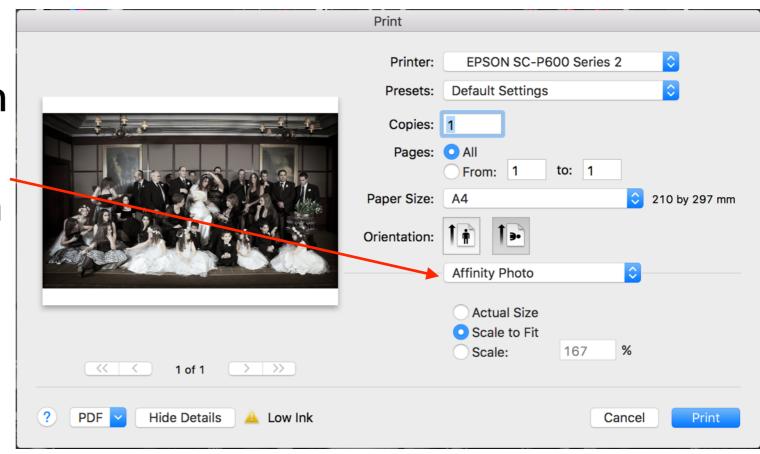
Open your image



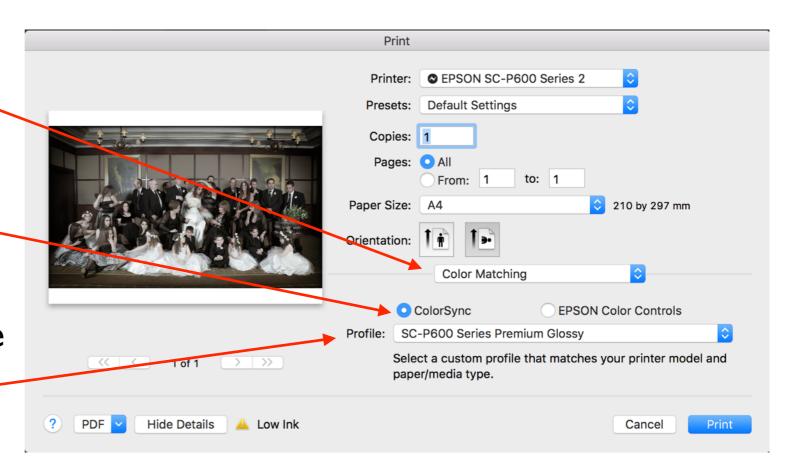
• Select File - Print



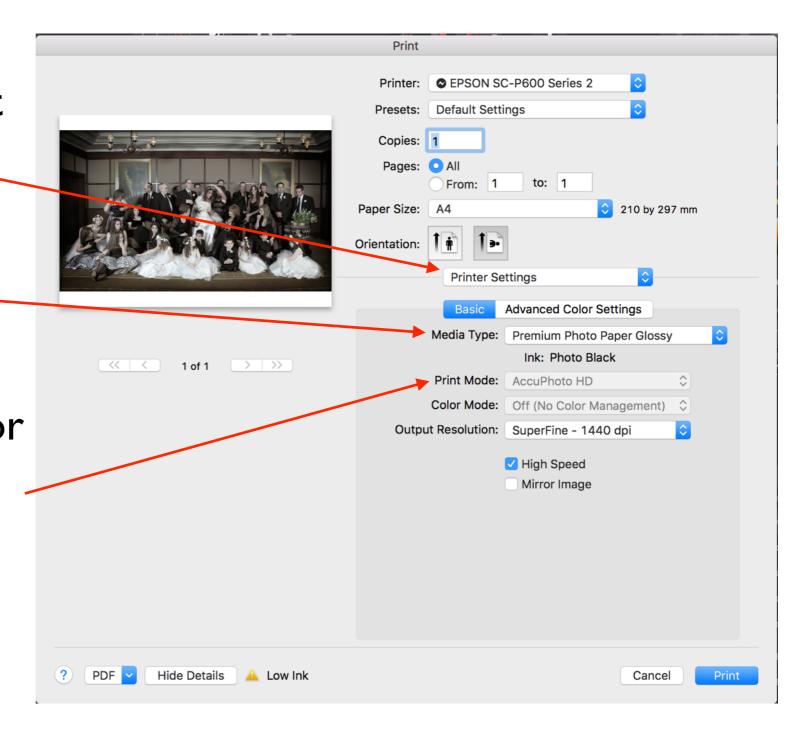
 Once the print dialog box it open select Affinity Photo drop down menu



