

Digital cameras

We've put 80 models through their paces and picked seven of the best

Keeping up with the developments in digital cameras can be hard. More and more models are being launched all the time with bigger zooms, more megapixels (Mp) and higher-quality lenses.

Digital cameras are also becoming smaller. Many are so thin you can easily pop them in your pocket. The sleek Sony Cyber-shot DSC-T7, for example, is under 2cm thick and has a lens that doesn't protrude.

Factors such as the growth in mobile phone cameras have put pressure on manufacturers to bring out new models more often, but this succession of new launches makes it increasingly difficult to work out which model is right for you.

On the upside, it does make finding a bargain much easier. If you buy online, you can save an average 26 per cent on a Best Buy digital camera compared with the high-street price (see 'Net savings', *Which?*, November 2005, p28). This is the biggest average online saving of any electronic product. But shopping on the high street does allow you to check whether any particular model feels comfortable in your hand.

We've split our cameras into three tables, based on their size. A small camera is defined as one you can put in your pocket, a large camera is something you'd carry in a bag and a medium camera is between those two sizes. We include cameras of 5Mp or less. For more details on the models in this report, see www.which.co.uk/digitalcameras, where you can also find information on cameras of 5.1Mp or more.

MEMORY CARDS

There are several different formats for memory cards, from Compact Flash to xD, SD and others. Most digital cameras will accept only one particular format.

The Panasonic (3) uses SD memory cards and comes with a 16MB card (below). A 128MB SD card is about £10 and will store about 50 photos at the Panasonic's highest quality setting. All major brands of memory cards are very reliable. There is little difference between ordinary cards and those

advertised as having fast read/write speeds, so it makes sense to pick the cheapest major brand of card you can find.



NEED TO KNOW

If you want to take professional shots, pick a big camera with a powerful optical zoom and a range of features. On the other hand, a small, lightweight camera you can throw in your bag or pocket could be all you need if you're just after some quick snaps. A medium-sized camera is a compromise between these two extremes.

RESOLUTION

This is defined in megapixels (Mp). More megapixels mean more detail, so you can create bigger prints without the image deteriorating into small blocks of colour. But choosing a camera with a huge number of megapixels isn't necessary unless you want to crop your pictures heavily or print large sizes – A4, for example.

All the cameras in our tables have less than 5.1 megapixels (Mp). For top-quality 6x4-inch prints, buy at least a 2.2Mp camera. For 7x5-inch prints pick a 3.2Mp model or higher. For 10x8-inch prints, pick one with at least 7.2Mp. See www.whichextra.co.uk/digitalcameras for more information on which of these higher-end model is worth buying, or see '60 more cameras on test', p51.

VIEWFINDER

All our digital cameras have a liquid crystal display (LCD) for composing shots. More than half have a viewfinder as well, which is a useful alternative as it is easier to use in bright sunlight when an LCD can be hard to view because of reflection. You can steady a shot more easily with a viewfinder, too, because you hold the camera up to your eye.

Viewfinders are optical or electronic. An optical viewfinder works in a similar way to a conventional viewfinder but isn't 100 per cent accurate. What you see when you look through it will differ from what the lens sees because it is in a different position.

An electronic viewfinder is a miniature LCD and is more accurate. It shows exactly what the lens will take a picture of.



OPTICAL ZOOM

All but the Kodak (41) and Canon (48) have an optical zoom range of, for instance, 36 to 432mm. The first figure refers to the lens at its shortest setting. The lower this number, the wider the angle of view it can manage – useful for taking landscape shots. The second figure indicates how far the zoom extends. The higher this number, the closer you can zoom in.



BEST BUYS

All the cameras we tested take satisfactory pictures and most of them are reasonably easy to use. But our Best Buys stand out from the crowd as combining very good picture quality with ease of use, excellent battery life and a decent selection of features.

Five of our seven Best Buys are in the large category, but size, price and resolution aren't strong indicators of total score. Some models, such as the small Best Buy Canon (43), have higher scores than many of the larger, more expensive cameras on test.

There are two Best Buy cameras in the small category, but none of the models in the medium category was sufficiently impressive to be a Best Buy.

