

Histograms

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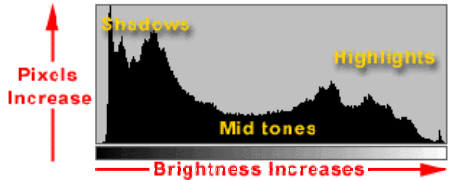
June 2008

What is a Histogram?

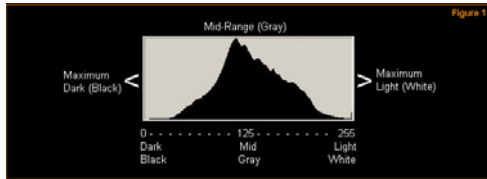
- A histogram is simply a chart that shows how many of the pixels in an image have each level of luminosity (brightness) from black (0) to white (255).
- The portion of the histogram that is to the left shows how much of your image is dark (black or nearly black), while the part to the right shows the amount of the image that is light (white or nearly white).

How do you read a Histogram?

- The horizontal axis represents the range of brightness from 0 (shadows) on the left to 255 (highlights) on the right.
- The vertical axis represents the number of pixels that have each one of the 256 brightness values. The higher the line coming up from the horizontal axis, the more pixels there are at that level of brightness.

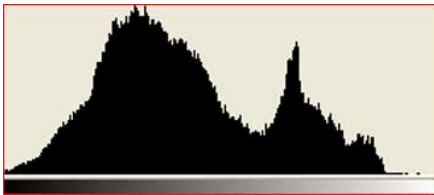


How do you read a Histogram?

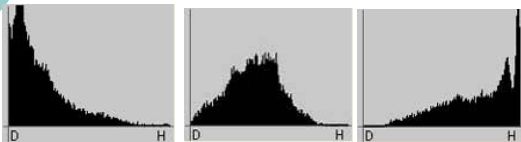


What do you think of this Histogram?

- o This is a good Histogram.



What about these?



Why use the Histogram when you have an LCD?

- The Histogram gives you a true representation of how the camera has recorded the light and dark of the photo.
- The Camera's LCD gives you a poor representation.
- The image on the LCD is effected by the light in the area and how bright you have the LCD set.

Stops Light

- Human Eye – Can see 10 stops of light (The eye is equal to a 50mm lens.)
- Camera – Most cameras can capture 5 to 7 stops of light

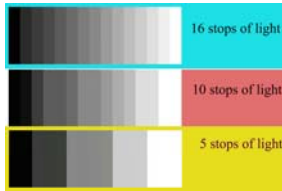
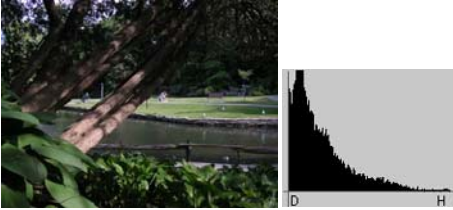


Figure 1
This image contains almost the full range of light that the camera's digital sensor can record. The light range is represented by the histogram graph, and other looks like a mountain peak. This is a correct exposure, since the histogram is not clipped off on the left or the right. If you can make your histograms look like this, good images will result.

Figure 2
This image is badly exposed. The histogram is clipped off on the left (dark) side, which means that the image is generally too dark. In fact, the light range in this image far exceeds the capability of the camera's sensor to record it. It is even slightly clipped off on the right side (light) which is caused by the light streaming through the clouds. The much light range!


Figure 3
This image, like the one above, will see too much light to record it all. Notice that the left side (dark) of the histogram is not clipped and we can see the green grass now. But, see how the right side (light) is now clipped off? This is reflected in the overexposure of the light streaming through the clouds. The image clearly will require filters to expose properly.

Examples



The image shows a photograph of a golf course with a pond and trees. To the right of the photograph is a histogram with a dark background and a light curve. The curve starts high on the left side (labeled 'D') and tapers off towards the right side (labeled 'H').

