


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>UKAS</b> CALIBRATION <b>4332</b>  Accredited to <b>ISO/IEC 17025:2005</b>	<b>Poole Instrument Calibration Limited</b>	
	Issue No: 008    Issue date: 04 December 2018	
	<b>Unit 1</b> Cabot Business Village Holyrood Close Poole Dorset BH17 7BA	<b>Contact: Mr Matthew Suter</b> Tel: +44 (0)1202 658333 Fax: +44 (0)1202 659966 E-Mail: m.suter@pooleinstruments.com Website: www.pooleinstruments.co.uk
<b>Calibration performed by the Organisations at the locations specified below</b>		

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

#### Laboratory locations:

Location details	Activity	Location code
<b>Address</b> Unit 1 Cabot Business Village Holyrood Close Poole Dorset BH17 7BA  <b>Local contact</b> Mr Matthew Suter  Tel: +44 (0)1202 658333 Fax: +44 (0)1202 659966 Email: m.suter@pooleinstruments.com	Electrical and Temperature.	P

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

Location details	Activity	Location code
The customers' 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.	Electrical and Temperature.	S



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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
<b>ELECTRICAL</b>				
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 1 kV	5.0 $\mu$ V 20 $\mu$ V 0.11 mV 1.0 mV 20 mV		P
Generation	0 mV to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1000 V	7.0 $\mu$ V 15 $\mu$ V 0.40 mV 5.0 mV 10 mV		P
DC Current				
Measurement	0 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A	0.020 $\mu$ A 0.10 $\mu$ A 1.0 $\mu$ A 10 $\mu$ A 0.25 mA		P
Generation	0 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 30 A	0.040 $\mu$ A 0.20 $\mu$ A 1.0 $\mu$ A 15 $\mu$ A 0.25 mA 7 mA		P
	0 A to 60 A 60 A to 300 A 300 A to 1500 A	100 mA 160 mA 650 mA	Simulated current using multi turn coil, for the calibration of clamp-on ammeters.	P
DC Resistance				
Measurement	0 $\Omega$ 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 $\Omega$	0.50 m $\Omega$ 2.0 m $\Omega$ 20 m $\Omega$ 0.20 $\Omega$ 2.0 $\Omega$ 20 $\Omega$ 1.0 k $\Omega$ 120 k $\Omega$ 2.5 M $\Omega$		P



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DC Resistance (cont'd)				
Generation (2 wire)	0.2 $\Omega$ 0.3 $\Omega$ 1 $\Omega$ 10 $\Omega$ 100 $\Omega$ 1 k $\Omega$ 10 k $\Omega$ 100 k $\Omega$ 1 M $\Omega$ 10 M $\Omega$ 100 M $\Omega$ 1 G $\Omega$	0.010 $\Omega$ 0.02 $\Omega$ 0.015 $\Omega$ 0.020 $\Omega$ 0.015 $\Omega$ 0.020 $\Omega$ 0.06 $\Omega$ 4.0 $\Omega$ 0.02 k $\Omega$ 2.1 k $\Omega$ 0.03 M $\Omega$ 5.5 M $\Omega$	Nominal values	P
Generation (4 wire)	100 m $\Omega$ 1 $\Omega$ 10 $\Omega$ 100 $\Omega$ 1 k $\Omega$ 10 k $\Omega$ 100 k $\Omega$	2.0 m $\Omega$ 2.0 m $\Omega$ 2.0 m $\Omega$ 4.5 m $\Omega$ 0.015 $\Omega$ 0.03 $\Omega$ 1.0 $\Omega$	Nominal values	P
AC Voltage Measurement	40 Hz to 1 kHz 2 mV to 200 mV 200 mV to 2V 2 V to 20 V 20 V to 200 V  1 kHz to 60 kHz 2 mV to 200 mV 200 mV to 2V 2 V to 20 V 20 V to 200 V  45 Hz to 30 kHz 200 V to 1 kV	15 $\mu$ V 150 $\mu$ V 1.0 mV 10 mV  50 $\mu$ V 0.50 mV 4.0 mV 0.040 V  1.4 V		P
Generation	0 mV to 20 mV 40 Hz to 206 Hz  20 mV to 200 mV 10 Hz to 100 kHz  200 mV to 2 V 10 Hz to 100 kHz  2 V to 20 V 40 Hz to 20 kHz  20 V to 200 V 40 Hz to 20 kHz	0.070 mV  0.30 mV 2.0 mV 0.050 V 0.35 V		P



