

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>0647</b>  Accredited to <b>ISO/IEC 17025:2017</b>	<b>InCal Site Solutions Limited</b>	
	Issue No: 024    Issue date: 13 August 2021	
	Unit 1G Kilroot Business Park Carrickfergus Co Antrim BT38 7PR	Contact: Mr R E Hughes Tel: +44 (0)28-9335 9762 Mob: +44 (0)7711644411 E-Mail: jennie@incalsitesolutions.co.uk Website: www.incalsitesolutions.co.uk

**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> Unit 1G Kilroot Business Park Carrickfergus Co Antrim BT38 7PR  <b>Local contact</b> Mr R E Hughes Tel: +44 (0)28-9335 9762 Mob: +44 (0)7711644411 E-Mail: jennie@incalsitesolutions.co.uk	Electrical Pressure Temperature	Lab

#### Site activities performed away from the locations listed above:

Location details	Activity	Location code
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.  Contact as above	Electrical Pressure Temperature Non-automatic weighing instruments	Site



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Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
<b>ELECTRICAL</b>				
Values and uncertainties listed below are applicable for the calibration of both measurement instruments and for instruments with an output. The method used is by direct comparison unless otherwise stated in the remarks column.				
DC Voltage Measurement and Generation	0 mV to 100 mV 60 mV to 6 V 6 V to 12 V 12 V to 60 V	13 $\mu$ V 0.10 mV 1.8 mV 8.5 mV		Lab & Site
DC Current Measurement and Generation	0 mA to 20 mA 20 mA to 60 mA	0.010 mA 0.020 mA		Lab & Site
DC Resistance Specific Values	80 $\Omega$ 100 $\Omega$ 250 $\Omega$	2.5 m $\Omega$ 2.3 m $\Omega$ 7.7 m $\Omega$		Lab & Site
Measurement	1 $\Omega$ to 600 $\Omega$ 600 $\Omega$ to 6 k $\Omega$	0.30 $\Omega$ 1.9 $\Omega$		Lab & Site
Generation	1 $\Omega$ to 600 $\Omega$ 600 $\Omega$ to 6 k $\Omega$	0.20 $\Omega$ 2.0 $\Omega$		Lab & Site
Electrical calibration of temperature simulators indicators, controllers and recorders for the following sensors:				
Noble metal thermocouples Type R & S	300 $^{\circ}$ C to 1200 $^{\circ}$ C	1.0 $^{\circ}$ C	with cold junction compensation	Lab & Site
Base metal thermocouples Type K, T and J	-100 $^{\circ}$ C to 0 $^{\circ}$ C 0 $^{\circ}$ C to 1200 $^{\circ}$ C	0.60 $^{\circ}$ C 0.50 $^{\circ}$ C	with cold junction compensation	Lab & Site
Pt100	-25 $^{\circ}$ C to +250 $^{\circ}$ C 250 $^{\circ}$ C to 400 $^{\circ}$ C	0.06 $^{\circ}$ C 0.55 $^{\circ}$ C		Lab & Site
Frequency	1 Hz to 10 MHz	0.011 % + 1 mHz	Periodic time of repetitive waveforms may be expressed in terms of 1/f or as events per unit time such as rpm.	Lab & site
Centrifuges	60 rpm to 60000 rpm	0.012 % + 1 rpm		Lab & Site
Elapsed time	10 s to 10 000 s	0.25 s		Lab & Site



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
<b>PRESSURE</b>				
Gas Pressure (gauge)			Calibration of devices with an electrical output may be undertaken.	
Calibration of pressure indicating instruments and gauges	-100 kPa to 0 kPa 0 kPa to 16 kPa 16 kPa to 100 kPa 100 kPa to 700 kPa 700 kPa to 2 MPa 2 MPa to 20 MPa	40 Pa 15 Pa 40 Pa 310 Pa 700 Pa 7.5 kPa	Methods consistent with EURAMET CG3	Lab & Site
Gas Pressure (absolute)				
Calibration of pressure indicating instruments and gauges	0 kPa to 200 kPa 200 kPa to 700 kPa 700 kPa to 2 MPa 2 MPa to 20 MPa	150 Pa 460 Pa 850 Pa 7.7 kPa		Lab & Site
Hydraulic Pressure (gauge)				
Calibration of pressure indicating instruments and gauges	0 MPa to 256 MPa 70 MPa to 280 MPa	25 kPa 320 kPa		Lab & Site
Hydraulic Pressure (absolute)				
Calibration of pressure indicating instruments and gauges	0.1 MPa to 70 MPa	25 kPa		Lab & Site
<b>TEMPERATURE</b>				
Resistance thermometers	0.01 °C -40 °C to +250 °C 250 °C to 660 °C	0.028 °C 0.060 °C 0.55 °C	Triple point of water	Lab & Site
Temperature indicators and recorders with sensors	0.01 °C -40 °C to +250 °C 250 °C to 660 °C	0.013 °C 0.060 °C 0.60 °C	Triple point of water	Lab & Site
Self-contained temperature loggers	-35 °C to -20 °C -20 °C to 0 °C 0 °C to 30 °C 30 °C to 50 °C	0.25 °C 0.20 °C 0.15 °C 0.20 °C	Calibration in air Chamber	
Temperature controlled autoclaves, media preparators, ovens, chambers, fridges/refrigerators and freezers (inclusive of associated indicators, controllers and recorders, all with sensors, within the specified parameters and ranges)	-40 °C to 0 °C 0 °C to 10 °C 10 °C to 200 °C 200 °C to 600 °C	0.30 °C 0.25 °C 0.30 °C 1.7 °C	Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping	Lab & Site



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
<b>NON-AUTOMATIC WEIGHING INSTRUMENTS</b>  Electronic, single pan (See Notes 1, 2,3 & 4)	200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10kg 20 kg 40 kg 60 kg	0.008 3 mg 0.011 mg 0.014 mg 0.018 mg 0.023 mg 0.029 mg 0.042 mg 0.072 mg 0.14 mg 0.42 mg 1.1 mg 2.1 mg 4.2 mg 11 mg 21 mg 42 mg 83 mg 440 mg	NOTES:  1. Weights are available in OIML Class:  E2 from 1m g to 100 g, max. grouped load 200 g  F1 from 1 g to 20 kg, max. grouped load 40 kg  M1 20 kg, max. grouped load 60 kg  2. Other loads within the overall listed range may also be used.  3. The uncertainty is dependent on the performance and scale division of the NAWI.  4. The method of calibration is based on EURAMET CG-18	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:  $Q[a, b] = [a^2 + b^2]^{1/2}$