Examples

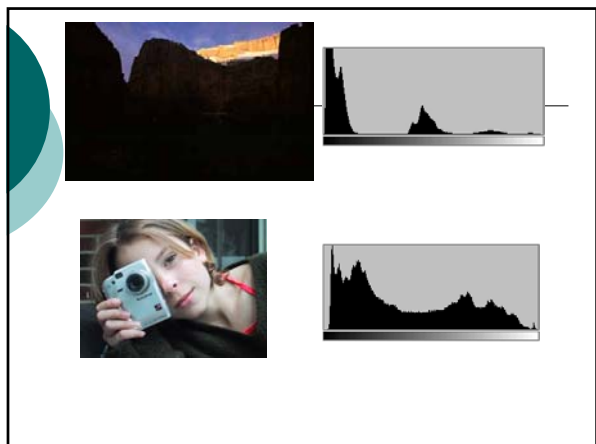


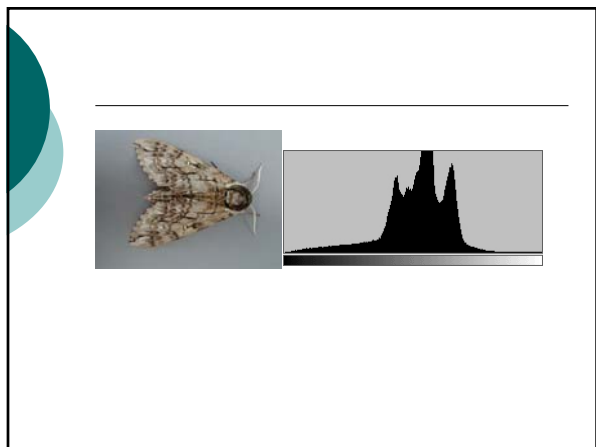
The image shows a photograph of a garden path with flowers and trees. To the right of the photograph is a histogram with a dark background and a light curve. The curve starts low on the left side (labeled 'D') and rises sharply towards the right side (labeled 'H').

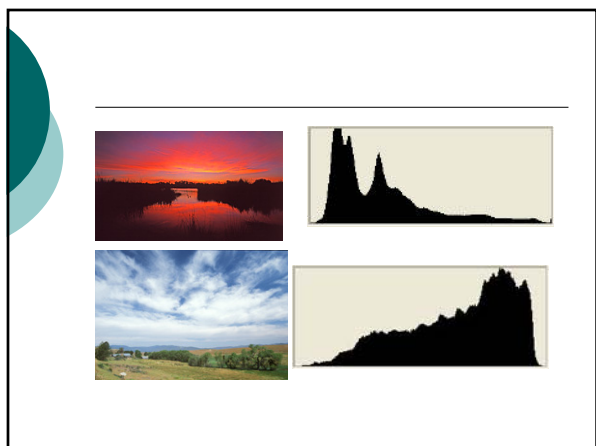
Examples

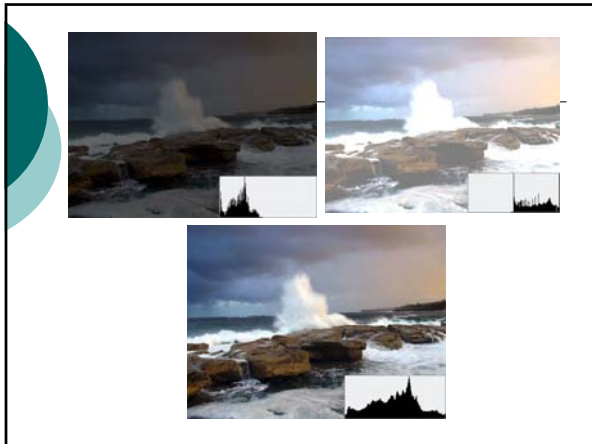


The image shows a photograph of a display of yellow and green bell peppers. To the right of the photograph is a histogram with a dark background and a light curve. The curve is bell-shaped and centered in the middle, with 'D' on the left and 'H' on the right.









Review

- Too Dark, Just Right, Too Light

Blinkies

What the heck are Blinkies?

- The technical name is "Highlight Warnings" or "Highlight Alerts". When they are turned on, they show which parts of the photo have been overexposed to the point that there is no detail in those areas.
- The Blinkies are displayed on the LCD.

How do I see the Blinkies?

- When Highlight Alerts is turned on, and you look at your photo in the LCD, the blown out area will flash like a strobe.
- If you did not intend the areas to be blown out you can retake the photo adjusting for the light.
- Not all blinkies are bad. If you are taking a photo of the sun, moon, streetlights or anything with a light you may have some blinkies.

How can you correct the Histogram?


- Adjust the Shutter or Aperture
 - Exposure Compensator
- Try a different angle
- Use a filter
 - Granulated Neutral Density

Adjust the Shutter or Aperture (Use the Exposure Compensator)

f10 - 0.5 sec f10 - 1.3 sec f10 - 2.5 sec
Focal Length 65mm

Try a different angle

Granulated Neutral Density



Histogram Quirks

- Jpeg vs RAW
 - Histogram is based on a Jpeg Image
- Single Color Histograms
 - Based on the Green Channel
- Colored Histograms

