



Value digital cameras

We get snap happy with 13 of the latest sub-£300 digital cameras

- 122 How we test
- 123 See the photos
- 124 Feature table
- 130 Sony Cyber-shot DSC-U20

REVIEWS

- 126 Canon Digital IXUS v³
- 126 Canon PowerShot A70
- 127 Casio Exilim EX-Z3
- 127 Fujifilm FinePix A310 Zoom
- 128 HP Photosmart 850
- 128 Kodak EasyShare LS633
- 130 Nikon Coolpix 3100
- 132 Nikon Coolpix 3500
- 132 Olympus Camedia C-350ZOOM
- 133 Ricoh Caplio G3
- 133 Samsung Digimax V4
- 135 Sony Cyber-shot DSC-P72
- 135 Toshiba PDR-T30

With summer just around the corner, now is an ideal time to invest in a digital camera. Many people reluctant to make the change from film over the past year or two will be pleased to know that image quality has dramatically improved to the extent where you can spend less than £250 for quality to rival a compact 35mm.

The Olympus Camedia C-350ZOOM, for instance, costs £186 and has a 3.2-megapixel CCD for 2,048 x 1,536 pixel images – just enough for A4 prints. It has a 3x optical zoom too, like most of the 13 cameras on test. If you crave higher-resolution images, both HP and Samsung include a 4-megapixel CCD for under £300 – the price limit we set for this Labs.

Samsung and Canon cater for those who want more than a point-and-shoot camera by incorporating full manual control over shutter and aperture settings. For those more concerned with capturing the moment, all 13 cameras are happy to take this responsibility away and automate everything from focus to metering and white balance.

Aside from image quality, it's important to consider portability. This is where cameras such as the Casio Exilim and the Canon IXUS come to the fore, but ignore the Sony Cyber-shot at your peril. Also

consider shooting modes. Some cameras are more limited than others when it comes to continuous shooting, movie clips and macro photography, but all are useful features when you want more than a simple still photo.

Most cameras come with 16MB of memory – enough for just a few shots – so we recommend you buy a high-capacity card straight away. The cost per megabyte depends on which standard the camera uses, with CompactFlash currently the cheapest and Sony's Memory Stick the most expensive. For models supplied with alkaline batteries, it's worth budgeting an extra £20 to invest in a set of high-power NiMH rechargeables and charger.

We give a complete listing of all the cameras' features on p124, but, more importantly, we put each one through a set of indoor and outdoor tests. We also make sure we use them in a 'typical' scenario and – if the camera supports the feature – take a few 'movies'. See p123 for more details and the cover CD for photograph samples.

So, to find out which cameras to avoid and which will make you reach for your credit card, read on.

CONTRIBUTORS

Jim Martin, Nick Ross



46 WIN £15,000 in prizes

Have you had a stunningly good experience with a manufacturer over the last 12 months, or a bad one? Either way, we want to hear from you.





How we test

Details of our comprehensive digital camera tests

We evaluate each camera by taking a selection of photos in controlled conditions on a tripod, as well as some more general-purpose shots without the stability of a tripod – the kind most people take in real life. We try to use the cameras in a wide range of situations, from bright outdoor conditions to very dark indoor scenes.

We also use all the functions available on the cameras to get a good idea of their flexibility and usability. As the 13 cameras on test are mainly aimed at the amateur point-and-shoot market, we use them in automatic mode to assess how well they meter and expose images in varying conditions. This also tests the effectiveness of the automatic white balance and noise-reduction systems. Most of the cameras include continuous shooting and movie modes, which we also try out. However, as these cameras are mainly used to shoot single stills, we concentrate on this area in our tests.

INDOOR PHOTOS

We take three indoor shots in the confines of our photography studio, which is blacked out. The main scene (*see below right*) is set up to include differing textures, strong primary colours, blacks and whites, reflective items and greyscale and colour charts. The shot is framed identically for each camera and taken with both forced and suppressed flash. Where the auto white balance fails to produce acceptable colours, we use tungsten preset or manual mode to account for the lighting used.

We also take an indoor shot using the camera's macro mode. This is composed of a banknote with a coin and a ruler for measuring the area captured. We set each camera on the tripod to be exactly square against the desk to enable us to accurately detect barrel distortion.



OUTDOOR PHOTOS

We take our outdoor test shots from the roof of the *PC Pro* offices, overlooking London's West End and landmarks like Centre Point and the London Eye. The strong backlighting of the sky and huge depth of field stress each camera's light metering, focus and exposure settings. We take two shots here – a wide landscape scene and a close-up portrait with fill-in flash, the latter to primarily test skin tones. Many thanks to Dennis Publishing's Kate Faulkner for offering to be our model for the day.

For the last outdoor shot, we look north for a view of the BT Tower. We take two shots, one at full wide (like the picture on the right) and one fully zoomed in to check again for resolution as well as to show the difference between the 2x, 3x and 8x optical zoom lenses on test. The ever-changing lighting conditions outdoors means the sky looks different in almost every shot.

WHAT WE LOOK FOR

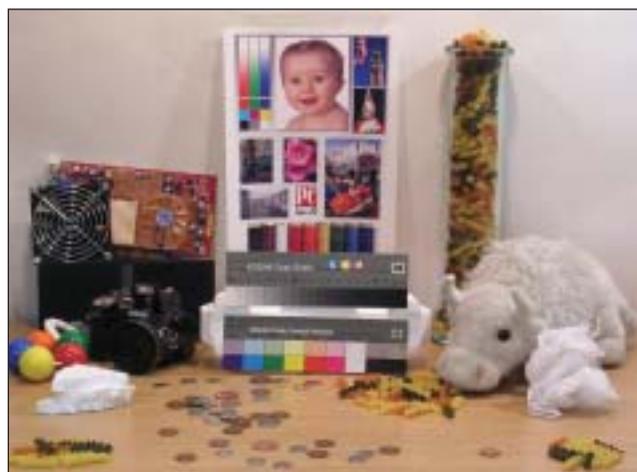
After uploading the images onto our usual test rigs, we scrutinise them for issues like barrel distortion, colour fringing and tonal range. We use a 19in Iiyama Vision Master Pro 454 monitor rather than printing images out. Although this still doesn't guarantee perfect colour accuracy, it offers the best real-world solution.

We also look for specifics in each shot. The indoor shot without flash is checked for general colour accuracy, resolution and errors such as noise and compression artefacts. The shot with flash is checked for the spread and range of the flash and again for colour-balance errors.

We calculate the area covered in the macro shot and check focus across the image, particularly in the corners. The outdoor



photos are examined for accurate skin tones, exposure, colour and detail capture. We concentrate on the model's face in the portrait shot for resolution, which gives a good indication of a camera's overall ability to capture fine detail.





See the photos

We've uploaded the test photos from each camera to our website so you can see for yourself exactly what kind of quality to expect. Simply go to www.pcpro.co.uk and click through to the Labs section. We've also included two images from each camera on this month's cover CD and all five on the DVD. The images below are unmodified and uncropped originals.



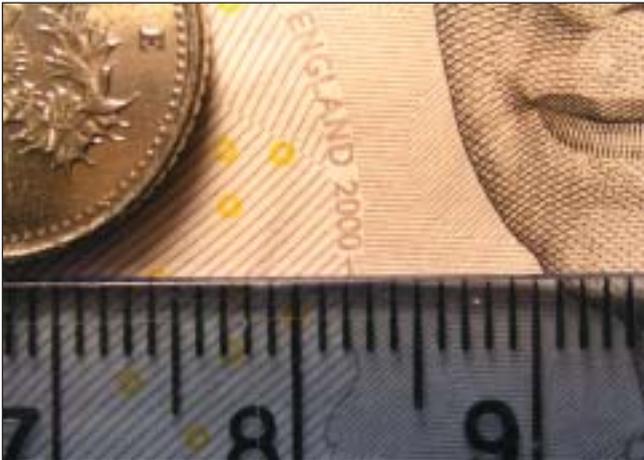
The Ricoh Caplio G3 had a tendency to make colours noticeably undersaturated and skin tones inaccurate. The sky is also burnt out in this shot.



