

# SHARP SHOOTERS

THE LATEST 3 MILLION PIXEL CAMERAS PUT TO THE TEST



ILLUSTRATION BY CHRIS ROBINSON

With these affordable top quality cameras there'll be no need to rob the rich...

WORDS & PICTURES RAY (ROBIN HOOD) ALLEN

Digital photography has come a long way in a short time. The quality that can be obtained from today's digital cameras would have cost you a small fortune not so long ago. Three million-plus cameras are now the current limit and although they still can't compete with high-end film cameras, for most of us who use a camera for the odd picture or holiday snaps, digital versions are more convenient and can produce better quality images than some cheaper 35mm cameras. For more demanding picture-taking most of the current three million pixel cameras have more than enough manual overrides. Next time you get your film developed look at how sharp they are, then browse our cover CD at the pictures taken with the various digital cameras in our three million pixel bonanza to see how sharp digital images can be!



## HOW THE TEST WAS DONE

All pictures were taken at either full wide angle or telephoto. Macro shots were taken as close as possible until either the camera gave a warning to say too close or the physical limit was reached as stated in the user manual. Each camera was mounted on a tripod. Every shot was taken with the best quality setting in JPEG format.

The girl portrait was used to show skin tone, fine detail on her hair and flash red-eye effect. The close up of the bike was to show fine detail and colour, the crank on the bike should have the fine text legible. The test chart shows resolution and lens quality. This is standard in all tests



TEST STARTS OVER THE PAGE

## Canon PowerShot S20 £699



Canon's PowerShot S20 is very compact – not much bigger than the tiny Fuji. From the front it looks like any other Canon compact film camera, only the back with its LCD screen gives it away. The gold and silver brushed finish makes it look expensive. As you would expect from a make like Canon the camera feels weighty, solid and well-built. Round the front you have a 6.5-13.0mm lens (32-64mm 35mm film equivalent) giving a good wide-angle, but for zooming into your subject it's the worst of the bunch. On the top of the body is

### WHAT YOU GET IN THE BOX

A wrist strap, Mac and PC cables, video cable (PAL output only), Canon software, Adobe PhotoDeluxe software, power adaptor/charger, Canon's own rechargeable battery pack, good manual and 16Mb CompactFlash card. No carry case.

the main shutter release, on/off/mode selector and the LCD info window. Round the back are all the main controls which are well laid-out and clearly marked.

The 1.8in screen is very good in bright sunlight. The switch gear gives a positive feel in use. A metal tripod mount is also provided. The level of manual control is average for a camera of this price, so it would suit first-time digital camera buyers. Features also include a useful stitch assistant mode for panoramic photos.

When you switch on the camera it springs into life at around three seconds, at which point the LCD appears and you are ready for action. Pressing the shutter the lens focuses quickly in under two seconds.

The buffer lets you take up to three hi-res pictures in quick succession before it gets full but you can view the saving process on the rear LCD by a small progress grid. This means the camera in use feels quick and responsive so will keep even the most trigger-happy satisfied. Using the LCD viewfinder to line-up shots works fine and for glasses wearers may be the only way to use the camera as the optical viewfinder does not have a dioptic adjuster.

The supplied battery pack is a NiMh type and takes 90 mins to charge. This gives about 50 pictures before another charge is needed. We only had to charge it once, which is good. The charger is a multi voltage type.

Now for the but... Taking pictures is a pleasant



This image lacks bite due to poor sharpness. You should be able to read SHIMANO on the crank.

experience until you review what you shoot, then you feel very disappointed compared to the competition in this test. Colour temperature is inconsistent and most pictures lack colour depth which result in shots on the cool side. Most shots are under-exposed. Sharpness is also a problem when viewed next to the others in this test.

On the plus side the lens, as you can see from our test chart grid, has virtually no barrel distortion with edge to edge sharpness, which is excellent. Focusing is good, but, as no indication is given if the camera has focused properly or not, if the shot is out of focus the end result looks like you have covered the lens with cling film!

On paper you would think Canon was onto a winner with this one, and out of the box it looks good and handles well, but it's let down by some less than average picture quality.