Shutter delay – the time difference between the shutter button being pressed and the picture being taken – varies significantly between different models. It's important this delay is as short as possible, so that you end up with the picture you expect, not one of the scene a moment or so after you pressed the button.

The medium-sized Sony (23), shown in the table on p50, has a very short shutter delay of just 0.2 seconds, although it is not a Best Buy. The small Kodak (80), in contrast, has a delay of well over one second (see p52).

Our Best Buys are all cameras that are at least average for their shutter delay.



1 Olympus
LARGE

BEST
ON
TEST

1 Olympus Camedia C-770 Ultra Zoom 70%

£230 online

This Olympus is well equipped, with a powerful 38-380mm optical zoom, electronic viewfinder, manual focus and aperture-priority and shutter-speed priority modes (see 'Jargon buster', p51 for an explanation). It takes very good pictures, especially with flash, and it also has an attachment for fitting an external flash should you need to use a more powerful one. It has good battery life, but that of other Best Buys is even better.



2 Olympus
LARGE

BEST
BUY

2 Olympus Camedia C-55 Zoom 70%

£270 from Argos

This pricier Olympus has a short shutter delay of only 0.4 seconds. Other features include a manual focus and aperture-priority and shutter-speed priority modes (see p51). The quality of the pictures it takes is good and it has a powerful optical zoom of 38mm-190mm to help you take more specialist shots. It also takes great flash pictures.

On the downside, it doesn't come with a charger or rechargeable batteries. It's worth shelling out an extra £15 to £20 for these, as it will save you money in the long run.



BEST
BUY

5 Nikon
LARGE

5 Nikon Coolpix 4800 67%

£180 online

For a camera with a powerful 36-300mm lens, this Nikon is quite compact. It is also light at 320 grams. It takes a good picture through its electronic viewfinder. Although it lacks manual focus and shutter-speed priority and aperture-priority modes (see 'Jargon buster', p51) it does have a feature called BSS (Best Shot Selector). With this option turned on, the camera takes up to ten images as fast as possible, and keeps only the sharpest. This helps to achieve a sharp picture, but it doesn't work as well as conventional image stabilisation.

Digital cameras

LARGE

- 1 Olympus Camedia C-770
- 2 Olympus Camedia C-55 Zoom
- 3 Panasonic Lumix DMC-FZ5
- 4 Konica Minolta Dimage Z20
- 5 Nikon Coolpix 4800
- 6 Fujifilm FinePix S5500 Zoom
- 7 Panasonic Lumix DMC-FZ3
- 8 Sony Cyber-shot DSC-H1
- 9 Canon PowerShot S1 IS
- 10 Konica Minolta DiMAGE Z3
- 11 Panasonic DMC-FZ20
- 12 Canon PowerShot S2 IS
- 13 Olympus Camedia C-765
- 14 Ricoh Caplio 400G wide
- 15 Kodak EasyShare DX7590
- 16 Kodak EasyShare Z740
- 17 Kodak EasyShare Z700
- 18 Fujifilm FinePix S3500 Zoom
- 19 Kodak EasyShare Z730
- 20 Kodak EasyShare DX 7440

USING THE TABLE

See p50 for the notes to go with this table.

KEY

★ ☆ ○ ●
Best —————> Worst
■ Best Buy

SCORE

This ignores price and is based on:

Image quality	30%
Ease of use	25%
Features	12%
Viewfinder/monitor	12%
Battery life	10%
Flash	8%
Movie quality	3%

BEST
BUYBEST
BUY3 Panasonic
LARGE

3 Panasonic Lumix DMC-FZ5 68%

£350 from Comet, Jessops, John Lewis

The Panasonic is a very big camera and comes with a massive optical zoom range of 36-432mm. It has a good selection of features, including aperture-priority and shutter-speed priority modes and an electronic viewfinder, but it has no manual focus. It is one of a small but growing breed of cameras with image stabilisation, a handy feature that helps you counter camera shake. Although the table shows that image quality is only average, this model only just misses out on being as good as the other Best Buys, so it's still a good choice.

