Schedule of Accreditation

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United Kingdom Accreditation Service

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

UKAS CALIBRATION **0809** **Accredited to ISO/IEC 17025:2017**	**Seaward Electronic Ltd** **Issue No:** 031 **Issue date:** 21 July 2026	
	Bracken Hill **South West Industrial Estate** **Peterlee** **Co Durham** **SR8 2SW** **United Kingdom**	**Contact: Mr Anthony Taylor** **Tel: +44 (0) 191 586 3511** **Fax: +44 (0) 191 586 0227** **E-Mail: servicetechnical@seaward.com** **Website: www.CalibrationHouse.co.uk**

Calibration performed by the Organisation at the locations specified

Locations covered by the organisation and their relevant activities

Laboratory location:

Location details		**Activity**	**Location code**
Address South West Industrial Estate Peterlee SR8 2SW & SR8 2LS United Kingdom	**Local contact:** Anthony Taylor Tel: +44 (0) 191 586 3511 Fax: +44 (0) 191 586 0227 E-Mail: servicetechnical@seaward.com Website: www.CalibrationHouse.co.uk	Electrical calibration Pressure calibration	Peterlee

Site activities performed away from the location listed above:

Location details		**Activity**	**Location code**
Customers' sites or premises 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.	**Local contact:** Anthony Taylor Tel: +44 (0) 191 586 3511 Fax: +44 (0) 191 586 0227 E-Mail: servicetechnical@seaward.com Website: www.CalibrationHouse.co.uk	Electrical calibration	Customers' premises

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
CALIBRATIONS CONDUCTED AT THE PERMANENT LABORATORY				
ELECTRICAL CALIBRATION			All electrical calibrations are performed as a comparison against a reference standard unless otherwise stated	
DC VOLTAGE				
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	Q[0.0032 %, 3.7 μV] Q[0.0032 %, 4.9 μV] Q[0.0026 %, 46 μV] Q[0.0032 %, 0.47 mV] Q[0.0032 %, 4.7 mV]	Values can be generated for the calibration of measuring instruments	
Measurement	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	Q[0.00099 %, 1.2 μV] Q[0.00035 %, 1.2 μV] Q[0.00035 %, 1.6 μV] Q[0.00054 %, 49 μV] Q[0.00056 %, 0.67 mV]	For measurement of instrument outputs	
DC RESISTANCE				
Generation			Values can be sourced or generated for the calibration of measuring instruments	Peterlee
	10 Ω 100 Ω	6.9 mΩ 12 mΩ	Nominal values obtained from a multi-function calibrator for calibration of multimeters, resistance meters etc.	
	1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 GΩ	93 mΩ 930 mΩ 9.3 Ω 160 Ω 4.6 kΩ 590 kΩ 13 MΩ		
	1 mΩ 10 mΩ 100 mΩ 1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ	0.0015 % 0.00080 % 0.00076 % 0.00069 % 0.00066 % 0.0013 % 0.00077 % 0.0010 % 0.00065 % 0.00079 %	Standard resistors available for calibration of resistance bridges, long-scale multimeters etc.	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
DC RESISTANCE (continued)				Peterlee
Measurement			For measurement of instrument outputs	
	1 mΩ	0.0047 %	Calibration of standard resistors	
	10 mΩ	0.0024 %		
	100 mΩ	0.0010 %		
	1 Ω	0.00089 %		
	10 Ω	0.00092 %		
	100 Ω	0.0012 %		
	1 kΩ	0.00092 %		
	10 kΩ	0.0011 %		
	100 kΩ	0.00091 %		
	1 MΩ	0.00089 %		
	0 Ω to 2 Ω	Q[0.0022 %, 4.7 µΩ]	Calibration of standard resistors, decade resistance boxes etc.	
