Types of Scanners

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TYPES OF SCANNERS

Flatbed Scanners
Flatbed scanners are the most popular image capturing device for desktop publishing and professional prepress. Flatbed scanners are normally cheaper than traditional drum scanners, although they are capable of producing scans of similar quality.

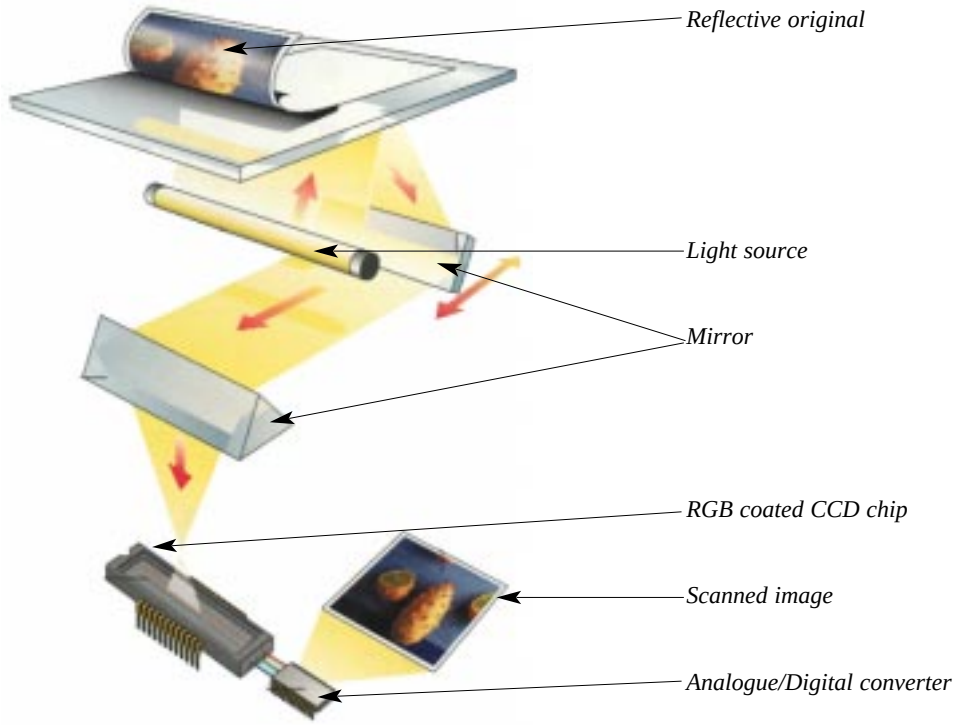
Most flatbed scanners are based on a charge-coupled device (CCD). This is an integrated, micro-electronic light sensing device. Flatbed scanners can normally be operated from within standard image-editing programs like Adobe Photoshop. Most scanners can scan reflective and transparent originals, an optional unit can be purchased to scan transparencies.

One of the main advantages of flatbed scanners are that images on rigid substrates of any thickness can be scanned, such as books or artboard layouts.

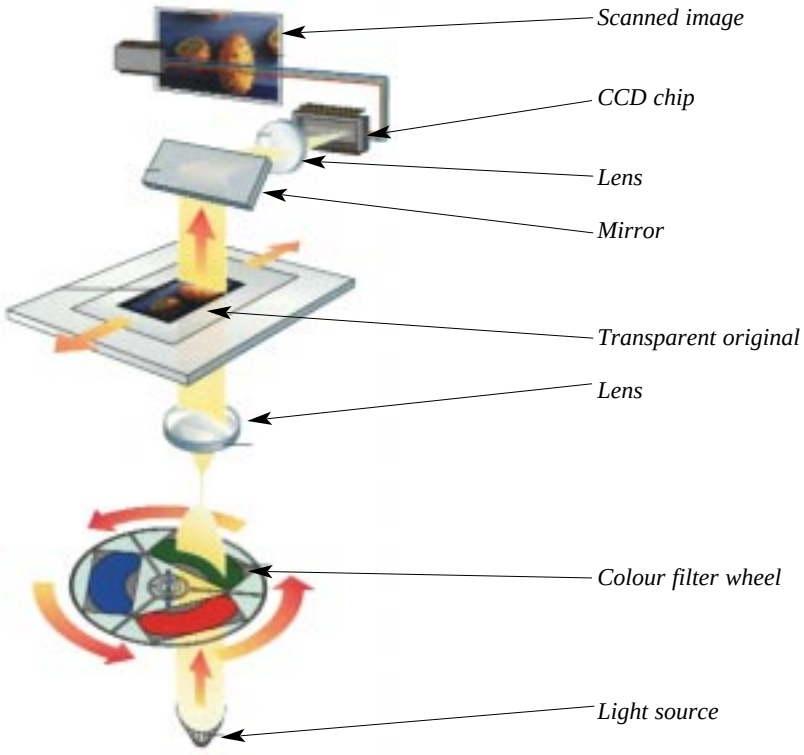
An area of scanning which has *not* proved very popular is optical character recognition (OCR). This is the scanning of printed text and converting it to a text file. Unless there are several pages which require scanning, it still is *not* very productive to produce a series of test scans before the OCR software can produce text files with small amount of errors.