The photos above and to the right highlight the difference between the HP Photosmart 850's 8x optical zoom and the 3x zoom of the Canon.



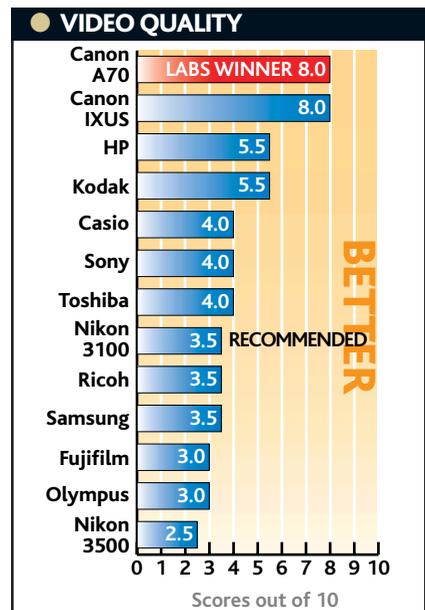
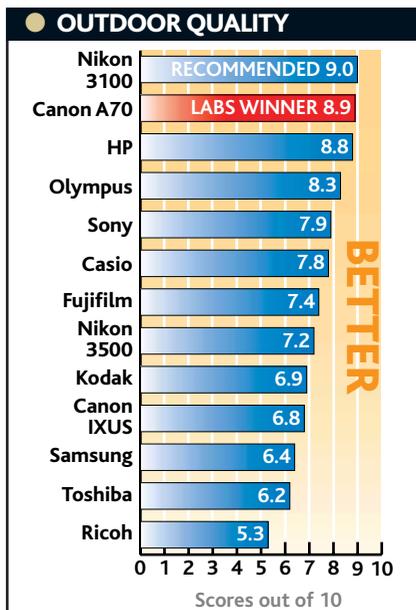
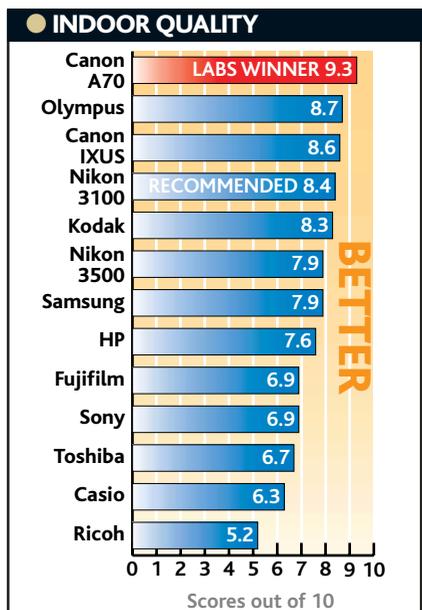
Although the Canon PowerShot A70's 3x optical zoom can't match the HP, it still captured more detail than others on test.



The Nikon Coolpix 3500's macro mode allows it to focus at just 4cm, and the image above is the uncropped 27 x 20mm area captured.



Casio's Exilim EX-Z3 had trouble automatically adjusting the white balance for our indoor shot, resulting in the red cast seen above.





