

**Group test:** budget colour ink-jet printers

The print quality of budget ink-jet printers is getting higher while the prices are falling every month. Which one deserves your attention?

**Tony Browne** takes a look

# Picture **perfect** **printing**

**A**s long as we use computers we will need printers, but which one is the best if you're on a tight budget? Ink-jets are ideal for a small business or in the home – not only can they print in photo-quality colour, but they can also print on many types of media including card, banner paper, transparencies and envelopes.

In this month's group test, we review seven budget colour ink-jets to find out which one offers the best printing quality, speed and value for money.

Our standard printer benchmarks are carried out using a PIII 500 PC with 128MB of RAM and a 10GB hard drive. We use a mixture of programs including MS Word, CorelDRAW and MS PowerPoint.

For the first two tests, we use Word with the printers on their default settings. We load a standard five page document and print it, timing from when we clicked Print on the print dialog box until the last printed page hits the paper tray. Next, we print out a single page document, five times.

We then go on to look at the quality of the text and images produced.

Our third test involves printing a bitmap image on plain paper. We load a file into a graphics editor and then enlarge the image by 200 per cent. Again, this is printed at the default setting of the printer. For our fourth test, we choose a picture that is around 4MB in size to test photo-quality printing. This is printed at the maximum resolution of the printer on to photo-quality ink-jet paper.

The last two tests are based on vector graphics and presentation slide printing. In test five we print out a picture of a train using CorelDRAW, and in test six we use PowerPoint to print out a presentation slide. Again these are both printed using default settings. You can see the results of these tests on page 92.

As our group test shows, ink-jet printing is improving all the time: printing times are decreasing, cartridges are easier to load, ink nozzles are smaller and more accurate, and ink technology is being developed all the time. All this adds up to high-quality printing at a price which is well within the reach of most people.

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## WHAT'S THE DIFFERENCE?

## Paper, paper, everywhere!

*To use an ink-jet printer you'll need paper, but which type?*

**L**ook around you and you'll probably spot lots of different types of paper – daily newspapers and magazines are two common examples. Although both predominantly use black text on a white page, the two mediums have totally different properties, with paper specially designed for each task.

Newspapers have a shorter life span than magazines, use rougher paper and cost a fraction of the price. Magazine covers need to be attractive for longer and they often have a glossy look to make them eye-catching.

Choosing the right paper for an ink-jet printing task is an absolute must. Plain paper is mainly used for printing out text-based documents using an ink-jet printer's black ink

cartridge. A good example of this is the paper used in photocopiers. This is fine for, say, a memo or an Internet page, but you may need to upgrade to letter quality paper if presentation is a concern.

Ink-jet paper is specially designed to bring out the best in high-quality images. The shine is created by a coated resin that helps improve the image quality. This paper can produce prints that almost match traditionally produced photographs.

Both types of paper come in different weights, acidities and opacities and choosing the wrong type could damage your print's image quality and its life expectancy. When choosing paper for your printer, always look at the manufacturer's recommendations.

## CANON



£93

## BJC-2000

**We weren't impressed by this mighty midget, despite it doubling up as a 360dpi scanner**

■ PRICE £93 ■ EX VAT £79 ■ SUPPLIER Canon UK ■ PHONE 0121 680 8062 ■ WWW www.canon.co.uk

## PRINTER SPEEDS

## The fastest ink-jet in the west

*Some ink-jet printers are traditionally labelled as 'slow' but not this beast*

**T**ink-jets are normally thought of as slow, especially compared with laser printers. However, professional ink-jets can produce some impressive performance figures. Take the Tally T3016 which, at the time of writing, is the world's fastest business ink-jet. This revolutionary printer combines a maximum resolution of 360dpi ink-jet quality with exceptional 16 pages per minute (2,000 characters-per-second) performance. What's more, it has a cost per page of around 0.3p, which compares favourably with the budget ink-jet printers reviewed here.

The key to the success of the T3016 is its print-head design. Two 128-nozzle print-heads, each with a life of some three billion characters, use specially formulated ink from easy to change cartridges, each capable of delivering around 40 million characters. The T3016 has a workload capacity of 60,000 pages per month and it can effortlessly handle both continuous forms and cut-sheet media. Impressive statistics for certain, but at nearly £3000, you're going to need spectacularly deep pockets.



The T3016 provides fast printing and flexible paper handling.

**T**he BJC-2000 is an entry-level printer from Canon's vast colour range, which is well known for using bubble jet technology. The first impression of this printer is that it is a lot smaller than the rest. It's also the lightest printer here, by a long margin.

