

An Introduction to creative lighting for

MACRO PHOTOGRAPHY

ADAPTALUX

AN INTRODUCTION TO MACRO

What is macro photography? Technically speaking, macro photography is creating an image of the subject of at least 1:1 scale on your camera sensor. This means when the captured image is scaled up from the size of the film or sensor, it shows incredible detail.

Macro photographs are achieved using dedicated lenses, usually the subject in front of the camera is made smaller by the lens, to fit onto the sensor. A macro Lens does the opposite, making a small subject larger.

One of the biggest challenges facing macro photographers is lighting the small subject matter. Limitations of different lighting techniques can make the process of applying creative lighting to your macro photos challenging.

In this guide, we will briefly outline the considerations when thinking about lighting your macro shots.

WHAT DO YOU NEED?

In addition to lighting, there are a few other things to consider before experimenting with macro photography. Here are a few of the things you may need to think about:

Camera - Macro photography can be achieved with any camera that has interchangeable lenses, this includes SLRs and many modern mirrorless cameras. The right lens is key!

Tripod & Shutter release - keeping the camera and subject perfectly steady while shooting is important for macro, camera movements are greatly exaggerated due to the scale of the subject.

Lens Focal Length & Minimum Focusing Distance - Fixed or variable? Focal length combined with focusing distance defines how "close" your macro images can be, the larger the zoom factor, combined with how far away you have to be in order to focus. Generally the larger the focal length, and the smaller the focusing distance, the better. A 300mm lens might sound great, but if you can't get closer than 80cm, it will limit your creativity.

Lens Aperture - A wide aperture can be very helpful in macro, where light tends to be even more scarce than in other types of photography. Remember, the smaller the F number, the shallower the depth of field (DoF). The effect of DoF is especially apparent at macro scale, at its extremes, your in-focus area could be as little as a fraction of a millimetre. This is why Bokeh is so often seen in macro photos.

Lens alternatives - We all know photography can be expensive but with macro, there are some alternatives to spending a lot on high end dedicated lenses. One common method is simply to use a manual lens designed for older cameras. Older lenses tend to be great value as the optical quality can be comparable, but the lack of modern autofocus keeps the price down and for most macro scenarios, you will be using manual focus anyway.

A common method of achieving a macro setup with less expense is to 'reverse' a prime lens using adaptors and an extension tube. with this method you can achieve the same results as a dedicated macro lens for a fraction of the cost.

WHY IS LIGHTING IMPORTANT?

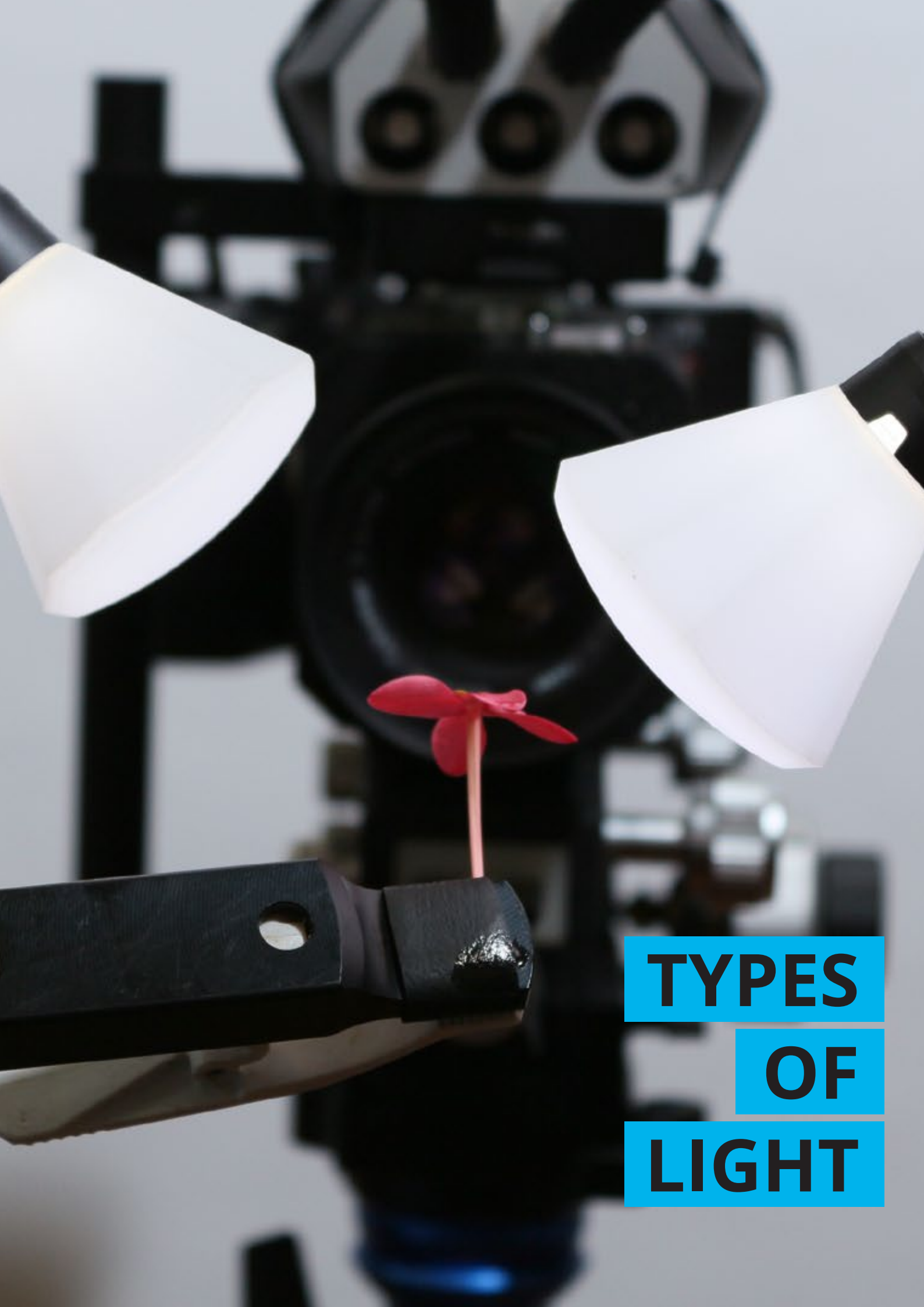
Macro photography is great for exploring new worlds that are otherwise invisible to the naked eye. You can turn ordinary, mundane subjects into fascinating ones. As photography is the art of capturing light, lighting is the most important element of an image. Especially in macro photography, where you should be able to have complete control over your lighting environment.

