Schedule of Accreditation

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United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

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Accredited to ISO/IEC 17025:2005

Chamois Metrology Limited

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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
Address Unit 8 The Centre Holywell Business Park Northfield Road SOUTHAM Warwickshire CV47 0FP	**Local contact** Mr N Morgan	Mass calibration Electrical calibration Pressure calibration Temperature calibration	UK
Address Classic Metrology Unit K2 M7 Business Park Newhall Naas County Kildare Ireland	**Local contact** Mr P Kinsella Tel. +353 (0) 45 896660 Fax. +353 (0) 45 896713 Email: info@classicmetrology.ie	Pressure calibration Electrical calibration Temperature calibration	IRE

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	**Local contact** Mr N Morgan	Pressure calibration	Site

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
PRESSURE Gas pressure (absolute)				UK & Site
Calibration of pressure measuring instruments and gauges	2 Pa to 1.4 kPa 1.4 kPa to 200 kPa 200 kPa to 345 kPa 345 kPa to 27.6 MPa 27.6 MPa to 40 MPa	20 % 0.0035 % + 2.0 Pa 0.0035 % + 15 Pa 0.0027 % + 15 Pa 0.0045 % + 15 Pa	Calibration of pressure measuring devices with an electrical output may be undertaken.	
Gas pressure (gauge)				
Calibration of pressure measuring instruments and gauges and “Pressure equivalent” calibration of Dead Weight Testers (pressure balances supplied with an associated mass set) and Effective area calibration of Dead Weight Testers	- 100 kPa to - 3.5 kPa 0 Pa to 1.4 kPa 1.4 kPa to 200 kPa 200 kPa to 345 kPa 345 kPa to 27.6 MPa 27.6 MPa to 40 MPa	0.0035 % 0.0040 % + 0.50 Pa 0.0030 % + 0.040 Pa 0.0035 % 0.0027 %0.0045 %	Calibrations may also be performed over an environmental temperature range of: + 20 °C to + 150 °C ± 1 °C Additional pressure uncertainty + 30 ppm + 23 Pa	
Gas pressure (differential)				
Calibrations of differential pressure devices with low and high pressure ports at a common mode pressure of 3.5kPa	0 Pa to 7 kPa (Line pressure 3.5 kPa)	0.010 % + 0.060 Pa		
Calibration of pressure indicating instruments and gauges	0 Pa to (7 - line pressure) MPa (Line pressure 200 kPa to 7 MPa)	0.000060 % of line pressure, plus 0.0035 % of differential pressure, plus 5.0 Pa	Differential pressure cells may be calibrated using digital communications protocols	
	7 MPa to (27.6 - line pressure) MPa (Line pressure 7 MPa to 27.6 MPa)	0.000060 % of line pressure, plus 0.0035 % of differential pressure, plus 10 Pa		
	0 Pa to (41.4 - line pressure) MPa (Line pressure 27.6 MPa to 41.4 MPa)	0.000065 % of line pressure, plus 0.0060 % of differential pressure, plus 16 Pa		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
Hydraulic pressure (gauge)				
Calibration of pressure measuring instruments and gauges. "Pressure equivalent" calibration of Dead Weight Testers (Pressure balance with associated mass set). Effective area calibration of Dead Weight Testers.	206 kPa to 7 MPa 7 MPa to 172 MPa 172 MPa to 345 MPa	0.0040 % + 16 Pa 0.0040 % + 0.24 ppm/MPa 0.0070 %		
Hydraulic pressure (absolute)				
Calibration of pressure measuring instruments and gauges.	206 kPa to 7 MPa 7 MPa to 172 MPa 172 MPa to 345 MPa	0.0040 % + 28 Pa 0.0040 % + 0.24 ppm/MPa + 15 Pa 0.0070 %		
Hydraulic pressure (differential)				
Calibration of pressure indicating instruments and gauges	0 Pa to (172 - line pressure) MPa (Line pressure 1.7 MPa to 172 MPa)	0.000060 % of line pressure plus 0.0055 % of differential pressure plus 20 Pa		
MASS	1 mg to 205 g 205 g to 510 g 510 g to 2.3 kg 2.3 kg to 26 kg	7.0 ppm + 0.16 mg 7.0 ppm + 0.25 mg 7.0 ppm + 0.30 mg 7.0 ppm + 3.0 mg		UK
ELECTRICAL				UK
DC Voltage	0 mV to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1 kV	15 ppm + 1.5 μV 12 ppm + 2.0 μV 12 ppm + 30 μV 16 ppm + 1.2 mV 16 ppm + 12 mV		
DC Current	0 μA to 60 μA 60 μA to 200 μA 200 μA to 2 mA 2 mA to 6 mA 6 mA to 20 mA 20 mA to 100 mA 100 mA to 202 mA 202 mA to 2.02 A 2.02 A to 20 A 100 mA to 1 A 1 A to 10 A 10 A to 30 A 20 A to 1000 A	53 ppm + 30 nA 53 ppm + 30 nA 53 ppm + 50 nA 53 ppm + 120 nA 40 ppm + 150 nA 40 ppm + 150 nA 62 ppm + 5.5 μA 90 ppm + 72 μA 330 ppm + 8.0 mA 250 ppm + 150 μA 500 ppm + 1.0 mA 500 ppm + 3.0 mA 0.22 % + 100 mA	Using nominal 50 Ω shunt Using nominal 50 Ω shunt Using nominal 50 Ω shunt Using nominal 50 Ω shunt Using nominal 50 Ω shunt Using nominal 10 Ω shunt Generate only Generate only Generate only Measurement only Measurement only Measurement only Simulation using multi turn coil	UK

