

Glossary of Photographic Terms

Expert knowledge means success

Contents

1. Introduction
1. Glossary

Terms in Alphabetical Order:

1. A
2. B and C
3. D
4. E and F
5. G
6. H and I
7. J, L and M
8. N and O
9. P and R
10. S
11. T, U, V, W, X and Z
11. Further Information

Introduction

The following glossary contains terms relating to digital cameras including SLR and DSLR cameras as well as photographic effects. The list may not be complete as new terms and acronyms are arising all the time. If you note a glaring omission, please contact the publishers at: info@bizezia.com

Glossary

A

AA Filter

Most Digital SLR's have a "Low Pass Filter" (LPF) or AA (Anti-Aliasing) Filter in front of the CCD or CMOS sensor. This helps to eliminate colour aliasing problems, or the "moire" effect.

ACR (Adobe Camera Raw)

This is the program that comes up by default in CS3 when you open a RAW file. It is the program used to make the initial adjustments before transferring the RAW file to CS3, making further adjustments and then saving as .tiff, .jpg etc.

Adjustable Camera

A camera with manually adjustable settings for distance, lens openings, and shutter speeds.

Adjustable-Focus Lens

A lens that has adjustable distance settings.

Adjustment Brush

There are many new features in the Lightroom 2 photo software but the main one is the adjustment brush. This powerful tool enables you to make local adjustments to your photos with any combination exposure, brightness, contrast, saturation, clarity, sharpness, and colour settings.

AE

Automatic Exposure: Three kinds are available - programmed auto exposure, aperture-priority auto exposure and shutter-priority auto exposure.

AE Lock

Used to hold an automatically controlled shutter speed and/or lens aperture, in case you need to recompose your picture but want to retain an previous exposure reading.

AF-I (Nikon)

Lens with built-in autofocus drive motor. CPU is also built in. AF-I Nikkor lenses send information on distance to the camera body and are classified as D-type AF Nikkor lenses.

AF or Auto Focus

Most modern SLR lenses have this function now. The lens automatically focuses on the subject as quick as the eye. With an SLR you can normally select manual focus if necessary.

AI (Nikon)

Automatic index; Nikon's system for telling the camera's exposure meter what the lens' maximum aperture is.

AI/S (Nikon)

Automatic index/Shutter; Nikon's lens mount permitting automatic operation in shutter-priority and program auto-exposure systems.

Aliasing

This is an effect caused by sampling an image at too low a rate. It causes rapid change (high texture) areas of an image to appear as a slow change in the sample image. Once this has happened, it is extremely difficult to reproduce the original image from the sample.

Angle of View

This is calculated by the focal length of the lens and the size of the image sensor. The 35mm equivalents differ according to the sensor size.

Aperture

The lens opening that allows more, or less light onto the sensor formed by a diaphragm inside the actual lens. It is measured in f/stops.

Aperture Priority

Often abbreviated as A or Av (for Aperture value) on a camera mode dial. It is a setting on some cameras that allows the user to choose a specific aperture value while the camera selects a shutter speed to match. The camera will ensure proper exposure. This is different from manual mode, where the user must decide both values, shutter priority where the user picks a shutter speed with the camera selecting the aperture to match, or program mode where the camera selects both.

Aperture Priority AE

When using this mode, the user selects the aperture giving control over the Depth of Field. A large aperture letting more light in gives a small depth of field, meaning not much will be in focus. Whereas a small aperture, not letting much light in, will give a greater depth of field or more will be in focus from the front to back of the image.

APO

Apochromatic; a type of lens which focuses different wavelengths of light on the film plane for improved image sharpness. Especially useful in telephoto lenses. (Chromatic aberration is corrected).



What is a Camera?

The term camera comes from the camera obscura (Latin for "dark chamber"), an early mechanism for projecting images. The modern camera evolved from the camera obscura.

AS

Antishake - often understood to be the same as Image Stabilization, but may only refer to a camera automatically increasing ISO.

ASA

American Standards Association. (also see ISO).

ASL

Aspherical Lens: allows for high quality, yet compact and lightweight lenses.

Aspect Ratio

The ratio of horizontal to vertical dimensions of an image. For example, 35mm slide film = 3:2, TV = 4:3, HDTV = 16:9, 4x5 Film = 5:4.

Aspherical Lens

A lens with edges flattened so that it is not a perfect sphere. These produce a much superior image.

Automatic Exposure

The camera sets the shutter speed and aperture for the correct exposure according to the light.

Average Metering

In this metering mode the camera will use the light information coming from the entire scene and averages for the final exposure setting, giving no weighting to any particular portion of the metered area.

AWB

This stands for Automatic White Balance. Most digital cameras have this feature where the camera sets the white balance. Override is available in most DSLRs.

B

B & W

Abbreviation for Black and White.