THE LABS
Value digital cameras

● **FEATURE TABLE**



	Canon Digital IXUS v3	Canon PowerShot A70	Casio Exilim EX-Z3	Fujifilm FinePix A310	HP Photosmart 850	Kodak EasyShare LS633
Overall score	103	116	98	85	108	103
Price (inc VAT) ¹	£288 (£338)	£228 (£268)	£269 (£316)	£254 (£299)	£289 (£340)	£229 (£269)
Supplier	InternetCamerasDirect.co.uk 0870 752 2566	InternetCamerasDirect.co.uk 0870 752 2566	dabs.com (web only)	Fujifilm 020 7586 1477	dabs.com (web only)	dabs.com (web only)
Supplier's website	www.internetcamerasdirect.co.uk	www.internetcamerasdirect.co.uk	www.dabs.com/2CTDWS	www.fujifilm.co.uk	www.dabs.com/24YYWS	www.dabs.com/2FGRWS
Manufacturer's website	www.canon.co.uk	www.canon.co.uk	www.exilim.co.uk	www.fujifilm.co.uk	www.hp.co.uk	www.kodak.co.uk
Basic warranty	1yr RTB	1yr RTB	1yr RTB	1yr RTB	1yr C&R	1yr RTB
OPTICS						
Lens manufacturer	Canon	Canon	SMC Pentax	Fujinon	Fujinon	Schneider Kreuznach
Aperture range (wide setting)	f/2.8-f/7.2	f/2.8-f/8	f/2.6-f/4.8	f/2.8-f/7	f/2.8-f/11	f/2.7-f/5.2
Shutter speeds (seconds)	15-1/1,500	15-1/2,000	1-1/2,000	2-1/2,000	16-1/2,000	4-1/1,400
Optical zoom (range)	2x	3x	3x	3x	8x	3x
Digital zoom (range)	3.2x	3.2x	2x	1.4-2.9x	7x	3.3x
Focal length (35mm equivalent)	35-70	35-105	35-105	38-114	37-300	37-111
RESOLUTION						
CCD megapixels	3.34	3.34	3.34	3.14	4.13	3.34
Effective megapixels	3.14	3.14	3.14	3.14	3.92	3.1
Maximum picture resolution	2,048 x 1,536	2,048 x 1,536	2,048 x 1,536	2,048 x 1,536	2,272 x 1,712	2,032 x 1,524
Other resolutions	1,600 x 1,200, 1,024 x 768, 640 x 480	1,600 x 1,200, 1,024 x 768, 640 x 480	1,600 x 1,200, 1,280 x 960, 640 x 480	2,816 x 2,120 ² , 1,280 x 960, 640 x 480	1,136 x 848	2,032 x 1,354 (3:2), 1,656 x 1,242, 1,200 x 900
File format	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2, PIM II)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)
Video-capture (format)	AVI (Motion JPEG) with audio	AVI (Motion JPEG) with audio	AVI (Motion JPEG) with audio	AVI (Motion JPEG) no audio	AVI (MPEG-1) with audio	QuickTime (Motion JPEG) with audio
Video capture resolution and length	640 x 480, 320 x 240, 160 x 120, memory-capacity dependent	640 x 480, 320 x 240, 160 x 120, memory-capacity dependent	320 x 240, 30 seconds	320 x 240, 120 seconds; 160 x 120, 480 seconds	288 x 208, 60 seconds	320 x 240, memory-capacity dependent
Audio recording functions	✓	✓	✓	✗	✓, 30 seconds with each frame	✓
Uncompressed mode	✗	✗	✗	✗	✗	✗
Number of compression settings	3	3	3	4	3	2
MEMORY						
Technology	CompactFlash Type I	CompactFlash Type I	SD/MMC card	xD-Picture Card	SD/MMC card	SD/MMC card
Memory supplied (MB)	16	16	10 (integrated)	16	16	16 (integrated)
Maximum picture capacity in highest-quality mode ³	9	9	5	10	6	17
Maximum picture capacity in lowest-quality mode ³	168	168	98	122	56	50
SHOOTING MODES						
Time to ready (seconds) ⁴	2.8	3.2	2.6	3.6	4.6	5.3
Continuous shooting (number of frames, fps)	12, 2fps	12, 2.2fps	✗	4, 3fps	✗	4, 1.4fps
Time-lapse shooting	✗	✗	✗	✗	✗	✗
Self-timer	✓, 2 or 10 seconds	✓, 2 or 10 seconds	✓, 2 or 10 seconds; 3-shot mode	✓, 10 seconds	✓, 10 seconds	✓, 10 seconds
Stitch assist	✓	✓	✗	✗	✗	✗
Auto bracketing	✗	✗	✗	✗	✗	✗
Other modes	✗	Five scene presets	21 scene presets	Four scene presets, webcam	✗	Three scene presets
CONTROLS AND FUNCTIONS						
Focus method	Auto	Auto (multi), manual	Auto, manual	Auto	Auto	Auto (multi, centre)
Focus-assist lamp	✓	✓	✗	✗	✓	✗
Shutter-priority mode	✗	✓	✗	✗	✓	✗
Aperture-priority mode	✗	✓	✗	✗	✓	✗
Full manual exposure	✗	✓	✗	✗	✗	✗
Light-metering modes	Evaluative, spot	Evaluative, centre weighted, spot	Multipattern	64-segment	Average, centre weighted, spot	Multipattern, centre weighted, spot
White balance presets	6	6	5	7	5	4
Manual white balance control	✓	✓	✓	✗	✓	✗
Exposure compensation range	+/- 2EV, 1/3 increments	+/- 2EV, 1/3 increments	+/- 2EV, 1/3 increments	-2.1 - +1.5EV, 1/3 increments	+/- 3EV, 1/2 increments	+/- 2EV, 1/2 increments
Macro mode focus range (cm)	10-47	5-46	6-50	10-80	10-70	13-70
Macro area covered (H x W mm)	99 x 74	56 x 42	33 x 25	58 x 44	51 x 38	89 x 67
Integrated flash modes	Auto, red-eye reduction, forced, off, slow synchro	Auto, red-eye reduction, forced, off	Auto, red-eye reduction, forced, off	Auto, red-eye reduction, forced, off, slow synchro, slow synchro with red-eye reduction	Auto, red-eye reduction, off, night, night with red-eye reduction	Auto, red-eye reduction, forced, off
Flash-level adjustment	✗	✗	✗	✗	✗	✗
Equivalent ISO rating	50, 100, 200, 400	50, 100, 200, 400	50, 100, 200	Auto (160-400), 200, 400 (800 at 1,280 x 960)	100, 200	100, 200, 400
Manual ISO selection	✓	✓	✓	✓	✓	✓
Special effects	Vivid, neutral, low sharpening, sepia, monochrome	Vivid, neutral, low sharpening, sepia, monochrome	Sepia, monochrome	Monochrome, chrome	Sepia, monochrome	✗
User profiles	✗	✗	Up to 999 Best Shot profiles	✗	1	Limited customisation
Orientation sensor	✓	✓	✗	✗	✓	✓
PHYSICAL FEATURES						
Viewfinder	Optical	Optical	Optical	Optical	Electronic, 76,800 pixels	Optical
LCD (size, pixels)	1.5in, 118,000 pixels	1.5in, 118,000 pixels	Zin, 84,960 pixels	1.5in, 60,000 pixels	Zin, 130,000 pixels	2.2in OLED, 113,578 pixels
LCD/viewfinder coverage (per cent)	100/82	100/82	Not stated/not stated	92/80	100/not stated	Not stated/not stated
Separate status LCD	✗	✗	✗	✗	✗	✗
Video output	PAL/NTSC	PAL/NTSC	✗	PAL/NTSC	PAL/NTSC	PAL/NTSC
Standard tripod thread	✓, metal	✓, plastic	✓, metal	✓, plastic	✓, metal	✓, metal
Add-on lenses	✗	✓, with adaptor	✗	✗	✗	✗
Remote shutter connection	✗	✗	✗	✗	✗	✗
Hotshoe for external flash	✗	✗	✗	✗	✗	✗
Weight with media & batteries (g)	194	328	144	198	528	238
Dimensions (W x H x D mm)	87 x 57 x 27	101 x 64 x 43	87 x 57 x 23	97 x 64 x 33	120 x 85 x 120	114 x 56 x 31
BATTERY/POWER SUPPLY						
Battery type included	Lithium ion	4 x alkaline AA	Lithium ion	2 x alkaline AA	4 x alkaline AA	Lithium ion
Charger included	✓	✗	Uses AC adaptor	✗	✗	✓
AC adaptor included	✗	✗	✓	✗	✗	✗
PC CONNECTIVITY						
Connection type	USB	USB	USB	USB	USB 2	USB
Software supplied	ArcSoft PhotImpression 4, ArcSoft VideoImpression 1.7, ZoomBrowser EX 4, PhotoRecord 1.6, PhotoStitch 3.1, RemoteCapture 2.6, File Viewer 1	ArcSoft PhotImpression 4, ArcSoft VideoImpression 1.7, ZoomBrowser EX 4.1, PhotoRecord 1.6, PhotoStitch 3.1, RemoteCapture 2.7, File Viewer 1.2	Photo Loader, Photohands	FinePix Viewer, ImageMixer VCD, QuickTime	HP photo and imaging software	Kodak EasyShare 2.1
ACCESSORIES						
Carry case	✗	✗	✗	✗	✗	✗
Lens cover	Built in	Built in	Built in	Built in	Separate cap	Built in
Other	Wrist strap, A/V cable, USB cable	Wrist strap, A/V cable, USB cable	Docking cradle, wrist strap, USB cable	PictureCradle adaptor, wrist strap, video cable, USB cable	Dock adaptor, shoulder strap, lens cap tether, USB cable	Docking cradle, wrist strap, A/V cable, USB cable

¹ Prices were correct at time of going to press. ² With interpolation. ³ With memory supplied. ⁴ As measured.



