

# Suggested Requirements for a Digital Point and Shoot Camera

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Photography Special Interest Group (SIG)

August 4, 2008

# Suggested Requirements for a Digital Point and Shoot Camera

- Part 1: A PowerPoint presentation of desirable features in a Digital Point and Shoot Camera and what they mean to the photographer, and
- Part 2: Digital Photography Glossary of Terms; and

# Suggested Requirements for a Digital Point and Shoot Camera

- Part 3: Examples of how certain manual settings in the Digital Point and Shoot Camera enhance photos, versus the results achieved when a Digital Point and Shoot Camera is used in its Automatic mode.

# Suggested Requirements for a Digital Point and Shoot Camera

In no particular order.....

- Resolution - 10 megapixels
- Image Stabilization
- Sensor - 1/1-8-inch, 4:3 format
- Storage - SD, XD, Compact Flash or Memory Stick
- Viewfinder - Optical Zoom

# Suggested Requirements for a Digital Point and Shoot Camera

- Viewfinder Ratio - .95:1
- Focus - Through-The-Lens (TTL)
- Lens - Focal Length:
  - Wide - 7.6 mm
  - Telephoto - 22.8 mm
- Lens - Focal Length:
  - Wide - f/2.6
  - Telephoto - f/4.8

# Suggested Requirements for a Digital Point and Shoot Camera

- Lens

Reputable Manufacturer.....

Canon

HP

Kodak

Nikon

Pentax

Sony

# Suggested Requirements for a Digital Point and Shoot Camera

- Zoom - 37mm – 111mm
- Focus
  - Normal
  - Macro
  - Infinity
- Shutter speed - 1/2000 to 15 seconds

# Suggested Requirements for a Digital Point and Shoot Camera

- Tripod mount
- Cable release
- Built in flash
- Hot shoe
- Image display
  - Color
  - 2.5 inches or larger



# Suggested Requirements for a Digital Point and Shoot Camera

- Flash settings
  - On/Off
  - Night
  - Red-eye reduction
- Status LCD

# Suggested Requirements for a Digital Point and Shoot Camera

- Image Capture

  - Still

  - Self-timer - 2 to 15 second delay

  - Video

- Audio capture

  - Still

  - Video

# Suggested Requirements for a Digital Point and Shoot Camera

- Exposure Mode settings
  - Auto (default)
  - Action
  - Landscape
  - Portrait
  - Aperture Priority (Av)  
(Limited selection)

# Suggested Requirements for a Digital Point and Shoot Camera

- Exposure Compensation  
(Should be manually adjustable)  
-2.0 to +2.0 EV (Exposure Value)  
in 0.3 or 0.5 EV increments  
A/K/A Exposure latitude  
This EV is absolute minimum

# Suggested Requirements for a Digital Point and Shoot Camera

- White Balance settings
  - Auto (default)
  - Sun
  - Shade
  - Tungsten
  - Fluorescent
  - Manual

# Suggested Requirements for a Digital Point and Shoot Camera

- AE (Automatic Exposure) Metering settings
  - Average
  - Center-Weighted (default)
  - Spot

# Suggested Requirements for a Digital Point and Shoot Camera

- ISO (formerly ASA) Speed settings
  - Auto (default)
  - 100 or lower
  - 200
  - 400

# Suggested Requirements for a Digital Point and Shoot Camera

- Color settings
  - Full Color (default)
  - Black & White
  - Sepia
  - RAW



# Suggested Requirements for a Digital Point and Shoot Camera

- Saturation settings (vivid color) { Low
- Sharpness settings (crisp edges) { Medium (default)
- Contrast settings (finer detail) { High

# Suggested Requirements for a Digital Point and Shoot Camera

- Compression settings (print quality)
  - Best - highest quality
  - Better (default) decent, not great
  - Good - only good for email viewing
- Compression format
  - JPEG (stills)
  - MPEG1 (video)

# Suggested Requirements for a Digital Point and Shoot Camera

- Power - type of battery (batteries), something generic vs. proprietary
- Camera size
- Camera weight with batteries
- Climatic range considerations

Temperature range – 40° F to 113° F

Humidity range – 15% to 85%

# Suggested Requirements for a Digital Point and Shoot Camera

- Warranty - not less than 1 year
- Purchase with a Credit Card
- Buy from a Reputable Manufacturer.....

