

Essential guide **How to use studio lighting**



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Essential guide: Studio flash, part 1

As the winter draws in, it's time to retreat to the cosy indoors and explore the wonders of mains flash lighting

WORDS BY WILL CHEUNG PICTURES BY CHRIS ROUT

Most photographers have a flash of some sort. It might be a small one built into the camera or it might be one that sits atop the camera. To be fair, such units deliver decent results within the limitations of power output and their fixed positions. Indeed, you can do more with on-camera flashguns just by taking them off the camera.

But let's be honest, if you really want to take portraits, still lifes or interior shots that are worth a second look, mains powered studio flash is the way to go. You get a consistent and powerful light with quick recycling, it's balanced for colour film, and the output is easily enhanced with the many accessories available in most flash systems.

Not only that but you get a modelling light, a tungsten or halogen lamp, which gives you an accurate idea of how the flash lighting will look in the final result.

Speaking of tungsten, you can use just this for studio work and such units are comparatively cheap. The negatives are that tungsten light

units run hot and they give an output, which appears orange on daylight film unless you use colour correction filters.

Naturally, there's a downside to mains flash and inevitably it's cost. Photography has never been a cheap hobby, but even a budget, low-power mains flash outfit will set you back a few hundred quid. If you only use it once in a blue moon, you'd be better off buying a new lens. But make the effort of giving your studio kit a regular workout and the investment will be thoroughly worthwhile.

In this first of a two-part Essential guide special, *PM* takes you through what can be achieved with just one flashhead and a few key accessories, ably assisted by pro photographer Chris Rout and model Lucy Kinninmonth. Setting custom white-balance, using a flashmeter and how to mix flash with daylight are core techniques covered in part one. Next month in *PM*, we delve into the world of using two and more flashheads as well as what kit to buy, so don't miss it.

CHRIS ROUT

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Essential guide: Anatomy of a mains flash unit



There are basically two types of studio flash units. There are top-end, expensive power pack and separate flashhead combinations - the flashhead houses the flash tube and modelling lamp, while the power pack houses the

capacitor, mains circuitry and the controls. They're too expensive for general enthusiast use.

Perfect for home use are monoblocs, which have the power pack, flash tube and controls in one unit, and that's what's shown here.

1 FLASH TUBE

Never touch this - grease from your fingers will weaken it and most are not user-changeable. It's always a good idea to let the unit cool down, especially after a prolonged shooting session, before moving the light and packing it away. More powerful models are often fitted with cooling fans.

in the maker's range. Budget models will usually have tungsten lamps, while more expensive units will have halogen bulbs.

3 REFLECTOR

Fitted to the head, in this example, by a bayonet fitting. This can be swapped for other light modifiers, such as softboxes and honeycombs.

2 MODELLING LAMP

The type of lamp used depends on the brand and where the model sits

4 BROLLY SOCKET

The brolly's stem slips onto this.

1 MAINS SOCKET

Most flash units take IEC, kettle type leads. In case of overheating, studio flash units usually have an automatic cut-off when it gets hot. They then carry on working once they've cooled down. The flash unit will also have its own fuse so have some spares handy.

2 SYNC SOCKET

Plug the sync lead or the receiver of a remote transmitter outfit into this. Incidentally, if you use sync leads, it's advisable to always have a spare one available.

3 SLAVE SENSOR

When this detects flash or a signal from a remote transmitter, it will trigger the flash. Most units let you switch it off, which can be handy in some situations.

4 MODELLING LAMP CONTROL

Some units let you vary the output of the modelling lamp in proportion to the output from the flash, which helps you judge the lighting effect accurately.

Some models have a setting that turns the modelling lamp off immediately after a shot is taken and turns it back on when fully charged. It's a useful check feature.

5 FLASH OUTPUT CONTROL

You won't want to use your flash units at full power all the time and this is where you control output. Units offer varying degrees of sophistication. Budget units may only offer full and half power, while others such as this head from Elinchrom allow accurate control in one-tenths of a stop.

