

McCRONE ACCESSORIES & COMPONENTS

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INFORMATION CALIBRATION FOR ORDERING THE IMA RETICLE

When ordering the IMA Reticle specify the diameter (in millimeters) of the reticle disc to fit your microscope eyepiece and the magnification factor (MF). The MF is unique for each microscope and 10x objective combination. Determining the correct MF value insures that the sizing circles will be exactly 10 and 25 microns $\pm 2\%$ on your microscope. The MF value is calculated as follows:

1. Set up the microscope with all the attachments and lenses you will use with the IMA. The IMA requires a compound microscope with a 10x objective, two 10x eyepieces and episcopic (vertical) illuminator, **IMPORTANT!** To calculate a correct MF value the episcopic (vertical) illuminator must be installed along with any other attachments affecting the microscope tube length/magnification (anything placed between the objective and the eyepiece).
2. Insert a 100 division/10mm reticle scale into one eyepiece. Many microscopes are purchased with such a scale already installed.
3. Turn on the microscope vertical illuminator.
4. Adjust the interpupillary distance.
5. Rotate the 10x objective into place.
6. Focus the eyepiece so that the reticle lines are clear and sharp. Rotate the eyepiece diopter ring on the eyetube of the microscope to focus. Do not use the microscope focus knob.
7. Place a certified stage micrometer of 100 division/1mm on the microscope stage and focus the microscope on the graduated lines.
8. Adjust the microscope stage X & Y controls to align the stage micrometer parallel to the eyepiece reticle scale at the zero division.
9. Record the largest number of whole eyepiece reticle scale divisions (GSD) per corresponding whole stage micrometer division (SMD). To make the measurement as accurate as possible a large part of each scale must be used. The ratio of eyepiece reticle scale divisions/stage micrometer divisions is the magnification factor MF.
10. Examples:
If there are 75 GSD per 80 SMD then $MF = 0.938$ or $(75/80)$
If there are 95 GSD per 92 SMD then $MF = 1.032$ or $(95/92)$