With good lighting, your macro photographs will pop out of the frame and will be sharp, vibrant, and visually stunning. If you get the lighting wrong however, your macro photograph will appear dull and unexciting.

Macro photography can be achieved using three forms of light; continuous, flash, and natural. All of these have distinct advantages over one another. Which you choose is determined by factors like personal preference, speed, subject matter and the style you are looking to achieve.



Wasp inside an apple, shot with continuous white light.



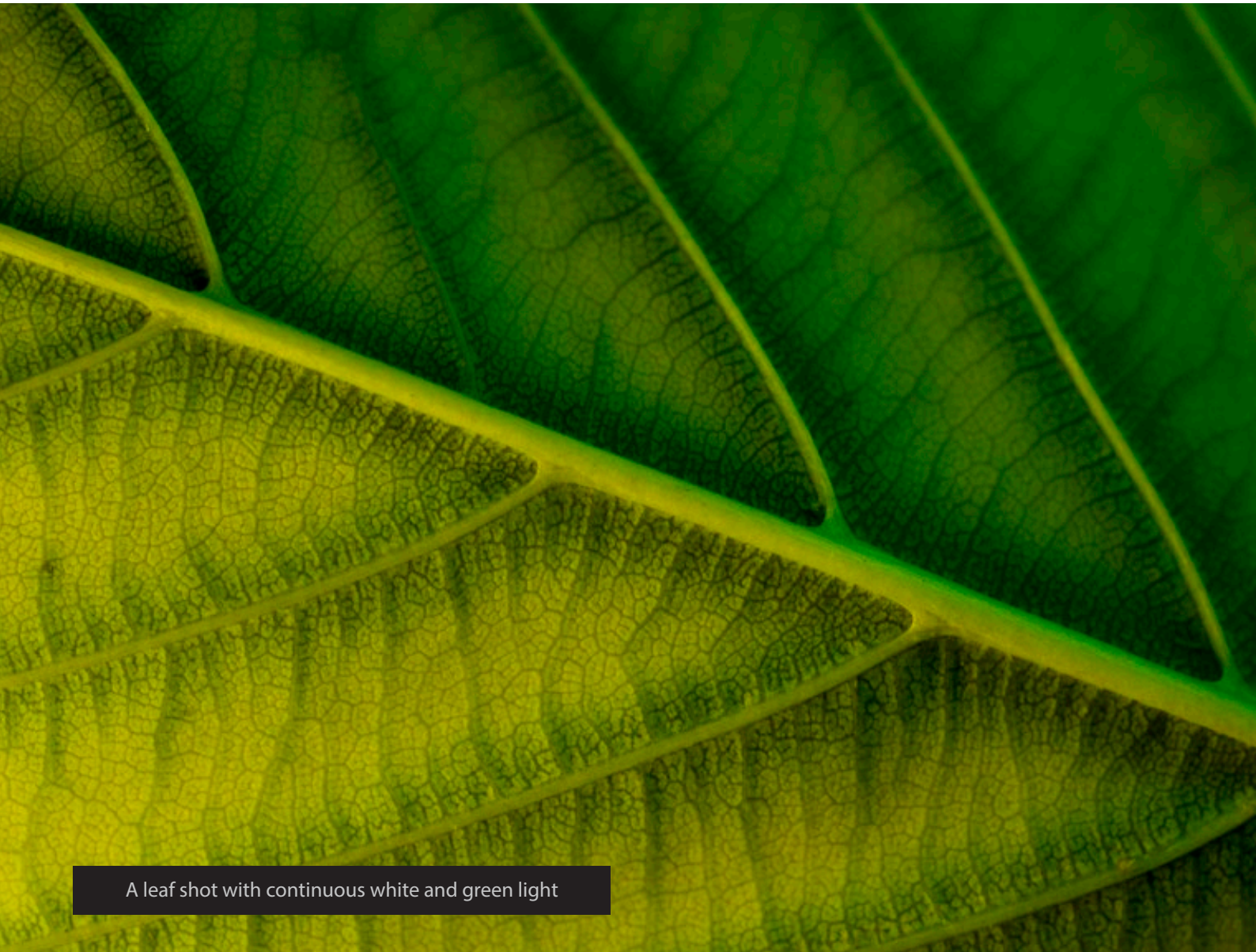
TYPES OF LIGHT

CONTINUOUS LIGHTING

Continuous macro lighting is great for controlling a number of lighting characteristics. One of the most significant advantages, is that you can see how your light falls