

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>0438</b>  Accredited to <b>ISO/IEC 17025:2017</b>	<b>European Instruments Limited</b>	
	Issue No: 022    Issue date: 12 October 2023	
	<b>Shotover Kilns</b> Old Road Headington Oxford OX3 8ST	<b>Contact: Mr D Hitchcock</b> Tel: +44 (0)1865-750375 Fax: +44 (0)1865-769985 E-Mail: sales@ei.co.uk Website: <a href="https://ei.uk/calibration">https://ei.uk/calibration</a>
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
<b>Address</b> Shotover Kilns Old Road Headington Oxford OX3 8ST	Mass (weights)  Volume Volumetric equipment (pipettes)	Perm lab

#### 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.	Mass (Weighing machines)  Volume Volumetric equipment (pipettes)	Site



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Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
MASS  (See Notes 1 & 2)	Nominal value (g)	(mg)	NOTES	Perm Lab
	25 000	250	1. Calibrations can be given in other units as required.	
	20 000	60	2. Intermediate values of weights can be calibrated with an uncertainty not less than that interpolated from the next higher and next lower nominal values.	
	10 000	10		
	5 000	5.0		
	2 000	2.0		
	1 000	0.50		
	500	0.25		
	200	0.10		
	100	0.050		
	50	0.030		
	20	0.025		
	10	0.020		
	5	0.015		
	2	0.012		
	1	0.010		
	0.5	0.008 0		
	0.2	0.006 0		
	0.1	0.005 0		
	0.05	0.004 0		
	0.02	0.003 0		
0.01	0.002 0			
0.005	0.002 0			
0.002	0.002 0			
0.001	0.002 0			
NON-AUTOMATIC WEIGHING MACHINES See notes 3 and 4 (From 1 mg to 1755 kg)	200 mg	0.0045 mg	4 Weights are available in OIML Class:  E2 from 1 mg to 500 g, max. grouped load 5 kg  F1 from 10 mg to 10 kg, max. grouped load 201 kg  M1 from 5 kg to 20 kg, max. grouped load 1755 kg  5 Other loads within the overall listed range may also be used.  6. Calibration method in line with the requirements of Euramet gauge cg-18	Site
	500 mg	0.0061 mg		
	1 g	0.0076 mg		
	2 g	0.0092 mg		
	5 g	0.011 mg		
	10 g	0.016 mg		
	20 g	0.022 mg		
	50 g	0.036 mg		
	100 g	0.069 mg		
	200 g	0.13 mg		
	500 g	0.34 mg		
	1 kg	0.75 mg		
	2 kg	3.3 mg		
	5 kg	4.6 mg		
	10 kg	32 mg		
	20 kg	36 mg		
	50 kg	310 mg		
	100 kg	320 mg		
	200 kg	1.5 g		
	500 kg	4.9 g		
1000 kg	9.8 g			
1755 kg	14 g			



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
VOLUME of liquids (See Note 7)	0.2 $\mu$ L to 2 $\mu$ L 2 $\mu$ L to 20 $\mu$ L 20 $\mu$ L to 100 $\mu$ L 100 $\mu$ L to 200 $\mu$ L 200 $\mu$ L to 500 $\mu$ L 0.5 mL to 1 mL 1 mL to 2 mL 2 mL to 5 mL 5 mL to 20 mL	0.050 $\mu$ L 0.090 $\mu$ L 0.30 $\mu$ L 0.80 $\mu$ L 2.0 $\mu$ L 0.005 mL 0.009 mL 0.015 mL 0.050 mL	7. For water delivered from piston and/or plunger operated volumetric apparatus using procedure as defined in ISO 8655 (gravimetric method).  Single Channel Pipettes and Multi-Channel Pipettes  Users requiring conformity to ISO 8655-6 should note that this cannot be demonstrated using fewer than 10 readings.	Perm Lab, Site
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:  $Q[a, b] = [a^2 + b^2]^{1/2}$