

Digital Photography

Monitor Calibration

Program : store specific

Image Types

JPEG stands for "Joint Photographic Expert Group" and, as its name suggests, was specifically developed for storing photographic images. It has also become a standard format for storing images in digital cameras and displaying photographic images on internet web pages. JPEG files are significantly smaller than those saved as TIFF, however this comes at a cost since JPEG employs lossy compression.

JPEG files achieve a smaller file size by compressing the image in a way that retains detail which matters most, while discarding details deemed to be less visually impactful. JPEG does this by taking advantage of the fact that the human eye notices slight differences in brightness more than slight differences in color. The amount of compression achieved is therefore highly dependent on the image content; images with high noise levels or lots of detail will not be as easily compressed, whereas images with smooth skies and little texture will compress very well.

TIFF stands for "Tagged Image File Format" and is a standard in the printing and publishing industry. TIFF files are significantly larger than their JPEG counterparts, and can be either uncompressed or compressed using lossless compression.

The RAW file format is digital photography's equivalent of a negative in film photography: it contains untouched, "raw" pixel information straight from the digital camera's sensor.

A RAW file is developed into a final JPEG or TIFF image in several steps, each of which may contain several irreversible image adjustments. One key advantage of RAW is that it allows the photographer to postpone applying these adjustments — giving more flexibility to the photographer to later apply these themselves, in a way which best suits each image.

Tips :

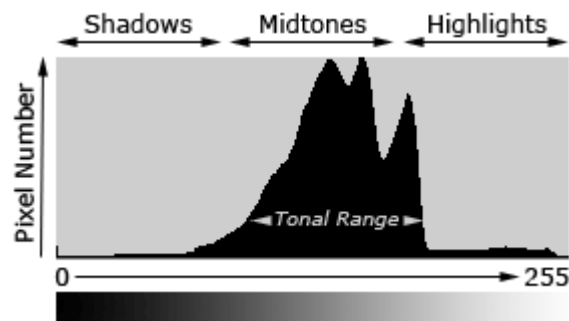
Only save an image using a lossy compression once all other image editing has been completed, since many image manipulations can amplify compression artifacts.

Avoid compressing a file multiple times, since compression artifacts may accumulate and progressively degrade the image. For such cases, the JPEG algorithm will also produce larger and larger files at the same compression level.

Histogram

Understanding image histograms is probably the single most important concept to become familiar with when working with pictures from a digital camera. A histogram can tell you whether or not your image has been properly exposed, whether the lighting is harsh or flat, and what adjustments will work best. It will not only improve your skills on the computer, but as a photographer as well.

Each pixel in an image has a color which has been produced by some combination of the primary colors red, green, and blue (RGB). Each of these colors can have a brightness value ranging from 0 to 255 for a digital image with a bit depth of 8-bits. A RGB histogram results when the computer scans through each of these RGB brightness values and counts how many are at each level from 0 through 255. Other types of histograms exist, although all will have the same basic layout as the histogram example shown below.



Software for Post-Processing

Windows Live Photo Gallery

Google Picasa

Adobe Photoshop

Microsoft ICE (Image Composite Editor 1.35)

Autopano

The GIMP

Editing Processes

Levels is a tool in Photoshop and other image editing programs which can move and stretch the *brightness levels* of an image histogram. It has the power to adjust brightness, contrast, and tonal range by specifying the location of complete black, complete white, and midtones in a histogram. Since every photo's histogram is unique, there is no single way to adjust the levels for all your photos. Compare to the Brightness of other programs.

Curves tool can take input tones and selectively stretch or compress them. Unlike levels however, which only has black, white and midpoint control, a tonal curve is controlled using any number of anchor points. Compare to using Shadow and Highlight in other programs.

Stitching Panoramic pictures.