



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION

Valid To: November 30, 2022

Certificate Number: 5874.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1,8}:

I. Chemical

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
pH Meters ³ –			
pH	4 pH, 7 pH, 9 pH	0.021 pH	Standard pH solutions
Electrical Simulation of pH Indicator	Up to 14 pH	0.0022 pH	Simulator Metrohm
Conductometers ³ –			
Conductivity	100 µS/cm	0.72 µS/cm	Standard solution
Electrical Simulation (Resistance)	1 µS/cm 3 µS/cm 10 µS/cm 30 µS/cm 100 µS/cm 300 µS/cm 1000 µS/cm 2 mS/cm 3 mS/cm 10 mS/cm 30 mS/cm 100 mS/cm 300 mS/cm 500 mS/cm	0.07 µS/cm 0.11 µS/cm 0.16 µS/cm 0.34 µS/cm 0.77 µS/cm 5.9 µS/cm 12 µS/cm 0.098 mS/cm 0.13 mS/cm 0.15 mS/cm 0.48 mS/cm 0.65 mS/cm 0.85 mS/cm 1.5 mS/cm	Resistance decade box 1040, time electronics

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
Temperature Controllers (RTD, Thermocouples) ³ – Electrical Simulation			EURAMET/cg-11
RTD	(-200 to 850) °C	0.15 °C	Simulator Druck
Thermocouples			
Type J	(-210 to 1200) °C	0.14 °C	
Type K	(-270 to 1370) °C	0.13 °C	
Type N	(-270 to 1300) °C	0.24 °C	
Type R	(-50 to 1760) °C	0.25 °C	
Type S	(-50 to 1740) °C	0.25 °C	
Type T	(-270 to 400) °C	0.18 °C	
pH Meters, Ion Meters & Titrators ³ –			
Electrical Simulation (Voltage)	(-2000 to -700) mV (-700 to 0) mV (0 to 400) mV (400 to 2000) mV	0.21 mV 0.15 mV 0.17 mV 0.21 mV	Simulator Metrohm
Electrical Simulation Temperature – Resistance (PT100, PT1000)	(0 to 25) °C (25 to 100) °C	0.064 °C 0.076 °C	Resistance decade box 1040, time electronics

III. Fluid Quantities

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
Volume Measurements Gravimetric Method ^{3,5} –			Balance
Pipettes	(2 to 10) µl*	0.13 µl	ISO 8655-1, ISO 8655-2, ISO 8655-3, ISO 8655-4, ISO 8655-5, ISO 8655-6 *for this range, measurement for nominal value of more than 10 µl (note a of the table 1 of ISO 8655-6).
Burettes	20 µl	0.13 µl	
Dispensers	50 µl	0.15 µl	
Dilators	100 µl	0.19 µl	
	200 µl	0.21 µl	
	500 µl	0.28 µl	
	1 ml	0.45 µl	
	2 ml	1.2 µl	
	5 ml	2.3 µl	
	10 ml	2.9 µl	
	20 ml	5.7 µl	
	25 ml	7.1 µl	
	50 ml	9.1 µl	
	100 ml	14 µl	

IV. Mechanical

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments ⁶
Scales & Balances ³ –	Up to 10 kg R = 0.000 001 g R ≤ 0.001 g R > 0.001 g (10 to 20) kg (20 to 50) kg (50 to 75) kg	4R 2R 0.8R 1.4R 2.5R 3.6R	Weights class E2, M1 (OIML R111) OIML R76 USP 41
Titration ³ – Spindle Travel	Up to 10 mm (10 to 50) mm (50 to 100) mm	0.007 mm 0.010 mm 0.012 mm	Dial indicator
Pressure ³ – Pressure Gages, Pressure Indicators, Pressure Transmitters			Pressure transducer OIML/R 101; EA-10/17
Absolute	(0 to 0.7) MPa	0.5 kPa	
Vacuum	(0 to -95) kPa	0.5 kPa	
Pneumatic Gage & Differential	(0 to 100) Pa (100 to 250) Pa (0 to 2) MPa (2 to 7) MPa	0.35 Pa 0.4 Pa 0.7 kPa 0.89 kPa	
Hydraulic	(2 to 7) MPa (7 to 20) MPa	0.89 kPa 4.3 kPa	

V. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
Temperature Measuring Instruments & Devices ³ –			ISO 1770, ISO 1771, ASTM E1, ASTM E644, ASTM E1137, ASTM E220
Thermocouples	(-50 to -35) °C (-35 to 0) °C (0 to 100) °C (100 to 300) °C	0.25 °C 0.16 °C 0.19 °C 0.23 °C	SPRT, RTD probes

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments ⁶
Temperature Measuring Instruments & Devices ³ – (cont)			ISO 1770, ISO 1771, ASTM E1, ASTM E644, ASTM E1137, ASTM E220
RTD (PRT) Probes	(-50 to 0) °C (0 to 20) °C (20 to 100) °C (100 to 300) °C	0.08 °C 0.05 °C 0.07 °C 0.10 °C	SPRT, RTD probes
Liquid-In-Glass Thermometers	(-35 to 0) °C (0 to 20) °C (20 to 100) °C	0.09 °C 0.085 °C 0.095 °C	
Mechanical & Electrical Indicators	Up to 100 °C (100 to 300) °C	0.19 °C 0.23 °C	
Temperature – Measure ³			
Liquid Baths, Heaters, Rotavapors ¹⁰	Up to 20 °C (20 to 200) °C (200 to 300) °C	0.21 °C 0.24 °C 0.29 °C	SPRT, RTD probes thermocouples
Climatic Chambers ³ – Furnaces, Freezers, Incubators, Refrigerators, Autoclaves (validation), Vehicles for Food Transportation ⁹ Including Uniformity	(-50 to 0) °C (0 to 20) °C (20 to 200) °C (200 to 300) °C (300 to 600) °C (600 to 800) °C	0.18 °C 0.19 °C 0.26 °C 1.2 °C 2.7 °C 4.4 °C	DKD-R 5-7 ISO 17665 thermocouples, temperature loggers, probe PT100
Humidity – Measure ³			
Climatic Chambers	(25 to 75) % RH	1.5 % RH	Humidity logger

VI. Time & Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
Rotational Speed, RPM ^{3, 11} – Centrifuges, Shakers	Up to 300 RPM (300 to 600) RPM (600 to 1200) RPM (1200 to 48 000) RPM	0.20 RPM 0.28 RPM 1.5 RPM 11 RPM	Optical tachometer

Parameter/Equipment	Range	CMC ² (±)	Comments ⁶
Timers ³	10 s to 6 h	0.8 s	Stopwatch

¹ This laboratory offers commercial calibration 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) 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, R represents the resolution of the unit under test.

⁵ Calibration by means of balances calibrated by Dr. Golik.

⁶ Calibration can be also performed to manufacturer or specific customer requirements.

⁷ 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.

⁸ This scope meets A2LA's *P112 Flexible Scope Policy*.

⁹ IS 1291 Israeli standard (Hebrew version) Vehicle for food products transport in a controlled temperature.

¹⁰ Calibration of rotavapors includes RPM testing and vacuum-testing.

¹¹ Calibration of RPM includes OPM (Oscillation Per Minute) testing.



Accredited Laboratory

A2LA has accredited

DR. GOLIK – SCIENTIFIC SOLUTIONS

Tel-Aviv, ISRAEL

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 7th day of October 2020.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5874.01
Valid to November 30, 2022
Revised June 30, 2021

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