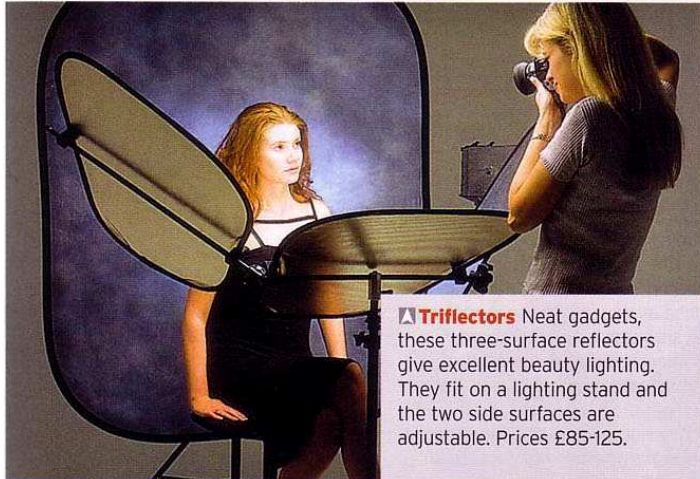
6 AUDIBLE CHECK

The flash emits a beep when it's fully recharged and ready to go again. This is an excellent feature if you're in a fast-moving shoot when you're concentrating (as you should be!) on what's happening in the viewfinder and making sure the image is in focus and brilliantly composed.



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Accessories



▲ **Triflectors** Neat gadgets, these three-surface reflectors give excellent beauty lighting. They fit on a lighting stand and the two side surfaces are adjustable. Prices £85-125.

▶ **Reflectors or light modifiers** Often called spill kills, they fit on the front of the flash unit to prevent light scatter from the flash tube. Most brands offer a variety of spill kills and similar accessories.



▲ **Softboxes** They are more expensive, but they give a directional light compared with brollies. Most enthusiasts start with the brollies and rarely move onto softboxes, which is a big shame.

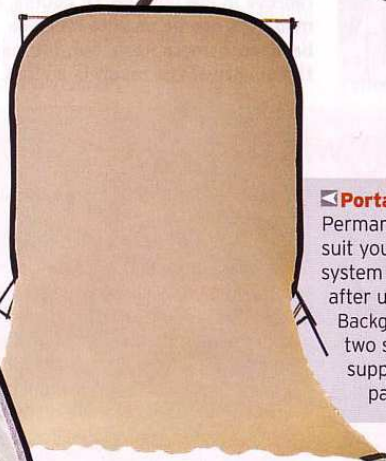
Lighting stands

These adjustable stands hold your lights. The ones supplied with kits are fine to start with, but you may need more heavy-duty ones if you start using softboxes, and so on.

Portable background systems

Permanent background systems won't suit your living room so you need a system that you can easily pack away after use. Something like the Interfit Background Kit at £70, which comprises two stands and an extending pole that supports the rolls of background paper or cloth, is ideal.

◀ **Lighting brollies** Brollies are popular and give a decent light. Thin white ones can be used in 'shoot through' mode, but most brollies reflect light onto the subject. White and silver are the most widely used.



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Gear used: One head, a white brolly used in reflected mode and a white reflector

A remarkable amount can be achieved with a single flash head, so don't despair if you're on a budget and building up your outfit gradually.

A single head placed at 45° to the model gives a nice quality, but the non-



lit side can look too heavy so to really make the most of the situation you need a reflector. You should place this as close as you can to the model, but make sure it stays out of frame.

A reflector is only useful if it's accurately positioned to throw light back from the flash in the most effective manner possible. To find this position, stand directly in line between the model and the camera lens and move the reflector around to see its effect. Once you've found it, hold the reflector in position with a reflector holder, lighting stand or similar.

An on-camera flash is convenient, but it doesn't give great lighting. This is the sort of shot you get with a camera-mounted flash. There's no modelling lamp and there's a harsh shadow behind, plus there's the risk of red-eye in low lighting. Of course, light modifiers can be used to improve basic on-camera flash, but, ultimately, the quality of the result is limited.

Before going any further, do make sure that your camera is set to the correct shutter speed to synchronise with flash. If you don't do this, part of the shot will be obscured by the shutter blind. So, take the camera off its P, A or S setting and go for manual mode. The camera's instruction manual will tell you the correct flash sync speed, but if you're not sure set 1/60sec.