## Casio QV-3000EX £600



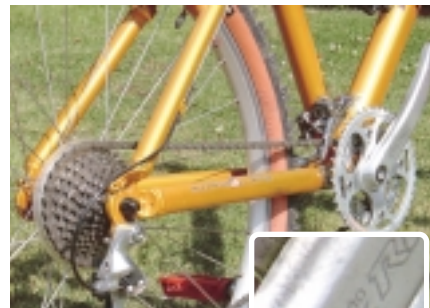
Last time we looked at this camera it didn't have much competition, so how does it fare this time? Physically it's not the biggest, that's taken care of by the Nikon and Epson. But it's still big for a digital camera! The body is silver and black plastic. Buttons are well laid-out, with clear labels showing each function they perform. The sculptured grip makes the camera fit nicely into your hand. In use it feels solid and balances well. Being bulky it will suit people with bigger hands, but it's not pocketable.

### WHAT YOU GET IN THE BOX

Neck strap, serial cables for Mac and PC, USB cable, video cable (PAL/NTSC), lens cap, soft case, four alkaline batteries to get you going, image transfer software on CD and a 8Mb CompactFlash memory card. No mains adaptor is included.

Up front we have a 7-21mm lens (33-100mm, 35mm film equivalent) that's manufactured by Canon. Optical zoom is at 2x with a 6x digital zoom available if that extra detail is needed. On top we have the main function switch to turn on/off the camera and a small LCD info window to keep you up-to-date with the battery state and number of remaining shots. This Casio runs on four AA cells, but power consumption is high. Two sets of batteries were used for the duration of this review, so carry a spare set! Round the back there's a very large and spectacle-friendly optical viewfinder, dioptic adjuster is also included. Menu control the 1.8in LCD screen, which is very good in bright sunlight. The zoom level is positioned in thumb reach but feels too small to use and you find yourself pressing it hard as the lever doesn't have much travel.

Casio have used some friendly graphics for the LCD and using the menu system is intuitive and logical, each function clearly shown in picture form and text so any beginner can understand the mode they have selected. As with most cameras now, the QV-3000EX also includes a movie option for Internet use. The quality of the movies is very high for a digital camera, but they are silent. Connecting it up to the computer can be done with USB or infrared. Full marks to Casio for making the USB port work on a Mac without any drivers – plug 'n' play at its best! Video-out is PAL and NTSC. Flip over the camera and there's a plastic tripod mount that is off-centre so you can



Level of fine detail is very high, but hard edges show some after-effects of the JPEG compression.

get to the battery compartment to change cells without removing it from the tripod. Power up is sluggish at around five seconds, with shots saved in just under two seconds.

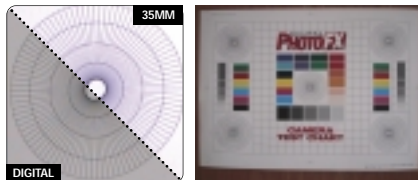
Picture quality is very good when compared with the competition; images are punchy and sharp. Detail capturing power of this camera is very high. Barrel distortion is not a problem with this great lens from Canon. Very slight under-exposure and colours being on the cool side is the only thing we can fault.

This is simply the best Casio to date. Shame they couldn't supply the camera with a battery charger with four rechargeable AA cells and given you a higher capacity memory card – the supplied 8Mb card can only hold five pictures on the best setting. Maybe next time Casio will be onto a real winner.





Flash is not powerful enough to light this indoor shot properly. Fine detail is lost.



From our test card we can see that under-exposure is a problem, but the lens is good with sharpness which extends right into the corners.

## VERDICT

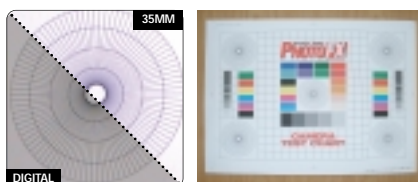
Looks good, feels good, but is let down by its not so good pictures and the zoom is not powerful enough. Try before you buy and then think carefully.

**RATING** ★★☆☆☆

CONTACT **CANON** 08000 350350



Red-eye is a problem. Skin tones are natural, if a little washed-out. Very fine detail is reduced.



Sharpness is very good but can lack bite. Colour is on the cool side. Just watch out for hard edges as our chart shows they can spoil a photograph.

## VERDICT

Excellent pictures from this camera, better suited for bigger hands! Good features and handling. Just make sure you get some spare batteries.

