



FIRST MAN PHOTOGRAPHY

UNDERSTANDING EXPOSURE

A BEGINNERS GUIDE

ABOUT THE AUTHOR





ADAM KARNACZ (FIRST MAN PHOTOGRAPHY)

Adam is a professional landscape photographer and filmmaker.

Thanks to his YouTube channel, 'First Man Photography', Adam now shares his experience and love of the craft with tens of thousands of people each Sunday with his landscape photography 'vlogs'. His films entertain and educate and have inspired people all over the world to get out and make their next picture.

Adam's passion and enthusiasm for landscape photography is infectious and he works tirelessly to encourage others to improve. "Using composition, light and different techniques such as long exposure, I aim to tell a story. It is not just about recreating the scene in front of

me. It is about combining this with my feelings, my emotions and sense of atmosphere that make the final image."

Adam has a reputation for making the technical aspects of photography easy to understand. His popular [Landscape Photography Masterclass](#) and work as a leader with industry leading tour company Light & Light make Adam one of the most sought after landscape photography tutors in the business.

"I hope you enjoy this eBook and it gives you an insight into the exciting and incredible photography journey that lies ahead." Good luck.

INTRODUCTION



Welcome to First Man Photography and thanks for subscribing to the email list. You are now a member of an exclusive group receiving all the great First Man content before anyone else, helping you to take your photography to the next level.

It is unlikely you have arrived here without a burning passion for photography taking hold of you. You are not alone. Photography is now one of the most popular hobbies in the world and it is easy to see why. We have all seen and done amazing things. Capturing these moments feels good and continues to make you feel good a long way into the future when you look back over your images. The

passion for the art also drives us and encourages us to get out more often to create and capture more amazing memories.

Let's ask ourselves a question. When you look back at all your captured memories in the future, what are you going to see? Most people will probably scroll through their Facebook or Instagram timeline and look back at various blurry, badly composed, and horribly exposed snapshots taken on the latest smart phone with a lens so small that the light going through it wouldn't light a match box. You on the other hand will look back at beautiful images,

thoughtfully captured, perfectly exposed, that so vividly remind you of the good times you had and amazing scenes you witnessed.

Getting to the point where you are consistently capturing beautiful shots is far from easy but the challenge is extremely rewarding on a virtually daily basis. There is always time for photography and the craft can act as an island and retreat from the busy and hectic lifestyles that most of us now lead. Whatever the weather or the location there will be an opportunity for capturing beautiful images. This ranges from macro and still life when you are trapped inside on a rainy day, to outstanding landscapes when the weather is good, to street photography if you are in the city. Portraits will almost certainly be a big part of your craft too whether you are doing weddings, shooting models or taking photos of your family and friends.

There are several rules you may have heard of that govern various aspects of photography but one of the key parts, if not the most important, is exposure. See the images below to see the difference between a dark and dingy under exposed image, an overexposed and burnt out shot and a beautiful image perfectly exposed.

At its most basic level exposure is the act of light being exposed to the medium capturing that light. In your eyes this is taken care of by your retina. In a camera the light sensitive portion is the sensor in a digital camera and the film if you are you using a film camera. Controlling the amount of light that reaches the sensor or film is therefore what we are talking about when say we are controlling exposure. When we look at an image we would normally describe it as being perfectly exposed if our main subject appears as it would if we looked at it with our own eyes. There is also another factor to consider when we talk about the exposure of our image. This is the sensitivity of our sensor or film. This can be controlled in digital

cameras by directly adjusting the sensitivity of the sensor and the speed of the actual film when dealing with film cameras. This is most commonly described as ISO and this forms one element of the 'exposure triangle'.



A perfectly exposed portrait.



This is the same shot 2 stops under exposed. Notice how so much detail is lost in the shadow areas.



The same shot but 2 stops overexposed. You can see whilst much detail remains in darker areas the highlights are blown out and detail is lost.