Nikon Coolpix 3100	Nikon Coolpix 3500	Olympus Camedia C-350ZOOM	Ricoh Caplio G3	Samsung Digimax V4	Sony Cyber-shot DSC-P72	Toshiba PDR-T30
110	97	101	87	102	99	85
£211 (€248)	£262 (€308)	£186 (€218)	£189 (€222)	£245 (€288)	£237 (€278)	£245 (€288)
InternetCamerasDirect.co.uk 0870 752 2566	InternetCamerasDirect.co.uk 0870 752 2566	InternetCamerasDirect.co.uk 0870 752 2566	dabs.com (web only)	InternetCamerasDirect.co.uk 0870 752 2566	InternetCamerasDirect.co.uk 0870 752 2566	dabs.com (web only)
www.internetcamerasdirect.co.uk www.nikon.co.uk	www.internetcamerasdirect.co.uk www.nikon.co.uk	www.internetcamerasdirect.co.uk www.olympus.co.uk	www.dabs.com/2HVOWS www.ricoh-cameras.co.uk	www.internetcamerasdirect.co.uk www.samsungcamera.co.uk	www.internetcamerasdirect.co.uk www.sony.co.uk	www.dabs.com/29X5WS www.toshiba.co.uk
1yr RTB	1yr RTB	1yr RTB	1yr RTB	2yrs RTB	1yr RTB	1yr RTB
Nikon f/2.7-f/4.9 4-1/3,000 3x Up to 4x 38-115	Nikon f/2.7-f/4.8 2-1/3,000 3x 1.2x-4x 37-111	Olympus f/3.1-f/5.2 2-1/1,000 3x 3.3x 35-105	Ricoh f/2.6-f/4.7 8-1/2,000 3x 3.4x 35-105	Schneider Kreuznach f/2.8-f/6.7 15-1/2,000 3x 1x-4x 38-114	Sony f/2.8-f/5.6 2-1/2,000 3x 3.8x-9.6x (at 2-megapixels or less) 39-117	Toshiba f/2.8-f/11 4-1/1,000 2x X 38-76
3.34	3.34	3.34	3.34	4.1	3.34	3.34
3.14	3.14	3.14	3.14	3.87	3.14	3.14
2,048 x 1,536	2,048 x 1,536	2,048 x 1,536	2,048 x 1,536	2,272 x 1,704	2,048 x 1,536	2,048 x 1,536
1,600 x 1,200, 1,024 x 768, 640 x 480	1,600 x 1,200, 1,280 x 960, 1,024 x 768, 640 x 480	1,024 x 768, 640 x 480	1,280 x 960, 640 x 480	2,272 x 1,504 (3:2), 1,120 x 840, 544 x 408	2,048 x 1,360 (3:2), 1,632 x 1,224, 1,280 x 960, 640 x 480	1,024 x 768, 640 x 480
JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2)	JPEG (EXIF 2.2), GIF (for Clip Motion)	JPEG (EXIF 2.2)
QuickTime (Motion JPEG) no audio	QuickTime (Motion JPEG) no audio	QuickTime (Motion JPEG) no audio	AVI (Motion JPEG)	AVI (Motion JPEG) with audio	AVI (MPEG-1) with audio	AVI (MPEG-1) no audio
640 x 480, 20 seconds; 320 x 240, 40 seconds	320 x 240, 35 seconds	320 x 240, 15 seconds	320 x 240, 30 seconds; 160 x 120, 120 seconds	288 x 208, memory-capacity dependent	640 x 480, 160 x 120, memory-capacity dependent	320 x 240, memory-capacity dependent
X	X	X	✓	✓	✓, 5 seconds with each frame	X
X	X	X	X	TIFF	X	X
1	3	4	2	2	2	4
CompactFlash Type I	CompactFlash Type I	xD-Picture Card	SD/MMC card	SD/MMC card	Memory Stick Pro	SD/MMC card
16	16	16	8 (integrated)	32	16	16
10	10	6	5	12	10	12
144	229	165	52	676	97	112
3.4	3.9	4.1	2.6	5.4	2.3	5.4
Dependent on resolution, 1.5fps; 16 frames saved as single image	Dependent on resolution, 1.5fps; 16 frames saved as single image	11, 1.5fps in HQ mode	3-9, 7.5fps; 16 frames saved as single image	3, 1.4fps at 4MP; 28, 1.4fps at 1MP; 99, 1.4fps at 0.3MP	2, 2fps; 16, 25/12.5/6.3fps (saved as single image)	16 frames saved as single image
X	X	X	✓	X	X	X
✓, 10 seconds	✓, 10 seconds	✓, 12 seconds	✓, 2 or 10 seconds	✓, 2 or 10 seconds	✓, 10 seconds	✓, 2 or 10 seconds
X	X	X	X	X	X	X
X	X	X	Exposure, white balance	✓	X	X
Best Shot Selector, 14 scene presets	Best Shot Selector, 12 scene presets	Four scene presets	Six scene presets	Easy mode, two scene presets	Clip Motion (ten manually shot frames, saved as single image)	X
Auto	Auto	Auto	Auto, manual, fixed	Auto, manual	Auto, five-position manual	Auto
X	X	X	X	✓	✓	✓
X	X	X	X	✓	X	X
X	X	X	X	✓	X	X
X	X	X	X	✓	X	X
256-segment	256-segment	Digital ESP, spot	256-segment, centre weighted, spot	Multipattern, spot	Multipattern, spot	Auto TTL
6	6	5	5	5	5	5
✓	✓	X	✓	X	X	X
+/- 2EV, 1/3 increments	+/- 2EV, 1/3 increments	+/- 2EV, 1/2 increments	+/- 2EV, 1/3 increments	+/- 2EV, 1/2 increments	+/- 2EV, 1/3 increments	X
4-30	4-30	20-50	1-60	30-80, Super Macro 6-30	10-50	10-50
33 x 25	27 x 20	67 x 50	37 x 28	59 x 44	70 x 53	77 x 58
Auto, red-eye reduction, forced, off	Auto, red-eye reduction, forced, off	Auto, red-eye reduction, forced, off, slow synchro red-eye reduction	Auto, red-eye reduction, forced, off, slow synchro with	Auto, red-eye reduction, forced, off, slow synchro	Auto, red-eye reduction, forced, off	Auto, red-eye reduction, forced, off, slow synchro
X	X	X	X	X	✓, 3 levels	X
50-800	50-200	60-400	125, 200, 400, 800	100, 200, 400	100, 200, 400	100, 200, 400
X	X	X	✓	✓	✓	✓
X	X	X	X	Monochrome, sunset, sRGB	Negative art, monochrome, sepia, solarize	Sepia, monochrome
X	X	X	X	3	X	X
X	X	X	X	X	X	X
Optical	X	Optical	Optical	Optical	Optical	X
1.5in, 111,000 pixels	1.5in, 111,000 pixels	1.8in, 85,000 pixels	1.6in, 80,000 pixels	1.5in, 118,000 pixels	1.5in, 123,200 pixels	1.5in, 118,000 pixels
97/82	97/N/A	98/74	Not stated/76	Not stated/not stated	100/not stated	100/N/A
X	X	X	X	X	X	X
PAL/NTSC	X	PAL/NTSC	PAL/NTSC	PAL/NTSC	PAL/NTSC	X
✓, plastic	✓, plastic	✓, plastic	✓, plastic	✓, plastic	✓, metal	X
X	X	X	X	X	X	X
X	X	X	X	Optional remote	X	X
X	X	X	X	X	X	X
218	216	220	209	209	260	214
88 x 65 x 38	114 x 60 x 32	108 x 58 x 40	124 x 56 x 37	106 x 55 x 38	120 x 58 x 37	108 x 54 x 30
2 x NiMH AA (2,000mAh)	Lithium ion	2 x alkaline AA	2 x alkaline AA	Lithium (non-rechargeable)	2 x NiMH AA (2,100mAh)	Lithium ion
✓	✓	X	X	X	✓	Uses AC adaptor
X	X	X	X	X	X	✓
USB	USB	USB	USB	USB	USB 2	USB
NikonView 6, Adobe Photoshop Elements 2	NikonView 5, Adobe Photoshop Elements	Camedia Master 4.1	Caplio G3 Software	Digimax Viewer, MGI PhotoSuite III SE	Pixela ImageMixer 1.5	ACDSee image viewer
X	X	X	X	✓	X	✓
Built in	Built in	Built in	Built in	Built in	Built in	Built in
Wrist strap, video cable, USB cable	Wrist strap, USB cable	Wrist strap, video cable, USB cable	Wrist strap, A/V cable, USB cable	Wrist strap, A/V cable, USB cable	Wrist strap, A/V cable, USB cable	Neck strap with stylus, USB cable



Canon Digital IXUS v³

PRICE £288 (£338 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT An excellent performer with impressive features considering its size. Although there are now significantly smaller options, they can't match the IXUS for quality.

The ultra-compact IXUS family has been around for some time now and its age is starting to show. Although it's small compared with most digital cameras, upstarts like Casio's Exilim EX-Z3 are even smaller.

However, we remain impressed by how many features Canon manages to squeeze into the v³'s all-metal chassis. The 1.5in LCD is bright, sharp and responsive, and there's now a 3.34-megapixel CCD against the 1.92-megapixel sensor in the previous IXUS. Manual white balance, exposure compensation and spot metering are easily reachable via the well-designed menu system. Plus, Canon's usual stitch-assist feature makes panoramas simple to shoot.

When it came to our tests, the IXUS again proved its quality. Reproductions of our indoor still-life scene were among the best, with accurate white balance, excellent sharpness and negligible noise evident in both flash and non-flash shots.

Unfortunately, in spite of its sharpness,

the small 2x optical zoom lens held the IXUS back on occasion, not least when we zoomed in on the BT Tower, with detail being not surprisingly absent. In general, shots of our model were excellent, with superb sharpness and colour accuracy. However, the size of the lens again caused some problems, with these shots being slightly spoiled by barrel distortion.



Canon PowerShot A70

PC PRO
A LIST

PRICE £228 (£268 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT Excellent all-round image quality and an amazing array of features make the PowerShot A70 an outstanding choice.

Armed with a superb 3x optical zoom lens, a 3.34-megapixel CCD and a wealth of features, the PowerShot A70 is well placed to blow its predecessor, the previously A-Listed PowerShot A40, out of the water.

Although relatively heavy at 328g, the A70's half-metal, half-plastic body oozes quality. It's comfortable even for one-handed use, as the shutter button, mode dial and zoom control are all in reach. What's more, the buttons and menu system are similar to the IXUS's intuitive design, and the 1.5in LCD, while a little small, is bright, accurate and quick to update.

