


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 UKAS CALIBRATION 0794 Accredited to ISO/IEC 17025:2005	Calibration Services (Calserv) Limited	
	Issue No: 029 Issue date: 11 March 2011	
	Ty Isaf Frongoch, Bala Gwynedd Wales LL23 7NU	Contact: Miss Alison Ayres Tel: +44 (0)1678 521567 Fax: +44 (0)870 051 0010 E-Mail: info@calserv.co.uk Website: www.calserv.co.uk
Calibration performed by the Organisations at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address Ty Isaf Frongoch, Bala Gwynedd Wales LL23 7NU Local contact Miss Alison Ayres Tel: +44 (0)1678 521567 Fax: +44 (0)870 051 0010 Email: info@calserv.co.uk	Temperature, relative humidity, electrical and time interval calibration	Lab

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.	Temperature chamber calibration	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
TEMPERATURE				Lab
Platinum resistance thermometers				
Calibration at fixed points				
TP Mercury	- 38.8344 °C	3.0 mK	Note: TP = Triple Point FP = Freezing Point MP = Melting Point	
TP Water	0.01 °C	1.6 mK		
MP Gallium	29.7646 °C	3.0 mK		
FP Indium	156.5985 °C	5.0 mK		
FP Tin	231.928 °C	6.0 mK		
FP Zinc	419.527 °C	10 mK		
FP Aluminium	660.323 °C	16 mK		
Calibration by comparison	- 196 °C	0.0070 °C		
	- 90 °C to 0 °C	0.0070 °C		
	0 °C	0.0050		
	0 °C to 250 °C	0.010 °C		
	250 °C to 300 °C	0.015 °C		
	300 °C to 420 °C	0.020 °C		
	420 °C to 660 °C	0.035 °C		
Thermistors	- 90 °C to 0 °C	0.0070 °C		
	0 °C	0.0050 °C		
	0 °C to 250 °C	0.010 °C		
Thermocouples - base metal	- 196 °C	0.20 °C		
	- 90 °C to 0 °C	0.15 °C		
	0 °C to 40 °C	0.10 °C		
	40 °C to 80 °C	0.15 °C		
	80 °C to 350 °C	0.20 °C		
	350 °C to 420 °C	0.30 °C		
	420 °C to 660 °C	0.40 °C		
	660 °C to 1100 °C	0.70 °C		
	1100 °C to 1300 °C	2.1 °C		
Thermocouples - noble metal	0 °C to 280 °C	0.50 °C		
	280 °C to 660 °C	0.45 °C		
	660 °C to 1100 °C	0.70 °C		
	1100 °C to 1300 °C	2.1 °C		
Electronic thermometers, data loggers and transmitters with sensors	Range as for sensor type	As for sensor type	Including instruments with electrical outputs	
Calibration of temperature loggers and probes in an air chamber	5 °C to 10 °C	0.35 °C	Including temperature probes built in to humidity instruments.	
	10 °C to 50 °C	0.22 °C		



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TEMPERATURE (cont'd)				
Calibration of temperature loggers and probes in an air chamber suitable for multiple instruments	- 40 °C to 0 °C 0 °C to 60 °C 60 °C to 130 °C	0.70 °C 0.50 °C 1.0 °C	Including temperature probes built in to humidity instruments.	
Metal block calibrators and portable liquid baths	0 °C - 95 °C to - 50 °C - 50 °C to + 250 °C 250 °C to 300 °C 250 °C to 660 °C 660 °C to 1100 °C 1100 °C to 1300 °C	0.015 °C 0.045 °C 0.025 °C 0.045 °C 0.10 °C 1.0 °C 2.4 °C	For zero reference baths	
Averaging thermometers and other instruments with large temperature probes				
Straight probes up to 2 m	5 °C to 50 °C	0.023 °C	Calibration at uniform temperatures in a stirred liquid bath	
Probes which can be coiled	- 20 °C to + 50 °C	0.060 °C		
Temperature controlled baths, fridges, freezers, ovens, furnaces and environmental chambers, inclusive of controllers and displays	- 200 °C to + 250 °C 250 °C to 660 °C 660 °C to 1100 °C 1100 °C to 1300 °C	0.55 °C 1.0 °C 1.4 °C 3.6 °C	Single or multiple point measurements	Site
HUMIDITY				
Relative humidity instruments	5 °C to 10 °C 10 %rh to 90 %rh 10 °C to 15 °C 5 %rh to 50 %rh 10 °C to 15 °C 50 %rh to 95 %rh 15 °C to 30 °C 5 %rh to 95 %rh 30 °C to 40 °C 5 %rh to 95 %rh 40 °C to 50 °C 5 %rh to 90 %rh	0.60 %rh + 2.7 % of reading 0.80 %rh + 1.5 % of reading 3.2 % of reading 0.80 %rh + 1.3 % of reading 0.80 %rh + 1.7 % of reading 0.80 %rh + 1.7 % of reading		Lab



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HUMIDITY (cont'd) Relative humidity instruments (cont'd) Using unsaturated salts	<i>At ambient temperature:</i> 5 %rh 10 %rh 35 %rh 50 %rh 80 %rh 95 %rh	0.70 %rh 0.50 %rh 0.70 %rh 1.1 %rh 1.3 %rh 1.4 %rh		
ELECTRICAL Electrical calibration of temperature simulators for the following sensors:				Lab
Noble metal thermocouples	- 200 °C to + 500 °C 500 °C to 1800 °C	0.50 °C 0.30 °C	including cold junction compensation	
Base metal thermocouples	- 200 °C to + 1380 °C	0.13 °C	including cold junction compensation	
Resistance sensors	- 200 °C to + 800 °C	0.0017 °C		
Electrical calibration of temperature indicators, controllers and recorders for the following sensors:				
Noble metal thermocouples	- 200 °C to + 500 °C 500 °C to 1800 °C	0.50 °C 0.30 °C	including cold junction compensation	
Base metal thermocouples	- 200 °C to + 1380 °C	0.13 °C	including cold junction compensation	
Resistance sensors	- 200 °C to + 800 °C	0.0070 °C		
Calibration of thermistor indicators by resistance simulation.	0 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 10 MΩ	50 ppm + 6.0 mΩ 25 ppm + 16 mΩ 40 ppm + 16 mΩ 30 ppm + 60 mΩ 30 ppm + 4.0 Ω 45 ppm + 18 Ω 160 ppm + 1.2 kΩ		
TIME Time interval	1 minute to 24 hours	0.50 s		Lab
END				