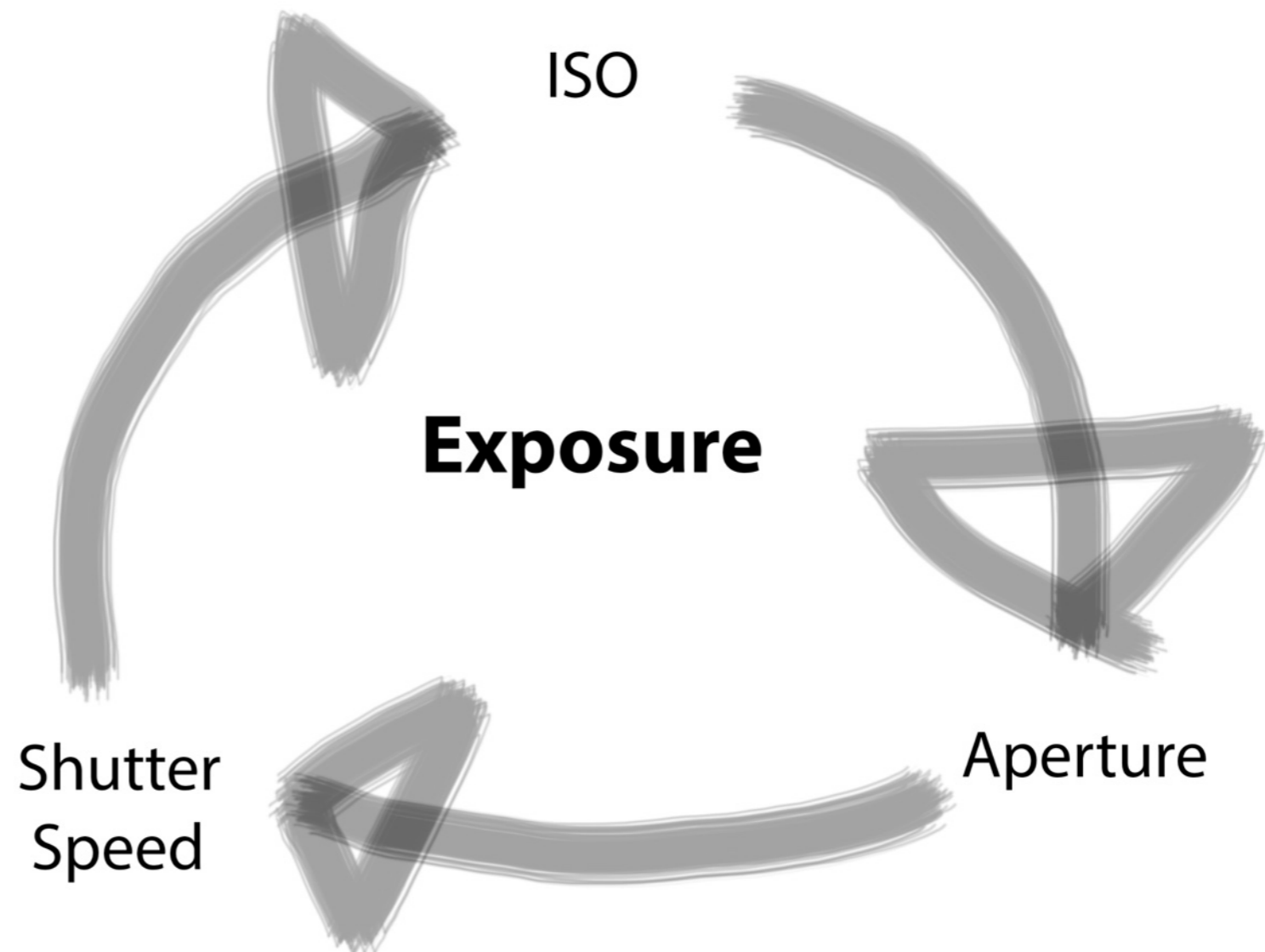
The three elements that make up the exposure triangle are, as discussed above, ISO and the two elements that physically control the amount of light hitting the sensor; aperture and shutter speed.

With most modern cameras, adjustments can be made to each of these settings independently or all three at the same time using EV adjustments. The latter leaves your camera to decide on the individual setting of the three elements. Different modes on your camera are essentially affecting these elements in different ways. For example, it is likely that your phone camera or point and shoot camera has a low-light mode. All this mode does is boost your ISO

to make the sensor more sensitive so more detail is captured in the darker conditions. DSLR's and other more focused cameras have semi-manual modes such as aperture priority (AV) and shutter priority (TV) where only that named element is adjusted by you. This provides more creative options and gives you control where you need it.

Let's look at the three elements in isolation and discuss what each one is doing within the camera.

The diagram shows the exposure triangle and the manner in which the elements are all linked to affect the resulting exposure.



ISO



The chart above shows the ISO scale and how noise output increases with sensitivity.

ISO

If you have ever read about the elements of the exposure triangle before you are probably wondering why we are dealing with ISO first. As discussed earlier ISO controls the sensitivity of your sensor. It has no other purpose and very little can be done to use ISO creatively. As a rule, the lower the ISO, the better. As you boost ISO the sensor will become more sensitive to other things in addition to the light you are trying to capture. This interference will manifest in your image as noise, as seen above. It will be a very rare occasion when you use this creatively because it is not the same effect as film grain. If you want grain in your images you are much better off adding it later in post production. You will therefore select your ISO

based on the available light where you are shooting and bearing in mind the type of shot you are trying to capture.

