
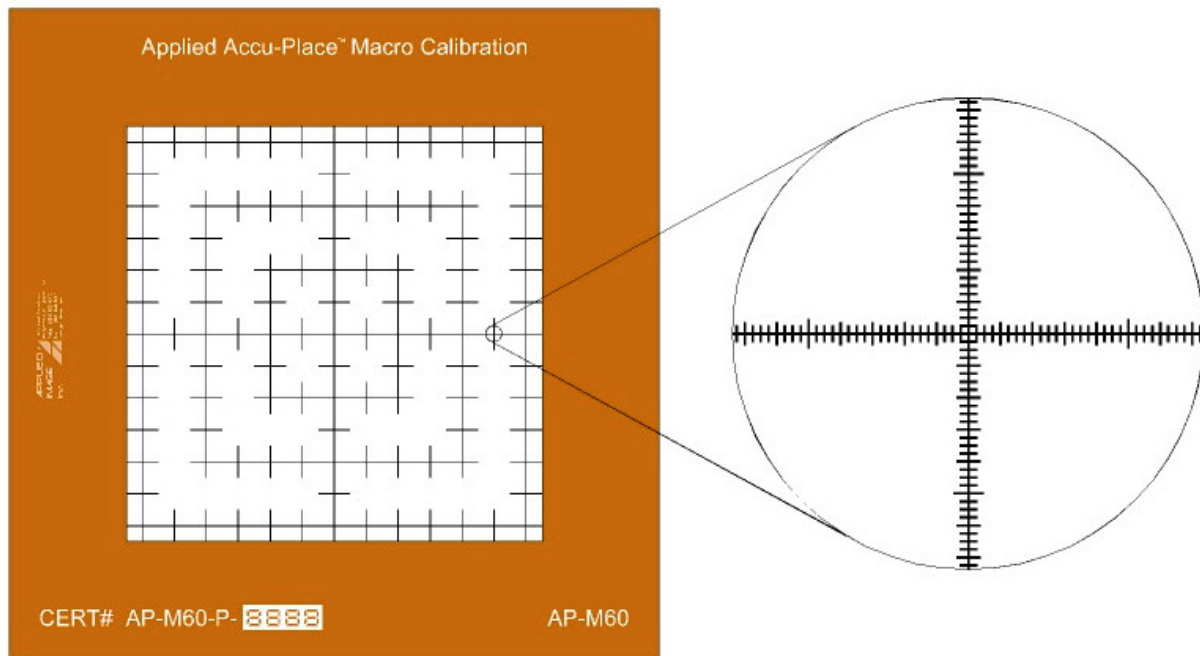


1653 East Main Street Rochester, NY 14609 USA Voice: 585.482.0300 FAX: 585.288.5989 imaging@appliedimage.com	<b>AP-M</b> <b>Accu-Place™</b> <b>Macro Calibration Standard</b> <b>Product Specifications</b>	<b>APPLIED®</b> <b>IMAGE</b> <b>Inc</b> 
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**Catalog Part No:** AP-M60-P / AP-M100-P / AP-M200-P / AP-M300-P


**Product Name:** Accu-Place™ Macro Calibration Grid

**Drawing / Photo of Part:**



The above image is an approximate representation of the actual product.  
 Specifications are subject to change without notice.

**Description:** The Accu-Place Macro Calibration Standards feature crossing horizontal and vertical scales enabling the calibration of magnification and linear distance. The scales have 0.025mm divisions over their full length. Additional scales are provided at (typically) 10mm intervals to form boxes about the center point. Scale linewidth is nominally 6 microns.

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Part Numbers, Overall Size, Image Size and Scale Divisions:

<i>Part Number</i>	<i>Substrate Size (mm)</i>	<i>Image Area (mm)</i>	<i>Scale Increments (mm)</i>
AP-M60-P	100x100	60 x 60	0.025
AP-M100-P	125x125	100x100	0.025
AP-M200-P	250x200	200x150	0.025
AP-M300-P	400x200	300x150	0.025

Substrate Types:

Available substrate types are soda-lime glass or opal glass. A part number suffix specifies material: CG = chrome glass; OP = Opal Glass

Because this image has very narrow line widths (6μ), this part is not available on photo film or photo paper as a standard item.

NOTE: If you are interested in film or paper versions, please inquire. Material availability varies and we may be able to accommodate you.

Image Forming Material: Chromium

Polarity: Positive (opaque or black crosshair and labels on clear field)

Reading Direction: Right Read Chrome Up (RRCU)

Image Placement Accuracy: 0.002 mm per 100 mm at 68 degrees F (20C).


Image Placement Linearity (point to adjacent point): 0.001mm distortion max.

Note: Accuracy is affected by plate flatness and temperature.

Typical Soda Lime Glass Flatness:

Standard Plates up to 175mm x 175mm; better than 10μ for any 100mm x 100mm area.

Standard Plates larger than 175mm ; better than 10μ for any 100mm x 100mm area and a maximum bow of 200μ.

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Material Notes:

- Thermal expansion coefficient of soda-lime glass is 0.0000045- 0.0000052 inch/inch/ deg. F.
- Flatness of Opal material may vary.
- Specifications reflect standard off the shelf materials.
- Improved materials are available on special order.
- Polyester or paper expansion is the major source of change in photo-emulsion versions. Thermal expansion and humidity expansion are greater for paper bases than other substrates.
- Plates are imaged with the back surface held by a flat vacuum platen. This generally causes the plate flatness to be better than when it is in the free state. The point to point length change from a plate in the flattened state compared to a bowed state is approximately:

Typical length change of glass plate due to plate bowing:

<u>Length</u>	<u>10μ</u>	<u>100μ</u>	<u>200μ</u>	<u>400μ</u>	<u>Bow</u>
100mm	0.002μ	0.2μ	0.8μ	3.2μ	
200mm	0.001μ	0.1μ	0.4μ	1.6μ	Length
300mm	0.0007μ	0.07μ	0.27μ	1.1μ	Change

Image Contrast / Density: Features are high contrast having an optical density of 2.6 or greater.

Application Note: A white vinyl backing may be applied to back of a transparent part to enhance reflection when illumination is directed toward the same surface of the part as it is viewed. An extra charge applies.