In terms of image quality, the A70 finished near the top of every test. In our indoor shots, auto white balance was excellent and colours were accurate. Neither noise nor compression artefacts were evident when viewed up close, although a slight yellow cast did creep in without flash. The sharp Canon lens captured excellent detail when zooming in on the BT

Tower, but the A70 really came into its own in our portrait shot – images were exquisitely sharp, accurate and well-exposed.

Our general testing showed that Canon's fantastic evaluative metering virtually always produces perfectly exposed photographs, even in heavily backlit and high-contrast situations. The relatively fast lens and assist lamp meant that the A70 excelled in low-light conditions, enabling smaller apertures (and subsequently greater depth of fields) than any other camera

but the HP. When flash was needed, it

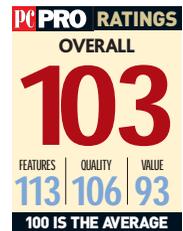


These aren't major problems, though, and our general testing reinforced our opinion that the IXUS is a very capable performer. One highlight was movie capabilities: even clips shot at 640 x 480 remained smooth, limited only by memory capacity (Canon supplies a 16MB CompactFlash card).

This isn't to say that the v³ is without its faults: depth of field was sometimes lacking and flash, while impressive up close, wasn't as powerful as we'd have liked. Also, some overexposed and underexposed shots occasionally appeared – it couldn't match the PowerShot A70 here.

On the whole, the IXUS is a great camera as its features and quality scores show. However, its high price, compared with the A70 – which performs better but costs £60 less – means we can't recommend this third version of the IXUS. Another problem for the v³ is the imminent release of the IXUS II, which promises to be smaller still and has a faster on-board image processor.

Bearing this in mind, it may be worth waiting for the new model. If you're after a stylish, compact device now, the Casio Exilim is thinner and boasts a 3x optical zoom, if slightly poorer image quality overall.



was rarely overpowering and enhanced outdoor shots when used as fill-in. We hardly needed to use the manual white balance, while the multipoint auto focus – which shows on-screen the point or points on which the camera has focused – was easily the most accurate and one of the fastest on test.

All of this, coupled with a fast start-up time of 3.2 seconds, makes the A70 ideal as a point-and-shoot device, leaving users to worry only about their composition. But, like the Samsung Digimax V4, the A70 caters for the enthusiast with full manual control over shutter speeds (15 seconds to 1/2,000 second), aperture, focus, exposure compensation and ISO.

At this price, we can forgive the lack of rechargeable batteries and a case, especially as there's a decent array of software, including the useful PhotoStitch. If you're still not convinced, the A70 also excels when shooting movies – the 640 x 480 mode with sound (as shared with the IXUS) beats everything else on test. Then there's a decent continuous mode. We could go on and talk about the add-on lenses and cheap CompactFlash media, but by this point the A70 is well and truly in the lead in this Labs.





Casio Exilim EX-Z3

PRICE £269 (£316 inc VAT)

SUPPLIER www.dabs.com/2CTDWS

VERDICT Super-compact, yet with a 3x optical zoom, the Exilim produces decent shots outdoors. Only poor image quality when compared with the best prevents an award.

If you're after a compact digital camera, nothing beats Sony's Cyber-shot DSC-U20 (see p130), but it doesn't have a zoom lens. Casio's new Exilim EX-Z3, however, measures just 87 x 57 x 23mm (W x H x D) – slipping easily into a pocket – yet has a 3x optical zoom lens against the 2x of the thicker IXUS.

With its 3.34-megapixel sensor, the EX-Z3 has a maximum resolution of 2,048 x 1,536 and saves images as JPEG, EXIF 2.2. Just five of these can be stored in the 10MB of integrated memory, but there's an SD/MMC card slot for extra storage.

In spite of the diminutive dimensions, Casio has made room for a large 2in LCD on the rear. The only disappointment is its low resolution compared with others on test, but it's quick to update when framing and is bright enough outdoors. External buttons are kept to a minimum, but the four-way direction pad makes menu navigation simple.

Although the EX-Z3 is packed with features, there aren't many manual

photographic controls. You can't alter much aside from ISO and EV adjustment, plus a basic manual focus. There's no continuous shooting either. Movies are supported at 320 x 240 with audio and limited to 30 seconds in length, but we were disappointed with both the picture and sound quality.

Still, there's plenty to like about the EX-Z3. It starts up in a mere 2.6 seconds and the 21 preset



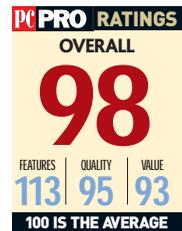
scene modes enable you to get the best results in varying situations. The metal tripod mount is a welcome inclusion and the generously bundled docking cradle charges the lithium ion battery and allows one-touch picture downloading.

Being compact and feature-laden is nothing without decent image quality and the EX-Z3 turned in a mixed bag of test shots. Macro ability was good, with a captured area of just 33 x 25mm, but indoor performance was marred by the poor auto white balance. Using the manual setting fixed the problem, but other cameras didn't require this interaction.

Outdoors, images were better. Our portrait shot showed good exposure, realistic skin tones, superbly accurate colours and good flash performance. Zooming in on the BT Tower shot revealed noticeable JPEG artefacts (due to the high compression), but resolution and detail capture were respectable overall. Our main gripe was the Casio's tendency to produce blurred shots with a narrow depth of field as well as

constantly burning out highlights.

While we can't recommend the EX-Z3, it's a good choice if you want a camera you can take anywhere.



Fujifilm FinePix A310 Zoom

PRICE £254 (£299 inc VAT)

SUPPLIER Fujifilm 020 7586 1477

VERDICT The A310 takes good snapshots, but lacks quality compared with the Olympus C-350. Unless the price drops significantly, it's one to avoid.

Fujifilm's brand-new A310 – the successor to the A303 – uses the firm's fourth-generation Super CCD HR with the aim of producing even sharper images. As standard, the A310 matches other 3-megapixel cameras with 2,048 x 1,536 pixel images, but using interpolation it can produce 6-megapixel, 2,816 x 2,120 images.

Sadly, image quality wasn't as fantastic as Fujifilm's publicity would have us believe. Indoors, we noticed images were noisy when viewed full size, a trait we've seen with Super CCD in the past. This was true with and without flash, but with flash we saw a slightly red cast, showing up the failings of the auto white balance. Without flash, the 64-segment metering resulted in good exposure and the auto focus worked well. But, when stepping up to six megapixels, images weren't any sharper and were just as noisy.

Outdoors, images were again noisier than we'd have liked. The BT Tower shot showed lots of compression artefacts and was no match for Nikon's Coolpix 3100. Our portrait shot,

meanwhile, was the A310's highlight, thanks to good exposure, great skin tones and accurate colours. For a point-and-shoot camera, this is the most important result.

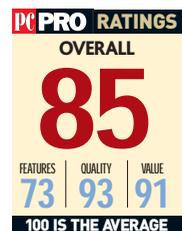
If you choose to take non-interpolated photographs, the supplied 16MB xD-Picture Card can store 19 photos. Fujifilm also crams in the near-ubiquitous 3x optical zoom, although one sign of cost cutting is the 1.5in LCD – this has just 60,000 pixels, but is fairly swift to refresh.



Despite the lightweight plastic casing (which lends this camera a cheaper feel than you might expect) and absence of features, the A310 sits at the top end of Fujifilm's Basic & Compact range. And it means basic. For example, enabling the 'manual' mode only adds exposure compensation and white balance options to the standard menu – and there isn't even a manual white balance control. A separate button controls image size and ISO; you can choose between 200, 400 and – thanks to the Super CCD – even 800, albeit at a fixed 1,280 x 960.

