Introduction

This series of tutorials on photography aims to help you take full control of your camera. I often tell my students that I want them to move away from the idea “taking a photograph” and towards the idea of “making a photograph.”

I teach them how to take the camera off auto mode and take full control of the camera settings. In this way they are able create the photographs that they want. Why let the camera decide how your photographs should look?

I hope to do the same for the readers of this series of tutorials. I want you take control of your camera.

In order to do this, it’s essential to understand the 3 components of what we call “The Exposure Triangle”. These are: aperture, shutter speed and ISO.

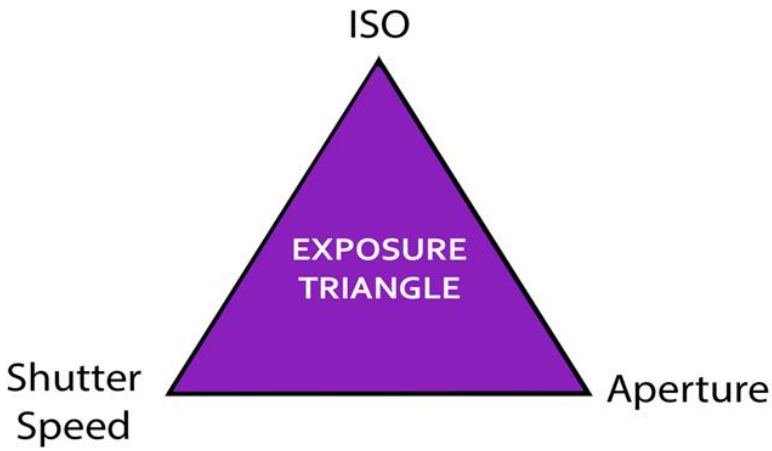
Our first tutorial will deal with exposure itself …

What is photographic exposure?

Exposure is the amount of light that enters the camera lens and hits the digital sensor or film.

We can control the amount of light entering the lens by adjusting two settings: **aperture** and **shutter speed** (or exposure time).

A third setting, ISO also has an effect on exposure. Together, aperture, shutter speed and ISO form what is called the "**Exposure Triangle**". We will look at this in more detail in a future tutorial.



Underexposure and overexposure.

If not enough light enters the lens, the photo will be too dark or "**underexposed**". Conversely, if too much light is allowed to enter the lens, the photo will be too bright or "**overexposed**".

How is exposure measured?

Exposure is measured in **stops**. A stop is a doubling or halving of the amount of light let in to the lens when taking a photo.

If you find that your photograph is underexposed, you will need to increase your exposure by a stop or more.

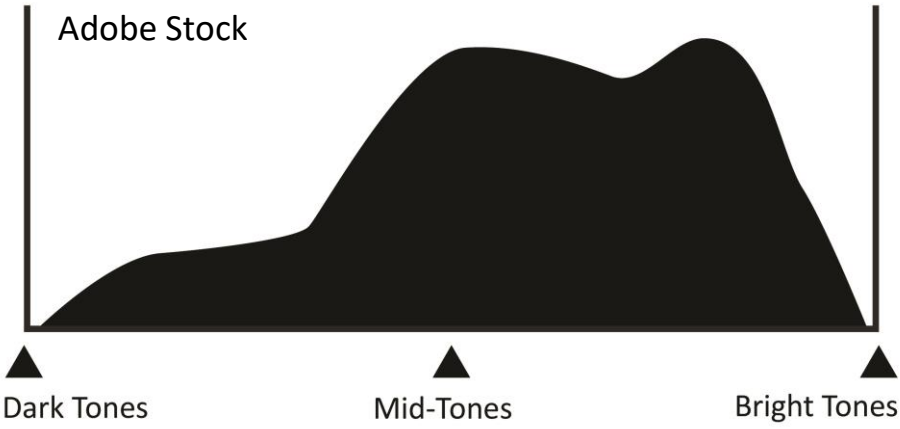
If your photograph is overexposed, you will need to do the opposite and decrease your exposure by a stop or more.

Stops can also be divided into 1/2 stops or 1/3 stops for more detailed adjustments.

