

## Selecting a Digital Camera

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There are hundreds of digital still cameras currently on the market, so to decide which one is best for you, you'll need to compare features. In this article, I am highlighting several of the best selling digital cameras, while pointing out some of their differences. Some of my observations are subjective. I currently use two digital still cameras, but have owned about a dozen, handled several dozen, sold digital cameras for Apple Computer, once managed a camera store and have read hundreds of digital camera reviews. Before buying any camera, you owe it to yourself to go to a camera store to see and test the ones you're interested in. Different models will fit your hands and expectations more or less than somebody else.

**Price:** You can spend anywhere from about \$100 to \$5,000 on a digital camera. Short of professional level or some specialized need, a good camera will cost you \$300-\$400.

**Size:** My Canon SD500 Digital ELPH weighs only 6 oz, while my Canon Digital Rebel with it's interchangeable lenses weighs about 5 lbs. I've always recommended the 12" PowerBook over the 15" or 17" on the premise that the smaller and lighter it is, the more you'll use it. I seldom travel with my single lens reflex (SLR), because I don't want to lug it through airport security or haul it on my bicycle. I tend on the other hand to carry my ELPH with me everywhere I go. The SLR takes better pictures, but not if I

don't have it with me. The weight and bulk of a digital camera is of critical importance. On a film camera, you wanted to use at least 35 mm film in order to meet minimum standards of picture quality, so the camera had to be big enough to accommodate 35 mm film. If you went smaller, you had to use smaller film sizes, so your image quality suffered. The size of a digital camera doesn't correlate anywhere near as much with quality. You can produce excellent photos from a compact digital camera. When you want to use the lenses from your film camera or other interchangeable lenses, however, you're back to the bulk of the film camera. The digital single lens reflex (SLR) cameras are almost as bulky and heavy as their film counterparts. The greater the zoom lens magnification and the more bells and whistles (features) on a digital camera, the bulkier the camera is going to be.

**Resolution:** The resolution of a digital camera is stated in "megapixels." Consumer digital cameras currently range from about 2 megapixels to 8 megapixels. The screen on an iBook or 17" monitor is typically 1024x768 pixels. That's not quite one million pixels or one megapixel. If your digital photos are viewed only on your 1024x768 screen or used only on the Web, you need only one or two megapixels. If, however, the images are going to be printed out, you'll need more (see Chart A below). Don't buy a camera solely on the basis of pixels. Just like megahertz isn't a good measure of a computer, pixels aren't definitive in choosing a digital camera. Not all pixels are created equal. The images from lower quality digital cameras suffer from problems like "barrel distortion," "purple fringing," and "artifacts," so it behooves you to check the reviews on the camera you're contemplating.

A 3 megapixel camera will do just about all you need for Web publishing or email, and will support small prints. 5 megapixels has become the norm. For professional use, 6 megapixels is the minimum.

Chart A  
Digital Print Quality

	poor	okay	good	very good	excellent	photo quality
	screen Web	5"x7"	8"x10"	11"x14"	16"x20"	
2 Mp	excellent	very good	poor	poor	poor	
3 Mp	poor	excellent	good	poor	poor	
4 Mp	poor	poor	very good	okay	poor	
5 Mp	poor	poor	excellent	very good	good	
6 Mp	poor	poor	poor	excellent	very good	
7+ Mp	poor	poor	poor	poor	poor	

**Lens:** You want a zoom that takes you at least three times closer to your subject, that is, at least 3x. You shouldn't care about "digital zoom." That's just a marketing gimmick. All you're doing with digital zoom, is cropping a portion of the picture at lower resolution. If you could get by with less resolution, you would have purchased a lower resolution camera. I believe in taking pictures with all the resolution you have, then cropping. The typical digital camera zoom

lenses are 3x and range from the 35 mm film camera equivalent of about 38 mm to 110 mm.

**Optical viewfinder:** In my opinion, don't buy a camera that doesn't have an optical viewfinder (e.g. Nikon Coolpix S1, Sony Cyber-shot DSC-T series). Some of the compact digital cameras have only an LCD for previewing the image. Some LCDs fare poorly in bright sunlight and they all hog power. I keep my LCDs turned off to make my batteries last longer.

**Manufacturer:** The major players are Canon, Nikon, Sony, Olympus, Konica/Minolta and Kodak. As you can see from my list below, there are others, but for the most part, I'd avoid the less popular brands unless a particular feature makes one of their cameras stand out for you.

**Memory:** There are two main forms of digital memory card: Compact Flash and Secure Digital (usually shown as "SD"). Generally speaking, Compact Flash is used in high-end SLRs, while SD is most common in point and shoot cameras. Sony uses a proprietary and therefore more expensive "memory stick." Fuji and some Olympus cameras use xD cards, another proprietary format. The SD format is gaining in market share, even at the high end.

Whatever memory card a camera uses, you're going to want a much bigger card than the card (typically 32 MB) that comes with the camera. Only eight 5 megapixel images will fit on a 32 MB memory card, while 140 will fit on a 512 MB card and 280 will fit on a 1 GB card. The cards are relatively cheap, so you should buy at least two of the largest ones

you can afford. CompactFlash cards range up to 8 GB. SD cards range up to 4 GB. Some cameras handle images more quickly with the faster "Ultra," or "Premium" cards. A fast 1 GB CompactFlash or SD card runs about \$75-85 from Amazon.com.

