



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMCO LABS LTD
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CALIBRATION

Valid To: February 28, 2023

Certificate Number: 6151.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 4}:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Electrical Simulation of Thermocouple ³ –			
Type J	(-200 to 0) °C (0 to 1170) °C	0.40 °C 0.28 °C	Simulator Druck EURAMET/cg-11
Type K	(-200 to -100) °C (-100 to 0) °C (0 to 300) °C (300 to 900) °C (900 to 1300) °C	0.61 °C 0.30 °C 0.21 °C 0.23 °C 0.33 °C	
Type R	(-40 to 600) °C (600 to 1740) °C	0.85 °C 0.44 °C	
Type S	(-40 to 600) °C (600 to 1730) °C	1.4 °C 0.55 °C	
Type T	(-200 to 0) °C (0 to 100) °C (100 to 390) °C	0.31 °C 0.20 °C 0.21 °C	

Parameter/Equipment	Range	CMC ² (±)	Comments
Electrical Simulation of PRT (Chamber Controllers) ³ –			
Pt 50	(-190 to 0) °C (0 to 830) °C	0.14 °C 0.21 °C	Simulator Druck EURAMET/cg-11
Pt 100	(-190 to -100) °C (-100 to 0) °C (0 to 830) °C	0.14 °C 0.14 °C 0.17 °C	
Pt 200	(-190 to 0) °C (0 to 830) °C	0.15 °C 0.21 °C	
Pt 500	(-190 to 0) °C (0 to 830) °C	0.15 °C 0.28 °C	
Pt 1000	(-190 to 0) °C (0 to 390) °C	0.14 °C 0.19 °C	

II. Mechanical

Parameter/Equipment	Range ⁵	CMC ^{2, 5} (±)	Comments
Scales & Balances ³	Up to 30 kg $R = 0.000\,001\text{ g}$ $0.000\,001\text{ g} < R < 0.001\text{ g}$ $R > 0.001\text{ g}$	 $5R$ $2R$ $1.2R$	Weights class E2 (OIML R111) OIML R76 USP 41

III. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Climatic Chambers ³ – (Furnaces, Freezers, Incubators, Food Transportation Vehicles ⁶ , Refrigerators and Pharmaceutical Transportation Vehicles ⁷) Including Uniformity	(-200 to -100) °C (-100 to -80) °C (-80 to 100) °C (100 to 250) °C	0.58 °C 0.53 °C 0.26 °C 0.24 °C	DKD-R 5-7, IS 1291 ⁶ , Ministry of Health procedure 126 ⁷ , thermocouples, temperature loggers, probe PT100
Temperature – Measuring Equipment ³			
Thermocouples	(-80 to 100) °C	0.39 °C	ISO 1770, ISO 1771 ASTM E1, ASTM E644 ASTM E1137, ASTM E220
RTD (PRT) Probes	(-80 to -20) °C (-20 to 100) °C (100 to 250) °C	0.21 °C 0.30 °C 0.30 °C	SPRT, RTD probes:
Liquid-In-Glass Thermometers	(-20 to 0) °C (0 to 100) °C	0.28 °C 0.31 °C	
Mechanical & Electrical Indicators	(-80 to 100) °C	0.39 °C	
Temperature – Measure ³			
Liquid Baths, Heaters	(0 to 100) °C (100 to 250) °C	0.34 °C 0.35 °C	RTD probes, thermocouples

¹ This laboratory offers commercial 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 This laboratory performs field calibration activities for these parameters. 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 This scope meets A2LA's *P112 Flexible Scope Policy*.

⁵ In the statement of CMC, *R* represents the resolution of the unit under test.

⁶ Israeli Standard 1291 - Vehicles for food transport in a controlled temperature.

⁷ Israel's Ministry of health procedure 126 – "Guidance for the storage and transport of pharmaceutical products"



Accredited Laboratory

A2LA has accredited

EMCO LABS LTD

Ashdod, 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 26th day of January 2021.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 6151.01
Valid to February 28, 2023

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