



THE HASHEMITE KINGDOM OF
JORDAN

Accreditation Unit

Annex (1)



To the Accreditation Certificate No. **JAS Cal. - 009** Dated **21-02-2023**

For Metrology Professionals LLC (MetrologyPro) / Amman

In the fields of Calibration of:

Pressure, Temperature, Mass and Balance, Torque, Conductivity
meter, pH meter, Sound Level Meters, Volume, Rotational Speed and
Time

Measurand	Measuring Range	Calibration and measurement Capability (CMC) a	Calibration Methods/ Standards/ Remarks
Pressure (Calibration Location: MetroLab/Permanent & On-Site)			
Pressure /Vacuum Meter	$-350 \text{ mbar} \leq X \leq 350 \text{ mbar}$	1 mbar	DKD-R6-1:2014, version No.(3), Date (03/2014). Sequence C Only
	$-1 \text{ bar} < X \leq 40 \text{ bar}$	0.04 bar	
	$40 \text{ bar} < X \leq 400 \text{ bar}$	0.29 bar	
Temperature (Calibration Location: MetroLab/ Permanent & On-Site)			
Resistance Thermometers/ RTD with indicator / External Data Loggers sensors	$-40 \text{ }^\circ\text{C} \leq X \leq 160 \text{ }^\circ\text{C}$	0.25 °C	- METPRO_WI_032, version No.(5), Date (7/7/2022).
	$160 \text{ }^\circ\text{C} < X \leq 420 \text{ }^\circ\text{C}$	0.75 °C	- METPRO_WI_049, version No.(5), Date (7/7/2022).
Thermocouple Thermometers	$-40 \text{ }^\circ\text{C} \leq X \leq 160 \text{ }^\circ\text{C}$	0.65 °C	- EURAMET Calibration Guide No. 8, version 3.0 (02/2019)
	$160 \text{ }^\circ\text{C} < X \leq 400 \text{ }^\circ\text{C}$	0.8 °C	
	$400 \text{ }^\circ\text{C} < X \leq 660 \text{ }^\circ\text{C}$	1.4 °C	



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			- NABL 129, issue No. (1), Date (02/04/2019) page 132
Temperature block calibrator	$-95\text{ }^{\circ}\text{C} \leq X \leq 160\text{ }^{\circ}\text{C}$	0.25 °C	- EURAMET Calibration Guide No. 13, version 4.0, (07/2017) - NABL 129, issue No. (1), Date (02/04/2019) page 132
Mass (Calibration Location: MetroLab/ Permanent & On-Site)			
Non-Automatic weighing instruments Using class E2 standard weights	$0.001\text{ g} \leq X \leq 320\text{ g}$	$3.4 \cdot 10^{-3}\text{ g} + 2.9 \cdot 10^{-2}\text{ Wt}$ Wt in g	OIML- R_E_76- 1/edition 2006 (E).
Non-Automatic weighing instruments Using class F1 standard weights	$320 < X \leq 3\text{ kg}$	$3.4 \cdot 10^{-3}\text{ Wt} + 1.6$ Wt in g	
	$3\text{ kg} < X \leq 10\text{ kg}$	$0.16 \cdot 10^{-6}\text{ Wt} + 1.36 \cdot 10^{-2}\text{ g}$ Wt in g	
	$10\text{ kg} < X \leq 20\text{ kg}$	$2.6 \cdot 10^{-6}\text{ Wt} + 7.8 \cdot 10^{-3}\text{ g}$	
Non-Automatic weighing instruments Using class M1 standard weights	$20\text{ kg} < X \leq 200\text{ kg}$	$5 \cdot 10^{-6}\text{ Wt}$ Wt in kg	OIML R 111-1:2004 Calibration of Weights
Conventional Class M1, M2, & M3	1 mg	0.05 mg	
	2 mg	0.06 mg	
	5 mg	0.06 mg	
	10 mg	0.08 mg	



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	20 mg	0.1 mg	
	50 mg	0.12 mg	
	100 mg	0.16 mg	
	200 mg	0.2 mg	
	500 mg	0.25 mg	
	1 g	0.3 mg	
	2 g	0.4 mg	
	5 g	0.5 mg	
	10 g	0.6 mg	
	20 g	0.8 mg	
	50 g	1.0 mg	
	100 g	1.6 mg	
	200 g	3.0 mg	
	500 g	8.0 mg	
	1 kg	16 mg	
	2 kg	30 mg	
	5 kg	80 mg	
	10 kg	0.16 g	
	20 kg	0.3 g	
Torque (Calibration Location: Metrolab/ Permanent)			
Torque measurement	11 N.m < X ≤ 113 N.m	4 %	ISO 6789:2017 parts 1&2
	113 N.m < X ≤ 1016 N.m	2.5 %	
Chemical (Calibration Location: Metrolab/ Permanent)			
Conductivity meter	84 μS/cm	7.3 μS/cm	METPRO_W I_066, version No.(3), Date (7/7/2022).
	111.8 mS/cm		
PH Meter/ Probe	4 pH	0.087 pH	METPRO_W



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	7 pH		I_066, version No.(3), Date (7/7/2022).
	10 pH		
Sound Level Meters (Calibration Location: MetroPro/Permanent)			
Sound level meter	94 dB	0.78 dB	METPRO_W I_013, version No.(3), Date (7/7/2022).
	114 dB		
Volume (Calibration Location: MetroPro/ Permanent)			
Pipettes	$100 \mu\text{L} \leq X \leq 1000 \mu\text{L}$	1.2 μL	- ISO 8655:2022,
	$1 \text{ mL} < X \leq 100\text{ml}$	1.2 μL	- EURAMET cg-19:2018, Version No. (3)
Volumetric flask	$0 \text{ L} \leq X \leq 20 \text{ L}$	0.13 L	- NABL 129 Chapter 1(D): Volume (2 April 2019) - EURAMET cg-19:2018, Version No. (3)
Rotational Speed (Calibration Location: Metrolab/ Permanent & On-Site)			
Rotational speed (RPM)	10 RPM – 900 RPM	1.6 RPM	METPRO_W I_011, version No.(5), Date (7/7/2022); Centrifuges Only
	901 RPM – 5000 RPM	3.7 RPM	



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Time (Calibration Location: Metrolab/ Permanent & On-Site)			
Time	$0 \leq X \leq 1$ hour	0.6 s	Time measurement using stopwatch, NIST practice guide: Stopwatch & Timer Calibrations (2009 edition) Section 5, page 25 to 37

a) The reported CMCs are expressed at approximately the 95 % level of confidence, 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.

List of employees in the laboratory who are technically responsible for issuing the calibration certificates in the scope of accreditation:

1. **Mohammed Hourani: Technical Manager.**
2. **Fouad Alremawi: Senior Calibration & Validation Engineer.**
3. **Ahmad Yasin: Calibration Engineer**
4. **Laith Awad: Calibration Engineer**