An image scanner—often abbreviated to just scanner, although the term is ambiguous out of context (barcode scanner, CT scanner etc.)—is a device that optically scans images, printed text, handwriting or an object and converts it to a digital image. Commonly used in offices are variations of the desktop flatbed scanner where the document is placed on a glass window for scanning. Hand-held scanners, where the device is moved by hand, have evolved from text scanning “wands” to 3D scanners used for industrial design, reverse engineering, test and measurement, orthotics, gaming and other applications. Mechanically driven scanners that move the document are typically used for large-format documents, where a flatbed design would be impractical.

Modern scanners typically use a charge-coupled device (CCD) or a contact image sensor (CIS) as the image sensor, whereas drum scanners, developed earlier and still used for the highest possible image quality, use a photomultiplier tube (PMT) as the image sensor. A rotary scanner, used for high-speed document scanning, is a type of drum scanner that uses a CCD array instead of a photomultiplier. Non-contact planetary scanners essentially photograph delicate books and documents. All these scanners produce two-dimensional images of subjects that are usually flat, but sometimes solid; 3D scanners produce information on the three-dimensional structure of solid objects.

Digital cameras can be used for the same purposes as dedicated scanners. When compared to a true scanner, a camera image is subject to a degree of distortion, reflections, shadows, low contrast, and blur due to camera shake (reduced in cameras with image stabilization). Resolution is sufficient for less demanding applications. Digital cameras offer advantages of speed, portability and non-contact digitizing of thick documents without damaging the book spine. As of 2010 scanning technologies were combining 3D scanners with digital cameras to create full-color, photo-realistic 3D models of objects.

In the biomedical research area, detection devices for DNA microarrays are called scanners as well. These scanners are high-resolution systems (up to 1 µm/ pixel), similar to microscopes. The detection is done via CCD or a photomultiplier tube.