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
DC Resistance	0 Ω to 20 Ω	15 ppm + 20 μΩ		
	20 Ω to 200 Ω	20 ppm + 150 μΩ		
	200 Ω to 2 kΩ	20 ppm + 1.5 mΩ		
	2 kΩ to 20 kΩ	20 ppm + 15 mΩ		
	20 kΩ to 200 kΩ	20 ppm + 100 mΩ		
	200 kΩ to 2 MΩ	20 ppm + 1.5 Ω		
	2 MΩ to 20 MΩ	40 ppm + 20 Ω		
	20 MΩ to 200 MΩ	400 ppm + 500 Ω		
	200 MΩ to 1 GΩ	0.35 %+ 12 kΩ		
AC VOLTAGE	1 mV to 200 mV			UK
	20 Hz to 40 Hz	180 ppm + 16 μV		
	40 Hz to 10 kHz	140 ppm + 16 μV		
	10 kHz to 30 kHz	350 ppm + 16 μV		
	30 kHz to 100 kHz	850 ppm + 20 μV		
	200 mV to 2 V			
	20 Hz to 40 Hz	150 ppm + 40 μV		
	40 Hz to 10 kHz	120 ppm + 40 μV		
	10 kHz to 30 kHz	280 ppm + 40 μV		
	30 kHz to 100 kHz	600 ppm + 120 μV		
	100 kHz to 500 kHz	2.0 % + 15 mV		
	2 V to 20 V			
	20 Hz to 40 Hz	150 ppm + 260 μV		
	40 Hz to 10 kHz	150 ppm + 260 μV		
	10 kHz to 30 kHz	280 ppm + 330 μV		
	30 kHz to 100 kHz	600 ppm + 300 mV		
	20 V to 200 V			
	20 Hz to 40 Hz	150 ppm + 7.0 mV		
	40 Hz to 10 kHz	150 ppm + 7.0 mV		
	10 kHz to 30 kHz	280 ppm + 7.0 mV		
	30 kHz to 60 kHz	600 ppm + 15 mV		
	200 V to 1 kV			
	45 Hz to 10 kHz	250 ppm + 25 mV		
	10 kHz to 30 kHz	400 ppm + 30 mV		
AC CURRENT	25 μA to 200 μA			UK
	40 Hz to 45 Hz	0.17 % + 410 nA		
	45 Hz to 1 kHz	0.080 % + 390 nA		
	200 μA to 2 mA			
	40 Hz to 45 Hz	0.18 % + 1.0 μA		
	45 Hz to 1 kHz	0.075 % + 0.70 μA		
	2 mA to 20 mA			
	40 Hz to 45 Hz	0.18 % + 1.1 μA		
	45 Hz to 1 kHz	0.073 % + 7.4 μA		
	20 mA to 200 mA			
	40 Hz to 45 Hz	0.18 % + 120 μA		
	45 Hz to 1 kHz	0.077 % + 86 μA		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
AC CURRENT (cont'd)	200 mA to 2 A			
	40 Hz to 45 Hz	0.18 % + 1.1 µA		
	45 Hz to 1 kHz	0.085 % + 0.77 µA		
	200 mA to 20 A			
	40 Hz to 45 Hz	0.16 % + 11 mA		
	45 Hz to 1 kHz	0.037 % + 6.6 mA		
	20 A to 100 A @ 50 Hz	0.22 % + 100 mA	Simulation using a multi turn coil	
	100 A to 1000 A @ 50 Hz	0.22 % + 400 mA		
CAPACITANCE				UK
Sourcing only	1 nF	29 pF		
	10 nF	61 pF		
	20 nF	99 pF		
	50 nF	220 pF		
	100 nF	370 pF		
	1 µF	5.1 nF		
	10 µF	78 nF		
	100 µF	770 nF		
	1 mF	12 µF		
	10 mF	120 µF		
ELECTRICAL SIMULATION OF TEMPERATURE				UK
Base Metal Thermocouples	- 200 °C to + 1400 °C	0.12 °C		
Noble Metal Thermocouples	500 °C to 1800 °C	0.14 °C	Excluding automatic CJC	
Type B (Noble)	500 °C to 1800 °C	0.30 °C		
Base Metal Thermocouples	- 200 °C to + 1400 °C	0.27 °C		
Noble Metal Thermocouples	500 °C to 1800 °C	0.29 °C	Including automatic CJC	
Type B (Noble)	500 °C to 1800 °C	0.45 °C		
Pt 100 resistance thermometer simulation				
	- 200 °C to + 266 °C	0.012 °C		
	266 °C to 830 °C	0.022 °C		
FREQUENCY			Frequency may also be expressed in terms of time; 1/f, for repetitive signals or in other units such as revolutions per minute.	UK
	10 MHz Clock frequency	3.0 parts in 10^{10}		
Generation	1 Hz to 60 MHz	5.0 parts in 10^{8}		
Measurement	10 mHz to 60 MHz	5.0 parts in 10^{8} + 1.0 mHz		
TIME INTERVAL	0 s to 1 day	100 ms	Manually triggered single events.	
RPM	60 RPM to 60000 RPM	50 ppm + 0.01 RPM	Generate	UK

