

Technically, a good picture requires

- Proper exposure – enough light?
 - You can see the details you should see.
 - High-key – snow in sunlight
 - Low-key – black velvet in candlelight
- Proper focus
 - Nothing is blurred that shouldn't be.



Low Key

High Key

Exposure

- Amount of light striking the imaging sensor
- A combination of
 - Intensity of light - **Aperture**
 - Duration of light - **Shutter Speed**
 - **ISO** - Sensitivity of imaging sensor/computer program
- “Auto” exposure = about 18-20% average brightness. Produces a pretty good tonal range on average.
- Best exposure shows detail in the image where the photographer wants to show detail.
 - It might be much darker (low key) or lighter (high key).

Aperture

- The size of the hole letting light through the lens. Usually controlled by an iris mechanism. f1.4 is wide. f22 is narrow.



Shutter speed

- How long the aperture hole is open
- Less than 1/30 sec requires a very steady camera. (Image stabilizer helps)
- 1/60 sec, raindrops are 3/4" long
- 1/500 sec stops most action
- Typical cameras have a range from 30+ seconds to 1/1000 sec

- Shutter speed: Slow
- Aperture?





- Aperture: Wider
- Shutter Speed: Slow

Proper exposure involves

- Fast enough shutter to stop movement, overcome jiggle
- Slow enough shutter to allow just enough light in
- Big enough aperture for 20% average pixel brightness level (average number only – you may want more or less)
- Small enough aperture for adequate depth-of-field (all the things you want to be in focus to be so)

ISO

- Formerly the sensitivity of the film:
 - ISO 50 is “slow,” needs lots of light; 400+ is fast
- Now ISO relates to the software algorithm used to analyze the CCD output.
 - ISO 50 usually means ideal light for the camera sensor
 - ISO 400 or more means you will begin to see some “noise” (speckles or “artifacts”)
 - Typical ranges 50, 100, 200, 400, 800, 1600 +

Getting exposure right

- Getting an acceptable tonal range Lots of information captured in shadows, mids and highlights. (“dynamic range” “luminosity range”)
 - Use the automatic options? (Modes)
 - When to under-expose or over-expose?
 - Using weighted or spot exposure windows (center, corners, top, bottom)
 - Lens filters can improve focus, eliminate glare, enhance contrast

Picture content

- Featuring the subject
 - Lack of distractions, flattering lighting, filling the frame
 - Something interesting for the eye to find
- Composition
 - Arrangement or “layout”
- Quality of light
 - Direction, hard or soft, morning or midday, color temperature, grayness, use of fill-in lighting, etc.
- Framing
 - Use of natural elements to surround, and point to image
 - Inclusion of narrative details

Camera differentiating qualities

- Lens quality
 - sharpness, color correction, “constant aperture,” speed
- Optical zoom range
- Widest aperture
 - F 2.0 or lower is good for low light and selective focus.
 - F 2.8 is good, but not as good.
- Battery life (especially with the LCD on)
- Ruggedness
- Options in the built-in software – (love the **histogram**)
- Pixel count (2-MP needed for a convincing standard print)
- Picture quality at higher ISO values

Camera Drawbacks

- Not all have really good lenses.
- Slow reaction time
 - Slow to focus if something is moving,
 - Slow to get ready to take the next picture,
 - A quick sequence shots may not be possible.
- Some are not set for natural color or contrast.
- Some resist giving you control.
- Will the files still open when you're 64?