4 Konica Minolta Dimage Z20 67%

£200 from Argos, Jessops

The space-age looking Konica Minolta has image stabilisation to help you counter camera shake (see 'Jargon buster', p51) and a wide 36-290mm optical zoom. Its LCD screen is smaller than that on other Best Buys, at only 29 x 22mm, and the camera doesn't come supplied with rechargeable batteries or a charger. Despite this, battery life (tested with rechargeable batteries) is excellent and shutter delay and overall image quality are good. This is the heaviest of our Best Buys, weighing in at 435 grams.



Specification

Features

Performance

Score

Price (£)	Resolution (Mp)	Optical zoom (mm)	Size hwxwd (cm)	Weight (g)	Shutter priority	Aperture priority	Manual focus	Viewfinder	Image stabilisation	Shutter delay	Battery life	Ease of use	Image quality	(%)
230	3.9	38-380	6.5x11.5x7.5	361	✓	✓	✓	electronic		○	☆	☆	☆	70
270	5.0	38-190	7x11x5.5	367	✓	✓	✓	optical		☆	★	☆	☆	70
350	4.9	36-432	7x12x9.5	353	✓	✓		electronic	✓	○	★	☆	○	68
200	4.9	36-290	8.5x11.5x11	435	✓	✓	✓	electronic	✓	☆	★	☆	☆	67
180	3.9	36-300	7x12x6	320				electronic	BSS	○	★	○	☆	67
270	3.9	37-370	8x11.5x10.5	451	✓	✓	✓	electronic		☆	★	☆	○	66
283	3.0	35-420	7x12x9.5	353	✓	✓		electronic	✓	☆	★	☆	○	66
400	5.0	36-432	8.5x11.5x10	536	✓	✓	✓	electronic	✓	☆	★	☆	○	65
250	3.1	38-380	8x11.5x7.5	499	✓	✓	✓	electronic	✓	☆	★	☆	○	65
230	3.9	35-420	8.5x11x5x9	469	✓	✓	✓	electronic	✓	★	★	☆	○	63
400	4.9	36-432	9x13.5x10.5	590	✓	✓	✓	electronic	✓	●	★	○	○	62
400	5.0	36-432	8x11.5x8.5	547	✓	✓	✓	electronic	✓	☆	★	☆	○	62
200	3.9	38-380	6.5x11.5x7.5	342	✓	✓	✓	electronic		●	☆	○	☆	62
300	3.1	28-85	7.5x13.5x7.5	455			✓	optical		★	★	☆	○	61
250	5.0	38-380	8x10.5x9	409	✓	✓		electronic		○	★	○	○	59
200	5.0	38-380	8x10.5x8.5	368	✓	✓		electronic		☆	☆	○	○	58
165	4.0	35-175	7.5x9.5x5.5	286	✓	✓		optical		☆	☆	○	○	58
130	3.9	39-234	8x11x9	390	✓			electronic		☆	★	☆	○	57
180	5.0	33-132	7x10.5x5.5	248	✓	✓		optical		★	○	☆	○	55
100	4.0	33-132	7x10.5x5.5	253	✓	✓	✓	optical		★	★	○	○	55

60 more cameras on test

The main tables show all the digital cameras under 5.1Mp we've tested that are currently available. Go to our website www.which.co.uk/digitalcameras for more details on these, plus information about 60 more cameras with higher resolution. These models, with 5.1Mp and above,

are suitable if you want to create top-quality, large prints.

The models in the mini-table below are 5.1Mp and over, high-scoring Best Buys, available on the high street. All have manual focus and shutter-speed priority and aperture-priority modes, except for the Canon Digital Ixus 700.

Model	Price (£)	Mp	Score (%)
Olympus Camedia C-7070	500	7.1	75
Fujifilm Finepix S7000	330	6.3	72
Canon Digital Ixus 700	315	7.1	70
Konica Minolta A200	450	8.0	68
Canon Powershot G6	450	7.1	68

Last report September 2005

USING THE TABLES

We tested the latest models from popular brands with less than 5.1Mp resolution.

Specification

Price For Best Buys we give the cheapest widely available high-street price as we went to press. Prices for other models are a guide to what you should expect to pay. Online prices are in *italics*.

