

# Choosing a Printer

Ian Whiting - 30/12/11

My inkjet printer has stopped working and I need to replace it. I looked at the specifications for appropriate models and drew up a list of costs. I thought this might be of interest to other members.

I have only looked at the two market leaders, Epson and Canon. I have used both manufacturers before and do not have a preference. I had an old cheap Epson printer that had three colour inks in one cartridge and was mainly used just for letters and text; this printer ran for about 12 years. My cheap Canon, used just for photos, had separate ink cartridges but only ran for about 6 years.

There are several things that you might want to look for in a printer. We will each have a different list of priorities

## Paper Size

A4 or A3 will be the normal decision. A4 printers take up less desk space. You need to ask yourself how often you will print an A3 sheet and would it be worth just sending those out to a print house.

## Quality

Photographic quality will probably be important to club members but for most of us I doubt we would notice much difference between the prints unless placed side by side, and even then how well the printer was profiled and the choice of paper would negate any real differences.

The marketing arms of each manufacturer will bamboozle you with dots/inch (dpi), 1 or 2 pl ink droplets, number of print heads and many other confusing terms. For instance they may claim 9,600 dpi whilst in practice you will be selecting 240 or 300 dpi. These high numbers have almost no correlation with reality and are calculated in the most misleading way possible. Generally there is very little discernable difference between comparable priced printers.

## Colour Inks

Printers always have the three colours; cyan, magenta and yellow, known by their initials **CMY**. In theory any colour can be made by mixing these three. Some have some additional colours, e.g. light cyan or red, for improved mixing.

I would expect that the more colour inks it has the better the gradation.

In addition the printer will have at least one black ink (known by the initials **Bk**) which is used for text and mixed for a purer "black" colour.

The cheapest printers may be using one cartridge containing all three CMY colour inks. This is fine if you use all three colours equally, but if one colour runs out before the other two you need to replace the whole cartridge, throwing away the remaining ink for the other two colours.

It is best to purchase a printer with separate cartridges for each colour, thus only replacing each individual colour as required. All printers listed in my table at the end use separate ink cartridges.

### **Black Inks**

The printer will come with one or more black inks; these are used on both colour prints and text, sometimes a different black for each. Some have two or three "shades" of black and greys to improve monochrome prints.

Some printers require you to swap the black ink cartridges depending upon the type of print or paper being used. This can be time consuming and will waste some ink; in one case 2.5 ml of ink is discharged in a swap, that is a lot from a 11 ml cartridge, you should consider this if you need to change papers regularly. Some printers hold both black cartridges so you do not need to remove and store a partly-used cartridge but it still uses some ink when automatically switching between blacks.

Often the black ink cartridges are larger than the colour inks. In my table below I have priced a typical colour ink cartridge.

### **Performance**

Usually the more expensive the printer the faster it will print an image. Whilst it is nice to have a print made quickly I do not print that many to worry about it.

### **Other Features**

Printers can have other features that you might find important, e.g. direct printing from your camera, a WiFi or LAN connection, an LCD screen, duplex printing, paper cartridges, roll sheet feeding, card and canvas prints, gloss ink. The one that I am particularly interested in was being able to print to a CD as I like to present attractively printed CD and DVDs of images to clients and friends.

### **Purchase Cost**

An important initial consideration, although running costs (see below) will probably be far more over the years, depending upon how many prints you make. If you make very few prints then purchase cost is important, if you print a lot of images then running costs will be the more important factor.

Also enquire about the amount of ink supplied with the printer. Do not assume the ink cartridges that come with your printer are full. Some printers only include cartridges with just enough ink to test it works, after which you have to purchase a whole new set of cartridges with a full complement of ink, which can sometimes be half the cost of the printer again.

### **Running Costs**

The most expensive part of a printer is the running cost. Ink is expensive. There are some things you can do to lessen the cost.

Shop around, buy from a cheap supplier. There are lots around, I often use [www.valueshop.co.uk](http://www.valueshop.co.uk).

Profile your monitor and printer and use the Photoshop PROOF SETUP and GAMUT WARNING features to create an acceptable print before printing. Before I profiled my printer ink/paper

combinations I was making maybe 5 test prints before I achieved an acceptable print. Typically I now create an image that looks good on my screen, then using PROOF SETUP, I add one curves adjustment layer to adjust the image for the printer. I can turn this layer on or off depending upon whether I am creating an image for the screen or printer. When sending images to a specialist outside printer, e.g. DSCL, download their profile and PROOF to that.