	2 Ω to 20 Ω	Q[0.0013 %, 19 µΩ]		
	20 Ω to 200 Ω	Q[0.0011 %, 67 µΩ]		
	200 Ω to 2 kΩ	Q[0.0011 %, 0.67 mΩ]		
	2 kΩ to 20 kΩ	Q[0.0011 %, 6.7 mΩ]		
	20 kΩ to 200 kΩ	Q[0.0011 %, 67 mΩ]		
	200 kΩ to 2 MΩ	Q[0.0012 %, 1.2 Ω]		
	2 MΩ to 20 MΩ	Q[0.0027 %, 120 Ω]		
	20 MΩ to 200 MΩ	Q[0.015 %, 12 kΩ]		
	200 MΩ to 2 GΩ	Q[0.15 %, 1.2 MΩ]		
High resistance/high voltage			For measurement of instrument output / source	
Measurement	1 kΩ to 100 kΩ	Q[0.061 %, 3.0 Ω]	The applied voltages will be in the range 10 V to 1000 V DC	
	100 kΩ to 100 MΩ	Q[0.062 %, 120 Ω]		
	100 MΩ to 1 GΩ	0.035 %		
	1 GΩ to 10 GΩ	0.031 %		
	10 GΩ to 100 GΩ	0.081 %		
	100 GΩ to 1 TΩ	0.70 %		
	10 MΩ to 100 MΩ	0.44 %	The applied voltages will be in the range 1 kV to 5 kV DC	
	100 MΩ to 1 GΩ	0.46 %		
	1 GΩ to 10 GΩ	0.44 %		
	10 GΩ to 100 GΩ	0.45 %		
	100 GΩ to 1 TΩ	0.49 %		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
AC VOLTAGE				Peterlee
Measurement	0.1 mV to 10 mV *1 Hz to 2 kHz* *2 kHz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz*	 Q[0.041 %, 1.7 µV] Q[0.049 %, 1.7 µV] Q[0.050 %, 1.7 µV] Q[0.35 %, 1.3 µV]	For measurement of instrument outputs	
	10 mV to 100 mV *1 Hz to 2 kHz* *2 kHz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz*	 Q[0.011 %, 1.8 µV] Q[0.015 %, 1.3 µV] Q[0.027 %, 1.6 µV] Q[0.063 %, 5.9 µV]		
	100 mV to 1 V *1 Hz to 2 kHz* *2 kHz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz*	 Q[0.0090 %, 6.3 µV] Q[0.014 %, 5.9 µV] Q[0.027 %, 12 µV] Q[0.063 %, 58 µV]		
	1 V to 10 V *1 Hz to 2 kHz* *2 kHz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz*	 Q[0.0090 %, 6.3 mV] Q[0.014 %, 5.9 µV] Q[0.027 %, 12 µV] Q[0.063 %, 58 µV]		
	10 V to 100 V *1 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.011 %, 0.61 mV] Q[0.013 %, 0.58 V]		
	100 V to 1000 V *1 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.014 %, 29 mV] Q[0.013 %, 29 mV]		
Generation	20 mV to 200 mV *45 Hz to 1 kHz* *1 kHz to 20 kHz* *20 kHz to 100 kHz*	 Q[0.051 %, 25 µV] Q[0.11 %, 41 µV] Q[0.36 %, 81 µV]	Values can be generated for the calibration of measuring instruments	
	200 mV to 2 V *45 Hz to 1 kHz* *1 kHz to 20 kHz* *20 kHz to 100 kHz*	 Q[0.051 %, 0.11 mV] Q[0.11 %, 0.16 mV] Q{0.35 %, 2.4 mV}		
	2 V to 20 V *45 Hz to 1 kHz* *1 kHz to 20 kHz* *20 kHz to 100 kHz*	 Q[0.045 %, 1.1 mV] Q[0.083 %, 1.6 mV] Q[0.32 %, 38 mV]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
AC VOLTAGE (continued)				Peterlee
Generation (continued)	20 V to 200 V			
	45 Hz to 1 kHz	Q[0.082 %, 87 mV]		
	1 kHz to 10 kHz	Q[0.14 %, 47 mV]		
	200 V to 700 V			
	45 Hz to 1 kHz	Q[0.082 %, 87 mV]		
	1 kHz to 10 kHz	Q[0.19 %, 0.46 V]		
	700 V to 1000 V			
	45 Hz to 1 kHz	Q[0.082 %, 0.10 V]		
	1 kHz to 10 kHz	Q[0.17 %, 0.46 V]		
DC CURRENT				
Generation	0 µA to 200 µA	Q[0.0093 %, 35 nA]	Values can be generated for the calibration of measuring instruments	
	200 µA to 2 mA	Q[0.0083 %, 46 nA]		
