

A GUIDE TO LIGHTING

When looking at this subject there are two groups of lighting, Natural and Artificial. We use both for taking photographs without knowing that we are using them. When we take an image of a landscape or any other image outside we use natural light. Any image taken indoors or outside where a light illuminates your subject is artificial lighting.

There are two distinct types of artificial lighting Constant and flash. Constant as the name suggests is on all the time it is used, while Flash illuminates by a short burst of light triggered by the camera.

For the best results use daylight balanced equipment. Light colour is measured in degrees Kelvin, daylight is said to be 5500 - 6500K. Most light bulbs have information on the packaging telling you the colour temperature of the bulb. Most flashguns operate in the daylight range as do most studio lights.

1. NATURAL LIGHT

This is a free lighting source and in theory the brightest of all the light sources as it comes from the sun. As photographers we have no control over the main source of light, but we can use reflectors to help us to get the lighting we desire.

Reflectors need not be expensive, a bit of white card, aluminium foil or a mirror will work. Readymade reflectors can be bought and range in price from around the ten pound mark to fifty or sixty pounds (you pay your money and take your choice)

When this light source is used, you can use any of your camera modes Program, aperture priority, shutter priority or manual (PASM) to take your image.

2. CONSTANT LIGHTING

The lighting comes from a light bulb of some type. This could be normal household bulb, a daylight balanced bulb or an LED bulb. Generally the higher the wattage the brighter the bulb (but this only applies to the same type of bulb)

Tungsten and halogen lamps use the most electricity to generate a set amount of light. They also create a lot of heat while in use.

Energy saving (Fluorescent) lamps use about half the amount of electricity of a tungsten bulb to give an equal amount of light. They still produce heat but not as much as tungsten.

LED lighting will use a quarter of the electricity to give the same light as a tungsten bulb and they produce the lowest amount of heat.

Constant lighting set-ups need not be expensive, as you may already have equipment you can use. LED torches can be used for table top, if you don't own any, they can be bought quite cheaply, starting around two or three pounds.

Studio Constant Lighting is a bit more expensive, prices start from around forty pounds and go up to whatever you wish to pay. Generally there are two types of studio constant lighting used today, energy saving and LED.

Energy saving set-ups use either a single large bulb of around 150 watts or multiple bulbs of lower wattage. These bulbs can be bought separately and used instead of your normal light bulb at home if you don't fancy buying a studio outfit.

LED studio lights are far more expensive. When looking at the price for LED's they seemed to start around a hundred pounds and go into thousands. I think that this will change and the price will fall as they become more popular. As LED's don't degrade with age and last far longer than traditional bulbs, I think this is the way all constant lighting will go.

As with natural daylight, there is no connection to the camera, so any of your camera shooting modes will work with them, as will any make of camera. It also works for movie taking. Flash lighting won't do this.

3. FLASH LIGHTING

Most cameras have a built-in flash unit or one that will clip on quickly. These are usually low powered units with a limited range. More powerful units are sold as separate items by your camera manufacturer or by a third party manufacturer. The prices start from around fifty pounds for a basic flash unit and can go into the hundreds for studio lights.

The power of a flash is called a guide number and the higher the number the more powerful the flash. Your camera's built-in flash is normally about a guide number of 11 while a good speed light/flashgun will be about 36 to 42. The guide number for studio lights will be a lot higher.

Flash lighting is the most complex form of lighting, as they can be used in so many ways and for so many different things.

Because the duration of a flash is so short, a fraction of a second, it can be used to freeze motion i.e. birds in flight, moving vehicles and water droplets.

It can also be used to overpower natural light or work with it and highlight a section of an image as you want it. This is called fill in flash.

There are two types of flash, portable and studio. They both work the same way, but studio lights normally have a modelling bulb to give the user an idea of how the flash will light the subject. Both need to be set off by the camera and there are many ways to do this. First you can place a flashgun directly on the hotshoe on your camera. This will give you a very direct light. If you want more control and the ability to take the flash off camera then an extension lead is a simple way to start.

Off camera triggers can be used to give even more control, but to use them you must have a compatible flashgun. There are two types of trigger, optical and radio.

Optical triggers are set off by another flash. A normal set-up would be to have a big flashgun connected to an optical trigger, which is pointed at a subject. You then use the pop up flash on your camera to set it off. Optical triggers are very simple devices and will not support the sophisticated metering system in your camera, so they only have a single contact to set a flashgun off. Because of this the flashgun you use must have a manual mode on it.

There is also an infra-red system of optical triggers that work in a similar way to the other optical triggers, where the camera is fitted with a sender and the receiver sets off the flash. Both types of optical trigger work by line of sight and can only trigger the flash if they can see the sender.

Some of the newer flashguns have three modes built in, auto, manual and slave. In the slave mode they quite often have both optical and radio trigger built in, check your instructions to find out if you already have this system.

Optical triggers start from around £5 and are probably the cheapest way to set off a flash.

Radio Triggers use a radio signal between a sender and a receiver. They are becoming more sophisticated all the time. There are two types, basic and dedicated. The basic type requires the use of a manual flashgun. The dedicated trigger needs to be specific to your camera make, as it allows the camera metering system to control the flash output. This also means the flashgun must be the correct type to work with your camera.

Both types of radio trigger allow the greatest freedom in use, as most will work over a thirty meter range from the trigger source and in any direction. They are not governed by line of sight so can be placed behind objects or walls and will still fire off a flash.

They can be bought for as little as £20 and can run to hundreds if you want the very top models.

When using Flash, your camera must synchronise with it. Flash Sync speeds differ on different makes and models of camera. A shutter speed of 125th of a second will work on most digital cameras. With a basic radio trigger, you can only use manual mode on a camera, while dedicated triggers will quite often switch camera to flash mode for you.

