Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

0433

Accredited to ISO/IEC 17025:2017

Mettler-Toledo Ltd

Issue No: 021 **Issue date:** 22 July 2022

64 Boston Road
Leicester
LE4 1AW

Contact: Penny Billington
Tel: + 01162 3357070/ 01162 345204 (direct line)
E-Mail: Penny.Billington@mt.com
Website: www.mt.com

Calibration performed by the Organisations at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address 64 Boston Road Leicester LE4 1AW **Local contact** Penny Billington	Mass Volume Calibration of PCR Machines and thermal cyclers	P

Site activities performed away from the locations listed above:

Location details	Activity	Location code
At customers premises The customers' site or premises must be suitable for the nature of the particular calibrations undertaken and will be the subject of contract review arrangements between the laboratory and the customer.	Calibration of non automatic weighing machines Volume Calibration of PCR Machines and thermal cyclers	S

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Mass	Nominal value (g) 30 000 20 000 10 000 5 000 2 000 1 000 500 200 100 50 20 10 5 2 1 0.5 0.2 0.1 0.05 0.02 0.01 0.005 0.002 0.001, See notes 1 and 2	(mg) 30 20 10 5.0 1.0 0.50 0.25 0.10 0.050 0.030 0.025 0.020 0.015 0.012 0.010 0.0080 0.0060 0.0050 0.0040 0.0030 0.0020 0.0020 0.0020 0.0020	NOTES 1 Calibrated using Borda substitution method. 2 Intermediate values can be calibrated with an uncertainty not less than that interpolated from th e next higher and lower nominal value in the table. 3 Calibrations can be given in other units as required	P
NON-AUTOMATIC WEIGHING MACHINES	1 mg to 5 mg 5 mg to 10 mg 10 mg to 20 mg 20 mg to 50 mg 50 mg to 100 mg 100 mg to 200 mg 200 mg to 500 mg 500 mg to 1 g 1 g to 2 g 2 g to 5 g 5 g to 10 g 10 g to 20 g 20 g to 50 g 50 g to 100 g 100 g to 2.3 kg 2.3 kg to 10 kg 10 kg to 64 kg 64 kg to 1000 kg See notes 3 and 4.	0.0036 mg 0.0039 mg 0.0055 mg 0.0071 mg 0.009 mg 0.011 mg 0.015 mg 0.018 mg 0.022 mg 0.028 mg 0.043 mg 0.055 mg 0.067 mg 0.12 mg $m(1.1 \times 10^{-6})$ $m(2.9 \times 10^{-6})$ $m(6.5 \times 10^{-6})$ $m(6.1 \times 10^{-5})$ See note 5	3.Weights are available in OIML Class: E2 1 mg to 1 kg. max grouped load 2.3 kg F1 1 g to 10 kg. max grouped load 64 kg M1 10 kg. max grouped load 1000 kg 4. Other loads within the overall listed range may also be used. 5. Where m is applied mass 6. Method in line with Euramet guide cg-18	S

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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
VOLUME of liquids (See Note 7)	Nominal value			
Single channel instruments	0.1 µL to 2.0 µL 2.0 µL to 20.0 µL 20.0 µL to 100 µL 100 µL to 200 µL 200 µL to 500 µL 0.5 mL to 1 mL 1 mL to 2 mL 2 mL to 5 mL 5 mL to 10 mL 10 mL to 20 mL 20 mL to 50 mL 50 mL to 100 mL	0.030 µL 0.060 µL 0.20 µL 0.30 µL 0.70 µL 0.002 0 mL 0.003 0 mL 0.007 0 mL 0.015 mL 0.020 mL 0.030 mL 0.050 mL	**Note 7.** For water delivered from POVA (piston and/or plunger operated volumetric apparatus), using gravimetric procedures agreed with UKAS. 1 volume (fixed volume pipettes) 4 volumes (variable volume pipettes) 10 readings (as specified in ISO 8655) From minimum 1 volume and minimum 4 readings, up to 4 volumes and up to 10 readings (by agreement with customer)	P, S
Multi-channel instruments up to 12 channels simultaneously calibrated	1.0 µL to 20 µL 20.0 µL to 50.0 µL 50.0 µL to 100 µL 100 µL to 200 µL 200 µL to 600 µL 600 µL to 1200 µL Above 1200 µL to 1250 µL	0.10 µL 0.20 µL 0.30 µL 0.50 µL 1.5 µL 5.0 µL 7.0 µL		P, S
TEMPERATURE (See Note 8)				
Static and dynamic calibration of: 1. PCR© cycler 2. Thermocycler 3. Temp controlled dry-block incubators	30 °C to 95 °C	0.19 °C	**Note 8.** Single point or multi-point calibration Calibration against digital thermometer with an array of sensors. The PCR© (Polymerase Chain Reaction), process is covered by patents owned by Hoffman-LaRoche Inc	P, S
END				

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$