	2 mA to 20 mA	Q[0.0047 %, 350 nA]		
	20 mA to 200 mA	Q[0.0059 %, 3.5 µA]		
	200 mA to 2 A	Q[0.011 %, 41 µA]		
	2 A to 20 A	Q[0.035 %, 410 µA]		
	20 A to 30 A	Q[0.12 %, 410 µA]		
Calibration of clamp-on ammeters using multi-turn coil	30 A to 1500 A	Q[0.54 %, 490 mA]	Hall effect clamps	
Measurement	0 µA to 20 µA	Q[0.0026 %, 0.48 nA]	For measurement of instrument outputs	
	20 µA to 200 µA	Q[0.0009 %, 0.48 nA]		
	200 µA to 2 mA	Q[0.00087 %, 4.9 nA]		
	2 mA to 20 mA	Q[0.0011 %, 48 nA]		
	20 mA to 200 mA	Q[0.0048 %, 1.2 µA]		
	200 mA to 2 A	Q[0.012 %, 0.12 mA]		
	2 A to 20 A	Q[0.022 %, 0.47 mA]		
	20 A to 30 A	Q[0.058 %, 1.7 mA]		
AC CURRENT				
Generation	*45 Hz to 500 Hz*		Values can be generated for the calibration of measuring instruments	
	20 µA to 200 µA	Q[0.12 %, 0.29 µA]		
	200 µA to 2 mA	Q[0.11 %, 0.47 µA]		
	2 mA to 20 mA	Q[0.11 %, 4.7 µA]		
	20 mA to 200 mA	Q[0.11 %, 47 µA]		
	200 mA to 2 A	Q[0.14 %, 0.47 mA]		
	1 kHz to 10 kHz			
	2 mA to 20 mA	Q[0.58 %, 8.1 mA]		
	20 A to 30 A	Q[0.70 %, 81 µA]		
	45 Hz to 100 Hz			
	2 A to 20 A	Q[0.072 %, 2.5 mA]		
	20 A to 30 A	Q[0.084 %, 23 mA]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
AC CURRENT (continued)				Peterlee
Generation (continued)				
Calibration of clamp-on ammeters using multi-turn coil	*45 Hz to 1 kHz* 30 A to 100 A	Q[0.56 %, 0.49 A]	Hall effect clamps	
	45 Hz to 100 Hz 100 A to 1500 A	Q[0.54 %, 0.50 A]		
	45 Hz to 1 kHz 30 A to 100 A	Q[0.34 %, 0.052 A]	Wound clamps	
	45 Hz to 100 Hz 100 A to 1500 A	Q[0.31 %, 0.13 A]		
Measurement	*45 Hz to 200 Hz:*		For measurement of instrument outputs	
	2 μA to 200 μA	Q[0.023 %, 31 nA]		
	200 μA to 2 mA	Q[0.023 %, 310 nA]		
	2 mA to 20 mA	Q[0.023 %, 3.1 μA]		
	20 mA to 200 mA	Q[0.023 %, 31 μA]		
	200 mA to 2 A	Q[0.058 %, 0.50 mA]		
	45 Hz to 100 Hz 2 A to 20 A	Q[0.16 %, 0.23 mA]		
	0.2 μA to 20 μA *10 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.24 %, 2.9 nA] Q[0.24 %, 2.9 nA]		
	20 μA to 200 μA *10 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.037 %, 5.8 nA] Q[0.064 %, 5.8 nA]		
	200 μA to 2 mA *10 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.034 %, 58 nA] Q[0.062 %, 58 nA]		
	2 mA to 20 mA *10 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.035 %, 0.58 μA] Q[0.062 %, 0.58 μA]		
	20 mA to 200 mA *10 Hz to 2 kHz* *2 kHz to 10 kHz*	 Q[0.034 %, 5.8 μA] Q[0.061 %, 5.8 μA]		
	200 mA to 2 A *10 Hz to 2 kHz*	 Q[0.038 %, 0.12 μA]		
	2 A to 20 A *10 Hz to 2 kHz*	 Q[0.11 %, 0.58 mA]		
	20 A to 30 A *10 Hz to 2 kHz*	 Q[0.10 %, 14 mA]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Electrosurgical Analyser Current Measurement	*200 kHz to 1 MHz* 0 mA to 64 mA 64 mA to 640 mA 640 mA to 3.2 A	 Q[0.60 %, 0.20 mA] Q[0.70 %, 0.40 mA] Q[0.70 %, 6.9 mA]		Peterlee
FREQUENCY	1 Hz to 1 GHz	2.0 parts in 10^9	Can be reported as 1/f for repetitive timing events E.G. RPM	
Elapsed time	1 s to 12 hrs	69 ms	Manual start stop. For the calibration of counters & Stopwatches	
