Calibration Equipment
for thermometers & temperature probes

Temperature is a critical measurement for ensuring the safety and quality of many products and processes. Whether monitoring temperature at the point of goods in, throughout production, final product storage or during distribution, thermometer calibration is essential.

The food industry, in particular, is very aware of the critical nature of processing temperatures as part of their HACCP procedures. The importance of thermometer calibration is not just a food safety issue, but also an economic consideration, as thermometer accuracy can affect both quality and productivity.

It is recommended that thermometers and temperature monitoring equipment be calibrated regularly. New equipment should be checked for accuracy upon receipt and before being put into service. Thermometers that are in constant use and used in critical areas should be calibrated more regularly. The definition of a regular calibration check is very much at the discretion of the user, for example, a food processing company may well decide to check thermometers daily before use, whereas a restaurant may decide that once a week is adequate.

calibration checks

Depending on the instrument and its intended temperature and use, an iced water and boiling water method can be used for checking the accuracy of a thermometer and probe. When used properly and in conjunction with a Reference thermometer, this offers a cost-effective method of calibration and verification.

Other techniques can be employed utilising dry-well and calibration baths in conjunction with a Reference thermometer. These techniques are particularly relevant and often more convenient when several thermometers and temperature probes are to be calibrated at any one time. Dry-wells and calibration baths provide variable and stable heat sources.

A Reference thermometer is an important instrument for checking the calibration of other thermometers and probes. However, it is of paramount importance that this instrument is kept for the sole purpose of verifying the accuracy of thermometers and temperature probes and has a current UKAS Certificate of Calibration.

Temperature simulators are an alternative to real-world temperature checking and are particularly useful for checking thermometers on-site or in-situ. It should be remembered, when using temperature simulators, that you are only checking the calibration of the instrument and not the system.

UKAS Certificates of Calibration

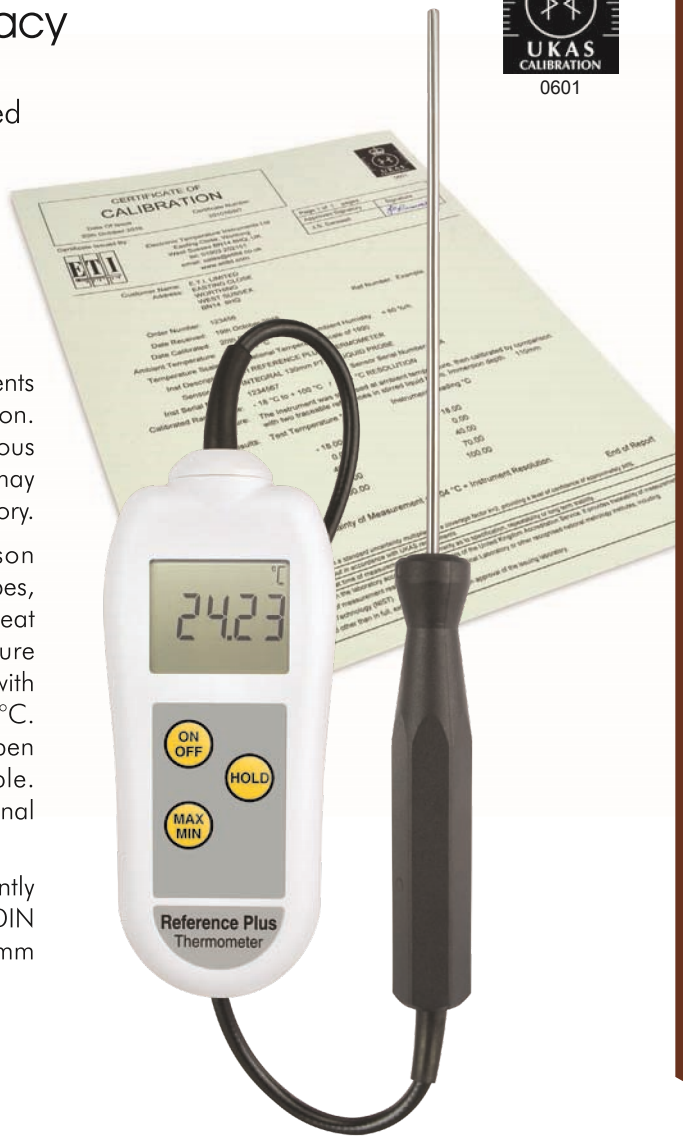
Our in-house UKAS calibration laboratory offers certification for both thermometers and probes either individually or as a system. Each UKAS Certificate of Calibration indicates deviations from standards at various temperature points.

