


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>0822</b></p> <p>Accredited to <b>ISO/IEC 17025:2005</b></p>	<h3>Chamois Metrology Limited</h3> <p>Issue No: 063    Issue date: 09 June 2017</p>	
	<p><b>Unit 8 The Centre</b>  <b>Holywell Business Park</b>  <b>Northfield Road</b>  <b>Southam</b>  <b>Warwickshire</b>  <b>CV47 0FP</b></p>	<p><b>Contact: Mr N Morgan</b>  <b>Tel: +44 (0)1926 812066</b>  <b>Fax: +44 (0)1926 813569</b>  <b>E-Mail: neil.morgan@chamois.net</b>  <b>Website: www.chamois.net</b></p>
<p><b>Calibration performed by the Organisations at the locations specified below</b></p>		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<p><b>Address</b>  Unit 8 The Centre  Holywell Business Park  Northfield Road  SOUTHAM  Warwickshire  CV47 0FP</p> <p><b>Local contact</b>  Mr N Morgan</p>	<p><u>Mass calibration</u>  <u>Electrical calibration</u>  <u>Pressure calibration</u>  <u>Temperature calibration</u></p>	UK
<p><b>Address</b>  Classic Technology  Metrology division  Unit K2  M7 Business Park  Newhall  Naas  County Kildare  Ireland</p> <p><b>Local contact</b>  Mr P Kinsella    Tel. +353 (0) 45 896660  Fax. +353 (0) 45 896713  Email: info@classictechnology.ie</p>	<p><u>Pressure calibration</u>  <u>Electrical calibration</u>  <u>Temperature calibration</u>  <u>Mass calibration</u>  <u>Humidity calibration</u></p>	IRE

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

Location details	Activity	Location code
<p>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</p> <p><b>Local contact</b>  Mr N Morgan</p>	<p><u>Pressure calibration</u></p>	Site



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DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k = 2$ )	Remarks	Location Code
<p><b>PRESSURE</b></p> <p>Gas pressure (absolute)</p> <p>Calibration of pressure measuring instruments and gauges</p> <p>Gas pressure (gauge)</p> <p>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</p> <p>Gas pressure (differential)</p> <p>Calibrations of differential pressure devices with low and high pressure ports at a common mode pressure of 3.5kPa</p> <p>Calibration of pressure indicating instruments and gauges</p>	<p>2 Pa to 160 Pa 160 Pa to 1.4 kPa 1.4 kPa to 710 kPa 710 kPa to 27.6 MPa 27.6 MPa to 40 MPa</p> <p>- 100 kPa to - 3.5 kPa -3.5 kPa to 0 Pa 0 Pa to 1.4 kPa 1.4 kPa to 200 kPa 200 kPa to 710 kPa 710 kPa to 27.6 MPa 27.6 MPa to 40 MPa</p> <p>6 Pa to 10 kPa (Line pressure 3.5 kPa)</p> <p>0 Pa to (7 - line pressure) MPa (Line pressure 200 kPa to 7 MPa)</p> <p>7 MPa to (27.6 - line pressure) MPa (Line pressure 7 MPa to 27.6 MPa)</p> <p>0 Pa to (41.4 - line pressure) MPa (Line pressure 27.6 MPa to 41.4 MPa)</p>	<p>20 % 0.0040 % + 32 Pa 0.0030 % + 2.0 Pa 0.0025 % + 11 Pa 0.0045 % + 11 Pa</p> <p>0.0035 % 0.0095 % + 0.60 Pa 0.0040 % + 0.50 Pa 0.0025 % + 0.030 Pa 0.0025 % 0.0025 % 0.0045 %</p> <p>0.010 % + 0.060 Pa</p> <p>0.000060 % of line pressure, plus 0.0035 % of differential pressure, plus 5.0 Pa</p> <p>0.000060 % of line pressure, plus 0.0035 % of differential pressure, plus 10 Pa</p> <p>0.000065 % of line pressure, plus 0.0060 % of differential pressure, plus 16 Pa</p>	<p>Calibration of pressure measuring devices with an electrical output may be undertaken.</p> <p>Calibrations may also be performed over an environmental temperature range of +20 °C to +150 °C, with an uncertainty of <math>\pm 1</math> °C on the reported temperature. There will be an additional pressure uncertainty of <math>\pm (30 \text{ ppm} + 0.030 \text{ Pa})</math>.</p> <p>Differential pressure cells may be calibrated using digital communications protocols</p> <p>Calibrations may also be performed over an environmental temperature range of +2 °C to +8 °C with an uncertainty of <math>\pm 1</math> °C on the reported temperature.</p>	<p>UK &amp; Site</p>