The basic theme continues on the rear, where a dial lets you choose from auto, movie (silent movies can be taken at 320 x 240 for up to 120 seconds), playback and scene modes. The latter comprises portrait, landscape, sport and night scenes, automatically adjusting the aperture and shutter speeds to the appropriate values.

It may be easy to use, but at £254 the FinePix A310 is too expensive to compete with similarly priced cameras on test. It can't match the best for quality, it lacks manual control and it also falls behind the winners when it comes to build quality.





HP Photosmart 850

PRICE £289 (£340 inc VAT)

SUPPLIER www.dabs.com/24YYWS

VERDICT Packed with features, including an 8x optical zoom, the HP is slightly let down by a slow auto focus and a limited choice of resolutions, but it's still a fine choice.

Although it costs the same as the Canon IXUS v³, the Photosmart 850 couldn't be more different in specification. We were amazed that, for less than £300, you can buy a 4-megapixel camera with an 8x optical zoom. It also has an EVF (electronic viewfinder), which automatically senses your eye and switches on.

Of course, the disadvantage is that the 850 is the largest camera on test – little helped by the fact that it has to accommodate four AA batteries for power. Needless to say, only alkaline cells are included. Features-wise, the 850 is only rivalled by the Samsung V4 and Canon A70, but neither can compete with the HP's awesome lens.

Those craving manual control will appreciate shutter- and aperture-priority modes, manual white balance, a choice of metering modes and exposure compensation to +/- 3EV. However, there's no manual focus or full manual mode and only ISO selection between 100 and 200. Another sticking

point is the choice of just two resolutions – either 4-megapixel or 1-megapixel.

A 16MB SD card is included – this will store only six shots at full quality. Movies are supported with audio at 288 x 208 for clips up to a minute long. Downloading to a PC is fast thanks to the USB 2 interface.



Image quality indoors was respectable, particularly thanks to accurate colours, but the maximum aperture of f/2.8 was slower than we expected from the large lens. We also noticed some jaggies – inexcusable considering the huge 1.7MB JPEG files. No uncompressed mode is offered. Detail and resolution weren't noticeably better than the 3-megapixel cameras on test and some noise was evident in the shot without flash. Also, the auto white balance didn't work as well as we'd like.

Outdoors, the 8x zoom meant the 850 surpassed every other camera on the BT Tower shot, but generally outdoor shots tended to be underexposed. Using the fill-in flash, the HP took a good portrait shot, but colours were rather saturated even if the exposure was impressive.

One general criticism is that the auto focus was rather slow compared with others, and this proved frustrating after a while. The start-up time of 4.6 seconds was relatively slow too. Outdoors, the main 2in LCD was hard to see, but the EVF was excellent – it's only a shame you can't review images on it.

While the 850 has several faults, it certainly offers good value and decent image quality for those wanting a large zoom lens on a budget.



Kodak EasyShare LS633

PRICE £229 (£269 inc VAT)

SUPPLIER www.dabs.com/2FGRWS

VERDICT The OLED screen is amazing and build quality is outstanding. Image quality, however, can't match the best on test.

The EasyShare LS633 is the very latest in Kodak's range and will only just be available by the time you read this review.

It has one unique feature: a huge 2.2in OLED screen. Standing for Organic LED, OLED is a new technology that's likely to replace LCD in the future thanks to bright, vivid colours, fast refreshes and super-wide viewing angles.

While this screen dominates the back of the Kodak, the brushed-metal finish makes the LS633 an attractive, solidly built camera. A dial on the rear acts as an on/off switch and lets you select between auto, macro, movie and three scene presets quickly. Movies are only limited in length by the memory capacity, and the test clips we shot had adequate frame rates, superb colours and good sound. The only limitation is that you can't zoom while filming.

A total of 16MB of memory is integrated, enough for 17 best-quality shots, and there's an

SD/MMC card slot as well. We also appreciated the supplied lithium ion battery, which lasted ages even with the screen on.

As the LS633 is aimed at the point-and-shoot market, there's little in the way of manual control – exposure compensation is a menu option rather than an external button. However, navigating menus is easy with the mini-joystick and, providing you don't mind the slightly patronising cartoon-style, icons are intuitive.



We expected great image quality from the 3.34-megapixel CCD and Schneider 3x optical zoom lens, and indoors it certainly lived up to expectations. Flash performance was excellent, with good coverage and detail capture. What's more, the red-eye reduction mode was very effective. Colours were accurate, as was the white balance in automatic mode. Without the flash, the image was slightly underexposed, but colours remained realistic.

Outdoor quality was generally good, but highlights were burnt out in most photos. We appreciated the accurate colours, and skin tones were also true to life – in fact, taking shots of people is one of this camera's strongest points. Our fill-in flash shot was respectable against the harsh backlighting. But, when zooming in on the BT Tower, we noticed JPEG compression artefacts, which led to a lower score than other cameras. Macro ability was even more disappointing – the LS633 could only focus close enough for an area of 89 x 67mm.

It's this sort of shortcoming that prevents us from recommending the LS633, but if you want a point-and-shoot camera for snapshots, particularly of people, it's a good choice.





Nikon Coolpix 3100

PRICE £211 (£248 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT Superb image quality, a tempting price and an intuitive interface make the 3100 stand out from the crowd.

Nikon is no stranger to winning awards for its digital cameras in *PC Pro* – indeed, the Coolpix 4500 won the Recommended award in our last digital cameras Labs (see issue 98, p115). The 3100 is a new compact design, based loosely around the original Coolpix 775. Its small dimensions mean it will fit unobtrusively into bags and coat pockets.

The familiar combination of a 3.34-megapixel CCD and 3x optical zoom puts the 3100 on a par with most other contenders in this Labs. As usual with Nikon, CompactFlash cards are the chosen recording media, but only Type I is supported. A 16MB card is bundled.

A 1.5in LCD with 111,000 pixels makes it easy to check focus and has a fast refresh for framing and shooting movies (without sound). As well as 320 x 240, VGA movies are possible, but the frame rate is much slower than the two Canons. In spite of the low price, two 2,000mAh NiMH AA batteries are included along with a charger.

In keeping with the point-and-shoot target market, there are a total of 14 scene presets, many of which place an overlay on the LCD to assist shooting. The 'manual' mode allows you to change exposure compensation, image sharpness and also features Nikon's highly useful Best Shot



Selector where only the sharpest image of a burst sequence is kept.

But, even without using the in-camera sharpening, the 3100 produced some of the best photos we saw. Particularly worthy of note is the BT Tower close-up, which shows just how well Nikon's tiny lens can resolve detail. Plus, the tricky portrait shot was competently handled, resulting in near-perfect exposure, great fill-in flash performance and well-saturated, accurate colours. Indoors, the auto white balance worked well and the 3100 was able to capture a tiny area in macro mode.

Our main gripes – and the reasons why the 3100 didn't win this Labs – are that the auto focus didn't always deliver sharp photos and the absence of a low-light assist lamp meant that the 3100 sometimes struggled with night shots. Plus, the Coolpix has no spot metering or on-screen focus indication like the A70, so it isn't possible to tell which part of the composition is being used to lock on to.

The A70 also has sound recording capabilities and 'proper' manual shooting modes, which will appeal to enthusiasts, but the 3100's more compact dimensions, rechargeable batteries and lower price make it a great alternative.

PC PRO RATINGS		
OVERALL		
110		
FEATURES	QUALITY	VALUE
98	113	120
100 IS THE AVERAGE		

Sony Cyber-shot DSC-U20

PRICE £170 (£200 inc VAT)

SUPPLIER www.dabs.com/28PZWS

VERDICT A camera with true 'wow' factor. The U20 is capable of taking great pictures and its ultra portability encourages you to take plenty of them.

In spite of the number of sexy digital cameras in the Labs this month, one stole everyone's attention: the Cyber-shot DSC-U20. Sony's mobile phone-sized camera oozes desirability from every angle with its gorgeously designed and solidly engineered aluminium casing.

