

Video Gear: Cameras

A video camera captures light and converts it into an electronic signal we see as video. Video cameras also capture audio. The three basic parts of a video camera are the lens, the camera itself, and a viewfinder so you can watch what the camera records.

The lens produces sharp images of what the camera is pointed at. Cameras can capture tight scenes, called “narrow angle”. Cameras can capture more-open scenes, called “wide angle”. Cameras can have zoom lenses. These lenses smoothly move from wide-angle to narrow angle. The zoom is measured as a ratio of from the farthest wide-angle to the closest narrow-angle. For example, a 20-to-1 zoom lets the lens appear up to 20 times closer than its widest angle.

What we see as white light is actually a balanced mix of the three primary light colors: Red, Green, and Blue. These three colors can be mixed together to create millions of colors. Cameras have beam splitters, which separate ordinary white light into the three primary colors which are also called RGB.

Imaging devices change light into an electrical signal that produces video images. These devices are charge-coupled devices or a CCD chip. They contain horizontal and vertical rows of thousands or millions of light sensitive pixels. Professional television cameras have 3 CCD chips – one each for red, green, and blue light. Today, some cameras use complementary metal-oxide semiconductor systems, called CMOS. This is a more energy efficient technology and its image quality is improving.

There’s always a small video monitor that is attached to a camera so that you can see what you are recording. Cameras can have an adjustable viewfinder tube. They can also have a flat-panel liquid crystal display or LED screen that can be folded out and reversed. This allows camera operators or on-air talent to see the video being recorded.

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