

## INKJET PRINTING

### Factors Determining Quality

When printing photographic images using an inkjet printer there are a number of factors determining the quality of the output. The key ones to be aware of are:

- The image size and quality
- The paper quality
- The printer, ink and its settings

Learn to control these and you can ensure top quality prints every time.

### Image Size & Quality

The quality of an image held digitally on a computer is determined by the amount of information in the file. This is dictated to a large degree by the images resolution, which is measured in points per inch or ppi. As a very basic guide the higher the ppi the greater the resolution of the image and therefore the quality, assuming the size of the image remains the same. However once you reach a resolution of 300ppi there is little benefit to increasing the resolution further as this is sufficient to produce a photographic quality print. In fact you can produce high quality prints from images with a resolution as low as 240ppi but aim for 300ppi for photo quality.

The next factor determining image quality is the dimension of the image you want to produce. If you want to make a print at 15" x 10" then your digital image should have those dimensions also. Yes I know most image editing software will allow you scale an image to make it larger, but this won't actually improve matters. If the image file does not contain sufficient information to produce an image of the required dimensions then scaling it will not make the information magically appear. Practically speaking you can increase the dimensions of an image by about 30% before you start to hit problems.

If you really need to scale an image up in size by more than 30% I suggest you look at specialist software packages designed to do this rather than rely on your image editing software. Genuine Fractals is one that does a very good job of scaling images by 100% or more without apparent loss of detail and works as a plug-in for Photoshop. If you want to try it out before committing your money you can download an evaluation copy from the Internet.

The final factor to consider is the file format used to hold the digital image. These really fall into two categories, compressed and uncompressed. Common file formats that you will encounter are JPG, which is a compressed file and TIFF, which is an uncompressed format. The benefit of the compressed format is that the file size is much smaller however the downside is that there is a loss of image quality due to the compression. The greater the compression used the lower the image quality. Personally I hold all my digital images using the TIFF format as this provides me with the best quality and greatest level of flexibility.

To summarise then:

1. Ensure the file you are printing from has been scanned at 300ppi
2. Ensure the dimensions of the image match your intended print size
3. Try to hold your images as TIFF files

### Paper Quality

The most important point here is that if you don't print on photographic inkjet paper you won't achieve high quality prints. There are a number of choices of inkjet photographic paper including all the printer manufacturers. If you buy the paper produced by your printer manufacturer you won't go far wrong however such papers also tends to be expensive. It is therefore also worthwhile considering 3<sup>rd</sup> party brands such as Olmec and Ilford. My own

personal choice is the Ilford Galerie instant dry which produces good photographic images and also appears to be waterproof. Another nice touch is that Ilford include information with their papers about how to set up your printer for the best results.

When deciding on which paper to buy you should also consider whether you want a matt or a gloss finish. Matt finishes tend not to be quite as bright as the gloss papers, but gloss reflects a lot of light and with larger images the reflections can be very distracting, especially if framed behind glass.

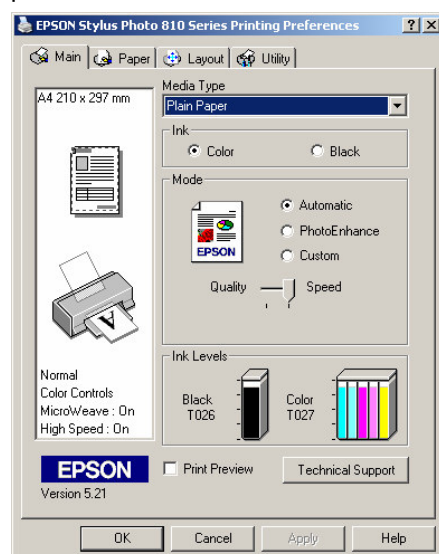
The other factor to consider with paper is the weight. The weight is measured in grams per square meter of paper, which is abbreviated to  $\text{g/m}^2$ . Heavier papers tend to be better quality and feel much more like a real photograph. Ideally aim for papers with a weight of  $240 \text{ g/m}^2$  or more however once you reach around  $300 \text{ g/m}^2$  the paper is becoming much more like card and can be difficult for some printers to handle.

## **Printer, Ink & Settings**

Starting with the choice of ink then. If in doubt use the ink manufactured by the same company that makes your printer i.e. Epson ink for an Epson printer. In the past I have tried inks manufactured by other companies and initially they looked fine. A few months later however and they have either faded or the colours have begun to bleed into each other; neither scenario is acceptable. The exception to this rule is the specialist ink made for the photographic market although these tend to also be very expensive. If you don't want to take a chance with your ink and printer but require a high quality output that will last, many photo labs also now accept and print from digital files, often to large sizes. Whilst this can be more expensive than producing your own prints, professionally printed images often have a life expectancy beyond that of a traditional photograph.

At this point I will assume that you already have an inkjet printer that you will be using to print your images. Most inkjets are capable of printing at very high resolution however many people mistakenly print at this default setting which is often as low as 360ppi. If you want to produce a high quality print you need to be printing at 1440ppi or more. The downside is that such high-resolution prints take much longer to produce.

The remainder of this article will explain how to make a few necessary adjustments to your printer software so that you can ensure a much better quality of print. The examples are taken using an Epson Stylus Photo 810 however the principles can be applied to most printers.

