

# TECHNICAL DATA SHEET

## Electron Microscopy Sciences

**FOR RESEARCH ONLY**

GRATING REPLICAS

CAT# 80050 & 80051

Calculate the electron microscope magnification using the diffraction grating replica pattern as follows:

Measure (in millimeters) between the limiting lines of as many squares of the replica pattern as possible. Apply the following formula:

$$\text{Magnification} = \frac{\text{Distance in mm between limiting lines} \times 2,160}{\text{Number of spaces between limiting lines}}$$

Note:

Limiting lines are chosen arbitrarily by the viewer. Statistical significance increases with the distance between the 2 limiting lines due to the increased size of the sample; i.e., the more "lines or spaces" included in the measurement, the more accurate the calibration.

Care of Grating Replica Specimens:

When not in use, the replica should be kept in a dust-free atmosphere (as the same vial in which it is supplied). The replica surface can be damaged if it is touched with any hard object. NEVER TRY TO CLEAN IT. Care should be taken with the TEM specimen to avoid bending the grid, which can cause cracking of the replica. When viewing a replica specimen in the TEM always begin at low magnification, with one square of the supporting copper grid filling the EM screen, slowly increase the illumination to near maximum intensity (but not to cross-over) then reduce the level of the illumination and go to the desired magnification. Repeat this procedure every time a new area of the replica is to be viewed.

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