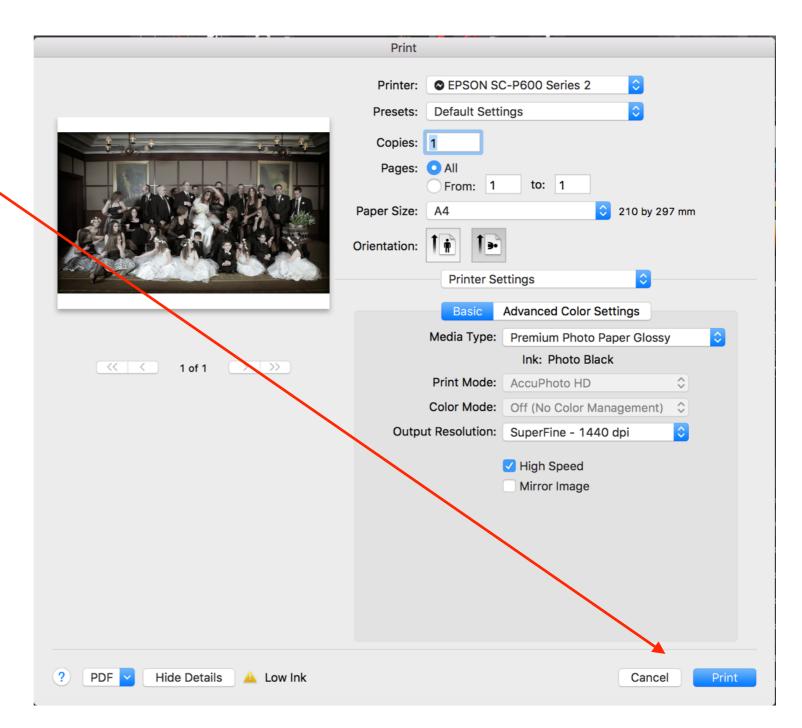
- Choose the Color Matching option
- Check that the ColorSync radio button is selected
- Select the ICC Profile that matches the media being used



- Choose the Print Settings
- Select the required Media
- Print Mode
 AccuPhoto HD or
 depending on
 driver version
 Color is greyed
 out



Press Print



Epson Advanced Black and White Printing

- A selection of Epson printers have the ability to use the Advanced Black and White feature built into the driver
- The printers that are capable of ABW are:

SP-2400	SP-3800
SP-2880	SP-3880
	SP-4880
R-3000	
P-600	SP-4900
P-800	SP-7900
	SP-9900

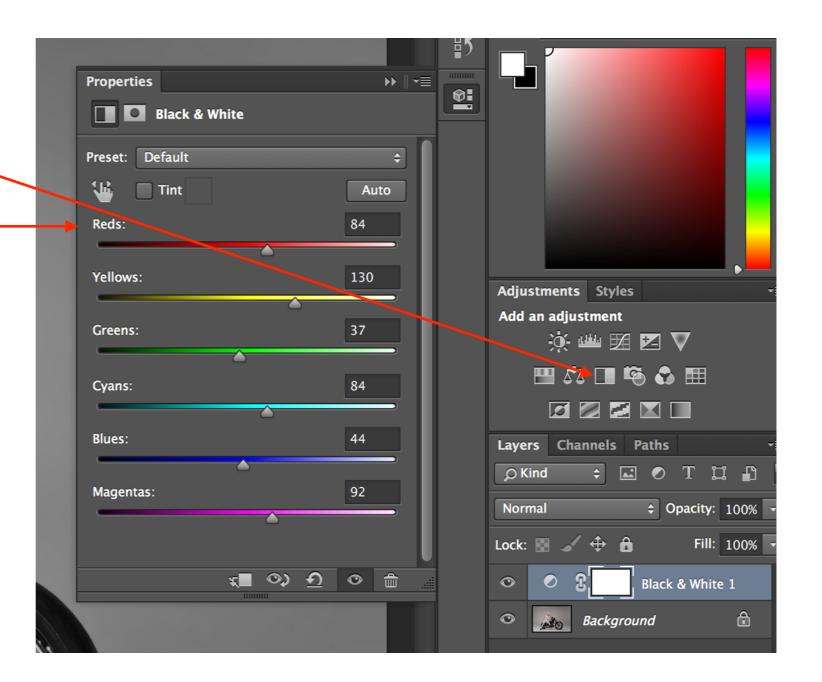
Converting for B&VV

- There are a number of ways to convert images to B&W
- Please choose your preferred method