**RATING** ★★☆☆☆

CONTACT **CASIO** 020 8450 9131

# Epson PhotoPC 3000Z £799



Look quickly and you might mistake this Epson for a 35mm camera. The first thing you notice is the hot-shoe for an external flashgun. Also on top is an LCD info window for number of shoots and quality setting and main on/off switch with mode setting. Round the front is a 7-21mm lens (34-102mm 35mm film equivalent) and a substantial grip to keep things steady. It's weighty compared to the others, which also helps to steady shots. The back contains a 1.8in LCD screen with a function button surrounding the edge that acts as the on-screen navigation aid. This works very well, with clear on-screen graphics.

The screen is good in bright sunlight but there's also the large and clear optical viewfinder with dioptic adjuster. The battery compartment is under the hand grip, next to a plastic tripod mount.

Power-up takes just over four seconds, focusing takes around one second which makes this faster than others in this test. Before we say how quick it takes to save images we need to give you some information about HyPicT.



Unable to focus on what is quite a big object. The detail in the grass is not as sharp as it could be.



Red-eye is creeping in, image is lacking overall sharpness. Over-blown colour.

Epson have taken the bog standard 3.3 million pixel CCD and applied a technique called HyPicT (Hyper Picture Technology) to give 4.8 million pixels images. Epson claim it's better than other interpolation systems. For the purpose of this test (and your sanity!) we will not go into detail about the process. Saving images with this switch on can take up to 14 seconds as you need to wait for the additional processing to be done. But with the system off saving is under two seconds. Unlike the Fuji, this system can be switched off on the Epson so to be fair to the Fuji we have tested this Epson with the system on.

Pictures are generally well-exposed with only a few being slightly under-exposed. Colours are neutral and accurately presented. Sharpness is a little soft when viewed next to the competition. When viewed closely a level of JPEG after-effects are evident.

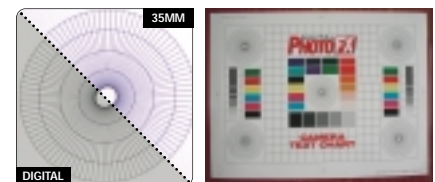
HyPicT doesn't affect the level of detail it just adds more pixels to make a bigger image area. If you need to print bigger files it may be of use, but for the majority of us the extra processing time and time delay don't justify the end result.

Power consumption is good – one set of batteries kept this camera powered for the duration of the test. The on-screen menus are a joy to use, the selection buttons that surround the screen make it easy and intuitive to use. Internet users will be pleased to know it has movie with sound capturing ability. You can also take sound clips with each photo if you wish.

The hot-shoe makes the camera more flexible to use in studio works. Another feature worth noting is the time lapse recording mode which can be programmed with various interval settings.

## WHAT YOU GET IN THE BOX

Soft camera case, lens adaptor, lens cap, battery charger with four AA NiMH batteries, Mac and PC serial cable, video cable (PAL & NTSC), USB cable, 16Mb CompactFlash card, Epson software and user manual.



Most images are soft compared with others, corner sharpness is poor. Colours can look over-saturated in some areas.

## VERDICT

Very good design with that traditional camera feel. The hot-shoe and easy to use on-screen menu system are let down by average picture quality.

**RATING** ★★☆☆☆

CONTACT **EPSON** 0800 220546

## Fuji FinePix 4700 Zoom £700

This little Fuji has been the most talked-about digital camera in a long time, not because it's a great camera, but because it was the first consumer



digital camera to break four million pixels using Fuji super CCD but only had a pixel count of 2.47! So, we ask, can this super CCD cut the mustard with some true three million plus cameras?

Physically it's the smallest of the bunch but weighty due to its brushed metal finish, that looks very tasty. This compact body has a very solid feel with super build quality and its looks give it the

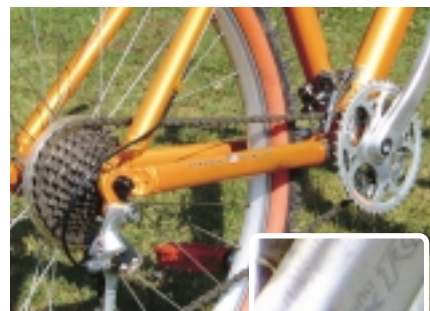
### WHAT YOU GET IN THE BOX

Battery charger with two AA Ni-MH, 16Mb SmartMedia card, USB cable, hand strap, video cable (PAL output only), Fuji software for Mac and PC plus Adobe PhotoDeluxe and a soft carry case.

desirability factor that others in this test can only dream of. At first you may find it hard to hold steady due to the small size, but after a short time you become accustomed to its tiny dimensions; bigger handed people may find it hard to use so try before you decide.