Print smaller pictures. That may seem obvious but if you are into trailing prints before printing the final, large image try printing a small example, section of a page until you get the right settings. Using Photoshop you can move the trial section to another part of the page and re-use the same sheet. This was a normal procedure in the dark room where a graduated filter was placed over the paper so that different exposure stops could be evaluated in one go.

I am told that glossy paper uses more ink than matt

Cartridges for different printer models contain differing amounts of ink. When comparing printers I looked at how much ink each cartridge held and a typical, average cost of an original ink from a cheap supplier. I could then compare the cost per ml. This is not 100% comparable as different printers waste more ink in cleaning cycles and need cleaning more often depending upon use and rest periods. The world is full of myths about these factors.

### **Compatible Inks**

Try compatible inks which can be 60 to 80% cheaper than the original. I have used the compatible JetTec brand and have been happy with it. There may be better ones around, I have no experience of them.

Some compatible ink cartridges contain more ink than the original, e.g. the JetTec cartridge equivalent for the Canon CLI-521Y has 11ml of ink as opposed to 9ml in the Canon cartridge. The supplier [www.valueshop.co.uk](http://www.valueshop.co.uk) lists the quantity in most of their cartridges.

I was unable to tell the difference between a Canon ink and JetTec ink.

Using a third party ink may negate the printer warranty. I tend to stay with the original ink cartridges for a few months then switch to compatibles. NB you will need to re-profile the printer whenever you change to a new ink or paper combination.

Some people believe that a third-party ink clogged their printer head and broke the printer. I used third-party inks (usually JetTec) in the Epson printer most of the time and they never gave me any problems. I also used JetTec inks in my Canon printer and the cyan head failed; however the cyan head was giving me intermittent problems (it could not see any cyan cartridge and I had to remove it and put it back in) whilst I was still only using Canon inks so I doubt I can blame the ink.

Refill cartridges. You can buy large bottles of ink and inject ink back into an empty cartridge. This saves money but can be a messy business. I have no idea how well or often cartridges can be re-used.

Switch to a continuous ink system. This means buying bottles of ink and feeding this, via a tube, to each print head. Not all printers can be converted to this system. Large volume print shops tend to use this.

### **Mixed Suppliers**

Manufacturers will, obviously, implore you to only purchase their original inks and papers. There probably are some advantages to this but they are likely to be less important than claimed. Most professional photographers choose papers from other manufacturers, e.g. Hahnemühle, Ilford, Kodak, Permajet) that they trust and have experience with.

### **Longevity**

Some ink/paper combinations are claimed to last for up to 300 years when kept in the dark, e.g. in an album. There is some real truth to these claims, especially for the archival, acid-free papers. I do know some prints can fade very quickly if left out in the open or in sunshine with no UV glass.

I have no idea whether a compatible ink would last any less time than an original ink. You can believe the marketing claims or not.

### **Table**

I drew up a table of costs using best prices after a quick search of the Internet. It may be of interest to you, I hope all the facts are correct, please check any that are important to you. These were taken at the end of December 2011, I don't doubt it will go quickly out of date.

## A3

		Purchase £	Inks							Example code	Compat ink avail	Print CD	
			Colour	Black	Gloss / clear	Total	Carts ml	Carts £	£ / ml				
Epson	1400	230	5	1	0	6	13	11.40	0.88	T0794		CD	WiFi
	R2000	420	5	2	1	8	17	14.00	0.82	T1594		CD	WiFi
	R3000	520	5	4	0	8	26	22.00	0.85	T1574		CD	WiFi. Auto switch 2 blacks
	R2880	430	6	4	0	8	11	10.00	0.91	T0964		CD	
	Pro 3880	1158	5	4		9	80	42.35	0.53	T580400			A2+ printer, auto switch 2 blacks
Canon	6550	165	3	2	0	5	9	8.80	0.98	CLI-526Y	Yes		
	7000	334	3	2	1	6	14	9.30	0.66	PGI-9Y			
	9000 MKII	380	7	1	0	8	13	11.00	0.85	CLI-8Y	Yes	CD	
	9500 MkII	650	8	2	0	10	14	9.30	0.66	PGI-9Y		CD	The 8 colours inc 1 grey

## A4

Epson	P50	110	5	1	0	6	13	8.00	0.62	T080440	Yes	CD	
	R800	220	5	2	1	8	13	13.40	1.03	T054440	Yes		
Canon	iP3600	57	3	2	0	5	9	8.50	0.94	CLI-521Y	Yes		
	iP4850	80	3	2	0	5	9	8.80	0.98	CLI-526Y	Yes	CD	
	iP4950	65	3	2	0	5	9	8.80	0.98	CLI-526Y	Yes	CD	