Calibration of Portable Appliance Testers				
Earth Bond	*At 50 Hz:* 0.05 Ω 0.09 Ω 0.1 Ω 0.115 Ω 0.2 Ω 0.33 Ω 0.45 Ω 0.5 Ω 0.575 Ω 1.0 Ω 3.3 Ω 5.0 Ω 10 Ω 15 Ω 18 Ω	 1.2 % 0.67 % 0.62 % 0.54 % 0.34 % 0.30 % 0.28 % 0.24 % 0.25 % 0.20 % 0.29 % 0.24 % 0.19 % 0.18 % 0.18 %		
Insulation Resistance	*At DC:* 0.25 MΩ 0.5 MΩ 1.0 MΩ 2.0 MΩ 4.0 MΩ 5.0 MΩ 6.0 MΩ 10 MΩ 15 MΩ 18 MΩ 50 MΩ 90 MΩ	 0.25 % 0.13 % 0.077 % 0.060 % 0.062 % 0.066 % 0.052 % 0.051 % 0.068 % 0.064 % 0.083 % 0.12 %		
Insulation Resistance Test Voltage	100 V 250 V 500 V 1000 V	0.094 % 0.073 % 0.13 % 0.11 %		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Portable Appliance Testers (continued)				
Leakage Current	*DC:*			
	0 μA to 320 μA	Q[0.12 %, 0.051 μA]		
	320 μA to 3.2 mA	Q[0.069 %, 0.23 μA]		
	3 mA to 32 mA	Q[0.11 %, 2.3 μA]		
	50 Hz to 60 Hz:			
	0 mA to 1.6 mA	Q[0.29 %, 0.40 μA		
	1.6 mA to 16 mA	Q[0.35 %, 3.8 μA		
	16 mA to 20 mA	Q[0.35 %, 39 μA		
Flash Test	*DC, 50 Hz and 60 Hz:*			
	Current (0 mA to 32 mA)	See *Leakage Current* above		
	Voltage *(AC, 50 Hz and 60 Hz)*			
	1 kV	12 V		
	1.5 kV	13 V		
	2 kV	17 V		
	3 kV	21 V	These capabilities also apply to flash testers and high voltage meters.	
	4 kV	28 V		
	5 kV	35 V		
	Voltage *(DC)*			
	1 kV	10 V		
	2 kV	12 V		
	3 kV	13 V		
	4 kV	14 V		
	5 kV	20 V		
	6 kV	32 V		
Load Test	*At 50 Hz:*			
	1 kVA and 3 kVA nominal	Q[3.3 %, 0.0020 kVA		
Calibration of RCD Testers				
Trip Current	*At 50 Hz:*			
	10 mA to 100 mA	Q[1.4 %, 0.083 mA		
	100 mA to 2 A	Q[1.4 %, 0.83 mA		
Trip Time	20 ms to 100 ms	0.96 ms		
	100 ms to 400 ms	1.5 ms		
	400 ms to 700 ms	4.8 ms		
	700 ms to 900 ms	8.5 ms		
Calibration of Loop Testers				
Loop impedance	*At 50 Hz:*			
	0.5 Ω to 1 Ω	12 mΩ		
	5 Ω	36 mΩ		
	10 Ω	65 mΩ		
	100 Ω	0.65 Ω		
	1 kΩ	6.1 Ω		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Seaward PV100/PV150 solar installation meters			The accreditation for calibration of these instruments includes the expression of opinions relating to the effects of storage periods of up to six months on the calibration validity.	Peterlee
Insulation Resistance	0.5 MΩ 1 MΩ 10 MΩ 90 MΩ 190 MΩ	10 kΩ 10 kΩ 100 kΩ 100 kΩ 1.0 MΩ	At 500 V DC	
	0.25 MΩ 90 MΩ	10 kΩ 1.0 MΩ	At 250 V DC	
	1 MΩ	10 kΩ	At 1000 V DC	
Insulation Voltage	250 V 500 V	1.0 V 1.0 V	Into 1 mA load Into 1 mA load	
Continuity Resistance	0.67 Ω 1.2 Ω 10.5 Ω 100 Ω 190 Ω	10 mΩ 10 mΩ 100 mΩ 1.0 Ω 1.0 Ω		
Current clamp input	100 mV (10 A simulation) 199 mV (20 A simulation) 500 mV (50 A simulation)	100 mA 100 mA 100 mA	Simulation of current clamp at 100 A/V	
RPE Voltage	110 V 240 V 420 V	1.0 V 1.0 V 1.0 V		
Open circuit panel voltage	10.9 V 49.9 V 202 V 440 V 640 V 900 V	100 mV 100 mV 1.0 V 1.0 V 1.0 V 1.0 V	DC Voltage	
Short circuit current	0.97 A 2.7 A 8 A	10 mA 20 mA 50 mA	DC Current	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Defibrillator Analysers				Peterlee