The Canon is a bit sparse looking, mainly because there's only one button (which feeds in paper) and you have to select paper options via a switch on the print-head. Rather strangely, this printer is missing power LEDs or buttons, so you might have trouble working out if it's on or off – we resorted to lifting the cartridge lid, just to make sure. Lifting the lid results in the print-head moving to the middle, revealing that this printer only takes one ink cartridge.

Canon is often a maverick when it comes to cartridge technology and this model is no different. The BJC-2000 cartridges are small so you'll be changing them quite often if you're a heavy-duty user. There's also a confusing array of cartridge options available. We were sent a BC-21e cartridge, which is a mixture of coloured and black ink for text and an optional BC-22e which is for colour photo printing only. You can also get optional black, fluorescent and scanner cartridges. The latter enables you to scan documents into your PC at up to 360dpi, and costs £58.

The BJC-2000 can take a variety of print media such as over-head film, envelopes and even banner paper. That said, the paper handling facilities are not as well developed as some of the other printers on test here.

When printing using the standard BC-21e cartridge, the BJC-2000 isn't the quickest off the block. Text ink colouring wasn't sufficiently dark enough for our liking and photo-type prints weren't sharp.

The documentation supplied is poor – maybe Canon feels that this printer is so simple and user-friendly that no one needs decent manuals.

## PC Plus

## VERDICT

## CANON BJC-2000

**For Small footprint, scanning option  
Against Relatively poor print quality  
and paper handling**

|                                 |   |
|---------------------------------|---|
| Design and paper handling ..... | 6 |
| Print quality .....             | 6 |
| Speed and memory .....          | 6 |
| Costs and maintenance .....     | 7 |
| Documentation .....             | 6 |
| Value for money .....           | 8 |

7/10

**PC Plus****EPSON****£139****STYLUS COLOR 760**

Epson has a good reputation as a printer manufacturer. How does this model fare?

■ PRICE £139 ■ EX VAT £118 ■ SUPPLIER Epson ■ PHONE 0800 220 546 ■ WWW www.epson.co.uk

**E**pson has a well deserved reputation when it comes to producing printers, and the Epson Stylus Color 760 is a mid-range model with some neat features. For a start, it follows the latest computing trend by producing a range of iMac colours, though it's also available in off-white. It includes support for USB or parallel connection which makes installation easy.

Instead of using thermal ink-jet or bubble jet technology, Epson's ink-jet printers use Micro Piezo technology. This is based on specially designed print-heads, which contain a number of tiny pumps powered by the Piezo crystals. Epson claims that this approach gives better control over ink placement and, therefore, improves the overall standard of printing.

When it came to styling the Stylus Color 760, Epson shunned chic and opted for functionality. This does have its advantages – for example, the wide, coloured lid helps when inserting ink cartridges. After loading the cartridges, you'll need to charge them on first use. This is something that seems unique to Epson but it's simple to do.

Testing went well. The Stylus Color 760 is quiet, the build quality is good and the paper compares well with others in this group test. It produced plain text lettering reasonably quickly and the text quality was so dark it could easily pass for that of a laser printer. In our five page document test, the Stylus Color 760 was joint fastest with the Tally T7080, completing it in 1 minute 39 seconds. Meanwhile, the colour test results were excellent during reproduction at both high and low quality settings. We couldn't fault the clear documentation supplied with the printer, either.

Epson is generous with its software. With the Stylus Color 760 you get Epson's Print Adventure; some Epson branded ink-jet paper; and Adobe's PhotoDeluxe 3.1, an imaging program that enables photos to be enhanced using filters.

**PC Plus****VERDICT****EPSON STYLUS COLOR 760**

*For Unusual range of colours, decent printing ability, cheap running costs*

**Against Slightly large footprint**

*Design and paper handling.....9*

*Print quality .....8*

*Speed and memory.....8*

*Costs and maintenance.....9*

*Documentation .....7*

*Value for money.....8*

**9/10****HEWLETT-PACKARD****£99****DESKJET 840C**

One of the cheaper printers in our test. Will it win a Value Award?

■ PRICE £99 ■ EX VAT £84 ■ SUPPLIER HP UK ■ PHONE 0990 474747 ■ WWW www.hp.com/uk

**T**he cheaper of our two Hewlett-Packard Deskjets is the 840C, which looks very similar to the discontinued HP Deskjet 710C. The 840C is available in two tone beige and grey and the overall design of this printer is slightly different to the Deskjet 710C.

