SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

ACCREDITED LABS DBA QUALITY CONTROL SERVICES
5775 SE International Way
Milwaukie, OR 97222
Brett Bohannon Phone: 208 860 3981

CALIBRATION

Valid To: September 30, 2027 Certificate Number: 1550.01

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, 9]:

I. Chemical

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
pH Meter[3] –			
pH	4 pH 7 pH 10 pH	0.051 pH 0.029 pH 0.053 pH	Standard pH solutions
Electrical Simulation of pH Indicator	(414 to -414) mV	0.32 mV	DMM
Conductivity Meters[3]	10 µS/cm 100 µS/cm 1000 µS/cm 10 000 µS/cm	0.68 µS/cm 4.2 µS/cm 15 µS/cm 140 µS/cm	Standard conductivity solutions
Dissolved Oxygen Meters[3] – Fixed Points	0 % DO 100 % DO	0.32 % DO 0.67 % DO	Saturated solution at 25 °C

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Turbidimeters[3]	(< 0.1 to 1) NTU (1 to 20) NTU (21 to 200) NTU (201 to 1000) NTU (1001 to 4000) NTU	0.083 NTU 0.87 NTU 2.2 NTU 5.0 NTU 21 NTU	Formazin nephelometric turbidity unit standards
Refractometers[3]	1.3330 $^{n}_{D}$ 1.399 86 $^{n}_{D}$ 1.468 39 $^{n}_{D}$ 0 % Brix 40 % Brix 70 % Brix	0.000 45 $^{n}_{D}$ 0.000 43 $^{n}_{D}$ 0.000 41 $^{n}_{D}$ 0.33 % Brix 0.23 % Brix 0.17 % Brix	$^{n}_{D}$ is a unit for refractive index % Brix is a unit for refractive index specific to sugar solutions Accredited refractive index standards
Spectrophotometers[3] Transmittance at (440 to 635) nm Wavelength	 10 % *T* 50 % *T* 400 nm peak 525 nm peak 780 nm peak	 0.11 % *T* 0.60 % *T* 0.76 nm 0.76 nm 0.98 nm	 Spectronic glass filter standards *T* = transmittance

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2] (±)	Comments
Electrical Simulation of Thermocouple Indicators – Type J Type K Type S Type T	 (-200 to 800) °C (-200 to 1300) °C (0 to 1500) °C (-200 to 400) °C	 0.31 °C 0.32 °C 0.38 °C 0.40 °C	 Fluke 702 / 726 process calibrator

III. Fluid Quantities

Parameter/Equipment	Range	CMC[2] (±)	Comments
Fume Hoods – Air Velocity Only[3]	(60 to 120) ft/min	19 ft/min	Extech 407119A anemometer
Volumetric Apparatus[3] – Including But Not Limited To: Pipettes, Syringes, Dispensers, & Burettes	(0.1 to 0.5) µL (0.5 to 2.5) µL (2.5 to 5) µL (5 to 10) µL (10 to 100) µL (100 to 500) µL (500 to 1000) µL (1000 to 2500) µL (2500 to 5000) µL (5 to 10) mL (10 to 25) mL (25 to 50) mL	0.061 µL 0.050 µL 0.065 µL 0.054 µL 0.16 µL 0.73 µL 0.99 µL 1.4 µL 3.3 µL 9.4 µL 9.6 µL 12 µL	Gravimetric method using: analytical balances / precision balances

IV. Mechanical

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Balances and Scales[3]	(1 to 3) mg (> 3 to 50) mg (> 50 to 100) mg (> 100 to 200) mg (> 200 to 500) mg > 500 mg to 3 g (> 3 to 5) g (> 5 to 10) g (> 10 to 30) g (> 30 to 50) g (> 50 to 100) g (> 100 to 200) g (> 200 to 300) g (> 300 to 400) g (> 400 to 500) g > 500 g to 1 kg (> 1 to 2) kg (> 2 to 3) kg (> 3 to 5) kg (> 5 to 10) kg (> 10 to 30) kg (> 30 to 50) kg	0.000 73 mg 0.000 86 mg 0.0013 mg 0.0030 mg 0.0032 mg 0.0057 mg 0.0075 mg 0.010 mg 0.017 mg 0.031 mg 0.064 mg 0.077 mg 0.14 mg 0.16 mg 0.59 mg 0.76 mg 1.3 mg 1.8 mg 2.4 mg 9.3 mg 82 mg 83 mg	ASTM Class 1 weights