Energy	0 J to 10 J 10 J to 30 J 30 J to 150 J 150 J to 360 J	Q[1.1 %, 0.1 J] Q[1.0 %, 0.22 J] Q[1.0 %, 0.64 J] Q[1.0 %, 0.83 J]		
Calibration of temperature indicators by electrical simulation				
Supporting ambient temperature measurement	17 °C to 23 °C	0.22 °C		
PT100 indicators	-200 °C to -70 °C -70 °C to +260 °C 260 °C to 500 °C 500 °C to 850 °C	0.0029 °C 0.0041 °C 0.0054 °C 0.0060 °C		
PT25 indicators	-200 °C to -70 °C -70 °C to +500 °C 500 °C TO 850 °C	0.0061 °C 0.0072 °C 0.0077 °C		
Type K thermocouple indicator simulation	-270 °C to -220 °C -200 °C to -70 °C -70 °C to +1370 °C	2.4 °C 0.83 °C 0.75 °C	Including reference junction compensation	
Calibration of Seaward *Apollo 600* Portable Appliance Testers			The accreditation for calibration of these instruments includes the expression of opinions relating to the effects of storage periods of up to six months on the calibration validity.	
Earth Bond Resistance	0.05 Ω to 19.99 Ω	Q[0.015 %, 6.0 mΩ]		
Earth Bond Test Current	0 mA to 250 mA DC	Q[0.037 %, 0.58 mA]		
Earth Bond Test Voltage	0 V to 10 VDC	Q[0.0042 %, 0.58 mV]		
Insulation Resistance	0.1 MΩ to 1 MΩ 1 MΩ to 10 MΩ 10 MΩ to 20 MΩ	Q[0.019 %, 5.8 kΩ] Q[0.065 %, 5.8 kΩ] Q[0.91 %, 7.5 kΩ]		
Insulation Voltage	0 V to 750 V DC	Q[0.012 %, 0.058 V]		
Insulation Current	0 mA to 2 mA DC	Q[0.014 %, 5.8 µA]		
Differential Leakage Current	0.20 mA to 10mA DC 10mA to 20 mA DC	Q[0.14 %, 5.6 µA] Q[0.13 %, 64 µA]		
Touch Leakage Current	0.10 mA to 3.50 mA DC	Q[0.14 %, 5.6 µA]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Seaward *Apollo 600* Portable Appliance Testers (continued)				Peterlee
Substitute Leakage Current	0.20 mA to 20 mA, 50 Hz	Q[0.14 %, 24 µA]		
Substitute Leakage Test Voltage	0 V to 50 V, 50 Hz	Q[0.069 %, 25 mV]		
Load Test Voltage	0 V to 250 V, 50 Hz	Q[0.069 %, 0.63 V]		
Load Test Current	0 A to 16 A, 50 Hz	Q[1.2 %, 0.24 A]		
RCD Test Time	10 ms 20 ms 500 ms	0.13 ms 0.26 ms 4.5 ms		
RCD Test Current	0 mA to 170 mA, 50 Hz	Q[0.25 %, 47 µA]		
Calibration of HV Neon Indicators				
Leakage Current	0 µA to 600 µA 600 µA to 6000 µA	Q[1.4 %, 1.6 µA] Q[1.4 %, 14 µA]		
Calibration of DC Power Supplies				
Output Voltage	0 V to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V	Q[0.0052 %, 0.58 mV] Q[0.0048 %, 0.58 mV] Q[0.0061 %, 1.0 mV] Q[0.0061 %, 59 mV]		
Output Current	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10A to 20 A	Q[0.060 %, 0.58 mA] Q[0.059 %, 0.58 mA] Q[0.12 %, 0.59 mA] Q[0.068 %, 4.9 mA] Q[0.068 %, 7.9 mA]		
PRESSURE CALIBRATION			Methods consistent with EURAMET CG17	
Gas Pressure, Gauge				
Calibration of pressure indicating instruments and gauges	-91 kPa to -85 kPa -85 kPa to -3 kPa 0.0 Pa to 20 kPa 20 kPa to 3.5 MPa	0.90 kPa Q[170 Pa/MPa, 12 Pa] Q[57 Pa/MPa, 23 Pa] Q[71 Pa/MPa, 12 Pa]	Absolute pressures within these gauge ranges can be generated subject to an additional measurement uncertainty of 310 Pa.	

