



UGANDA NATIONAL BUREAU OF STANDARDS

CERTIFICATE OF LABORATORY RECOGNITION

Certificate No: UNBS/LRS/0027

This certificate is valid as per the scope stated in the accompanying schedule of recognition, Annex "A" which is an integral part of the present certificate bearing the above recognition number for

Calibration of Equipment for Mass, Temperature, Relative Humidity, Length, Pressure, Force, Electrical Resistance, Voltage and Current.

In accordance with the recognised International Standard **ISO/IEC 17025:2017**

Being supplied to

MEASUREMENT SOLUTIONS LIMITED

P. O. Box 37542, Kampala.

1st Floor – Konkomebbi House, Kibumbiro Trading Centre, Busega, Kampala.

The recognition demonstrates technical competence and the operation of a laboratory quality management system to perform the calibration as described in the Annex. While this certificate remains valid, the recognised laboratory above is authorised to use the relevant UNBS recognition number to issue facility reports and /or certificates.

Recognition Decision Date: 2022-02-14

Date of original issue: 2022-02-14

Certificate Issue No: 01

Effective Date: 2022-02-14

Expiry date: 2025-02-13

Certificate Issue date: 2022-02-14

Executive Director

UGANDA NATIONAL BUREAU OF STANDARDS



ANNEX A

SCHEDULE OF RECOGNITION – CALIBRATION LABORATORIES

Facility Number	UNBS/LRS/0027	S/N	Technical Signatories	Measurement Quantity/ Calibration Field
Measurement Solutions Limited P.O. Box 37542 - Kampala 1 st floor – Konkomebbi House, Kibumbiro trading Centre, Busega Kampala		1.	Rwashana Simon (Technical Signatory)	<ul style="list-style-type: none"> • Calibration procedure for weighing scales – MSL/OP/6.4/08 • Calibration procedure for weights/mass pieces – MSL/OP/6.4/09 • Calibration procedure for digital thermometer – MSL/OP/6.4/10 • Calibration procedure for infrared thermometers – MSL/OP/6.4/11 • Calibration procedure for pressure gauges – MSL/OP/6.4/13 • Calibration procedure for hygrometer – MSL/OP/6.4/17 • Calibration procedure for dial gauges – MSL/OP/6.4/20 • Calibration procedure for compression machines – MSL/OP/6.4/02 • Calibration procedure for measuring tapes – MSL/OP/6.4/15 • Calibration procedure for Vernier calliper – MSL/OP/6.4/14 • Calibration procedure for torque wrenches – MSL/OP/6.4/06 • Calibration procedure for Electrical Multi-meter resistance – MSL/OP/6.4/27 • Calibration procedure for Electrical Multi-meter DC (Voltage/Current) – MSL/OP/6.4/28 • Calibration procedure for Electrical Multi-meter AC (Voltage/Current) – MSL/OP/6.4/29
		2.	Timothy Semwanga (Technical Signatory)	<ul style="list-style-type: none"> • Calibration procedure for weighing scales – MSL/OP/6.4/08 • Calibration procedure for weights/mass pieces – MSL/OP/6.4/09 • Calibration procedure for measuring tapes – MSL/OP/6.4/15 • Calibration procedure for Vernier calliper – MSL/OP/6.4/14 • Calibration procedure for dial gauges – MSL/OP/6.4/20
		3.	Daniel Magala (Metrologist)	<ul style="list-style-type: none"> • Calibration procedure for weighing scales – MSL/OP/6.4/08 • Calibration procedure for weights/mass pieces – MSL/OP/6.4/09 • Calibration procedure for digital thermometer – MSL/OP/6.4/10

