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Scanning & Digital Imaging in a Nutshell: An introduction to scanning and digital photography

Scanners simply read color information from a photograph or piece of film and record this information as a grid of pixels. The amount of detail captured with a scanner is determined by something called scanning resolution. Resolution is measured in samples per inch or SPI. Many times people refer to resolution with the term DPI, "dots per inch", or with PPI, "pixels per inch". SPI, DPI, and PPI all describe the same thing. For simplicities sake we'll use the term DPI from here on. So what does "dots per inch" mean? DPI means that a scanner will capture so many dots or pixels for every inch of area scanned. For Example: If you were to scan a 5x7 photograph at 300 DPI you would end up with a digital image that is 1500 pixels wide and 2100 pixels in height. Some simple arithmetic was used to arrive with these numbers. The photo being scanned was 5 inches wide and 7 inches tall. The photo was scanned at 300 DPI "dots per inch". Simply multiply the resolution, 300 in this case, by the dimensions of the photo being scanned, 5 x 300 = 1500 and 7 x 300 = 2100. Resolution determines how much information a scanner captures from the photograph of film being scanned. The higher the resolution, the more pixels the resulting digital image will contain. The more pixels an image contains, the more detailed the digital image is.

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