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AC Voltage (cont'd)				
Generation (cont'd)	200 V to 700 V 40 Hz to 10 kHz	0.8 V		P
	700 V to 1000 V 56 Hz	0.70 V		
AC Current Measurement	40 Hz to 3 kHz 0 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 40 Hz to 5 kHz 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A	0.10 $\mu$ A 0.50 $\mu$ A		P
		5.0 $\mu$ A 0.050 mA 2.0 mA		
Generation	40 Hz to 206 Hz 0 $\mu$ A to 25 $\mu$ A	0.35 $\mu$ A		P
	40 Hz to 1 kHz 25 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A	0.50 $\mu$ A 3.5 $\mu$ A 0.030 mA 0.30 mA 3.5 mA		
	40 Hz to 100 Hz 2 A to 20 A	0.012 A		
	56 Hz 2 A to 30 A	0.018 A		
	50 Hz 0 A to 60 A 60 A to 300 A 300 A to 1500 A	100 mA 270 mA 1.2 A	Simulated current using multi turn coil, for the calibration of clamp-on ammeters.	
Capacitance				
Generation	1 nF 10 nF 20 nF 50 nF 100 nF 1 $\mu$ F 10 $\mu$ F	3.0 pF 20 pF 35.0 pF 0.010 nF 0.015 nF 5.0 nF 0.25 nF	Nominal values	P
Frequency				
Generation	10 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 1 MHz 1 MHz to 10 MHz	0.0010 Hz 0.005 Hz 0.05 Hz 0.10 Hz 0.25 Hz 0.50 Hz 0.005 kHz 0.05 kHz		P



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<b>TEMPERATURE SIMULATION</b>				
Temperature indicators, calibration by electrical simulation, for the following sensor types:				
Noble metal thermocouples				
Type R	0 °C to 1700 °C	0.50 °C	with cold junction Compensation	P
Type S	-50 °C to +1700 °C	0.50 °C		
Base metal thermocouples				
Type K	-140 °C to +1340 °C	0.30 °C	with cold junction Compensation	P
Type J	-150 °C to +750 °C	0.30 °C		
Type T	-250 °C to +400 °C	0.40 °C		
Type N	-150 °C to +1300 °C	0.30 °C		
Type E	0 °C to 800 °C	0.32 °C		
Resistance thermometer (Pt100)	-100 °C 0 °C 30 °C 60 °C 100 °C 200 °C 400 °C 800 °C	0.050 °C 0.030 °C 0.040 °C 0.050 °C 0.050 °C 0.060 °C 0.070 °C 0.080 °C	Nominal values	P
Base metal thermocouples				
Type K	-50 °C to +1300 °C	0.71 °C	with cold junction Compensation	S
Type J	-50 °C to +1100 °C	0.60 °C		
Type T	-50 °C to +390 °C	0.76 °C		
Type N	-50 °C to +1300 °C	0.93 °C		
Resistance thermometer (Pt100)	-50 °C to +600 °C	0.28 °C		S
Temperature simulators, calibration by electrical simulation, for the following sensor types:				
Noble metal thermocouples				
Type R	0 °C to 1600 °C	0.70 °C	with cold junction Compensation	P
Type S	0 °C to 1600 °C	0.70 °C		



