


Schedule of Accreditation

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United Kingdom Accreditation Service

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

 <p>UKAS CALIBRATION</p> <p>0666</p> <p>Accredited to ISO/IEC 17025:2005</p>	<p>Allied Aerosystems Ltd</p> <p>Issue No: 033 Issue date: 04 August 2016</p>	
	<p>Avionic and Metrology Centre Unit G1/2 Treforest Industrial Estate Pontypridd CF37 5YL</p>	<p>Contact: Mr P Ashurst Tel: +44 (0)1443 849970 Fax: +44 (0)1443 849988 E-Mail: phillip.ashurst@allied-aerosystems.com Website: www.allied-aerosystems.co.uk</p>
<p>Calibration performed by the Organisations at the locations specified below</p>		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
<p>Address Avionic and Metrology Centre Unit G1/2 Treforest Industrial Estate Pontypridd CF37 5YL</p> <p>Local contact Mr P Ashurst Tel: +44 (0)1443 849970 Fax: +44 (0)1443 849988 E-Mail: phillip.ashurst@allied-aerosystems.com</p>	<p>Electrical, DC&LF Electrical, RF Rotational speed Time</p>	Lab 1
<p>Address Units 1-6, Moy Road Industrial Estate Taffs Well Cardiff CF15 7QR</p> <p>Local contact All correspondence and deliveries are to be made to the above address</p>	<p>Dimensional Torque Mass Temperature Pressure Surface plates and tables</p>	Lab 2

Site activities performed away from the locations listed above:

Location details	Activity	Location code
<p>Customers' Premises</p> <p>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.</p>	<p>Non-automatic weighing instruments</p> <p>Surface plates and tables</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
DC VOLTAGE				Lab 1
Generation	0 mV to 220 mV 220 mV to 2.2 V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1100 V	11 ppm + 1.0 μ V 9.3 ppm + 1.4 μ V 9.3 ppm + 4.7 μ V 9.3 ppm + 9.3 μ V 10 ppm + 0.12 mV 13 ppm + 0.80 mV		
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	5.2 ppm + 1.2 μ V 3.3 ppm + 0.59 μ V 3.2 ppm + 5.1 μ V 4.7 ppm + 51 μ V 4.8 ppm + 0.66 mV		
DC CURRENT				Lab 1
Generation	0 μ A to 220 μ A 220 μ A to 2.2 mA 2.2 mA to 22 mA 22 mA to 220 mA 220 mA to 2.2 A 2.2 A to 11 A 11 A to 20 A 20 A to 100 A	70 ppm + 12 nA 70 ppm + 12 nA 70 ppm + 0.12 μ A 81 ppm + 1.2 μ A 110 ppm + 35 μ A 0.08 % + 0.39 mA 0.15 % + 5.0 mA 0.15% + 24 mA		
Measurement	11 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	0.30 % + 2.4 mA 0.30 % + 18 mA 0.30 % + 61 mA	Simulated using a multi turn coil	
Measurement	0 μ A to 200 μ A 200 μ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2.0 A to 20 A 20 A to 100 A	10 ppm + 0.48 nA 10 ppm + 4.7 nA 10 ppm + 47 nA 39 ppm + 0.93 μ A 200 ppm + 16 μ A 440 ppm + 51 μ A 0.11 %		



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DC RESISTANCE				Lab 1
Generation	0 Ω 1 m Ω 10 m Ω 100 m Ω 1.0 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1.0 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1.0 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	59 $\mu\Omega$ 0.010 % 0.010 % 0.010 % 91 ppm 93 ppm 22 ppm 23 ppm 14 ppm 15 ppm 11 ppm 11 ppm 10 ppm 11 ppm 12 ppm 14 ppm 25 ppm 23 ppm 32 ppm 52 ppm 83 ppm		
Measurement	0 Ω to 2 Ω 2 Ω to 20 Ω 20 Ω to 200 Ω 200 Ω to 2 k Ω 2 k Ω to 20 k Ω 20 k Ω to 200 k Ω 200 k Ω to 2 M Ω 2 M Ω to 20 M Ω 20 M Ω to 200 M Ω 200 M Ω to 2 G Ω	12 ppm + 5.0 $\mu\Omega$ 8.5 ppm + 21 $\mu\Omega$ 8.5 ppm + 70 $\mu\Omega$ 8.4 ppm + 0.62 m Ω 8.4 ppm + 6.2 m Ω 8.6 ppm + 62 m Ω 9.9 ppm + 1.4 Ω 16 ppm + 120 Ω 68 ppm + 670 Ω 0.060 % + 1.2 M Ω		
AC VOLTAGE				Lab 1
Generation	<i>10 Hz to 20 Hz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V 22 V to 220 V <i>20 Hz to 40 Hz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V 22 V to 220 V	0.090 % + 6.0 μ V 0.070 % + 7.0 μ V 0.080 % + 19 μ V 0.070 % + 0.12 mV 0.070 % + 1.2 mV 0.070 % + 12 mV 0.060 % + 6.0 μ V 0.030 % + 7.0 μ V 0.030 % + 12 μ V 0.021 % + 35 μ V 0.021 % + 0.35 mV 0.021 % + 3.5 mV		