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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k = 2$ )	Remarks	Location Code
<p>PRESSURE (cont'd)</p> <p>Hydraulic pressure (gauge)</p> <p>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.</p> <p>Hydraulic pressure (absolute)</p> <p>Calibration of pressure measuring instruments and gauges.</p> <p>Hydraulic pressure (differential)</p> <p>Calibration of pressure indicating instruments and gauges</p>	<p>137 kPa to 200 kPa 200 kPa to 7 MPa 7 MPa to 172 MPa 172 MPa to 345 MPa</p> <p>200 kPa to 7 MPa 7 MPa to 172 MPa 172 MPa to 345 MPa</p> <p>0 Pa to (172 - line pressure) MPa (Line pressure 1.7 MPa to 172 MPa)</p>	<p>0.0070 % + 14 Pa 0.0040 % + 16 Pa 0.0040 % + 0.24 ppm/MPa 0.0080 %</p> <p>0.0040 % + 28 Pa 0.0040 % + 0.24 ppm/MPa + 15 Pa 0.0080 %</p> <p>0.000060 % of line pressure plus 0.0055 % of differential pressure plus 20 Pa</p>		
<p>MASS</p>	<p>Nominal value (g)</p> <p>26 000 20 000 10 000 5 000 2 000 1 000 500 200 100 50 20 10 5 2 1 0.5 0.2 0.1 0.05 0.02 0.01 0.005 0.002 0.001</p>	<p>(mg)</p> <p>26 20 10 5.0 2.0 1.0 0.50 0.20 0.10 0.060 0.050 0.040 0.032 0.024 0.020 0.016 0.012 0.010 0.0080 0.0060 0.0050 0.0040 0.0040 0.0040</p>	<p>Intermediate values can be calibrated with an uncertainty not less than that interpolated from the next higher and lower nominal value in the table.</p> <p>Calibrations can be given in other units as required.</p>	<p>UK</p>



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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k = 2$ )	Remarks	Location Code
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 1050 V	10 ppm + 0.5 $\mu$ V 10 ppm + 1.0 $\mu$ V 10 ppm + 10 $\mu$ V 10 ppm + 200 $\mu$ V 10 ppm + 2.0 mV		
DC Current	0 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 100 mA  100 mA to 200 mA 200 mA to 2 A 2 A to 20 A	20 ppm + 1.0 nA 20 ppm + 10 nA 20 ppm + 75 nA 40 ppm + 150 nA  35 ppm + 0.70 $\mu$ A 250 ppm + 30 $\mu$ A 500 ppm + 1.0 mA	Using nominal 10 $\Omega$ shunt	UK
DC Current Generation only	100 mA to 202 mA 202 mA to 2.02 A 2.02 A to 20 A  20 A to 1000 A	62 ppm + 5.5 $\mu$ A 90 ppm + 72 $\mu$ A 330 ppm + 8.0 mA  0.22 % + 100 mA	Simulation using multi turn coil	
DC Resistance	0 $\Omega$ to 2 $\Omega$ 2 $\Omega$ to 20 $\Omega$ 20 $\Omega$ to 200 $\Omega$ 200 $\Omega$ to 2 k $\Omega$ 2 k $\Omega$ to 20 k $\Omega$ 20 k $\Omega$ to 200 k $\Omega$ 200 k $\Omega$ to 2 M $\Omega$ 2 M $\Omega$ to 20 M $\Omega$ 20 M $\Omega$ to 200 M $\Omega$ 200 M $\Omega$ to 1 G $\Omega$	15 ppm + 20 $\mu$ $\Omega$ 15 ppm + 20 $\mu$ $\Omega$ 15 ppm + 150 $\mu$ $\Omega$ 15 ppm + 1.0 m $\Omega$ 15 ppm + 15 m $\Omega$ 15 ppm + 100 m $\Omega$ 15 ppm + 1.5 $\Omega$ 20 ppm + 20 $\Omega$ 400 ppm + 500 $\Omega$ 0.35 % + 12 k $\Omega$		
AC VOLTAGE	1 mV to 200 mV 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz  200 mV to 2 V 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 500 kHz  2 V to 20 V 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 500 kHz	150 ppm + 15 $\mu$ V 120 ppm + 15 $\mu$ V 350 ppm + 16 $\mu$ V 600 ppm + 20 $\mu$ V  140 ppm + 40 $\mu$ V 120 ppm + 40 $\mu$ V 260 ppm + 40 $\mu$ V 350 ppm + 100 $\mu$ V 0.65 % + 15 mV  150 ppm + 260 $\mu$ V 140 ppm + 260 $\mu$ V 260 ppm + 330 $\mu$ V 550 ppm + 1.2 mV 0.65 % + 120 mV		UK



