

CERTIFICATE OF ACCREDITATION

**BOTSWANA BUREAU OF STANDARDS (INDUSTRIAL METROLOGY UNIT)
NATIONAL METROLOGY INSTITUTE**

Company Registration No. 10022360

Facility Accreditation Number: CAL-3 005

is a SADCAS accredited Calibration Laboratory
provided that all SADCAS conditions are complied with

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

ELECTRICAL METROLOGY

The facility is accredited in accordance with the recognized International Standard

ISO/IEC 17025: 2017

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

*SADCAS is a subsidiary organization of SADC. A memorandum of understanding between SADC and
SADCAS serves as the basis for the recognition of SADCAS by SADC Member States
as a multi-economy accreditation body*



**Eve Christine Gadzikwa
SADCAS Chief Executive Officer**

**Effective Date (Issue No: 1): 30 May 2026
Certificate Expires: 29 May 2031**

ANNEXURE A

SCHEDULE OF ACCREDITATION

ELECTRICAL METROLOGY

Laboratory Accreditation Number: CAL-3 005 (ISO/IEC 17025: 2017)

Permanent Address of Laboratory Botswana Bureau of Standards Industrial Metrology Unit Plot 55745, Block 8, Airport Road Gaborone Botswana			Technical Signatories : Mr K Tshaila (All items) Ms M Gareanna (All items)		
Postal Address Private Bag B048 Gaborone Botswana			Nominated Representative : Mr T S Kajane		
Tel : +267 390 3200/364 5651 Fax : +267 390 3120 Cell : +267 71 384 114 Email : kajane@bobstandards.bw ;			Issue No : 01 Date of Issue : 30 May 2026 Expiry Date : 29 May 2031		
ITEM	MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT	METHOD	NOMINAL RANGE	NOMINAL FREQUENCY	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ($\pm$)
1	DC Voltage				
1.2	DC Voltage Meters	Nanovoltmeter, Microvoltmeter, Multimeter, DC Voltmeter			
1.2.1	Very Low Values (below or equal to 1 mV)	Direct method: IM/EE/TP01	1 mV	DC	$4 \cdot 10^{-4} \cdot U$
1.2.2	Intermediate Values (above 1 mV to 1100 V)	Direct method: IM/EE/TP01	1 mV to 10 mV 10 mV to 100 mV 100 mV to 10 V 10 V to 1000 V	DC	$4 \cdot 10^{-4} \cdot U$ $7 \cdot 10^{-5} \cdot U$ $6 \cdot 10^{-5} \cdot U$ $6 \cdot 10^{-5} \cdot U$
2.	DC Resistance				
2.2	DC Resistance Meters	Microohmmeter, Multimeter, Multifunction Transfer Standard, Resistance Bridge			
2.2.1	Low Values (below or equal to 1 Ω)	Direct method: IM/EE/TP01	1 Ω	DC	$6 \cdot 10^{-4} \cdot R$
2.2.2	Intermediate Values (above 1 Ω to 1 G Ω)	Direct method: IM/EE/TP01	1 Ω to 100 k Ω 100 k Ω to 1 M Ω 1 M Ω to 1 G Ω	DC	$6 \cdot 10^{-4} \cdot R$ $6 \cdot 10^{-4} \cdot R$ $7 \cdot 10^{-3} \cdot R$

Original date of accreditation: 30 May 2026

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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%.

ANNEXURE A

Laboratory Accreditation No: CAL-3 005 (ISO/IEC 17025:2017)

Issue No: 01

Date of Issue: 30 May 2026

Date of Expiry: 29 May 2031

ITEM	MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT	METHOD	NOMINAL RANGE	NOMINAL FREQUENCY	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)
3	DC Current				
3.2	DC Current Meters	Picoammeter, Nanoammeter, Multimeter, Multifunction Transfer Standard, Current Comparator			
3.2.1	Low Values (below or equal to 0.1 mA)	Direct method: IM/EE/TP01	100 µA	DC	$9 \cdot 10^{-3} \cdot I$
3.2.2	Intermediate Values (above 0.1 mA to 20 A)	Direct method: IM/EE/TP01	0,1 A to 20 A	DC	$4 \cdot 10^{-3} \cdot I$
5.	AC Voltage (up to the MHz range)				
5.2	AC Voltage up to 1100 V				
5.2.2	Meters: AC Voltmeter, Multimeter, Multifunction Transfer Standard	Direct method: IM/EE/TP01	1 mV to 100 mV 100 mV to 100 V 100 V to 1000 V	50 Hz to 100 kHz	$9 \cdot 10^{-4} \cdot U$ $7 \cdot 10^{-4} \cdot U$ $9 \cdot 10^{-4} \cdot U$
6.	AC Current				
6.2	AC Current up to 100 A				
6.2.2	Meters: AC Ammeter, Multimeter, Multifunction Transfer Standard	Direct method: IM/EE/TP01	100 µA to 100 mA 100 mA to 1 A 1 A to 20 A	50 Hz to 10 kHz	$5 \cdot 10^{-3} \cdot I$

Original date of accreditation: 30 May 2026

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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%.



Pinkie J Malebe
SADCAS Technical Manager