Barrel Distortion

A common geometric lens distortion causing an acquired image to pucker towards the centre and be rounded along the outer edges.

B (Bulb)

At the B setting, the shutter remains open as long as the shutter release button remains fully depressed.

Bracketing

Take a series of pictures taken at different exposures.

Brocken Spectre

The Brocken Spectre is basically a shadow (the photographer's shadow) cast on and in a cloud (fog). As the cloud is not an object with a sharp boundary, but more or less transparent to some optical depth, the shadow figure is a three-dimensional image cast not only on the cloud but also in the

cloud. Where two shadows overlap, the shadow is called umbral (see also Fog Bow).

Buffer

Temporary storage areas held in your camera or computer's RAM. Its acts as a temporary holding area for data that will be manipulated by the processor before saving it to another device. For example if you are shooting in continuous mode, when the RAM buffer on your digital camera is full it will slow to a much slower rate while the buffer empties to your compact flash card or other device.

C

CAF

CAF stands for Continuous Auto Focus. What continuous auto focus does is it takes the most prominent object in your shots' composition and it uses this as its focal point. However, the system is not always perfect at guessing what you want that object to be. You can compensate for this by zooming into the object you want to be in focus, hold that zoom until the object is sharp, and then slowly zoom out.

Card Reader

Used for transferring data from your flash memory card to your PC. A better way of transferring your image files than connecting the camera to your PC. Sometimes the cameras circuitry can become corrupt.

CCD (Charged Coupled Device)

This is a light sensitive chip used in your digital camera for image gathering. The CCD Pixels gather the colour from the light and pass it to the shift register for storage. CCD's are analogue sensors, the digitising occurs when the electrons are passed through the A to D converter. This "Analogue to Digital" converter converts the analogue signal to a digital file or signal.

Centre-Weighted Average Metering

In this system, the meter concentrates between 60 to 80 percent of the sensitivity towards the central part of the viewfinder. The balance is then "feathered" out towards the edges. Some cameras will allow the user to adjust the weight/balance of the central portion to the peripheral one. One advantage of this method is that it is less influenced by small areas that vary greatly in brightness at the edges of the viewfinder: as many subjects are in the central part of the frame, consistent results can be obtained.

Channel

One piece of information stored with an image. For example, a true colour image has 3 channels, red, green and blue.



What is Photography?

"Photography is the art, science and practice of creating durable images by recording light or other electromagnetic radiation, either electronically by means of an image sensor or chemically by means of a light-sensitive material such as photographic film. Typically, a lens is used to focus the light reflected or emitted from objects into a real image on the light-sensitive surface inside a camera during a timed exposure. The result in an electronic image sensor is an electrical charge at each pixel, which is electronically processed and stored in a digital image file for subsequent display or processing."
Wikipedia

Chroma

The colour of an image element or pixel. A chroma is made up of saturation plus the hue values, but is separate from the luminance value.

CIFF

This stands for Camera Image File Format - an agreed type of image storage used by many camera makers.

Close-Up

The general term for pictures taken at relatively close distances, from 1/10 life-size (1:10) to life-size (1:1).

Colour Cast

A colour cast is a tint of a particular colour, usually unwanted, which affects the whole of a photographic image evenly. Certain types of light can cause film and digital cameras to have a colour cast. In general, the human eye does not notice the unnatural colour, because our eyes and brains adjust and compensate for different types of light in ways that cameras cannot.

CMS

Colour management system. A software program designed to ensure colour matching and calibration between video and/or computer monitors and any form of hard copy output.

CMYK

This stands for **C**yan, **M**agenta, **Y**ellow and **B**lacK. Colours used by most printers to produce your prints.

Coating

A layer or multiple layers of thin anti-reflective materials applied to the surface of lens elements to reduce light reflection (flare) and increase the amount of transmitted light.

Codec

A Codec compresses information to enable it to be sent across a network much faster. It will also decompress information received via the network.

Colour Balance

The accuracy with which the colours captured in the image, match the original scene.

Compression

A digital photograph creates an image file that is enormous. To enable image files to become smaller and more manageable cameras employ some form of compression such as JPEG. RAW and TIFF files have no compression and take up more disk space.

CRW

The RAW CCD file format used by Canon Digital Cameras. The acronym is derived from Canon RAW.

D**Dark Frame**

A noise reduction process where a camera takes a second exposure of a black frame after the camera takes a long exposure image. The image noise is easily identified in the black frame shot and is then electronically removed from the actual image. This helps to reduce the amount of hot pixels that normally show up in long exposure shots from digital cameras.

Dedicated Flash

An Electronic Flash Unit that is made to be used directly with a specific make or model of a camera. Canon, Nikon Minolta and Olympus for example, all have electrical contacts in the hotshoe which passes TTL (through the lens) metering and AF range information to and from the flash unit or speedlight.