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
TEMPERATURE				
Temperature indicators and recorders, with temperature sensor(s)	- 15 °C to 130 °C	0.080 °C		UK
Resistance thermometers	- 15 °C to 130 °C	0.080 °C		
Capability at Classic Metrology				
TEMPERATURE				IRE
Temperature indicators and recorders, with temperature sensor(s)	0.01 °C (Water Triple Point) - 80 °C to + 100 °C 100 °C to 280°C	0.0030 °C 0.019 °C 0.034 °C		
Platinum Resistance Thermometers (4 wire)	0.01 ºC (Water Triple Point) - 80 °C to + 100 °C 100 °C to 280°C	0.0030 ºC 0.019 °C 0.034 °C		
Metal Block Calibrators and portable liquid baths	- 80 °C to + 100 °C 100 °C to 280 °C 280 °C to 420 °C 420 °C to 660 °C 0 °C	0.030 °C 0.036 °C 0.15 °C 0.15 °C 0.020 °C	Suitable zero reference baths	
PRESSURE			Calibration of pressure measuring devices with an electrical output may be undertaken.	IRE
Gas pressure (absolute)				
Calibration of pressure measuring instruments and gauges	2 kPa to 35 kPa 35 kPa to 300 kPa 300 kPa to 600 kPa 600 kPa to 10 MPa	0.0060 % + 2.0 Pa 0.0070 % + 2.0 Pa 0.0065 % + 20 Pa 0.0050 % + 20 Pa		
Gas pressure (gauge)				
Calibration of pressure measuring instruments and gauges	- 95 kPa to - 34.5 kPa - 34.5 kPa to - 2 kPa 0 Pa to 2 kPa 2 kPa to 35 kPa 35 kPa to 200 kPa 200 kPa to 500 kPa 500 kPa to 10 MPa	0.0075 % 0.0060 % + 0.20 Pa 0.0075 % + 1.0 Pa 0.0060 % + 0.20 Pa 0.0070 % 0.0065 % 0.0050 %		
Gas pressure (differential)				
Calibrations of differential pressure devices with low and high pressure ports at a common mode pressure of 3.5 kPa	0 Pa to 7 kPa (Line pressure 3.5 kPa)	0.030 % + 0.080 Pa		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
Hydraulic pressure (gauge)				
Calibration of pressure measuring instruments and gauges	358 kPa to 3.5 MPa 3.5 MPa to 111.5 MPa	0.0090 % + 30 Pa 0.0075 %		IRE
Hydraulic pressure (absolute)				
Calibration of pressure measuring instruments and gauges	458 kPa to 3.6 MPa 3.6 MPa to 111.6 MPa	0.0090 % + 50 Pa 0.0075 % + 20 Pa		
ELECTRICAL				
DC VOLTAGE	0 mV to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1 kV	15 ppm + 3.0 μV 12 ppm + 4.0 μV 12 ppm + 40 μV 16 ppm + 2.0 mV 16 ppm + 4.0 mV		IRE
DC CURRENT	0 mA to 4 mA 4 mA to 40 mA 40 to 100 mA	50 ppm + 50 nA 50 ppm + 100 nA 50 ppm + 400 nA	Using nominal 50 Ω shunt Using nominal 50 Ω shunt Using nominal 50 Ω shunt	IRE
Generation only	100 mA to 202 mA 202 mA to 2.02 A 2.02 A to 20 A 20 A to 1500 A	130 ppm + 6.6 μA 150 ppm + 180 μA 420 ppm + 1.5 mA 0.22 % + 100 mA	Simulation using a multi turn coil	
DC RESISTANCE	0 Ω to 20 Ω 20 Ω to 200 Ω 200 Ω to 2 kΩ 2 kΩ to 20 kΩ 20 kΩ to 200 kΩ 200 kΩ to 2 MΩ 2 MΩ to 20 MΩ 20 MΩ to 200 MΩ 200 MΩ to 1 GΩ	30 ppm + 310 μΩ 20 ppm + 250 μΩ 20 ppm + 3.0 mΩ 20 ppm + 30 mΩ 20 ppm + 300 mΩ 30 ppm + 3.0 Ω 35 ppm + 350 Ω 500 ppm + 3.0 kΩ 0.35 % + 600 kΩ		IRE
AC VOLTAGE	20 mV to 200 mV 20 Hz to 40 Hz 40 Hz to 2 kHz 2 kHz to 10 kHz	 150 ppm +30 μV 120 ppm + 25 μV 120 ppm + 25 μV		IRE
	200 mV to 2 V 20 Hz to 40 Hz 40 Hz to 2 kHz 2 kHz to 10 kHz 10 kHz to 100 kHz	 150 ppm + 100 μV 100 ppm + 100 μV 100 ppm + 100 μV 600 ppm + 250 μV		
AC VOLTAGE	2 V to 20 V 20 Hz to 40 Hz 40 Hz to 10 kHz 10 kHz to 100 kHz	 120 ppm + 3.0 mV 250 ppm + 2.0 mV 600 ppm + 3.0 mV		IRE

