



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

LBCAL SOLUTIONS (PTY) LTD
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CALIBRATION

Valid To: May 31, 2025

Certificate Number: 4067.01

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 RTD Devices ³	(-180 to 150) °C (>150 to 800) °C	0.52 °C 0.54 °C	LCS03/003A, LCS03/005A
Electrical Simulation of TC Devices – Measuring Equipment ³			
Base Metal Thermocouples (Type J and K)	(-100 to 1000) °C	0.95 °C	LCS03/003A
Base Metal Thermocouples (Type T)	(-100 to 350) °C	0.95 °C	
Noble Metal Thermocouples (Type R and S)	(0 to 1500) °C	1.2 °C	



II. Mechanical

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Pneumatic Pressure – Measuring Equipment ³			
Absolute Pressure	(15 to 800) kPa	3.1 kPa	LCS13/015A
Gauge Pressure	(-85 to 2000) kPa	2.1 kPa	LCS03/011A
Differential Pressure	(0 to 250) Pa (250 to 2000) Pa	4.0 Pa 11 Pa	LCS03/012A
Pipettes	(2 to 20) µL (>20 to 100) µL (>100 to 500) µL (>500 to 1000) µL (>1000 to 5000) µL (>5000 to 10 000) µL (>10 000 to 25 000) µL (>25 000 to 50 000) µL	0.8 µL 1.1 µL 2.0 µL 6.6 µL 29 µL 52 µL 81 µL 85 µL	LCS03/017A (single channel), LCS09/028A (multi-channel)
Scales and Balances ³	(1 to 5) mg (>5 to 500) mg (>0.5 to 200) g (>200 to 3000) g	0.033 mg 0.082 mg 0.97 mg 0.52 g	LCS04/016A
Mass Pieces	1 mg to 100 g (100 to 200) g (200 to 3000) g	0.06 mg 0.34 mg 0.16 g	LCS20/040A

III. Thermodynamics

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Temperature – Measuring Equipment ³			
Platinum Resistance Thermometers	-80 °C (-30 to 150) °C (>150 to 300) °C	0.41 °C 0.24 °C 0.48 °C	LCS03/001A
Ice Point Reference	0 °C	0.12 °C	LCS07/023A
Infrared Thermometers	(-30 to 150) °C	0.44 °C	LCS20/039A
Liquid in Glass Thermometers	0 °C (25 to 75) °C (>75 to 150) °C (>150 to 250) °C	0.2 °C 0.2 °C 0.3 °C 0.33 °C	LCS11/029A, LCS19/034A
Digital Thermometers	-80 °C (-30 to 150) °C (>150 to 300) °C	0.4 °C 0.22 °C 0.4 °C	LCS03/006A, LCS03/007A
Mechanical (Dial) Thermometers	-80 °C (-30 to 300) °C	1.2 °C 1.2 °C	LCS03/006A
Temperature Loop Line (Sensor and Display)	-80 °C (-30 to 150) °C (>150 to 300) °C	0.4 °C 0.22 °C 0.4 °C	LCS03/004A, LCS08/027A, LCS04/026A
Data Loggers	(-80 to -25) °C (>-30 to 150) °C (>150 to 300) °C	0.70 °C 0.41 °C 0.80 °C	LCS03/006A, LCS11/030A, LCS13/032A

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Temperature – Measure ³			
Autoclaves	(20 to 150) °C	0.38 °C	LCS03/008A
Environmental Chambers, Sterilizers, Warehouses	(-30 to 150) °C (>150 to 300) °C	0.31 °C 0.5 °C	LCS03/008A, LCS03/010A
Temperature Installations (Ovens, Incubators, Stirred Water Baths, Fridges, Freezers)	(-80 to -25) °C (>-30 to 150) °C (>150 to 300) °C	0.5 °C 0.31 °C 0.5 °C	LCS03/009A, LCS11/010A1, LCS10/025A
Furnaces	(100 to 1000) °C	2 % of range	LCS20/036A, LCS20/037A
Hot Plates	(50 to 300) °C	2 % of reading	LCS20/038A
Relative Humidity – Measuring Equipment ³			
Digital Hygrometers and Data Loggers Fixed Points (15 to 30) °C	10 % RH 35 % RH 50 % RH 65 % RH 75 % RH 95 % RH	1.1 % RH 1.1 % RH 1.4 % RH 1.4 % RH 1.6 % RH 1.6 % RH	LCS03/018A
(15 to 30) °C (10 to 60) °C	(10 to 95) % RH (10 to 95) % RH	3.3 % RH 3.5 % RH	LCS11/030A, LCS13/032A, LCS06/021A
Humidity Mapping Environmental Chambers, Storage Areas	(10 to 90) % RH	3.7 % RH	LCS03/010A, LCS11/010A1

IV. Time & Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Rotational Speed (Contact) ³ Centrifuges, Stirrer	(5 to 500) rpm (>500 to 3000) rpm	2 rpm 5 rpm	LCS03/019A
Rotational Speed – (Non-Contact) ³ Centrifuges, Stirrer	(5 to 1000) rpm (>1000 to 50 000) rpm	1 rpm 6 rpm	LCS05/020A
Timers ³	5 s to 240 min	0.5 s	LCS03/013A

¹ This laboratory offers commercial 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 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

LABCAL SOLUTIONS (PTY) LTD

Kyalami, SOUTH AFRICA

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 23rd day of June 2023.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4067.01
Valid to May 31, 2025
Revised June 27, 2023

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