Depth of Field (or DOF)

The range of acceptably sharp focus in front of and behind the distance the lens is focused on. This is controlled by the focal length and aperture opening of a lens. A large or wide aperture gives a shallow depth of field (not much range in focus) and a smaller or narrow aperture give a large depth of field (more range in focus).

Diaphragm

A series of metal "blades" that can be manipulated to form a larger or smaller opening through which the light is admitted.

Diffusion Filter

A diffusion filter is a translucent photographic filter used for a special effect. When used in front of the camera lens, a diffusion filter softens subjects and generates a dreamy haze. This can also be improvised by smearing petroleum jelly on a UV filter or shooting through a nylon stocking. Diffusion filters may be uniform or may have a clear central area to create a vignette of diffused area around the clear centre subject.

Digital Imaging

The new evolution of the art of photography where images are scanned into an electronic format and then "processed" with software such as Adobe Photoshop: see www.adobe.com/products/photoshop.html

Dioptr Adjustment

There should be a knob or dial near the viewfinders eyepiece but not all cameras have this feature. Dioptric adjustment allows for fine-tuning of the viewfinder focus to suit an individual's eyes. The process is essential to ensure that both the image on the focusing screen and the viewfinder display information are in perfect focus.

Distance Scale

The main use of distance scale comes with macro photography (that is, taking pictures at a very close distance). Auto-focus often does not work well at close range. Setting the distance scale at a low distance or in the macro range reduces the amount of focus fine-tuning.

DSLR

Digital Single Lens Reflex (SLR) – a camera with interchangeable lens.

DX-Coding

Code printed on film cartridges providing most new cameras with film speed information.

Dynamic Range (or DR)

This expresses the luminance range of a scene, a captured image or the maximum range of luminance that a camera can capture at one setting. It describes the ratio between the maximum and minimum measurable light intensities (white and black, respectively).

E

Element

One piece of glass comprising the internal optics of a lens. (See Group).

Equivalent (or Equivalence) Exposure

An equivalent exposure is one that relies on the same amount of light for the proper exposure but juggles the aperture and shutter speed settings to yield different image effects.

EOS (Canon)

Electronic Optical System; Canon's current line of autofocus cameras and accessories.

E-TTL (Canon)

The acronym stands for Evaluative, through-the-lens flash metering. This system uses a brief pre-flash before the main flash in order to calculate the correct exposure.

EV

Exposure Value; A number that represents available combinations of shutter speed and aperture offering the same exposure effect when scene brightness remains the same. Each EV number can be applied to various shutter speed and aperture combinations.

EXIF

This stands for Exchangeable Image File Format. It provides embedded information about camera and exposure for each image. Most decent graphics programs can read this information.

Exposure

Light striking a sensitised material (film or paper emulsion).

Exposure Bracketing

This is where the camera will take 3 or 5 images and varies the exposure up or down for each photograph ensuring at least one will be well exposed.

Exposure Compensation

Modifying the shutter speed and/or lens aperture recommended by the camera's light meter in order to produce special creative effects or to meet special requirements. You can lighten or darken the image by under or over exposing the image. Factors considered may include unusual lighting distribution, variations within a camera system, filters, non-standard processing, or intended underexposure or overexposure.

F

F-Stop

This a number indicating the size of the aperture. It is an inversely proportionate number as in F2.8 is a large opening and F16 is a small opening.

Fill-Flash

Exposure consisting of a combination of flash and "available light" balanced to produce a pleasing mix of the two.

Fisheye Lens

An ultra-wide angle lens which purposely introduces barrel distortion so straight lines near the edges of the frame appear to curve out.

Fixed Aperture

The aperture remains constant regardless of the lens' focal length. For example, the Canon "L" series have a constant fixed aperture when zooming.

Fixed Focal Length Lens

Basically, this is a non zoom lens. 100mm, 50mm, 200mm etc.

Flare

Image degradation caused by stray light which passes through the lens but is not focused to form the primary image. This is often caused by light bouncing off internal air-to-glass surfaces.

Flash (or Flash Gun/Flash Unit)

A flash is a device used in photography producing a flash of artificial light (typically 1/1000 to 1/200 of a second) at a colour temperature of about 5500 K to help illuminate a scene. A major purpose of a flash is to illuminate a dark scene. Other uses are capturing quickly moving objects or changing the quality of light. Flash units are commonly built directly into a camera. Some cameras allow separate flash units to be mounted via a standardised "accessory mount" bracket (hot shoe).

Flash Diffuser

A flash diffuser spreads the light from the flash of a camera. In effect, the light will not come from one concentrated source (like a spotlight), but rather will spread out, bounce from reflective ceilings and walls, thus getting rid of harsh light, and hard shadows. This is particularly useful for portrait photographers, since harsh light and hard shadows are usually not considered flattering in a portrait.