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AC VOLTAGE (cont'd)	20 V to 200 V 20 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz	140 ppm + 7.0 mV 260 ppm + 7.0 mV 600 ppm + 15 mV		
AC CURRENT	200 V to 1 kV 45 Hz to 10 kHz 10 kHz to 30 kHz	200 ppm + 25 mV 380 ppm + 30 mV		
	20 µA to 200 µA 55 Hz to 5 kHz 5 kHz to 10 kHz	0.050 % + 50 nA 0.060 % + 50 nA		
	200 µA to 2 mA 55 Hz to 10 kHz	0.050 % + 500 nA		
	2 mA to 20 mA 55 Hz to 10 kHz	0.050 % + 5.0 µA		
	20 mA to 200 mA 55 Hz to 10 kHz	0.050 % + 50 µA		
	200 mA to 2 A 55 Hz to 1 kHz	0.060 % + 500 µA		
	2 A to 20 A 55 Hz to 1 kHz	0.060 % + 4.0 mA		
AC CURRENT Generation only	25 µA to 200 µA 40 Hz to 45 Hz 45 Hz to 1 kHz	0.17 % + 410 nA 0.080 % + 390 nA		UK
	200 µA to 2 mA 40 Hz to 45 Hz 45 Hz to 1 kHz	0.18 % + 1.0 µA 0.075 % + 0.70 µA		
	2 mA to 20 mA 40 Hz to 45 Hz 45 Hz to 1 kHz	0.18 % + 1.1 µA 0.073 % + 7.4 µA		
	20 mA to 200 mA 40 Hz to 45 Hz 45 Hz to 1 kHz	0.18 % + 120 µA 0.077 % + 86 µA		
	200 mA to 2 A 40 Hz to 45 Hz 45 Hz to 1 kHz	0.18 % + 1.1 mA 0.085 % + 770 µA		
	2 A to 20 A 40 Hz to 45 Hz 45 Hz to 100 Hz	0.16 % + 11 mA 0.037 % + 6.6 mA		
	20 A to 100 A at 50 Hz	0.22 % + 100 mA	Simulation using a multi turn coil	
	100 A to 1000 A at 50 Hz	0.22 % + 400 mA		