Adobe Photoshop

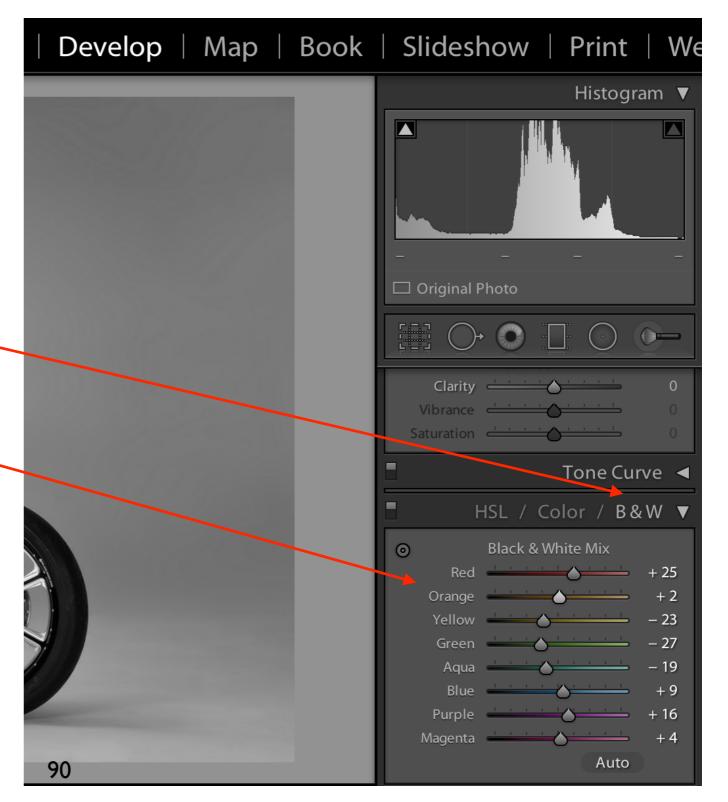
B&WConversion

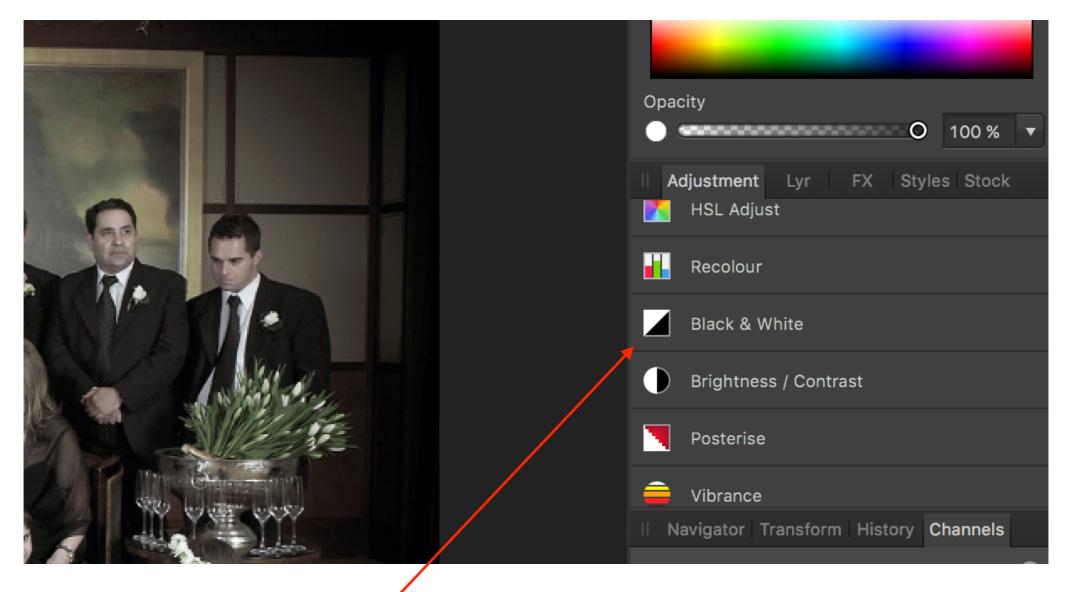
Adjustments



Adobe Lightroom

- B&W Conversion
- Adjustments





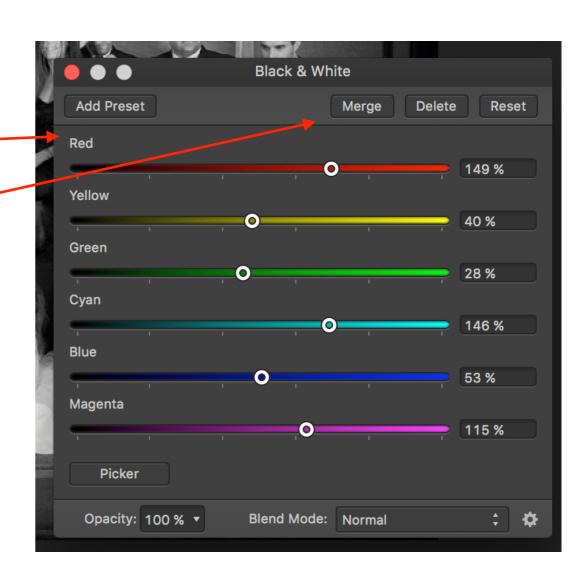
Select Black & White in the Adjustment Tab

 Adjust the Tone controls to suit



 Adjust the Tone controls to suit

Select Merge



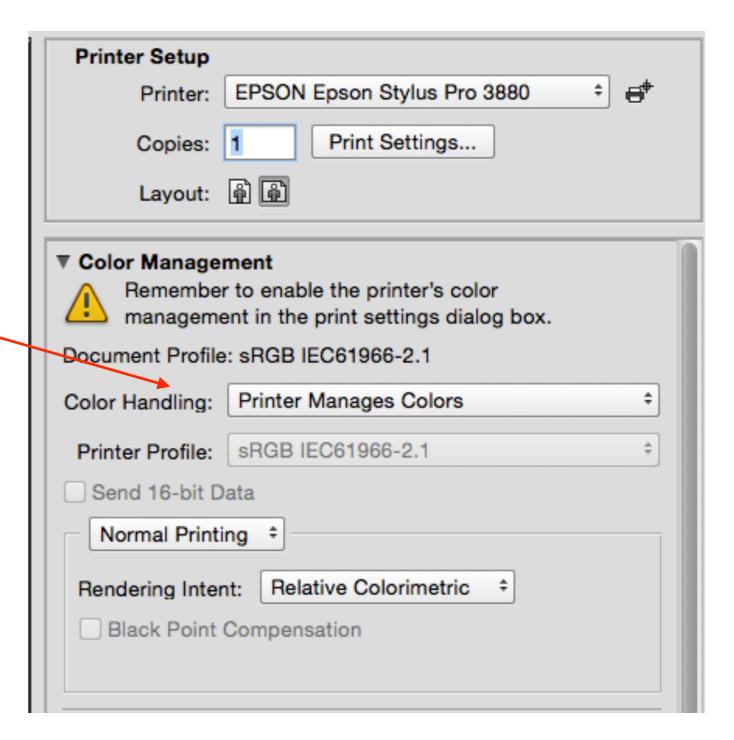
NIK Silver Efex



 When setting up B&W images for print using Advance B&W feature make sure that the print dialogue is set up correctly