Canon

Nikon

HP

Pentax

Kodak

Sony

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **AE Metering** – AE (Automatic Exposure) allows the photographer to select the region of the scene the camera will use to measure and calculate the exposure; e.g.: Average – the camera uses the entire scene region to measure and calculate exposure; Center-Weighted – the camera uses the center half of the scene region to measure and calculate exposure; Spot - the camera uses a small area in the center of the scene region to measure and calculate exposure.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Ambient light** – The natural light in a scene.
- **Aperture** – *See next page.*
- **Archival** – The ability of a material, including some printing papers and compact discs, to last for many years.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*

- **Aperture** – A small, circular opening inside the lens that can change in diameter to control the amount of light reaching the camera's sensor as a picture is taken. The aperture diameter is expressed in f-stops; the lower the number, the larger the aperture. For instance, the aperture opening when set to f/2.8 is larger than at f/8. The aperture and shutter speed together control the total amount of light reaching the sensor. A larger aperture passes more light through to the sensor. Many cameras have an aperture priority mode that allows you to adjust the aperture to your own liking. See also *shutter speed*.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Application** – A computer program, such as an image editor or image browser.
- **ASA speed** – *See ISO speed.*
- **Buffer** – Memory in the camera that stores digital photos before they are written to the memory card.
- **Burning** – Selectively darkening part of a photo with an image editing program.



# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **CCD** – Charge Coupled Device: one of the two main types of image sensors used in digital cameras. When a picture is taken, the CCD is struck by light coming through the camera's lens. Each of the thousands or millions of tiny pixels that make up the CCD convert this light into electrons. The number of electrons, usually described as the pixel's accumulated charge, is measured, then converted to a digital value. This last step occurs outside the CCD, in a camera component called an analog-to-digital converter.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **CD-R** – CD-Recordable: a compact disc that holds either 650 or 700 MB of digital information, including digital photos. Creating one is commonly referred to as *burning a CD*. A CD-R disc can only be written to once, and is an ideal storage medium for original digital photos.
- **CD-RW** – CD-Rewritable: similar in virtually all respects to a CD-R, except that a CD-RW disc can be written and erased many times. This makes them best suited to many backup tasks, but not for long term storage of original digital photos.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **CMOS** – Complementary Metal-Oxide Semiconductor: one of the two main types of image sensors used in digital cameras. Its basic function is the same as that of a CCD. CMOS sensors are currently found in only a handful of digital cameras.
- **CMYK** – Cyan, Magenta, Yellow, Black. The four colors in the inksets of many photo-quality printers. Some printers use six or more ink colors to achieve smoother, more photographic prints. Two additional colors are often lighter shades of cyan and magenta.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Cable release** – A flexible cable used for firing a camera shutter. Particularly useful for slow shutter speeds and time exposures, when touching the camera may cause camera vibration and blurring of the image.
- **CompactFlash™** – A common type of digital camera memory card, about the size of a matchbook. There are two types of cards, Type I and Type II. They vary only in their thickness, with Type I being slightly thinner. A CompactFlash memory card can contain either flash memory or a miniature hard drive. The flash memory type is more prevalent.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Contrast** – The difference between the darkest and lightest areas in a photo. The greater the difference, the higher the contrast.
- **Digital camera** – A camera that captures the photo not on film, but in an electronic imaging sensor that takes the place of film.
- **Dodging** – Selectively lightening part of a photo with an image editing program.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Download, downloading** – The process of moving computer data from one location to another. Though the term is normally used to describe the transfer, or downloading, of data from the Internet, it is also used to describe the transfer of photos from a camera memory card to the computer. Example: I downloaded photos to my PC.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **DPI** – Dots per inch: A measurement of the resolution of a digital photo or digital device, including digital cameras and printers. The higher the number, the greater the resolution.
- **EXIF** – Exchangeable Image File: the file format used by most digital cameras. For example, when a typical camera is set to record a JPEG, it's actually recording an EXIF file that uses JPEG compression to compress the photo data within the file.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Exposure compensation** – EV (Exposure Value) allows the user to determine the image exposure i.e.: increasing or decreasing light; increments of compensation range from -5.0 EV to +5.0 EV in steps of 0.5 and 0.3, a/k/a
- **Exposure latitude** – The range of camera exposures from underexposure to overexposure that will produce acceptable pictures from a specific film or digital image.



# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **External flash** – A supplementary flash unit that connects to the camera with a cable, or is triggered by the light from the camera's internal flash. Many fun and creative effects can be created with external flash.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **f-Number or f-Stop** – A number that indicates the size of the lens opening on an adjustable camera. The common f-numbers are f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, and f/22. The larger the f-number, the smaller the lens opening. In this series, f/1.4 is the largest lens opening and f/22 is the smallest; f-numbers or f-stops work in conjunction with shutter speeds to indicate exposure settings.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **File** – A computer document.
- **Fill flash** – A flash technique used to brighten deep shadow areas, typically outdoors on sunny days. Some digital cameras include a fill flash mode that forces the flash to fire, even in bright light.
- **Fire** – Slang for shooting a picture. Example: I pressed the shutter button to fire.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **FireWire** – A type of cabling technology for transferring data to and from digital devices at high speed. Some professional digital cameras and memory card readers connect to the computer over FireWire. FireWire card readers are typically faster than those that connect via USB. Also known as IEEE 1394, FireWire was invented by Apple Computer but is now used with Windows-based PCs as well.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Grayscale** – A photo made up of varying tones of black and white. **Highlights** – The brightest parts of a photo.
- **Histogram** – A graphic representation of the range of tones from dark to light in a photo. Some digital cameras include a histogram feature that enables a precise check on the exposure of the photo.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Hot Shoe** – The fitting on a camera that holds a small portable flash. It has an electrical contact that aligns with the contact on the flash unit's “foot” and fires the flash when you press the shutter release. The direct flash-to-camera contact eliminates the need for a sync cable.
- **Image browser** – An application that enables you to view digital photos. Some browsers also allow you to rename files, convert photos from one file format to another, add text descriptions, and more.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Image editor** – A computer program that enables you to adjust a photo to improve its appearance. With image editing software, you can darken or lighten a photo, rotate it, adjust its contrast, crop out extraneous detail, remove red-eye and more.
- **Image resolution** - The number of pixels in a digital photo is commonly referred to as its image resolution.
- **Inkjet** – A printer that places ink on the paper by spraying droplets through tiny nozzles.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **ISO speed** – A rating of a sensors sensitivity to light. Though digital cameras don't use film, they have adopted the same rating system for describing the sensitivity of the camera's imaging sensor. Digital cameras often include a control for adjusting the ISO speed; some will adjust it automatically depending on the lighting conditions, adjusting it upwards as the available light dims. Generally, as ISO speed increases, image quality drops and the result is called “noise”. Formerly known as ASA speed.



# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **JPEG** – A standard for compressing image data developed by the Joint Photographic Experts Group, hence the name JPEG. Strictly speaking, JPEG is not a file format, it's a compression method that is used within a file format, such as the EXIF-JPEG format common to digital cameras. It is referred to as a lossy format, which means some quality is lost in achieving JPEG's high compression rates. Usually, if a high-quality, low-compression JPEG setting is chosen on a digital camera, the loss of quality is not detectable to the eye.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **LCD** – Liquid Crystal Display: a low-power monitor often used on the top and/or rear of a digital camera to display settings or the photo itself.
- **Media** – Material that information is written to and stored on. Digital photography storage media includes CompactFlash cards and CDs.
- **Megabyte (MB)** – A measurement of data storage equal to 1024 kilobytes (KB).

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Megapixel** – Equal to one million pixels.
- **Memory Stick®**—A memory card slightly smaller than a single stick of chewing gum. Like CompactFlash and SmartMedia, it is flash-based storage for your photos.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **NiMH** – Nickel Metal-Hydride: a type of rechargeable battery that can be recharged many times. NiMH batteries provide sufficient power to run digital cameras and flashes.
- **Online photo printer** – A company that receives digital photos uploaded to its Web site, prints them, then sends the prints back by mail or courier.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Panning** – A photography technique in which the camera follows a moving subject. Done correctly, the subject is sharp and clear, while the background is blurred, giving a sense of motion to the photo.
- **Pixel** – Picture Element: digital photographs are comprised of thousands or millions of them; they are the building blocks of a digital photo.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **RAW** – The RAW image format is the data as it comes directly off the CCD, with no in-camera processing is performed.
- **Red-eye** – The red glow from a subject's eyes caused by light from a flash reflecting off the blood vessels behind the retina in the eye. The effect is most common when light levels are low, outdoor at night, or indoor in a dimly-lit room.
- **RGB** – Red, Green, Blue: the three colors to which the human visual system, digital cameras and many other devices are sensitive.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Saturation** – How rich the colors are in a photo.
- **Sensitivity** – See *ISO speed*.
- **Serial** – A method for connecting an external device such as a printer, scanner, or camera, to a computer. It has been all but replaced by USB and FireWire in modern computers.
- **Sharpness** – The clarity of detail in a photo.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Shutter speed** – The camera's shutter speed is a measurement of how long its shutter remains open as the picture is taken. The slower the shutter speed, the longer the exposure time. When the shutter speed is set to 1/125 or simply 125, this means that the shutter will be open for exactly 1/125th of one second. The shutter speed and aperture together control the total amount of light reaching the sensor. Some digital cameras have a shutter priority mode that allows you to set the shutter speed to your liking. *See also aperture.*



# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **SmartMedia**<sup>™</sup>—a wafer-thin, matchbook size memory card. This is also a flash-memory based storage medium.
- **Through-The-Lens Focus** – Viewing the scene to be photographed through the same lens that admits light to the sensor. TTL viewing, while focusing and composing a picture eliminates any difference between what the viewfinder sees and what the camera records.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **Thumbnail** – A small version of a photo. Image browsers commonly display thumbnails of photos several or even dozens at a time. In Windows XP's My Pictures, you can view thumbnails of photos in both the Thumbnails and Filmstrip view modes.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **USB** – Universal Serial Bus: a protocol for transferring data to and from digital devices. Many digital cameras and memory card readers connect to the USB port on a computer. USB card readers are typically faster than cameras or readers that connect to the serial port, but slower than those that connect via FireWire.