There is no print job cancel button on this model which means that deleting a printing task can take an age when compared with the HP Deskjet 930C, overleaf, which comes with a print cancel button. It does have drying flaps, though, which neatly hold printed output for a few seconds after printing. This feature is impressive for a budget ink-jet.

Remarkably at this price, the Deskjet 840C shares the ability to use a USB port and the facility to get rid of paper jams by removing a section at the back of the printer. This is a great idea, which seems to be an HP speciality at the moment. The Deskjet 840C and the Tally are the only printers here which get their paper from the front and then send it back from the same place. Unfortunately, these paper flaps don't fold so you lose more desktop space.

Setting up this Deskjet 840C is easy. There are two A3 sized instruction sheets which are slightly confusing but the software installation is sweet and the instruction booklet is excellent. The driver doesn't have as many advanced features as some of the other printers but it does the job.

This printer was a lot slower than some of the others in this group test. For example, it took nearly twice as long completing our high-quality photo print test compared with the Deskjet 930C. However, comparing the Deskjet 830C results with the other sub £100 printers in our test – the Lexmark Z31 and Canon BJC2000 – it came out favourably. In both of the text benchmarks the Deskjet 840C was the winner because its text printing was dark black and well defined, whereas Canon's printouts were quite light and the Lexmark Z31 was prone to the odd smudge. Of the three, the Deskjet 840C gets our vote for its good print quality and low running costs.

**PC Plus****VERDICT****HP DESKJET 840C**

*For USB equipped, neat paper jam pull out section*

**Against Slow, big footprint**

*Design and paper handling.....8*

*Print quality .....7*

*Speed and memory.....7*

*Costs and maintenance.....7*

*Documentation .....7*

*Value for money.....8*

**7/10**

**HEWLETT-PACKARD****£149****DESKJET 930C**

**The Deskjet 930C neatly complements HP's computer range in colour and build quality**

■ PRICE £149 ■ EX VAT £127 ■ SUPPLIER HP UK ■ PHONE 0990 474 747 ■ WWW www.hp.com/uk

**H**ewlett-Packard's mid-range ink-jet printer is the Deskjet 930C. The Deskjet 930C is grey, matching HP's Pavilion range of desktop PCs. Along with the Deskjet 840C, Lexmark Z51 and Epson Stylus Color 760, the Deskjet 930C has a USB connector. This printer also has a neat paper jam tray at the back which can be released by a big plastic thumbscrew. Fortunately, we never had to test this feature but the other printer manufacturers featured here should take note.

While we're on the subject of paper handling, the neatly designed in/out paper trays cleverly fold up, saving space. They can also handle the class average of 100 sheets of plain A4. Furthermore, the Deskjet 930C is one of the few printers here that doesn't throw its paper output on the floor – and this is despite the paper trays being rather flimsy. We are glad to report that the rest of the printer is built to HP's usual high standards.

Like the other HP printer reviewed here, the Deskjet 930C has a quoted maximum resolution – this is 2,400 x 1,200dpi. This is the highest in the group and the performance of this printer in our tests was, indeed, far from tardy. Although it was only the fourth fastest printer to complete the five page document test, overall we were impressed with the 930C's speed and quietness in our six tests.

The Deskjet 930C boasts HP's PhotoRet III image enhancement technology for great quality colour printing. Judging from the fine results in our tests this system seems to work well. However, while printing photo-quality images, there was a 1cm band at the top of the page that was clearer than the rest. Funnily enough, text, bitmap and vector images weren't affected by this problem. Included in this package is an excellent manual but there's no additional software, which is slightly off-putting.

All-in-all, we would say that the Deskjet 930C has an edge when it comes to both printing quality and build over the Lexmark Z51. The system is also cheap to run and maintain.

