Schedule of Accreditation

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United Kingdom Accreditation Service

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Accredited to ISO/IEC 17025:2017

Pennine Instrument Services Limited

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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
ELECTRICAL CALIBRATION All electrical measurements are carried out using the method of direct comparison or transfer to laboratory reference standards unless otherwise determined in the remarks column. The measurement and generation headings in the first column declare the laboratory's ability to either measure outputs of submitted test items or to generate values as a stimulus for test items which measure.			
DC Voltage			
Measurement	0 mV to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1100 V 1 kV to 4 kV 4 kV to 6 kV 6 kV to 8 kV 8 kV to 10 kV 10 kV to 15 kV 15 kV to 20 kV 20 kV to 25 kV 25 kV to 30 kV 30 kV to 35 kV 45 kV to 40 kV	9.0 ppm + 0.60 μV 5.0 ppm 4.0 ppm 7.0 ppm 7.0 ppm 0.49 % + 6.0 V 0.49 % + 6.1 V 0.61 % + 6.3 V 0.60 % + 6.6 V 0.72 % + 35 V 0.72 % + 35 V 0.72 % + 57 V 0.72 % + 68 V 0.72 % + 78 V 0.72 % + 97 V	These values can be generated for the calibration of measuring instruments, Outputs of instruments can be measured directly
Generation	0 mV to 330 mV 330 mV to 3.3 V 3.3 V to 33 V 33 V to 330 V 330 V to 1020 V	13 ppm + 1.6 μV 8.0 ppm 9.0 ppm 11 ppm 12 ppm	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
AC Voltage Measurement			
	1 mV to 12 mV		
	10 Hz to 40 Hz	160 ppm + 0.8 µV	
	40 Hz to 1 kHz	100 ppm + 0.8 µV	
	1 kHz to 20 kHz	100 ppm + 0.8 µV	
	20 kHz to 50 kHz	160 ppm + 0.8 µV	
	50 kHz to 100 kHz	250 ppm + 0.8 µV	
	100 kHz to 300 kHz	0.63 % + 0.8 µV	
	12 mV to 120 mV		
	10 Hz to 40 Hz	110 ppm	
	40 Hz to 1 kHz	100 ppm	
	1 kHz to 20 kHz	100 ppm	
	20 kHz to 50 kHz	170 ppm	
	50 kHz to 100 kHz	250 ppm	
	100 kHz to 300 kHz	0.62 %	
	300 kHz to 1 MHz	0.63 %	
	1 MHz to 2 MHz	0.63 %	
	120 mV to 1.2 V		
	10 Hz to 40 Hz	100 ppm	
	40 Hz to 1 kHz	100 ppm	
	1 kHz to 20 kHz	100 ppm	
	20 kHz to 50 kHz	160 ppm	
	50 kHz to 100 kHz	250 ppm	
	100 kHz to 300 kHz	280 ppm	
	300 kHz to 1 MHz	0.62 %	
	1 MHz to 2 MHz	0.62 %	
	1.2 V to 12 V		
	10 Hz to 40 Hz	110 ppm	
	40 Hz to 1 kHz	100 ppm	
	1 kHz to 20 kHz	100 ppm	
	20 kHz to 50 kHz	100 ppm	
	50 kHz to 100 kHz	390 ppm	
	100 kHz to 300 kHz	410 ppm	
	300 kHz to 2 MHz	0.62 %	
	12 V to 120 V		
	10 Hz to 40 Hz	130 ppm	
	40 Hz to 1 kHz	110 ppm	
	1 kHz to 20 kHz	120 ppm	
	20 kHz to 50 kHz	250 ppm	
	50 kHz to 100 kHz	680 ppm	
	100 kHz to 300 kHz	690 ppm	
	300 kHz to 1 MHz	720 ppm	
	120 V to 200 V		
	10 Hz to 100 Hz	190 ppm	
	100 Hz to 2 kHz	180 ppm	
	2 kHz to 10 kHz	160 ppm	
	10 kHz to 30 kHz	170 ppm	
	30 kHz to 100 kHz	420 ppm	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
AC Voltage Measurement (cont'd)			
	200 V to 1100 V		
	10 Hz to 100 Hz	150 ppm	
	100 Hz to 2 kHz	140 ppm	
	2 kHz to 10 kHz	350 ppm	
	10 kHz to 30 kHz	790 ppm	
	1 kV to 2 kV *50 Hz*	0.84 % + 8.4 V	
	2 kV to 4 kV *50 Hz*	0.84 % + 13 V	
	4 kV to 6 kV *50 Hz*	0.94 % + 18 V	
	6 kV to 7 kV *50 Hz*	0.97 % + 19 V	
AC Voltage Generation			
	7 kV to 10 kV		
	50 Hz to 60 Hz	0.80 % + 40 V	
	10 kV to 15 kV		
	50 Hz to 60 Hz	0.80 % + 59 V	
	15 kV to 20 kV		
	50 Hz to 60 Hz	0.80 % + 87 V	
	20 kV to 25 kV		
	50 Hz to 60 Hz	0.80 % + 110 V	
	1 mV to 33 mV	0.060 % + 2.6 μV	
	33 mV to 33 V	0.030 %	
	45 Hz to 10 kHz		
	1 mV to 33 mV	0.050 % + 2.6 μV	
	33 mV to 330 V	0.010 %	
	10 kHz to 20 kHz		
	1 mV to 33 mV	0.050 % + 2.6 μV	
	33 mV to 330 mV	0.020 %	
	330 mV to 3.3 V	0.010 %	
	3.3 V to 33 V	0.010 %	
	33 V to 330 V	0.010 %	
	20 kHz to 50 kHz		
	1 mV to 33 mV	0.050 % + 2.6 μV	
	33 mV to 330 mV	0.020 %	
	330 mV to 3.3 V	0.010 %	
	3.3 V to 33 V	0.010 %	
	33 V to 330 V	0.030 %	
	50 kHz to 100 kHz		
	1 mV to 33 mV	0.060 % + 2.6 μV	
	33 mV to 330 mV	0.020 %	
	330 mV to 3.3 V	0.040 %	
	3.3 V to 33 V	0.010 %	
	33 V to 330 V	0.090 %	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
