

# RAW v JPEG

Firstly, an outline definition of these two formats.

## A RAW FILE

- Is not an image (it will require special software to view and edit).
- Is typically a proprietary rather than a generic format and so will vary between camera manufacturers .
- Records the complete (lossless) data from the camera's sensor.
- Is higher in dynamic range (the ability to display highlights and shadows).
- Is lower in contrast.
- Is not as sharp.
- Is not suitable for printing directly from the camera or without post processing.
- Is read only (all changes are saved elsewhere).
- Has to be processed by computer to produce an image file.

## A JPEG (JPEG is an acronym for Joint Experts Picture Group.)

- Is a standard format readable by any image programme.
- Can be compressed in camera allowing more images to be stored on the memory card.
- Is smaller in terms of file size.
- Is lower in dynamic range.
- Is higher in contrast.
- Is sharper.
- Is immediately suitable for printing, sharing, or posting on the Web.
- Can be manipulated, though not without losing data each time an edit is made.
- Can be processed in your camera (within reason).

These differences do not necessarily mean that you have to choose one over the other as some (not all) cameras have the option to record both a RAW file and a JPEG at the same time.

Do note however that if you choose this option it will use up more space on your memory card but high capacity memory cards are much cheaper than in the past so you might consider RAW + JPEG just to cover all the possibilities.

If you cannot or do not want to do any post processing in a computer then you have to shoot in JPEG.

Remember that shooting in RAW is just the first step in producing a quality image. If, on the other hand, quality is of the utmost importance and you want to get every bit of performance your camera can offer then you should be shooting in Raw.

## **SHOOTING IN RAW**

When shooting in Raw, the computer, rather than the camera, will process the data and generate an image that can be viewed on the monitor.

Ultimately you will save it in an image file format such as JPEG, TIFF, GIF etc.

Because a computer has far more processing power than a camera shooting in Raw will give you much more control over your final image and the editing software may be able to correct, within reason, errors made at the taking stage.

You will of course need suitable software on your computer to process RAW files, for example Lightroom or Adobe Camera Raw which comes bundled with Adobe Photoshop or Elements.

## **SHOOTING IN JPEG**

When you shoot in JPEG the camera's internal firmware will take the information from the sensor and process it as determined by your menu settings before saving it.

Some information is lost in the process and in some cameras there is slightly more digital noise in a JPEG.

## **THE MAIN BENEFITS OF RAW**

If you shoot JPEG and allow your camera to process the images you will effectively be throwing away a significant amount of the information initially captured by the sensor.

A RAW file however contains ALL that information and this can be used to advantage when the file is processed on computer.

From the original RAW file you can create many versions of the same image without affecting the original information (data) in any way.

You can always re-visit the RAW file and change the settings as no permanent changes are made to that file.

Whether you use ACR (Adobe Camera Raw), Lightroom or Aperture all edits are stored elsewhere in a "sidecar" file as a set of "instructions" and no permanent changes are made.

## **CONCLUSIONS**

Many serious photographers choose to shoot RAW because of the advantages outlined above.

However this does not mean that the JPEG format should be dismissed out of hand.

If you have no desire to use computer editing, perhaps because you are not comfortable with computers and software, you need to work at high speed or just want to produce images without fuss then JPEG may be the best option.

Many professionals, working to deadlines, where time is money, choose to shoot in JPEG as the results are generally perfectly acceptable.

RAW is often the preferred option for serious amateurs and professionals such as wedding, portrait and fashion photographers where the ultimate in image quality is the goal.

The choice, as always, is yours.

(An additional note – some cameras now have the option of TIF format. Much of what applies to JPEG also applies to TIF. There are significant differences between these formats and more information can be found online).

# PROCESSING RAW FILES

A RAW file has to be processed using specialist software, either stand alone or bundled with another application.

If you use Photoshop or Elements they both incorporate a RAW file converter (called ACR or Adobe Camera RAW) and if you open a RAW file in Photoshop or Elements it will initiate ACR automatically.

Generally the version of ACR bundled with Elements will be a cut down version of the one included with Photoshop.

A better option perhaps is Lightroom which incorporates a powerful and sophisticated RAW file converter.

There are other options available on the market (eg Aperture or OnOne) but essentially they all do the same job.

The given advice is that all initial editing including cropping, straightening, exposure adjustments, contrast, vibrance, saturation, colour correction, noise reduction etc. is performed in the RAW file converter as it is non-destructive and can be re-visited or reset at any time in the future.

In short, do anything that can be done in the RAW file converter, leave Photoshop or Elements for the processes that can't.

The possible exception is sharpening. It can be done in the RAW file converter but if you are going on to do further editing in Photoshop or Elements it might be best to do it there as one of the final processes.