SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION

Valid To: June 30, 2027 Certificate Number: 6553.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the organization's compliance with R205 – A2LA's Calibration Program Requirements), accreditation is granted to this laboratory to perform the following calibrations[1, 5]:

I. Dimensional

Parameter/Equipment	Range	CMC[2] (±)	Comments
Length[3] – Non-Contact Cross Head/Extensometers			
Displacement	Up to 1000 mm	0.09 mm	Laser interferometer
	Up to 500 mm Up to 1000 mm	0.29 mm 0.29 mm	Displacement meter, QS-54
Displacement Gauge	Up to 1000 mm	0.081 mm	Laser interferometer, QS-52

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II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Electrical Calibration of Thermometer Indicators – Generate & Measure			
PT 100	(-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	0.5 °C 0.5 °C 0.5 °C 0.5 °C	QS-60
Type K	(-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	0.6 °C 0.6 °C 0.6 °C 0.6 °C	
Type T	(-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	0.67 °C 0.67 °C 0.67 °C 0.67 °C	

III. Mechanical

Parameter/Equipment	Range	CMC[2, 4, 6] (±)	Comments
Force – Measuring Equipment			
Compression	(98.1 to 98.1) N (98.1 to 196.1) N (196.1 to 294.2) N (294.2 to 392.3) N (392.3 to 490.3) N (490.3 to 588.4) N (588.4 to 686.5) N (686.5 to 784.5) N (784.5 to 882.6) N (882.6 to 980.7) N (980.7 to 1961.3) N (1961.3 to 2942.0) N (2942.0 to 3922.7) N (3922.7 to 4903.3) N (4903.3 to 5884.0) N (5884.0 to 6864.7) N (6864.7 to 7845.3) N (7845.3 to 8826.0) N (8826.0 to 9806.7) N	0.50 % 0.30 % 0.17 % 0.13 % 0.11 % 0.12 % 0.12 % 0.099 % 0.092 % 0.18 % 0.099 % 0.068 % 0.053 % 0.052 % 0.047 % 0.042 % 0.039 % 0.035 % 0.035 %	QS-44, HBM/C3H3 1 ton load cell

Parameter/Equipment	Range	CMC[2, 4, 6] (±)	Comments
Force – Measuring Equipment (cont)			
Compression	9806.7 N (9806.7 to 19 613.3) N (19 613.3 to 29 420.0) N (29 420.0 to 39 226.6) N (39 226.6 to 49 033.3) N (49 033.3 to 58 839.9) N (58 839.9 to 68 646.6) N (68 646.6 to 78 453.2) N (78 453.2 to 88 259.9) N (88 259.9 to 98 066.5) N	0.37 % 0.21 % 0.15 % 0.12 % 0.098 % 0.087 % 0.082 % 0.082 % 0.076 % 0.078 %	QS-44 HBM/C3H3 10 ton load cell
	49 033 N (49 033 to 98 067) N (98 067 to 147 100) N (147 100 to 196 133) N (196 133 to 245 166) N (245 166 to 294 200) N (294 200 to 343 233) N (343 233 to 392 266) N (392 266 to 441 299) N (441 299 to 490 333) N	0.51 % 0.28 % 0.20 % 0.16 % 0.14 % 0.13 % 0.11 % 0.097 % 0.095 % 0.092 %	QS-44 HBM/C3H3 50 ton load cell
Tension	(98.1 N) Fixed point (98.1 to 196.1) N (196.1 to 294.2) N (294.2 to 392.3) N (392.3 to 490.3) N (490.3 to 588.4) N (588.4 to 686.5) N (686.5 to 784.5) N (784.5 to 882.6) N (882.6 to 980.7) N (980.7 to 1961.3) N (1961.3 to 2942.0) N (2942.0 to 3922.7) N (3922.7 to 4903.3) N (4903.3 to 5884.0) N (5884.0 to 6864.7) N (6864.7 to 7845.3) N (7845.3 to 8826.0) N (8826.0 to 9806.7) N	0.68 % 0.27 % 0.22 % 0.16 % 0.13 % 0.13 % 0.13 % 0.10 % 0.13 % 0.20 % 0.11 % 0.076 % 0.060 % 0.051 % 0.049 % 0.042 % 0.038 % 0.035 % 0.034 %	QS-44 HBM/C3H3 1 ton load cell