Using reflectors

Basically, anything that reflects light onto the subject can be called a reflector. The simplest reflector is a sheet of white card or newspaper. You may prefer to make your own, ie. by covering a piece of hardboard with silver foil, for example. In pro studios, you will find large sheets of polyboard

Setting custom white-balance

Most electronic flash units give a light output that closely matches the colour sensitivity of daylight colour film. If you find that your flash units give cool-looking images, it may be that the flash gives light of 5600K so fit an 81A filter on the lens.

Digital camera users have a dedicated flash white-balance setting, which should give excellent results. Use this rather than the auto white-balance.

However, many DSLRs offer a Kelvin feature so you can set the colour temperature to match the actual output of the flash. Check the instructions or the maker's website

for the colour temperature of the light produced by your flash.

Many DSLRs have a custom white-balance feature and this is an even better option, because you can set the camera to precisely match the colour of the light, regardless of the source. This usually involves photographing a white subject - a sheet of white paper works well - under the prevailing lighting and the camera will set the correct white-balance.

More consistent than a piece of white paper is the ExpoDisc. This fits onto the front of the lens (various sizes are available) and a shot is taken from the subject's position facing the



Chris Rout

■ **Biography**

Hometown Middlesbrough

Age 45

Day job Pro photographer

Favourite camera

Canon EOS 1D Mark II

Favourite lens 70-200mm f/2.8

Favourite photographer

Mario Testino

Website

www.chrisroutphotographer.co.uk

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or large panels painted white on one side and black on the other. Black absorbs light so stops too much light bouncing around and can help give a subject a more defined edge.

The best known shop bought reflectors are those from Lastolite, but other brands are available. These fold down to a fraction of their working size and are available in a variety of colours

or combinations of colour. White and silver are the most popular, the silver giving light with a greater 'kick' than white. White gives the best results for general portraits.

For this shot, we used the white side of a white/gold reflector. Gold reflectors should be used with care, because they can exaggerate flesh tones to an unnatural degree.

The set-up above gives an infinitely better result than on-camera flash. There's no heavy shadow, the lighting is more flattering and there's a nice catchlight in Lucy's eyes. The reflector has filled in the shadows too.

camera. This gives the camera the information on which to base its white-balance calculation. Even photographers who shoot Raw can benefit from custom white-balance, because it'll save time at the processing stage. For more details on this great gadget, check out www.flaghead.co.uk.

To exaggerate the difference in print, here we took our first shot using the tungsten modelling lamp of a studio flashhead and flash white-balance. Then we went through the process of setting custom white-balance and took a new shot using exactly the same light source. You can see how the ExpoDisc produced a neutral result.



