

The RAW Difference

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Understanding RAW

- What is RAW
- Benefits of RAW
- Downsides of RAW
- Capture Considerations
- Processing
- JPEG vs. RAW

What is RAW

- RAW is the term used to describe the information that has been collected by your digital camera sensor.
- Digital cameras use RAW, not all can write a RAW file.
- Bits of data, not a picture
- RAW simply records luminance values (brightness) and is a grayscale image

What is RAW

- RAW files need to be processed
- RAW conversion generates color information

Benefits of RAW

- RAW files contain more information
- JPEG capture throws away information
- RAW can be thought of as digital negative

Why RAW ? Interpretation of the data is made by you; not limited camera settings

Downsides to RAW

- All photos must be processed
- Longevity – Not a universal file format
- Storage considerations
 - Memory cards
 - Hard drive space
 - Permanent storage? DVD, CD?

Capture Considerations

- ISO, Aperture and Shutter speed matter
 - WB, contrast, brightness, etc. are applied in processing
- Histogram is a gauge
 - Preview picture is a jpg representation
 - Histogram is based on the jpg created in camera
- Proper exposure is still important

Capture Considerations

- Expose To The Right
- Camera captures linear data
 - Levels relate to exactly the number of photons captured
 - Typical capture about 6 stops of data
 - Typical 12 bit capture uses 4096 levels, 2048 levels is the brightest stop, 64 levels is the darkest. Don't blow highlights, underexposure doesn't use full potential

Processing

- RAW converters process the file into the picture you see
- White balance, color interpretation, tone mapping, noise reduction, antialiasing, sharpening are all handled by converters
- Converters use different algorithms to process. Results can vary.

Processing

- RAW converter usually included with camera from manufacturer.
- 3rd party converters – Capture One, Adobe Camera Raw (ACR), Bibble, Silkipix

JPEG vs. RAW

Benefits of JPEG

- Smaller size (compressed)
- WB, sharpening, contrast already set
- Ready to use

Benefits of RAW

- Better control of photo
- No sacrifice of quality