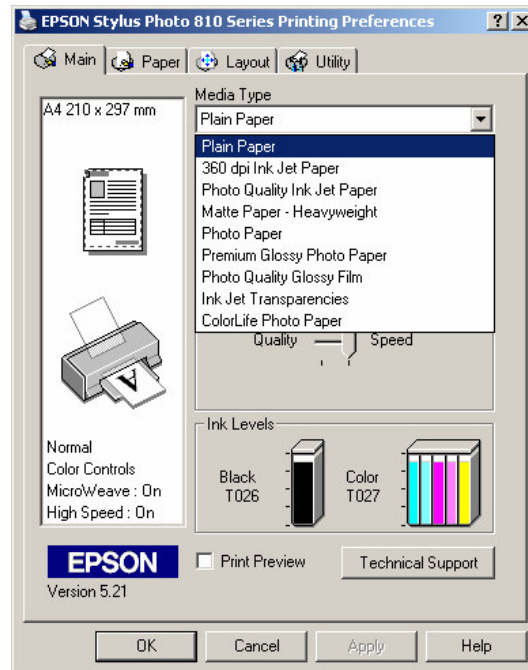


The first rule to remember is that every time you print an image you should check your printer settings. The dialog to the left shows the default settings for an Epson printer. Notice how the "Media Type" is set to plain paper and the "Mode" is set to automatic. Whilst this set up might give acceptable results for graphics such as charts being printed in documents it will not produce photographic images.

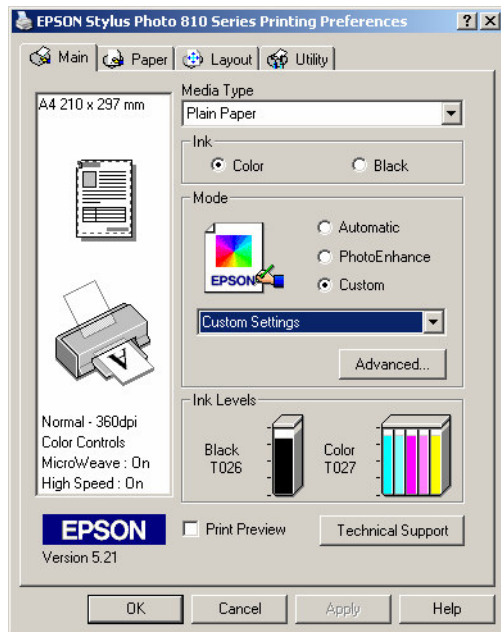
The first setting that needs to be changes is the "Media Type". If you select an incorrect media when printing you will end up with either too much or too little ink on the paper and the result will be a mess. Most printer software will provide for a number of different media types including some form of photo glossy inkjet paper. An example is shown below.

Aim to select a media type that appears to be close to the media you are using. Initially this might take a little bit of experimentation but it is worth the trouble. Alternatively read the packaging and any information that came with your paper. Ilford for example include an information sheet containing recommended printer settings that should be used to achieve best results.

The next option that needs to be set is the "Mode". On this Epson printer dialog there are 3 modes that can be selected. The first is "Automatic" which we have already discounted for our purposes. The second is "PhotoEnhance" which sounds as though it should be used to print photographic images. Whilst this is true, this mode fails to provide the level of control that you need to produce great prints. The third mode is "Custom" which when selected provides a drop down list

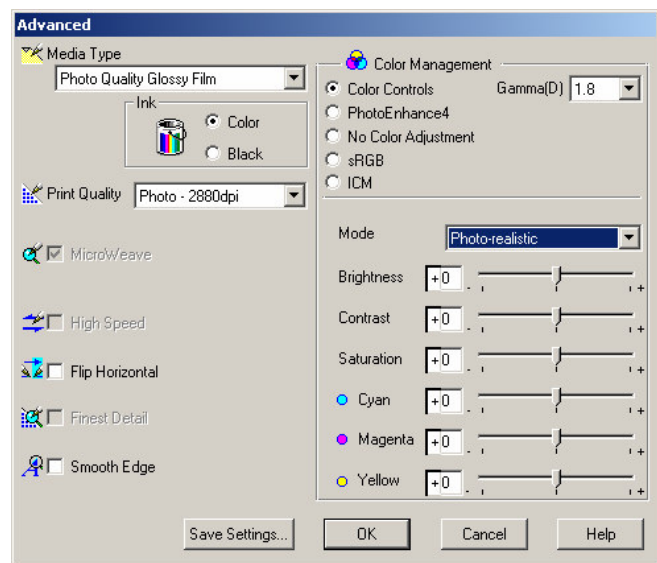


and an Advanced button. This can be seen in the next dialog.



The drop down list provides easy access to custom settings that have previously been created and saved. To create a custom setting the advanced button is used. Whilst your own printer dialog may not be the same (especially if you are not using an Epson printer) it will almost certainly provide some way to access the more advanced features of the printer and thereby provide you with full control of the settings.

Selecting the advanced button in the above dialog causes a further dialog to be displayed which can be used to set the "Media Type", the "Print Quality" and the "Colour Management". I would recommend that you select a suitably high print quality but don't change the "Colour Management" settings unless you understand what these do or want to experiment.



Equally if you are using a quality branded photo paper (as you should be), many manufacturers include a printing recommendations sheet. This provides a useful starting point to achieve quality prints using advanced printer controls. Notice that I say starting point

as I have sometimes achieved better results by modifying the recommended settings. For example I have found that Kodak papers often respond better to setting the "Media type" to "ColorLife" paper rather than the recommended "Premium Glossy Photo Paper".

Colour management is not discussed within this article but it's worth noting that changes to settings such as Brightness, Saturation and colours etc are best achieved with an image editing package such as Photoshop prior to printing.

Once you have created your printer settings you should save them for future use.

Having now configured the printer it's finally time to make the print.

Good Luck.