Reference Thermometers

±0.05 °C high system accuracy

UKAS CALIBRATION
0601

- 5-point UKAS Certificate of Calibration included
- supplied complete with high accuracy probe
- temperature range -199.99 to 199.99 °C
- ideal for calibration comparison checks



The Reference thermometers are high accuracy PT100 instruments that are supplied with a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at various check points: -18, 0, 40, 70 and 100 °C. Special points may be certified by arrangement with our UKAS calibration laboratory.

The Reference thermometers are ideal for comparison checking of the accuracy of other thermometers and probes, when used in conjunction with a stable temperature heat or chill source, see page 95. The instruments measure temperature over the range of -199.99 to 199.99 °C with a resolution of 0.01 °C and an accuracy of ±0.05 °C. The units feature a simple on/off push button with open circuit 'Err' and low battery indication, when applicable. The Reference Plus thermometer incorporates the additional features of a max/min and hold function.

The Reference thermometers are supplied with a permanently attached, high accuracy probe incorporating a 1/10th DIN PT100 sensor. The probe measures Ø3.3 x 130 mm and is supplied with a one metre PVC lead.

order code	description	
222-055	Reference	
222-063	Reference Plus	
814-132	Comparator	

low cost calibration checker

The Comparator provides an inexpensive way of checking the temperature of infrared thermometers when used in conjunction with a Reference thermometer.

HOLD · MAX/MIN · AUTO OFF · 2 YEAR GUARANTEE · MADE IN BRITAIN

specification	Reference & Reference Plus
range	-199.99 to 199.99 °C
resolution	0.01 °C
accuracy	±0.05 °C (-50 to 150 °C) ±0.1 °C (-150 to 200 °C)
battery	3 x 1.5 volt AAA
battery life	2000 hours
sensor type	PT100 1/10th DIN
display	10 mm LCD
dimensions	25 x 56 x 128 mm
weight	210 grams
a UKAS Certificate of Calibration is included	

Reference Thermapen® 3

0.01 °C resolution, high accuracy thermometer

UKAS CALIBRATION
0601

- 5-point UKAS Certificate of Calibration included
- ideal for calibration comparison checks
- compact & lightweight to use
- one-handed operation

The Reference Thermapen 3 thermometer is a high accuracy PT100 instrument that is supplied with a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at various check points: -18, 0, 40, 70 and 100 °C. Special points may be certified by arrangement with our UKAS calibration laboratory.

The Reference Thermapen 3 thermometer is ideal for comparison checking of the accuracy of other thermometers and probes, when used in conjunction with a stable temperature heat or chill source, see opposite. The instrument measures temperature over the range of -69.99 to 199.99 °C with a resolution of 0.01 °C and an accuracy of ±0.07 °C.

The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled if not required. Both low battery (icon) and open circuit indication are displayed, when applicable. Each Reference Thermapen 3 is powered by two lithium coin cell batteries with a minimum life expectancy of 1000 hours.