as you set up your shot. It will allow you to develop your understanding of how lighting effects macro photography, which will result in you becoming a better photographer!

Continuous lighting also offers a much more convenient way to direct light on to specific areas of a subject, as well as providing an easy method of introducing colours and effects into the shot. This gives you full control of the lighting environment, which can result in some stunning photographs.

Continuous lighting also adds another element to macro photography with a video capable camera. Macro videography is captivating and with continuous lighting, you don't need to change anything to switch between capturing photos and videos.



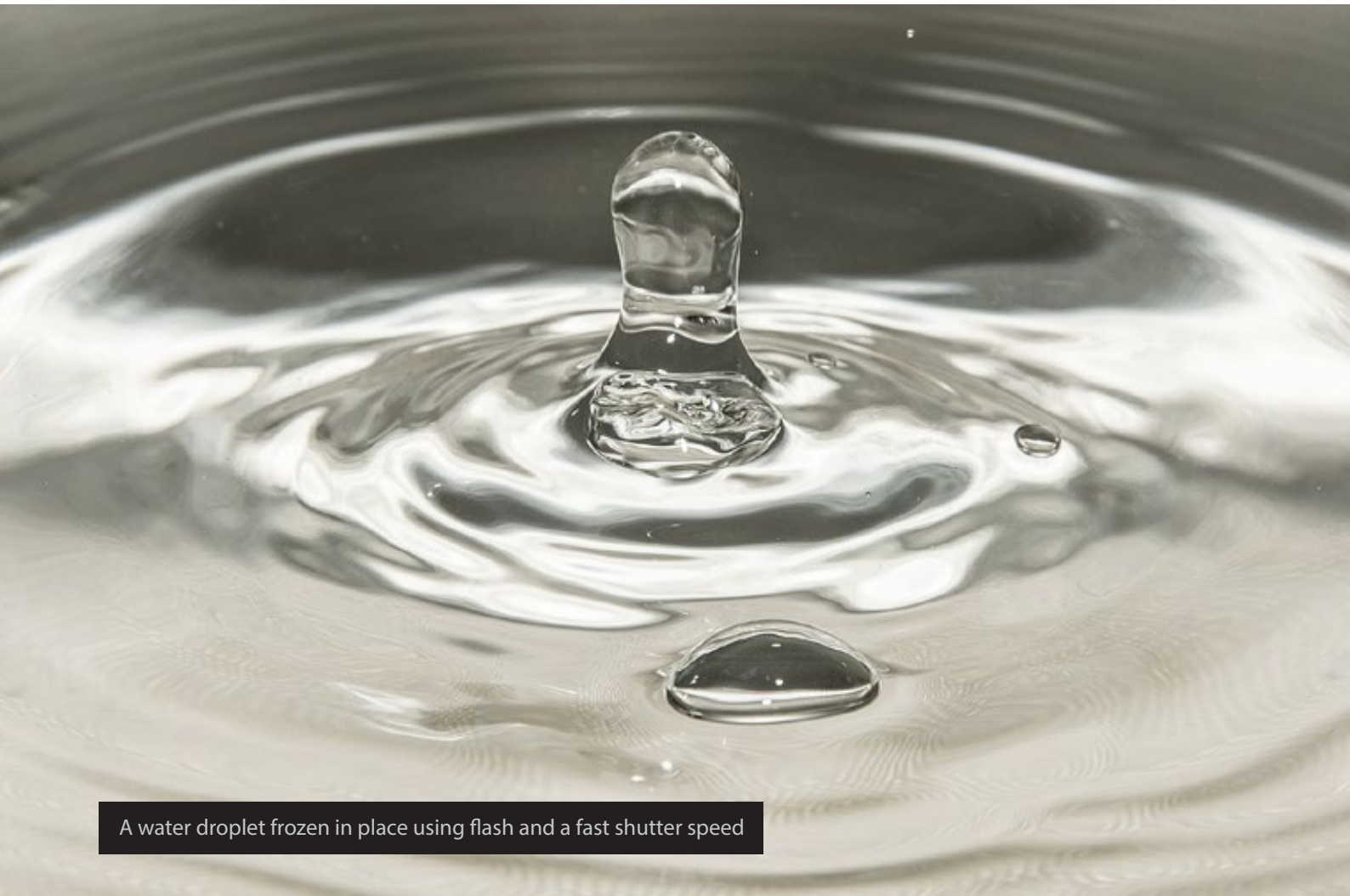
A leaf shot with continuous white and green light

