

Are You Ready for a Digital Camera?

by Jennifer Ruisaard and Conrad Turner

Digital cameras flashed onto the technology scene a few years ago, threatening the future of conventional photography. Employing the same elements as traditional cameras, digital cameras convert images into a series of pixels that computers can understand and display directly on-screen. These digital images transmit easily through e-mail attachments and are instantly ready to use.

The quality of digital images improved drastically over the last five years. In addition, digital cameras offer the benefits of speed, flexibility, and cost savings. Digital photographs are easy to retouch and manipulate through programs such as Photoshop. Furthermore, digital images do not need to be scanned. Therefore, defects introduced by the scanning process are eliminated.

Types of Digital Cameras

The digital photography market offers consumers three types of cameras: low-, mid-, and high-range. Buyers of digital cameras should choose a camera depending on their specific needs and the type of job to be done.

Low-end digital cameras cost around \$1,000 and are equivalent to conventional point-and-shoot cameras. Their low resolution, usually about 640 × 480 pixels, makes them a cost-effective tool for jobs that do not require high quality, sharpness, or color accuracy. This range of cameras can produce quality prints up to 2.4 × 1.8 inches at 133 lpi (266 ppi), which is sufficient for small brochures, advertisements, and catalog images.

The next group of digital cameras, called mid-range, cost between \$5,000 and \$15,000. These cameras are essentially traditional Single Lens Reflex (SLR) camera bodies. However, a Charged Coupled Device (CCD), that converts light images into digital information, is attached to the back of the camera body. From the outside, mid-range digital cameras look like nothing more

than an advanced SLR camera with a removable disk drive extended from the bottom of the body. The resolution of these cameras, around 1012 × 1524 pixels, makes it possible to print images 3.8 × 5.7 inches at 133 lpi (266 ppi).

The mid-range Kodak DCS 5c is attached to the familiar Canon EOS camera body, while the more powerful Kodak DCS 460 uses a Nikon N90 body. Other mid-range digital cameras are connected to other medium format SLR bodies. These cameras have familiar SLR functions, such as aperture control, shutter speed control, light meters, and exchangeable lens mounts. Photojournalists, still-life photographers, and law enforcement personnel utilize these cameras for jobs that demand high image quality and tight deadlines. Images captured on these cameras are often sent through e-mail or posted on the Internet.

High-end digital cameras may cost more than \$40,000. However, the prices for some of these cameras soar into the millions of dollars. The resolution of high-end cameras, around 2036 × 3060 pixels, can produce printed images up to about 7.7 × 11.5 inches at 133 lpi (266 ppi). The Sinar digital camera, coupled to a Leaf hard drive back, can be used for jobs requiring higher quality or larger images than those that can be produced by cameras in the mid-range group. High-end cameras are often used in surveillance aircraft for military applications. They are also used in image-capturing satellites, such as the Hubble Space Telescope. Back on earth, printers, advertisers, and publishers utilize high-end cameras for still-life photography and catalog scenes that require high resolution to capture fine detail.

Picking the right type of digital camera depends on the need of the user. Low-end digital cameras provide the photographer with acceptable, cheap, and convenient images for numerous applications. High-end digital cameras give photographers quality photographs fit for publication in premium magazines.

Drawbacks

It may seem that digital cameras are superior to conventional cameras. However, digital cameras do have drawbacks. Digital camera bodies have not reached the level of capabilities of

film-based SLR camera bodies. For example, film-based SLRs can take pictures in rapid succession. Unfortunately, digital cameras cannot record photographs rapidly because it takes time to save the images to the disk drive. Even though digital cameras may eventually phase out the use of conventional film, they have yet to reproduce certain aspects of film that bring about high quality pictures. For example, photographs taken with film, especially at slower speeds, look better magnified when compared to images captured with digital cameras. Unfortunately, enlargements from digital photographs look pixelized (stair-stepped). Grainy enlargements from film are still considered to be of higher quality than pixelized enlargements from digital images.

Why Buy a Digital Camera?

In a word, *speed*. Digital cameras allow the photographer to rapidly transmit color pictures from one place to another. Many people could find this characteristic very useful. For example, someone who runs a small business dealing with web-page design and frequents conventions or trade shows across the country could use a digital camera. He/she could conveniently carry the camera around, shoot an object, and instantly show a prospective customer the results on-screen.

Digital photography now plays a larger part in desktop color publishing, multimedia, and digital television, wrote John Larish in his book *Digital Photography—Pictures of Tomorrow*. “New hardware and software for digital imaging have opened up new directions in graphic design. The advent of new color printers and copiers for digital imaging has made hard copy reproduction of digital photographs easy” (Larish, 1992).

“We had a football game that was shot on film, and on digital,” said Gary Fong, director of editorial graphics technology for the San Francisco Chronicle (Eastman Kodak Company, 1997). “By the time we got it to the page, in color, we couldn’t tell which one was which.”

Digital cameras provide photographers an advanced way to capture an image. People use them for designing and producing items such as catalogs, magazines, advertisements, technical manuals, newsletters, insurance reports, real estate brochures, landscapes, record claims, sales sheets, and accident sites, to name a few of many possibilities.

Mass-media photographers and desktop publishers primarily employ digital cameras to make their jobs easier. Photojournalists have switched from conventional cameras to high-end digital cameras to produce higher quality photographs. “Film is expensive and it poses environmental problems. Digital cameras save the time and money that it costs in processing and developing film,” said Richard Carson, assistant director of photography at the *Houston Chronicle* (R. Carson, 1997).

Jay Penni is a commercial photographer who first used digital photography two years ago and commented on its use on the Kodak home-page (Eastman Kodak, 1997). “The great thing about shooting digital is the low cost, but more than that is the time savings. I can shoot 15 to 20 shots in a day, download them, and get client approval on the spot,” Penni said.

Carson (1997) said more photographers are using digital cameras because they allow photographers the freedom to get pictures from remote areas where facilities to process film may not exist. Photographers can then transfer their images instantly by way of fax or e-mail to newspapers, magazines, or other publishers. This saves time and money because processing film is not necessary.

Photographer Marc Bryan-Brown said he used his digital camera on a month-long expedition documenting areas of Arctic Siberia and posted his photos daily on-line. “There was no option of wet film processing. (There are no labs in Arctic Siberia.) And there was no question to me that to use the (digital camera) was the most efficient and effective way to get the images back to the states while on the expedition,” Bryan-Brown said (Eastman Kodak, 1997).

References

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