The Reference Thermapen 3 incorporates a stainless steel, penetration probe (Ø3.3 x 108 mm) that conveniently folds back through 180° into the side of the instrument when not in use.

supplied in a zip pouch with belt strap

optional accessories

- stainless steel wall bracket - screws not supplied *(832-002)*
- protective PVC wallet with belt strap *(830-110)*
- protect your instrument against high temperatures and accidental damage by fitting a protective silicone boot *(830-260)*

order code	description	
222-213	Reference Thermapen 3	
830-260	protective silicone boot	
830-265	silicone boot - glow in dark	
830-110	protective wallet	
832-002	s/steel wall bracket	
the Thermapen is supplied in a zip pouch (830-001)		

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specification	Reference Thermapen 3
range	-69.99 to 199.99 °C
resolution	0.01 °C
accuracy	±0.07 °C (-30 to 149.99 °C) otherwise ±0.2 °C
battery	2 x 3 volt CR2032 lithium coin cell
battery life	1000 hours
sensor type	PT100
display	12 mm LCD
dimensions	19 x 47 x 153 mm
weight	97 grams
a UKAS Certificate of Calibration is included	

3000 Series Dry-Well

small & lightweight calibrators

- ideal for checking the accuracy of thermometers
- portable temperature heat source

The 3000 dry-well calibrators are small and lightweight heat sources, ideal for checking the accuracy of digital thermometers and temperature probes. The units have a temperature range of 33 to 300 °C with a resolution of 0.1 °C.

The dry-wells offer a high level of stability (±0.5 °C) and a stabilisation time of five minutes. Plug it in, switch it on, set the verification temperature with the front panel buttons and insert your probe into the correct size well. Compare the temperature reading of your thermometer against the display and the difference is the error.

The 3001 dry-well will accept probe sizes Ø3.3, 4, 4.76 and 6.35 mm. The 3002 dry-well will accept probe sizes Ø3.3, 4.76, 6.35 and 9.6 mm. The 3003 dry-well will accept probe sizes Ø4.76 and 12.7 mm.

order code	description	
271-301	3001 dry-well	
271-302	3002 dry-well	
271-303	3003 dry-well	

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specification	3000 series dry-wells
range	33 to 300 °C
resolution	0.1 °C
accuracy	±0.5 °C (33 to 199.9 °C) ±1 °C (200 to 300 °C)
heating time	ambient to 300 °C after 10 mins
well depth	100 mm
power	230 volt AC (115 volt available)
dimensions	57 x 125 x 158 mm
weight	950 grams
FREE traceable certificate of calibration included	

3101 Dry-Well

heat/cool source calibrator

- ideal for checking the accuracy of thermometers
- accepts a wide variety of probe diameters

The 3101 dry-well features an easy to read LED display with a temperature range of -10 to 110 °C and a resolution of 0.1 °C. Heating time, ambient to 100 °C or cooling time, ambient to 0 °C is ten minutes.

The 3101 is excellent for checking the calibration of a wide range of instrumentation including digital thermometers and temperature probes, either above or below ambient temperature. The unit incorporates two removable wells/inserts, both Ø13 mm in diameter and will accept probe sizes Ø3.3, 4.1, 4.8, 6.4 and 9.6 mm. Each 3101 is supplied with two inserts of the customer's choice.

order code	description	
271-401	3101 dry-well	
271-321	Ø3.3 mm ID brass insert	
271-322	Ø4.1 mm ID brass insert	
271-323	Ø4.8 mm ID brass insert	
271-324	Ø6.4 mm ID brass insert	
271-325	Ø9.6 mm ID brass insert	

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specification	3101 dry-well
range	-10 to 110 °C
resolution	0.1 °C
accuracy	±0.5 °C (-10 to 99.9 °C) ±1 °C (100 to 110 °C)
heating time	ambient to 100 °C after 10 mins
cooling time	ambient to 0 °C after 10 mins
well depth	100 mm
power	12 to 24 volt DC*
dimensions	110 x 153 x 186 mm
weight	1800 grams
*supplied with 230/115 volt AC power adaptor FREE traceable certificate of calibration included	

MicroCal 1 & 1 Plus Calibrator

simulator or simulator & thermometer

- tests thermocouple type K, J, T, R, N, S & E thermometers
- for frequent checking of thermometer accuracies
- 2 models - simulator or simulator/thermometer
- 12 adjustable temperature points

The MicroCal 1 and 1 Plus thermocouple simulators help ensure that the frequent checking of thermometer accuracies are a routine operation. Both instruments are designed to simulate a chosen temperature to test thermocouple type K, J, T, R, N, S and E thermometers without the need for specialised equipment or conversion tables. The MicroCal 1 Plus also measures and simulates temperature.