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AC VOLTAGE (cont'd) Generation (cont.)				Lab 1
	<i>40 Hz to 20 kHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V 22 V to 220 V	0.047 % + 6.0 µV 0.017 % + 7.0 µV 0.014 % + 9.0 µV 0.010 % + 9.0 µV 0.010 % + 82 µV 0.011 % + 1.3 mV		
	<i>50 Hz to 1 kHz</i> 220 V to 1100 V	0.012 % + 6.0 mV		
	<i>20 kHz to 50 kHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V 22 V to 220 V	0.065 % + 6.0 uV 0.049 % + 7.0 uV 0.043 % + 12 uV 0.017 % + 24 uV 0.017 % + 0.24 mV 0.029 % + 4.7 mV		
	<i>50 kHz to 100 kHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V 22 V to 220 V	0.12 % + 10 uV 0.11 % + 10 uV 0.11 % + 35 uV 0.033 % + 93 uV 0.033 % + 0.50 mV 0.070 % + 12 mV		
	<i>100 kHz to 300 kHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V	0.16 % + 18 uV 0.16 % + 18 uV 0.13 % + 35 uV 0.060 % + 0.18 mV 0.070 % + 2 mV		
	<i>300 kHz to 500 kHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V	0.22 % + 35 uV 0.21 % + 35 uV 0.21 % + 47 uV 0.14 % + 0.5 mV 0.17 % + 6 mV		
	<i>500 kHz to 1 MHz</i> 1 mV to 2.2 mV 2.2 mV to 22 mV 22 mV to 220 mV 220 mV to 2.2 V 2.2 V to 22 V	0.43 % + 35 uV 0.42 % + 35 uV 0.42 % + 0.12 mV 0.28 % + 1.2 mV 0.35 % + 11 mV		



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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 VOLTAGE (cont'd) Measurement	<p><i>10 Hz to 20 Hz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V 70 V to 220 V</p> <p><i>20 Hz to 40 Hz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V 70 V to 220 V</p> <p><i>40 Hz to 20 kHz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V 70 V to 220 V</p> <p><i>100 Hz to 20 kHz</i> 220 V to 700 V 700 V to 1100</p>	<p>0.010 % 1.3 μV 70 ppm + 1.8 μV 60 ppm + 2.1 μV 50 ppm + 1.5 μV 50 ppm + 2.4 μV 50 ppm + 11 μV 50 ppm + 23 μV 50 ppm + 0.11 mV 50 ppm + 0.3 mV 50 ppm + 1.7 mV 50 ppm + 3.7 mV</p> <p>50 ppm + 2 μV 50 ppm + 2.2 μV 50 ppm + 2.1 μV 30 ppm + 2.2 μV 30 ppm + 3 μV 30 ppm + 10.5 μV 30 ppm + 14.6 μV 30 ppm + 30.3 μV 30 ppm + 0.28 mV 30 ppm + 0.55 mV 30 ppm + 2.0 mV</p> <p>40 ppm + 1.3 μV 30 ppm + 1.5 μV 30 ppm + 1.8 μV 20 ppm + 1.7 μV 20 ppm + 2.5 μV 20 ppm + 13.3 μV 20 ppm + 11.7 μV 20 ppm + 44 μV 20 ppm + 81 μV 20 ppm + 0.13 mV 40 ppm + 0.9 mV</p> <p>20 ppm + 12 mV 20 ppm + 20 mV</p>		Lab 1