FLASH (STROBE)

Flash photography is worth-while if used properly. It's main advantage over continuous light is the ability to freeze subjects, due to the power of the light output. This makes it excellent to use in the field, both as a fill light and for capturing moving insects.

Flash is arguably the most popular method of lighting, especially in a studio environment, however, it does come with challenges. Ringflashes or large (relative to the subject) softboxes can be good for getting close to the subject, but the light produced can be tricky to control and often leads to a lack of shadow and depth in the image - great for scientific studies of insects, where shadow hides important details of a creature, not so good for making creative, eye-catching images. The heat created by the powerful bursts of light can also be an issue for sensitive subjects.

Flash can be more complex to learn to use properly, with a multitude of settings and techniques such as manual mode, TTL and rear curtain sync. However, once mastered the results can be amazing. Using flash is very much a trial and error process and it takes time to perfect.



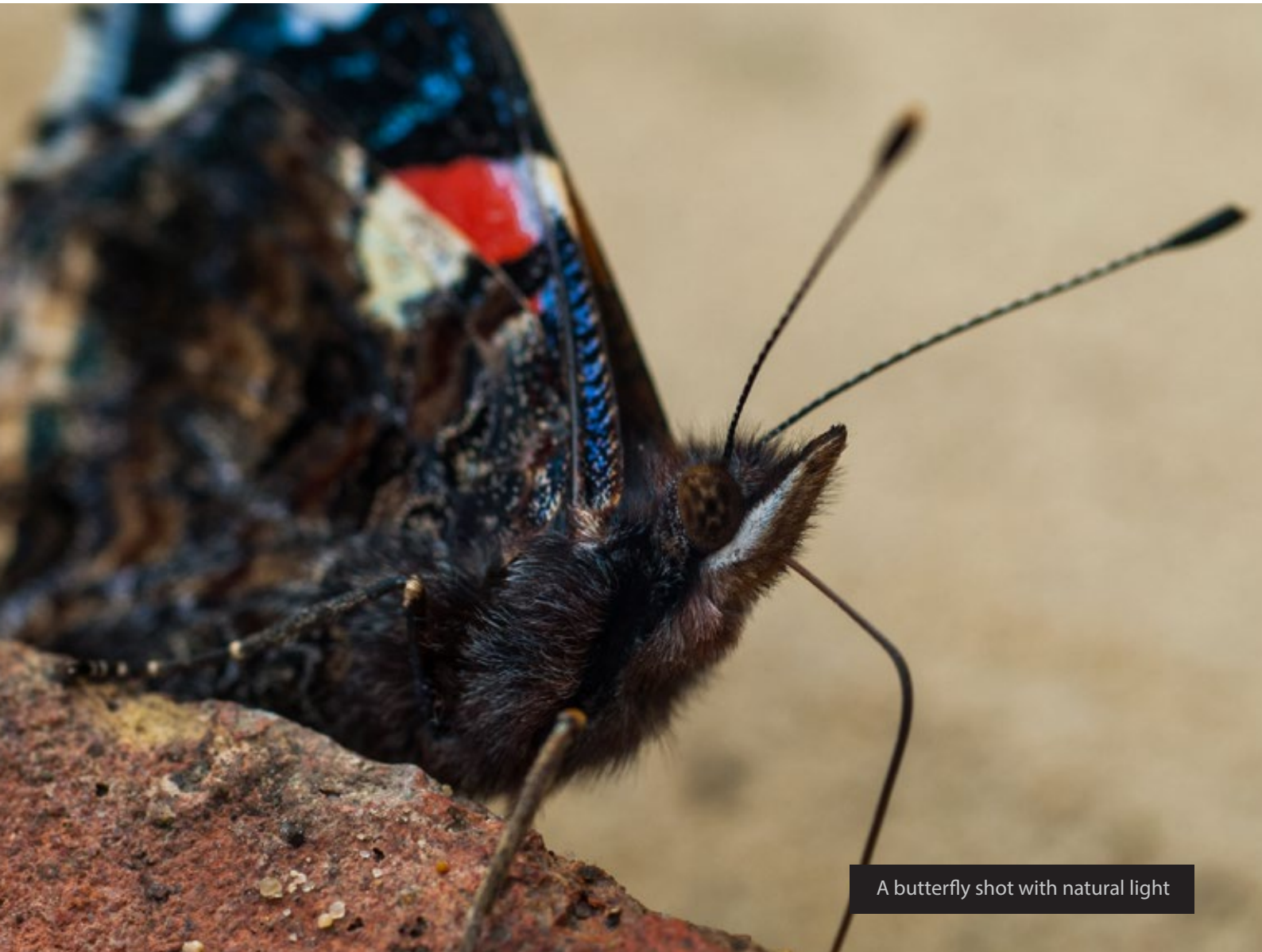
A water droplet frozen in place using flash and a fast shutter speed