Both models feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include: °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

An optional lead set is also available, that comprises of seven leads, one for each thermocouple type K, J, T, R, N, S and E. Each PVC lead is one metre long and incorporates two miniature thermocouple plugs.

Each MicroCal is supplied with a one metre PVC type K thermocouple lead with miniature connectors and a five-point (type K) UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.

incorporates a foot stand

thermocouple type K	range -200 to 1372 °C
thermocouple type J	range -200 to 1200 °C
thermocouple type T	range -270 to 400 °C
thermocouple type R	range 0 to 1768 °C
thermocouple type N	range -200 to 1300 °C
thermocouple type S	range 0 to 1768 °C
thermocouple type E	range -140 to 1000 °C

A 5-point UKAS Certificate of Calibration is included with each MicroCal simulator

UKAS CALIBRATION
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order code	description	
271-100	MicroCal 1	
271-101	MicroCal 1 Plus	
816-100	lead set (7 types)	
830-205	protective silicone boot	
832-115	acrylic wall bracket	

specification	MicroCal 1 & MicroCal 1 Plus
range	(see table above)
temp points	12 adjustable presets
accuracy	±0.3 °C (dependent upon thermocouple type)
battery	2 x 1.5 volt AAA
battery life	300 hours
sensor type	thermocouple type K, J, T, R, N, S & E (selectable)
display	custom LCD
dimensions	35 x 73 x 141 mm
weight	175 grams
a UKAS Certificate of Calibration is included	

MicroCal 2 & 3 Calibrators

temperature simulators

- type K, J or T thermocouple models available
- no need for additional specialised equipment
- 12 variable or 23 fixed temperature points
- 5-point UKAS Certificate of Calibration

The MicroCal 2 and 3 thermocouple simulators help ensure that the frequent checking of thermometer accuracies is a routine operation. Both instruments are designed to simulate a chosen temperature, allowing standard K, J or T thermocouple thermometers to be tested or re-calibrated simply and quickly, without the need for additional specialised equipment or conversion tables.

Both models feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include; °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

The MicroCal 2 has 12 preset temperatures for type K thermocouple -20, -10, 0, 10, 30, 50, 100, 195, 250, 500, 800 and 1000 °C, any of these temperatures can be modified and saved by the user. The factory default temperatures can be recalled at any time.

The MicroCal 3 has 23 fixed temperature points for type K thermocouple -100, -50, -20, -10, 0, 10, 20, 30, 40, 50, 60, 80, 100, 150, 195, 250, 300, 400, 500, 600, 800, 1000 and 1200 °C.

Each MicroCal is supplied with a one metre PVC lead with miniature thermocouple connectors and a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.

A 5-point UKAS Certificate of Calibration is included with each MicroCal simulator

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order code	description	
271-200	MicroCal 2 - type K	
271-201	MicroCal 2 - type J	
271-202	MicroCal 2 - type T	
271-210	MicroCal 3 - type K	
271-211	MicroCal 3 - type J	
271-212	MicroCal 3 - type T	
830-205	protective silicone boot	
832-115	acrylic wall bracket	

specification	MicroCal 2	MicroCal 3
range	(see table opposite)	
temp points	12 adjustable presets	23 fixed temperatures
accuracy	±0.3 °C	±0.5 °C
battery	2 x 1.5 volt AAA	
battery life	300 hours	
sensor type	dedicated type K, J or T thermocouple	
display	custom LCD	
dimensions	35 x 73 x 141 mm	
weight	175 grams	
a UKAS Certificate of Calibration is included		

MicroCheck

3-point checker/simulator

- for regular checking of thermometer accuracies
- 3-point UKAS Certificate of Calibration
- simple & easy to use
- 4 models available

The MicroCheck temperature checkers have been developed to verify the continuing accuracy of type K thermocouple thermometers with a 0.1 or 1 °C resolution.

All checkers feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include: °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

The MicroChecks simulate three fixed temperatures, enabling users to check the accuracy of each instrument at three known points without the need for specialist equipment.