AC Voltage Generation (cont'd)	 *100 kHz to 500 kHz* 1 mV to 33 mV 33 mV to 330 mV 330 mV to 3.3 V 330 V to 1020 V *45 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz*	 0.13 % + 2.6 μV 0.20 % 0.20 % 0.010 % 0.010 % 0.030 %	
DC Current Measurement	 0 μA to 1.2 μA 1.2 μA to 12 μA 12 μA to 120 μA 0.12 mA to 120 mA 120 mA to 200 mA 0.2 A to 2 A 2 A to 11 A	 110 ppm + 0.50 nA 23 ppm + 0.50 nA 18 ppm 16 ppm 17 ppm 65 ppm 140 ppm	
DC Current Generation	 0 μA to 330 μA 0.33 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 0.33 A to 1.1 A 1.1 A to 3 A 3 A to 11 A 11 A to 20.5 A 20.5 A to 150 A 150 A to 1025 A	 110 ppm + 3.8 nA 35 ppm 33 ppm 42 ppm 190 ppm 190 ppm 350 ppm 440 ppm 0.61 % 0.60 %	 For the calibration of clamp meters only
AC Current Measurement	 *10 Hz to 1 kHz* 2 μA to 200 μA 0.2 mA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 0.2 A to 2 A *1 kHz to 20 kHz* 0.12 mA to 12 mA 12 mA to 120 mA 120 mA to 1.05 A	 240 ppm + 17 nA 240 ppm 260 ppm 260 ppm 650 ppm 510 ppm 630 ppm 0.28 %	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
AC Current Measurement (cont'd)	*1 kHz to 5 kHz* 1.05 A to 2 A *20 Hz to 2 kHz* 2 A to 11 A *2 kHz to 5 kHz* 2 A to 11 A	 0.16 % 660 ppm 0.12 %	
AC Current Generation	*10 Hz to 20 Hz* 30 μA to 330 μA 330 μA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA *20 Hz to 45 Hz* 30 μA to 330 μA 330 μA to 3.3 mA 3.3 mA to 330 mA *10 Hz to 45 Hz* 330 mA to 1.1 A 1.1 A to 3 A *45 Hz to 1 kHz* 30 μA to 330 μA 330 μA to 3.3 mA 3.3 mA to 330 mA 330 mA to 1.1 A 1.1 A to 3 A *1 kHz to 5 kHz* 30 μA to 330 μA 330 μA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 330 mA to 1.1 A 1.1 A to 3 A 3 A to 11 A 11 A to 20.5 A	 0.15 % + 60 nA 0.10 % 0.14 % 0.13 % 0.15 % + 60 nA 0.10 % 0.060 % 0.050 % 0.04 % 0.14 % + 60 nA 0.10 % 0.060 % 0.050 % 0.040 % 0.24 % + 60 nA 0.12 % 0.090 % 0.070 % 0.090 % 0.040 % 0.23 % 0.25 %	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
AC Current			
Generation (cont'd)			
	5 kHz to 10 kHz		
	30 μA to 330 μA	0.28 % + 60 nA	
	330 μA to 3.3 mA	0.13 %	
	3.3 mA to 33 mA	0.14 %	
	33 mA to 330 mA	0.10 %	
	45 Hz to 100 Hz		
	3 A to 11 A	0.060 %	
	11 A to 20.5 A	0.080 %	
	100 Hz to 1 kHz		
	3 A to 11 A	0.070 %	
	11 A to 20.5 A	0.090 %	
	10 A to 1025 A		
	45 Hz to 65 Hz	0.40 %	For the calibration of clamp meters only
	65 Hz to 100 Hz	0.90 %	
DC Resistance			
Measurement			
	0 Ω to 20 Ω	22 ppm + 1.0 μΩ	
	20 Ω to 200 Ω	12 ppm	
	200 Ω to 12 kΩ	8.0 ppm	
	12 kΩ to 120 kΩ	11 ppm	
	0.12 MΩ to 1.2 MΩ	18 ppm	
	1.2 MΩ to 12 MΩ	42 ppm	
	12 MΩ to 200 MΩ	630 ppm	
	200 MΩ to 2 GΩ	900 ppm	
Generation (sourcing spot values)			
	0.0001 Ω	660 ppm	
	0.001 Ω	290 ppm	
	0.01 Ω	180 ppm	
	0.1 Ω	80 ppm	
	1 Ω	28 ppm	
	1.9 Ω	28 ppm	
	10 Ω	11 ppm	
	19 Ω	12 ppm	
	100 Ω	9.0 ppm	
	190 Ω	9.0 ppm	
	1 kΩ	6.0 ppm	
	1.9 kΩ	7.5 ppm	
	10 kΩ	8.5 ppm	
	19 kΩ	9.5 ppm	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
DC Resistance			
Generation (sourcing spot values cont'd)			
	100 kΩ	9.0 ppm	
	190 kΩ	9.5 ppm	
	1 MΩ	9.5 ppm	
	1.9 MΩ	15 ppm	
	10 MΩ	29 ppm	
	19 MΩ	53 ppm	
	100 MΩ	200 ppm	
Range Values	0 Ω to 11 Ω	71 ppm + 60 μΩ	
	11 Ω to 33 Ω	79 ppm	
	33 Ω to 110 Ω	34 ppm	
	110 Ω to 330 Ω	20 ppm	
	330 Ω to 1.1 kΩ	12 ppm	
	1.1 kΩ to 3.3 kΩ	14 ppm	
	3.3 kΩ to 11 kΩ	12 ppm	
	11 kΩ to 33 kΩ	12 ppm	
	33 kΩ to 110 kΩ	12 ppm	
	110 kΩ to 330 kΩ	23 ppm	
	330 kΩ to 1.1 MΩ	18 ppm	
	1.1 MΩ to 3.3 MΩ	59 ppm	
	3.3 MΩ to 11 MΩ	64 ppm	
	11 MΩ to 33 MΩ	230 ppm	
	33 MΩ to 110 MΩ	300 ppm	
	110 MΩ to 330 MΩ	0.14 %	
	330 MΩ to 1.1 GΩ	0.55 %	
DC Power	Voltage: 1 V to 1000 V Current: 10 mA to 20 A 10 mW to 20 kW	500 ppm	
	Voltage: 1 V to 1000 V Current: 1 A to 1000 A 1 W to 1000 kW	0.70 %	For the calibration of power clamp meters
AC Power	*50 Hz to 1 kHz* Voltage: 1 V to 1000 V Current: 10 mA to 20 A 10 mW to 20 kW	0.21 %	Active and reactive in phase (unity)
	50 Hz to 1 kHz Voltage: 1 V to 1000 V Current: 10 mA to 20 A 10 mW to 20 kW	0.60 %	Reactive power factor -1 to 1
	50 Hz to 1 kHz Voltage: 1 V to 1000 V Current: 1 A to 1000 A 1 W to 1000 kW	0.71 %	For the calibration of power clamp meters