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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k = 2$ )	Remarks	Location Code
AC RESISTANCE <i>55 Hz to 1 kHz</i>	30 $\mu\Omega$ to 10 m $\Omega$ 10 m $\Omega$ to 100 m $\Omega$ 100 m $\Omega$ to 1 $\Omega$ 1 $\Omega$ to 10 10 $\Omega$ to 100 $\Omega$ 100 $\Omega$ to 1 k $\Omega$	26 $\mu\Omega$ 0.26 % 0.26 % 0.16 % 0.16 % 0.16 %		UK
CAPACITANCE Sourcing only	1 nF 10 nF 20 nF 50 nF 100 nF 1 $\mu$ F 10 $\mu$ F	29 pF 61 pF 99 pF 220 pF 370 pF 5.1 nF 78 nF		
FREQUENCY  Generation Measurement	10 MHz Clock frequency 10 mHz to 80 MHz 1 mHz to 80 MHz	1.0 parts in $10^8$ 5.0 parts in $10^8$ 5.0 parts in $10^8 + 5.0$ $\mu$ Hz	Frequency may also be expressed in terms of time; 1/f, for repetitive signals or in other units such as revolutions per minute.	UK
TIME INTERVAL	0 s to 1 day	100 ms	Manually triggered single events.	UK
RPM	60 RPM to 60000 RPM	50 ppm + 0.01 RPM	Generate	UK



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OSCILLOSCOPES				
Vertical deflection coefficients				UK
DC	30 mV to 300 mV 300 mV to 120 V	1.1 % 0.30 %	Square-wave & DC signals appropriate for the calibration of oscilloscope vertical deflection coefficients	UK
Peak to Peak Voltage 1 kHz	30 mV to 300 mV 300 mV to 6 V	1.3 % 0.70 %		
Horizontal deflection coefficients				
Time	10 ns to 1 s	0.10 %	Pulse markers	
			The uncertainties quoted above are based on the readout resolution of typical oscilloscopes.	
ELECTRICAL SIMULATION OF TEMPERATURE				UK
Base Metal Thermocouples	-200 °C to +1400 °C	0.050 °C	Excluding automatic CJC	UK
Noble Metal Thermocouples	500 °C to 1800 °C	0.050 °C		
Type B (Noble)	500 °C to 1800 °C	0.10 °C		
Base Metal Thermocouples	-200 °C to +1400 °C	0.17 °C	Including automatic CJC	UK
Noble Metal Thermocouples	500 °C to 1800 °C	0.19 °C		
Type B (Noble)	500 °C to 1800 °C	0.28 °C		
Cold Junction Compensation	0 °C to 30 °C	0.15 °C		
Pt 100 resistance thermometer simulation				
	-200 °C to +266 °C 266 °C to 830 °C	0.011 °C 0.015 °C		



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<b>TEMPERATURE</b>				
Temperature indicators and recorders, with temperature sensor(s)	0.01 °C (Water Triple Point) -95 °C to 140 °C 140 °C to 150 °C 150 °C to 650 °C	0.0050 °C 0.055 °C 0.080 0.10 °C		UK
Resistance thermometers	0.01 °C (Water Triple Point) -95 °C to 140 °C 140 °C to 150 °C 150 °C to 650 °C	0.0050 °C 0.055 °C 0.080 °C 0.10 °C		
Thermocouples Base Metal	-95 °C to 0 °C 0 °C to 30 °C 30 °C to 650 °C	0.40 °C 0.10 °C 0.40 °C		
Noble Metal Type R and S Type B	0 °C to 650 °C 0 °C to 650 °C	0.40 °C 0.70 °C		
Metal Block Calibrators and portable liquid baths	-100 °C to 250 °C 250 °C to 650 °C	0.050 °C 0.135 °C		
<b>PRESSURE</b>			Calibration of pressure measuring devices with an electrical output may be undertaken.	IRE
Gas pressure (absolute)				
Calibration of pressure measuring instruments and gauges	1.4 kPa to 710 kPa 710 kPa to 10.1 MPa	0.0050 % + 2.0 Pa 0.0050 % + 20 Pa		
Gas pressure (gauge)				
Calibration of pressure measuring instruments and gauges	-100 kPa to -1.4 kPa -1.4 kPa to 1.4 kPa 1.4 kPa to 10 MPa	0.0050 % 0.0075 % + 1.0 Pa 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	6 Pa to 10 kPa (Line pressure 3.5 kPa)	0.010 % + 0.060 Pa		