Parameter/Equipment	Range	CMC[2, 4, 6] (±)	Comments
Force – Measuring Equipment (cont)			
Tension	9806.7 N (9806.7 to 19 613.3) N (19 613.3 to 29 420.0) N (29 420.0 to 39 226.6) N (39 226.6 to 49 033.3) N (49 033.3 to 58 839.9) N (58 839.9 to 68 646.6) N (68 646.6 to 78 453.2) N (78 453.2 to 88 259.9) N (88 259.9 to 98 066.5) N	0.45 % 0.20 % 0.16 % 0.12 % 0.090 % 0.089 % 0.082 % 0.071 % 0.073 % 0.068 %	QS-44 HBM/C3H3 10 ton load cell
	49 033 N (49 033 to 98 067) N (98 067 to 147 100) N (147 100 to 196 133) N (196 133 to 245 166) N (245 166 to 294 200) N (294 200 to 343 233) N (343 233 to 392 266) N (392 266 to 441 299) N (441 299 to 490 333) N	0.51 % 0.26 % 0.18 % 0.14 % 0.13 % 0.11 % 0.095 % 0.086 % 0.085 % 0.085 %	QS-44 HBM/C3H3 50 ton load cell
Force – Universal Testing Machine[3]			
Compression	(9.81 to 98.1) N (98.1 to 980.7) N (980.7 to 9806.7) N (4903.3 to 49 033) N (9806.7 to 98 067) N (49 033 to 490 333) N	0.14 N 1.5 N 6.0 N 51 N 79 N 0.39 kN	QS-46 – load cell
Tension	(9.81 to 98.1) N (98.1 to 980.7) N (980.7 to 9806.7) N (4903.3 to 49 033) N (9806.7 to 98 067) N (49 033 to 490 333) N	0.12 N 0.8 N 7.4 N 50 N 79 N 0.7 kN	
Speed – Measure[3]	Up to 1000 mm/min (1000 to 2000) mm/min	0.76 mm/min 4 mm/min	Laser interferometer with timer, QS-62

Parameter/Equipment	Range	CMC[2] (±)	Comments
Torque – Torque Sensor Clockwise/Counter-Clockwise	 Up to 5 N·m (5 to 9) N·m (9 to 14) N·m (14 to 18) N·m (18 to 23) N·m	 0.045 N·m 0.052 N·m 0.052 N·m 0.050 N·m 0.054 N·m	 QS-50

IV. Thermodynamics

Parameter/Equipment	Range	CMC[2] (±)	Comments
Temperature – Platinum Resistance Thermometer	 (-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	 0.12 °C 0.12 °C 0.12 °C 0.12 °C	 QS-56
Temperature – Thermocouple Type K Type T	 (-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C (-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	 0.12 °C 0.12 °C 0.12 °C 0.12 °C 0.13 °C 0.12 °C 0.12 °C 0.12 °C	 QS-56, platinum resistance thermometer
Temperature – Climate Chambers[3]	(-70 to 0) °C (0 to 50) °C (50 to 200) °C (200 to 300) °C	2.1 °C 1.2 °C 3 °C 5 °C	QS-58

[1] This laboratory offers commercial and field calibration services.

[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] 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, repeatability) 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] The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

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

[6] In the statement of CMC, percentage (%) refers to percent of reading, unless otherwise noted.

Accredited Laboratory

A2LA has accredited

EKTRON TEK CO., LTD.

Changhua, Taiwan, R.O.C.

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 9th day of July 2025.

Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 6553.01
Valid to June 30, 2027

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