



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

**PIONEER INDUSTRIAL LABORATORIES COMPANY**  
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**CALIBRATION**

Valid To: July 31, 2026

Certificate Number: 4913.04

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<sup>1,6</sup>:

**I. Chemical**

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
pH Meter	4.0 pH 7.0 pH 10.2 pH	0.0065 pH 0.0073 pH 0.0082 pH	Standard buffer solutions
Conductivity Meter (Fixed Points)	84 µS/cm 1413 µS/cm	0.0059 µS/cm 0.82 µS/cm	Standard conductivity solutions

**II. Dimensional**

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Caliper (Vernier, Dial & Digital)	Up to 300 mm	19 µm	Step gage, gage blocks (slip gauges)
Height Gauge (Vernier, Dial, Digital)	Up to 600 mm	11 µm	Gage blocks (slip gauges), surface plate
Dial Indicator/Gauge	Up to 30 mm	5.8 µm	Gage blocks (slip gauges)

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Micrometers (Digital & Mechanical)	Up to 25 mm	0.79 μm	Gage blocks (slip gauges)
LVDT Transducer <sup>3</sup>	Up to 50 mm	4.3 μm	Gage blocks (slip gauges)
Pin Gauge	Up to 10 mm	1.5 μm	Digital micrometer
Plain Plug Gauge	Up to 25 mm	1.9 μm	Digital micrometer
Feeler Gauge	Up to 2 mm	1.1 μm	Digital micrometer
Thickness Gauge (Mechanical & Electronic)	Up to 50 mm	6.4 μm	Gage blocks (slip gauges)
Caliper Checker	Up to 300 mm	18 μm	Height gauge
Straight Edge Length Flatness Height	3 m (0.04 to 1) mm Up to 50 mm	0.39 mm 0.000 95 mm 0.018 mm	Length measuring tool Feeler gauge Height gauge
Length Measurement Measuring Length of:  Soil Compact Los Angeles Casagrande Asphalt compactor Resilience Tester	Up to 300 mm  500 mm 2000 mm 300 mm 500 mm Up to 300 mm	10 μm  0.16 mm 0.26 mm 0.023 mm 0.16 mm 0.073 mm	Digital caliper, steel ruler, measuring tape

### III. Mechanical

Parameter/Equipment	Range	CMC <sup>2, 7</sup> (±)	Comments
Pressure – Measuring Instruments <sup>3</sup>			
Pneumatic Gauge Vacuum <sup>3</sup>	(-0.85 to 0) bar	0.029 bar	Digital pressure gauges
Hydraulic Gauge Pressure <sup>3</sup>	Up to 1000 bar	0.11 bar	
Scales & Balances <sup>3</sup>	Up to 200 g (0.2 to 10) kg (10 to 35) kg (35 to 1000) kg	0.62 mg 55 mg 510 mg 0.026 kg	M-2 Class weights, F-1 Class weights
Batching Plant			
Weighing Scale	Up to 5000 kg	25 g	M-1 Class weights
Admixture Scale	Up to 10 L	2.2 ml	Graduated cylinder
Weighing Bridges	Up to 10 000 kg	18 kg	Class M1 weight set
Force, Compression <sup>3</sup> Measuring Equipment – Fixed Points	5 kN 10 kN 20 kN 30 kN 40 kN 50 kN 60 kN 90 kN 120 kN 150 kN 180 kN 210 kN 240 kN 270 kN	0.089 kN 0.21 kN 0.21 kN 0.19 kN 0.34 kN 0.39 kN 0.44 kN 0.57 kN 0.91 kN 1.2 kN 1.4 kN 1.6 kN 1.8 kN 2.0 kN	ASTM E-74, load cells

Parameter/Equipment	Range	CMC <sup>2, 4, 7</sup> (±)	Comments
Force, Compression <sup>3</sup> – Measuring Equipment – Fixed Points (cont)	300 kN 600 kN 900 kN 1200 kN 1500 kN 1800 kN 2100 kN 2400 kN 2700 kN 3000 kN	0.34 kN 0.35 kN 0.36 kN 0.62 kN 0.83 kN 1.0 kN 1.0 kN 1.1 kN 1.1 kN 1.1 kN	ASTM E-74, load cells
Mass – Measure	Up to 200 g (0.2 to 5) kg (5 to 35) kg	0.26 mg 66 mg 130 mg	Balance & F-1 Class weights
Mass – Measure  Soil Compact Los Angeles Casagrande Asphalt compactor	Up to 20 kg  5 kg 5 kg 200 g 5 kg	130 mg  0.064 g 0.10 g 0.000 22 g 0.092 g	Calibrated balance
Air Content Meter  5 & 7 L	5 % 10 % 15 %	3.3 % 3.3 % 3.3 %	1 L calibrated vessel graduated cylinder
Rotational Speed <sup>3</sup> – Measure	Up to 100 rpm Up to 500 rpm Up to 1000 rpm Up to 5000 rpm Up to 10 000 rpm	0.87 rpm 1.0 rpm 1.3 rpm 2.2 rpm 3.6 rpm	Tachometer
Graduated Cylinder	Up to 10 ml Up to 100 ml Up to 250 ml Up to 1000 ml	0.12 ml 0.60 ml 0.61 ml 2.9 ml	Balance