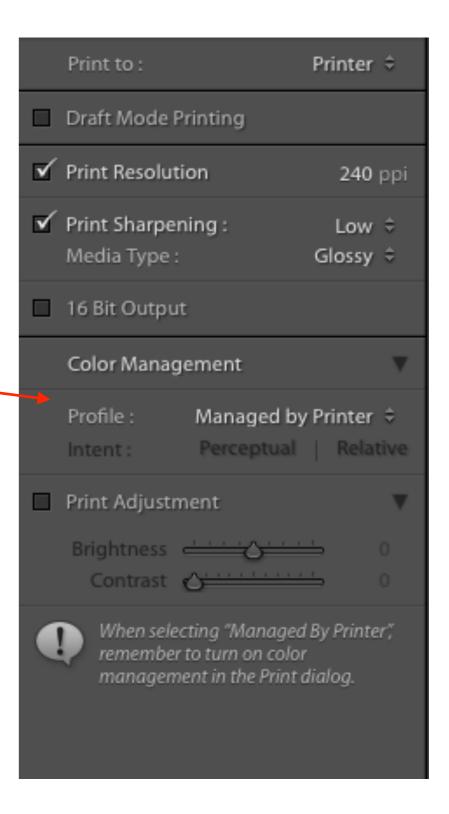
Photoshop CC

Printer ManagesColors



Lightroom CC

Managed by Printer



Epson Print Layout

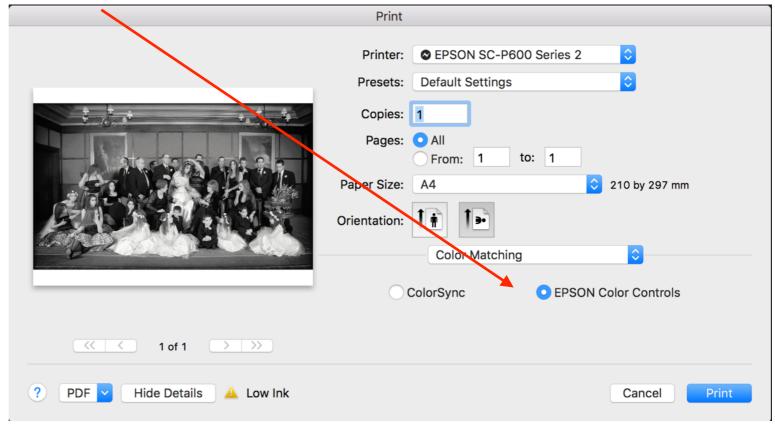
Type: AdvancedB&W Photo



Print

- Affinity Photo
- Select Color Matching

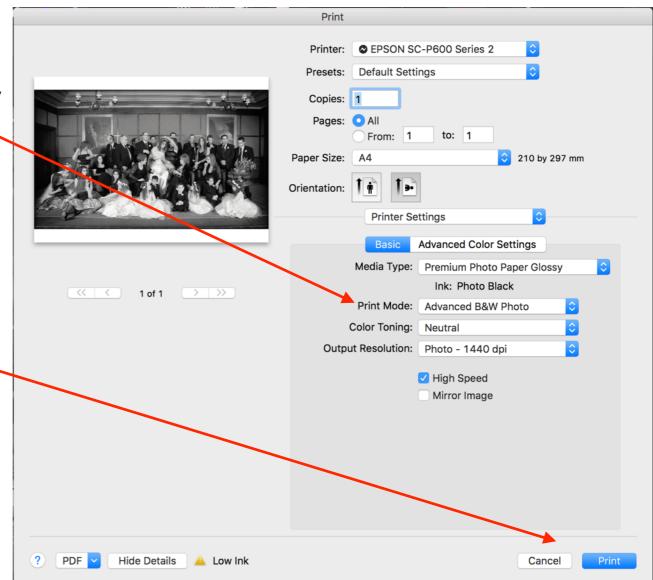
Epson Color Controls