**PC Plus****VERDICT****HP DESKJET 930C**

*For Lots of memory, good build quality, paper handling*

*Against Flimsy paper trays*

|                                       |          |
|---------------------------------------|----------|
| <i>Design and paper handling.....</i> | <i>8</i> |
| <i>Print quality .....</i>            | <i>7</i> |
| <i>Speed &amp; memory .....</i>       | <i>8</i> |
| <i>Costs &amp; maintenance .....</i>  | <i>7</i> |
| <i>Documentation .....</i>            | <i>8</i> |
| <i>Value for money .....</i>          | <i>7</i> |

**8/10****LEXMARK****£99****Z31**

**How does Lexmark's cheaper model compare with the Canon BJC-2000 and HP Deskjet 840C?**

■ PRICE £99 ■ EX VAT £84 ■ SUPPLIER Lexmark ■ PHONE 01628 481 500 ■ WWW www.lexmark.co.uk

**T**he Color Jetprinter Z31 has a large, curvy appearance and feels a little insubstantial in places – especially its weak bottom paper tray. We quickly found during our tests that this tray really is much too flimsy to even hold a single piece of paper (yes, it's true) and the prints that we created regularly ended up on the floor. You might think that this is excusable because of its low price, but there are similarly priced printers that have better paper handling than this.

Installing this printer is simple. Although the software setup is different from that of its bigger brother, it's just as easy to set up. As you might expect, this printer uses Lexmark's well-proven software driver system that speaks to you in an enthusiastic American voice. This facility also tells you when you're running low on ink and if you have any paper problems. If you find the voice a bit annoying, it is possible to switch it off.

Documentation supplied with this Lexmark is good. There's a fold-out setting up guide, a small book for the driver installation and a large user manual. We were disappointed that Lexmark chose not supply any other software except for the drivers.

Performance-wise, we found the Color Jetprinter Z31 a bit lacking. The quality of prints wasn't the best: the text was dark and slightly smudged on the first page of our repeat test; and colour output during the our photo-quality print was too dark. This spoils the overall effect of the picture. Output during bitmap, vector graphics and presentation slide printing was, on the other hand, more acceptable.

If you are thinking about buying this printer, you need to consider how it compares with the Hewlett-Packard Deskjet 840C and the Canon BJC-2000, both of which come in under £100. The Deskjet 840C and the Color Jetprinter Z31 were most closely matched when it came to speed and paper handling, but the Hewlett-Packard had the better print quality and USB, giving it the edge.

**PC Plus****VERDICT****LEXMARK Z31**

*For Decent quality prints for the money, good documentation*

*Against Poor paper handling, high*

|                                       |          |
|---------------------------------------|----------|
| <i>printing costs, slow speed</i>     |          |
| <i>Design and paper handling.....</i> | <i>6</i> |
| <i>Print quality .....</i>            | <i>7</i> |
| <i>Speed and memory .....</i>         | <i>7</i> |
| <i>Costs and maintenance .....</i>    | <i>6</i> |
| <i>Documentation .....</i>            | <i>8</i> |
| <i>Value for money .....</i>          | <i>6</i> |

**6/10**

**PC Plus****LEXMARK****£159****Z51**

**No, it's not the Z31 again, it's an identical looking Lexmark Z51, equipped with USB**

■ PRICE £159 ■ EX VAT £135 ■ SUPPLIER Lexmark ■ PHONE 01628 481 500 ■ WWW www.lexmark.co.uk

**T**he second of our two Lexmark printers is the Color Jetprinter Z51, which shares a lot of characteristics with the Z31. Their technical specifications are similar, though the Z51 is USB enabled and better equipped at paper-handling – when printing on transparencies, for example, the paper doesn't fall off the bottom tray.

On the Z51, all of the paper trays neatly fold into the main body of the printer. These are well engineered, if a little flimsy, but they do save you space on your desktop. This could be important because the Z51, like a lot of the other printers here, isn't the smallest of printers. It also uses Lexmark's Accu-Feed technology and high-resolution cartridges that can print at more than 1.44 million dots per square inch.

Setting up and inserting the cartridges is easy. We noticed that the driver is different to the Z31. It has more options, as you would expect from the more expensive model, such as a choice of half toning.

Documentation is excellent – you get a quick starting guide plus a proper user's guide. Both are clearly written and the quality of the diagrams is good.

While printing, there were occasions when there was a large pause before the printer returned control to the user. Occasionally this was just a few seconds but during the high-quality photo print it was a lengthy two minutes. We felt this was an unacceptably long time. The quality of the printouts were hard to fault: the black text seemed to gleam when printed, and the quality of the colours on the photo print were rich and vibrant. You also get CorelDRAW Print House Magic 4.0 software, thrown in for free.

At £159, Lexmark's ink-jet should be compared with our two other more expensive printers in the test: the Epson Color Stylus and the Tally T7080. Judging them feature for feature, the Epson and Lexmark are both well matched, but the Epson has better quality printing, is faster at producing its output and it costs a few pounds less.