With a weight of 118g and dimensions of just 85 x 40 x 29mm (W x H x D), it fits easily into any pocket and is one of the only cameras you'll carry everywhere with you. Two trade-offs are the fixed lens, equivalent to 33mm on a 35mm film camera, and a 2-megapixel CCD. However, this still gives a maximum image size of 1,632 x 1,224, which Sony claims is enough for A4 prints.

An 8MB Memory Stick provides storage for 15 top-resolution photos or 80 at 640 x 480. Silent movies can be captured, but only at 160 x 112 pixels.

Available in blue, silver or black,

Sony's little gem is aimed squarely at those who value portability, ease of use and style above out-and-out image quality. Without a telescoping zoom lens, the near-instant power-up time of 1.2 seconds also means you'll be able to capture life's more unexpected moments.

There's no optical viewfinder, but the tiny 1in LCD screen provides a fast refresh, although its brightness pales in comparison with most others on test. Menu options are easily readable, though, and you can turn the backlight off to save power. Not that



this should be necessary, as the two rechargeable 750mAh AAA batteries kept it going for a good length of time – a charger is also supplied.

In terms of image quality, the U20 is certainly impressive for its size. Auto focus is fast and generally accurate, while white balance rarely fails. Well-lit outdoor shots were very sharp, and colours were accurate and had little noise.

Indoor shots, however, were something of a mixed bag. The U20 struggles in low-light situations without flash, where a large degree of noise crept into most pictures. Shots with flash, though, were much better; my subjects were well exposed even in the darkest of rooms. It's worth noting that the flash is tiny and noise can quickly reappear if subjects are more than a couple of metres away.

I've become incredibly attached to the DSC-U20, and its portability has meant that I've carried it everywhere over the past few weeks. Picture quality is impressive overall and, although it doesn't offer the greatest value compared with others on test, the U20 is sure to win over many fans.

NICK ROSS



Nikon Coolpix 3500

PRICE £262 (£308 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT Disappointing image quality for the price, the 3500 also lacks manual features compared with its rivals. Only its macro mode pushes it to the fore.

The Coolpix 3500 looks very much like a miniature version of the older 950 design, but with a frame around it. The swivel design, Nikon claims, is to allow a 3x optical zoom to be incorporated into a camera just 32mm deep. It undoubtedly helps, but Casio manages to squeeze a telescoping 3x lens into its EX-Z3, which is thinner still at 23mm.

Pernickety comments aside, the 3500 feels generally well built, with our only complaint being the slightly flimsy battery/CompactFlash cover. The same high-resolution 1.5in LCD as used in the 3100 is a welcome sight, as is a similarly intuitive control system. The menus have a more grown-up look but are just as limited as the 3100's. Our criticism of the 3100's lack of auto focus indication can also be levelled at the 3500, but we found shots were always in focus, unlike some of the 3100's.

Although the side-by-side

specifications look similar, the 3500's lens is completely different to the 3100's and has a maximum shutter speed of two seconds against the 3100's four seconds. Also surprising, considering the higher price, is a single movie resolution of 320 x 240, again without audio. The same continuous shooting and Best Shot Selector modes are present, as is a lack of ISO control or spot metering.

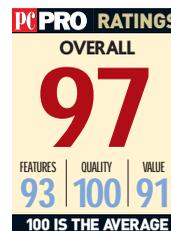


The compact dimensions also preclude an optical viewfinder, so you always have to use the LCD for framing shots.

We were surprised that the 3500 couldn't match the 3100 overall for image quality. A slight purple cast on the indoor flash shot meant colours weren't too accurate, particularly throwing reds out. The image was underexposed too. Without flash, the 3500 produced a slightly less sharp shot than the 3100, but exposure and colours were impressive.

In macro mode, the 3500 outstripped everything else on test, capturing an area of just 27 x 20mm. Outside, the 256-segment metering really shone with consistently good exposures. Plus, the tiny lens let in enough light to freeze action shots in our general testing, using fast shutter speeds. The fill-in flash portrait shot wasn't quite as good as the 3100's, with colours slightly unrealistic – notably skin tones had a purple tint. The BT Tower photo wasn't as sharp either but remained more detailed than most.

Ultimately, the Coolpix 3500 is adequate for general snapshots, but the 3100 delivers better image quality at a much lower price without sacrificing any of the 3500's features.



Olympus Camedia C-350ZOOM

PRICE £186 (£218 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT A good budget camera, capable of taking great shots indoors and outdoors. The lack of features is acceptable given the price.

As the cheapest camera on test, we were surprised by the C-350's specification. Despite costing less than £200, the Olympus features a 3x optical zoom lens and a 3.34-megapixel CCD. The maximum aperture is a rather slow f/3.1 and the longest exposure is only two seconds, but the C-350 isn't aimed at the kind of people who need to know about these features. Instead, it should be judged on its merits as a budget, point-and-shoot camera.

The design hasn't changed much from previous Camedia models, but the plastic body feels solid enough. A sliding door acts as a lens protector as well as an on/off switch, and the 1.8in LCD is larger than average, even if it has a low resolution.

Just six buttons are present to control all menu functions. These are fairly intuitive and allow selection of

either program auto or four scene modes. Metering includes ESP and a useful spot mode, while exposure compensation, continuous shooting (up to 11 frames) and a 2-in-1 mode are also selectable. There's no manual ISO selection and movies are limited to 15 seconds with no audio capabilities.

The C-350 uses the new, low-power xD-Picture Card, and 16MB is supplied for six images at top quality. We were slightly disappointed that



only XGA or VGA resolutions are offered if you don't want to use the full 3-megapixel quality. Not surprisingly at this price, only alkaline AA batteries are supplied.

In our indoor tests, the auto white balance worked well – good news, as there isn't a manual option – and colours were accurate. Resolution was respectable, although the image with flash was a touch grainy. Without flash, noise was again present, but the exposure was spot on, as was white balance. Macro ability was fair, with an area of 67 x 50mm, but the corners remained in sharp focus.

After the great indoor performance, the BT Tower shot didn't match our expectations. Although fine from a distance, up close we noticed a lack of detail – partially because of slight overexposure – which was much more apparent when placed next to the Nikon Coolpix 3100's effort. However, the portrait shot was excellent, with good exposure, well-saturated colours and superb resolution.

In general use, we appreciated the C-350's competence in taking quick snapshots that were always in focus and well exposed. For this reason, it's a much better budget choice than Ricoh's Caplio G3.





Ricoh Caplio G3

PRICE £189 (£222 inc VAT)

SUPPLIER www.dabs.com/2HV0WS

VERDICT Generally poor image quality isn't helped by just 8MB of memory, lacklustre build quality and a low-resolution LCD.

Like the Olympus C-350, the Caplio G3 costs well under £200. The cheap-looking plastic body gives the game away, and build quality isn't quite up to the standard of the Camedia. In fact, the G3 was showing evidence of wear after only a few days of use. But the main specifications are almost identical: a 3x optical zoom and a 3.34-megapixel CCD, with a power source of two AA batteries.

The Ricoh is 16mm longer than the Olympus, though, making it less pocketable. A dial on top lets you switch between playback and the four main shooting modes: auto, scene, movie and sound. Four direction buttons and a 1.6in LCD make the rear look similar to the C-350, but with only 80,000 pixels it's difficult to check that images are in focus.

Where Ricoh scores against Olympus is that the G3 can record audio with movies and

has a more usable 1,280 x 960 mid-resolution. It also allows manual ISO selection, has a faster continuous drive, a time-lapse shooting option and is the only camera on test capable of exposure and white balance bracketing.

However, the Caplio only has 8MB of memory, good for just five full-resolution images, against Olympus' 16MB. There's an SD/MMC card slot, but

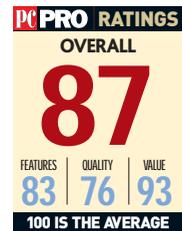


8MB is inexcusable in a 3-megapixel camera. The start-up time of 2.6 seconds is a bonus, though, and Ricoh claims a shutter response of just 0.14 seconds. The G3 felt fast in use, but the LCD wasn't particularly quick to refresh.