Up front we have a 3x optical Fujinon zoom lens that's a 7-21mm lens or 33-100 mm in 35mm format. On top there's a pop-up flash that's manually activated and the mode dial for the various capturing settings. Round the back we have a masterpiece of design; the jog-view-window, main on/off switch and a number of other function buttons. Next to this is the main 2in LCD screen which is very good in bright sunlight. Power is supplied by two AA cells that lasted the duration of this test – that's good as far as digital cameras go. Power up takes just over two seconds and once ready everything feels very snappy and responsive. Pictures are stored in just under four seconds which is decent, but not the fastest in this group.

Sharp focusing is achieved in around one second which is excellent. Picture quality from the Fuji is very high. We give exposure full marks as it's spot-on every time, nothing can fault it. Colour fidelity is superb, only leaning on the blue side in some shots. Focusing is again very good, and is only let down by low light situations when it can struggle to focus. Barrel distortion is high and sharpness falls off in the corners, but overall sharpness is good.



The main crank is not as sharp as it could be. And watch out for that unwanted pixel noise.

So how does super CCD compare with the competition when it comes to pure detail capturing? Super CCD may have a future but needs to be developed further to beat true CCDs. The level of fine detail captured is marginal when you compare it closely with the best in this test. Super CCD does seem to bring an extra edge to the Fuji images that some others lack in this test. Picture noise seems to be higher than normal CCDs which may be the extra detail the super CCD is supposed to be capturing.

The only cameras in this test doing anything close to what the Fuji is doing are the Epson, JVC and Ricoh but that is under software control inside the camera, whereas the Fuji is down to the hardware itself. Fuji must be doing something right as the images have far more sharpness than the Epson, JVC and Ricoh.

## JVC GC-X1 £700



First impressions are good – this has a classic finish with a good compact design. Up front we get a 7.5-17.5mm lens (37-86mm in 35mm format), so it's not as flexible as some in this test. On the top we have the usual LCD info window with the shutter release button and a number of function settings.

A good touch is the separate button for flash, timer and macro. The main on/off switch is at the end, just above the hand-grip, making it easy to accidentally switch the camera into a

### WHAT YOU GET IN THE BOX

AC power adaptor/battery charger, Lithium-ion battery pack (90 minutes for full charge), SmartMedia 8Mb, USB cable, Video cable (PAL output only), lens cap, hand strap, Mac and PC software CD-ROM and instruction book. No carry case.

different mode or turn it off completely.

Round the back there's a small but clear optical viewfinder and the main 2in TFT LCD which is poor in direct sunlight. Above that there's the main on-screen menu navigation controls which are sluggish to respond when you're using the menu controls. Next to this is the zoom in/out lever which has a good action, and finally another mode setting control, that, once again, is rather slow to activate.

Under the body is the card slot and battery house, using JVC's own battery pack which had to be recharged twice during this test. There's also a plastic tripod mount.

JVC, like Epson and Ricoh, have added some high-quality settings that push up the pixel count to give you bigger and, in theory, better picture quality. JVC have been more daring by giving us three options to play with.

In 6M pro-still mode the CCD collects twice the information by using two exposures with the image shifted by one pixel for the second exposure, this results in six million pixels rather than three. DR pro-still, again, takes two exposures one metering for the bright areas of the image and the other for dark, the end picture is a file that has the best data from each exposure to give you a wide dynamic range to avoid white/dark out in the picture file. The third option, NR pro-still, is a noise reduction process. Here several exposures are taken and again the good data is extracted from each and



Detail is good, but image has a grey look to it and is not the vibrant colour it should be.

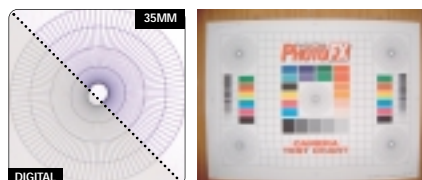
the digital noise is ignored. The only drawbacks in using such modes are that you need to have a tripod as multi exposures are taking place and the subject must be static. Also, each shot has to be processed before saving to the memory card and that can take several seconds to do.