Focus Assist

Cameras with this feature send out a light, either normal or infra-red to light up the subject to assist with the autofocus in low light or darkness.

Focal Length

A lens' angle of view, such as: Wide angle, standard or telephoto. It is the distance from the optical centre of a lens to the image plane when the lens is focused to infinity.

Focus Lock

Focus lock means pre-focussing the subject and re-framing by moving the camera. This is done by half pressing the shutter to focus and fully pressing to expose. This is done, for example, to ensure crisp, sharp eyes.

Focal Plane (or FP)

A shutter that opens and closes near to the film or image sensor, usually as a fast-moving slit, as contrasted with a bladed/leaf shutter located near a nodal point of a lens.

Fog Bow

A fog bow is a similar phenomenon to a rainbow, however, as its name suggests, it appears as a bow in fog rather than rain. Because of the very small size of water droplets that cause fog—smaller than 0.05 millimetres (0.0020 in)—the fog bow has only very weak colours, with a red outer edge and bluish inner (see also Brocken Spectre).

G

Gamma

Measure of the amount of contrast in an image according to the properties of a gradation curve. High contrast = High Gamma and Low = Low.

Gamma Correction

With reference to displaying an image accurately on a computer screen, Gamma correction controls the overall brightness of an image. Images which are not properly corrected can look either too dark or bleached out.

Gamut

This is the range of colours that are available in an image or output process. Gamut is generally used in describing the capabilities of a printer to reproduce colours accurately and vibrantly.

GIF

Graphic Image File format mainly used for Web graphic or small animated (GIF) files. Not good for photographs as it only contains a maximum of 256 colours.

GND

Graduated Neutral Density. A type of neutral density filter in which brightness is reduced more on one side of the filter than on the other, allowing the photographer to reduce the contrast between, for example, bright sky and dark land.

Golden Rectangle

An image ratio (width vs height) that makes the most pleasing, balanced impression on the viewer. Panoramic images are long and skinny; square negatives often make it hard for the viewer to recognize the central focus of a composition. A 35mm format is pretty close to a golden rectangle. Also see Panoramic Photography.

Gradation

A smooth transition between black and white, one colour and another or colour and no colour.

Grey Level

This is the brightness level of a pixel representing its lightness from black to white. It is usually defined as a value from 0 to 255, with 0 being black and 255 being white.

Grey Scale

A term used to describe an image containing shades of grey rather than colour. Most commonly referred to as a black and white photograph.

Group

Two or more elements cemented together within a lens. Lenses are described as having a certain number of elements in a certain smaller number of groups.

Guide Number

The power of a flash in relation to ISO film speed. Guide numbers are quoted in either meters or feet. (To convert from meters to feet, multiply the metric number by 3.3). Guide numbers are used to calculate the f/stop for correct exposure as follows: f/stop=guide number/distance.

Guide Number

The power output rating of a speedlight flash unit.

H

Halftone Image

An image reproduced through a special screen made up of dots of various sizes, to simulate shades of grey in an image.

Hipstamatic

Hipstamatic is a digital photography application for the Apple iPhone. It uses the iPhone's camera to allow the user to shoot square photographs, to which it applies a number of software filters to make the images look as though they were taken with an antique film camera. The user can choose among a number of effects which are presented in the application as simulated lenses, films and flashes. Several of these are included with the application, while others may be acquired through an in-app purchase.

Hot Shoe

A mounting device, usually built onto the top of a camera that enables a flash unit, or speedlight, to be mounted on and triggered by the camera.

Hue

A term used to describe the complete range of colours of the spectrum. Hue is the component that determines just what colour you are using. In gradients where you use a colour model in which hue is a component, you can create some rainbow effects.

Hyperfocal Distance

The hyperfocal distance is the point at which you should focus your lens to allow you to get maximum depth of field (DOF). Once focused on this point, everything from half the hyperfocal distance to infinity will be sharp.

I

i-TTL

Similar to Canon's "E-TTL", Nikon's new flash exposure system is used on the new D70 DSLR and SB-600 and SB-800 Speedlights.

ICC Profile

"The International Colour Consortium" is a group that sets the standard guidelines for colour management in the imaging world. Colour profiles simply let one piece of hardware or software know how another device or image has created its colours and how they should be interpreted or reproduced.

iESP

Olympus' exposure metering system.

iLink

Sony's term for the IEE-1394 FireWire data port found on Sony camcorders.

Internal Focusing (and Internal Focus Lens)

An internal focus lens (sometimes known as IF) is a photographic lens design in which focus is shifted by moving the inner lens group or groups only, without any rotation or shifting of the front lens element. This makes it easy to use, for example, a screwed-in polarizing filter or a petal shaped lens hood. During macro photography, using an internal focus lens reduces the risk of the front of the lens accidentally hitting the subject during focusing as the front element does not move. The physical size of an internal focusing lens does not change during focus, nor does the front of the lens rotate. This is particularly useful for large lenses, keeping the size more compact, or when using filters or accessories mounted on the front of the lens that may require careful alignment. One issue internal focusing lens can have is that the true focal length of the lens is reduced when not focused at infinity.

