

SUBJECT CALIBRATION CURVES FOR FACTORY
MICROSCOPES

SUPERSEDED DATE

All microscopes used in determining diameters of fine wires, such as grid lateral wires, filaments, etc. whether uncoated or coated with aquadag, emission material, etc. must be calibrated.

Before using any microscope for measuring purposes always check to see that instrument has same eyepiece and same objective lenses as indicated on page 2 containing calibration curves for respective units.

1. To Calibrate a Measuring Microscope

A. Equipment - A glass stage micrometer with divisions of known widths, usually in tenths and hundreds of a millimeter.

B. Procedure

1. Place glass stage micrometer under objective of microscope and make a coarse focus on glass stage micrometer lines,
2. Turn ocular micrometer so that lines in both micrometers are parallel and then make a fine focus on glass stage micrometer lines.
3. Determine the value of the total ocular micrometer divisions in terms of glass stage micrometer divisions.
4. Convert this value into millimeters from the known widths of the glass stage micrometer divisions.
5. Then divide by the total divisions in the ocular micrometer to obtain the value of one division on ocular micrometer in millimeters.
6. To convert to mils, divide the value of one division on ocular micrometer in millimeters by .0254.

2. For Example

Glass stage micrometer:

Each large division = 0.10mm

Each small " = 0.01mm

Ocular micrometer:

20 large divisions are divided into a total of 100 small divisions.

Ocular micrometer divisions in terms of glass stage micrometer divisions.

100 div. on ocular mic. = 5 large div. plus 1 small div. on glass stage
mic. or 0.51mm.

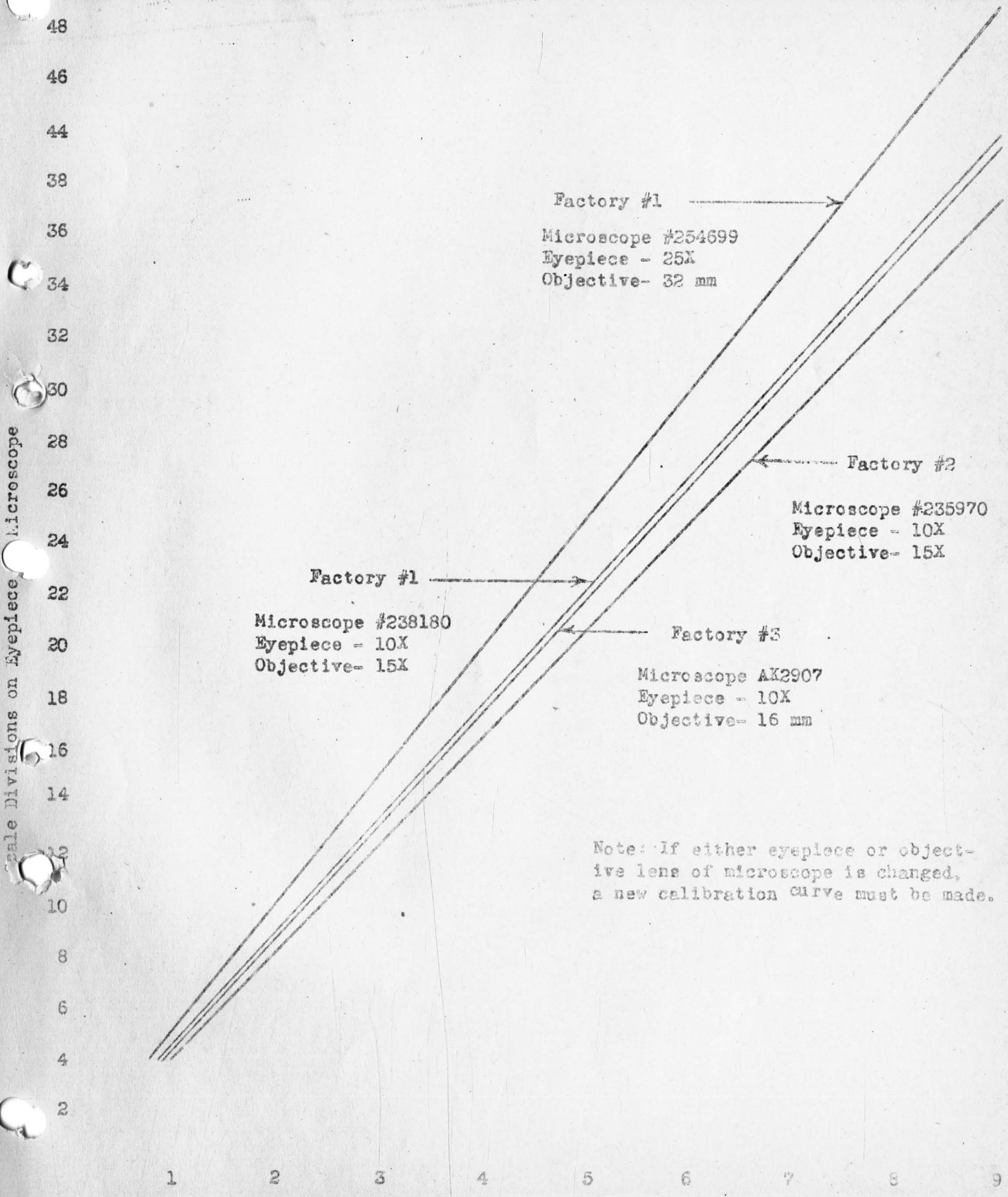
1 div. on ocular mic. = 0.051mm

Conversion of mm into mil.

25.4mm = 1 inch or .0254mm = 1 mil.

1 div. on ocular mic. = $\frac{.0051}{.0254}$ = .201 mils.

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Note: If either eyepiece or objective lens of microscope is changed, a new calibration curve must be made.