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
CALIBRATIONS CONDUCTED AT CUSTOMERS' PREMISES				Customers premises and Peterlee
ELECTRICAL CALIBRATION				
DC VOLTAGE				
Generation	0 mV to 200 mV	Q[0.0084 %, 7.0 µV]	Values can be generated for the calibration of measuring instruments	
	200 mV to 2 V	Q[0.0073 %, 55 µV]		
	2 V to 20 V	Q[0.0073 %, 0.47 mV]		
	20 V to 200 V	Q[0.0074 %, 4.7 mV]		
	200 V to 1000V	Q[0.0074 %, 31 mV]		
Measurement	Up to 100 mV	Q[0.0068 %, 5.7 µV]	For measurement of instrument outputs	
	100 mV to 1 V	Q[0.0058 %, 10 µV]		
	1 V to 10 V	Q[0.0051 %, 82 µV]		
	10 V to 100 V	Q[0.0063 %, 0.91 mV]		
	100 V to 1000 V	Q[0.0063 %, 13 mV]		
DC RESISTANCE				
Generation			Values can be generated for the calibration of measuring instruments	
	10 Ω	59 mΩ	Nominal values obtained from a multi-function calibrator for calibration of multimeters, resistance meters etc.	
	100 Ω	67 mΩ		
	1 kΩ	0.17 Ω		
	10 kΩ	1.2 Ω		
	100 kΩ	12 Ω		
	1 MΩ	0.24 kΩ		
	10 MΩ	12 kΩ		
	100 MΩ	0.24 MΩ		
Measurement	Up to 100 Ω	Q[0.12 %, 13 mΩ]	For measurement of instrument outputs	
	100 Ω to 1 kΩ	Q[0.12 %, 95 mΩ]		
	1 kΩ to 10 kΩ	Q[0.12 %, 0.95 Ω]		
	10 kΩ to 100 kΩ	Q[0.12 %, 9.5 Ω]		
	100 kΩ to 1 MΩ	Q[0.12 %, 0.16 kΩ]		
	1 MΩ to 10 MΩ	Q[0.47 %, 4.6 kΩ]		
	10 MΩ to 100 MΩ	Q[1.1 %, 0.60 MΩ]		
AC VOLTAGE				
Generation	20 mV to 200 mV		Values can be generated for the calibration of measuring instruments	
	45 Hz to 1 kHz	Q[0.056 %, 49 µV]		
	1 kHz to 2 kHz	Q[0.092 %, 67 µV]		
	2 kHz to 10 kHz	Q[0.15 %, 0.30 mA]		
	200 mV to 2 V			
	45 Hz to 1 kHz	Q[0.070 %, 0.53 mV]		
	1 kHz to 2 kHz	Q[0.095 %, 0.55 mV]		
	2 kHz to 10 kHz	Q[0.13 %, 0.94 mV]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
AC VOLTAGE (continued)				Customers premises and Peterlee
Generation (continued)	2 V to 20 V			
	45 Hz to 1 kHz	Q[0.069 %, 5.3 mV]		
	1 kHz to 2 kHz	Q[0.087 %, 5.5 mV]		
	2 kHz to 10 kHz	Q[0.15 %, 9.4 mV]		
	20 V to 200 V			
	45 Hz to 1 kHz	Q[0.087 %, 53 mV]		
	1 kHz to 2 kHz	Q[0.12 %, 70 mV]		
	2 kHz to 10 kHz	Q[0.19 %, 0.10 mV]		
	200 V to 1000 V			
	45 Hz to 1 kHz	Q[0.080 %, 0.30 V]		
Measurement	10 mV to 100 mV		For measurement of instrument outputs	
	45 Hz to 1 kHz	Q[0.082 %, 57 µV]		
	1 kHz to 10 kHz	Q[0.11 %, 72 µV]		
	100 mV to 1 V			
	45 Hz to 1 kHz	Q[0.080 %, 0.38 mV]		
	1 kHz to 10 kHz	Q[0.10 %, 0.40 mV]		
	1 V to 10 V			
	45 Hz to 1 kHz	Q[0.080 %, 3.8 mV]		
	1 kHz to 10 kHz	Q[0.096 %, 4.0 mV]		
	10 V to 100 V			
	45 Hz to 1 kHz	Q[0.080 %, 37 mV]		
	1 kHz to 10 kHz	Q[0.11 %, 59 mV]		
	100 V to 750 V			
	45 Hz to 1 kHz	Q[0.080 %, 0.29 mV]		
