Thermometry Bridges and Precision Thermometers



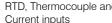
sotech offers instruments for the Primary Laboratory through to Industrial calibration applications.

The microK is the only instrument of its type in the world which will work to <1mK precision and support all three commonly used sensors, platinum resistance thermometers (PRTs), thermocouples and thermistors. Long term, the stability of the microK achieves literally zero drift for resistance ratio measurements and an annual drift of <3 ppm for voltage measurements.

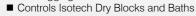
The microK Precision Thermome An unequalled combination of accuracy, stability and versatility.

- Accuracy <20 ppb</p>
- 3 Channels
- Stability of 0 ppm / year ■ Resistance range of 0 - 500 kΩ
- Internal resistance standards 1, 10, 25, 100 and 400Ω
- Supports SPRTs, PRTs, Thermistors and Thermocouples





- Accuracy to 0.003°C (3mK)
- SPRT, PRT, Thermistor,
- Datalogging



RTD, Thermocouple and ■ 0.0001°C resolution (PRT Inputs) Thermocouple and Current inputs

Fast and Rugged Dry Block Bath Calibrators



Fast-Cals are the top choice for quick and easy on-site calibration, suitable for Washer Disinfectors, Steam Sterilizers, Autoclaves, and

Our rugged models, originally tested for the US Navy, are among the world's most durable temperature calibrators, now available to a wider market without compromising quality. Both models come with standard or custom-drilled inserts.

Three Models: -35°C to 650°C time proven designs for fast, accurate calibration on site.

- Rugged & Lightweight
- Accuracies: ±0.15°C to ±2°C
- Shoulder Carry Case Included ■ PC Interface and Software



Rugged Calibrators

Two Models -40°C to 660°C

- Fast, reliable, and accurate ■ Rugged, IP56, designed for use
- in harsh environments ■ Use in cold environments -
- down to -29°C
- PC Interface and Software



Metrology Baths and Furnaces



We can confidently claim that Isotech manufactures the widest selection of Metrology Baths, Furnaces and Fixed Point Apparatus. There are simply too many to discuss here, so if you are in the market for this equipment please call us with your requirements.

Shown here is one of our more popular models The Medusa 3. Our full range of Metrology baths have the following advantages:

- Temperature range covering -25°C to 1100°C
- Suitable for fixed points from Indium to Silver
- Equalizing blocks available for comparison calibrations
- Black body option
- Surface sensor calibration option
- Extended depth calibration volume is ideal for longer probes and minimising stem conduction













Software



sotech devices with PC interfaces are supplied with software for monitoring and control as standard. I-Cal Easy has set new standards for ease of automating temperature calibration, right down to calculating coefficients for probes (ITS-90, Thermocouple Error, EN 60751), the inbuilt certificate designer allows you to produce the certificate you need. Icarus ITS-90 software is used as a post calibration tool in Primary Laboratories across the world to generate reports and data for SPRTs.





Calibration Services & Training



Our laboratory was first established in 1980 and has grown to be a full scale UKAS laboratory providing calibration with uncertainties comparable, if not better, than most of the world's NMI's

■ Training

Isotech is widely recognised as a leading provider of training for temperature calibration both at the customers site and in Southport, for more details visit our website www.isotech.co.uk/training



How Isotech Can Help?

- ISO 17025 schedule includes Dry Block Calibrators, Thermometers, ITS-90 Fixed Point Cells, Standard Resistors
- Our experienced calibration team can provide advice and support whatever your calibration needs from industrial applications through to Primary
- Clear and simple certification - the uncertainty stated on the certificate is for the piece of

The World's Leading National Metrology Institutes choose Isotech ...shouldn't you?

