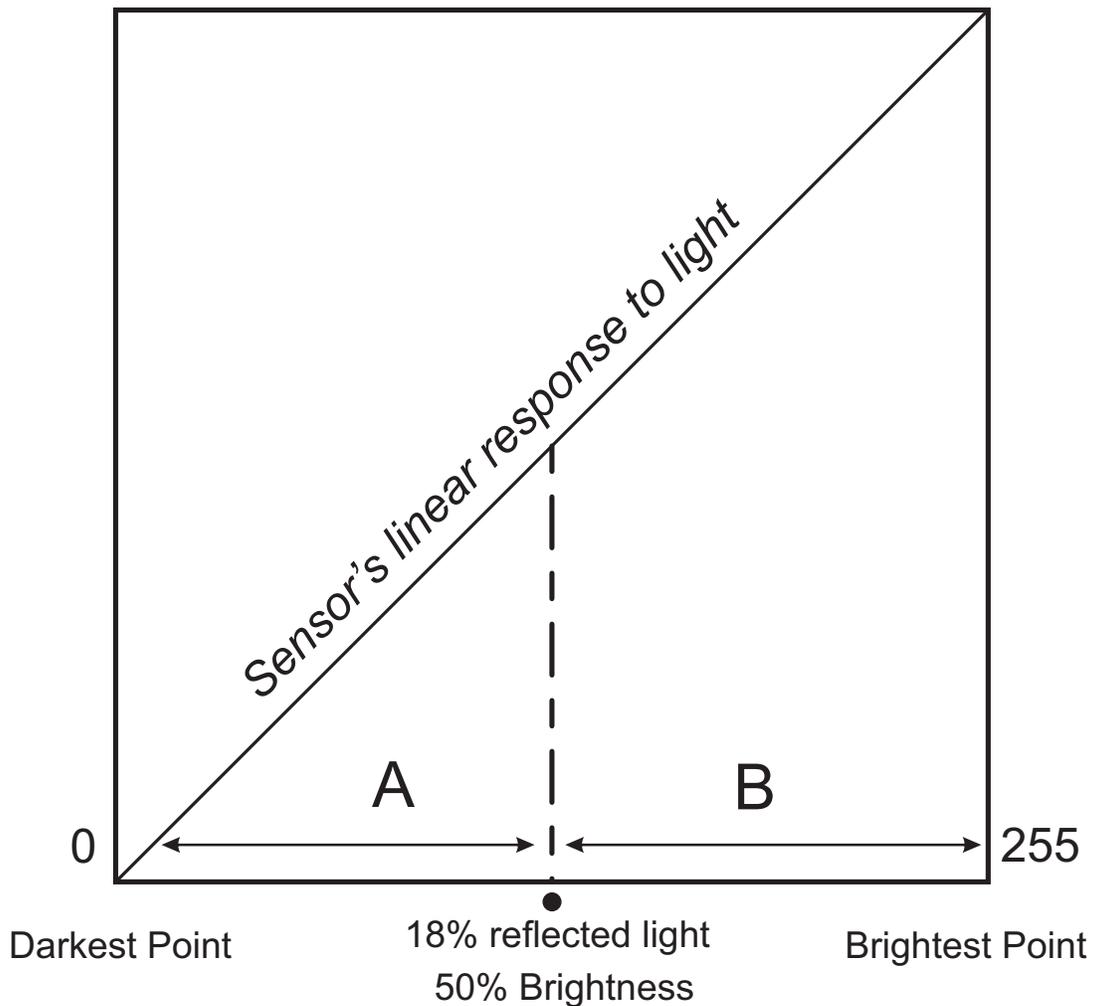
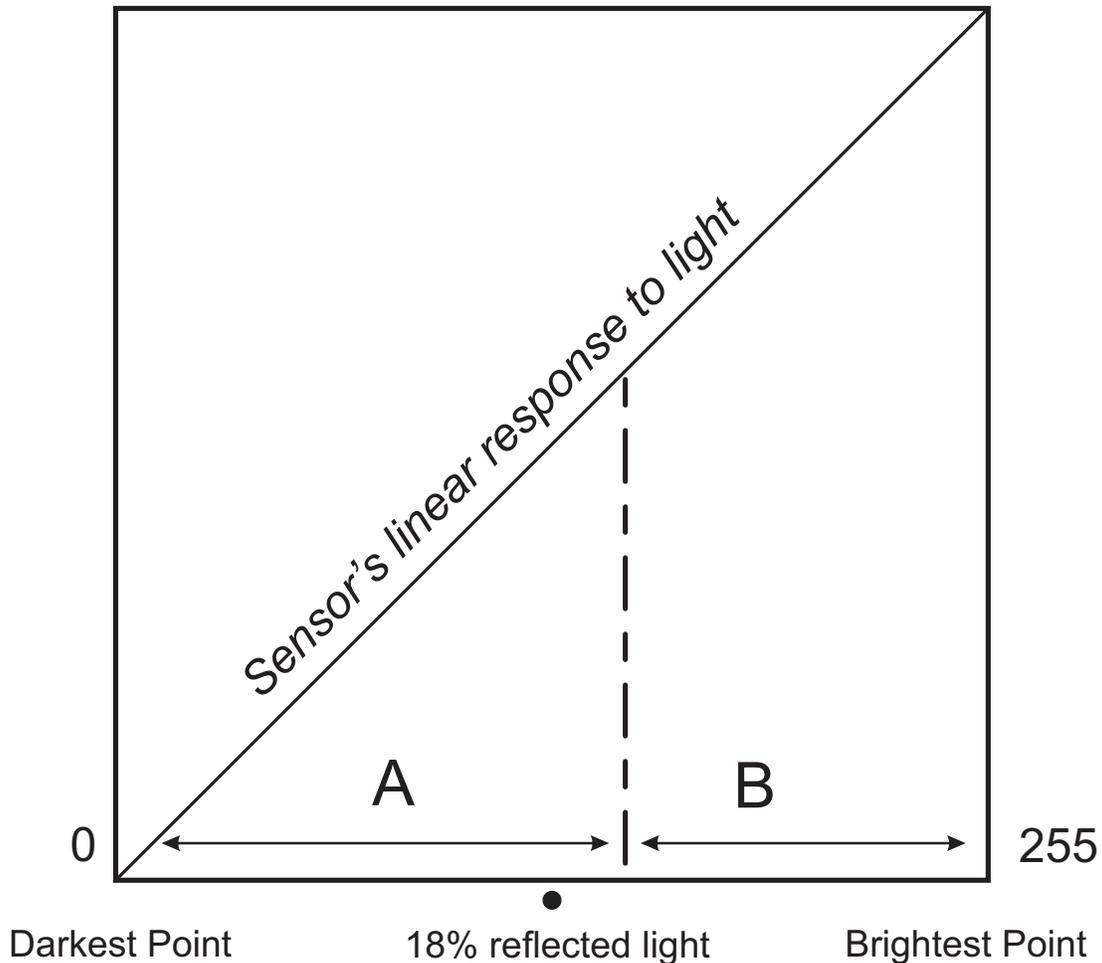


