

# Low Vision Magnification Devices

Which magnification device will work best for you? Start with a low vision assessment from a low vision doctor, certified vision rehabilitation therapist (CVRT), or certified low vision therapist (CLVT). For distance viewing devices, like a monocular or bioptic, start with an assessment from a certified orientation and mobility specialist (COMS).

## Magnification Devices

(in alphabetical order)

### Biopic

A biopic helps with distance viewing. It combines a pair of eyeglasses with a small telescope called a monocular, for one or both eyes. The monocular is mounted in the upper part of the glasses, so most of the time you're just looking through the glasses. Need a closer look? Just tilt your head to look through the monocular. Some countries and most U.S. states permit driving with a biopic. Each state is different, and some states require driver training before you can drive wearing a biopic.



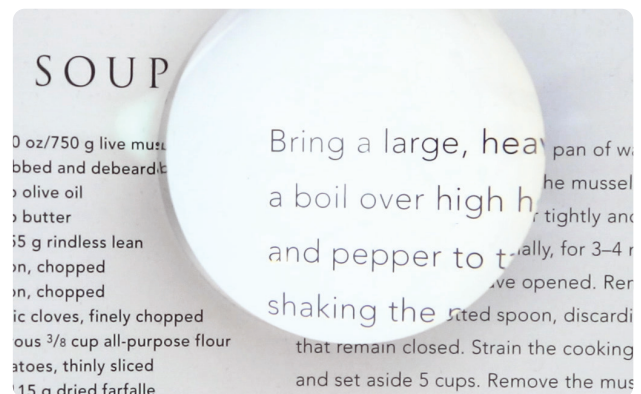
## Desktop Video Magnifier

This magnifier uses a digital camera and built-in light to magnify print or objects onto a flat screen, like a TV or computer monitor. The screens can range in size from 10 inches on a portable model to 24 inches for a desktop model. Depending on the model, objects and text are magnified from 2 to 72 times. Most let you change the foreground and background colors to increase contrast. Some models include a sliding reading base called an XY table. You put reading material on this table and slide it left and right for continuous reading. Many video magnifiers have text to speech (TTS) built right in. Push a button, and the video magnifier reads the text on the screen out loud.



## Dome Magnifier

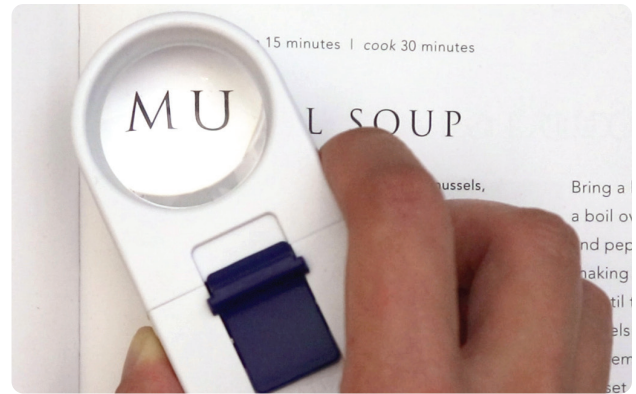
This magnifier is mostly used for reading. The dome magnifier is a dome of glass or plastic, and you put it on top of the print you want to read. You push the dome along the page while you read.



## Handheld Optical Magnifiers

These magnifiers have a clear plastic or glass lens with a fixed magnification power. This power is measured in either diopters (D) or power (X). Some have a built-in light.

Magnifiers like the dome magnifier and stand magnifier are designed to be already in focus when you put them on the print you're reading. Others you hold in your hand, and you focus the magnifier by moving it closer or farther away from what you're looking at.



## Handheld Video Magnifier

These are portable electronic magnifiers that use a digital camera and flat screen, like a smart phone or tablet, instead of a glass lens. Each model is different, but they usually magnify from 2X to 12X, and most have automatic focus. To make things easier to see, you can change the colors, brightness, and contrast on the screen. Most are rechargeable and will operate several hours without a power cord. Screen sizes vary from about 2 to 7 inches, and some include a handle, like you'd find on a handheld magnifier.



## Monocular

A monocular is a small, handheld telescope that magnifies distant objects. Some have a fixed focus, so anything you see through the lens beyond a certain distance is in focus. Others are manually focused, so you can change the focus to look at something close up or farther away. Some monoculars can be clipped onto your eyeglasses for hands-free use.



## Stand Magnifier

When you put this magnifier on a page of printed text, it is already at the correct focal length. A stand magnifier usually has a handle and a battery-operated light. Like the dome magnifier, you can just slide it across the print as you read.





## Glossary: Low Vision Terms

(in alphabetical order)

### CCTV

This stands for closed-circuit television and is another name for desktop video magnifiers.

### Continuous Reading

This refers to reading for a significant length of time, such as when you read a newspaper or magazine article or a book.

### Diopter (D)

This is a measurement of the curvature of a lens, like the lenses in eyeglasses or handheld optical magnifiers. To convert diopters (D) to magnification power (X), divide the number of diopters by 4. For example, a 20 D handheld magnifier has 5X magnification power.

### Focal Length

This is the distance between the lens and the object or print being magnified, where it appears the sharpest. For example, the focal length of a 2X handheld optical magnifier is approximately 5 inches or 13 centimeters. Holding the 2X magnifier about 5 inches from a printed page gives you the sharpest image. **Here's a tip:** Remember, the stronger the power, the shorter the focal length. If a 2X magnifier focuses at 5 inches, any magnifier stronger than that will focus at less than 5 inches.

## **Low Vision Doctor**

This is an optometrist or ophthalmologist who specializes in low vision, or vision that can't be corrected with glasses or contact lenses.

## **Low Vision Therapist**

The certified low vision therapist (CLVT) performs a wide range of evaluations and assessments related to vision, lighting, adaptive devices, and daily living skills. For more information, check out the CLVT description on the ACVREP certification page.

## **OCR**

This stands for the process of optical character recognition. With OCR, computer software changes an image of text into electronic text, like that found in a word processor. For example, using OCR, a digital picture of a page of text from a book or newspaper can be changed into electronic text.

## **Orientation and Mobility Specialist**

The certified orientation and mobility specialist (COMS), also called an O&M specialist, provides training on moving through the environment with a vision impairment. This may include traveling from one point to another by walking, mass transit, and other options. For more information, check out the COMS description on the ACVREP certification page.

## **Power**

This indicates the magnification level, and it is symbolized by an X on magnification devices. For example, a 2X handheld magnifier magnifies what is beneath the lens 2 times, a 5X magnifier magnifies what's underneath it by 5 times, and so on.

## **Spot Reading**

This refers to reading short bits of text, such as that on a medicine bottle, return address on an envelope, highlights from a brochure, etc.

## **Text to Speech**

Text to speech (TTS) is a feature of some devices. It converts electronic text into spoken text. With TTS, you can hear the text in a word processing document, web page, or e-book read out loud in an electronic voice.

## **Vision Rehabilitation Therapist**

The certified vision rehabilitation therapist (CVRT) provides training in adapted daily living skills and assistive technology to people with vision loss. The CVRT often provides primary rehabilitation training to people who have acquired vision loss later in life. For more information, check out the CVRT description on the ACVREP certification page.

## XY Table

This is a movable table surface beneath some desktop video magnifiers. It lets you move reading material in all directions while you read the magnified print on the monitor.