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AC VOLTAGE (cont'd) Measurement	<p><i>20 kHz to 50 kHz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V 70 V to 220 V 220 V to 700 V</p> <p><i>50 kHz to 100 kHz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V 70 V to 220 V 220 V to 700 V</p> <p><i>100 kHz to 300 kHz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V 22 V to 70 V</p> <p><i>300 kHz to 500 kHz</i> up to 2.2 mV 2.2 mV to 7 mV 7 mV to 22 mV 22 mV to 70 mV 70 mV to 220 mV 220 mV to 700 mV 700 mV to 2.2 V 2.2 V to 7 V 7 V to 22 V</p>	<p>50 ppm + 1.8 uV 40 ppm + 1.9 uV 40 ppm + 2.1 uV 30 ppm + 3.2 uV 20 ppm + 4 uV 20 ppm + 7 uV 20 ppm + 15 uV 20 ppm + 25 uV 20 ppm + 41 uV 30 ppm + 0.61 mV 30 ppm + 1.9 mV 0.009 % + 15 mV</p> <p>70 ppm + 2.2 uV 50 ppm + 2.2 uV 70 ppm + 2.5 uV 70 ppm + 4.4 uV 50 ppm + 9.3 uV 50 ppm + 3.7 uV 50 ppm + 25 uV 60 ppm + 31 uV 60 ppm + 21 uV 60 ppm + 4 mV 60 ppm + 9.1 mV 0.04 % + 17 mV</p> <p>0.017 % + 5.7 uV 0.010 % + 5.8 uV 0.009 % + 5.8 uV 0.010 % + 6.9 uV 0.009 % + 11 uV 0.009 % + 9 uV 0.008 % + 24 uV 0.012 % + 67 uV 0.012 % + 21 uV 0.012 % + 7.0 mV</p> <p>0.051 % + 6.0 uV 0.032 % + 7.0 uV 0.027 % + 9.0 uV 0.023 % + 22 uV 0.022 % + 9.0 uV 0.022 % + 34 uV 0.019 % + 17 uV 0.030 % + 0.18 mV 0.030 % + 0.20 mV</p>		Lab 1



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AC CURRENT (cont'd) Generation AC CURRENT Measurement	<p><i>5 kHz to 10 kHz</i> 22 μA to 220 μA 220 μA to 2.2 mA 2.2 mA to 22 mA 22 mA to 220 mA 220 mA to 2.2 A</p> <p><i>50 Hz to 1 kHz</i> 1 μA to 200 μA 200 μA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 20 A</p> <p><i>50 Hz to 60 Hz</i> 20 A to 100 A</p> <p><i>1 kHz to 5 kHz</i> 1 μA to 200 μA 200 μA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 20 A</p> <p><i>5 kHz to 10 kHz</i> 1 μA to 200 μA 200 μA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 20 A</p>	<p>0.22 % + 0.12 μA 0.22 % + 1.2 μA 0.21 % + 12 μA 0.21 % + 0.12 mA 1.2 % + 0.24 mA</p> <p>0.034 % + 26 nA 0.033 % + 0.26 μA 0.033 % + 2.6 μA 0.034 % + 26 μA 0.078 % + 0.26 mA 0.11 % + 2.6 mA</p> <p>0.17 %</p> <p>0.036 % + 26 nA 0.033 % + 0.26 μA 0.033 % + 6.4 μA 0.034 % + 26 μA 0.09 % + 0.27 mA 0.33 % + 2.6 mA</p> <p>0.052 % + 26 nA 0.034 % + 0.26 μA 0.033 % + 6.4 μA 0.034 % + 26 μA 0.091 % + 0.27 mA 0.38 % + 2.0 mA</p>		Lab 1
FREQUENCY	<p>10 MHz, 5 MHz, 1 MHz, 100 kHz</p> <p>1 Hz to 10 Hz 10 Hz to 100 Hz 100 Hz to 1 kHz 1kHz to 10kHz 10 kHz to 100 kHz 100 kHz to 10 MHz 10 MHz to 100 MHz 100 MHz to 1 GHz 1 GHz to 10 GHz 10 GHz to 20 GHz</p>	<p>1.0 in 10^{12}</p> <p>2.0 in 10^6 1.0 in 10^6 1.0 in 10^7 1.0 in 10^8 1.0 in 10^9 1.0 in 10^9 1.6 in 10^{10} 19 in 10^{12} 15 in 10^{12} 2.8 in 10^{12}</p>	<p>For oscillator calibration over gate times of 100 s or greater</p> <p>Can be quoted as time for repetitive events</p>	Lab 1