	5 kV to 50 kV	Q[1.0 %, 2.0 V]		
	50 Hz			
DC CURRENT				
Generation	0 A to 200 µA	Q[0.019 %, 40 nA]	Values can be generated for the calibration of measuring instruments	
	200 µA to 2 mA	Q[0.017 %, 0.17 µA]		
	2 mA to 20 mA	Q[0.017 %, 1.6 µA]		
	20 mA to 200 mA	Q[0.018 %, 19 µA]		
	200 mA to 2 A	Q[0.069 %, 0.36 mA]		
	2 A to 20 A	Q[0.055 %, 1.4 mA]		
Calibration of clamp-on ammeters using multi-turn coil	20A to 200 A	Q[0.53 %, 0.49 A]	Hall Effect Clamps	
	200 A to 1000A	Q[0.53 %, 0.49 A]		
Measurement	0 A to 10 mA	Q[0.058 %, 7.3 µA]	For measurement of instrument outputs	
	10 mA to 100 mA	Q[0.059 %, 19 µA]		
	100 mA to 1 A	Q[0.12 %, 0.13 mA]		
	1 A to 3 A	Q[0.14 %, 0.87 mA]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
AC CURRENT				Customers premises and Peterlee
Generation			Values can be generated for the calibration of measuring instruments	
	45 Hz to 200 Hz			
	20 µA to 200 µA	Q[0.13 %, 0.57 µA]		
	200 µA to 2 mA	Q[0.079 %, 1.9 µA]		
	2 mA to 20 mA	Q[0.078 %, 35 µA]		
	20 mA to 200 mA	Q[0.085 %, 0.19 mA]		
	200 mA to 2 A	Q[0.12 %, 1.8 mA]		
	45 Hz to 200 Hz			
	2 A to 20 A	Q[0.19 %, 9.3 mA]		
Calibration of clamp-on ammeters using multi-turn coil	*50 to 60 Hz*			
	20 A to 200 A	Q[0.33 %, 46 mA]	Wound Clamp	
	200 A to 1000A	Q[0.32 %, 46 mA]		
	20 A to 200 A	Q[0.56 %, 0.49 A]	Hall Effect Clamps	
	200 A to 1000 A	Q[0.55 %, 0.60 A]		
Measurement	*45 Hz to 500 Hz*		For measurement of instrument outputs	
	50 mA to 1 A	Q[0.16 %, 0.68 mA]		
	1 A to 2 A	Q[0.20 %, 2.2 mA]		
FREQUENCY				
Measurement	1 Hz to 10 Hz	Q[0.0017 %, 1.3 mHz]	For measurement of instrument outputs	
	10 Hz to 100 Hz	Q[0.0017 %, 1.3 mHz]		
	100 Hz to 1 kHz	Q[0.0017 %, 1.2 mHz]		
	1 kHz to 10 kHz	Q[0.0017 %, 1.2 mHz]		
	10 kHz to 100 kHz	Q[0.0017 %, 1.4 mHz]		
	100 kHz to 1 MHz	Q[0.0017 %, 8.3 mHz]		
	1 MHz to 10 MHz	Q[0.0017 %, 82 mHz]		
	10 MHz to 100 MHz	Q[0.0017 %, 0.82 Hz]		
	100 MHz to 1 GHz	Q[0.0017 %, 8.2 Hz]		
Calibration of Oscilloscopes				
Vertical Deflection	2 mV / division	34 µV		
	5 mV / division	40 µV		
	10 mV / division	51 µV		
	20 mV / division	80 µV		
	50 mV / division	0.18 mV		
	100 mV / division	0.35 mV		
	200 mV / division	0.70 mV		
	500 mV / division	1.7 mV		
	1 V / division	3.5 mV		
	2 V / division	7.0 mV		
	5 V / division	17 mV		
	10 V / division	35 mV		
	20 V / division	82 mV		
	50 V / division	0.20 V		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Oscilloscopes (continued)				Customers premises and Peterlee
Timebase	5 ns / division	0.085 %		
	10 ns / division	0.083 %		
	20 ns / division	0.083 %		
