



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

METROLOGY SOLUTIONS, INC.

Cookeville, TN

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 5th day of October 2009.



A handwritten signature in black ink, reading "Peter Mlynek".

President & CEO
For the Accreditation Council
Certificate Number 2857.01
Valid to September 30, 2011

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

METROLOGY SOLUTIONS, INC.
 815 Delman Drive
 Cookeville, TN 38501
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CALIBRATION

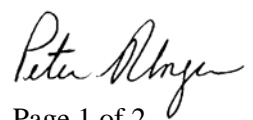
Valid To: September 30, 2011

Certificate Number: 2857.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Dimensional

| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|--|-------------------------------------|------------------------|---------------|
| Contour Projectors ³ – Optical Comparators | | | |
| XY linears | (0 to 24) in | (200 + 1.7L) μin | Glass masters |
| XY squareness | (18 to 48) in | (200 + 1.7L) μin | |
| Magnification | 10x to 100x | 450 μin | |
| Focal squareness | 4 in | 200 μin | |
| Edge detection | N/A | 200 μin | |
| Video Measurement Systems ³ | | | |
| Measuring stage | (8 in x 6 in) to (18 in x 24 in) | (37 + 4.2L) μin | Glass grid |
| Z-axis linear | (0 to 6) in | (50 + 2.5L) μin | Step gage |
| Z-axis squareness | (0 to 6) in | 160 μin | Square |
| Optical alignment | N/A | 50 μin | Dot reticle |



| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|---------------------------------|--------------|------------------------|---------------------------|
| Micrometers ³ | (0 to 20) in | (30 + 6L) μin | Comparison to gage blocks |
| Calipers ³ | (0 to 12) in | (290 + 1L) μin | Comparison to gage blocks |
| Digital Indicators ³ | (0 to 2) in | (76 + 2L) μin | Comparison to gage blocks |

II. Dimensional Testing⁶

| Parameter/Equipment | Range | CMC ^{2,5} (±) | Comments |
|------------------------|-----------------------|------------------------|----------|
| 3-Dimensional geometry | (700 x 1000 x 700) mm | (20 + 3L) μm | CMM |

¹ This laboratory offers commercial and field calibration services.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ In the statement of Calibration and Measurement Capability, L is the numerical value of the nominal length of the device measured in inches.

⁵ In the statement of Calibration and Measurement Capability, L is the measured length in meters, unless otherwise noted.

⁶ This laboratory meets the A2LA Calibration Program Requirements for the types of dimensional testing listed above. Accredited test reports issued containing appropriate statements of measurement results, measurement uncertainty, and traceability are considered equivalent to a "calibration" certificate.