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TEMPERATURE SIMULATION Electrical calibration of temperature indicators and simulators Resistance thermometers (Pt 100) Base metal thermocouples Noble metal thermocouples Cold junction compensation	 -200 °C to 400 °C 400 °C to 800 °C -250 °C to 0 °C 0 °C to 1370 °C -250 °C to 0 °C 0 °C to 1370 °C 50 °C to 400 °C 400 °C to 1800 °C 0 °C to 400 °C 400 °C to 1800 °C At ambient temperature 22 °C \pm 5 °C	 0.070 °C 0.075 °C 0.21 °C 0.17 °C 0.15 °C 0.060 °C 0.26 °C 0.18 °C 0.21 °C 0.16 °C 0.05 °C	 Uncertainties based on Types K and R. Uncertainties may be higher for other thermocouple types Other RTD types can be calibrated but may have larger uncertainties Including cold junction compensation Excluding cold junction compensation Including cold junction compensation Excluding cold junction compensation	Lab 1
TIME Elapsed Time	1 s to 100 ks	0.20 s 0.0010 s	Mechanically triggered events Electronically triggered events	Lab 1
ROTATIONAL SPEED Tachometers	60 rpm to 9,999 rpm 10,000 rpm to 120,000 rpm	6.2 ppm + 0.058 rpm 6.0 ppm + 0.58 rpm	Optical or electrically triggered devices. Mechanical tachometers will attract a larger uncertainty due to resolution.	Lab 1



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RF ATTENUATION	<p><i>10 MHz to 4 GHz</i></p> <p>0 dB to 10 dB 10 dB to 40 dB 40 dB to 50 dB 50 dB to 70 dB 70 dB to 90 dB</p> <p><i>4 GHz to 12 GHz</i></p> <p>0 dB to 10 dB 10 dB to 20 dB 20 dB to 30 dB 30 dB to 40 dB 40 dB to 50 dB 50 dB to 70 dB 70 dB to 80 dB 80 dB to 90 dB</p> <p><i>12 GHz to 18 GHz</i></p> <p>0 dB to 10 dB 10 dB to 20 dB 20 dB to 30 dB 30 dB to 40 dB 40 dB to 50 dB 50 dB to 70 dB 70 dB to 90 dB</p>	<p>0.036 dB 0.040 dB 0.050 dB 0.080 dB 0.090 dB</p> <p>0.043 dB 0.040 dB 0.050 dB 0.040 dB 0.060 dB 0.13 dB 0.12 dB 0.13 dB</p> <p>0.16 dB 0.16 dB 0.15 dB 0.16 dB 0.24 dB 0.25 dB 0.26 dB</p>	<p>Using R & S ZNB-20</p> <p>The uncertainties are quoted for 50 Ω systems for devices fitted only with Type N Connectors which present a near match to the 50 Ω measurement system . Measurement of devices presenting a significant mismatch will receive much larger uncertainties .</p>	Lab 1
VOLTAGE REFLECTION COEFFICIENT	<p><i>10 MHz to 9 GHz</i></p> <p>≤ 1.0</p> <p><i>9 GHz to 18 GHz</i></p> <p>≤ 1.0</p>	<p>0.020</p> <p>0.054</p>	<p>Using R & S ZNB-20</p> <p>The uncertainties are quoted for 50 Ω systems for devices fitted only with Type N Connectors . Results and uncertainties may also be quoted in units of Return Loss (dB) or VSWR .</p>	Lab 1



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DIMENSIONAL MEASUREMENTS			All linear calibrations may be given in inch units.	Lab 2
MEASURING INSTRUMENTS AND MACHINES				
Micrometers				
External	BS 870:2008 0 mm to 600 mm	Heads 2.0 μm between any two points. Extension rods $1.0 + (8.0 \times \text{length in m}) \mu\text{m}$		
Internal	BS 959:2008 and above 0 mm to 1000 mm	Heads 2.0 μm between any two points. Extension rods $1.0 + (8.0 \times \text{length in m}) \mu\text{m}$		
Depth	BS 6468:2008 0 mm to 300 mm	Heads 2.0 μm between any two points. Extension rods $1.0 + (8.0 \times \text{length in m}) \mu\text{m}$		
Micrometer heads	As BS 1734:1951 0 to 100	1.6 μm		
Micrometer setting rods/ Length gauges, flat & spherical ended	BS 870:2008 25 mm to 600 mm	$1.0 + (5.0 \times \text{length in m}) \mu\text{m}$		
Three point bore	3 mm to 150 mm	Overall performance 5.0 μm		
Vernier Gauges				
Caliper	BS 887:2008 and above 0 mm to 1500 mm	Overall performance $10 + (30 \times \text{length in m}) \mu\text{m}$		
Dial gauges and dial test indicators	As BS 907:2008 and BS 2795:1981 0 mm to 25 mm	2.0 μm		
Simple height gauges	BS EN ISO 13225:2012 0 mm to 300mm 300 mm to 450mm 450 mm to 600mm 600 mm to 1000mm	25 μm 26 μm 27 μm 28 μm		
Spirit levels	As BS 958:1968 5 seconds to 60 minutes of arc nominal sensitivity	1.5 seconds of arc		