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Base metal thermocouples			with cold junction Compensation	P
Type K	-150 °C to +555 °C 555 °C to 1300 °C	0.50 °C 0.50 °C		
Type J	-150 °C to +1100 °C	0.50 °C		
Type T	-150 °C to +100 °C 100 °C to 390 °C	0.50 °C 0.50 °C		
Type N	-150 °C to +1250 °C	0.50 °C		
Type E	-150 °C to +355 °C 355 °C to 900 °C	0.60 °C 0.40 °C		
Resistance thermometer	-200 °C to 0 °C 0 °C to 800 °C	0.010 °C 0.020 °C		P
Base metal thermocouples			with cold junction Compensation	S
Type K	-50 °C to 0 °C 0 °C to 1300 °C	1.0 °C 1.0 °C		
Type J	-50 °C to +750 °C	1.0 °C		
Type T	-50 °C to 0 °C 0 °C to 390 °C	1.1 °C 1.0 °C		
Type N	-50 °C to +1300 °C	1.0 °C		
Resistance thermometer (Pt100)	-50 °C to +600 °C	0.24 °C		S
<b>TEMPERATURE</b>				
Resistance thermometers and Electronic thermometers with sensors	-30 °C to +140 °C 0.01 °C	0.10 °C 0.035 °C	In Triple point of water cell	P
	140 °C to 400 °C 400 °C to 600 °C	0.15 °C 0.18 °C		
Base metal thermocouples	-30 °C to 200 °C	0.40 °C		P
	200 °C to 600 °C	0.6 °C		
Noble metal thermocouples				
Type R & Type S	0 °C to 200 °C 200 °C to 400 °C 400 °C to 600 °C	0.60 °C 0.75 °C 1.0 °C		
Metal block calibrators	-40 °C to +30 °C	0.045 °C		P
	30 °C to 230 °C 230 °C to 420 °C 420 °C to 660 °C	0.05 °C 0.06 °C 0.085 °C		



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Temperature surveys				
Temperature controlled, incubators, ovens, environmental chambers, fridges/refrigerators and freezers	-75 °C to +200 °C 200 °C to 600 °C	0.75 °C 1.0 °C	Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping	S
Temperature indicators and recorders, with temperature sensor(s)	-30 °C to +140 °C 140 °C to 400 °C 200 °C to 400 °C 400 °C to 600 °C	0.16 °C 0.20 °C 0.25 °C 0.30 °C		S
EQUIPMENT FOR IEE 16 <sup>TH</sup> /17 <sup>TH</sup> /18 <sup>TH</sup> EDITION WIRING TESTING				
<u>LOOP TESTERS</u>				
AC Resistance at 50 Hz	Nominal applied resistances 0.05 Ω 0.10 Ω 0.22 Ω 0.33 Ω 0.5 Ω 1 Ω 5 Ω 10 Ω 100 Ω 1 kΩ	3.6 mΩ 3.9 mΩ 3.6 mΩ 4.1 mΩ 4.9 mΩ 6.6 mΩ 20 mΩ 37 mΩ 370 mΩ 3.0 Ω		P
<u>CONTINUITY TESTERS</u>				
DC Resistance	1 mΩ to 100 mΩ 100 mΩ to 2 Ω 2 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 50 kΩ	1.0 mΩ 2.0 mΩ 3.8 mΩ 14 mΩ 32 mΩ 2.0 Ω		P
Continuity Current Measurement	0 mA to 400 mA	70 uA		P



