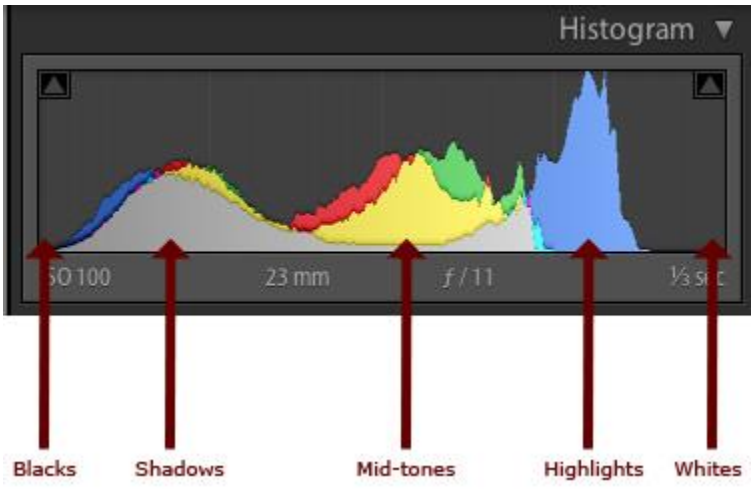
Understanding Histograms

One question I get asked all the time is “how does the histogram work and how does it help me?”

That graph might look complicated, but there's no reason to shy away from it, it's actually pretty easy to use once you understand how it works.

The histogram is simply a graphical representation of the tonal range of your photo that helps you evaluate the exposure. It’s easy: the blacks are on the left, the whites are on the right, all the mid-tones are in between.



The most important thing to know about the histogram is that a spike on the right that touches the edge of the graph is a problem. That means that there is a portion of your image where the highlights are "blown out" or completely white. The reason this is such a big problem is that an

area that is blown out contains no data at all, so you will not be able to do anything in post processing to adjust it. This only applies if the spike touches the edge of the graph. If if spikes before the edge, that's okay.

If there is a spike on the left edge, it means part of your image is completely black. You may want to use your exposure compensation to adjust the exposure to the right to make it brighter. But remember that having part of your image completely black, especially for a night shot, is okay.

There is no such thing as a perfect histogram. It's just a graphical representation of the tonal range in your image. It's up to you, as the artist, to decide what to do with this information. Having solid blacks and bright tones (provided they are not blown out) is not necessarily a bad thing.

Let's take a look at some examples of how histograms will look for different types of images.

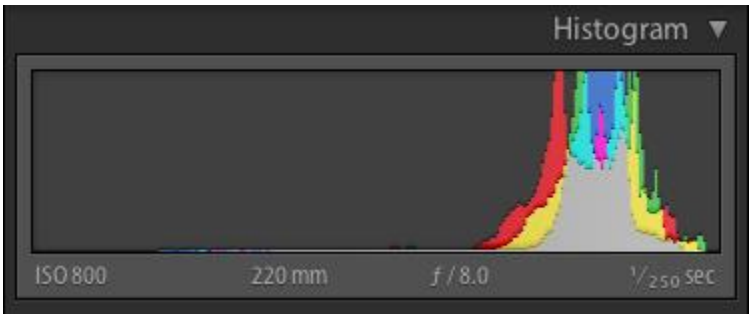
Histogram Examples

High Key Scene

When you have a scene that is "high key" it has a lot of bright tones and not so many mid-tones or blacks. When you are photographing a scene

that you want to be high key, your histogram should be stacked up on the right side - but not touch the right edge. If you want your scene to be high key but your histogram is showing a lot of mid-tones, your whites are probably going to come out looking more grey than you would like.

A high key or light toned scene

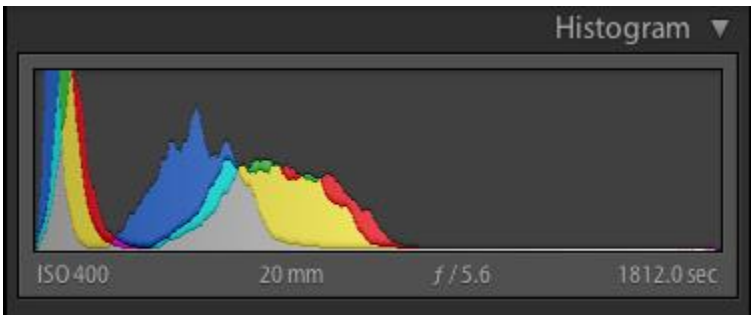


Histogram for the image above showing mostly light tones

Low Key Scene

A "low key" scene is a dark scene, which you would expect when photographing at night. In this case, your histogram will be stacked up on the left side. You may have a spike on the left edge, which indicates solid blacks.

