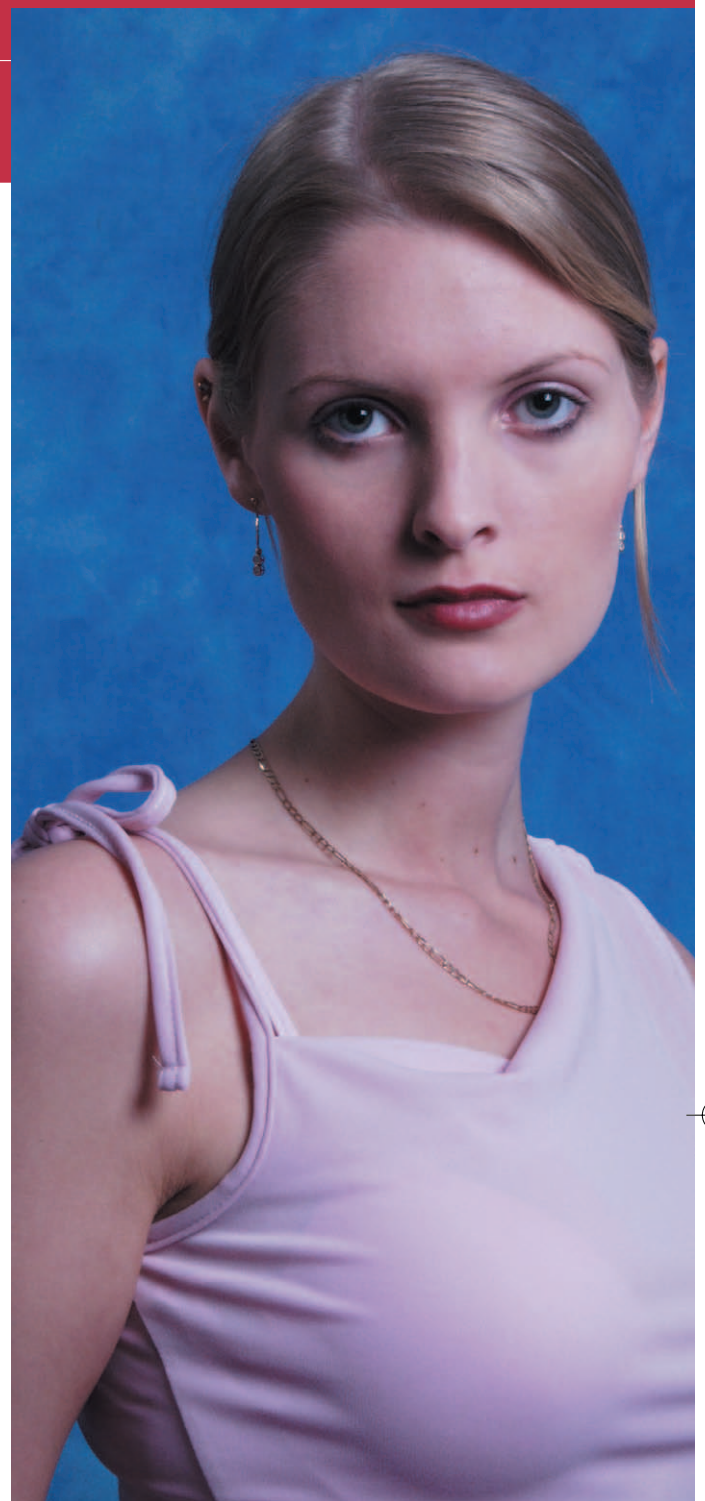


Getting Started with Lighting

Duncan Evans explains the basics of lighting types and fittings

There are three main components to great photos – content, composition and lighting. While photographers are at the mercy of natural light when outdoors, inside a studio or even a normal room light can be manipulated to create areas of brightness and shadows. The three main types of lighting used in photography are natural, tungsten lamps and flash.

Any digital camera can use natural light, but one with a tripod thread can also be used with continuous tungsten lamps. This makes them a tempting low cost alternative to a studio flash system if your camera doesn't have a PC-synch socket (a PC-synch socket allows a camera to be linked by a cable to flash units and trigger them). Hotshoe adapters are available for some cameras, which provide a synch socket, and infrared triggers are available that can fire flash units without the need for having wires everywhere.



NATURAL LIGHTING

A typical result when shooting under natural lighting at midday. The high sun casts strong, ugly shadows giving the model the dreaded "panda eyes"



If the subject is positioned so the sun is behind them, they will be backlit and thrown into murky shadow



A reflector can be used to throw light back onto the subject to brighten them, while avoiding the effects of direct sunlight

This is a studio shot using a single softbox with a flash head and a portable background

EQUIPMENT USED

Fujifilm *FinePix S2 Pro* (www.fuji.co.uk/digital)
 Lastolite portable background with train (www.lastolite.com)
 Jessops *Series 3* flash system with umbrella and softbox (www.jessops.com)
 Spot adapter and barn doors for Portaflash (www.jessops.com)
 Model: Hazel Marchant



Metering (this basically means measuring) the brightness of natural light is relatively easy, unless there are very reflective elements in the shot. A large amount of reflective surfaces can fool a camera's metering system into thinking the scene is brighter than it is, as light bouncing off a highly reflective surface will appear to be another light source to the camera.

To take a photograph (for example a portrait) in natural light, put the camera into its aperture priority (AP) mode, select the aperture required and fire away. The camera's metering system should measure how bright the scene is and set the camera's shutter speed to expose the scene properly. If the camera uses scene or pre-set shooting modes, select the portrait mode when taking portraits to optimise the camera's settings.