Drum Scanner
The original is wrapped around a drum that is rotated next to a light source. The photo-multiplier tube (PMT) used in drum scanners can generally record a greater dynamic range of colour and can sample more points per inch than flatbed scanners. Apart from better quality of colour, these scanners have the capabilities of enlarging originals to enormous proportions.

Flatbed Scanner (Reflective)

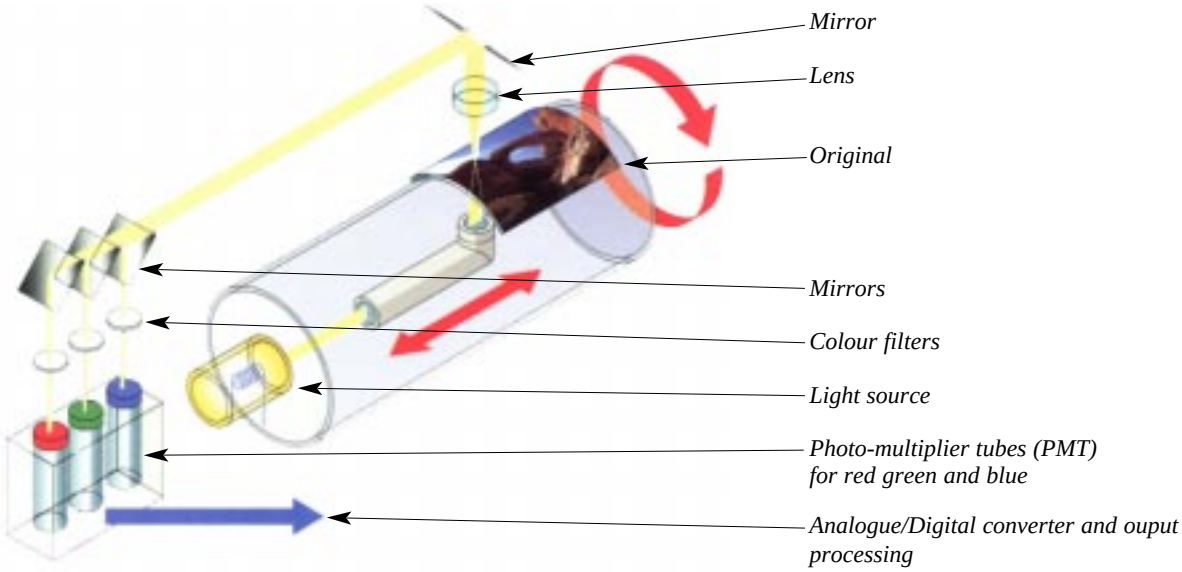


Flatbed Scanner (Transparency)



Both photomultiplier tubes (PMT) and charge-coupled devices (CCD) convert different brightness levels into continuously varying or analogue voltages. These are chopped into specific number of steps or levels by an analogue-to-digital converter.

Drum Scanner



QUESTIONS ON TYPES OF SCANNERS

(1) What is a charged-coupled device (CCD) which is used on a flatbed scanner?

(2) What is one of the main advantages of flatbed scanners?

(3) Give an example of an area of scanning which has not proved very popular?

(4) What is an advantage of a photo-multiplier tube used in drum scanners?