**PC Plus****VERDICT****LEXMARK Z51**

*For Good quality prints, well engineered paper trays*  
**Against Flimsy, slow return of control to user**  
 Design and paper handling.....8  
 Print quality .....8  
 Speed and memory.....7  
 Costs and maintenance.....6  
 Documentation .....8  
 Value for money.....7

**7/10****TALLY****£145****T7080**

**This L-shaped printer can be positioned two ways on your desk**

■ PRICE £145 ■ EX VAT £123 ■ SUPPLIER Tally UK Ltd ■ PHONE 0800 525 318 ■ WWW www.tally.co.uk

**T**ally isn't a name normally associated with ink-jet printers but the T7080 has recently joined the congested marketplace.

One of the most interesting features of this L-shaped printer is that it has a choice of two positions – vertical and horizontal. This innovation, according to Tally, saves space on your desktop. However, in either orientation, we felt that the model was bulky and old-fashioned looking.

Setting up the printer was a game of two halves. In the first, it all seems so easy – the colour and black and white cartridges vary in size so it's easy to load them in the correct way. The top sheet feeder also clips in positively. However, getting the bottom paper holder to work when the printer is in vertical mode is frustrating.

Additionally, the driver software installation is confusing. There's no auto-run install or setup.exe files, so you are forced to reboot and then look for the drivers by pointing the computer at the right directory. The documentation explaining this set up procedure is very poor and there are no diagrams or screenshots to help you out.

The printer looks cheap and the design isn't particularly pleasing on the eye. It also made a lot of loud cracking noises when we performed simple tasks such as clipping in paper holders. The buttons felt a bit flimsy, too.

When it came to printing, the Tally T7080 pretty much redeemed itself. The only piece of software supplied with this printer were the drivers and they worked fine. Its interface wasn't as user-friendly as the Epson Stylus Color 760 and Lexmark Z31, but it did have more features than the latter. Specification figures such as 2MB of memory and a maximum resolution of 1,200 x 1,200dpi helped the Tally produce some good results in our text printing tests. The photo-quality output wasn't far short of the Epson's when it came to reproduction, but the T8070 might not be for you if you want quick vector printing.

**PC Plus****VERDICT****TALLY T7080**

*For Decent prints, new two-way orientation idea*  
**Against Build quality seems substandard, very slow when printing images**  
 Design and paper handling.....7  
 Print quality .....7  
 Speed and memory.....6  
 Costs and maintenance.....7  
 Documentation .....6  
 Value for money.....6

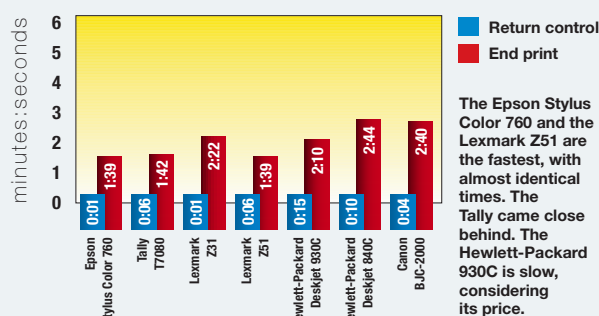
**6/10**



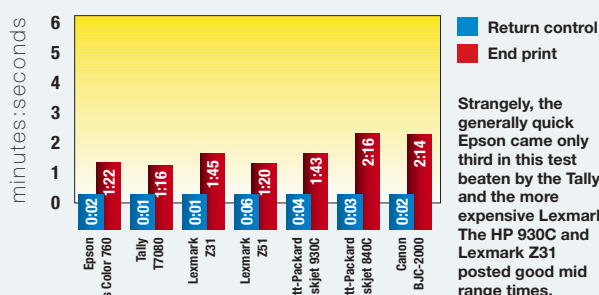
# PC Plus Test Results

We tested our ink-jet printers by running everyday tests such as printing text and images using well-known software such as MS Word, CorelDRAW and MS PowerPoint. Both the end of print and return of control time to the user are recorded and these are represented below by our six graphs

A FIVE PAGE DOCUMENT (TIME)



FIVE PAGE DOCUMENT (REPEAT)