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
Phase Angle	*50 Hz to 1 kHz* 0 ° to 360 °	 0.16 °	
Frequency	10 MHz 1 Hz to 3 GHz 0.1 Hz to 100 MHz 0.2 100 MHz to 3 GHz	4.0 in 10^{12} 5.0 in 10^{12} 5.0 in 10^{12} + 10 mHz 5.0 in 10^{12}	Source suitable for counters of sufficient resolution. Measurement capability of stable sources.
Capacitance Generation	*1 kHz* 190 pF to 400 pF 0.4 nF to 1.1 nF 1.1 nF to 3.3 nF 3.3 nF to 11 µF 11 µF to 33 µF 33 µF to 110 mF	 1.0 % 0.30 % 0.22 % 0.20 % 0.240 % 0.28 %	Values available for calibration of measuring devices.
Measurement	*100 Hz to 1kHz* 1 pF to 10 µF	 0.12 %	Measurement of capacitors.
Temperature Indicators and simulators, calibration by electrical simulation			
Cold junction	21 °C to 25 °C	0.20 °C	For reporting CJ value in ambient conditions for electrical simulation of temperature.
Noble metal thermocouples	0 °C to 1820 °C 0 °C to 1820 °C	0.30 °C 0.35 °C	Excluding cold junction compensation Including cold junction compensation
Base metal thermocouples	- 200 °C to - 100 °C - 100 °C to + 1372 °C - 200 °C to - 100 °C - 100 °C to 120 °C - 120 °C to + 1372 °C	0.25 °C 0.20 °C 0.25 °C 0.30 °C 0.27 °C	Excluding cold junction compensation Including cold junction compensation
Resistance sensors (Pt 100)	- 200 °C to + 800 °C	0.020 °C	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
17th Edition capability			
Insulation Resistance	10 kΩ to 5 MΩ 5 MΩ to 90 MΩ 90 MΩ to 1 GΩ 1 GΩ to 10 GΩ	700 ppm 0.36 % 1.2 % 1.4 %	
Insulation Resistance: Voltage measurement	50 V to 1 kV @ 0.5 mA or 1 mA	0.090 %	
Continuity resistance	20 mΩ to 1 Ω 1 Ω to 20 Ω 100 Ω 1 kΩ	1.9 % 1.5 % 0.2 % 0.2 %	
Continuity resistance current	0 mA to 320 mA @ 1 Ω	0.62 %	
Loop impedance	*50 Hz* 0.2 mΩ to 0.4 Ω 0.4 Ω to 0.8 Ω 0.8 Ω to 3 Ω 3 Ω to 8 Ω 8 Ω to 20 Ω 20 Ω to 200 Ω 200 Ω to 1 kΩ	 30 mΩ 31 mΩ 32 mΩ 33 mΩ 42 mΩ 210 mΩ 1.2 Ω	
RCD Trip Current	*50 Hz* 1 mA to 60 mA 60 mA to 3 A	 0.64 % 0.36 %	
RCD Trip time	20 ms to 400 ms 400 ms to 5 s	0.80 ms 8.3 ms	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
PAT Testers			
Earth Bond resistance	0.2 Ω to 2 Ω 2 Ω to 8 Ω 8 Ω to 20 Ω 20 Ω to 200 Ω 200 Ω to 1 kΩ	10 mΩ 16 mΩ 29 mΩ 150 mΩ 1.6 Ω	
Earth bond current	0 mA to 300 mA 300 mA to 8 A 8A to 30 A	3.0 % 0.60 % 0.50 %	
Insulation resistance	10 kΩ to 5 MΩ 5 MΩ to 90 MΩ 90 MΩ to 300 MΩ 300 MΩ to 1 GΩ 1 GΩ to 2 GΩ	700 ppm 0.36 % 1.2 % 1.2 % 1.4 %	
Leakage current	50 Hz 1 µA to 10 mA	 1.6 %	
Load	50 Hz 0.13 kW	 2.5 %	
Flash voltage	1 kV to 1.8 kV 2 kV to 3.6 kV	2.5 % 2.5 %	
Flash current	0.3 mA to 3 mA	4.0 %	
DIMENSIONAL CALIBRATION			
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			
Length			All linear calibrations may also be made in inch units.
Feeler gauges	BS 957:2008 0.02 to 1.00	3.0	
Gap Gauges (Plain parallel)	BS 969:2008 0.5 to 100 100 to 200 200 to 300	 1.0 2.0 4.0	
Length Gauges, Flat and Spherical-ended (excluding length bars)	0 to 3000 Diameter:	1.0 + (8.0 x length in m)	By comparison with reference standards

