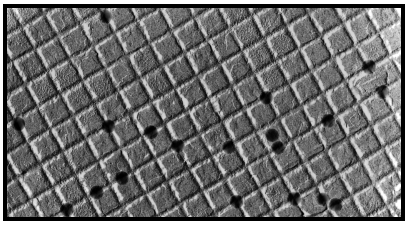
MAGNIFICATION CALIBRATION
LATEX SPHERES ON DIFFRACTION GRATING REPLICA
PRODUCT NO. 603

This specimen is a replica of a 2,160 lines/mm waffle-pattern diffraction grating on which 0.261µm diameter latex particles have been applied. When imaging the specimen, it should be kept in mind that the line spacing is 0.463µm and the pattern will not be visible until the imaging system is set to resolve that level of detail - around x2,500. At this magnification, the lines of the pattern will be 1.1575 mm apart and the latex particles will have a diameter of .625 mm.



1. To calculate the electron microscope magnification using the pattern of the **diffraction grating replica:** Take the measurement, in millimeters, between the limiting lines of as many squares of the replica pattern as possible. Apply the following formula:

Magnification = A x 2,160/B

A is distance in mm between limiting lines
B is number of spaces between limiting lines

(Alternatively, use the PELCO® Magnification Calibration Calculator, Prod. No. 252.)

2. To calculate the magnification by measuring the magnified image of the **0.261µm dia. latex spheres**, apply the following formula:

Magnification = diameter (in mm) x 3,831.4

Note: Due to variations in size, the latex particles are not an accurate way of determining instrument magnification, although the calculated figure will be tolerably close to that obtained using the diffraction grating pattern. They serve rather, as a useful point of reference for visualizing the appearance of objects at different magnifications and determining the lowest magnification at which structures you are looking for, in another specimen, might be visible.

Care of Grating Replica Specimen
When not in use, the replica should be kept in the vial. The replica surface may be damaged if touched. **Never try to clean it**. Care must be taken to avoid bending the grid as distortion may cause the replica film to fracture. **NOTE: ALWAYS VIEW THIS SPECIMEN AT THE LOWEST COMFORTABLE ILLUMINATION LEVEL TO AVOID DEGRADATION OF THE LATEX PARTICLES.**

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