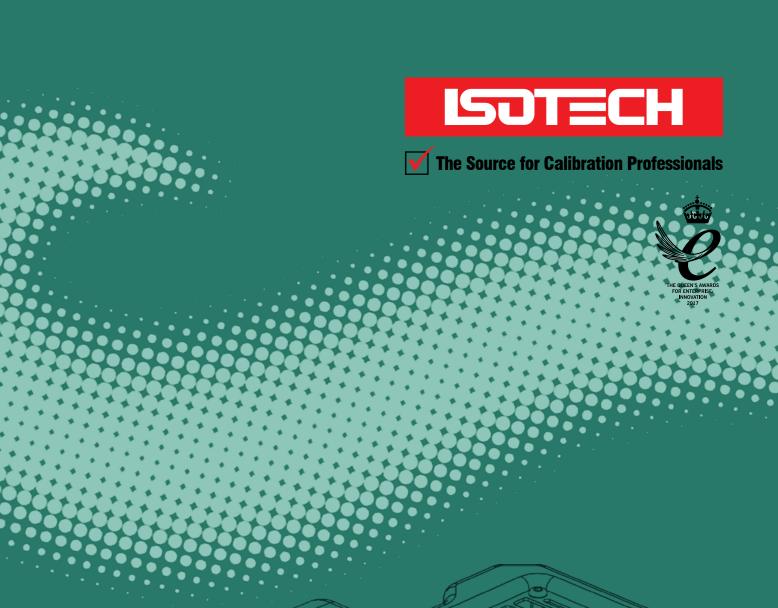




Telephone: +44 (0)1704 543830 Email: info@isotech.co.uk Web: www.isotech.co.uk

Isothermal Technology Limited Pine Grove, Southport, Merseyside PR9 9AG England

Edition 5: 23/2024



Product Overview

Solutions for Temperature Calibration and Precision Temperature Measurement

Portable Calibrators for Industrial Sensor Calibration

Multi-Function Isocal-6 - use as a Dry Block, Liquid Bath, Blackbody, Surface Sensor Calibrator or **ITS-90 Fixed Point System**

Buying a Dry Block or Liquid Bath? Spending too much money because you need both? Now you can have the benefits of both and more, with an Isocal-6 from Isotech! The Isocal-6 is a flexible range of calibration systems that can calibrate all types of temperature sensors. With the Isocal-6, different inserts are added to the bath to allow it to be used in 6 different modes, providing a solution for all temperature sensor calibration requirements. With optional accessories the Isocal-6 can perform as a dry block calibrator, a stirred liquid bath, a stirred ice bath 0°C reference (cooling models only), a blackbody source for IR thermometers, a calibrator for surface sensors or an ITS-90 fixed point apparatus.

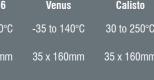
The advantage of the Isocal-6 is that you need only purchase the main calibrator initially, and can add other accessories at any time to increase your accuracy, stability and overall capability. Each different calibrator type has unique advantages. For example, Stirred Liquid Baths generally provide better stability, uniformity and heat transfer than dry blocks. Liquid baths are ideal for awkwardly shaped, angled or short sensors and provide uniformity.

Different Isocal-6 models cover the temperature range from -45°C to 250°C. Above this maximum temperature it is not practical to use a Stirred Liquid Bath. For more information please refer to the table below.





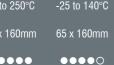




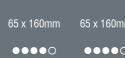














±0.2°C

±0.5°C

Surface Sensor Kit

Isotech block baths and Isocal-6 models are available in Basic, Site and ADVANCED models. In addition to the digital temperature controller of the Basic the Site includes an independent single channel indicator. The ADVANCED model has inputs for three thermometers and includes advanced logging, high resolution and other extended features.

Portable Calibrators for

High Temperature Industrial Calibration

Isotech's High Temperature Block Bath range offer industry leading performance in easy to use packages ideal for the calibration of thermocouples and platinum resistance thermometers. They have been designed for fast heating and cooling and, for added flexibility, surface sensor and infrared thermometer accessories can be

All our Block Baths, from Basic to ADVANCED are exceptionally easy to use with a clear user friendly interface and include a PC Interface and Software. Different models provide a range of block sizes to suit a wide variety of sensors and together span the range from 35°C to 1200°C.





Model	Jupiter	Gemini	Medusa	Pegasus
Temperature Range	35 to 650°C	35 to 700°C	30 to 700°C	150 to 1200°C
Calibration Range	35 x 148mm	64 x 160mm	45 x 285mm	33.5 x 130mm
Heat / Cool Speed	••••	•••00	•••00	••••

ITS-90 Fixed Points and Apparatus



cells from the Argon Triple Point to the Freezing Point of Copper. Many nations rely on Isotech for their primary temperature standards. There are a range of metal and quartz clad ITS-90 Fixed Point cells with the lowest of

sotech manufactures a complete range of ITS-90 fixed point In addition to solutions for the world's leading NMIs there are more cost effective solutions, still with uncertainties to less than 1mK to suit a wider range of laboratories.