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PRESSURE (cont'd)				IRE
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		
MASS	Nominal value (g)	(mg)		IRE
	20 000	10	Intermediate values can be calibrated with an uncertainty not less than that interpolated from the next higher and lower nominal value in the table.  Calibrations can be given in other units as required.	
	10 000	5.3		
	5 000	2.7		
	2 000	1.0		
	1 000	0.53		
	500	0.27		
	200	0.10		
	100	0.053		
	50	0.033		
	20	0.027		
	10	0.020		
	5	0.017		
	2	0.013		
	1	0.010		
	0.5	0.0083		
	0.2	0.0067		
	0.1	0.0053		
	0.05	0.0040		
	0.02	0.0033		
	0.01	0.0027		
	0.005	0.0020		
	0.002	0.0020		
	0.001	0.0020		
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	10 ppm + 1.5 $\mu$ V 10 ppm + 1.5 $\mu$ V 10 ppm + 10 $\mu$ V 10 ppm + 200 $\mu$ V 10 ppm + 2.0 mV		IRE
DC CURRENT	0 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 30 mA 30 mA to 200 mA 200 mA to 2 A 2 A to 20 A	20 ppm + 1 nA 20 ppm + 10 nA 20 ppm + 75 nA 50 ppm + 100 nA 35 ppm + 0.7 nA 250 ppm 30 $\mu$ A 500 ppm + 1.0 mA	Using nominal 50 $\Omega$ shunt	IRE



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ELECTRICAL (cont'd)				
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 $\mu$ A 150 ppm + 180 $\mu$ A 420 ppm + 1.5 mA  0.22 % + 100 mA	Simulation using a multi turn coil	
DC RESISTANCE	0 $\Omega$ to 2 $\Omega$ 2 $\Omega$ to 20 $\Omega$ 20 $\Omega$ to 200 $\Omega$ 200 $\Omega$ to 2 k $\Omega$ 2 k $\Omega$ to 20 k $\Omega$ 20 k $\Omega$ to 200 k $\Omega$ 200 k $\Omega$ to 2 M $\Omega$ 2 M $\Omega$ to 20 M $\Omega$ 20 M $\Omega$ to 200 M $\Omega$ 200 M $\Omega$ to 1 G $\Omega$	15 ppm + 20 $\mu$ $\Omega$ 15 ppm + 20 $\mu$ $\Omega$ 15 ppm + 150 $\mu$ $\Omega$ 15 ppm + 1.0 m $\Omega$ 15 ppm + 15 m $\Omega$ 15 ppm + 100 m $\Omega$ 15 ppm + 1.5 $\Omega$ 20 ppm + 20 $\Omega$ 400 ppm + 500 $\Omega$ 0.35 % + 12 k $\Omega$		IRE
AC VOLTAGE	1 mV to 200 mV 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz	150 ppm + 15 $\mu$ V 120 ppm + 15 $\mu$ V 350 ppm + 16 $\mu$ V 350 ppm + 16 $\mu$ V 600 ppm + 20 $\mu$ V		IRE
AC VOLTAGE	200 mV to 2 V 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 500 kHz	140 ppm + 40 $\mu$ V 120 ppm + 40 $\mu$ V 260 ppm + 40 $\mu$ V 350 ppm + 100 $\mu$ V 0.65 % + 15 $\mu$ V		IRE
AC VOLTAGE	2 V to 20 V 20 Hz to 55 Hz 55 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 500 kHz	150 ppm + 260 $\mu$ V 140 ppm + 260 $\mu$ V 260 ppm + 330 $\mu$ V 550 ppm + 1.2 mV 0.65 % + 120 mV		IRE
	20 V to 200 V 20 Hz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz	140 ppm + 7 mV 260 ppm + 7 mV 600 ppm + 15 mV		
	200 V to 1 kV 45 Hz to 10 kHz 10 kHz to 30 kHz	200 ppm + 25 mV 380 ppm + 30 mV		



