


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>0511</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Quasartronics Ltd</h3> <p>Issue No: 013 Issue date: 5 January 2011</p>	
	<p>Unit 3, Watt House Innovation Centre Pensnett Estate Kingswinford West Midlands DY6 7YD</p>	<p>Contact: Mr A P Walker Tel: +44 (0)1384 401132 Fax: +44 (0)1384 400754 E-Mail: mail@quasartronics.com Website: www.quasartronics.com</p>
<p>Calibration performed at the above address only</p>		

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k = 2$)	Remarks
<p>DIMENSIONAL CALIBRATION</p>			
<p>RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED</p>			
LENGTH			
Plain plug gauges (parallel)	From 1 up to 50 diameter Above 50 up to 100	1.5 on diameter 2.0 on diameter	
Plain ring gauges (parallel) and setting standards	10 up to 50mm Above 50 up to 100 Above 100 up to 150	1.8 on diameter 2.0 on diameter 2.5 on diameter	
Screw plug gauges (parallel) including check and setting plugs	From 1 up to 100 diameter Above 100 up to 150	3.0 on pitch diameter 5.0 on pitch diameter	Single start, symmetrical thread forms only.
Screw ring gauges (parallel)	12 up to 75 75 up to 150	5.0 on pitch diameter 7.0 on pitch diameter	Single start, symmetrical thread forms only.
		Note: on all screw threads Pitch 1.5 Flank angle: $2.0 + (800 / (M \times P))$ minutes of arc, where M is projector magnification and P is pitch in mm.	
Vee blocks	BS 3731:1987 up to 150	Dependent on size and grade From 2.5 up to 5.0	
Length gauge, flat and spherical ended (excluding length bars)	Up to 600	$1.0 + (8.0 \times \text{length in m})$	
Plain gap gauges (parallel)	BS 969:1982 From 2 up to 100 Above 100 up to 200	3.0 5.0	



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DIMENSIONAL CALIBRATION (continued)			
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH (continued)			
Feeler gauges	BS 957:Part 1:1959 BS 957:Part 2:1969	2.0 2.0	
Parallels	BS 906:Part 1:1972 up to 50 x 100 x 400	Dependent on size and grade From 2.5 up to 5.0	
ANGLE			
Squares			
Blade type	BS 939:1977 up to 300 Above 300 up to 600	3.0 on squareness 5.0 on squareness	The CMC is for the departure from flatness, straightness, parallelism, or squareness, i.e. the distance separating the two parallel planes which just enclose the surface under consideration.
Right angle and box angle plates	BS 5535:1978	Squareness: 3.0 + (1.0 per 100 mm) Parallelism: 1.0 + (1.0 per 100 mm)	
MEASURING INSTRUMENTS AND MACHINES			
Micrometers			
External up to 450 mm Internal Depth	BS 870:1959 and above BS 959:1959 BS 6468:1984	Heads: 2.0 between any two points Setting and extension rods: 1.0 + (8.0 x length in m)	
Vernier caliper, height and depth gauges up to 1000 mm	BS 887:1982 and BS 1643:1983	Overall performance 10 + (30 x length in m)	
Dial gauges and dial test indicators	BS 907:1965 and BS 2795:1981	2.0	
TORQUE CALIBRATION			
Hand Torque Tools	From 5 Nm to 1000 Nm to BS EN ISO 6789:2003	1.0 % of full scale	Calibration results may also be given in units of lbf.in and lbf.ft, or in the units of an electrical output signal.



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ELECTRICAL CALIBRATION			
DC Voltage			
Generation	100 μ V to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1 kV	43 ppm + 1.5 μ V 35 ppm + 8.0 μ V 29 ppm + 83 μ V 35 ppm + 730 μ V 36 ppm + 8 mV	
Measurement	100 μ V to 300 mV 300 mV to 3 V 3 V to 30 V 30 V to 300 V 300 V to 1 kV	7.3 μ V 70 μ V 820 μ V 13 mV 31 mV	
DC Resistance			
Generation	10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω 100 M Ω 1 G Ω	120 ppm + 30 m Ω 59 ppm + 4.1 m Ω 47 ppm + 14 m Ω 47 ppm + 97 m Ω 48 ppm + 820 m Ω 120 ppm + 8.3 Ω 0.41 % + 210 Ω 0.35 % + 50 k Ω 1.4 % + 5.2 M Ω	
Measurement	1 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 k Ω 1 k Ω to 10 k Ω 10 k Ω to 100 k Ω 100 k Ω to 1 M Ω 1 M Ω to 10 M Ω 10 M Ω to 100 M Ω	330 μ Ω 2.2 m Ω 51 m Ω 240 m Ω 4.5 m Ω 38 m Ω 780 m Ω 29 k Ω	
DC Current			
Generation	10 μ A to 2 mA 2 mA to 200 mA 200 mA to 2 A 2 A to 20 A	120 ppm + 69 nA 150 ppm + 5.3 μ A 0.030 % + 250 μ A 0.050 % + 530 μ A	
Measurement	10 μ A to 1 mA 1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10 A	61 nA 530 nA 5.3 μ A 120 μ A 5.3 mA	



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ELECTRICAL CALIBRATION (continued)			
AC Voltage			
Generation	40 Hz to 1 kHz 10 mV to 200 mV 200 mV to 2 V	0.080 % + 30 μ V 0.080 % + 300 μ V	
	60 Hz to 1 kHz 2 V to 20 V 20 V to 200 V 200 V to 1 kV	0.060 % + 1.9 mV 0.070 % + 23 mV 0.070 % + 230 mV	
	1 kHz to 10 kHz 10 mV to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1 kV	0.10 % + 95 μ V 0.13 % + 950 μ V 0.12 % + 9.3 mV 0.13 % + 120 mV 0.18 % + 1.2 V	
	10 kHz to 40 kHz 200 mV to 2 V	0.13 % + 2.1 mV	
Measurement	40 Hz to 20 kHz 10 mV to 300 mV 300 mV to 3 V 3 V to 30 V	120 ppm + 100 μ V 120 ppm + 1.9 mV 120 ppm + 9.6 mV	
	40 Hz to 1 kHz 30 V to 300 V	120 ppm + 150 mV	
	40 Hz to 60 Hz 300 V to 1 kV	120 ppm + 1.2 V	
AC Current			
Generation	60 Hz to 1 kHz 200 μ A to 2 mA 2 mA to 2 A	0.13 % + 65 nA 0.13 % + 23 μ A	
	60 Hz to 500 Hz 2 A to 20 A	0.13 % + 380 μ A	
Measurement	40 Hz to 1 kHz 10 μ A to 3 mA 3 mA to 30 mA 30 mA to 300 mA	120 ppm + 1.6 μ A 120 ppm + 15 μ A 120 ppm + 190 μ A	
	40 Hz to 400 Hz 300 mA to 3 A 3 A to 10 A	120 ppm + 2.0 mA 120 ppm + 15 mA	



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ELECTRICAL CALIBRATION (continued)			
Capacitance			
Sourcing	1 nF 10 nF 100 nF 1 μ F 10 μ F 100 μ F	0.30 % + 0.50 pF 0.30 % + 5.8 pF 0.30 % + 110 pF 0.50 % + 1.8 nF 0.70 % + 29 nF 0.95 % + 510 nF	
Time Interval	1 ns to 1 s	0.13 %	
END			