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Pipettes	10 µl 20 µl 30 µl 40 µl 50 µl 100 µl 200 µl 300 µl 500 µl 700 µl 800 µl 900 µl 1000 µl	0.61 µl 0.64 µl 0.65 µl 0.66 µl 0.58 µl 0.59 µl 0.58 µl 0.60 µl 0.59 µl 0.59 µl 0.59 µl 0.58 µl 0.58 µl	Analytical balance

#### IV. Radiation

Parameter/Equipment	Range	CMC <sup>2, 4</sup> (±)	Comments
Radiation Leak <sup>3</sup> Tests – Wipe Method	Alpha Radiation From (0.01 to 28.5) Bq  Beta Radiation From (0.1 to 28.5) Bq	0.76 Bq  5.6 Bq	DOZA UMF-2000, alpha/beta gauges, radiometer
Density Blocks  Moisture Blocks	(1100 to 2800) kg/m <sup>3</sup>  (0 to 750) kg/m <sup>3</sup>	0.04 kg/m <sup>3</sup>  0.83 %	Calipers, weighing scales, nuclear gauge
Nuclear Surface Moisture & Density Gauge Calibration –  Density  Moisture	  (1758.8 to 2725) kg/m <sup>3</sup>  (0 to 800) kg/m <sup>3</sup>	  0.10 %  0.83 %	In accordance with ASTM D7759  Range may vary by +/-32 kg/m <sup>3</sup> per ASTM D7759

Parameter/Equipment	Range	CMC <sup>2,4</sup> (±)	Comments
Radiation Exposure, Meters – Dosimeters	(0 to 3.30) μSv (3.4 to 5.4) μSv (5.5 to 10.64) μSv (10.64 to 843.4) μSv (843.5 to 5000) μSv	8.3 % 6.6 % 5.7 % 5.2 % 5.5 %	DOZA MK-01/18 dosimeter CS-137 source

#### V. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2,4</sup> (±)	Comments
Temperature – Measuring Instruments			
Temperature Indicators, Thermometers (Liquid in Glass, Analog & Digital, Data Loggers w/ Probes, Recorders)	(-40 to 120) °C (50 to 250) °C (> 200 to 400) °C (> 400 to 650) °C	0.26 °C 0.42 °C 0.44 °C 0.48 °C	Thermocouples with indicator & dry blocks
	(10 to 50) °C	0.20 °C	Environmental chamber with data logger
Thermocouple Probes	(-40 to 400) °C (50 to 650) °C	0.40 °C 0.45 °C	Thermocouples with indicator & dry blocks
Thermo-Hygrometer	(0 to 50) °C (10 to 90) % RH	0.29 °C 0.96 % RH	Humidity chamber, thermo-hygrometer
Temperature –Measure <sup>3,5</sup>			
Ovens, Furnaces, Liquid Baths, Sterilizers, Freezers, Incubators	(-40 to 1200) °C	1.7 °C	12 channels data logger with thermocouples

## VI. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Stop Watches	Up to 5 Hour	0.74 s	Stopwatch

<sup>1</sup> This laboratory offers commercial calibration and field calibration services.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> In the statement of CMC, % represents % of reading unless otherwise noted.

<sup>5</sup> The contributions from the "best existing device" are not included in the CMC claim.

<sup>6</sup> This scope meets A2LA's P112 Flexible Scope Policy.

<sup>7</sup> 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.



# Accredited Laboratory

A2LA has accredited

## PIONEER INDUSTRIAL LABORATORIES COMPANY

*Al Riyadh, SAUDI ARABIA*

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 25<sup>th</sup> day of July 2024.

A blue ink signature of Mr. Trace McIntruff.

Mr. Trace McIntruff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 4913.04  
Valid to July 31, 2026  
Revised October 29, 2024

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