IQ - Image Quality

Image quality is a characteristic of an image that measures the perceived image degradation (typically, compared to an ideal or perfect image). Imaging systems may introduce some amounts of distortion or artefacts in the signal, so the quality assessment is an important problem.

Image Resolution

This relates to the number of pixels per unit length of image. E.g. pixels per inch, pixels per millimetre, or pixels wide etc.

Image Sensor

Digital cameras use an electronic image sensor (CCD or CMOS), to gather the image data, whereas a traditional camera exposes light to emulsion film,

Image Stabilization (IS)

An optical or digital system built in to a lens for removing or reducing camera movement, most effective with telephoto or telephoto zoom lenses. Can be found on most of Canon's "L" range of lenses as well as mid-range lenses such as the EF 28-125 IS USM

Interlaced

This is the term used to describe an image sensor that gathers its data by first processing the odd lines, and then processing the even lines.

Intervalometer (or Interval Recording)

Another term for Time Lapse Photography. You can capture an image or images at pre-set intervals automatically. Good quality remote releases have this function built in, meaning you don't have to stand around pressing the shutter every 5 or 10 seconds.

IR (Infra Red)

This uses a beam of light that is invisible to us humans to either control a device without wires or as a method of transferring data from camera to computer (or printer) without cables. Some cameras also employ infrared in the auto focusing system.

ISO

International Standards Organization; the number represents the film's sensitivity to light. A higher ISO number indicates the film is more sensitive and requires less light for a proper exposure.

J

JFIF (Also known as EXIF)

This is a specific type of the JPG file format.

JPEG (Joint Photographic Experts Group)

This is the name of the committee that designed the standard image compression algorithm.

JPG

This is the most common type of compressed image file format used in modern cameras. It is a "lossy" type of image storage because even in its highest quality mode, there is compression used to minimize its size.

L

Landscape Mode

This is when you hold the camera in its normal, horizontal orientation to capture the image. The opposite is "portrait mode".

Latitude

The variance from "proper" exposure which will still provide acceptable results.

LCD (Liquid Crystal Display)

There are 2 types. First, a TFT high-resolution colour display device like a very small TV set. Secondly, a monochrome (B and W) information display using just black alphanumeric characters on a grey or green background.

LED (Light Emitting Diode)

This refers to all the little red, green and yellow indicator lights used on most cameras, power supplies and electronic devices.

Light Meter

A light meter is a device used to measure the amount of light. In photography, a light meter is often used to determine the proper exposure for a photograph. Typically a light meter will include a computer, either digital or analogue, which allows the photographer to determine which shutter speed and f-number should be selected for an optimum exposure, given a certain lighting situation and film speed.

Lightroom (also LR)

Lightroom, a popular software application from Adobe for processing images from digital cameras.

Lossless

This refers to storing an image in a non-compressed format, such as TIFF.

Low Pass Filter

Most DSLR's (Digital SLR's) employ a Low Pass Filter (LPF) or Anti-Aliasing (AA) filter in front of the sensor to help eliminate problems with colour aliasing (moiré).

M

Macro Focusing

Macro focusing, applied to zoom lenses, moves the lens group(s), enabling the lens to focus closer than the normal focusing distance from close-up shooting.

Matrix

Auto-exposure metering where the camera sets both aperture and shutter speed according to data stored in the camera's built-in memory, comparing the scene to be photographed to reference scenes.

Matrix Metering

Matrix metering is a sophisticated process which reads light intensity from several points within the scene. The camera's metering system determines what "should" give your photograph proper exposure by sampling the whole image and breaking it into different sections to calculate the best exposure possible. This is the most accurate form of metering as it samples the whole scene and sets the exposure according to an average.

Metering

Metering is used to calculate the exposure from the existing light conditions. Includes Matrix Metering, Spot metering and Centre-weighted metering.

Mirror Lock Up

Mirror lock-up (often abbreviated to MLU) is a feature employed in many Single Lens Reflex (SLR) cameras. It allows the operator to reduce vibration-induced motion blur during exposure. It also allows the mounting of lenses which extend into the SLR's mirror box when mounted.

Moiré

A visible pattern that occurs when one or more halftone screens are mis-registered in a colour image. Often produces a coloured checkerboard (or rainbow) pattern.

Motion Blur

Motion blur is the apparent streaking of rapidly moving objects in a still image or a sequence of images such as a movie or animation. It results when the image being recorded changes during the recording of a

single frame, either due to rapid movement or long exposure.

Motion JPEG

A video clip composed of a sequence of JPEG compressed images. Sometimes abbreviated to MPEG (see MPEG below), although they are slightly different. The main difference is that MPEG provides temporal compression, while MJPEG simply provides spatial compression.

