



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

VISIONAL TECHNOLOGY LLC (LIMITED LIABILITY CORPORATION)

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CALIBRATION

Valid To: November 30, 2026

Certificate Number: 4111.01

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization's compliance with A2LA's Calibration Program Requirements), accreditation is granted to this laboratory to perform the following calibrations^{1, 6, 7}:

I. Dimensional Testing/Calibration

| Parameter/Equipment | Range | CMC ^{2, 4} (±) | Comments |
|--|-----------------------|---------------------------------------|---------------------------------|
| Vision Measurement System ³ – | | | |
| Length Accuracy | Up to 758 mm | $(0.52 + 0.00077L) \mu\text{m}$ | Glass line scale |
| Z-Axis Linear Error (1D Tactile) | Up to 177 mm | $(0.38 + 0.0063L) \mu\text{m}$ | Gage blocks Glass line scale |
| Euv – Length Error of the Imaging Probe | Up to 150 mm | $(1.0 + 0.0021L) \mu\text{m}$ | |
| Probing Error (PF2D) | Up to 3.5 mm 14 mm | 0.44 μm 1 μm | Circle chart |
| Probing Error of the Imaging Probe (PFV2D) | Up to 3.5 mm 14 mm | 0.57 μm 1 μm | Circle chart |

| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|--|------------------------------|--|--|
| Coordinate Measuring Machines (CMM) ³ | | | |
| Length Accuracy | Up to 1000 mm | $(0.14 + 0.0002L) \mu\text{m}$ | Step gage |
| Probe Performance | Up to 25 mm | 0.15 μm | Sphere |
| Scanning Performance | Up to 25 mm | 0.12 μm | Sphere |
| Optical Comparator ³ – | | | |
| Length Accuracy (Vertical) | Up to 192 mm Up to 8 in | $(1.7 + 0.003L) \mu\text{m}$ $(66 + 3L) \mu\text{in}$ | Glass scale |
| Length Accuracy (Horizontal) | Up to 606 mm Up to 24 in | $(0.65 + 0.0019L) \mu\text{m}$ $(26 + 1.9L) \mu\text{in}$ | Glass scale |
| Chart Rotation (Angles) | Up to 360° | 1.2 Arcminutes | Glass reticle |
| Optical - Scales, Reticles, Grid/Dot Array | | | |
| Diameters | Up to 3.5 mm Up to 400 mm | 0.41 μm $(2.1 + 0.0035D) \mu\text{m}$ | Vision system by comparison to calibrated standards |
| Angles | Up to 360° | 1.0 Arcminutes | Vision system |
| Distances | Up to 758 mm | $(0.52 + 0.00142L) \mu\text{m}$ | Vision system by comparison to calibrated standards |
| Steel Rules | Up to 640 mm | $(3.9 + 0.0025L) \mu\text{m}$ | Vision system |
| Length Standards | Up to 758 mm | $(0.10 + 0.00023L) \mu\text{m}$ | CMM by comparison to laboratory primary length standards |
| Micrometers ⁷ | Up to 1 in (1 to 2) in | 4 μin $(15 + 1L) \mu\text{in}$ | Gage blocks |
| Calipers ⁷ | Up to 24 in. | $(144 + 0.2L) \mu\text{in}$ | Gage blocks |

II. Dimensional Testing

| Parameter/Equipment | Range | CMC ^{2, 4} (\pm) | Comments |
|----------------------------------|--------------|----------------------------------|--|
| Length Measurements ⁵ | Up to 640 mm | $(2.0 + 0.0034L) \mu\text{m}$ | CMM, vision system |
| Diameter ⁵ | Up to 3.5 mm | 0.41 μm | CMM, vision system by comparison to calibrated standards |
| | Up to 400 mm | $(2.1 + 0.0035D) \mu\text{m}$. | CMM, vision system |
| Angle ⁵ | Up to 360° | $(0.53 + 0.0015A)$ Arcminutes | CMM, vision system |

¹ This laboratory offers commercial calibration service, field calibration service, and dimensional testing.

² Calibration and Measurement Capability Uncertainty (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. CMCs 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 This laboratory performs field calibration activities for these parameters. Field calibration service is available for this calibration. 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 CMC, L is the numerical value of the nominal length of the device measured in millimeters (metric units) or inches (imperial units); D is the numerical value of the nominal diameter of the device measured in millimeters (metric units) or inches (imperial units); and A is the nominal numerical value of an angle measured in decimal degrees.

⁵ This test is not equivalent to that of a calibration.

⁶ This scope meets A2LA's P112 *Flexible Scope Policy*.

⁷ Repeatability of the Unit Under Test has not been utilized in the calculation of the CMC value for this measurement parameter.



Accredited Laboratory

A2LA has accredited

VISIONAL TECHNOLOGY LLC (LIMITED LIABILITY CORPORATION)

San Juan, PUERTO RICO

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – *Specific Requirements: Calibration Laboratory Accreditation Program*. 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 April 2017*).



Presented this 22nd day of November 2024.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4111.01
Valid to November 30, 2026

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