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Balances and Scales[3] – (cont.)	(> 50 to 100) kg (> 100 to 300) kg	87 mg 820 mg	ASTM Class 6 weights
Moisture Analyzers[3]	1 mg to 10 g (> 10 to 20) g (> 20 to 50) g (> 50 to 100) g (> 100 to 200) g (> 200 to 400) g (> 400 to 500) g	0.082 mg 0.084 mg 0.093 mg 0.10 mg 0.11 mg 0.83 mg 1.0 mg	ASTM Class 1 weights plus temperature measurement of heating element (refer to parameter temperature – measure)
Scales (Class III)[3]	(0.001 to 2500) lb (> 2500 to 5000) lb	0.82*R* 1.0*R*	NIST Class F weights NIST Class F weights w/ substitution weights
Rotational Speed[3] –			
Tachometers	(50.0 to 100.0) rpm (100.1 to 999.9) rpm (1000.0 to 2000.0) rpm (2000.1 to 5000.0) rpm (5000.1 to 9999.9) rpm 10 000 rpm (10 001 to 20 000) rpm (20 001 to 30 000) rpm (30 001 to 50 000) rpm (50 001 to 100 000) rpm	0.082 rpm 0.15 rpm 0.59 rpm 1.2 rpm 1.5 rpm 1.6 rpm 2.5 rpm 2.9 rpm 4.6 rpm 8.9 rpm	Strobe / tachometer
Rotational Devices, Including Centrifuges, Shakers, Stirrers, Etc.	(50 to 5000) rpm (5000 to 10 000) rpm (10 001 to 20 000) rpm (20 001 to 30 000) rpm	6.0 rpm 6.1 rpm 6.6 rpm 6.8 rpm	
Mass[6]	1 mg (> 1 to 2) mg (> 2 to 3) mg (> 3 to 5) mg (> 5 to 10) mg (> 10 to 20) mg (> 20 to 30) mg (> 30 to 50) mg (> 50 to 100) mg (> 100 to 200) mg (> 200 to 300) mg	0.000 88 mg 0.0011 mg 0.000 94 mg 0.0011 mg 0.0012 mg 0.0013 mg 0.0013 mg 0.000 92 mg 0.000 91 mg 0.000 83 mg 0.000 92 mg	Performed in accordance with NIST.IR.5672 and NIST.IR.6969

Parameter/Equipment	Range	CMC[2] (±)	Comments
Mass[6] – (cont.)	(> 300 to 500) mg > 500 mg to 1 g (> 1 to 2) g (> 2 to 3) g (> 3 to 5) g (> 5 to 10) g (> 10 to 20) g (> 20 to 30) g (> 30 to 50) g (> 50 to 100) g (> 100 to 200) g (> 200 to 300) g (> 300 to 500) g > 500 g to 1 kg (> 1 to 2) kg (> 2 to 3) kg (> 3 to 5) kg (> 5 to 10) kg (> 10 to 20) kg (> 20 to 30) kg	0.0010 mg 0.0014 mg 0.0017 mg 0.0032 mg 0.0043 mg 0.0083 mg 0.0080 mg 0.010 mg 0.014 mg 0.023 mg 0.054 mg 0.068 mg 0.066 mg 0.080 mg 0.53 mg 0.72 mg 1.0 mg 5.0 mg 13 mg 14 mg	Performed in accordance with NIST.IR.5672 and NIST.IR.6969

V. Thermodynamics

Parameter/Equipment	Range	CMC[2, 8] (±)	Comments
Thermometers and Temperature Sensors –			
Liquid-In-Glass Thermometers[7]	(-80 to -1) °C (0 to 150) °C (151 to 400) °C	0.078 °C 0.042 °C 0.35 °C	PRTs with digital readouts, temperature baths
RTD and Thermistor Sensors	(-80 to -1) °C (0 to 150) °C (151 to 400) °C (401 to 600) °C	0.039 °C 0.030 °C 0.34 °C 1.3 °C	
Thermocouple Thermometers	(-80 to -1) °C (0 to 150) °C (151 to 400) °C (401 to 600) °C (601 to 1000) °C	0.098 °C 0.074 °C 0.36 °C 1.5 °C 3.8 °C	 Thermocouple w/ readout and furnace

Parameter/Equipment	Range	CMC[2, 8] (±)	Comments
Infrared (IR) Thermometers	(-15 to < 0) °C (0 to < 50) °C (50 to < 100) °C (100 to 120) °C (> 120 to 200) °C (> 200 to 350) °C (> 350 to 500) °C	0.94 °C 0.74 °C 0.44 °C 0.96 °C 1.5 °C 2.7 °C 4.0 °C	Fluke 4180 IR calibrator Fluke 4181 IR calibrator
Temperature Measure[3] – Including But Not Limited To: Freezers, Refrigerators, Cold Boxes, Incubators, Environmental Chambers, Water Baths, Autoclaves, Hot Plates, Furnaces, & Ovens	(-80 to -1) °C (0 to 150) °C (151 to 400) °C (401 to 600) °C (601 to 1000) °C	0.33 °C 0.29 °C 0.79 °C 3.7 °C 8.1 °C	Digital Thermometer
Relative Humidity[3] – Measure Thermo Hygrometers	(40 to 60) % RH (15 to 25) °C	1.2 % RH 0.09 °C	Fluke 1620A meter with 2626H sensor

[1] This laboratory offers commercial calibration service and field 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 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 Calibration and Measurement Capability Uncertainty (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 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] For the parameter Dissolved Oxygen, DO represents "Dissolved Oxygen" and for the parameter Turbidity, NTU represents Nephelometric Turbidity Units.

[5] For the parameters Analytical and Precision Balances, Scales and Moisture Analyzers and Moisture Balances, *R* represents the numerical value of the resolution of the device.

[6] English/Avoirdupois Mass values will be determined using accepted international conversion factors.

[7] CMC uncertainties based on total immersion thermometers.

[8] 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.

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

Accredited Laboratory

A2LA has accredited

ACCREDITED LABS DBA
QUALITY CONTROL SERVICES

Milwaukie, OR

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 the requirements of ANSI/NCSL Z540-1-1994 and 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 23rd day of October 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1550.01
Valid to September 30, 2027
Revised August 17, 2026

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