Start-up is just under four seconds and pictures are saved in about the same time. Picture quality from the camera is only average, sharpness is above average in this group, exposure is good with daylight pictures with only a few dark scenes being under-exposed. Colour rendition is below average especially when the light isn't ideal where you end up with washed-out colours that lack vibrancy. The other thing that lets this camera down is that it's unfriendly to use and the menu navigation can be non-responsive.





Good exposure in this one, colours are a little too rich. Absolute detail is missing.



Barrel distortion is high, too much noise in our solid boxes of flat colour. Results are the same as a two million pixel camera.

## VERDICT

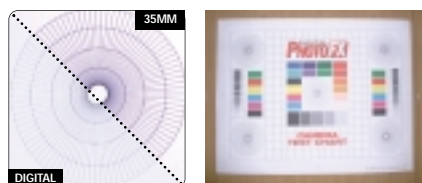
Excellent design and build quality, top picture quality with superb exposure. Lots of manual overrides, but the macro mode isn't that impressive.

**RATING** ★ ★ ★ ★ ★

CONTACT **FUJI** 020 7586 1477



Sharpness is above average, colour is poor and red-eye is a problem. Under-exposed.



Test chart showed colours are solid but washed-out, overall sharpness is nothing special. Very poor focus in the corners.

## VERDICT

Picture quality is nothing to write home about, colour could be better. Nice compact design, only let down by sluggish navigation.

**RATING** ★ ★ ★ ★ ★

CONTACT **JVC** 020 8208 7654

# Nikon Coolpix 990 £850



This camera wins awards like no tomorrow, and it has good reason to, because it is very good. So good, in fact, that some may argue that it's not fair to put this camera in a group test like this, because the quality is reflected in the higher price tag.

The body feels comfortable and solid to hold with its big rubber grip. The twisty design has now become the trademark of the high-end Nikons and adds that extra flexibility when it comes to composing low or high level photographs.

The 8-24mm lens is equivalent to a 38-115 mm in 35mm format. The optical viewfinder is large and clear with a useful dioptic adjuster. On top there's a detailed LCD info window that shows you real time info that the lens is currently seeing, such as aperture settings. Next to that there's the shutter release/on/off and a number of mode setting buttons.

A 1.8in TFT LCD is on the back of the handgrip section which is far better than its predecessors in bright sunlight. Next to this are the zoom buttons and menu navigation controller. Down under the main body is a battery compartment. This camera lasted the duration of the test without a second set of



Colour is spot-on, very impressive. Shame about the red-eye. Detail is again very high.



The camera failed to focus at the right point, but what is in focus is pin sharp.

cells, which is very good considering the meter constantly takes readings. There's also a metal tripod mount. The list of manual overrides is superb, every control you may ever need is here.

Starting up takes just under 3.5 seconds and once things are ready the camera is very responsive in use. Only the Olympus' menu system can be operated slightly quicker. Taking pictures is a joy, exposure is very good and focusing is the best of the bunch.

The only problem we can find with the Coolpix 990 is it's rather hit and miss when it comes to focusing using the viewfinder. For example, if you zoom in on a subject so that it's in the middle of the viewfinder when you take the image you may find the background is in focus and the subject isn't when you review the shot.

If this only occurred once you could put it down to conditions, but we had several shots where this happened. If you tend to use focus lock when you take images you may find it difficult to get a predictable result. Saying that, if you had the camera for some time you could work out what's causing the camera to cock up and adjust manually to compensate.

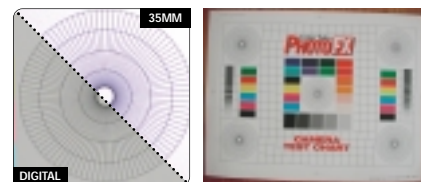
Focusing aside, colour accuracy is excellent and sharpness is very good, apart from at the edges where it starts to drop off.

Photoshop users will love the histogram playback option on the LCD which allows you to see the tonal range of each shot. You can then, if you know what you're doing, take a second shot with a different exposure.

Apart from the focusing slip-ups this camera would have been given a maximum five star rating, instead of our score of 4.5.

## WHAT YOU GET IN THE BOX

Good package from Nikon, lots of software including Photoshop 5 LE, 16Mb CompactFlash card, lens cap, neck strap, video cable (PAL & NTSC), USB cable and drivers, no serial option and four alkalines.