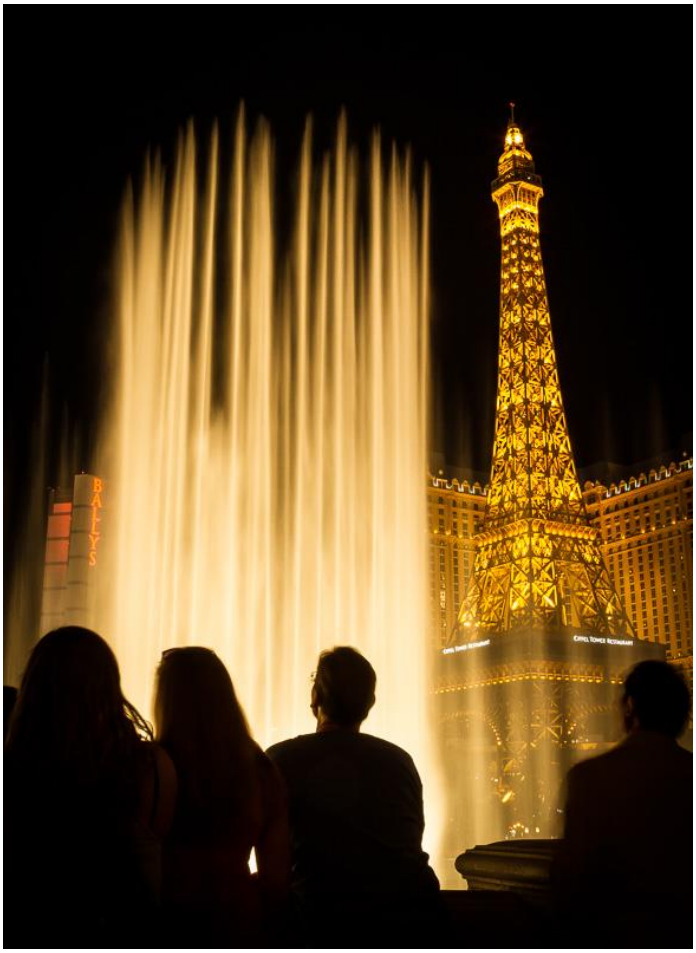
A low key or dark scene will have mostly tones on the left side of the histogram.



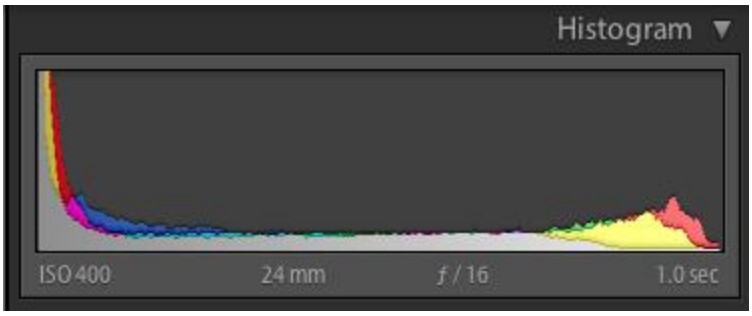
Histogram for the image above showing a dark scene.

High Contrast Scene

A high contrast scene is one where there are lots of very dark tones and very bright tones and perhaps not so many tones in between. In this case, your histogram will show data on the left and the right and not so much in the middle.



High contrast scene. Extreme brights and extreme darks with little in the middle.

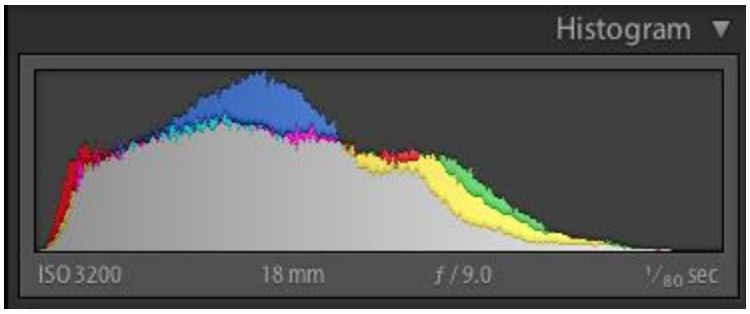


Histogram of high contrast scene above.

Low Contrast Scene

A low contrast scene has a lot of mid-tones and few dark tones and bright tones. Your histogram will have a bell shape.

Low contrast scenes have a lot of mid-tones with few brights and shadows.



Histogram of low contrast scene above.

Again, it's up to you as the artist to decide what to do with this information. You have to decide whether the information in the graph is what you want or not. It's just another tool in your arsenal to help you transform your artistic vision into a photograph.

In the field, you can use the histogram in conjunction with Live View to see it before you make an image. You can also see it afterwards when you review the photo on your LCD screen. Either way, it is critical that you use the histogram to check your exposure while you're in the field. That way you have an opportunity to make another exposure while you are still on scene.

If you're not happy with your histogram, use your exposure compensation to adjust the exposure by making the image darker or lighter. Or, you may choose to affect the light on the scene instead by using a flash, a reflector, or a diffuser. The choice is yours.