NATURAL LIGHT

Natural light is often the most commonly accessible means of lighting your macro photographs, after all, we all have access to the sun. If you are shooting outdoors in the daytime, the results can be spectacular, if a little predictable.

Sunlight (preferably direct) usually provides more than enough light for macro photography. You can combine it with reflectors and other photography accessories to gain an element of control, though the fixed angle and non-adjustable brightness of the sun can get in the way of creative freedom.

Natural light can also be used in combination with either continuous or flash accessories to expand your options, fill shadows or add some extra brightness to darker ares of the shot. Be careful not to overpower your natural shot with too much artificial light, it's easy to get carried away and lose the look you were going for.



A butterfly shot with natural light

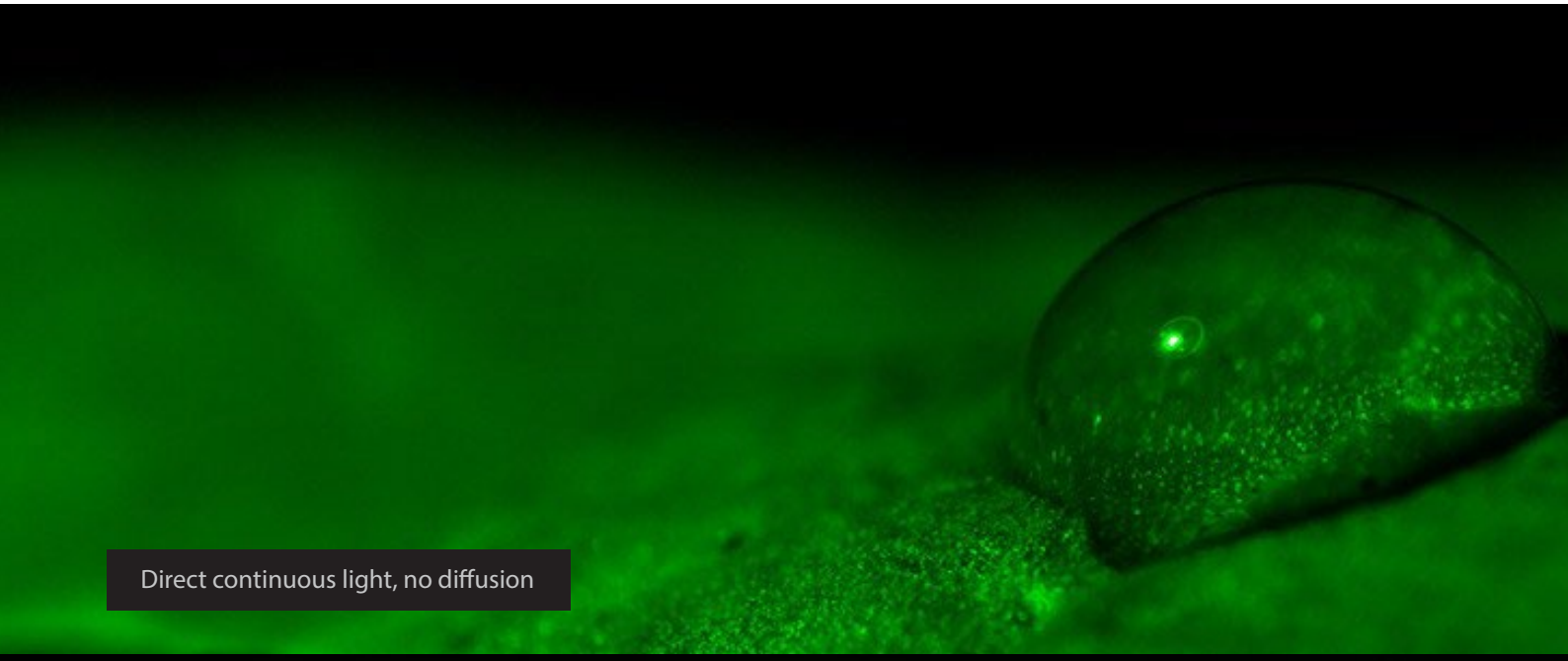

CONTROL
YOUR
LIGHT...

LIGHTING CONTROL: DIFFUSION

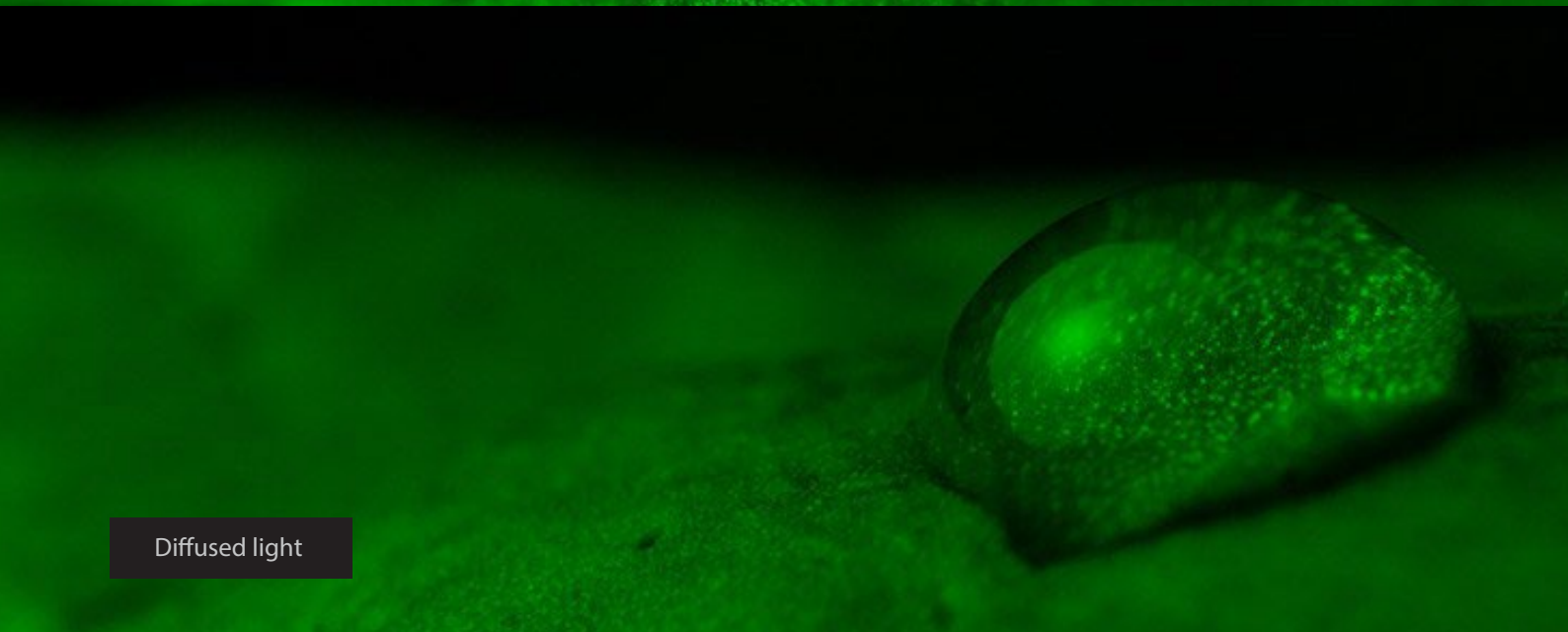
Harsh lighting is not desirable in many photographic scenarios, both in normal photography, and macro. The way to avoid this is to use diffusers, which spread out the light source across a bigger surface area. This results in a softer light that looks natural and makes your macro photographs more aesthetically pleasing.

Most flashes and continuous light sources will have a diffusion method built-in, such as removable soft boxes, but there are options for those DIY enthusiasts too. Often adequate diffusion can be achieved with semi opaque materials such as thin paper. You can also bounce light off white or reflective surfaces to achieve a similar effect.

Notice the difference in the shadows and catch-light (reflection) in the water droplet below.