Resolution The number of usable pixels – may differ from the number stated by the manufacturer. **Optical zoom** The lower the first figure, the wider the angle of view. The higher the second figure, the more you can zoom in on the subject. **Weight** Includes battery, memory card, neck strap and lens cap.

Features

Shutter priority This mode helps you to be more creative. You can alter the shutter speed to help you blur or freeze movement. **Aperture priority** This lets you change how much of a shot is in focus. **Manual focus** Lets you focus exactly where you want. It's useful for close-ups, when autofocusing won't work, or for deliberately shooting something out of focus. **Viewfinder** An optical viewfinder works in a similar way to a conventional viewfinder but isn't totally accurate. An electronic viewfinder is a miniature LCD and is more accurate. See 'Viewfinder', p47. **Image stabilisation** This counters camera shake.

BSS (Best Shot Selector) means the camera takes a series of rapid shots and keeps the sharpest.

Performance

Shutter delay A rating of ★ means a delay of 0 to 0.3 seconds. ● is a delay of more than 1.2 seconds.

KEY

★ ☆ ○ ● ●
Best —————> Worst
■ Best Buy

SCORE

This ignores price and is based on:

Image quality	30%
Ease of use	25%
Features	12%
Viewfinder/monitor	12%
Battery life	10%
Flash	8%
Movie quality	3%

Digital cameras

MEDIUM

	Specification					Features					
	Price (£)	Resolution (Mp)	Optical zoom (mm)	Size hwxwd (cm)	Weight (g)	Shutter priority	Aperture priority	Manual focus	Viewfinder	Image stabilisation	Shutter delay
21 Canon PowerShot A75	174	3.1	35-105	7x10.5x5	304	✓	✓	✓	optical		○
22 Canon PowerShot A520	200	3.9	35-140	7x9.5x4	238	✓	✓	✓	optical		○
23 Sony Cyber-shot DSC-W5	220	5.0	38-114	6.5x10x4	255				optical		★
24 Canon PowerShot A85	230	3.9	35-105	7x10.5x5	318	✓	✓	✓	optical		○
25 Canon PowerShot S60	300	5.0	28-100	6x12.5x4	289	✓	✓	✓	optical		☆
26 Nikon Coolpix 3200	150	3.1	38-115	7x9x4	198				optical	BSS	☆
27 Fujifilm FinePix E500 Zoom	134	4.0	28-91	7x10.5x5	229	✓	✓	✓	optical		☆
28 Fujifilm FinePix A310	202	3.1	38-114	6.5x10x4	197				optical		☆
29 Olympus Camedia C-470	170	3.9	35-105	6x10.5x4	196						☆
30 Casio Exilim Pro EX-P505	400	4.9	38-190	6x10x6	253	✓	✓	✓			☆
31 Sony Cyber-shot DSC-S90	200	4.0	39-117	7x9.5x4.5	259				optical		★
32 Nikon Coolpix 4100	155	3.9	35-105	7x9x4	196				optical	BSS	☆
33 Olympus Camedia C-480	140	3.9	38-114	6x10.5x4	205						●
34 Panasonic Lumix DMC-LZ2	230	4.9	37-222	6.5x10.5x4.5	245					✓	●
35 Fujifilm FinePix A330 Zoom	101	3.0	38-114	6.5x11x4	203				optical		☆
36 Samsung Digimax V50	291	5.0	38-114	6x11x4.5	481	✓	✓	✓	optical		●
37 Canon PowerShot A400	125	3.1	45-100	5.5x11x4.5	216				optical		●
38 Olympus C-315 Zoom	130	5.0	38-106	6x10.5x4.5	215				optical		●
39 Kodak EasyShare C340	190	5.0	34-102	7x9.5x4	204				optical		○
40 Olympus C-370	99	3.1	38-114	6.5x9x4.5	203						●
41 Kodak EasyShare CX7300	90	3.2	37-37	7x10.5x4.5	201				optical		☆
42 Kodak EasyShare CX7330	180	3.1	37-111	7x10.5x4.5	232				optical		○

Jargon buster

APERTURE-PRIORITY MODE

This function gives you more precise control. You adjust the camera's 'f-value' manually, so you can control how much of the shot is in focus.

