


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 0593 Accredited to ISO/IEC 17025:2017	VWR International Limited Issue No: 038 Issue date: 19 August 2021	
	1 Dragon Court Crofts End Road St George Bristol BS5 7XX	Contact: Mr I Francis Tel: +44 (0)117 9515 696 E-Mail: Ian.Francis@vwr.com Website: www.vwr.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 1 Dragon Court Crofts End Road St George Bristol BS5 7XX Local contact Mr I Francis Tel: +44 (0)117 9515 696 Email: Ian.Francis@vwr.com Website: www.vwr.com	Temperature Validation of PCR machines Pressure Gas	Lab

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Customer's premises, eg, Hospitals, Laboratories, and Manufacturing Plants	Rotational speed (Centrifuges) Temperature (Sterilizers etc, and Thermal Products) Validation of PCR machines Pressure Gas Temperature sensors with indicators or recorders Humidity Chambers Non Automatic weighing machines	Site



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Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks	Location Code
TEMPERATURE			Unless otherwise stated calibration performed by comparison with reference thermometers	
Temperature sensors with indicators or recorders	-80 °C to -35 °C -35 °C to +55 °C 55 °C to 140 °C 140 °C to 250 °C 250 °C to 350 °C 350 °C to 650 °C	0.028 °C 0.024 °C 0.030 °C 0.038 °C 0.36 °C 0.60 °C	Calibration performed within Liquid Baths Calibration performed within Metal Block Baths	Lab
Liquid-in-glass thermometers	-35 °C to +55 °C 55 °C to 140 °C 140 °C to 250 °C	0.024 °C 0.030 °C 0.038 °C	Calibration performed within Liquid Baths Uncertainty +1/10 scale division	Lab
Temperature block calibrators	-30 °C to +140 °C -30 °C to +140 °C 140 °C to 350 °C 350 °C to 650 °C	0.060 °C # 0.12 °C 0.35 °C 0.60 °C	# this CMC only applies to blocks with stirred liquids	Lab
Temperature controlled autoclaves, media preparators, incubators, sterilizers, ovens, environmental chambers, furnaces, fridges/refrigerators, freezers, and liquid baths (inclusive of associated indicators, controllers and recorders, all with sensors, within the specified parameters and ranges)	-196 °C to -80 °C -80 °C to -30 °C -30 °C to +140 °C 140 °C to 250 °C 250 °C to 340 °C 340 °C to 1040 °C 1040 °C to 1140 °C	1.20 °C 0.70 °C 0.42 °C 0.80 °C 3.20 °C 3.30 °C 4.10 °C	Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping	Site
Temperature sensors with indicators or recorders	-30 °C to +140 °C	0.34 °C		Site
Static and dynamic validation of PCR machines and thermal cyclers	4 °C to 95 °C		The PCR (Polymerase Chain Reaction), process is covered by patents owned by Hoffman-LaRoche Inc.	Lab & Site
Accuracy and uniformity		0.22 °C		
PRESSURE			Unless otherwise stated calibration performed by comparison with reference pressure gauge	
GAS PRESSURE GAUGE				
Calibration of pressure indicating instruments and gauges	-100 kPa to +1 MPa -100 kPa to +1 MPa	0.66 kPa 1.16 kPa	Calibration of pressure devices with an electrical output may be undertaken	Lab Site



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks	Location Code
TIME INTERVAL				
Timers	10 s to 1 hr	1.5 s	Calibration by comparison with reference timer	Lab & Site
ROTATIONAL SPEED				
Temperature of centrifuges	100 rpm to 50 000 rpm	0.24 %	Calibration by comparison with reference tachometer	Site
	-10 °C to +25 °C	2.6 °C		Site
HUMIDITY				
Humidity chambers	20 %rh to 90 %rh	5.6 %rh	Calibration by comparison with reference hygrometer and thermometers	Site
			In the temperature range 20 °C to 50 °C	
WEIGHING INSTRUMENTS				
Non-automatic weighing machines	200 mg 500 mg	0.030 mg 0.040 mg	1. Weights are available in OIML Class:	Site
	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g	0.015 mg 0.018 mg 0.024 mg 0.031 mg 0.038 mg 0.046 mg 0.08 mg 0.15 mg 0.38 mg	E2 from 1 g to 2 kg, Max. grouped load 6.1 kg	
	1 kg 2 kg 5 kg 10 kg 20 kg	0.8 mg 1.5 mg 7.6 mg 19.9 mg 28.0 mg	F1 from 1 mg to 10 kg, Max. grouped load 20 kg	
			2. Other loads within the overall listed range may also be used.	
			3. Calibration method in line with the requirements of Euramet guide cg-18	
END				



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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: $Q[a, b] = [a^2 + b^2]^{1/2}$