Direct continuous light, no diffusion

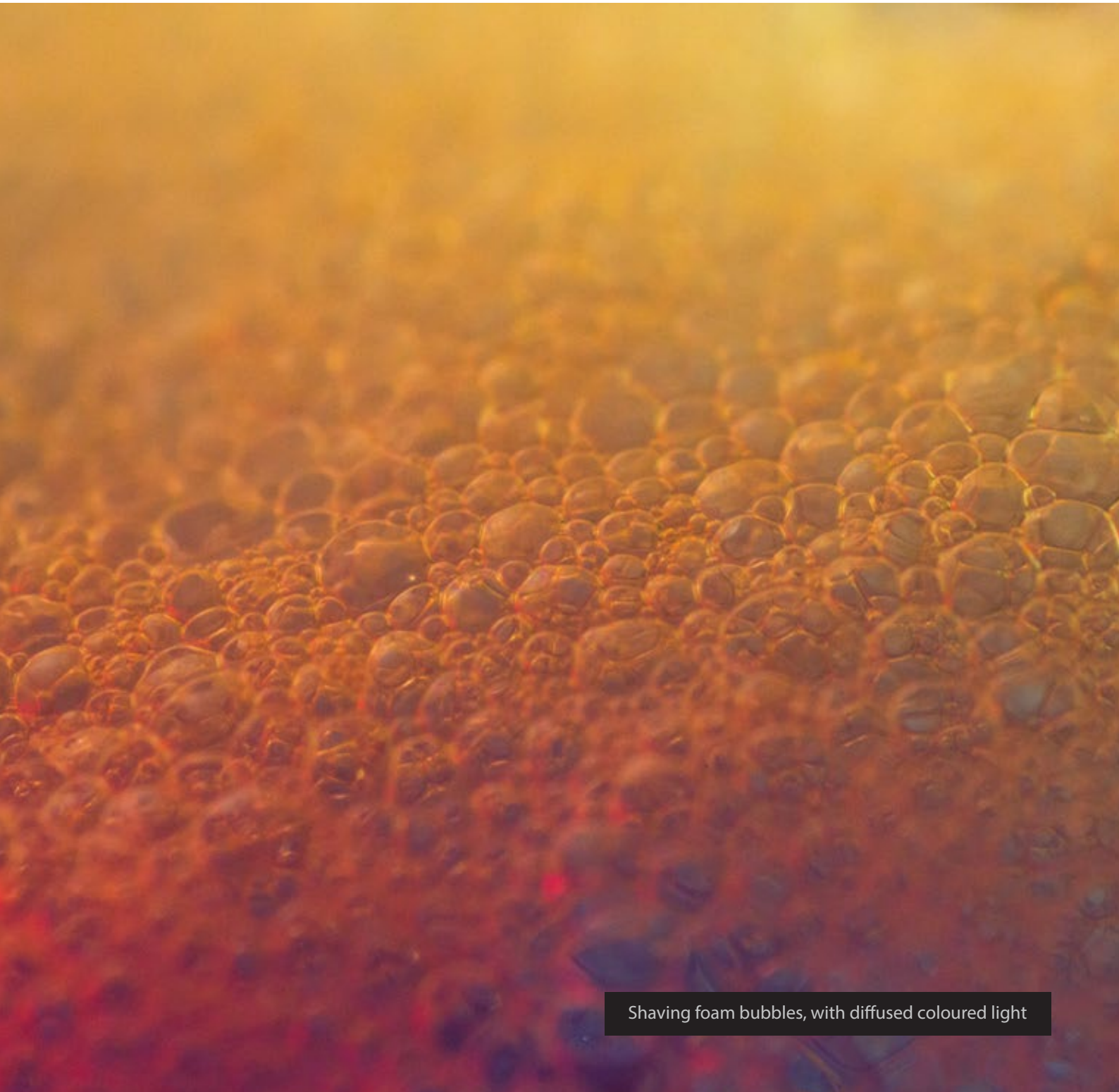


Diffused light

LIGHTING CONTROL: COLOUR

Adding coloured light to your images can make them unique, adding some visual interest to an otherwise bland photograph to help your work stand out in the crowd.

Coloured light can be achieved in several ways, including using a gel (coloured translucent material over a white light), a coloured diffuser, or a coloured light source such as an LED. For a more subtle hue, you could also try reflecting your light on a coloured material, such as craft card.



