

How to Use a Manual Lensometer

A lensometer measures the optical properties of a pair of eyeglasses and may also be referred to as a focimeter. It's an ophthalmic instrument that's most often used to ensure that a pair of eyeglasses has been ground to the correct prescription. A manual lensometer can provide the basic parameters of a lens, including the spherical, cylindrical, and axis curvatures. However, a manual lensometer requires two wheels to be adjusted simultaneously, so the operator must have good vision and eye-hand coordination.

Items you will need:

- Manual lensometer
- Pair of prescription eyeglasses
- Paper and pencil for recording prescription figures

Step 1

Mount one of the eyeglass lenses on the manual lensometer's viewing platform. Both lenses should be flush with the bottom of the platform, and the lensometer's viewing lens should be centered on the lens's optical center. Fix the lens in place with the lensometer's brace.

Step 2

Determine the spherical value of the lens. Turn the axis and focus knobs until the thin lines in the viewfinder are both parallel and in focus. Read the measurement on the focus knob to get the spherical value for the lens. Manual lensometers typically measure values to the nearest quarter diopter.

Step 3

Measure the cylinder value of the lens. Rotate the focus knob to bring the fat lines that are perpendicular to the thin lines into focus. Subtract the current measurement on the focus knob from the previous reading obtained in step 2. Record this difference as the cylinder value of the lens, being sure to include the sign.

Step 4

Record the axis value of the lens. This is the current measurement of the axis dial. The spherical, cylindrical, and axis values provide the complete curvature of the primary part of the lens.

Step 5

Calculate the add value for bifocal lenses. Center the viewing lens of the lensometer on the bifocal portion of the lens. Adjust the focus knob once again to bring the fat lines back into focus and subtract the current reading from the previous reading. This difference is the add value for the bifocal lens.

(On-line; verbatim; author unknown)