Exactly the same approach is used when shooting scenes lit with tungsten lamps. However, tungsten light isn't that bright, so longer exposure times will be needed to expose the scene properly. This means the camera will have to be stabilised on a tripod to prevent camera shake. Another problem with tungsten lights is that colour casts may appear if the camera's automatic white balance doesn't do its job properly.

Cameras are normally tuned to compensate for the average colour temperature of daylight (around 5,500°K, which makes daylight slightly blue). If a camera does not compensate for the colour of light, all colours in the scene will be tinted with a mild blue. When a light source is used that has a different colour temperature for daylight, the camera's automatic white balance has to correctly assess and compensate for the new colour temperature to prevent any colour casts.

Some cameras allow the colour temperature to be set at specific values given in degrees Kelvin (°K) or for the scene's colour temperature to be metered and the temperature adjusted manually. At the very least the camera should have a range of picture symbols representing overcast, sunny and gloomy conditions, plus a variety of artificial light sources like tungsten and fluorescent bulbs. When using tungsten lamps, manually set the white balance to the tungsten setting, to prevent an orange cast appearing on photos.

METERING FLASH

Metering light from a flash system (whether a full studio system, or the camera's built-in flash) is completely different from metering for continuous light sources. This requires a flash meter and the use of camera's manual settings.

The flash meter will accept the same PC-synch lead that plugs into the camera. Most flash photography uses exposure times of 1/125th sec or 1/250th sec. These are

TUNGSTEN LAMPS



This is what happens when the automatic white balance gets the temperature reading for a tungsten light source wrong – there is a definite warm, orange cast



Same lighting was used, but this time the camera's white balance has been set to compensate for tungsten lighting, producing a cooler image with no colour casts

Photography by Duncan Evans



TECHNIQUE : LIGHTING

LIGHT FITTINGS

Flash heads can be used in three ways: with no diffusion, pumping out harsh bright light; with a reflective umbrella that bounces light back at the subject, diffusing and softening it; or with a softbox that considerably softens the light, which makes it more flattering for portraits and produces very weak shadows. A softbox costs more than the umbrella, but is considerably better for portraits.

Soft, diffused lighting is all good and well, but there are times when something more dramatic is needed. Fortunately there are accessories that can be attached to your flash heads that do just that. There are honeycomb effects, gels for colouring light, hair lights, snoots (spot lighting) and barn doors. Light from flash units fitted with snoots and barn doors is harsher, but it can be used to create more dramatic effects.



The broolly reflects the light back at the subject making it softer, but it still produces notable shadows



Using a softbox on the flash head gives softer light



Barn doors consist of four wings that can be independently moved over or away from the light to direct it. Here the doors have been narrowed on the left to send the area behind the model into shadow. The light source was at 45° to the camera to ensure that the model remained lit while the background was darkened



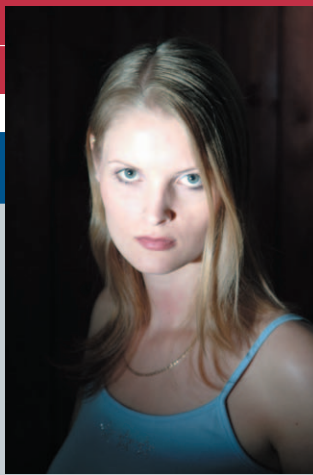
Here the top leaf has been lowered to cover the forehead in shadow, leaving the face peering out from the gloom

the speeds at which most cameras can synchronise firing the shutter with activating the flash. The exposure time is kept short so the background light will not register and the subject's natural movement won't blur the picture. The camera needs to have a manual setting, so the camera's shutter speed can be set to the flash synch speed. The aperture setting is directly related to the very short burst of high energy flash, and is often used to refer to the power of the flash head because of this.

To discover the strength of the lights and set the correct aperture, turn them on and plug the lead from the lights into the flash meter

rather than the camera. Ensure the diffuser (the white opaque bulb shape) is across the sensor, set the desired ISO and flash synch speed on the meter, hold it in front of the subject and press the test/fire button. The meter will fire the flash heads and record the strength of the light. This will be given as an aperture setting, which should be dialled into the camera before taking the shot.

The meter must be set to the same ISO rating as the camera or the reading will be wrong. The meter can be used to check the level of light falling onto different areas, so if it has been badly directed the variations will be seen before shooting begins. ■



The light from this spot light is pointed at the model's face a meter reading is taken from it. The tight spot of light means that everything else falls away into shadow, giving a dramatic portrait

LIGHTING RATIOS

This term refers to the strength of a main light, compared to that of a secondary one. The main light is known as the key light, and the secondary one as the fill light.

The key light is used to provide overall illumination for the scene and create areas of shadows. The fill light (or lights – there can be more than one) provides more depth of lighting and shape where shadows may not be needed.

The power of the flash can usually be set on the flash units themselves – the more sophisticated the unit, the more power options it'll have.

All these photos were taken using Jessops *PortaFlash* gear which offers full, half and quarter power settings.



Two lights with the same maximum power setting are used here, giving a 1:1 lighting ratio and all-round illumination



The lighting ratio is now 2:1 with the key light to the left. An umbrella has been used rather than a softbox, to emphasise the shadows and illustrate the point



The key light has four times the power of the fill. There is plenty of shadow detail, yet the model's left arm and leg are more rounded thanks to the subtle fill light