

Digital Photography & Home Inspections, Part II

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The Mechanics of Digital Photography. As complex as it may seem, the actual process by which a camera takes a picture is quite simple. When the shutter of a camera is operated, an aperture device within the camera opens to allow light to enter and expose the film to an image. In the early days of photography a camera was a box with two plates. The rear plate contained the film and the front plate, or shutter, was pulled out of the camera to expose the film. This process was timed and the front plate was returned to the camera to essentially shut the camera off.

In a common 35mm SLR camera, the aperture device is located between the lens, attached to the camera body, and the film loaded within the camera body. A shutter is used to activate the aperture device that allows light to penetrate into the camera and onto the film. The size of the aperture opening is measured in what is called f-stops. Common f-stop settings are f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16 and f/22. The larger the f-stop number, the smaller the aperture opening and the less light enters the camera. Most digital cameras have pre-set f-stops that are controlled by the EV (exposure value) settings. The f-stops or EV settings can be adjusted to compensate for lighter or darker exposure conditions. If the conditions are too dark, a flash can be employed to raise the light level for better exposure.

The mechanics of capturing an image is somewhat similar in a digital camera. Although they do not use traditional shutter/aperture arrangements to control exposure, once the shutter is activated, a digital camera measures the light in the scene and then selects the proper aperture setting and shutter speed needed to properly expose the image to the image-sensor, which collects the image. This activation period is timed to allow the appropriate amount of light in. The image is then stored on a floppy disc, compact flash card, memory stick or they may be transferred directly to a computer hard drive.

Memory. As discussed earlier, once the shutter within a camera is activated, the image is stored on film or on a digital storage medium. A traditional 35mm camera requires the film to be sent to a developer to be processed and then printed. With digital cameras, the images can be stored on a variety of different storage mediums. The typical mediums used today are standard 3.5" floppy discs, compact flash cards, PCMCIA cards or memory sticks. Another option is to connect the camera to a computer via a cable and transfer the images directly to the hard drive for storage.

LCD and Zoom. Most digital cameras are equipped with an LCD (liquid crystal display) screen. The LCD screen is like a miniature computer monitor that allows the user to view the subject, display operational menu options and view the final image once a picture has been taken.

A more recent addition to digital cameras is a zoom feature. These zooms are anywhere from 3x to 16x and can be activated manually or digitally when focusing on the subject. This feature can be a valuable asset to an Inspector. Now a photo of a damaged roof tile on a two-story structure can be collected without the risk of breaking tiles or scaling an unsafe roof.

In **Part III**, we will explore techniques used in taking pictures and viewing / editing the pictures.

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