



World Class Accreditation

The American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

BOBIER METROLOGY SOLUTIONS

Flint, MI

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 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 27th day of April 2009.





Peter Abney

President & CEO
For the Accreditation Council
Certificate Number 1526.01
Valid to June 30, 2010
Revised December 3, 2009

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

BOBIER METROLOGY SOLUTIONS
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 Flint, MI 48532
 DeVere Bobier Phone: 810 732 4030

CALIBRATION

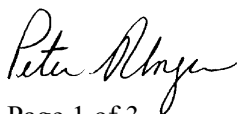
Valid To: June 30, 2010

Certificate Number: 1526.01

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 (±)	Comments
Optical Comparator ³ – Magnification	5× to 100×	76 µin + 440 µin/in	Reticle and S-T magnification
Scale Deviation (Visual)	Up to 152 mm	1.9 µm + 0.49 µm/mm	Reticle
Scale Deviation (with Edge Detector)	Up to 152 mm	2.1 µm + 0.49 µm/mm	
CMM ³ – Linear Displacement Accuracy	Up to 1016 mm	0.37 µm + 1.1 µm/m	Renishaw laser
	Up to 457.2 mm	1.5 µm + 0.006 µm/mm	18” step gage
	457.2 to 1016 mm	1.3 µm + 0.007 µm/mm	40” step gage



Parameter/Equipment	Range	CMC ² (±)	Comments
CMM ³ (cont.) –			
Volumetric Performance (Manual)	254 to 915 mm	3.0 μm + 0.0002 μm/mm	Ball bar
Volumetric Performance (DCC)	254 to 915 mm	1.9 μm + 0.0003 μm/mm	Ball bar
Squareness	Up to 610 mm	0.26 μm + 0.012 μm/mm	9” or 24” Granite square
Video/Vision Measuring Machines ³ –			
Scale Deviation	Up to 152 mm	1.9 μm + 0.49 μm/mm	Reticle
Machine Tools ³ –			
Linear Displacement Accuracy	Up to 1016 mm	0.37 μm + 1.1 μm/m	Renishaw laser

II. Dimensional Testing

Parameter/Equipment	Range	CMC ² (±)	Comments
Calipers	Up to 12 in	89 μin + 2.1 μin/in	Master block
Micrometers	Up to 4 in	54 μin + 11 μin/in	Master block
Depth Micrometers	Up to 1 in	56 μin + 3.6 μin/in	Master block
Ring Gage – Inside Diameter	Up to 12 in	2.3 μin + 11 μin/in	CMM, master ring
Plug Gage – Outside Diameter	Up to 12 in	2.6 μin + 11 μin/in	Master plug with: laser micrometer or CMM

Parameter/Equipment	Range	CMC ² (±)	Comments
Gage Balls/CMM Cal Spheres	Up to 2 in	5.7 µin + 17 µin/in	Gage ball comparison MMQ44
Linear Accuracy			
2D	Up to 24 in	3.5 µin + 11 µin/in	CMM/OGP
3D	Up to 24 in	17 µin + 32 µin/in	
Position	Up to 28 in × 40 in × 24 in	7.9 µin + 33 µin/in	CMM/OGP

¹ This laboratory offers commercial and field calibration service.

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.