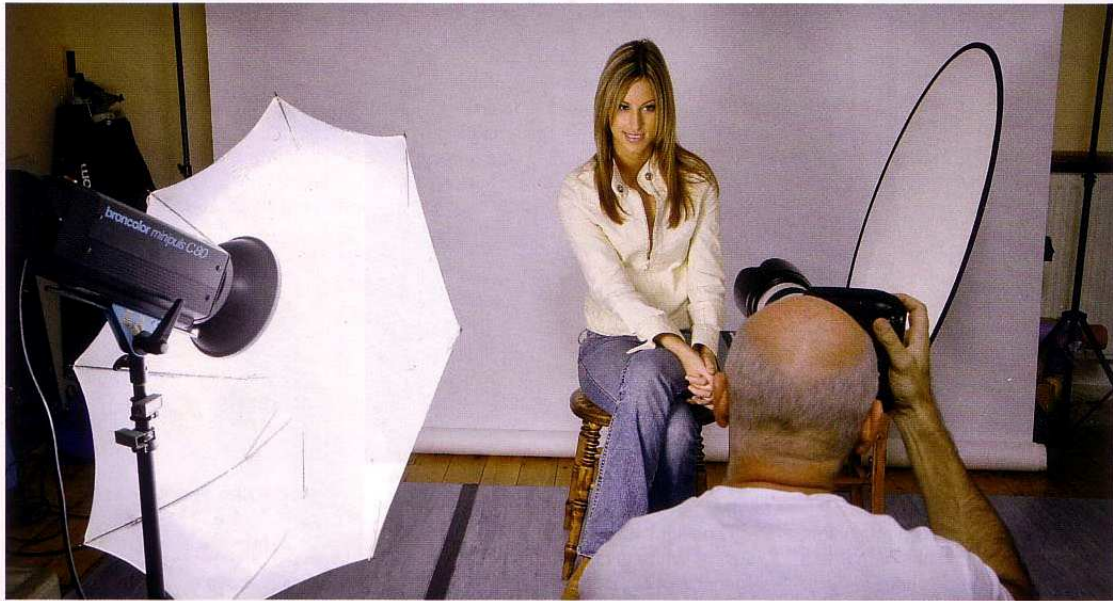
With flash white-balance



With custom white-balance

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Gear used: One head, a white brolly used in shoot through mode, reflector



Not all white brollies are suitable for shoot through technique, but if you have a translucent, single-skin white brolly this will be fine and it's worth a try. Be warned, though, if your white brolly is grubby or yellowing, dump it and get a new one.

Because the light is aimed at the subject you'll find that this method is more efficient and gives a tad more power than using a brolly in reflected mode. The quality of light will also be more direct and slightly harsher.

How to position the light, model and background relative to each other and the camera is something that taxes newcomers to studio work.

You need some separation between the model and the background to avoid any shadows falling onto it. One metre should do it, but allow more if you have the space.

The main light should be roughly 45° to the model - at least to start with - and you can't go far wrong with this because it'll give a natural light. If you

use a reflector, try placing it to one side or at around 45° for a more rounded effect, and angle it upwards slightly to throw some light under the model's chin and neck.

Varying the distance between the light and the subject and brolly/softbox size also have an impact. The bigger the light source, the softer the lighting so if you want a soft light source, use a big brolly or softbox. You can also make the light source bigger, giving a more rounded effect, by bringing the unit in closer to your subject.

One of the most common mistakes inexperienced studio photographers make is that they don't move the lights around. Once set up with a unit placed at 45° to the model, you won't want to make many changes during a session. You certainly don't want to go tweaking after every single shot, because that would be tedious for all concerned. But do try some alternatives, always going back to the camera position to study the effect in the viewfinder.



Shoot through technique gives a similar effect to light reflected in a brolly, but has slightly more 'kick'. Light spread is also very good so this is a low cost way of lighting a fairly large area, considering the diameter of the brolly.

Essential guide **How to use studio lighting****Move the lights**

We expect light to come from above, so that's a good starting point for positioning your lights. As you can see from our examples here, a low

position gives an unnatural light, but if you go too high the shadows under the eye are too heavy. The ideal position is just a little above the

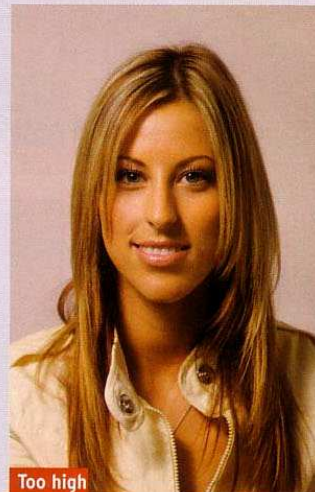
model's head. As with any lighting change, always go back to the camera position and check the result through the viewfinder.



Too low



About perfect



Too high

Using a flashmeter

All flashmeters measure incident light, ie. the light falling on the subject rather than the light being reflected. This gives the most accurate readings as the measurements aren't influenced by the subject's reflective properties.

Because mains flash is so consistent taking one reading after another very quickly will still give consistent results. And it's easy to do.

For a simple set-up like this, place the meter with the white diffusion dome pointing back at the camera close to the model's chin and fire the flash. Make sure your body isn't blocking any light source, as this will give an incorrect reading.

Take readings in different areas if you want to check the evenness of the set-up. In this example, the readings were within one-tenth of a stop so the lighting is very even.

Go wireless

Synchronisation, or 'sync' cables, are a pain and best eliminated if at all possible because they are a weak link. Connections can work loose, they become unplugged and if someone trips over a cable, it could bring a camera or flash unit crashing down to the ground.

Consider buying a remote triggering outfit instead. The transmitter sits on the camera accessory shoe - or use it in your hand when you're taking meter readings. Press the shutter release and the transmitter sends out a signal to receiver units telling the flash to fire.