There is no such thing really as the “perfect” exposure, only the right one for the scene you are capturing. Some photos like night shots are supposed to be dark. Photos taken in bright sunshine or in the snow are bright by their very nature. Photos taken on an overcast day will lie somewhere in the middle in terms of exposure.

What is a histogram?

A **histogram** is a graph that displays a visual representation of the spread of tones in a photograph. These tones range from the darkest shadows on the left of the graph to the mid-tones to the brightest highlights on the right.



Clipped shadows and blown highlights.

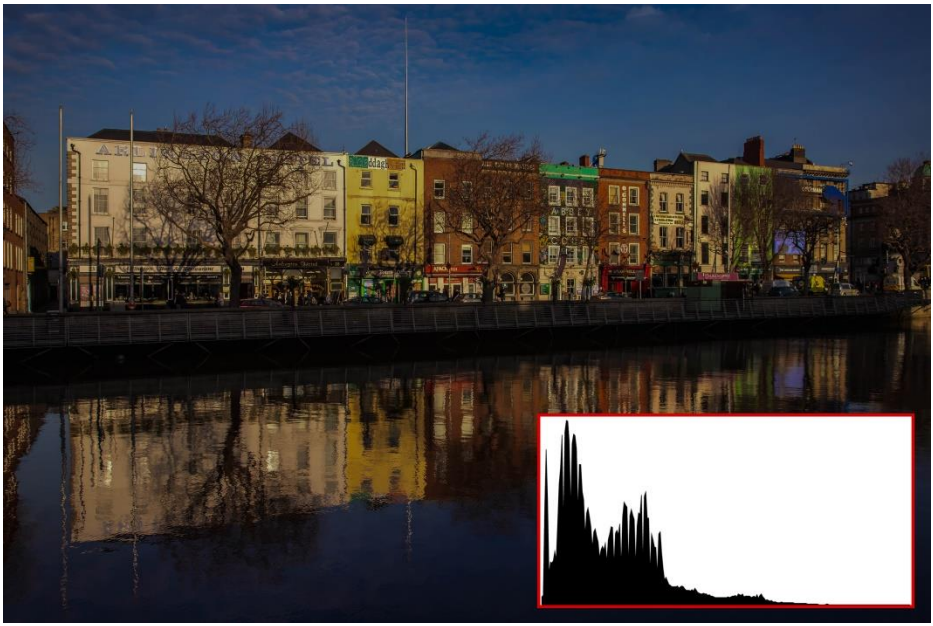
It allows you to check if any areas of the photograph are so dark that they are pure black and contain no detail whatsoever. These are known as "**clipped shadows**".

At the other end of the scale, the histogram will reveal if any areas of the image are so bright that they are pure white and also contain no detail. These areas are known as "**blown highlights**".

It is important to note that there are times when clipped shadows and blown highlights are unavoidable. Perhaps there is a dark corner of a cathedral in the frame or the bright lights of a street lamp. Remember that the histogram is only a guide.

Very generally speaking, you will want to try avoid clipped shadows and blown highlights where possible. That said, I personally don't mind a little clipping in the shadows as it adds some punch to the image.

Examples of underexposed, overexposed and correctly exposed photographs.