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
AC VOLTAGE (cont'd)	20 V to 200 V			
	20 Hz to 40 Hz	300 ppm + 20 mV		
	40 Hz to 10 kHz	100 ppm + 20 mV		
	10 kHz to 100 kHz	600 ppm + 120 mV		
	200 V to 1 kV			
	55 Hz to 10 kHz	100 ppm + 650 mV		
AC CURRENT				IRE
Generation	25 μA to 202 μA			
	40 Hz to 45 Hz	0.28 % + 420 nA		
	45 Hz to 999 Hz	0.099 % + 390 nA		
	202 μA to 2.02 mA			
	40 Hz to 45 Hz	0.22 % + 1.2 μA		
	45 Hz to 999 Hz	0.094 % + 0.80 μA		
	2.02 mA to 20.2 mA			
	40 Hz to 45 Hz	0.23 % + 12 μA		
	45 Hz to 999 Hz	0.094 % + 7.9 μA		
	20.2 mA to 202 mA			
	40 Hz to 45 Hz	0.22 % + 120 μA		
	45 Hz to 999 Hz	0.94 % + 90 μA		
	202 mA to 2.02 A			
	40 Hz to 45 Hz	0.25 % + 1.2 mA		
	45 Hz to 999 Hz	0.11 % + 0.11 mA		
	2.02 A to 20 A			
	40 Hz to 45 Hz	0.34 % + 13 mA		
	45 Hz to 999 Hz	0.073 % + 4.4 mA		
	20 A to 100 A 40 Hz to 60 Hz	0.25 % + 100 mA	Simulation using a multi turn coil	
	100 A to 1500 A 40 Hz to 60 Hz	0.25 % + 400 mA		
CAPACITANCE				IRE
Generation	1 nF	29 pF		
	10 nF	58 pF		
	20 nF	92 pF		
	50 nF	190 pF		
	100 nF	360 pF		
	1 μF	5.1 nF		
	10 μF	74 nF		
	100 μF	840 nF		
	1 mF	13 μF		
	10 mF	130 μF		

