



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

DIXON & RYAN CORP
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CALIBRATION

Valid To: February 28, 2022

Certificate Number: 1564.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 5}:

I. Dimensional

| Parameter/Equipment | Range | CMC ^{2, 4} (±) | Comments |
|---------------------------------|--|--|---|
| Adjustable Column Height Gages | (1 to 24) in | (67 + 8.0L) μin | Gage blocks, electronic amplifier and probe |
| Bore Gages – 2 Point | 0.000 05 in resolution 0.0001 in resolution 0.0005 in resolution | 140 μin 140 μin 320 μin | Adjustable height gage |
| Calipers | Up to 80 in | (0.6R + 15L) μin | Gage blocks, ring gage |
| Electronic Amplifier and Probes | 0.000 01 in resolution 0.0005 in resolution | 59 μin 300 μin | Gage blocks |
| End Standards | Up to 60 in | (61 + 10L) μin | Gage blocks, electronic amplifier and probe |
| Hole Gages – 3 Point | (0.2 to 10) in | (110 + 21L) μin | Ring gages |
| Indicating Dial Calipers | (0.2 to 10) in | (290 + 32L) μin (120 + 13L) μin | Gage blocks, ring gage Hite master |

| Parameter/Equipment | Range | CMC ^{2,4} (±) | Comments |
|---|--|--------------------------------|---------------------------------------|
| Indicators | 0.000 01 in resolution 0.0001 in resolution | 130 μin 140 μin | Gage blocks Adjustable height gage |
| | 0.0005 in 0.001 in | 300 μin 590 μin | Indicator calibrator |
| Micro Hites ³ and Height Gages ³ | Up to 48 in | (84 + 4L) μin (60 + 3L) μin | Gage blocks Standard reference bar |
| Micrometers | Up to 60 in | (0.6R + 15L) μin | Gage blocks |
| Ring Gages | (0.25 to 12) in | (33 + 3.0L) μin | ID/OD comparator and gage blocks |
| Surface Roughness Gage | 20 μin Ra 120 μin Ra | 2.7 μin Ra 3.4 μin Ra | Surface patch |

II. Mechanical

| Parameter/Equipment | Range | CMC ^{2,6} (±) | Comments |
|---------------------|--|-------------------------|---------------|
| Torque Wrenches | (5 to 50) in·lbf (40 to 400) in·lbf (100 to 1000) in·lbf | 2.0 % 2.0 % 2.0 % | Torque tester |
| | (25 to 250) ft·lbf (60 to 600) ft·lbf | 2.0 % 2.0 % | |

¹ This laboratory offers commercial calibration service.

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 of 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 CMC of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device, to the environment (if the calibration is performed in the field) 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 CMC, L is the numerical value of the nominal length of the device measured in inches, R is the resolution of the device measured in micro inches, % FS is the percent of the full scale.

⁵ This scope meets A2LA's *P112 Flexible Scope Policy*.

⁶ In the statement of CMC, percentages are percentage of reading, unless otherwise indicated.



Accredited Laboratory

A2LA has accredited

DIXON & RYAN CORP.

Royal Oak, MI

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 28th day of February 2020.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1564.01
Valid to February 28, 2022

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