

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS CALIBRATION</p> <p>0555</p> <p>Accredited to ISO/IEC 17025:2017</p>	<p>DNV Services UK Ltd</p> <p>Issue No: 063 Issue date: 16 April 2026</p>	
	<p>DNV Bishop Auckland Chilton Way Ferryhill Co Durham DL17 0SE</p>	<p>Contact: Mrs K Moore Tel: +44 (0) 203 816 5315 E-Mail: bishopauckland@dnv.com Website: https://www.dnv.com/energy/services/laboratories-test-facilities/bishop-auckland/</p>
<p>Calibration performed at the above address only</p>		

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
FLOW			
Volume Flow (Natural Gas)	8 m ³ /hr to 20 m ³ /hr 20 m ³ /hr to 40 m ³ /hr 40 m ³ /hr to 400 m ³ /hr 400 m ³ /hr to 2500 m ³ /hr 2500 m ³ /hr to 6500 m ³ /hr 6500 m ³ /hr to 13000 m ³ /hr 13000 m ³ /hr to 19500 m ³ /hr	0.23 % 0.20 % 0.19 % 0.18 % 0.18 % 0.18 % 0.20 %	Calibration of devices with an electrical output may be undertaken Calibration of flow meters using reference meter methods
Mass Flow (Natural Gas)	304 kg/hr to 760 kg/hr 760 kg/hr to 1920 kg/hr 1920 kg/hr to 19200 kg/hr 19200 kg/hr to 120000 kg/hr 120000 kg/hr to 312000 kg/hr 312000 kg/hr to 624000 kg/hr 624000 kg/hr to 936000 kg/hr	0.33 % 0.33 % 0.30 % 0.30 % 0.30 % 0.30 % 0.31 %	
TEMPERATURE			
Resistance thermometers	-20 °C to 90 °C	0.022 °C	Calibrations performed within liquid baths
Temperature indicators with sensors	-20 °C to 90 °C	0.022 °C	
Liquid-in-glass thermometers	-20 °C to 90 °C	0.029 °C	Total immersion types



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
PRESSURE			
<u>Gas pressure (gauge)</u> Calibration of pressure indicating instruments and gauges.	1.5 kPa to 3.5 kPa 3.5 kPa to 100 kPa 30 kPa to 700 kPa 200 kPa to 10 MPa 6 MPa to 27.6 MPa 1 MPa to 30 MPa	0.0091 % 0.0091 % 0.0079 % 0.0056 % 0.0058 % 0.0064 %	Methods consistent with EURAMET CG17
<u>Gas pressure (differential)</u> Calibration of pressure indicating instruments and gauges	0.2 Pa to 2 MPa (At line pressure of 0.5 MPa to 10 MPa)	Q[0.0056 % of dP , 0.00010 % of line pressure , 8.0 Pa]	
	0.2 Pa to 2 MPa (At line pressure of 10 MPa to 30 MPa)	Q[0.0066 % of dP , 0.00010 % of line pressure , 26 Pa]	
ELECTRICAL			
DC Voltage	0 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V	26 μ V 60 μ V 470 μ V 6.0 mV	Measure and source
DC Resistance			
Range values - bridge	0 Ω to 25 Ω 25 Ω to 400 Ω	15 $\mu\Omega$ 15 $\mu\Omega/\Omega$	Measuring using Bridge Minimal current
General	1 Ω to 100 Ω 100 Ω to 1 k Ω 1 k Ω to 10 k Ω 10 k Ω to 100 k Ω 100 k Ω to 1 M Ω	23 $\mu\Omega/\Omega$ 25 $\mu\Omega/\Omega$ 90 m Ω 1.3 Ω 21 Ω	Measure and source with reference to digital multimeter
Temperature indicators, calibration by electrical simulation:			
Resistance thermometer (Pt 100)	-40 $^{\circ}$ C to + 200 $^{\circ}$ C	0.10 $^{\circ}$ C	



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks
DIMENSIONAL Orifice plates	Bore (d) diameters: 12 mm to 50 mm 50 mm to 100 mm 100 mm to 200 mm 200 mm to 650 mm Plate thickness (E) Edge thickness (e) Surface roughness of face - Ra Flatness of face Bevel angle (α) Edge angle Edge radius (G) Plate concentricity Outside diameter of plate: 100 mm to 200 mm 200 mm to 650 mm Drain hole diameter: 1 mm to 3 mm 3 mm to 13 mm	10 μ m 12 μ m 17 μ m 25 μ m 10 μ m 25 μ m 10 % of reading, minimum 0.40 μ m 20 μ m 60 minutes of arc 12 minutes of arc 20 μ m 25 μ m 20 μ m 25 μ m 25 μ m 15 μ m	As BS EN ISO 5167-2:2022, BS EN ISO 5167-2:2003 (withdrawn), AGA Report No. 3, Part 2:2016 and ISO/TR 15377:2007 (withdrawn). All linear calibrations may be given in inch units.
Methods: Unless otherwise stated, all measurements are performed by direct comparison with the indication from a calibrated reference instrument.			
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: $Q[a, b] = [a^2 + b^2]^{1/2}$