Out of the box your camera will almost certainly be set to Auto ISO and will do the choosing for you. Most cameras will also let you set a maximum that the automatic mode will use so your images do not get too noisy. Despite this your camera is not as smart as you are. If you get used to setting the ISO manually from the outset you will be rewarded with better control over your camera in any lighting condition and be one step closer to producing beautiful images every time.

Most cameras will have a low ISO setting of 100. This is the setting where your camera is the least sensitive so will require good bright light. This will generally be outside or under good studio lighting conditions and there will be virtually no noise. This is a setting that is almost essential for landscape photography where detail is generally important across the entire image. ISO increases are then made, on most cameras, in $1/3$ stop increments where a stop is an effective doubling or halving of the amount of light captured. You can learn the maths involved in this if you see fit but the important point is to understand how they relate to aperture and shutter speed.

The newest crop of cameras have excellent low light capabilities so the ISO can be pushed pretty high with out too much degradation in the image quality.

APERTURE

The aperture is literally the hole within your lens that the light passes through on its journey to your sensor. The size of the aperture is adjusted by the diaphragm or iris within and this in turn controls the physical amount of light getting to your sensor. Unlike ISO the aperture size is also used to be creative and is responsible for controlling the depth of field of your image. That being the portion of your image that is in focus. As a rule, the larger the aperture the more shallow the depth of field will be; with more areas of the image out of focus. The quality of this out of focus area is known as 'bokeh'. This is useful in



photojournalism or portraits when you want to isolate your subject from the background.

A smaller aperture will result in more of your image being in focus and this is useful in a variety of situations when you need front to back sharpness such as landscapes or group portraits.

Aperture settings are measured in f/stop numbers and again there is a mathematical explanation to this that may one day maybe useful for you to learn, but not today. Confusingly a large aperture is denoted by a small f/stop number and smaller apertures by higher numbers as in the diagram below.

Certain lenses have different capabilities when it comes to the maximum and minimum apertures it can achieve. This is often denoted in the description of the lens such as 50mm f/1.4. This means that on this 50mm lens the largest aperture that can be achieved is f/1.4 and this will provide an extremely shallow depth of field. It also consequently allows in a lot of light making it a better low light performer.

Many kit zoom lenses have a varied maximum aperture. For example, a kit lens with a focal range of 17-55mm will have a max aperture range from f/3.5 - f/5.6 with the larger aperture at the wide end. This means that with these lenses the amount of light hitting the sensor will vary depending on the focal range you have selected resulting in a different exposure when you zoom in. Most pro lenses do not suffer this issue as they will, for example, have a max aperture of f/2.8 throughout the zoom range.

Shooting in aperture priority mode is a good progression from shooting in auto. The camera leaves the decision on aperture down to you and takes care of the shutter speed and ISO for you. This

gives you full control over your depth of field and can be very useful in many situations, especially when shooting people.



A landscape shot will generally require a smaller aperture to ensure sharp focus on everything from objects in front of you all the way to the horizon.



Larger apertures create “bokeh” providing an artistic look that isolates your subject.

SHUTTER SPEED



In most situations shutter speed will be last of the exposure triangle elements to think about. Once ISO and aperture are set, adjustments to shutter speed can be made easily to adjust for changes in light or direction of light on your subject.

The shutter on a camera works like a set of curtains or drapes. When you press the shutter button the first curtain will open, exposing your sensor, and then the second will move across closing it again. Adjustments in shutter speed simply changes the amount of time the sensor is exposed to the light therefore affecting your exposure.

Shutter speed is measured in seconds and fractions of seconds. Depending on your camera you will have the ability to shoot within the range of 1/8000th of a second down to a 30 second long

exposure. The bulb mode on your camera will allow for longer exposures with a shutter release cable, giving the ability to capture extreme long exposures that are required for certain types of photography and often used in landscapes.

Like adjustments in aperture, shutter speed is also used creatively in certain situations. There are many occasions when freezing the action is absolutely vital so using a fast shutter is a must. This is especially the case when shooting sports and wildlife. Imagine the speed at which some birds fly, if you want to capture an image without some serious motion blur then a very fast shutter speed is a must. The same applies to freezing a sportsman running or a ball flying through the air.