BITMAP PRINTING ON PLAIN PAPER

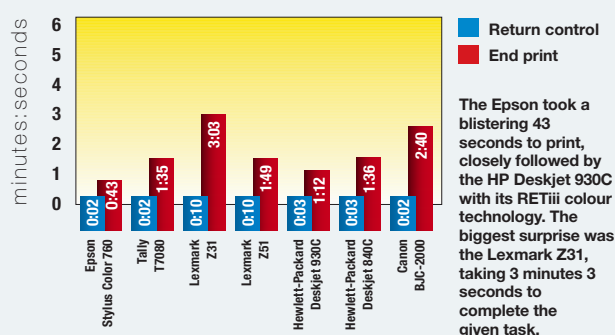
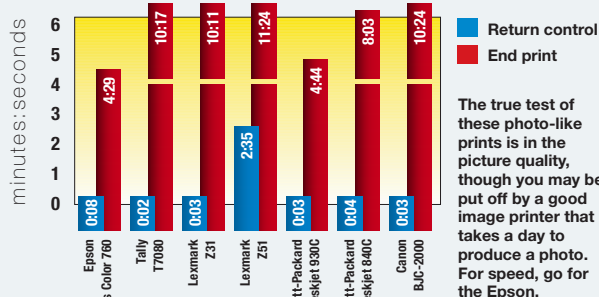
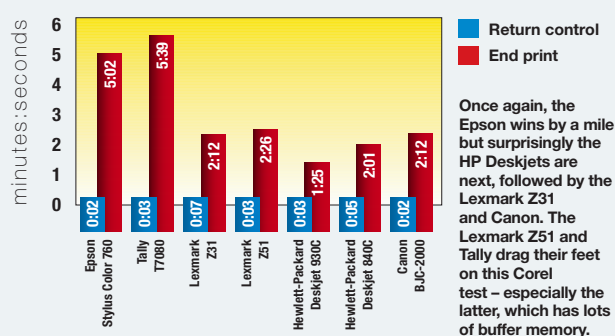


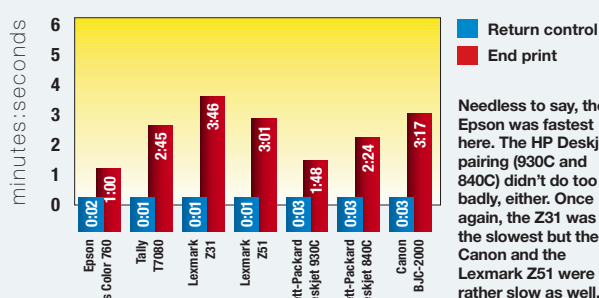
PHOTO-QUALITY PRINTING



VECTOR GRAPHICS PRINTING



PRESENTATION SLIDE PRINTING



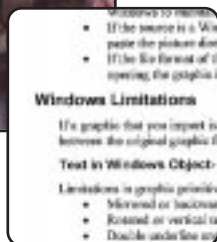


## PC PLUS PRODUCT FACTS

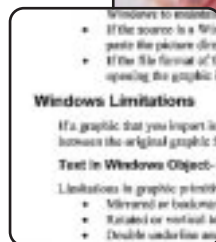
| Model Name                           | BJC-2000              | Stylus Color 760                        | Deskjet 840C           |
|--------------------------------------|-----------------------|-----------------------------------------|------------------------|
| Supplier                             | Canon                 | Epson                                   | Hewlett-Packard        |
| Telephone number                     | 0121 680 8062         | 0800 220 546                            | 0990 474 747           |
| Price                                | £93 (£79 ex VAT)      | £139 (£118 ex VAT)                      | £99 (£84 ex VAT)       |
| Price of head/ink cartridges inc VAT |                       |                                         |                        |
| Black                                | £11.75 for a 3 pack   | £18.44                                  | £25.73                 |
| Colour                               | £17.63 for a 3 pack   | £18.44                                  | £28.20                 |
| Yield of ink cartridge/tank          |                       |                                         |                        |
| A4 5% black                          | 225                   | 900                                     | 495                    |
| 15% colour                           | 100                   | 300                                     | 430                    |
| Cost per page                        |                       |                                         |                        |
| A4 5% black b -20% p - 80% p         | a - 1p b - 8p c - 30p | a - 2p b - 8p c - 33p                   | a - 5p b - 12p c - 47p |
| Warranty                             | 1 year on site        | 1 year repair or replace                | 1 year RTB             |
| Technology                           | Bubble jet            | Piezo ink-jet                           | Thermal Ink-jet        |
| Maximum resolution dpi               | up to 720 x 360       | 1,440 x 720                             | up to 600 x 1,200      |
| Claimed top speed colour - B and W   | 2ppm - 4.5ppm         | 6.8ppm - 7ppm                           | 3.1ppm - 4.6ppm        |
| Interfaces                           | Parallel              | Parallel and USB                        | Parallel and USB       |
| Maximum paper size                   | A4/A5                 | A4                                      | A4                     |
| Maximum paper weight (GSM)           | 75                    | 64                                      | 200                    |
| Paper tray capacity (sheets)         | 50 A4 sheets          | 100 A4 sheets                           | 100 A4 sheets          |
| Bundled software                     | Drivers only          | Photodelux 3.1<br>Epson Print Adventure | Drivers only           |
| DOS support                          | No                    | Yes, through Windows                    | Yes, through Windows   |
| Windows 3.x support                  | Yes                   | Yes                                     | Yes                    |
| Windows 95/98 support                | Yes                   | Yes                                     | Yes                    |
| Windows NT support                   | Yes                   | Yes                                     | Yes                    |
| Size W x D x H (mm)                  | 365 x 203 x 188       | 450 x 269 x 175                         | 457 x 178 x 356        |
| Verdict                              | 7                     | 8                                       | 7                      |