Each MicroCheck is supplied with a one metre PVC type K thermocouple lead with miniature connectors and a three-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.

acrylic wall bracket

model	range
MicroCheck 1	0 °C, 100 °C & 500 °C
MicroCheck 2	-20 °C, 20 °C & 200 °C
MicroCheck 3	-20 °C, 0 °C & 220 °C
MicroCheck 4	-20 °C, 0 °C & 100 °C
other ranges are available upon request	

A 3-point UKAS Certificate of Calibration is included with each MicroCheck checker

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order code	description	
271-011	MicroCheck 1	
271-012	MicroCheck 2	
271-014	MicroCheck 3	
271-015	MicroCheck 4	
830-205	protective silicone boot	
832-115	acrylic wall bracket	

specification	MicroCheck
range	(see table above)
temp points	3 fixed temperatures
accuracy	±0.5 °C
battery	2 x 1.5 volt AAA
battery life	300 hours
sensor type	type K thermocouple
display	custom LCD
dimensions	35 x 73 x 141 mm
weight	175 grams
a UKAS Certificate of Calibration is included	

Thermistor Test Caps

supplied with a UKAS Certificate of Calibration

0601

Calibration thermistor test caps are suitable for checking the accuracy of the Therma 20, Therma 22 or any equivalent thermistor thermometer.

Simply plug in the desired test cap and the display on the thermometer should show the same temperature as the certified value.

Each test cap is supplied with a UKAS Certificate of Calibration with a guaranteed uncertainty of ±0.1 °C.

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order code	description	
286-001	thermistor test cap -18 °C	
286-002	thermistor test cap 0 °C	
286-003	thermistor test cap 3 °C	
286-004	thermistor test cap 70 °C	
286-005	thermistor test cap 100 °C	
a UKAS Certificate of Calibration is included		

PT100 Test Caps

supplied with a UKAS Certificate of Calibration

0601

Calibration PT100 test caps are suitable for checking the accuracy of the Precision PT100 thermometer or any platinum resistance thermometer fitted with a Binder connector.

Simply plug in the test cap and the display on the thermometer should show the same temperature as the certified value.

Each test cap is supplied with a UKAS Certificate of Calibration with a guaranteed uncertainty of ±0.1 °C.

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order code	description	
282-001	PT100 test cap -18 °C	
282-002	PT100 test cap 0 °C	
282-003	PT100 test cap 3 °C	
282-004	PT100 test cap 70 °C	
282-005	PT100 test cap 100 °C	
a UKAS Certificate of Calibration is included		

UKAS Calibration

service & repair

0601

The United Kingdom Accreditation Service (UKAS) is the UK national accreditation body responsible for assessing and accrediting the competence of organisations in the fields of measurement, testing, inspection and certification of systems, products and personnel. It operates under a Memorandum of Understanding with the Secretary of State for Department for Business, Energy & Industrial Strategy, who has licensed UKAS to use accreditation symbols that feature the Royal Crown, and to confer the use of these symbols to UKAS accredited organisations.

Having achieved accreditation to UKAS, our in-house laboratories are inspected on a regular basis to ensure that our calibration methods, equipment and personnel are maintained to the standards required by UKAS and ISO/IEC 17025.

Our UKAS accredited laboratory is also capable of calibrating non-ETI manufactured temperature and humidity instruments and data-loggers. Please contact our sales department for more information.

The following are just a few examples of frequently asked questions;

The difference between calibration & certification?

Calibration means "to measure". The instrument being tested is calibrated against a known source. A certificate shows which results have been obtained during calibration and certifies the accuracy of the instrument.

What is meant by uncertainty of measurement?

When anything is measured there is a probability that there will be some inaccuracies. Perhaps the test instrument is not entirely accurate; perhaps ambient temperatures are not conducive to accurate measurement; possibly the operator has not followed correct procedures. Each measurement has an "uncertainty" factor, and this can be calculated by a combination of all potential errors. This is then stated as a tolerance, i.e. plus or minus the measured figure.