	50 ns / division	0.085 %		
	100 ns / division	0.083 %		
	200 ns / division	0.083 %		
	500 ns / division	0.085 %		
	1 µs / division	0.083 %		
	2 µs / division	0.083 %		
	5 µs / division	0.085 %		
	10 µs / division	0.083 %		
	20 µs / division	0.083 %		
	50 µs / division	0.085 %		
	100 µs / division	0.083 %		
	200 µs / division	0.083 %		
	500 µs / division	0.085 %		
	1 ms / division	0.083 %		
	2 ms / division	0.083 %		
	5 ms / division	0.085 %		
	10 ms / division	0.083 %		
	20 ms / division	0.083 %		
	50 ms / division	0.085 %		
	100 ms / division	0.084 %		
	200 ms / division	0.089 %		
	500 ms / division	0.11 %		
	1 s / division	0.17 %		
Calibration of Portable Appliance Testers				
Earth Bond	*At 50 to 60 Hz*			
	0.05 Ω	1.0 mΩ		
	0.1 Ω	1.0 mΩ		
	0.5 Ω	1.4 mΩ		
	1 Ω	2.3 mΩ		
	1.8 Ω	8.9 mΩ		
	10 Ω	23 mΩ		
	18 Ω	36 mΩ		
Insulation Resistance	*At DC*			
	10 kΩ to 2 MΩ	Q[0.12 %, 0.58 kΩ]	These capabilities also apply to insulation testers.	
	2 MΩ to 20 MΩ	Q[1.2 %, 0.66 kΩ]		
	20 MΩ to 200 MΩ	Q[1.2 %, 15 kΩ]		
	200 MΩ to 2 GΩ	Q[1.2 %, 0.37 MΩ]		
Insulation Resistance Test Voltage	100 V to 1000 V	Q[0.19 %, 0.58 V]		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC)	Remarks	Location Code
Calibration of Portable Appliance Testers (continued)				
Leakage Current	*At DC* 0 mA to 1 mA 1 mA to 10 mA 10 mA to 20 mA *At 50 Hz to 60 Hz* Up to 1 mA 1 mA to 10 mA 10 mA to 20 mA	 Q[0.16 %, 0.82 µA] Q[0.16 %, 6.3 µA] Q[0.16 %, 63 µA] Q[0.35 %, 0.83 µA] Q[0.21 %, 8.3 µA] Q[Q[0.21 %, 83 µA]		Customers premises and Peterlee
Flash Test	DC, 50 Hz to 60 Hz Current (0 mA to 20 mA) Voltage (DC) 100 V to 1000 V 1000 V to 6000 V Voltage (AC; *50 Hz to 60 Hz*) 100 V to 1000 V 1000 V to 5000 V	 See *Leakage Current* above. Q[0.19 %, 0.58 V] Q[0.20 %, 11 V] Q[0.37 %, 0.60 V] Q[0.64 %, 7.8 V]	These capabilities also apply to flash testers and high voltage meters.	
Load Test	0 kVA to 3 kVA	Q[0.78 %, 0.27 kVA]		
Calibration of RCD Testers				
Trip Current	At 50 Hz 10 mA to 100 mA 100 mA to 2 A	 Q[1.4 %, 0.083 mA] Q[1.4 %, 0.83 mA]		
Trip Time	20 ms to 100 ms 100 ms to 400 ms 400 ms to 700ms 700 ms to 900 ms	0.96 ms 1.5 ms 4.8 ms 8.5 ms		
Calibration of Loop Testers				
Loop Impedance	At 50 Hz 0.5 Ω to 1 kΩ	 Q[(0.60 % to 0.80 %), 4.6 mΩ]		
Calibration of Defibrillator Analysers				
Energy	0 J to 10 J 10 J to 30 J 30 J to 150 J 150 J to 360 J	Q[1.1 %, 0.1 J] Q[1.0 %, 0.22 J] Q[1.0 %, 0.64 J] Q[1.0 %, 0.83 J]		

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 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: $Q[a, b] = [a^2 + b^2]^{1/2}$