			<ul style="list-style-type: none"> Calibration procedure for infrared thermometers – MSL/OP/6.4/1 Calibration procedure for hygrometer – MSL/OP/6.4/17 Calibration procedure for compression machines – MSL/OP/6.4/02
		4. Patrick Semei (Metrologist)	<ul style="list-style-type: none"> Calibration procedure for weighing scales – MSL/OP/6.4/08 Calibration procedure for weights/mass pieces – MSL/OP/6.4/09 Calibration procedure for measuring tapes – MSL/OP/6.4/15 Calibration procedure for Vernier calliper – MSL/OP/6.4/14 Calibration procedure for dial gauges – MSL/OP/6.4/20 Calibration procedure for Electrical Multi-meter resistance – MSL/OP/6.4/27 Calibration procedure for Electrical Multi-meter DC (Voltage/Current) – MSL/OP/6.4/28 Calibration procedure for Electrical Multi-meter AC (Voltage/Current) – MSL/OP/6.4/29
		5. Julius Lutaaya (Metrologist)	<ul style="list-style-type: none"> Calibration procedure for weighing scales – MSL/OP/6.4/08 Calibration procedure for weights/mass pieces – MSL/OP/6.4/09 Calibration procedure for pressure gauges – MSL/OP/6.4/13
Measurand / Equipment	Range of Measurement or Nominal Size of the Equipment	Calibration and Measurement Capability (CMC) expressed as Uncertainty (\pm)	Method/Procedure
CALIBRATION FIELD – PRESSURE			
Pressure gauges	0-700bars	± 4.57 bars	Calibration procedure for pressure gauges – MSL/OP/6.4/13 Adarsh Master Pressure gauge Model: En-400AIT 1807187
CALIBRATION FIELD-TEMPERATURE			
Liquid in glass thermometer	0 - 300 deg.C	± 1.7 deg.C	Type S Thermocouple Centrocal GMBH
Digital thermometer	-20 - 350 deg.C	± 1.7 deg.C	CALOG Temperature Simulator
Oven	30 - 300 deg.C	± 2.0 deg.C	Type S Thermocouple, Multi channel Temperature recorder (Thermosense UK)
Incubator	30 - 150 deg.C	± 2.0 deg.C	Type S Thermocouple, Multi channel Temperature recorder (Thermosense UK)

Thermo-hygrometer	30 - 70 deg.C	±2.0 deg.C	Type S Thermocouple, Extech RHT 20 Thermo humidity Datalogger
Data loggers	-20 - 70 deg.C	±2.0 deg.C	Type S Thermocouple , Extech RHT, Thermo humidity Datalogger, Multi channel Temperature recorder (Thermosense UK)
CALIBRATION FIELD - LENGTH			
Vernier callipers		±1.3 µm	Grade 2 Gage Blocks DIN 861 Standard
Micro-meters		±1.3 µm	Grade 2 Gage Blocks DIN 861 Standard
Dial gauges		±1.3 µm	Grade 2 Gage Blocks DIN 861 Standard
Tachometers		±1.4 mm/s	Vibration Tachometer – Extech 461880
CALIBRATION FIELD – RELATIVE HUMIDITY			
Hygrometer	0 – 100%	±2.0%	Extech RHT 20 Thermo humidity Datalogger, Trotec BL30 Temperature and Relative Humidity Datalogger
Thermo-hygrometer	0 – 100%	±2.0%	Extech RHT 20 Thermo humidity Datalogger , Trotec BL30 Temperature and Relative Humidity Datalogger
CALIBRATION FIELD – FORCE			
Compression force	0 – 3000KN	±1.12%	Load Cell and Indicator, 80 kN Proving Ring , 3000 KN ELE Load Column (serial No 1052-11-1412)
Tensile force	0 – 25KN	±2.0%	Hydra Jaws Force gauge (Serial number MEA1E-D 2294)
Torque wrenches	10 – 350Nm	±2.0%	Norbar Tru check Plus 350 Torque Tester (Serial Number 95360)
CALIBRATION FIELD – ELECTRICAL			
Resistance		±0.82 Ω	Calog Simulator , IET Resistance Substitutor, Rigol Digital Multimeter
A.C Voltage	230 V	±5.0 V	Rigol Digital Multimeter
D.C Voltage	24 V	±1.023 mV	Calog Simulator, Univeral Calibrator
A.C Current	10 A	±1.5 A	Rigol Digital Multimeter
D.C Current	20 µA	±2.0 mA	Calog Simulator, Universal Calibrator
CALIBRATION FIELD – MASS			

Mass balance	0 – 200 g	± 1.0016 g	F1 Mass Pieces
Mass balance	0 – 30 kg	± 6.0 g	M1 Mass pieces
Mass balance	0 – 300 kg	± 6.0 g	M1 mass Pieces
Mass pieces	0 – 20 kg	± 6.0 g	M1 Mass pieces

ISSUED BY

UGANDA NATIONAL BUREAU OF STANDARDS

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MANAGER CERTIFICATION DEPARTMENT