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Calibration performed by the Organisation at the locations specified

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks	Location Code
FREQUENCY			Frequency may also be expressed in terms of time; 1/f, for repetitive signals or in other units such as revolutions per minute.	IRE
	0.2 Hz to 10 Hz 10 Hz to 10 MHz 10 MHz to 50 MHz	7.0 ppm + 2.0 mHz 1.0 ppm + 2.0 mHz 7.0 ppm + 2.0 mHz		
RPM (Revolutions per minute)				IRE
	2 rpm to 10 rpm 10 rpm to 100 rpm 100 rpm to 1000 rpm 1000 rpm to 100000 rpm 100000 rpm to 100000 rpm	20 ppm + 0.00050 rpm 20 ppm + 0.0020 rpm 20 ppm + 0.020 rpm 20 ppm + 0.20 rpm 20 ppm + 2.0 ppm		
ELECTRICAL SIMULATION OF TEMPERATURE				IRE
Base Metal Thermocouples Noble Metal Thermocouples Type B (Noble)	- 200 °C to + 1400 °C 500 °C to 1800 °C 500 °C to 1800 °C	0.16 °C 0.18 °C 0.38 °C	Excluding automatic CJC	
Base Metal Thermocouples Noble Metal Thermocouples Type B (Noble)	- 200 °C to 1400 °C 500 °C to 1800 °C 500 °C to 1800 °C	0.31 °C 0.33 °C 0.53 °C	Including automatic CJC	
Pt 100 resistance thermometer simulation				
	- 200 °C to 266 °C 266 °C to 830 °C	0.015 °C 0.025 °C		
TIME INTERVAL	0 to 1 day	20 ppm + 100 ms	Manually triggered single events.	IRE
TEMPERATURE			Supporting measurement for reporting ambient temperature or cold junction reference.	IRE
	15 °C to 28 °C 0 °C	0.14 °C 0.14 °C		

END