As you can see in the image on the previous page the action has been frozen using a fast shutter speed. Puffins fly very fast and the eye has been frozen by panning whilst shooting. Even at 1/2500th of a second motion blur can still be seen in the wings. This is an example of where we start to see a relationship between the elements of the exposure triangle because to achieve this kind of shutter speed a higher ISO or large aperture is required.

In a similar fashion, slow shutter speeds are equally important when you want to show motion in your image. An example of this is to show the movement of clouds during a landscape shot or to smooth



This infrared image shows both motion in the clouds and how a long shutter speed or exposure can smooth out water.

out water to add a beautiful ethereal feel to your image.

Again the elements of the exposure triangle start to work together because to achieve long shutter speeds in good light you will need to have a low ISO and a very small aperture to avoid your image overexposing. If you require even longer exposure times for your images, the use of neutral density filters become a necessity.



This image of an old priory shows how a slow shutter speed captures movement in the clouds.



L I G H T M E T E R

When you shoot in any of the automated modes (Auto, P,) or semi automated modes (TV, AV) your camera adjusts and decides on the exposure by using the internal light meter in your camera. The meter works by reading the light that is reflected off your subject. With a DSLR or similar high end camera the light meter can generally be seen in the view finder. This shows as a scale, as below, where a correct exposure is given a value of 0. The scale value then goes up two stops and down two stops as to whether the image will be overexposed or under exposed respectively. The meter will decide



the correct exposure based on analysis of the light entering the frame. The metering mode can also be changed so the meter analyses different portions of the frame.

Evaluative (and Nikon equivalent) metering is generally the default a camera will be set to out of the box. In this mode the frame is split into regions and decides on the correct exposure by evaluating each area in combination with the auto focus system. This is the also the most sophisticated exposure mode on your camera and will get a reasonable exposure in many conditions.

Spot metering requires more skill to use but can result in better results in more difficult lighting conditions. In this mode the camera will exposure for a very small area usually based around the autofocus point you are using. This can be especially useful in a situation where your subject is back lit. For example, if you are taking a portrait with the sun behind your subject other metering modes would take the bright background into account and under expose your subject so they are almost a silhouette. With spot

metering your subject will be perfectly exposed and you will have a nice blown out background.

Optimus Prime - Spot metered in backlit conditions.



With spot metering the camera has exposed correctly for the subject isolating it with a white, blown out background.



Shot with evaluative metering the camera has taken all portions of the frame into account including the bright sky and glass surface leaving the subject under exposed.

The other metering modes included with most cameras are partial metering and centre weighted average. These offer an exposures taking the portions of the frame into account as shown below.



Centre Weighted Average



Partial Metering

EXPOSURE COMPENSATION



Exposure compensation gives you some extra control when you are shooting in one of the automatic exposure modes (Auto, P, AV, TV). Put simply the camera gives you the option to increase or decrease the exposure selected by the meter. Depending on your chosen mode the camera will adjust aperture, shutter speed, ISO (if using auto ISO) or a combination to give you the selected exposure in third stop increments up to, or down to, two or three stops depending on your camera.

This is useful when the meter does not perceive your scene in the same way that your eyes do. One example is when shooting a

sunset. Generally in a sunset scene there will be very little light left on the foreground as the sun hits the horizon, soaking the sky with beautiful colours and, leaving the area in front of you relatively dark. Your camera, not being as smart as you, will then correctly expose for the foreground and in the process over expose the sky (as below) so you lose all the colour detail that your eyes can see. As a very rough guide a sunset scene will look much better between 1 and 2 stops under-exposed from what the light meter thinks is correct. This can be achieved by adjusting the exposure compensation down by 1 to 2 stops.

The exposure compensation scale can be seen on the rear LCD screen and through the viewfinder. The same scale shows the meter reading when the shutter button is half pressed.



Exposure Compensation Scale

When in manual mode exposure compensation does not exist. The same physical controls on the camera will introduce bracketing which takes multiple shots at different exposures. This is a common technique for creating HDR shots and other composites.

Although making adjustments using exposure compensation might give the impression of manual control, it is not. If you become accustomed to using this mode you will very quickly start running into problems in your shooting. For example, if you shoot in aperture priority mode adjusting exposure compensation will only adjust the shutter speed, ISO or both because you have already selected your f-stop. In a low light situation if you try to increase exposure using exposure compensation the camera will firstly increase ISO and then reduce your shutter speed and this can quite quickly leave your images very noisy and give you a shutter speed so slow that even a small amount of movement in your subject will result in a smudgy and unpleasantly blurry image that will be unusable.