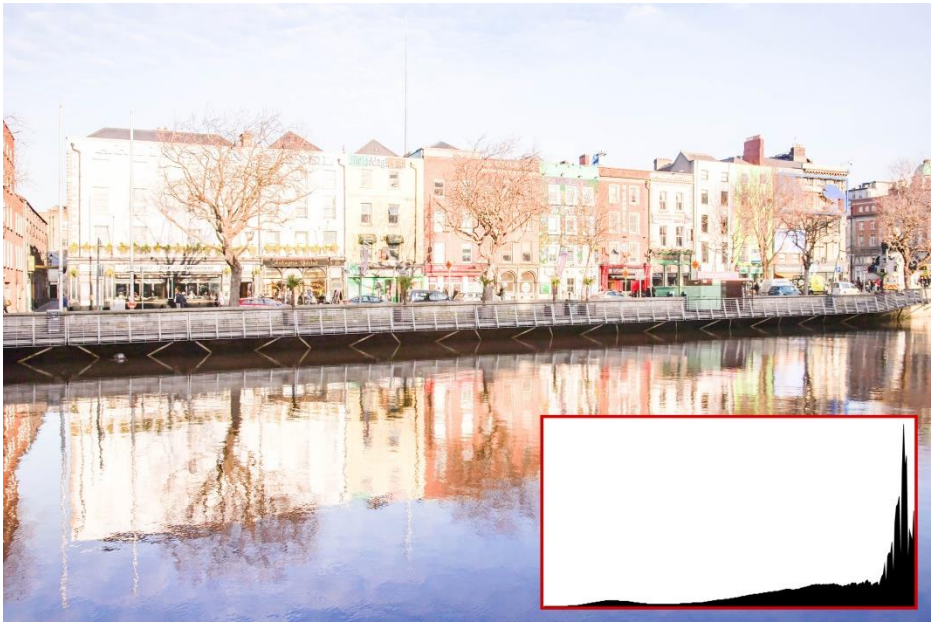


Underexposed Photograph

This photograph of Bachelor's Walk in Dublin is too dark. It is underexposed by about 2 stops.

Note how the histogram is bunched up to the left hand axis of the histogram.

There are a lot of clipped shadows especially running through the middle of the photograph.

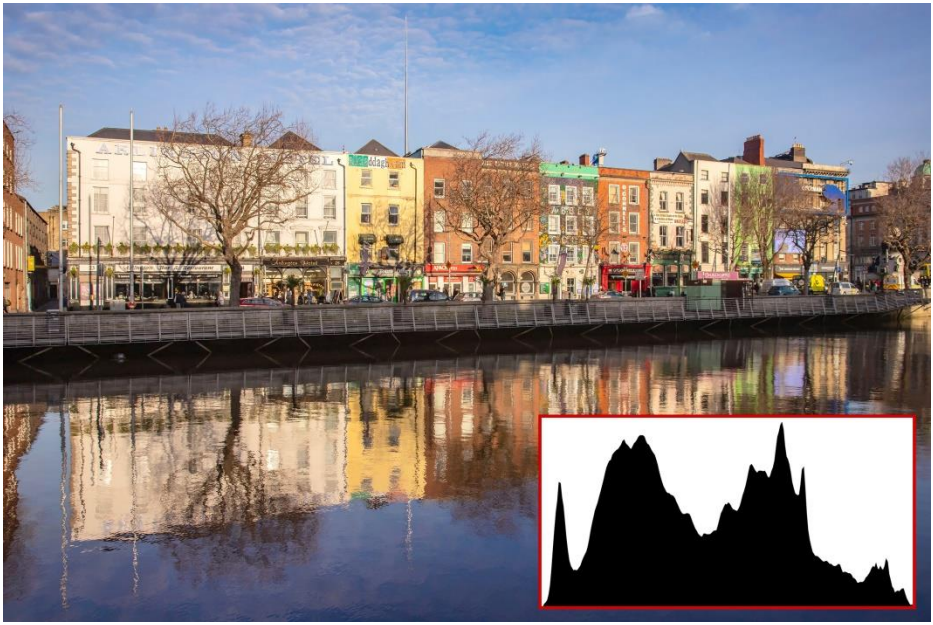


Overexposed Photograph

This time, the same photograph is overexposed by roughly 2 stops.

Notice how this time the histogram is completely bunched up towards the right hand side of the graph as a result.

There are a lot of blown highlights in this photograph. Some parts of the buildings to the left and areas of the sky contain no detail whatsoever.



Correctly Exposed Photograph

This version of the photograph has the correct exposure for the scene in question.

The histogram shows a good spread of tones from the shadows on the left to the mid-tones to the highlights on the right.

This time, there is plenty of detail visible in the buildings and sky.

What is the highlights warning tool?

There is also another tool available on all digital cameras that will help you avoid too many blown highlights. This is called the "**highlights warning tool**". Check your manual to see how to activate it this feature.

This is a feature that makes the blown out areas of your photograph flash in black on your back screen. This is a particularly useful tool as blown

highlights are quite difficult to recover in post-processing. I keep this tool turned on all the time.

Over the next few weeks, you are going to learn how to take control of all of the settings on your camera. New tutorials will be posted every Tuesday and Friday on the Fingal Library Blog. The downloadable PDF files are formatted to be easily read on tablets and mobile phones.

Our next tutorial will look at the first element of the exposure triangle: aperture.