# Suggested Requirements for a Digital Point and Shoot Camera

- Digital Photography Glossary of Terms\*
- **White balance** – A function on the camera to compensate for different colors of light being emitted by different light sources.

# Suggested Requirements for a Digital Point and Shoot Camera

## - Digital Photography Glossary of Terms\*

### \* Glossary sources:

Digital Photography Review

Eastman Kodak Company

Hewlett Packard Company

Microsoft Corporation

Profotos – Photo Glossary

# Suggested Requirements for a Digital Point and Shoot Camera

- Demonstration Shots of Key Camera Features
  1. Exposure Compensation
  2. Fill Flash
  3. ISO
  4. Sport Mode
  5. White Balance

# Suggested Requirements for a Digital Point and Shoot Camera

- Demonstration Shots
  1. Exposure Compensation (ev) – decreasing or increasing light
    - a. Decrease light  
Boneyard Beach, Bull Island, SC
    - b. Increase light  
Taos Pueblo, Taos, NM

THIS or THIS

0 ev

-1 ev





# THIS or THIS

0 ev

+1 ev



# Suggested Requirements for a Digital Point and Shoot Camera

## 2. Fill Flash - Demonstration Shots

Shot 1

Brookgreen Gardens

Ilex Berries

March 11, 2008

Shot 2

NC Aquarium

Yellow Slider Turtles

July 22, 2008

THIS or THIS  
with flash without flash



THIS or THIS  
with flash without flash



# Suggested Requirements for a Digital Point and Shoot Camera

- Demonstration Shots
3. ISO 100 vs. 400  
Difference in light

# 3. ISO 100 vs. ISO 400



- Manual, NO Flash
- Fluorescent setting
- Exposure: 1/7 sec
- F Stop: 3.2
- ISO: 100



- Manual, NO Flash
- Fluorescent setting
- Exposure: 1/7
- F Stop: 3.2
- ISO: 400

# Suggested Requirements for a Digital Point and Shoot Camera

- Demonstration Shots
4. Automatic vs. Sport Mode
    - To stop motion
    - Smoky Mountain Stream
    - Cades Cove, TN

# Automatic vs. Sport Mode





# Suggested Requirements for a Digital Point and Shoot Camera

- Demonstration Shots
5. White Balance to show effect of correct light on exposure

# 5. White Balance



- Automatic
- Flash ON
- Shutter: 1/60 sec.
- Aperture: f2.7
- ISO: 100



- Manual
- NO Flash
- Shade setting
- Shutter: 1/25
- Aperture: f 2.7
- ISO: 100

A Partial List of Current Point and Shoot Cameras that meet my minimum criteria are.....

<b>Manufacturer</b>	<b>Model</b>	<b>Megapixels</b>	<b>Optical Zoom</b>	<b>Approximate Cost</b>	<b>Exposure Compensation Adjustable</b>	<b>Flash ON/OFF</b>	<b>ISO Adjustable</b>	<b>Tripod Mount</b>	<b>View Finder</b>	<b>White Balance Adjustable</b>
Canon	PowerShot G9	12.1	6X	\$499.99	Yes	Yes	Yes	Yes	Yes	Yes
Canon	PowerShot S5 IS	8	12X	\$349.99	Yes	Yes	Yes	Yes	Yes	Yes
Casio	Exilim Pro EX-F1	6	12X	\$999.99	Yes	Yes	Yes	Yes	Yes	Yes
FujiFilm	FinePix S8 100 fd	10	18X	\$399.00	Yes	Yes	Yes	Yes	Yes	Yes
Nikon	Coolpix P 80	10.1	18X	\$399.95	Yes	Yes	Yes	Yes	Yes	Yes
Olympus	SP-570 UZ	10	20X	\$499.99	Yes	Yes	Yes	Yes	Yes	Yes
Panasonic	Lumix DMC-FZ 18	8.1	18X	\$349.95	Yes	Yes	Yes	Yes	Yes	Yes
Sony	Cyber-Shot DSC-H50	9.1	15X	\$399.99	Yes	Yes	Yes	Yes	Yes	Yes

*Thank You*

