


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>UKAS</b> CALIBRATION  8751 Accredited to ISO/IEC 17025:2017	<b>ARENA Instrumentation</b>	
	Issue No: 011    Issue date: 17 August 2021	
	<b>Unit 5</b> Aerodrome Close Loughborough LE11 5RJ	<b>Contact: Mr Gary Moseley</b> Tel: +44 (0)151 355 1314 Fax: +44 (0) 151357 3428 E-Mail: gary.moseley@arena-instrumentation.com Website: www.arena-instrumentation.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
<b>Address</b> Unit 5 Aerodrome Close Loughborough  <b>Local contact</b> Gary Moseley  Tel: +44 (0) 151 355 1314 Fax: +44 (0) 151 357 3428 Email: gary.moseley@arena-instrumentation.com	Temperature calibration of wireless monitors for mapping, temperature Indicators, recorders and transmitters Timers	Lab

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

Location details	Activity	Location code
The customer's 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.	Temperature controlled enclosures Temperature Indicators, recorders and transmitters Timers  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 All calibration by comparison  Temperature dataloggers, indicators, controllers, wireless transmitters and recorders, all with sensors	-90 °C to -80 °C -80 °C to -45 °C -45 °C to -25 °C -25 °C to +100 °C 100 °C to 140 °C	0.25 °C 0.13 °C 0.16 °C 0.12 °C 0.12 °C	In air chamber	Lab
	-45 °C to -25 °C -25 °C to +50 °C 50 °C to 140 °C 140 °C to 250 °C	0.12 °C 0.10 °C 0.13 °C 0.39 °C	In block calibrator or liquid bath	Lab/site
	-80 °C to -25 °C -25 °C to +100 °C 100 °C to 140 °C	0.31 °C 0.13 °C 0.18 °C	In customer air chamber  Uncertainty will depend on stability of the customers environment	Site
Thermal performance of centrifuges	0°C to 40°C	0.38 °C		Lab/site
Temperature controlled incubators, ovens, environmental chambers, fridges/refrigerators, freezers and liquid baths	-90 °C to -80 °C -80 °C to -40 °C -40 °C to -25 °C -25 °C to 0 °C 0 °C to 85 °C 85 °C to 140 °C	1.5 °C 1.2 °C 0.50 °C 0.42 °C 0.21 °C 0.19 °C	Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping	Site
Timers	10 s to 1 hr	0.9 s		Lab/site
Calibration by comparison  Rotational speed	12 rpm to 90000 rpm	1.7 rpm		Site/Lab



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks	Location Code
NON-AUTOMATIC WEIGHING INSTRUMENTS  Electronic digital top-pan balances See note 1 and note 2  Methods consistent EUROMET CG18	Up to 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 10 kg	0.0090 mg 0.012 mg 0.018 mg 0.019 mg 0.025 mg 0.034 mg 0.064 mg 0.088 mg 0.23 mg 0.32 mg 1.5 mg 8.4 mg 9.2 mg 13 mg 17 mg	Note 1: Weights are available in OIML class:  E2 1 mg to 200 g, maximum grouped load 500 g  F1 500 g to 20 kg, maximum grouped load 30 kg  Note 2: Other values within the range may be calibrated with an interpolated uncertainty	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:  $Q[a, b] = [a^2 + b^2]^{1/2}$