The multicoloured Epson Stylus Color 760 provided the best photo-type quality print in the test. The colours are sharp and skin tones are captured accurately. Text reproduction was great and there were good results in Corel and PowerPoint.



This is the printout from the cheaper Lexmark. The output has a pixelated look but the colours are vibrant. The text quality is high, though there's some bleeding of lower lines in our five page repeated test.



If you want to print just plain black text the Tally might be for you. Its text is good and there weren't any problems with vector and presentation prints either. Photo-type prints are flat and slightly red.



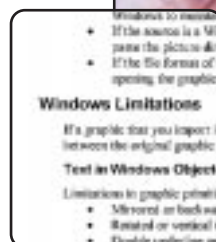
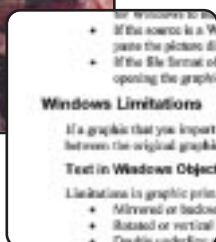
With the Lexmark z51, the colours just leap out at you in photo-quality mode. The trouble is, these colours are much too strong. There is no variance in tone and so colours appear constantly dark.



| Deskjet 930C           | Z31                    | Z51                            | T7080                  |
|------------------------|------------------------|--------------------------------|------------------------|
| Hewlett-Packard        | Lexmark                | Lexmark                        | Tally                  |
| 0990 474 747           | 01628 481 500          | 01628 481 500                  | 0800 525 318           |
| £149 (£127 ex VAT)     | £99 (£84 ex VAT)       | £159 (£135 ex VAT)             | £145 (£123 ex VAT)     |
| £25.85<br>£30.55       | £29.38<br>£29.99       | £24.99<br>£28                  | £29.38<br>£34.08       |
| 830<br>430             | 600<br>275             | 600<br>275                     | 1,050<br>460           |
| a – 3p b – 10p c – 41p | a – 4p b – 15p c – 60p | a – 4p b – 14p c – 57p         | a – 3p b – 10p c – 41p |
| 1 year RTB             | 1 year                 | 1 year                         | 2 years RTB            |
| Thermal Ink-jet        | Thermal Ink-jet        | Thermal Ink-jet                | Bubble jet             |
| Up to 2,400 x 1,200    | 1,200 x 1,200          | 1,200 x 1,200                  | 1,200 x 1,200          |
| 2ppm – 4.5ppm          | 3ppm – 3.5ppm          | 5ppm – 10ppm                   | 6ppm – 10ppm           |
| Parallel and USB       | Parallel               | Parallel and USB               | Parallel               |
| A4                     | A4                     | A4                             | A4                     |
| 200                    | 270                    | 270                            | 200g/m <sup>2</sup>    |
| 100 A4 sheets          | 100 A4 sheets          | 100 A4 sheets                  | 150 A4 sheets          |
| Drivers only           | Drivers only           | Corel Print House<br>Magic 4.0 | Drivers only           |
| Yes, through Windows   | Yes, through Windows   | Yes, through windows           | Yes                    |
| Yes                    | Yes                    | Yes                            | Yes                    |
| Yes                    | Yes                    | Yes                            | Yes                    |
| Yes                    | Yes                    | Yes                            | Yes                    |
| 432 x 203 x 406        | 461 x 520 x 293        | 460 x 467 x 326                | 436 x 210x 170         |
| 8                      | 6                      | 7                              | 6                      |



Pure text printing quality is very impressive on the Deskjet 930C. Furthermore, our benchmarks in vector and presentation printing are also above average. The bitmap print is better than most, though the photo print is spoiled by a banding problem at the top of the page.



