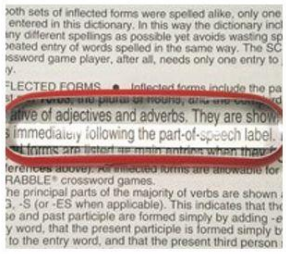
CAMERAS: THE ESSENTIAL LOW VISION TOOL

Many eye diseases do not result in complete blindness. With professional treatment, some level of ability to see from one or both eyes can be kept. But at such low vision levels, performing the simplest tasks difficult is nearly impossible. Folks with such poor vision are said to have low vision.

With vision levels stabilized, optometric eye care consists primarily of assistive technologies, particularly magnifying devices of various kinds. Hand-held magnifiers are the most common assistive technology. Magnifiers help but can only display a few words or letters at a time, making them useful for limited tasks, such as reading a few words on a label. These magnifiers find limited use in reading books and newspapers. Hand-held magnifiers may have a built-in light or may be attached to stands for ease of use.









The next type of magnification is provided by using cameras attached to monitors to display a magnified view of whatever is under the camera. These cameras are typically called "document cameras" because of their role in displaying paper documents. Several document camera types are shown in this next image. All require a TV or computer screen to display a magnified image.

Generally, cameras achieve magnification through two methods – electronic (digital) magnification and optical (lens) magnification. Optical zoom cameras provide the best image quality at high magnifications (12X+) and cost more than double the price of digital zoom cameras. The cost of optical cameras alone can exceed $1,000, whereas digital zoom cameras typically cost well under $500. The feature sets of optical zoom cameras tend to be similar, whereas digital zoom camera features vary directly with price. Some vendors provide camera plus monitor (CCTV) assistive technologies, using optical cameras, at prices around $3,000. Most assistive technology camera systems use optical zoom cameras in lieu of digital zoom cameras.

EZReader also offers an optical zoom camera option, but we consider those cameras suitable for only a small segment of low vision users. In our experience, low vision uses have only one primary requirement for their camera: magnification at up to 8X. At those magnifications, the size of the magnified content (i.e., the magnified text from the document) will be larger than the damaged area of the eye, making further magnification of minimal use to the low vision user.

That is why the default EZReader system ships with a digital zoom camera. It provides good image quality at moderate magnification levels at a much better price. New Vision Concepts has tested over a dozen cameras to find the one with the best physical features as well as the most distortion-free images at 8X magnification levels – the sweet spot for low vision users.

As part of the EZReader installation, users are provided not only with instructions on operating the document camera but also on how to use the camera to get the best image quality, how to manage room lighting and how to position the camera for varying types of documents. Users are also instructed on what types of furniture and furniture placement will give the best viewing results.

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