Image quality, sadly, was the worst we saw. The main issue was undersaturated colours indoors and outdoors. Noise was also a problem, while detail capture wasn't up to the level we'd expect from this lens and CCD combination. The portrait shot showed up these flaws and they can't all be corrected in any photo-editing suites. Resolution in the BT Tower shot was reasonable, but noise was again noticeable.

One highlight was the macro test, where the G3 captured a much smaller area than the Olympus of 37 x 28mm. Plus, barrel distortion was barely noticeable. But outdoor shots, including the portrait shot, were consistently underexposed, while any shots with flash were overexposed and highlights burnt out.

Since xD-Picture Cards cost roughly the same as SD cards, investing in this new technology isn't any more expensive and makes the Olympus the obvious budget choice over the Ricoh.



Samsung Digimax V4

PRICE £245 (£288 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT A great price for a 4-megapixel camera, but image quality isn't on a par with the best in this Labs.

As the reigning A-Listed value digital camera, the Digimax V4 was always going to be hard-pushed to retain its status after this competitive Labs. But there are plenty of good reasons why it made it onto the A List in the first place.

For a start, it has a 4-megapixel CCD and a Schneider Kreuznach 3x optical zoom lens. It's compact too, measuring just 106 x 55 x 38mm (W x H x D), solidly built – in spite of the plastic casing – and comes with a carry case.

While Samsung isn't the biggest name in digital cameras, the firm certainly seems to be heading in the right direction, catering for both point-and-shoot and advanced amateurs with the Digimax V4. A dial on the rear selects from eight shooting modes, which include easy, program and the manual mode. The latter is blessed

with not only aperture- and shutter-priority modes, but also fully manual control. Oddly, there's no manual white balance, but there's +/-2EV exposure compensation, spot metering and manual focus. Many will also appreciate the MySET shooting mode, where you can save your preferred settings.

The 1.5in LCD is rather small, but it's sharp and fast enough for framing, and the five-way navigation pad makes the V4 intuitive to use.

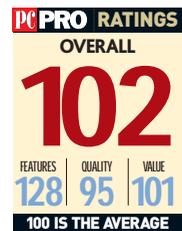


While no rechargeable batteries are included, Samsung bundles a 32MB SD card for 12 full-resolution images, and it's worth noting that the V4 is the only camera on test capable of storing files in uncompressed TIFF format, although each one would be 11MB in size.

Image quality, as we originally found (see *issue 103, p75*), wasn't incredible. The auto white balance left a slight green cast in our indoor shot without flash and a blue cast when using flash. However, resolution was excellent and noise minimal. Outdoors, we noticed that the slow auto focus meant moving subjects were difficult to capture and, even on a tripod, our shot of the BT Tower wasn't as well focused as we'd hoped.

In our general testing, though, we found images were always in focus. Metering using the multi setting produced superb results in most situations and the V4 coped well indoors and with harsh backlighting. However, flash coverage was less than we'd hoped for and the Super Macro mode wasn't particularly inspiring. What's more, the sound quality in movie clips was poor and you can't use the zoom.

Sadly for Samsung, Canon's A70 steals a march on the V4, offering a similar array of controls and delivering significantly better image quality for less money.





Sony Cyber-shot DSC-P72

PRICE £237 (£278 inc VAT)

SUPPLIER www.internetcamerasdirect.co.uk

VERDICT Good image quality outdoors, but indoor performance isn't great. Long battery life is a plus, but not enough to make the P72 a winner.

In our last digital cameras Labs, the DSC-P71 (see *issue 98, p96*) proved good enough to win a Recommended award. In spite of the eight-month period between reviews, the P72's specifications remain virtually identical with a 3.34-megapixel CCD and 3x optical zoom.

Improvements include support for Memory Stick Pro (for high capacities) and a USB 2 interface. Sony bundles a 16MB stick, which is good for ten images at 2,048 x 1,536, but more importantly includes rechargeable batteries in the package. The six-hour wait for a single charge is annoying, although the high-power 2,100mAh AA cells last for ages.

On the back is a small, 1.5in LCD, but with 123,200 pixels it's one of the sharpest around and the controls and menus are intuitive. Although there's little in the way of manual options, there are some useful

features, including flash-level adjustment, spot metering and a choice of multi- and centre-weighted auto-focus modes. Exposure compensation is possible, as is ISO selection, but there's no manual white balance. In low-light situations, the focus-assist lamp proved useful, although the LCD did become very grainy.

Image size is set using a separate button, but values are in megapixels rather than actual dimensions. We



appreciated the blistering start-up time of 2.3 seconds. However, it's worth noting that, after using the flash – as with most cameras – there's a second or two wait while it recharges.

We expected great quality from the P72, but it really needs lots of light to perform well. This meant that outdoor shots were generally better than indoor shots. The portrait shot (with fill-in flash) was one of the best we saw. Skin tones were superb, and it was hard to tell a flash was used. Without flash, exposure remained good, but colours were a touch oversaturated. Resolution was also impressive, although the BT Tower shot was noisier than we'd have liked and the high compression led to noticeable artefacts.

Indoors, the auto white balance was respectable, but our overriding concern was noise, which plagued shots – both with and without flash. Surprisingly for a Sony camera, macro ability wasn't brilliant, with a large area of 70 x 53mm. Movies, while exhibiting good sound, were far grainier than the Canons and prevented the use of the optical zoom.

Overall, the DSC-P72 doesn't fare well against the current competition. When Canon's PowerShot A70 has more features and better image quality for less money, there are few reasons to buy the Sony.



Toshiba PDR-T30

PRICE £245 (£288 inc VAT)

SUPPLIER www.dabs.com/29X5WS

VERDICT Toshiba's PDR-T30 produces relatively poor image quality and lacks several key features. Disappointing.

The PDR-T30 represents a big departure from the firm's previous digital camera designs we've seen at *PC Pro* and is unique in having a touch-screen LCD. Not that we could find a good reason for it being there – the five-way navigation pad is arguably easier to use when navigating menus.

Gimmicks aside, the PDR-T30 is compact and sturdily built thanks to an all-metal case. Toshiba supplies a garish green carry case and a sparkly plastic neck strap, both of which detract from the otherwise tasteful design. Also included are a rechargeable lithium ion battery and a 16MB SD card.

Perhaps due to its compactness, there's only a 2x optical zoom, but the 3.34-megapixel CCD is par for the course in this test. A sliding door, rather like the Olympus Camedia's, protects the lens but doesn't act as a power switch. This is a missed opportunity, and note that power-on time is slow at 5.4

seconds. Disappointingly, there's no optical viewfinder or tripod thread, the latter being a particularly frustrating omission since the base of the camera is curved.

Unlike other cameras, the PDR-T30 doesn't even pretend to have a manual mode – almost every function is automatically controlled bar white balance, which has four presets if the automatic mode fails. You can also manually select ISO from 100, 200 or 400 settings. There's a basic continuous mode, which saves 16



frames as a single image, and movies can be shot at 320 x 240 with no audio.

When scrutinising images, we found that the PDR-T30 generally produced acceptable snapshots, but quality was second poorest overall. Our indoor scene with flash was underexposed and fairly noisy, while the same scene without flash was overexposed, noisy and exhibited a similarly poor level of resolution and detail capture. An area of 77 x 58mm was rather large for the macro shot and focus was noticeably poor in the corners. Thankfully, barrel distortion was acceptable for a lens this small.

Outdoors, the 2x zoom prevented the Toshiba scoring well on our BT Tower shot, where detail capture was poor compared with the Nikon Coolpix 3100. The portrait shot was well exposed, but colours were undersaturated and skin tones became slightly jaundiced. In general testing, the PDR-T30 struggled with highlights and shadows, burning out whites, especially when using the flash indoors.

Overall, Toshiba has left too many features out of the PDR-T30 and included too many novelty ones. While it excels at taking general snapshots, there are better choices.