We couldn't work out why but the black text on this printer was lighter than the others, although the letters were well formed. The colour print had obvious banding and the tones were flat and unimpressive.



Both HPs suffered from a possible driver fault so there was a higher quality print band at the top of the page. Apart from this the print quality of the HP 840C was average. The colours seem flat, except in bitmap printing.

Pure text printing quality is very impressive on the **Deskjet 930C**. Furthermore, our benchmarks in vector and presentation printing are also **above average**



# PC Plus Verdict

Seven different ink-jets from five different manufacturers, but which were the best ink-jets?

## ANALYSIS

### How to buy

*Before buying an ink-jet, there are several factors to consider*

Before you spend your hard-earned cash, you need to think about what you want out of your printer. Not only do you have to look at the printing quality of each one in different circumstances, but you also have to consider other factors such as speed and costs.

Speed is an important factor here – some people don't mind waiting a while for a print while others may depend on speed to get the job done. Running costs are also important when considering ink-jet printing. The cost of buying the printers can be low, but keeping these devices in ink and other consumables can be expensive if you use your printer a lot.

The printers that we looked are all available for under £160 but, while reading this round up, you'll notice that there are two pricing bands: The first band of printers cost around £99 and the second band cost around the £150 mark.

In the first set of printers we have included the Canon BJC-2000, the HP Deskjet 840C and the Lexmark Z31. Next we have heavy hitters – the Stylus Color 760, the Deskjet 930C and the Tally T7080.

The more expensive printers justify their higher prices by having more facilities such as better paper handling, better printing quality and faster optional methods of connection such as USB.

These printers are the cream of the crop (at the time of writing) but watch out, by Christmas time we can almost guarantee that these models may have been replaced or they will have slipped into the budget category as quality continues to improve.

## BEST BUY

### EPSON STYLUS COLOR 760

■ PRICE £139 ■ EX VAT £118 ■ SUPPLIER Epson ■ PHONE 0800 220 546 ■ WWW [www.epson.co.uk](http://www.epson.co.uk)

**I**f you're looking for a fine mixture of price and performance then the Epson Stylus Color 760 is the one for you. Not only does it have the best photo-quality imaging but it is also one of the fastest at most types of printing. As far as all round performance goes, the Epson stands head and shoulders above the rest.

Epson should be applauded for its colourful design and you can pick a colour that matches your computer or mood. If you need further proof of this model's superiority in this group test, don't forget that its competitively priced and its one of the cheapest to run and maintain.



The Epson Color Stylus is a great value choice that has winning speed and decent print quality

## BEST PERFORMANCE

### HEWLETT-PACKARD DESKJET 840C

■ PRICE £99 ■ EX VAT £84 ■ SUPPLIER HP UK ■ PHONE 0990 474 747 ■ WWW [www.hp.com/uk](http://www.hp.com/uk)

**N**ot everyone wants, or needs, to pay a high price for printing and this is fine because the price that you can get a decent quality ink-jet printer has fallen in the last few years. If you don't want to pay a high price for the printer, you no doubt don't want a model that costs a lot to run, either. Whatever the cost, decent print quality and speed are important considerations.

Following these parameters, it is quite easy to see why the Hewlett-Packard Deskjet 840C is good value. It has USB compatibility, relatively low running costs and, in our tests, the paper handling was better than similarly priced models. Our only doubt was over the picture quality, but we strongly suspect that the 'banded' test results were a conflict between our test PC and HP's driver software.



Hewlett Packard is well known for its great build quality and in this area the HP 840 excels

## TECHNICAL BRIEFING

### Ink-jet printing in the future

*This is the class of 2000, but what does the future hold for ink-jet printing?*

The next generation of ink-jets will be shipped without parallel or printer ports at the rear. Parallel port is an old and slow technology and new PCs such as EasyPC and EasyNow have no such method of connection.

If an EasyPC owner wants to pick a printer other than one that is USB equipped, then they will have

to pay extra for a USB-to-parallel adaptor. USB will eventually be replaced by USB 2, currently in development.

How about printers with built-in flash card readers, so you can print out photos taken from digital cameras without the need to turn your computer on? Bluetooth is a new wireless

communication standard which uses radio waves to 'talk' between devices. It has a short range (within a building) and is currently being developed by 3com, Ericsson, IBM, Nokia and Microsoft. When this comes, we will be able to print out whilst not being physically connected to the printer.