

Measuring with Reticles & Stage Micrometers

A **reticle** is a clear circular glass insert inscribed with a scale that allows the observer to make an accurate measurement of the specimen being viewed. The lens that holds the reticle must have a reticle retainer ring and the reticle must be of the proper diameter for the particular eyepiece lens. For stereo or binocular microscopes, only one of the lenses will have a reticle.

Any reticle scale must be calibrated, using a device called a **stage micrometer**. A stage micrometer is simply a microscope slide with a scale etched on the surface. A stage micrometer is generally 1"x 3" and made of either glass, metal or plastic.

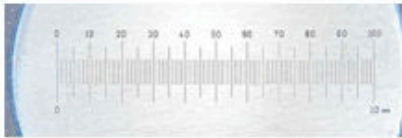
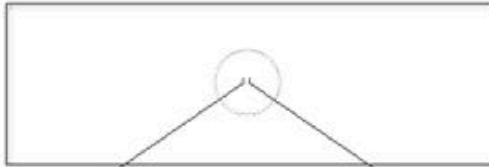
By making a comparison of the marks on the stage micrometer to the marks on the reticle, a value for each mark on the reticle can be determined. A stage micrometer is only needed to establish the relationship (ratio) between the reticle and the actual size of the specimen.

When a higher power objective is used, the represented value between the marks will change proportionately. For the most accurate results, it is suggested that you calibrate your reticle using a stage micrometer for each objective lens.

As an example, for a reticle that is 10mm long with 100 divisions, each division was found to represent the following distances.

1X Objective	100um (0.1mm)
4X Objective	25um
10X Objective	10um
40X Objective	2.5um
100X Objective	1 um

Stage Micrometer



Different Types of Reticles