**Image storage format:** Most digital images are compressed and stored in the JPEG format that is used on the Web. If you're shooting for print publication, you may need to have RAW images that can be manipulated more. Most compact consumer level cameras do not support RAW images. For those, you typically need to go with the SLRs.

**Software:** iPhoto has rendered the manufacturer's image software offerings unimportant to a Mac user. I load my images - JPEG or RAW - into my Mac with iPhoto, then export them for editing via Photoshop. I never use the manufacturer's bundled software.

**Batteries:** Some cameras support the use of AA or AAA batteries in a pinch, while most use proprietary Lithium-ion rechargeable batteries. Cameras with Li-ions are more compact and those batteries last much longer. If the camera has a Li-ion battery, you should buy a spare (about \$40-50) and keep it charged.

**Other features:** There isn't enough space here to cover all the features of all the digital cameras. If you're interested in manual controls, image stabilization, particular macro (close-up) functions, panorama capability, slave flash support, movie mode, burst mode, a rotating LCD, audio control, wireless image transfer, laser focusing, auto-focus

assist lighting, dual memory card support, and/or accessories like conversion lenses, underwater housings, cases and AC adaptors, you really need to peruse the camera reviews.

### Sources of information

My favorite source by far is Jeff Keller's "Digital Camera Resource Page" [dcresource.com](http://dcresource.com). With in-depth reviews of some 750 consumer digital cameras, the DCRP is a fantastic source of information. I like to compare photos that Keller has taken with each of the cameras he has reviewed. If Keller hasn't reviewed a camera (or even if he has), he provides links to other reviews.

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### My current list of favorite cameras with comments and street prices

#### Canon PowerShot SD450 \$300

My favorite all-around compact camera, the SD450 is so compact that it fits in a shirt pocket. 5 megapixel. 3X optical zoom. 2.5" LCD display. Optical viewfinder. Nice VGA movie mode. SD media. No RAW or TIFF mode. For a slightly larger 3 megapixel, AA battery alternative, see the **Canon PowerShot A510** (\$149).

#### Panasonic Lumix DMC-FX9 \$350

Ultra-compact 6 megapixel. Optical image stabilization. 3x zoom. No RAW or TIFF mode. SD media.

#### Canon PowerShot G6 \$522

Mid-sized 7 Megapixel camera. 4x zoom. Rotating 2" LCD.

SD media. One of the best movie modes in the industry. If you're more interested in wide-angle shots, you might look at the 8 megapixel **Canon PowerShot S80** (\$500) which has a 3.6 zoom that starts at just 28 mm.

**Canon PowerShot S2 IS** **\$450**  
A mid-sized 5 Megapixel camera with a 12x optical ultrazoom lens and image stabilization. The LCD is only 1.8", but it rotates. Unlike most digital still cameras, this camera supports the use of zoom in movie mode. SD media. Great camera for sports photography. See also: **Panasonic Lumix DMC-FZ20** (\$415).

**Canon PowerShot SD550 Digital ELPH** **\$400**  
This is a 7.1 megapixel version of the SD450. My SD500 is almost identical and it is my favorite camera ever. SD media. No RAW or TIFF mode. For a slightly less compact, so easier to hold alternative, see the 7 megapixel, 4x zoom **Canon PowerShot A620** (\$350).

**Nikon Coolpix 8400** **\$900**  
A large 8 megapixel camera with an ultra-wide 24-85mm zoom, rotating LCD, an AF-assist lamp, but an electronic viewfinder, not an optical viewfinder (better than LCD-only, but slower than optical).

**Sony Cyber-shot DSC-R1** **\$999**  
This very large (2 lb.) camera features a huge 10.3 megapixel CMOS sensor and a 5x Carl Zeiss lens. Performing like an SLR, it is clearly the best fixed-lens camera on the market. With an LCD mounted on top, the design leaves a bit to be desired, however, and like an SLR, there is no movie mode.

**Olympus C-7070 Wide Zoom** **\$650**  
A large 7.1 Megapixel camera with a 4x zoom lens that starts at 27 mm (27mm-110mm). Rotating 1.8" LCD. xD media.

**Canon Digital Rebel XT** **\$800**  
Large, but relatively lightweight 8 megapixel SLR. The best entry-level SLR. CompactFlash media. Instantaneous startup. If you can afford it, you might want to take a look at the **Canon EOS-20D** (\$1380), which is generally rated the best digital SLR. Coming soon, the CMOS 12.8 megapixel **Canon EOS 5D** (\$3,165)

**Nikon D50** **\$750**  
Nikon's mass-market 6 megapixel SLR. It has a 2" LCD, full manual controls and accepts any Nikon F-mount lenses. SD media. The next notch up is the **Nikon D70s** (\$1,150), and the ultimate Nikon SLR is the new 10 megapixel wireless **Nikon D200** (\$1,699)

**Konica Minolta Maxxum 7D** **\$900**  
A large 6 megapixel SLR with an anti-shake CCD to stop camera vibration and produce superb photo quality. RAW support. *Note 01/2006: Konica-Minolta announced that they are quitting the digital camera business and selling out to Sony, so I no longer recommend this camera.*

New cameras come out almost daily. If I missed a camera, you'll surely find it on the DCRP [dcresource.com](http://dcresource.com)