Sharpness is lost at the edges, but everything else is very good. Fine detail is high, colours are accurate. The downside image is very distorted.

## VERDICT

Excellent, almost pro-like features, nice to hold and use with outstanding picture quality. Responsive to use. And is still King when it comes to close-ups.

**RATING** ★ ★ ★ ★ ★

CONTACT **NIKON** 0800 230220

## Olympus C-3030 Zoom £800



Another very capable camera from one of the top names in digital cameras and again, like the Nikon, another camera that sets the standard that others should aim for.

This black beauty has a traditional compact camera shape and is small, well-designed with excellent build quality and button layout. The lens is 6.5-19.5mm (32-96mm in 35mm terms) so well-suited to landscape images. On the top is the shutter release and zoom lever, just below

### WHAT YOU GET IN THE BOX

You get two Lithium batteries to get you going, 16Mb SmartMedia card, camera strap, USB cable, serial cable, video cable (PAL only), software is basic just enough to get the images from the camera, and the best addition is the infrared control... nice.

that is the main mode selector wheel and left of this is the LCD info window.

The optical viewfinder is large and clear with dioptic adjuster while the 1.8in TFT LCD is positioned underneath and is very good in bright sunlight.

Surrounding the screen are function buttons and the main direction buttons for the on-screen menus. Turn over the camera to reveal the battery compartment which takes two Lithiums or four AA cells. Next to this is a plastic tripod mount. Come on Olympus, make it perfect, add a metal one.

This camera is great to hold and use, the weight and balance is just perfect in my medium-sized hand.

It's ready to use in just over 3.5 seconds from switching on. After taking your first image you know this camera is special when it comes to response. This is the fastest camera in the group with only the Nikon a close second. Images are saved to the card in record time – now this is what you really want from a digital camera!

The list of manual overrides is superb and not over-complicated to use and access from the menus; only the Nikon can rival it in this department.

Photos from the Olympus are brilliant, colours are vibrant and solid, skin tones are another area where it delivers. Exposure is also very good with only a couple of slightly over-exposed shots. Not much will trip up the



Colour and sharpness are excellent. Exposure on this image is superb. Detail is outstanding.

autofocusing system, either. Talking of AF, the system the 3030 Zoom uses is very nippy.

The quality of the lens is excellent, even at the edges, but barrel distortion is quite bad. Overall there's little else we can fault about this camera. Simple things like when the camera goes into power save mode, just a simple push of the zoom lever and the camera jumps into life at the point it powered off. Frustratingly many of the cameras in this test revert back to default settings, so you have to start setting everything up again. If I have to be picky, adjusting through the zoom range could be a bit smoother.

Just one more thing to mention is the great infrared remote control you get. This can be used to fire the camera from a distance. Every camera should have one!

## Ricoh RDC-7 £699



When you first see the design of this camera you may, if you're old enough, say to yourself "110", because this camera looks just like one of those poor quality cartridge cameras of the 1970s. One thing we expect to see in the digital camera world are interesting designs, but, unlike Ricoh, many stick to conventional 35mm shapes. Here's a decent looking piece of kit that, like the Fuji, can take time to get used to, but it soon feels steady to hold. Those who had a 110 will feel instantly at home! The slim design also fits into a bag or pocket without much trouble.

Round the front is a 7.3-21.9mm (35-105mm, 35mm film equivalent) lens that makes it very

flexible for general use. On top there's a small LCD info window and just below is a number of important mode setting buttons with the main shutter release on the right. To the left is the main 2.0in TFT LCD viewfinder that's good to see in direct sunlight. Its flip up design swivels too, making it the most versatile of the bunch for viewing. Under this screen are more function buttons that don't need to be accessed regularly to make for a clear and uncluttered appearance to the camera.

Round the back is a small, but clear, optical viewfinder with a dioptic adjuster and the battery compartment that houses a battery pack. This only needed one charge for the duration of the test. In the middle is the main on/off button with main mode settings on a thumb wheel.

The zoom can be used from the top or bottom of the body as the body is so thin. Down under is a plastic tripod mount.

Like the JVC it has a pro mode that takes the images size up to seven million pixels, unlike the JVC the manual doesn't explain what is being done to the image, all it says is that two shots are taken, so its process is probably very much like the JVC's.