MOV

Apple QuickTime Movie file format.

Movie Clip

A sequence of motion captured in AVI, MOV or MPEG formats. More and more digital cameras can now capture short movie clips, many can also record the sound.

MP

Abbreviation of Megapixel, such as in 5MP or 8MP.

MPEG

Motion JPEG movie file. The digital video compression standard agreed upon by the Motion Picture Expert Group from the motion picture computer industry.

MPEG-EX

Motion JPEG movie file created by Sony cameras. This was the first motion video recording sequence mode that was limited in length only by the amount of available storage space.

Multi-Pattern Metering

Exposure is determined by reading many different zones in the frame. This gives a more optimum exposure than those cameras using just a central zone metering system.

Multi-Point Focusing

The autofocus systems uses several different portions of the image to determine the correct focus.

Multi Zone Focusing

Many digital cameras now offer multi zone focusing. The camera will automatically determine which zone (centre, left, right, upper or lower) to use to perform the auto focusing. You no longer have to make sure that your subject is in the centre of the viewfinder in order to be correctly focused.

N

ND

Neutral Density. A neutral-grey pre-lens filter to reduce overall brightness without altering colour balance.

NEF (Nikon Electronic Format)

The Raw image data file format used by the Nikon DSLR (D2x, D100, etc) also some Coolpix digicams.

Neutral Density (or ND) Filter

A neutral density filter or ND filter can be a colourless (clear) or grey filter. An ideal neutral density filter reduces and/or modifies intensity of all wavelengths or colours of light equally, giving no changes in hue of colour rendition. The purpose of standard photographic neutral density filters is to allow the photographer greater flexibility to change the aperture, exposure time and/or motion blur of subject in different situations and atmospheric conditions. Neutral density filters are often used to achieve motion blur effects with slow shutter speeds

Noise

Relates to pixels in your image that were misinterpreted. Normally occurs when you shoot a long exposure (beyond 1/2-second) or when you use the higher ISO values from 400 or above. It appears as random groups of red, green or blue pixels. Programs such as Neat Image can remove most noise from an image.

Noise Reduction

Some cameras that offer long shutter speeds (more than 1 second) usually have a noise reduction (NR) feature that is either automatic or can be enabled in the menu. This is to help eliminate random "hot" pixels and other image noise. Can add more time to the process as it needs to write the new image data along with the recorded image.

O

OIS

Optical Image Stabilization, part is a family of techniques used to reduce blurring.

Optical Viewfinder

An eye level viewfinder that is used to compose the photograph.

Optical Zoom

Means that the camera has a real multi focal length lens, this is not the same as a "Digital Zoom" which magnifies the centre portion of the picture. Optical zoom gives better quality than a digital zoom.

Orientation Sensor

A special sensor in some cameras that can tell when you turn the camera round to portrait orientation to take a vertical shot. It also tells the camera to display it that way later when viewed on a monitor or TV screen during playback.

Overexposure

This is an image that appears much too bright. The highlights and colours are totally lost and usually unrecoverable even by top software. Either the shutter speed was too long or the aperture was too wide.

P

Panning

Panning is the horizontal movement of a camera as it scans a moving subject. When panning, the camera is moved in synchronicity with the subject as it moves parallel to the photographer. To pan successfully, the camera follows the subject's movement and matches its speed and direction as closely as possible.

Panoramic Photography

Panoramic photography is a technique of photography, using specialized equipment or software that captures images with elongated fields of view. It is sometimes known as wide format photography. The term has also been applied to a photograph that is cropped to a relatively wide aspect ratio.

Parallax

An effect seen in close-up photography where the viewfinder does not see the same as the lens. This is normally due to the offset of the viewfinder and lens. This is not an issue if you are using the LCD as a viewfinder or if your camera is an SLR.

Partial Metering

This mode meters a larger area than spot metering (around 10-15% of the entire frame), and is generally used when very bright or very dark areas on the edges of the frame would otherwise influence the metering unduly. Like spot metering, some cameras can use variable points to take readings from, (in general autofocus points), or have a fixed point in the centre of the viewfinder. Partial metering is found mostly on Canon cameras.

Perspective Control Lens (or Tilt Shift Lens)

A perspective control lens allows the photographer to control the appearance of perspective in the image; the lens can be moved parallel to the film or sensor, providing the equivalent of corresponding view camera movements. This movement of the lens allows adjusting the position of the subject in the image area without moving the camera back; it is often used to avoid convergence of parallel lines, such as when photographing a tall building. Lenses that provide only shift may be called shift lenses, while those which can also tilt may be called tilt-shift lenses. The terms PC and TS are also used by some manufacturers to refer to this type of lens.

Photography

From the Greek, meaning "painting or writing with light."