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
Plain Plug Gauges (parallel) cylindrical setting standards and rollers	1 to 50 50 to 100 100 to 200 200 to 300	0.80 1.0 1.5 2.5	By comparison with reference standards
Plain ring gauges (parallel)	5 to 15 15 to 50 50 to 100 100 to 150 150 to 200 200 to 500	2.0 1.8 2.0 2.5 3.0 8.0	By comparison with reference standards
Measuring Instruments and Equipment			
Dial gauges	BS 907:2008 and BS 2795:1981 0 to 50	1.0	
Micrometers			
External	BS 870:2008 0 to 600	Heads: 2.0 between any two points	
Internal	BS 959:2008 0 to 1000	Setting and extension rods: 1.0 + (8.0 x length in m)	
Depth	BS 6468:2008 0 to 300		
Vernier caliper gauges	BS 887:2008 0 to 1000		
Vernier depth gauges	BS 6365:2008 0 to 600	Overall performance 10 + (30 x length in m)	
Vernier height gauges	BS 1643:2008 (withdrawn) ISO13225:2012 0 to 1000		
AIR VELOCITY			Method by comparison using an open jet wind tunnel
Calibration of anemometers and pitot tubes with a digital display	0.3 m/s to 0.8 m/s 0.8 m/s to 1.5 m/s 1.5 m/s to 3 m/s 3 m/s to 5 m/s 5 m/s to 6 m/s 6 m/s to 7 m/s 7 m/s to 9 m/s 9 m/s to 11 m/s 11 m/s to 21 m/s 21 m/s to 26 m/s 26 m/s to 30 m/s	0.13 m/s 0.14 m/s 0.19 m/s 0.26 m/s 0.32 m/s 0.29 m/s 0.40 m/s 0.46 m/s 0.65 m/s 0.74 m/s 0.92 m/s	Calibration of devices up to 100 mm diameter may be undertaken