Once again, using this mode you need to use a tripod and have plenty of time to spare, because a shoot can take up to 70 seconds to save with the best compression selected and 120 seconds with no compression. At 13.5Mb



Fine detail is good with this one, colours are very accurate. Nice level of sharpness.

per image a larger capacity memory card should be used.

Start-up is very quick at just over two seconds and focusing is also accurate and responsive. This is backed up with very good image quality which produces photographs that are clean and free from noise, especially when the non-compressed Tiff mode is used. Sharpness is first rate and fine detail is also high. Apart from an occasional slight blue bias colours are very accurate.

This is the only camera in the bunch that can get closer than the Nikon in terms of the macro mode at an amazing one centimetre!

Overall there's a medium level of features, including a video capture mode, but arguably maybe not enough overrides to keep the photo enthusiast happy.

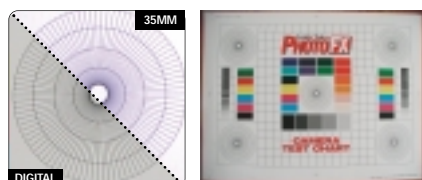
### WHAT YOU GET IN THE BOX

Comprehensive pack includes a soft case, wrist strap, multi voltage battery charger, lithium-ion battery pack, 8mb card, USB cable and drivers, serial cable for Mac & PC, video cable (PAL and NTSC), Ricoh picture transfer software, lens cap and instruction manual.





Again colour is very good, as is exposure. Red-eye is not as bad as others but still evident.



Sharpness and detail are simply great. Colour is very accurate. Edge sharpness is also high. Only thing is barrel distortion is above average.

## VERDICT

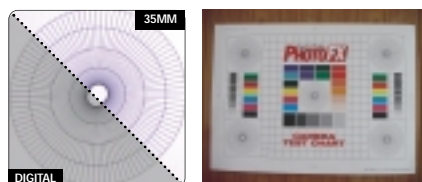
Superb level of manual features, outstanding picture quality, very fast in use, feels very responsive. Not many cameras can come close. It sets the standard.

**RATING** ★★★★★

CONTACT **OLYMPUS** 020 7253 2772



Colour balance with this shot is not very good and the flash isn't doing much to help matters.



Detail and sharpness across the chart is not up with the best, but above average. Colours again are good. Image distortion is high.

## VERDICT

This very neatly designed camera puts in a good performance to produce consistently good pictures. Great flexible LCD and well worth a try.

**RATING** ★★★★★

CONTACT **RICOH** 01782 753300

## Sony DSC-S70 £750



Sony are known for small electronic devices, but that's not the case when it comes to this piece of kit. It's chunky, but solid and has the usual high Sony build quality.

Sony have partnered with Carl Zeiss, known for their exceptional lens quality, and include a 7-21mm lens that's 34-102mm in 35mm film terms. A 6x digital zoom increase the scope.

The shutter release is on the top-plate with the main mode selector nearby and a LCD info window. There's a good sized optical viewfinder with dioptic adjuster and also a 2in TFT LCD screen that's good in direct sunlight. Surrounding this are a number of quick mode setting buttons plus the main menu navigation rocker switch.

The battery compartment houses the InfoLithium pack plus the memory stick. A metal tripod mount is situated under the body. Power up takes around four seconds and is, in typical Sony style, accompanied by a start-up chime. The on-screen menu system is very easy to use and understand, but there's not much in the way of manual overrides.

And now for the big but... everything is great until you want to take a picture. It seems as though Sony may have invented the

world's first time machine, used it to go back to the first range of digital cameras and picked up the worst AF system they could find. It's dreadful. You press the shutter and it takes over two seconds to focus. At this point your subject would probably have moved way out of the frame. After using the other cameras in this test it's so painful to wait so long. The good news is when you do capture the shot it saves to the Memory Stick very quickly.

The picture quality is not bad, but not as good as it could be from Carl Zeiss optics. We did expect more from this lens. The shots are a little on the soft side, even though focusing is, when it gets there, excellent. The exposure system is accurate and colours are strong and vibrant, just leaning on the warm side.

On the plus side Sony have the best battery pack in the world, known as InfoLITHIUM. This system tells you the amount of battery life remaining in minutes before it goes flat and at the end of our test it still had 88 mins of life. You could possibly charge this camera up and it would last for few weeks when others would go through at least five sets of batteries in the same time. The Memory stick storage is also very good with ultra fast saving times.