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LENGTH			All linear calibrations may be given in inch units.	Lab 2
Plain plug and pin gauges (parallel)	1 mm to 50 mm diameter 50 mm to 150 mm diameter	1.0 µm 1.5 µm		
Plain ring gauges (parallel) and setting standards	3 mm to 50 mm diameter 50 mm to 100 mm 100 mm to 150 mm diameter 150 mm to 200 mm diameter	1.7 µm 1.8 µm 2.2 µm 2.3 µm		
Thread measuring cylinders	As BS3777:1964 and BS5590:1978 and specials 0.1 to 5.0 diameter	0.8µm		
Plain gap gauges (parallel)	1 to 50mm 50 to 150mm	3µm 5µm		
Gauge blocks		Class (see note)		
Inch (Steel)	As BS 4311-1:2007 0.01 inch to 0.4 inch 0.4 inch to 1 inch 2 inch 3 inch 4 inch	C 3.4 4.1 5.7 7.6 9.6	Note: Class C uncertainties apply to the measurement of length of steel gauges by comparison with grade K standards of length of a similar material. Class C uncertainties apply to new and used grade 0,1 & 2 gauges to BS 4311-1:2007 and BS EN ISO 3650:1999	
		µ inches		
Millimetre (Steel)	As BS EN ISO 3650:1999 0.25 mm to 10 mm 10 mm to 25 mm 30 mm, 40 mm, 50 mm 60 mm, 70 mm, 75 mm 80 mm, 90 mm, 100 mm	C .10 .11 .13 .17 .20		
		µm		
Feeler Gauges	As BS 957:2008 0.02 mm to 1.00 mm	1.5 µm		
Parallels	As BS 906:1972 5 to 50 x 100 x 400	2µm to 5µm		
Right angle and box angle plates	As BS 5535:1978 50mm to 300mm	Squareness: 3.0 +(1.0 per 100 mm) Parallelism: 0.003 mm		
Vee blocks	As BS 3731:1987 20mm to 100mm	5µm		



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FORM Surface plates and tables Granite Cast iron	BS 817:2008 160 mm x 100 mm to 2500 mm x 1600 mm	1.5 $\mu\text{m} +$ (0.80 x diagonal in m) μm See Note 1	The uncertainty quoted is for the departure from flatness, i.e. the distance separating the two parallel planes which just enclose the surface under consideration.	Lab 2 and Site
TORQUE Torque Wrenches Torque Screwdrivers Static Torque Transducers	1 to 2500 N-m See note 1 0.1 to 25 N-m See note 1 0.005 to 1500 N-m Classes 0.05 to 5.0 See note 1	1.6 % 1.6 % 0.04 % of reading	Note 1: Values may be given in other units i.e. lbf/ft, mV/V etc.	Lab 2
MASS See notes 1 and 2	Nominal Value (g) 50 000 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 to 0.001	(mg) 50 20 10 5.0 2.0 1.0 0.50 0.20 0.10 0.060 0.050 0.040 0.030 0.024 0.020 0.016 0.012 0.010 0.0080 0.0060 0.0050 0.0040	Note 1: Calibrations can be given in other units as required. Note 2: Intermediate values can be calibrated to an uncertainty interpolated from the next higher and lower values in the table.	Lab 2