A digital camera's sensor responds to light "linearly." That is, as a straight line. In this regard, a sensor is like a solar panel. As the sun goes down the "information" (electricity) produced by the panel approaches zero. For your camera's images, more light = more tonal information. Less light = an accumulation of digital noise (static) and less tonal information. The graph below illustrates this.



1/4 of the digital information (tones) in an image is collected from the darkest half of our scene "A," while 3/4 of the digital information is collected from the brightest half of our scene "B." We can assign a value of 0 to the darkest point and 255 to the brightest point within a produced image. This is the dynamic range of the image with more tonal information recorded in areas of greater luminance. Lacking a lighting crew to illuminate our scene, we may choose to increase ISO well above 100 (the "native" or default ISO for many sensors) as a technique for capturing greater detail (more tones within the existing dynamic range) in a produced image. However, we must expect a loss of image quality (increased grain and/or noise) as ISO increases.

Photographers who shoot JPEG receive a “finished product” in the produced JPEG image. However, Raw shooters have greater latitude in capturing additional tones and greater dynamic range in a scene because the Raw file gathers all the tonal information collected by the sensor. The photographer then processes the Raw file using a Raw converter such as Adobe Photoshop’s Raw Plugin or DXO’s PhotoLab. The photographer may later save the Raw file as a JPEG, TIFF, PDF, or in any number of other image formats.



Raw shooters may also “expose to the right” ETTR (see illustration above) and “develop for shadows” by increasing exposure (EV+) in the camera without clipping image highlights. This has the effect of extending area “A” and gathering more detail within the darkest half of the scene. Experience is the best teacher here. A camera’s histogram is an inaccurate guide to this process, as it is based upon a JPEG thumbnail of data recorded by the sensor. Shooting Raw is one way to take maximum advantage of a camera’s dynamic range and capture the greatest number of tones in a scene.