Schedule of Accreditation

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United Kingdom Accreditation Service

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

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Accredited to ISO/IEC 17025:2017

BSRIA Limited

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Calibration performed by the Organisation at the locations specified

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address: Old Bracknell Lane West, Bracknell, Berkshire, RG12 7AH **Local contact:** Mr M Trotter	Air velocity Electrical Humidity Pressure Temperature Volume flow	Bracknell
Address: 68 Walton Summit Road, Walton Summit Centre, Bamber Bridge, Preston, Lancashire, PR5 8AQ **Local contact:** Mr A Collier	Pressure Temperature Volume flow	Preston

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
TEMPERATURE			Unless otherwise stated calibration by comparison with reference standards in a liquid bath	
Resistance thermometers	-80 °C to -38 °C -38 °C to -20 ° C -20 °C to +80 °C 80 °C to 250 °C	0.050 °C 0.030 °C 0.016 °C 0.020 °C		Bracknell
Digital thermometers with Thermocouple sensors	-80 °C to +250 °C	0.15 °C		Bracknell
Digital thermometers with PRT sensors	-80 °C to -20 °C -38 °C to -20 ° C -20 °C to +80 °C 80 °C to 250 °C	0.050 °C 0.030 °C 0.016 °C 0.020 °C		Bracknell
Air Temperature data loggers Calibration performed in an air chamber	-20 to 0 °C 0 °C to 70 °C	0.20 °C 0.060 °C	Calibrations may be undertaken on devices with an electrical output and on data recorders suitable for calibration in a chamber.	Bracknell
Digital thermometers with Thermocouple sensors	-20 °C to +80 °C	0.15 °C		Preston
Digital thermometers with PRT sensors	-20 °C to +80 °C	0.040 °C		Preston
PRESSURE			Methods consistent with EURAMET CG17.	
<u>Gas pressure (absolute)</u>				
Calibration of pressure indicating instruments and gauges	80 kPa to 115 kPa	25 Pa	Direct comparison method	Bracknell
	70 kPa to 115 kPa	25 Pa		Preston
<u>Gas pressure (gauge)</u>				
Calibration of pressure indicating instruments and gauges	-7.5 kPa to -3 kPa -3 kPa to -2 kPa -2 kPa to 2 kPa 2 kPa to 3 kPa 3 kPa to 3.5 kPa 3.5 kPa to 100 kPa	0.045 % + 0.50 Pa 0.045 % + 0.18 Pa 0.045 % + 0.11 Pa 0.045 % + 0.18 Pa 0.045 % + 0.50 Pa 0.025 %	Calibration of pressure devices with an electrical output may be undertaken.	Bracknell
Calibration of pressure indicating instruments and gauges	-7.5 kPa to 3 kPa -3 kPa to 3 kPa 3 kPa to 7.5 kPa	0.045 % + 0.50 Pa 0.045 % + 0.10 Pa 0.045 % + 0.50 Pa		Preston