Affinity Photo

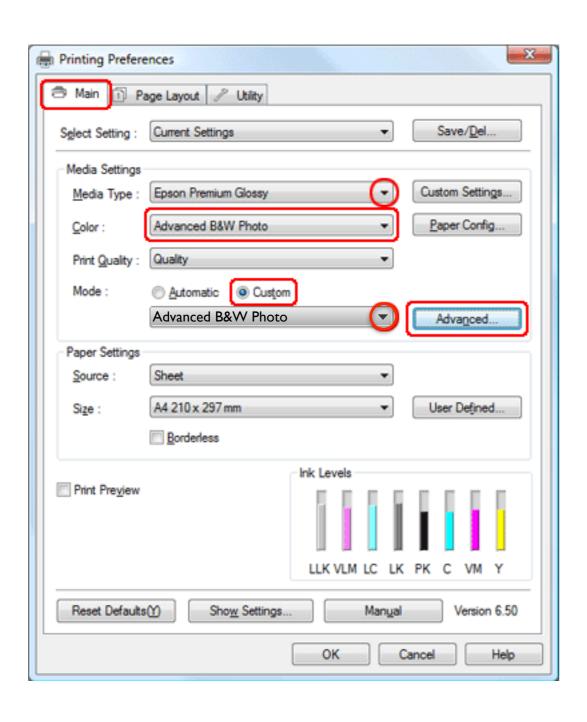
 Select Advanced B&W Photo

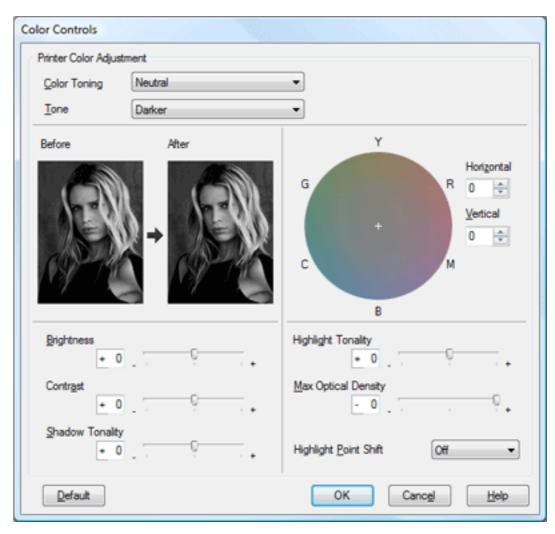
Print



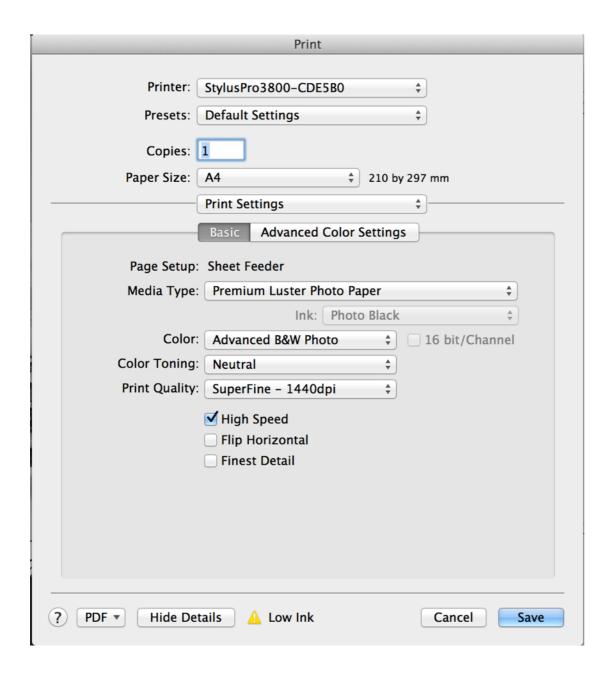
- The Advanced B&W feature also has the ability to tone images
- This is available in the Advanced feature of the driver