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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (k = 2)	Remarks
PRESSURE			Methods consistent with EURAMET CG3
<u>Hydraulic pressure (gauge)</u>			
Calibration of pressure indicating instruments and gauges	140 kPa to 410 kPa 410 kPa to 4.1 MPa 4.1 MPa to 289 MPa	0.016 % + 55 Pa 0.011 % 0.010 %	Calibration of pressure measuring devices with an electrical output may be undertaken.
<u>Hydraulic pressure (absolute)</u>			
Calibration of pressure indicating instruments and gauges	240 kPa to 510 kPa 510 kPa to 4.2 MPa 4.2 MPa to 289 MPa	0.016 % + 56 Pa 0.011 % + 12 Pa 0.010 % + 12 Pa	
<u>Gas pressure (gauge)</u>			
Calibration of pressure indicating instruments and gauges	-90 kPa to -1.5 kPa 0 to 800 Pa 800 Pa to 1.5 kPa 1.5 kPa to 200 kPa 200 kPa to 350 kPa 250 kPa to 7.1 MPa	0.0095 % + 0.17 Pa 9 Pa 10 Pa 0.0075 % + 0.17 Pa 0.022 % + 78 Pa 0.022 % + 70 Pa	
<u>Gas pressure (absolute)</u>			
Calibration of pressure indicating instruments and gauges	10 kPa to 80 kPa 80 kPa to 115 kPa 115 kPa to 315 kPa 315 kPa to 350 kPa 350 kPa to 7.2 MPa	0.0095 % + 12 Pa 12 Pa 0.0095 % + 12 Pa 0.022 % + 79 Pa 0.022 % + 71 Pa	