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Gear used: One head, softbox, reflector



Many photographers use lighting brolies all the time, especially when shooting on location, because they are much easier to pack away and carry around. They also give good light.

However, you can get even more attractive results with softboxes, which give a very directional light. They do take a little longer to set up but give a lovely, directional light. Various sizes and shapes, from around 70cm square upwards, are available so get one which suits your needs and your home studio.

Softboxes are silver inside to get maximum light efficiency and there's a translucent white diffuser cover which spreads and softens the light. Some models have the option of two white diffuser panels so use both if you want a soft but directional light.

Softboxes give a lovely rounded light, provided you don't use them too far back from the model. Get in close - obviously not in frame - and you'll get a

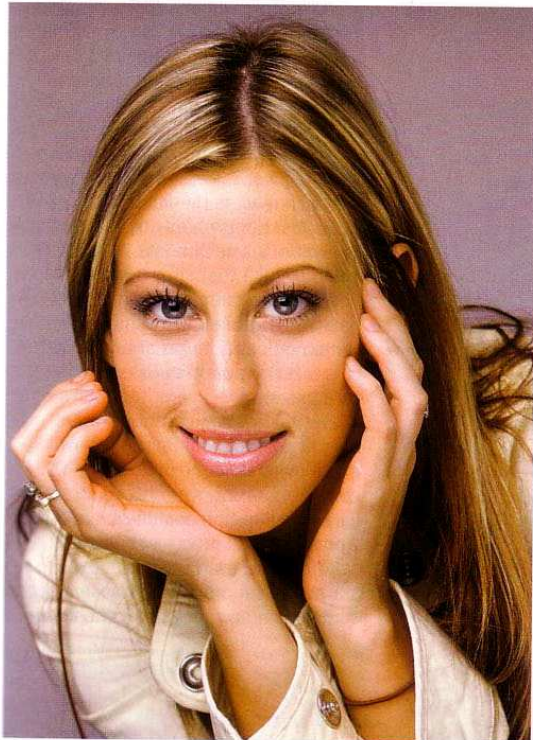
wraparound light that suits all sorts of portrait work.

A favourite technique used by beauty and fashion photographers is to have the softbox high above the model and the camera positioned directly below. Add a reflector or another diffused light from below and you have a gorgeous, very flattering, skin smoothing effect with no shadows. You get brilliant eye catchlights too - you only have to flick through a few top fashion magazines to see this lighting set-up in action.

Try the softbox in different positions and you'll see a tremendous difference in lighting. The set-up shown on the right is popular with pro fashion and beauty photographers, although they generally use even bigger softboxes than the one shown here. If you try this, make sure the light is on a heavy-duty stand to avoid any accidents.



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Softbox side, no reflector



Softbox side, reflector



Softbox high, no reflector



Softbox high, reflector

Move the light source, in this case a light with a softbox, and reflector around for different effects. The large picture here was taken with a softbox above the model and a white reflector throwing light up under her chin.

Background options

The best advice is to choose a background to match your subject, but it's not as straightforward as this because there's the small matter of cost. A pro studio will have a choice of colour paper rolls as well as fabric backgrounds, but that's not really affordable for the enthusiast.

Paper rolls come in two widths, 1.35m and 2.72m, costing roughly £32 and £48 respectively. If you find the 1.35m too narrow, you may want to consider buying a 2.72m and taking a hacksaw to it.

If you buy only one colour, make sure it's white - it's the most versatile. You can keep light off it to give a dark grey background to your shots, or light it for white, or colour it with lighting gels if you're feeling more ambitious.

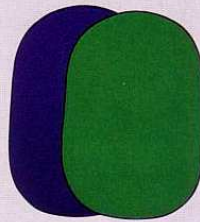
Cloth backgrounds are more expensive, from £90 upwards, so it's

even more crucial to buy a colour you're going to use. Neutral colours are usually best

so go for grey, blue or brown and stick with the lighter shades - these can be made darker more easily with careful lighting.

There are any number of accessories to hold a background, or you can take the DIY option and make your own. If you want something more professional, some supports can hold several paper rolls and use a simple pulley system to wind them up and down.