Shaving foam bubbles, with diffused coloured light

LIGHTING CONTROL: PLACEMENT

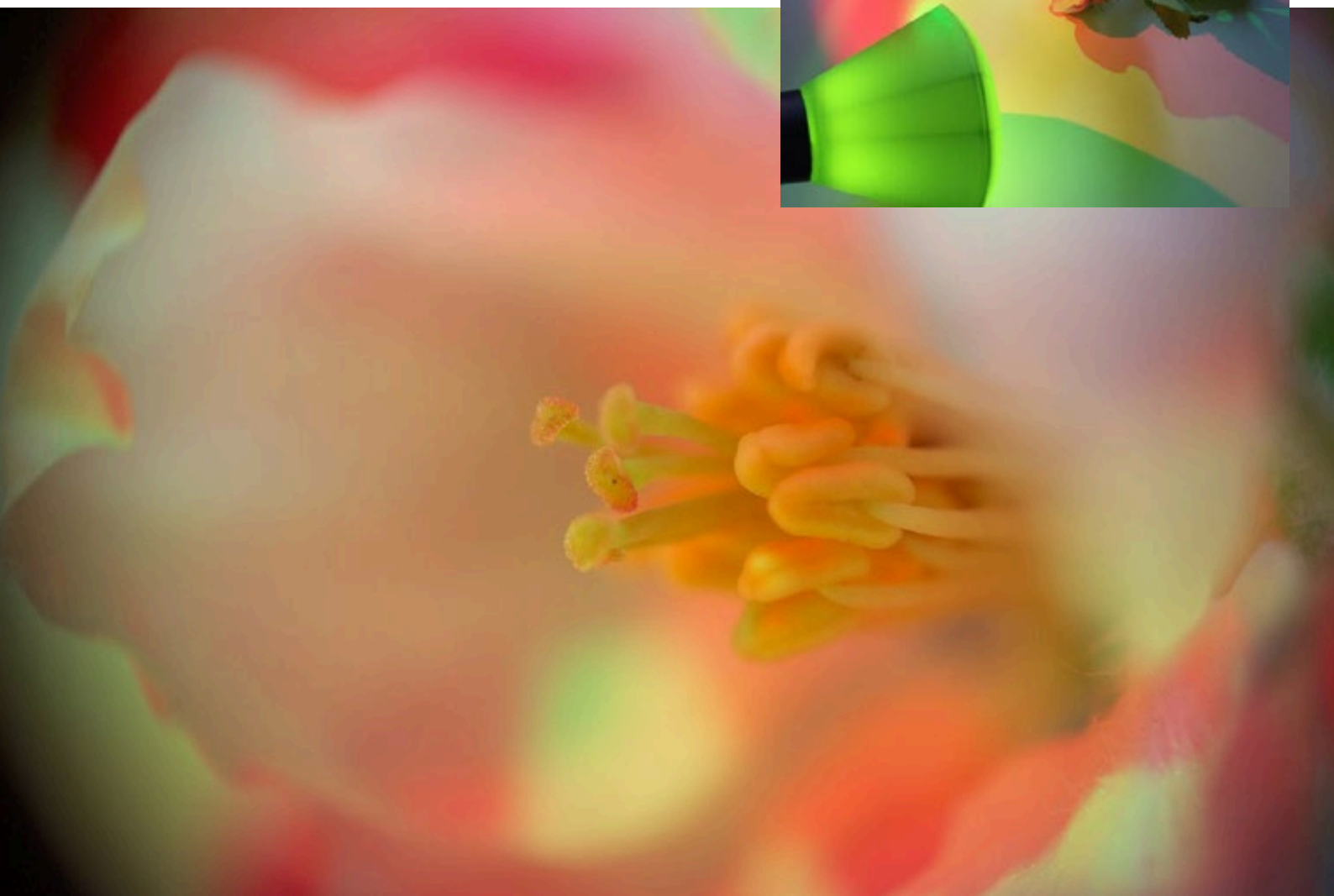
It is crucial to understand how the direction of light alters the appearance of your subject. Constructing your image with multiple light sources is much easier to achieve with continuous light, as you can see exactly where the light is falling at any time.

You can organise light source placement with flash, though you may be taking multiple exposures as you refine your flash placement so you can see the results!

Try experimenting by placing lights directly behind your subject, to the sides, or even shining through semi-translucent objects like leaves or liquids.

In this example, we can see all of our lighting considerations put into practise. Direct, diffused and coloured continuous light working together to create a soft, colourful and visually interesting macro shot of the flower.







Thanks for taking the time to read our guide to macro photography lighting.

Our product, Adaptalux Studio was used to light all of the continuous light shots in this guide. It is the perfect solution to your creative macro lighting needs, offering dynamic and powerful continuous lighting.

If you would like to know more, we are always happy to chat about photography, macro and lighting over on facebook, or take the time to check out our website, instagram and youtube for more inspiration and tutorials! Just search “adaptalux”.

Of course, if you already have an Adaptalux Studio, we would love to see your images! Tag us or email us at pictures@adaptalux.com

Thank you

Samuel Granger and Ben Tuxworth


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