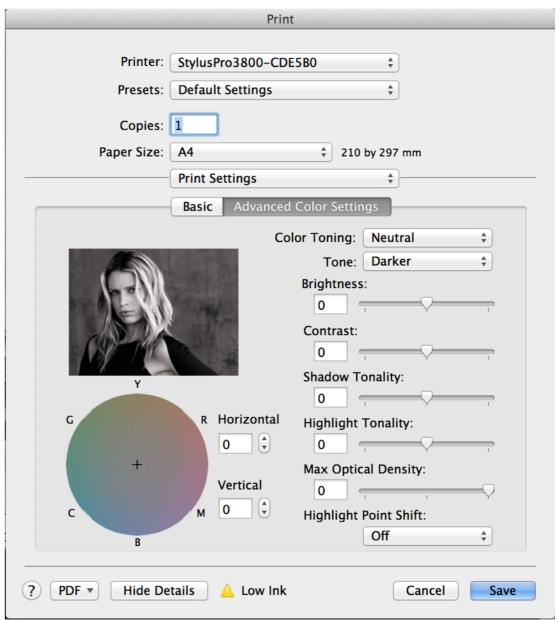
Windows





Mac OSX

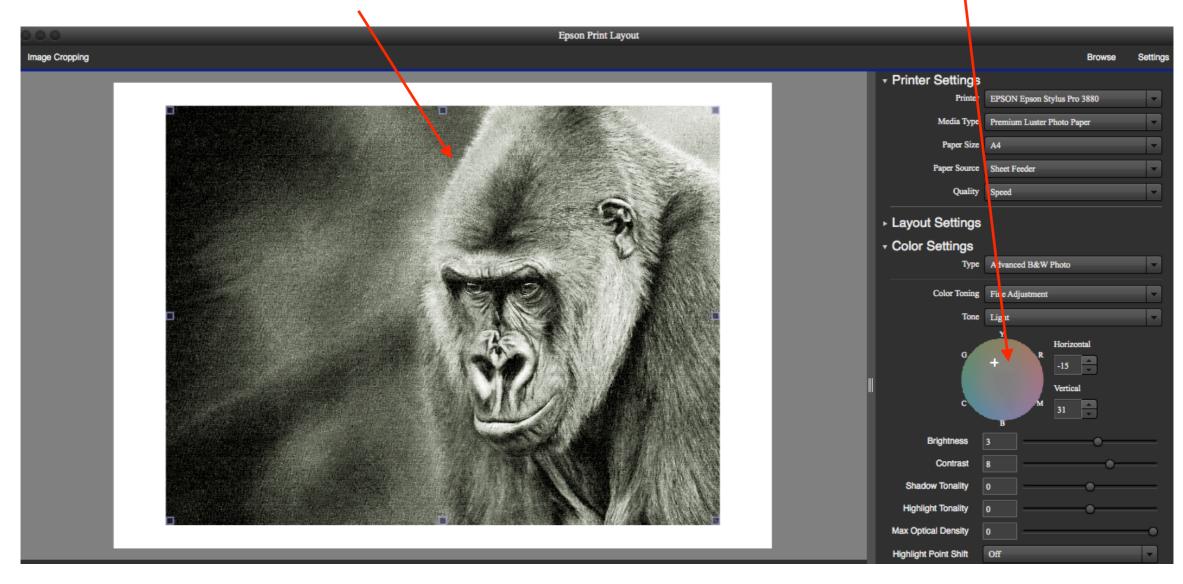




- The new Epson Print Layout Software has an additional feature
- The ability to preview any custom changes made your images in the preview window
- This is the only software that can do this at the time of writing this document

Live Preview

Image Toning



Conclusion

We hope this guide has helped you to understand the requirements for printing to Epson printers. As mentioned in the guide earlier, there is a wealth of information available on the internet as well as many good publications.

As updates to Operating Systems and Applications are made available we will also update this guide.

Please regularly check the Epson Australia Website for updates to Drivers, Firmware and Software to get the best from Epson products

EPSON EXCEED YOUR VISION

Thank You

Epson Applications and Training Specialist