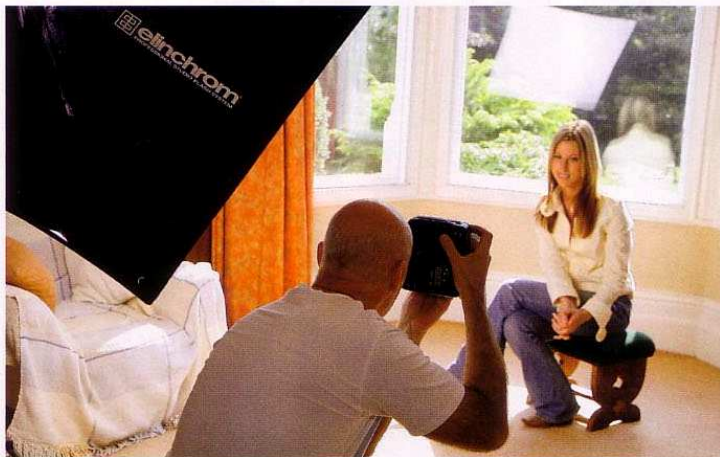
If yours is a living room studio, you want something that can be assembled and taken down and



stored easily. Systems comprising two lighting stands and a pole to hold the background are perfect. They are also suitable for taking on location. For backgrounds and supports, check out www.interfitphotographic.com www.jessops.com and www.speedgraphic.co.uk.

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Gear used: One head, softbox, reflector & daylight



So far, we've worked with just one flashhead as the light source, aided and abetted only by a reflector and various attachments. Now we're going to take that simple set-up into a daylight environment to show you how flash and natural light can be combined easily to great effect, creating the potential for some amazing shots.

On the day of our shoot, we had very strong late summer light, which made contrast control a problem so careful metering was crucial. In some ways, the lighting couldn't have been worse because it was so contrasty.

Before you start, you need to find a suitable location in your house. A large south-facing window (or French doors)

Metering advice

The skill with mixing daylight and flash is getting a perfect balance between the two lighting types. Too much flash and the effect, as you can see here, is horrible; too little and you might as well not bother.

Start by metering the natural daylight. Take the diffuser dome off the flashmeter and use it in daylight mode to take a reflected reading. Alternatively, use your SLR's meter.

In this case it was 1/125sec at f/8 at ISO 100. An incident light reading was taken to assess the sunlight striking the back of Lucy's head - this was f/11.

So now we knew that if we were to take a straight manual exposure of 1/125sec at f/8, the outside background would be perfectly exposed and Lucy would have nice highlights in her hair.

Next up, the flash. If we adjust the unit's output to give a meter reading of f/8, that would mean a perfect 1:1 balance between the inside and the outside, but overexposing the background often works better. In the shot on the opposite page, we used f/5.6 and set the flash to suit. This means the



background is one stop over-exposed, but it gives a lovely effect.

Too much fill-flash is easily avoided. Take readings and remember that the flash is playing second fiddle to the daylight.

Too much flash

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would be perfect and ideally there should be plenty of sunlight gently diffused by some high cloud. North-facing windows don't experience direct sunlight and the light is cooler, so you won't benefit from the warmth or the modelling that a southerly-facing window offers.

With strong sunlight, as we experienced, you could put the flash away and just rely on the sun with a few reflectors.

In fact, for this shot (right) Chris used his own home-made reflector - sheets of silver cooking foil (the duller side facing out) wrapped around a large wooden frame. It's very effective, plus it's cheap to replace the foil when it becomes tatty. This was placed on the floor and held in the correct position by a suitably sized box. The flash was placed to one side and quite high, looking down onto Lucy.

You'll need to take care with metering to ensure the right mix of daylight and flash lighting.

Don't do this at home

It's easy to get so engrossed in a session that you simply overlook potential disasters.

While concentrating on working the camera and dealing with the model, it's all too easy to forget to check out the background - we have deliberately exaggerated the error here to make the point. It's easily done and so readily avoided - just always do a final check around the viewfinder before pressing the shutter button.



Daylight, flash fill-in from a softbox and a home-made reflector on the floor are the essential ingredients for this lovely portrait of Lucy.

Next month:
How to use two or more lighting heads, plus a buyers' guide to studio flash kit