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 uncertainty of measurement 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 CIPM-ILAC definition of the CMC is as follows:

A CMC is a calibration and measurement capability available to customers under normal conditions:
(a) as published in the BIPM key comparison database (KCDB) of the CIPM MRA; or
(b) as described in the laboratory's scope of accreditation granted by a signatory to the ILAC Arrangement.

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 CMC is calculated according to the procedures given in M3003 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 CMC in certificates issued under its accreditation.

The CMC may be described using various methods in the Schedule of Accreditation:

As a single value that is valid throughout the range.
As an explicit function of the measurand or of a parameter (see below).
As a range of values. The range is stated such that the customer can make a reasonable estimate of the likely uncertainty at any point within the range.
As a matrix or table where the CMCs depend on the values of the measurand and a further quantity.
In graphical form, providing there is sufficient resolution on each axis to obtain at least two significant figures for the CMC.

Expression of CMCs - symbols and units

In general, only units of the SI and those units recognised for use with the SI are used to express the values of quantities and of the associated CMCs. Nevertheless, other commonly used units may be used where considered appropriate for the intended audience. For example, the term "ppm" (part per million) is frequently used by manufacturers of test and measurement equipment to specify the performance of their products. Terms like this may be used in Schedules of Accreditation where they are in common use and understood by the users of such equipment, providing their use does not introduce any ambiguity in the capability that is being described.

When the CMC is expressed as an explicit function of the measurand or of a parameter, this often comprises a relative term (e.g., percentage) and an absolute term, i.e. one expressed in the same units as those of the measurand. This form of expression is used to describe the capability that can be achieved over a range of values. Some examples are shown below. It should be noted that these expressions are *not* mathematical formulae but are instead written in a commonly used shorthand for expressing uncertainties - therefore, for purposes of clarity, an indication of how they are to be interpreted is also provided below.

DC voltage, 100 mV to 1 V: 0.0025 % + 5.0 µV

Over the range 100 mV to 1 V, the CMC is 0.0025 %·V + 5.0 µV, where V is the measured voltage.

Hydraulic pressure, 0.5 MPa to 140 MPa: 0.0036 % + 0.12 ppm/MPa + 4.0 Pa

Over the range 0.5 MPa to 140 MPa, the CMC is $0.0036\ \%\cdot p + (0.12\cdot 10^{-6}\cdot p\cdot 10^{-6}) + 4.0$ Pa, where p is the measured pressure in Pa.

It should be noted that the percentage symbol (%) simply represents the number 0.01. In cases where the CMC is stated only as a percentage, this is to be interpreted as meaning percentage of the measured value or indication.

Thus, for example, a CMC of 1.5 % means $1.5 \cdot 0.01 \cdot i$, where i is the instrument indication.