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AC CURRENT	20 $\mu$ A to 200 $\mu$ A 55 Hz to 5 kHz 5 kHz to 10 kHz	0.050 % + 50 nA 0.060 % + 50 nA		IRE
	200 $\mu$ A to 2 mA 55 Hz to 10 kHz	0.050 % + 500 nA		
	2 mA to 20 mA 55 Hz to 10 kHz	0.050 % + 5.0 $\mu$ A		
	20 mA to 200 mA 55 Hz to 10 kHz	0.050 % + 50 $\mu$ A		
	200 mA to 2 A 55 Hz to 10 kHz	0.050 % + 500 $\mu$ A		
	2 A to 20 A 55 Hz to 5 kHz	0.20 % + 5.0 mA		
Generation	25 $\mu$ A to 202 $\mu$ A 40 Hz to 45 Hz 45 Hz to 999 Hz	0.28 % + 420 nA 0.099 % + 390 nA		
	202 $\mu$ A to 2.02 mA 40 Hz to 45 Hz 45 Hz to 999 Hz	0.22 % + 1.2 $\mu$ A 0.094 % + 0.80 $\mu$ A		
	2.02 mA to 20.2 mA 40 Hz to 45 Hz 45 Hz to 999 Hz	0.23 % + 12 $\mu$ A 0.094 % + 7.9 $\mu$ A		
	20.2 mA to 202 mA 40 Hz to 45 Hz 45 Hz to 999 Hz	0.22 % + 120 $\mu$ A 0.94 % + 90 $\mu$ A		
	202 mA to 2.02 A 40 Hz to 45 Hz 45 Hz to 999 Hz	0.25 % + 1.2 mA 0.11 % + 0.11 mA		
	2.02 A to 20 A 40 Hz to 45 Hz 45 Hz to 999 Hz	0.34 % + 13 mA 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		



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CAPACITANCE Generation	1 nF 10 nF 20 nF 50 nF 100 nF 1 $\mu$ F 10 $\mu$ F 100 $\mu$ F 1 mF 10 mF	29 pF 58 pF 92 pF 190 pF 360 pF 5.1 nF 74 nF 840 nF 13 $\mu$ F 130 $\mu$ F		IRE
FREQUENCY Generation	0.01 Hz to 50 MHz	5.0 ppm	Frequency may also be expressed in terms of time; 1/f, for repetitive signals or in other units such as revolutions per minute.	IRE
Measurement	0.01 Hz to 50 MHz	8.0 ppm		
RPM (Revolutions per minute)	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		IRE
TIME INTERVAL	0 s to 100 hours	20 ppm + 100 ms	Manually triggered single events. Electronically triggered single events	IRE
	0 s to 100 hours	8 ppm + 80 ns		IRE
RCD Trip current	2 mA to 3 A 20 ms to 190 ms	5.8 % + 240 $\mu$ A		IRE
	2 mA to 3 A 190 ms to 5 s	1.4 % + 80 $\mu$ A		
Trip time	20 ms to 400 ms 400 ms to 5 s	1.0 ms 10 ms		
AC resistance for Loop 50 Hz			Laboratory loop 0.20 $\Omega$	IRE
Nominal Ranges	0.2 $\Omega$ to 10 $\Omega$ 10 $\Omega$ to 100 $\Omega$ 100 $\Omega$ to 1 k $\Omega$	0.6% + 4.8 m $\Omega$ 0.6% + 19 m $\Omega$ 0.6% + 36 m $\Omega$		
Earth Bond Resistance	0 $\Omega$ to 10 $\Omega$ 10 $\Omega$ to 100 $\Omega$ 100 $\Omega$ to 1 k $\Omega$	0.60 % + 4.8 m $\Omega$ 0.60 % + 19 m $\Omega$ 0.60 % + 36m $\Omega$		IRE
Earth bond current 50 Hz	10 mA to 500 mA 100 mA to 10 A 10 A to 30 A	1.8 % + 7.0 mA 1.8 % + 70 mA 1.8 % + 70 mA		



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**Schedule of Accreditation**  
issued by  
**United Kingdom Accreditation Service**  
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Chamois Metrology Limited**  
Issue No: 063 Issue date: 09 June 2017