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<b><u>INSULATION TESTERS</u></b>				
DC Resistance	10 k $\Omega$ to 20 k $\Omega$	0.12 %		P
	20 k $\Omega$ to 2 M $\Omega$	0.12%		
	2 M $\Omega$ to 4 M $\Omega$	0.12 %		
	4 M $\Omega$ to 6 M $\Omega$	0.12 %		
	6 M $\Omega$ to 9 M $\Omega$	0.60 %		
	9 M $\Omega$ to 20 M $\Omega$	0.85 %		
	20 M $\Omega$ to 90 M $\Omega$	0.65 %		
	90 M $\Omega$ to 400 M $\Omega$	1.3 %		
	400 M $\Omega$ to 800 M $\Omega$	1.2 %		
	800 M $\Omega$ to 2 G $\Omega$	1.30 %		
2 G $\Omega$ to 10 G $\Omega$	3.0 %			
DC Voltage	50 V	0.80 V		P
	100 V	1.1 V		
	150 V	1.4 V		
	200 V	1.7 V		
	250 V	2.0 V		
	500 V	3.5 V		
	1000 V	6.5 V		
Earth Resistance	100 m $\Omega$ to 2 $\Omega$	2.0 m $\Omega$		P
	2 $\Omega$ to 100 $\Omega$	3.8 m $\Omega$		
	100 $\Omega$ to 1 k $\Omega$	14 m $\Omega$		
<b><u>RCD TESTERS</u></b>				
Trip time	20 ms to 390 ms	0.75 ms		P
	390 ms to 1 s	9.3 ms		
Trip Current at 50 Hz	10 mA	110 $\mu$ A		P
	15 mA	170 $\mu$ A		
	30 mA	280 $\mu$ A		
	60 mA	520 $\mu$ A		
	100 mA	770 $\mu$ A		
	150 mA	1.2 mA		
	300 mA	2.4 mA		
	500 mA	4.0 mA		
	1 A	8.0 mA		
AC Voltage Source at 50 Hz	100 V	0.27 V		P
	200 V	0.36 V		
	230 V	0.48 V		
	300 V	0.48 V		
	400 V	0.66 V		





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<b>PORTABLE APPLIANCE TESTERS</b>				
Earth Bond Resistance at 50Hz	0.05 $\Omega$	3.5 m $\Omega$		P
	0.1 $\Omega$	5.0 m $\Omega$		
	0.17 $\Omega$	5.5 m $\Omega$		
	0.28 $\Omega$	5.5 m $\Omega$		
	0.38 $\Omega$	6.0 m $\Omega$		
	0.54 $\Omega$	6.5 m $\Omega$		
	1 $\Omega$	9.0 m $\Omega$		
	5 $\Omega$	25 m $\Omega$		
	10 $\Omega$	40 m $\Omega$		
	100 $\Omega$	375 m $\Omega$		
	1 k $\Omega$	4.0 $\Omega$		
Earth Continuity and Bond Current at 50Hz	100 mA	4.9 mA		P
	200 mA	5.7 mA		
	200 mA to 500 mA	8.5 mA		
	500 mA to 4 A	80 mA		
	4 A to 8 A	115 mA		
	8 A to 12 A	150 mA		
	12 A to 25 A	270 mA		
Earth Continuity Current DC	10 mA to 100 mA	1.3 mA		P
	100 mA to 300 mA	3.0 mA		
Leakage Current at 50Hz	0 mA to 1 mA	3.0 $\mu$ A		P
	1 mA to 10 mA	8.0 $\mu$ A		
	10 mA to 20 mA	50 $\mu$ A		
Insulation Resistance DC <i>See DC Resistance Insulation Testers</i>				P
Insulation Resistance Test Voltage	50 V	0.8 V		P
	100 V	1.1 V		
	150 V	1.4 V		
	200 V	1.7 V		
	250 V	2.0 V		
	500 V	3.5 V		
	1000 V	6.5 V		
Earth Continuity Resistance <i>See DC Resistance Continuity Testers</i>				P
Flash Test Voltage at 50 Hz	1 kV to 1.5 kV (Class 1)	45 V		P
	1.5 kV to 3 kV (Class 2)	80 V		
Flash Test Current	0.67 mA to 1 mA (Class 1)	40 $\mu$ A		P
	0.34 mA to 1 mA (Class 2)	40 $\mu$ A		
Load at 50Hz	49 VA to 7.5 kVA	0.20 VA		P
END				