BURST MODE

This feature allows the camera to take several shots immediately after each other and is useful for getting still images from fast action. The shot rate varies by model of camera, but most take one to three shots per second, up to about ten shots in total.

IMAGE STABILISATION

You use this to help counter camera shake. It is more common on larger models and



Burst mode is handy for taking still images from fast action scenes

typically works by moving the lens or digital sensor very slightly to compensate for the movements of your hand.

MANUAL FOCUS

Manual focus is common on larger models. Most cameras focus automatically on the subject when you press the shutter button. Manual focus lets you override this. It is useful for close-ups because it lets you focus on exactly what you want, such as the centre of a flower rather than the petals. It's also handy

for special effects – for instance, shooting a street light out of focus.

SHUTTER DELAY

Shutter delay is the time difference between the shutter button being pressed and the camera taking a picture. A long delay can mean you don't get the image you expect. You can reduce the delay by using the focus lock. To do this, you will need to half-depress the shutter button to focus the camera and then compose your picture using the LCD

screen or viewfinder while keeping the button half-pressed, then press it down fully to take the picture.

SHUTTER-SPEED PRIORITY MODE

This lets you select the shutter speed manually. A fast speed of 1/500 of a second will normally freeze the motion of a moving cyclist, for example. A similar shot taken with a shutter speed of 1/30 of a second will show the cyclist a bit blurry, creating a nice visual effect of speed.

Performance			Score
Battery life	Ease of use	Image quality	(%)
★	☆	○	66
★	☆	○	66
★	☆	○	66
★	☆	○	65
★	☆	○	65
★	☆	☆	64
★	☆	○	63
★	☆	○	61
★	○	☆	61
☆	☆	○	60
☆	☆	○	60
○	☆	☆	58
★	○	☆	57
☆	○	○	56
★	☆	○	56
★	●	○	55
★	●	○	54
★	●	☆	50
●	○	○	47
●	○	○	47
☆	○	○	44
○	○	○	42



43 Canon
SMALL

43 Canon Digital Ixus 40 69%

£215 from Currys, Dixons, Jessops and PC World

This Canon is light, weighing in at just a shade over 150 grams, and it's thin, so it's ideal for slipping into your pocket or handbag. Like some of the other smaller models, it doesn't have manual focus, or shutter-speed priority or aperture-priority modes, but it makes up for that by taking good-quality pictures. Other plus points include excellent battery life and an impressive shutter delay at just 0.4 seconds. It has a zoom range of only 35-105mm, which is the smallest among our Best Buys.



44 Nikon
SMALL

44 Nikon Coolpix 5900 68%

£230 from Jessops

This Nikon is light, weighing 181 grams. Its shutter delay is pretty good at 0.5 seconds but, in common with many small cameras, it lacks a number of features, with no shutter-speed priority or aperture-priority modes or manual focus. A small optical zoom (38-114mm) is about normal for this size of camera, and it has quite a large LCD screen and an optical viewfinder. A good all-rounder, it takes decent still pictures and movies.

SCORE

This ignores price and is based on:

Image quality	30%	Battery life	10%
Ease of use	25%	Flash	8%
Features	12%	Movie quality	3%
Viewfinder/monitor	12%		

KEY

★	☆	○	◐	●
Best	→	Worst		
Best Buy				

USING THE TABLE
See p50 for the notes to go with this table.