How often should we have our thermometer checked?

It depends on a number of factors. How important is temperature in your process? How often do you use your thermometer? How roughly is the instrument treated? Do you have the opportunity to check against other thermometers? For continued confidence in the accuracy of measurement, and to assist in compliance with HACCP and other legislation, it is recommended that you obtain a certificate of calibration at 12-month intervals.

Can my data-loggers be calibrated?

Yes. We can issue UKAS Certificates for both temperature and humidity data-loggers with internal or external probes. The standard certificate includes three different temperature or humidity points. For temperature calibration and measurement capability, see opposite, for humidity and air temperature, see page 102.

UKAS Temperature Calibration

in-house accredited laboratory

- thermometer temperature range -100 to 200 °C
- rapid turnaround - normally within 5 days
- certified uncertainties from ±0.02 °C
- 1 to 5-point UKAS Certificates

Our in-house UKAS accredited calibration laboratory for temperature has a wide measurement range of -100 to 200 °C with a calibration and measurement capability of 0.02 °C. The laboratory can also measure resistance up to 16 MΩ (i.e. resistance decade boxes and PT100/RTD temperature simulators) and DC voltage 0 to 200 mV (i.e. thermocouple simulators and calibrators). Original UKAS Certificates provide proof that instruments and probes have been calibrated against nationally approved standards.

thermometers & probes

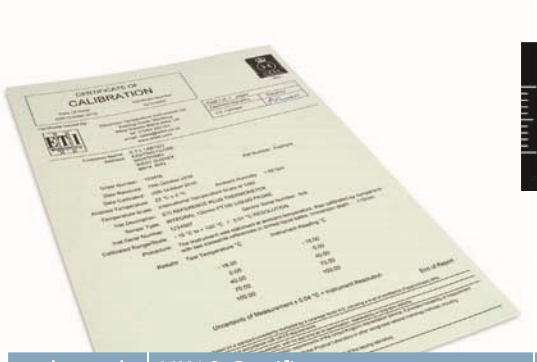
Each UKAS Certificate indicates the deviations from standards at various check points, the standard being -18, 0, 40, 70 and 100 °C with a guaranteed uncertainty, dependant on the probe type, see calibration and measurement capability table below.

test caps & simulators

Each UKAS Certificate indicates the deviations from standards at specific check points (-18, 0, 3, 70 and 100 °C) to an uncertainty of ±0.1 °C (resistance) or ±0.15 °C (thermocouple).

data-loggers

Each UKAS Certificate indicates the deviations from standards at three check points (-18, 0 and 40 °C) to an uncertainty of ±0.04 °C.



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order code	UKAS Certificate - temperature	
890-200	instrument only standard 5-point	
890-210	instrument & probe system 5-point	
890-215	checker 3-point	
890-230	test cap 1-point	
890-235	simulator 5-point	
890-240	data-logger 3-point	

calibration & measurement capability (CMC)

thermistor thermometer & probe	
-50 to 150 °C	CMC 0.02 °C
-100 to -50 °C	CMC 0.13 °C
PT100 (resistance sensors) thermometer & probe	
-50 to 200 °C	CMC 0.02 °C
-100 to -50 °C	CMC 0.13 °C
thermocouple thermometer & probe	
-50 to 120 °C	CMC 0.15 °C
-100 to -50 °C	CMC 0.17 °C
120 to 200 °C	CMC 0.2 °C
temperature data-loggers	
-50 to 100 °C	CMC 0.04 °C
thermistor & PT100 test caps	
-18 to 100 °C	CMC 0.1 °C
thermocouple simulators	
-200 to -50 °C	CMC 0.25 °C
-50 to 1372 °C	CMC 0.15 °C

UKAS Humidity Calibration

in-house accredited laboratory

0601

- certified uncertainties from 0.6 %rh, 0.18 °Cdp & 0.15 °C Air
- flexible certification - select the points you need
- qualified & experienced laboratory personnel
- rapid turnaround

Our in-house humidity laboratory is equipped with one of the world's premier humidity chambers together with a high accuracy mirror hygrometer. The Thunder Scientific 2500 humidity chamber uses two-pressure technology to generate controlled humidity conditions, which has long been the recognised standard for instrument calibration, test and verification. This method of generation is a fundamental technology, enabling confidence in traceability to National Standards. This, combined with an MBW referenced mirror hygrometer, ensures the standard of calibration is to a very high level. If you then combine this with UKAS Accreditation, and a rapid turnaround of your instrument, you can be sure that the service offered by our humidity laboratory will meet your requirements.