Pin-Cushioning

This is a common geometric lens distortion causing an acquired image to pucker toward the centre of the image, usually found at

telephoto focal lengths.

Polarizer (Polarizing Filter)

A filter for eliminating glare and reflections which attached to the front of your lens (normally just SLRs). There are 2 types of polarising filter, linear and circular. Linear is for film only, it screws up most auto focus systems on digicams. Therefore be sure you use a circular polarizer filter. It can also be used to darken skies and increase the saturation of colours.

PNG (Portable Network Graphics)

This is an image file format. It is a compressed file format similar to JPG.

Prime Lens

In film and photography, a prime lens is either a photographic lens whose focal length is fixed, as opposed to a zoom lens, or it is the primary lens in a combination lens system.

R

Rangefinder

This is the viewfinder on most smaller digital cameras and is a separate viewing device which is independent of the lens. It is often above and to the right or left of the lens. It exhibits a problem known as parallax when trying to frame subjects closer than five feet from the camera so it is advisable to use the colour LCD when shooting close-ups for just this reason.

RAW

RAW files store the unprocessed image data at 12 bits per channel, directly from the camera's imaging chip to its memory storage device. "Lossless" compression is applied to reduce the file size slightly, without compromising the quality. RAW image files must be processed with special software before they can be viewed or printed. These are normally in the form of a plug in for Photoshop or as a standalone product. The advantage is that you have the ability to alter the white balance, exposure value, colour values, contrast, brightness and sharpness as you see fit before you convert this data into the standard JPEG or TIFF format. Professional digital photographers import RAW image data directly into photo-editing programs like Photoshop CS (which comes with a Camera Raw plug-in that works with most popular RAW formats.)

Red-Eye

An effect caused by an electronic flash reflecting off the retina at the back of the eye making it look red. Compact cameras with the flash located close to the lens suffer the worst from this problem. Professional photographers use a bracket to hold an external flash unit above and off to the side of the lens to eliminate red-eye. It can also be easily reduced using most post-editing software.

Red-Eye Reduction Mode

A special flash mode whereby a pre flash or a series of low powered flashes are emitted before the main flash goes off. This causes the iris of the eye to contract meaning less light gets in the eye, therefore reducing red eye.

Render

This is the final step of an image transformation or three-dimensional scene through which a new image is refreshed on the screen.

Resize

In photographic terms, this means to take a large image and reduce it in size. Most editing programs offer a resize option.

Resolution

The quality of any digital image, whether printed or displayed on a screen, depends on its resolution, or the number of pixels used to create the image. More, smaller pixels add detail and sharpen the edges. Optical Resolution is an absolute number that the camera's image sensor can physically record. Interpolated Resolution adds pixels to the image using complex software algorithms to determine what colour they should be. It is important to note that interpolation doesn't add any new information to the image - it just makes it bigger.

RGB (Red, Green and Blue)

The primary colours from which all other colours are derived. The additive reproduction process mixes various amounts of red, green and blue to produce other colours. Combining one of these additive colours primary colours with another produces the additive secondary colours cyan, magenta and yellow. Combining all three produces white.

Rule of Thirds

The rule of thirds is a "rule of thumb" or guideline which applies to the process of composing visual images such as paintings, photographs and designs. The rule proposes that an image should be imagined as divided into nine equal parts by two equally-spaced horizontal lines and two equally-spaced vertical lines, and that important compositional elements should be placed along these lines or their intersections. Proponents of the technique claim that aligning a subject with these points creates more tension, energy and interest in the composition than simply centering the subject would.

S

Saturation

The degree to which a colour is undiluted by white light. If a colour is 100 percent saturated, it contains no white light. If a colour has no saturation, it is a shade of grey.

Self-Timer

Pre-set time delay (e.g. 2, 5, 3, 5 or 10 seconds) before the shutter fires automatically. This allows the photographer be in the picture without using a long cable release or remote control. It is also great for taking macro or night shots as by not touching the camera, you eliminate the chances of camera shake. Is also good to use the "mirror lock up" function if you have it.

Sepia

The (brownish) mono toned effect seen in images from the original 19th and early 20th Century cameras. This is now a feature often found as a special image effect on some digicams and/or editing software.

Shutter

The physical device that opens and closes to let light from the scene strike the image sensor. Digicams use both electronic and mechanical shutters.

Shutter Lag

The time between pressing the shutter and actually capturing the image. This is due to the camera having to calculate the exposure, set the white balance and focus the lens. It is worse with smaller digicams whereas the better DSLR's now have little or no shutter lag, like the better film SLR's.

Shutter Priority and Shutter Priority AE

When the photographer selects the shutter speed and the camera automatically sets the corresponding aperture determined by lighting conditions. Shutter speed priority is used to control motion capture. A fast shutter speed stops fast action, a slow shutter speed blurs a fast moving subject. It is good to use shutter priority for sports or wildlife photography.