Other ITS-90 Fixed Points

Available in large and slim sizes

■ All ITS-90 fixed points

Automated systems

- Jarrett-Isotech Water Cells
- Available in 4 different sizes
- Reference cells with isotopic analysis
- Uncertainties as low as 0.07mK ■ Slim cells for industrial applications

Benchtop ITS-90 Fixed Point Calibration

■ Outstanding Performance, from 0.7mK ■ Patented Immersion Compensator

■ Robust - No Glass Parts, Easily Transported



Large Volume Dry Blocks



Our professional large-volume dry block calibrators are designed for deep sensor immersion, minimizing stem conduction losses in larger probes. These calibrators enhance accuracy and reduce uncertainty by ensuring uniform immersion depth, offering reliable performance from -25°C to 1100°C.

- Temperature range covering 200°C to 1200°C
- High Accuracy Thermocouple Calibration
- Calibrate both Laboratory and Industrial Thermocouples



Innovation from Isotech



sotech is renowned for innovation, with award winning products like the ISOTower ITS-90 Fixed Points, Argon System, microK Thermometry Bridges, the milliK Precision Thermometer and Isocal-6; the multi function calibrator providing Dry Block, Liquid Bath, Surface Sensors, Blackbody and Fixed Point calibration.

In 2017 Isotech was awarded the Queen's Award for Enterprise recognising both the innovation and commercial success of the world leading microK Thermometry Bridge.



Isotech instils confidence in temperature calibration, and we rely on their products for precision and accuracy, enabling us to work within an impressive 1000th of a degree. Even after five years of use, our Isotech probes maintain their stability, reaffirming our trust in the brand.

David Hamilton, Managing Director, SK Wiring

Secondary Laboratory Equipment



Many accredited laboratories rely on Isotech for comparison baths, standards and instruments. We offer comparison equipment from -200°C to 1300°C as well as cryostats and liquid nitrogen apparatus. Isotech stirred liquid baths use concentric and parallel tube designs for outstanding performance. The concentric design of the Spherical Furnace provides a solution for small uncertainty calibration of thermocouples to 1300°C.

- Temperature ranges covering -80°C to 300°C ■ Parallel Tube action
- Commercial grade chiller
- Stability from ±0.0006°C ■ Up to 530mm calibration depth
- Fast cool-down
- Circular design eliminates cold corners
- Exceptionally small gradients



Fluidised Bath and Thermocouple Calibration Furnace

■ Safe, accurate comparison calibration equipment for use to 1300°C





Blackbody Calibration Sources



When leading manufacturers of infrared thermometers choose your product as the basis by which their product passes or fails, you know you have something good. Isotech is the only manufacturer of blackbody calibration sources to have developed a complete line from hand held field testers to black body fixed point cells for primary labs. Our more popular models include the Gemini R and

- Temperature range of 50°C to 550°
- 65mm cavity size
- Emissivity of 0.995
- Portable, yet can accept fixed points for primary reference



- Temperature range of 150°C to 1200°C ■ 20mm cavity size
- Emissivity of 0.995
- Portable, yet can accept fixed points for primary reference



Thermocouple Referencing Systems



sotech's first thermocouple referencing systems were developed for our own lab use to provide a single point ice reference for our cold junctions. We then developed multi-input systems for use in power plants and aviation test stands. In addition to ice point references, sotech manufactures a variety of elevated and ambient temperature referencing systems. Most units are custom built for the application. If you have special thermocouple referencing needs, call us and see how we can help.

Multi-Channel Systems

- Reference up to 200 thermocouples in one system
- Benchtop, Wall Mount and 19" rack mount options
- Pre-wired thermocouples or do-it-yourself



- 0°C or elevated reference temperatures
- Stability better than 0.05°C
- Multi-junction probes and various terminations available



Standard Thermometers



We manufacture a range of standard thermometers from Standard Platinum Resistance Thermometers (SPRTs) through to industrial standards. Our Standard Thermocouples can be supplied calibrated for use up to 1600°C. Resistance thermometers are available covering the range from -200°C to 1084°C. Isotech manufactures primary standards with uncertainties better than 1mK (0.001°C) to affordable rugged standards for industry and can provide UKAS calibration from our leading laboratory.