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
Load	0.13 kVA	6.0 %		
Leakage Current At nominal 240 V 50 Hz	2 mA to 8 mA	1.8 % + 11 $\mu$ A		IRE
Insulation Test Voltage	50 V to 1000 V	1.2 % + 950 mV		
Insulation Resistance	10 k $\Omega$ to 100 k $\Omega$ 101 k $\Omega$ to 1 M $\Omega$ 1.01 M $\Omega$ to 10 M $\Omega$ 10.1 M $\Omega$ to 100 M $\Omega$ 101 M $\Omega$ to 1 G $\Omega$ 1.01 G $\Omega$ to 10 G $\Omega$	0.12 % + 200 m $\Omega$ 0.12 % 1.2 % 1.2 % 1.4 % 7.0 %		
AC Voltage Nominal 50 Hz	100 V to 400 V	0.25 % + 160 mV		IRE
Continuity Resistance	20 m $\Omega$ to 1000 $\Omega$	0.30 % + 30 m $\Omega$		
Continuity Current At a nominal 1 $\Omega$	10 mA to 300 mA	1.6 % + 0.80 mA		
ELECTRICAL SIMULATION OF TEMPERATURE				IRE
Base Metal Thermocouples	-200 $^{\circ}$ C to +1400 $^{\circ}$ C	0.10 $^{\circ}$ C		
Noble Metal Thermocouples	500 $^{\circ}$ C to 1800 $^{\circ}$ C	0.11 $^{\circ}$ C	Excluding automatic CJC	
Type B (Noble)	500 $^{\circ}$ C to 1800 $^{\circ}$ C	0.24 $^{\circ}$ C		
Base Metal Thermocouples	-200 $^{\circ}$ C to +1400 $^{\circ}$ C	0.25 $^{\circ}$ C		
Noble Metal Thermocouples	500 $^{\circ}$ C to 1800 $^{\circ}$ C	0.26 $^{\circ}$ C	Including automatic CJC	
Type B (Noble)	500 $^{\circ}$ C to 1800 $^{\circ}$ C	0.39 $^{\circ}$ C		
Cold Junction Compensation	At ambient temperature of 20 $^{\circ}$ C	0.15 $^{\circ}$ C		
Pt 100 resistance thermometer simulation	-200 $^{\circ}$ C to +266 $^{\circ}$ C 266 $^{\circ}$ C to 830 $^{\circ}$ C	0.011 $^{\circ}$ C 0.015 $^{\circ}$ C		



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TEMPERATURE				IRE
Temperature indicators and recorders, with temperature sensor(s)	0.01 °C (Water Triple Point) -80 °C to +300 °C 300 °C to 420 °C 420 °C to 650 °C	0.0030 °C 0.017 °C 0.056 °C 0.094 °C		
Platinum Resistance Thermometers (4 wire)	0.01 °C (Water Triple Point) -80 °C to +300°C 300 °C to 420 °C 420 °C to 650 °C	0.0030 °C 0.017 0.056 °C 0.094 °C		
Metal Block Calibrators and portable liquid baths	-80 °C to +100 °C 100 °C to 300 °C 300 °C to 420 °C 420 °C to 650 °C 0 °C	0.030 °C 0.038 °C 0.15 °C 0.16 °C 0.020 °C	Suitable zero reference baths	
HUMIDITY				
Dew-point	-25 °C to -10 °C -10 °C to +60 °C	0.22 °C 0.17 °C		
Temperature sensors in air	0 °C to 60 °C	0.10 °C		
Relative humidity	Example conditions  <i>At 0 °C:</i> 10 %rh to 90 %rh  <i>At 23 °C:</i> 5 %rh to 95 %rh  <i>At 60 °C:</i> 5 %rh to 90 %rh	Corresponding to above dew-point and temperature uncertainties  0.20 %rh to 1.1 %rh  0.20 %rh to 1.1 %rh  0.20 %rh to 0.80 %rh		
END				