

# **CERTIFICATE OF ACCREDITATION**

*In terms of section 22(2) (b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-*

**ARCHIMEDES LABORATORY SOLUTIONS CC**  
**Co. Reg No: 2010/064440/23**  
**TEMPERATURE CALIBRATION LABORATORY**

Accreditation Number: **365**

is a South African National Accreditation System accredited Calibration Laboratory  
provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying scope of accreditation  
Annexure "A", bearing the above accreditation number for

## **TEMPERATURE METROLOGY**

The facility is accredited in accordance with the recognised International Standard

**ISO/IEC 17025:2017**

The accreditation demonstrates technical competency for a defined scope and the operation of a  
laboratory quality management system

While this certificate remains valid, the Accredited Facility named above is authorised to use the  
relevant SANAS accreditation symbol to issue facility reports and/or certificates

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**Ms FS Radebe**  
**Acting Chief Executive Officer**

**Effective Date: 26 February 2021**  
**Certificate Expires: 17 December 2025**

## ANNEXURE A

# SCOPE OF ACCREDITATION

## TEMPERATURE METROLOGY

Accreditation Number: 365

<b>Permanent Address of Laboratory:</b> Archimedes Laboratory Solutions cc Temperature Calibration Laboratory 50 9 <sup>th</sup> Avenue Northmead Benoni 1501  <b>Postal Address:</b> P O Box 13752 Northmead 1511  Tel: 082 900 0382 Fax: 086 566 4556 E-mail: <a href="mailto:dion@archlabs.co.za">dion@archlabs.co.za</a> or <a href="mailto:info@archlabs.co.za">info@archlabs.co.za</a>		<b>Technical Signatory:</b> Mr D Keet Mr Z Lloyd  <b>Nominated Representative:</b> Mr D Keet  Issue No.: 08 Date of Issue: 08 August 2022 Expiry Date: 17 December 2025		
ITEM	MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT	RANGE OF MEASURED QUANTITY	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	METHOD / PROCEDURE
<b>1</b>	<b>THERMOMETRY</b>			
<b>1.1</b>	<b>Thermocouples</b>			
1.1.1	Noble Metal	- 40 °C to 200 °C 200 °C to 400 °C 400 °C to 1 000 °C 1 000 °C to 1 200 °C	0,15 K 0,5 K 1,5 K 2,5 K	Calibration by comparison with reference thermometer in a bath, drywell or furnace
1.1.2	Base Metal	- 40 °C to 200 °C 200 °C to 400 °C 400 °C to 1 000 °C 1 000 °C to 1 200 °C	0,15 K 0,4 K 1,5 K 2,5 K	
1.1.3	Compensation and Extension Lead	0 °C to 70 °C	0,2 K	
1.1.4	Surface Temperature Probes	50 °C to 350 °C	5,0 K	Calibration by comparison with a reference thermometer on a hot plate or similar heat source
<b>1.2</b>	<b>Resistance Thermometers</b>			
1.2.1	Platinum Resistance Thermometers (PT 100)	- 40 °C to 200 °C 200 °C to 400 °C 400 °C to 600 °C	0,15 K 0,5 K 1,0 K	Calibration by comparison with a reference thermometer in a bath, drywell or furnace

Original Date of Accreditation: 17 December 2010

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The CMC, expressed as an expanded uncertainty of measurement, is stated as the standard uncertainty of measurement multiplied by a coverage factor  $k = 2$ , corresponding to a confidence level of approximately 95%

**Accreditation Manager**

# ANNEXURE A

Facility No.: 365  
Date of Issue: 08 August 2022  
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1.3	Thermometers			
1.3.1	Liquid-in-glass	- 40 °C to 0 °C 0 °C to 200 °C	0,4 K 0,6 K	Calibration by comparison with a reference thermometer in a bath, drywell, or furnace.
1.3.2	Digital Thermometers	- 40 °C to 200 °C 200 °C to 400 °C 400 °C to 1 000 °C 1 000 °C to 1 200 °C	0,15 K 0,5 K 1,5 K 2,5 K	
1.3.5	Radiation Thermometers	- 40 °C to 200 °C 200 °C to 500 °C	2,0 K 5,0 K	
1.4	Reference Temperature Sources			
1.4.1	Ice Point Reference	0,0 °C	0,05 K	Prepared in a thermally insulated flask using distilled water and Ice.
1.5	Temperature Measuring & Recording			
1.5.1	Thermo-Hygrograph / Data Loggers Internal	- 40 °C to 140 °C	0,5 K	Calibration in a chamber against a reference thermometer.
2	ELECTRICAL SIMULATION OF TEMPERATURE			
2.1	Thermocouple Simulation			
2.1.1	Digital Thermometers / Indicators	- 200 °C to 1 370 °C	0,8 K	Calibration by the sourcing or measurement of voltages equivalent to the thermocouple type.
2.1.2	Temperature Transmitters			
2.1.3	Temperature Calibrators			
2.1.4	Cold Junction Compensation			
2.2	Resistance Simulation			
2.1.1	Digital Thermometers / Indicators	- 200 °C to 850 °C	0,8 K	Calibration by the application or measurement of electrical resistance equivalent to the resistance thermometer type.
2.1.2	Temperature Transmitters			
2.1.3	Temperature Calibrators			
3	TEMPERATURE SOURCES			
3.2	Environmental Monitors			
3.2.1	Heat / Cold Stress Monitors (WBGT Monitors)	0 °C to 60 °C	0,6 K	By comparison to a reference thermometer in a chamber or bath.

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4	TEMPERAURE INSTALLATIONS AND DEVICES			
4.1	Iso-thermal Media evaluation (multi location over time monitoring)			
4.1.1	Steam Sterilizers - Temperature - Pressure - Time	20 °C to 200 °C 0 kPa to 200 kPa 0 to 120 minutes	1,0 K 2,5 kPa 2,0 sec	Calibration by temperature mapping over time using reference thermometers and/or loggers including calibration of the timing and a pressure indicating device where applicable.
4.1.2	Environmental Chambers	- 40 °C to 300 °C	1,0 K	
4.1.3	Furnaces / Drying Ovens Sterilizers			
4.1.4	Fridges & Freezers			
4.1.5	Incubators			
4.1.6	Liquid Baths			
4.2	Temperature Installations (single location)			
4.2.1	Furnaces, Ovens	- 80 °C to 200 °C 200 °C to 450 °C 450 °C to 1 200 °C	1,0 K 2,0 K 5,0 K	By comparison to a reference thermometer located at an appropriate location within the device or installation.
4.2.2	Fridges, Freezers			
4.2.3	Incubators			
4.2.4	Liquid baths			
4.2.5	Other industrial installations			
5	On-site calibration for items 1.1,1.2, 1.3, 1.5, 2 & 4			

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ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

**Accreditation Manager**