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TEMPERATURE				Lab 2
Temperature block calibrators	-50 °C to +100 °C 100 °C to 500 °C 250 °C to 650 °C	0.060 °C 0.060 °C to 0.13 °C 0.13 °C		
Resistance thermometers	-20 °C to 0 °C 0 °C Ambient temperature (20 °C) 0 °C to 250 °C 250 °C to 270 °C 270 °C to 650 °C	0.035 °C 0.025 °C 0.025 °C 0.040 °C 0.065 °C 0.25 °C		
Thermocouples	-20 °C to 130 °C 130 °C to 300 °C 300 °C to 650 °C 650 °C to 1000 °C 1000 °C to 1200 °C	0.50 °C 0.50 °C to 0.55 °C 0.55 °C to 0.70 °C 1.7 °C to 2.5 °C 2.5 °C to 3.5 °C		
Compensating and extension cables for Base metal thermocouples	0 °C / 20 °C	0.050 °C		
Digital thermometers with probes	-20 °C to 0 °C 0 °C Ambient temperature (20 °C) 0 °C to 250 °C 250 °C to 270 °C 270 °C to 650 °C 650 °C to 1000 °C 1000 °C to 1200 °C	0.035 °C 0.025 °C 0.025 °C 0.040 °C 0.065 °C 0.25 °C 1.7 °C to 2.5 °C 2.5 °C to 3.5 °C		
Liquid in glass thermometers	-20 °C to 70 °C 70 °C to 270 °C	0.050 °C 0.05 °C to 0.20 °C	Thermometers can be read with an uncertainty of 1/5 of the smallest marked division	
Liquid baths	-50 °C to 300 °C	0.040 °C	Suitable for characterisation of temperature calibration baths	



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United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Allied Aerosystems Ltd
Issue No: 033 Issue date: 04 August 2016

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
<p>ELECTRICAL SIMULATION</p> <p>Electrical calibration of temperature indicators</p> <p>Base metal thermocouples</p> <p>...Cold junction compensation</p> <p>Electrical calibration of temperature simulators</p> <p>Base metal thermocouples</p>	<p>-210 °C to -100 °C -100 °C to +200 °C 200 °C to 1200 °C 1200 °C to 1370 °C</p> <p>Ambient temperature</p> <p>-210 °C to -100 °C -100 °C to +200 °C 200 °C to 1200 °C 1200 °C to 1370 °C</p>	<p>0.18 °C 0.10 °C 0.08 °C 0.10 °C</p> <p>0.08 °C</p> <p>0.13 °C 0.08 °C 0.10 °C 0.12 °C</p>	<p>Uncertainties based on Types J and K. Uncertainties may be higher for other thermocouple types</p> <p>Including cold junction compensation</p> <p>Including cold junction compensation</p>	Lab 2
<p>PRESSURE</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</p> <p>Hydraulic pressure (gauge)</p> <p>Calibration of pressure measuring instruments and gauges</p>	<p>3.5 kPa to 175 kPa 175 kPa to 700 kPa 700 kPa to 7 MPa 7 MPa to 17 MPa</p> <p>- 100 kPa to 0 kPa 0 kPa to 3.5 kPa 3.5 kPa to 175 kPa 175 kPa to 700 kPa 700 kPa to 7 MPa 7 MPa to 17 MPa</p> <p>350 kPa to 700 kPa 700 kPa to 7.1 MPa 7.1 MPa to 83.6 MPa</p>	<p>0.0050 % + 1.4 Pa 0.0063 % 0.0054 % 0.013 % + 35 Pa</p> <p>60 Pa 2.0 Pa 0.0045 % 0.0053 % 0.0043 % 0.013 %</p> <p>0.0120 % 0.0081 % 0.0058 %</p>		Lab 2



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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
NON AUTOMATIC WEIGHING INSTRUMENTS (NAWI) Electronic, single pan weighing machines and weighing instruments See notes 1 and 2	Capacity 200 mg 500 mg 1 g 2 g 5 g 10 g 12 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg 50 kg 100 kg 200 kg 500 kg 1000 kg 2000 kg	0.012 mg 0.015 mg 0.018 mg 0.025 mg 0.037 mg 0.042 mg 0.058 mg 0.092 mg 0.16 mg 0.30 mg 0.78 mg 3.3 mg 6.5 mg 16 mg 33 mg 65 mg 160 mg 3.5 g 7.0 g 18 35 g 70 g	Note 1: Weights are available in OIML Class E2 Max grouped load 800 g OIML Class F1 Max grouped load 95 kg OIML Class M1 Max grouped load 3500 kg Note 2: Other loads within the overall listed range may also be used.	Site
END				