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
AIR VELOCITY				
Calibration of Anemometers and Pitot Tubes against a laser Doppler anemometer	0.15 m/s to 0.3 m/s 0.3 m/s to 2 m/s 2 m/s to 5 m/s 5 m/s to 15 m/s 15 m/s to 30 m/s	0.54 % + 0.015 m/s 0.54 % + 0.020 m/s 0.54 % + 0.030 m/s 0.54 % + 0.040 m/s 0.62 % + 0.060 m/s	Open jet wind tunnel method	Bracknell
Calibration of Anemometers and Pitot Tubes against differential pressure systems	0.15 m/s to 0.3 m/s 0.3 m/s to 2 m/s 2 m/s to 5 m/s 5 m/s to 15 m/s 15 m/s to 30 m/s	0.71 % + 0.036 m/s 0.72 % + 0.068 m/s 0.80 % + 0.080 m/s 0.84 % + 0.20 m/s 0.90 % + 0.40 m/s	Calibration of anemometers up to 120 mm diameter can be undertaken	
VOLUME FLOW - AIR				
Calibration of fans including blower doors and domestic air tightness fans BS EN ISO 5801:2008 method	7.6 l/s to 4000 l/s at fan pressures of 15 Pa to 1000Pa	0.50 l/s + 2.0% of flow and 1.0 Pa + 0.90 % of pressure	Calibrated in pressurising mode over the static pressure range of 0 to 60 Pa	Bracknell and Preston
	7.6 l/s to 4000 l/s at fan pressures of 15 Pa to 1000Pa	1.0 l/s + 2.0 % of flow and 1.0 Pa + 0.90 % of pressure	Calibrated in pressurising mode over the static pressure range of 60 Pa to 125 Pa	
Calibration of Balometers (capture flow hoods) Supply and extract methods	12 l/s to 900 l/s 12/l/s to 740 l/s	Q[1.5%, 0.75 l/s]	Calibration of Balometers with Back pressure disabled only	Bracknell Preston
Calibration of low volume flow hoods and cones Supply and extract methods	3.5 l/s to 95 l/s	4.3 % + 0.080 l/s		Bracknell

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
HUMIDITY			Calibration by comparison with a reference hygrometer and reference thermometers	
Relative humidity	*For the range 0 ℃ to 20 ℃* 10 %rh to 30 %rh 30 %rh to 95 %rh	 0.53 %rh 0.92 % of reading + 0.25 %rh	Calibrations may be undertaken on devices with an electrical output and on data recorders suitable for calibration in a chamber.	Bracknell
	For the range 20 ℃ to 30 ℃ 2 %rh to 30 %rh 30 %rh to 98 %rh	 0.35 %rh 0.90 % of reading + 0.080 %rh		
	For the range 30 ℃ to 50 ℃ 10 %rh to 30 %rh 30 %rh to 95 %rh	 0.29 %rh 0.83 % of reading + 0.040 %rh		
	For the range 50 ℃ to 70 ℃ 10 %rh to 30 %rh 30 %rh to 95 %rh	 0.25 %rh 0.71 % of reading + 0.040 %rh		
Frost point	-26 °C to -5 °C	0.14 °C		
Dew point	-8 °C to +69 °C	0.19 °C		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
ELECTRICAL			Electrical calibrations are performed as a comparison against a reference standard	
DC Resistance				
Generation and measurement capability for the calibration of resistance instruments	0 Ω to 200 Ω 200 Ω to 2 kΩ 2 kΩ to 20 kΩ 20 kΩ to 200 kΩ	15 μΩ/Ω + 400 μΩ 15 μΩ/Ω + 2.4 mΩ 15 μΩ/Ω + 24 mΩ 15 μΩ/Ω + 250 mΩ		Bracknell
DC Voltage				
	0 V to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200V 200 V to 1000 V	30 μV/V + 0.17 μV 30 μV/V + 1.7 μV 30 μV/V + 17 μV 30 μV/V + 170 μV 30 μV/V + 1.7 mV		Bracknell
DC Current				
Generation and measurement capability for the calibration of current instruments	0 A to 200 μA 200 μA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A	60 μA/A + 1.7 nA 50 μA/A + 17 nA 50 μA/A + 170 nA 50 μA/A + 1.7 μA 60 μA/A + 17 μA		Bracknell
Frequency measurement	40 Hz to 1.9 kHz 1.9 kHz to 19 kHz 19 kHz to 190 kHz 190 kHz to 400 kHz	17 μHz/Hz + 7 mHz 17 μHz/Hz + 10 mHz 17 μHz/Hz + 100 mHz 17 μHz/Hz + 1 Hz	Calibration by comparison	Bracknell
Tachometer Calibration			Calibration by comparison	Bracknell
Mechanical contact	6 RPM to 6,000 RPM	0.042 %		
Optical	6 RPM to 600,000 RPM	0.010 %		
Stroboscope calibration	6 RPM to 600,000 RPM	0.010 %		
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: $Q[a, b] = [a^2 + b^2]^{1/2}$