Other interesting features include a video capture mode, several picture effects modes including black & white and solarise and an external flash sync socket.

If this camera had a faster AF system it would be a great first time buyer, as the menu system is intuitive and easy to navigate.

It also has some nice touches, such as when you leave the lens cap on and turn on the power, a message tells you the cap is still on, instead of just popping it off onto the floor.

## WHAT YOU GET IN THE BOX

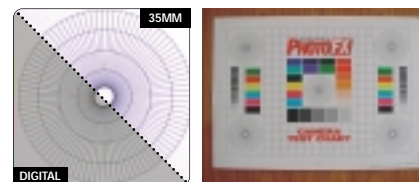
Power adaptor/charger, InfoLITHIUM battery pack, lens cap, shoulder strap, video cable (PAL and NTSC), USB cable and drivers, manual, 8Mb Memory Stick and MGI's PhotoSuite 8 and VideoWave.



Fine detail is lost on this one and skin tones have an orange tinge, not very pleasant.



Sharpness and detail are good, but on this image colours are not accurate.



Edge to edge sharpness is very good, but overall sharpness is not as high as some of the others. Colours tend to have a warmer feel.

## VERDICT

Nice camera to use, can give good results, if a little soft. Avoid if you like taking pictures of anything moving quickly, because you'll miss the moment.

**RATING** ★★★★★

CONTACT **SONY** 0990 111999

## Which cameras deliver the goods?



### Best for features

Counting the number of features is not the best way to find a winner, they must be of use to the user. Sony and Casio have a vast number of features which are useful to the casual user, but the real winners in this section are Olympus and Nikon as their features are better suited to the demanding enthusiast; it depends on the nature of the work but Nikon just wins.



### Best for close-ups

All cameras have a macro mode and some do it better than others. Some don't even have the ability to tell you if things are in focus at such close range. Two cameras shine through here – the Nikon and slightly closer Ricoh.

### Best for picture quality

Worst in the group was the Canon, which is a shame as it's a nice little camera for beginners. Epson and Sony are a little soft (in that order), Casio, JVC and Ricoh are excellent all-rounders in the picture department with sharp and punchy images. Fuji has too much noise, but is good. Now for the top two, in second place is the Olympus, and first place the Nikon (but only just).



### Best bundle

Bundles should contain everything the user will need to be up and running. Good news is most now come with all the goodies you need including rechargeable cells. Nikon provide the most when it comes to kit – you even get Photoshop LE.



### Best for handling

Handling is a personal thing that can depend simply on the size of your hand. For me speed is crucial and the ease of mode setting without pressing too many buttons and here Olympus is first followed by Nikon and Fuji.

## ★★★★ OVERALL VERDICT ★★★★★

Now is a good time to get into digital photography, the choice is vast and people that would have laughed at the quality from older digital cameras can now look and be converted to the digital future of photography.

Prices are coming down and specification is going up, all good news. And now, for the first time we have cameras that will satisfy most traditional camera users.

It's not just about specification and

price – a camera with a durable casing won't mark easily and a metal tripod mount is essential for enthusiasts

who use a tripod as they may

find a plastic strips easily if it's screwed in accidentally out of alignment.

If you intend taking the camera abroad look out for one with a charger that has multi voltage, and a video signal with PAL and NTSC to cope with any hotel room you might find yourself

in on your holidays.

But the most important aspect is picture quality and in this test we have taken a variety of images to test each camera's performance and put the results on the cover CD so you can compare performance to see how sharp each camera really is.

As well as sharpness you can compare colour rendition and exposure accuracy.

There's one mistake on the CD and that's Ricoh's close focus. The picture

is not at its closest setting, but it wasn't spotted until the CD was duplicated, so bear with us on that.

Overall it's clear from our set of 'Best for' panels that the Nikon is ahead of the game.

But in the overall picture it's a really close

call between the Olympus and

Nikon. Olympus are just ahead on price and more precise focusing, while Nikon wins on features and advanced handling. Let's call it a draw!



CONTACT CANON 08000 350350 CASIO 020 8450 9131 EPSON 0800 220546 FUJI 020 7586 1477 JVC 020 8208 7654 NIKON 0800 230220  
OLYMPUS 020 7253 2772 RICOH 01782 753300 SONY 0990 111999