The combination of our human brain and eyes is a match that will not be equalled by camera technology for many years to come. Therefore the automatic modes on your camera will never do justice to the amazing scenes you see before you whether it be a beautiful landscape or a studio set up with an exceptionally attractive model. If you shoot in RAW then poor exposure can be saved to a certain extent with the incredible software that we are treated to today. However images are always better when exposure is bang on, right in camera with just the right mix of aperture, shutter speed and ISO to achieve the look and artistic goal you had in mind long before shooting the shot.

There is only one way to achieve this, every time, in all situations.

A wide-angle landscape photograph capturing a sunset over a rolling green valley. In the center-left, a prominent conical hill rises, its slopes covered in green grass and a few scattered trees. The foreground is dominated by a dense field of purple heather, with a stone-paved path leading through it. The sun is positioned on the right side of the horizon, casting a warm, golden glow across the sky and the landscape. The sky transitions from a deep blue at the top to a bright orange near the horizon. In the far distance, a town or city is visible, its lights beginning to glow as the sun sets. The overall atmosphere is serene and picturesque.

SHOOTING MANUAL



A Traditional Light meter made by Sekonic. No longer needed.

When I began shooting manual I found it to be a freeing experience. No longer was there a need to be worrying about your camera's meter and what mode it was set to. No longer was the final exposure going to be a surprise when you reviewed your shot. And no longer were two shots of the same subject going to expose differently because your focus point was on a slightly different spot. This is because when you shoot manual you are taking the control away from your unintelligent camera.

The digital age has brought about many positive changes and has often made our lives much easier and more efficient. This is particularly true in photography

where it has opened up a once elitist and expensive pursuit to the masses. In terms of exposure, digital has changed things because there is now no cost for shooting a frame, viewing it and then deleting it again. This has removed the need in almost all situations for the use of a separate light meter.

When shooting manual on a digital camera you can use your lcd screen as a meter. All you need to do is decide on your settings, shoot off a test shot and see what the exposure looks like. Then, tweak the settings and shoot another shot until you are happy with the exposure. By doing this you will quickly learn the settings required in your usual



shooting environments and effectively predict what your settings will be in advance of firing off a single frame. The histogram can also be used to accurately see the exposure of your test shot.

In many shooting environments the light actually changes very little during a photo session, especially if the position of your light, camera and subject do not change. A studio is an obvious example of this but so is your living room in the evening or an overcast day. When you find yourself shooting in these conditions all you need to do is get your settings right and then forget about them, leaving you totally focused on capturing that beautiful image. In other conditions when light is changing, such as a partially cloudy day, once your ISO and aperture are set you can ride the shutter speed between shots making adjustments each time the light changes.

Shooting manual might seem a step too far for some people but by practicing, anyone can achieve this. It then leaves us free to completely focus on capturing some interesting and beautiful compositions.

**Mallyan Spout. 35mm 1/10sec;
f/6.3; ISO 100.**

CONCLUSION





As mentioned at the beginning, exposure is a vital part of photography. Understanding how to expose your shot correctly using the different exposure elements will ensure that when a photo opportunity presents itself you will not be left wanting. You will be putting all the skills you have learned and practiced to good use to capture a beautiful image, exactly as you intended. Really this is the key to understanding exposure. Alone, it will not make you an amazing photographer. People love photographs. However, the vast majority of people do not understand why a great photograph is a great photograph and in some sense, there is bliss in this ignorance because they can simply sit back and enjoy the picture. People will often speak of a photographer saying "they have the eye" like it is some god given talent that they were born with. Whilst some may have a propensity for it, the skills required to be a top quality photographer can be learned and constantly improved upon, whoever you are and however old or young you might be.

How a photograph is composed is hugely important and there are certain rules to follow that will help elevate your pictures from simple snap shots to potential masterpieces and shots that might one day pay the bills. The rule of thirds is one example of this and applies to many different styles of photography. Understanding light and post-processing of images are also important links in the chain and these are topics that I cover elsewhere.

Understanding exposure will arm you with the technical skills and confidence so your camera simply becomes an extension of your body and you can focus on creating beautiful images, every time.



THE NEXT STEPS

Learning the technical aspects of photography is a hugely important step but my YouTube channel is equally focused on thinking about the artistic side of photography. Most important is to go out and create images that speak to you. Photograph things you are passionate about whether it is landscapes, wildlife, people or macro. There is no wrong or right.

Please do come along on the journey by subscribing to the YouTube channel. Follow me on Instagram for all the latest images and stories and be sure to check out the landscape photography masterclass. 7 hours of content that will inspire, entertain and educate you to be able to go out and create some incredible landscape images.

See you out there!

Adam

<http://www.firstmanphotography.com/masterclass>

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Mountain Top Sunrise from
Great End in the Lake District.