Shutter Speed

How fast the camera's shutters open. It determines how long the film is exposed for.

Skylight Filter

This is an Ultra Violet absorbing filter that helps overcome the abundance of blue in outdoor photographs. Not really necessary in digital photography as the camera's white balance system adjusts for the colour temperature of the scene. You can also use them to protect the camera's lens from scratching, fingerprints or dirt.

SLR (Single Lens Reflex)

This means the camera has one lens (as opposed to Twin Lens Reflex like the Rolleiflex) that involves a mirror and prism that the viewer looks through (as opposed to a point and shoot or rangefinder where the viewer looks through a separate viewfinder).

Spot Metering

With spot metering, the camera's auto exposure system will only measure a very small area of the scene (between 1-5% of the viewfinder area). This will typically be the very centre of the scene, but some cameras allow the user to select a different off-centre spot, or to recompose by moving the camera after metering.

Stitching

Combining a series of images to form a larger image or a panoramic photo. It requires special post editing software.

Sunny 16 Rule

In photography, the Sunny 16 rule (also known as the Sunny f/16 rule) is a method of estimating correct daylight exposures without a light meter. Apart from the obvious advantage of independence from a light meter, the Sunny 16 rule can also aid in achieving correct exposure of difficult subjects. As the rule is based on incident light, rather than reflected light as with most camera light meters, very bright or very dark subjects are compensated for. The rule serves as a mnemonic for the camera settings obtained on a sunny day using the exposure value (EV) system.

T

TCon

Telephoto converters for increasing focal length.

Telephoto

This is the focal length that gives you the narrowest angle of coverage, good for bringing distant objects closer. (i.e. 100mm, 200mm, 500mm etc.).

Thumbnail

A small, low resolution version of a larger image file, which is used for quick identification or speedy editing choices.

TIFF (Tagged Image File Format)

An uncompressed image file that is lossless and produces no artefacts as is common with other image formats such as JPEG.

Time-Lapse

Capturing a series of images at pre-set intervals. Also known as Interval Recording or Intervalometer.

TLR

Twin-Lens Reflex, a camera with two lenses, one for taking pictures and one for viewing the scene. The two lenses are typically linked to ensure that they remain focused at the same distance.

TTL

Through-the-lens; commonly used when referring to metering through the lens as opposed to via a separate meter. Effective for fill-flash and other tricky lighting situations

Twain (Technology Without An Industry Name)

Protocol for exchanging information between applications and devices such as scanners and digital cameras. TWAIN makes it possible for digital cameras and software to communicate with each other on PCs.

U

Under Exposure

This happens when a picture appears too dark because insufficient light was delivered to the imaging system. It is the opposite of over exposure.

USM (Canon)

UltraSonic Motor - Canon's fastest, quietest autofocus lens mechanism.

UV Filter

This is an Ultra Violet absorbing filter that helps overcome the abundance of blue in outdoor photographs. Not really necessary in digital photography as the camera's white balance system adjusts for the colour temperature of the scene. It can be used to protect the camera's lens from scratching, fingerprints or dirt.

UXGA

This refers to an image resolution size of 1600 x 1200 pixels.

V, W, X and Z

VGA

Refers to an image resolution size of 640 x 480 pixels.

Viewfinder

In photography, a viewfinder is what the photographer looks through to compose, and in many cases to focus, the image. Most viewfinders are separate, and suffer parallax, while the single-lens reflex camera lets the viewfinder use the main optical system. Viewfinders are used in many cameras of different types: still and movie, film, analogue and digital. A zoom camera usually zooms its finder in sync with its lens, one exception being rangefinder cameras.

Vignetting

The term that describes the darkening of the outer edges of the image area due to the use of a filter or add-on lens. Most noticeable when the zoom lens is in full wide-angle. It is also sometimes used as a special effect in the photo editing stage of development.

White Balance

This refers to the adjustment of the brightness of the red, green and blue components, so that the brightest object in the image appears white. See also "AWB"

Wide angle

The focal length that gives you the widest angle of view. I.e. 10mm, 16mm, 24mm etc.

WR

Weather Resistant (mainly Pentax brand). Cameras and lenses with waterproof seals.

XGA

This refers to an image resolution size of 1024 x 768 pixels.

Zoom Lens

A variable focal length lens. The most common on digicams has a 3:1 ratio (i.e. 35-105mm). Detachable zoom lenses include for example, 24-70mm, 70-200mm and 100-400mm.

Further Information

This guide is for general interest - it is always essential to take advice on specific issues.

We believe that the facts are correct as at the date of publication, but there may be certain errors and omissions for which we cannot be responsible.

If you would like to receive further information about this subject or other publications, please call us – see our contact details on the next page.

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Publication issued or updated on:
20 February 2012

Ref: 789