Accurate monitoring of humidity can increase the efficiency of productivity in many aspects of production. An increasing number of employers are also realising the importance of healthy working environments, which includes the control of humidity to help prevent airborne bacteria, eliminate static shocks and reduce eye-strain.

As with most digital equipment, but even more so with hygrometers, there is a tendency for drift over a period of use. Therefore a regular calibration by comparison against Standards, traceable to National Standards, provides confidence in the continued accuracy of your instrument.

air temperature capability

Our humidity laboratory is also UKAS accredited for air temperature measurement certification. Please see below for calibration and measurement capability.

order code	UKAS Certificate - humidity	
890-110	3-point 25, 50 & 75 %rh	
890-112	1-point customer specified	
890-114	5-point customer specified	

order code	UKAS Certificate - air temperature	
890-120	2-point 10 & 40 °C	
890-132	1-point customer specified	
890-134	additional specified point	

calibration & measurement capability (CMC)

humidity	
10 to 90 %rh @ 0 to 65 °C	CMC 1.2 %rh
10 to 90 %rh @ 20 to 24 °C	CMC 0.6 to 1.0 %rh

air temperature	
0 to 65 °C	CMC 0.15 °C

Alternative temperature points can be offered to customer requirements, please contact our Service department for further details.

Service & Repair
of thermometers & probes

- additional one year's guarantee on repaired instruments
- thermometer, probe & re-calibration service available
- rapid turnaround - normally within 5 days
- qualified & experienced technicians

One of the true advantages of being a manufacturer is that we know how our instruments work and how to repair them. We are fully committed to supporting our customers, no matter which instrument they have chosen. Our service department is equipped with the best of resources and all repairs are undertaken in-house to give an unrivalled after-sales-service.

The vast majority of instruments that are damaged through use in busy commercial environments can be repaired. Naturally, if the instrument is outside the warranty period, there is a charge. But we wish to make customers aware that it can be cost-effective to repair an instrument, rather than throw it away and buy a new one.

Whilst an annual calibration check is all you may need for continued confidence in your instrument, there are times when you may wish for the added assurance of a full service, which includes a re-calibration and the added benefit of a further one year's guarantee.

Instruments for service or repair should be sent to your local distributor or direct to ETI, carriage paid and labelled with the sender's name, address, telephone number and a brief description of the problem to assist with rapid diagnosis. Contact our service department for advice on any non-ETI units you wish to have repaired or calibrated. The prices quoted in our price list below are a guide, for a more comprehensive price structure, please contact our service department.

order code	description - repair	
890-254	waterproof thermometers	
890-257	Thermamite thermometers	
890-295	ThermaData loggers	
890-303	Thermapen 3 thermometers	
890-310	Therma series thermometers	
890-318	CaterTemp Plus thermometer	
890-319	Therma Plus thermometer	
890-331	MicroTherma thermometers	
890-403	Thermapen 4 thermometer	
890-500	TempTest thermometers	
890-570	BlueTherm thermometers	
890-670	RayTemp infrared thermometers	
890-690	ThermaData WiFi (with probes)	

order code	description - re-calibration	
894-254	waterproof thermometers	
894-257	Thermamite thermometers	
894-303	Thermapen thermometers	
894-305	Food Check thermometer	
894-310	Therma series thermometers	
894-318	CaterTemp Plus thermometer	
894-319	Therma Plus thermometer	
894-331	MicroTherma thermometers	
894-500	TempTest thermometers	

order code	description - probe repair	
890-400	thermocouple probe	
890-410	thermistor probe	
890-420	PT100 probe	