Digital cameras	Specification					Features	Performance				Score
	Price (£)	Resolution (Mp)	Optical zoom (mm)	Size (cm) hwxwd	Weight (g)	Viewfinder	Shutter delay	Battery life	Ease of use	Image quality	(%)
SMALL											
43 Canon Digital Ixus 40	215	3.9	35-105	6x9x2.3	152	optical	☆	★	☆	☆	69
44 Nikon Coolpix 5900	230	5.0	38-114	6.5x9.5x4	181	optical	☆	★	☆	☆	68
45 Olympus Mju Digital 500	200	4.9	35-105	6x10x3.5	203		☆	★	☆	☆	66
46 Canon Digital Ixus 500	249	5	36-108	6x9x2.8	227	optical	○	★	☆	☆	65
47 Canon Digital Ixus 50	250	5.0	35-105	6x8.5x2.5	154	optical	☆	★	☆	○	65
48 Canon Digital Ixus i	319	3.9	39-39	5x9.5x2.5	125		○	★	○	☆	64
49 Nikon Coolpix 4600	140	3.9	35-105	6.5x9x4	192	optical	☆	★	☆	☆	63
50 Ricoh Caplio R2	230	4.9	28-135	5.5x10.5x3	201		★	★	☆	○	63
51 Casio Exilim EX-S500	300	4.9	38-114	6x9.5x1.8	131		☆	★	☆	○	62
52 Pentax Optio WP	230	4.9	38-114	5.5x11x2.5	139		○	☆	☆	○	61
53 Panasonic Lumix DMC-FX8	280	4.9	35-105	5.5x9.5x2.7	154		☆	★	☆	○	61
54 Nikon Coolpix S1	230	5.0	35-105	6x9.5x2	138		○	★	☆	☆	61
55 Konica Minolta Dimage Xg	148	3.1	37-111	7x9x2.6	143	optical	○	★	○	☆	60
56 Pentax Optio S5z	200	4.9	35.6-107	5.5x9x2.5	126		☆	○	☆	○	60
57 Casio Exilim EX-Z55	268	4.9	35-105	6.5x9.5x3.5	160	optical	☆	★	☆	○	60
58 Sony Cyber-shot DSC-T7	290	5.0	38-114	6.5x10x1.8	136		★	○	☆	○	59
59 Fujifilm FinePix Z1 Zoom	280	5.0	36-108	5.5x9.5x2	149		★	★	☆	○	59
60 HP Photosmart R507	170	4.0	35-105	6x9.5x2.8	162	optical	○	★	○	☆	58
61 Olympus Mju Mini Digital S	200	4.9	35-70	5.5x9.5x3	132		☆	☆	☆	☆	58
62 Pentax Optio S55	200	4.9	35.6-107	6.5x9.5x3.5	191		☆	○	○	○	57
63 Konica Minolta Dimage X50	158	4.9	37-105	6.5x9x3	146	optical	○	○	○	☆	57
64 Konica Minolta Dimage X60	200	4.9	38-114	6x9x2.5	140		○	◐	○	☆	57
65 Olympus Mju Mini Digital	220	3.9	35-70	6x9.5x3	134		○	○	○	☆	56
66 Panasonic Lumix DMC-FX2	242	4.0	35-105	5.5x10x2.7	146		◐	☆	○	○	56
67 Sony Cyber-shot DSC-T33	250	5.0	38-114	6.5x10.5x2	151		★	○	☆	○	56
68 HP Photosmart M517	150	5.0	36-108	5.5x11x4	202	optical	○	★	○	○	55
69 Sony Cyber-shot DSC-S40	150	4.0	32-96	5.5x10.5x3.5	188	optical	★	○	☆	○	55
70 Sony Cyber-shot DSC-L1	200	4.0	32-96	5x10x3	150		★	○	☆	○	55
71 Pentax Optio X	241	4.9	36-107	5.5x11.5x2	149		○	○	○	☆	55
72 Olympus IR-300	280	4.9	38-114	5.5x10x2.3	129		◐	☆	○	☆	54
73 Sanyo Xacti VPC-C5EX	500	5.0	38-190	11x2.8x7	175		○	◐	○	○	53
74 Casio Exilim Card EX-S100	150	3.1	36-102	9.5x6x1.9	128		★	☆	☆	○	53
75 Samsung Digimax i5	250	5.0	39-117	9.5x6x1.9	161		●	○	◐	○	51
76 Fujifilm FinePix A345 Zoom	100	4.0	35-105	6x9.5x3.5	203	optical	●	★	◐	○	50
77 Olympus Camedia FE-5500	230	4.9	35-105	6.5x9.5x2.5	140		◐	☆	○	○	49
78 Pentax Optio 50	130	4.9	32-96	6.5x9.5x3.5	185	optical	○	○	○	○	47
79 Samsung Digimax A4	170	3.9	38-114	5.5x11x4	215		●	☆	◐	○	46
80 Kodak Easyshare V550	280	5.0	36-108	6x10x2.5	161	optical	●	○	◐	○	44