



ISOTECH



The Source for Calibration Professionals

Selection Guide

Industrial Temperature Calibration

A Guide to Industrial Calibration

Isothermal Technology manufacture a full range of temperature calibration equipment from Primary Standards used in National and Primary Laboratories, for Secondary Laboratory Equipment used in accredited calibration laboratories and through to the Dry Blocks featured here.

Our customers include the worlds largest Primary Standards Laboratories, Accredited Laboratories (UKAS, DKD etc), large multinational companies, research organisations, manufacturing etc. Eighty percent of Nations rely on Isotech to supply their country's standards. This is not a responsibility taken lightly and Isotech constantly invests in its own full scale UKAS accredited laboratory. Isotech issues UKAS certificates for fixed point cells, thermometers, indicators and dry blocks. Isotech have issued several thousand calibration certificates and carried out several thousand measurements on Dry Blocks. We calibrate all types, not just our own.

The benefit of this experience, and the knowledge of years of manufacturing Dry Blocks is invested back into these products with the goal of constant improvement. In recent years the number of producers of Dry Blocks has increased dramatically, whilst many look similar (and some look surprisingly similar to our established models) they are often very different inside and can perform very badly.

The Dry Block Calibrators complement the ISOCAL-6 range. Above temperatures of approximately 250°C it is not practical to use stirred liquids due to fumes, risk of ignition and safety considerations.

Isotech's higher temperature calibration baths incorporate as many of the Isocal-6 options as is safe and practical to provide.



Why Choose Isotech?

Trust: Isotech has over 30 years' experience in solving temperature calibration problems. Isotech equipment has proven use. We have proven solutions for all, from low cost industrial sensor calibration to National Measurement Institutes.

Accreditation: Isotech has a full scale UKAS (ISO 17025:2005) accredited laboratory with world leading performance. Our UKAS Calibration certificates are recognised internationally and carry the ILAC MRA logo. "Accreditation by UKAS demonstrates an organisation's competence, impartiality and capability" and allows you to identify best practice, demonstrate due diligence and reduces your risk.

Expandable: With Isotech you can be confident as your requirement grows we can support you to add capacity for more sensors, wider temperature ranges and higher accuracy. The milliK Precision Thermometer is expandable to 33 Channels, our portable calibration blocks and furnaces can realise temperatures from -100°C to 1200°C, with accuracies to better than 0.001°C.

Wide Range: From low cost fast response systems to high capacity blocks we can help. From thermocouples, PRTs, Surface Sensors, digital sensors and infrared thermometers we can help. Benefit from our products and experience - choose Isotech to solve your calibration problems.

Isotech Dry Block Features

- 30 Years of Proven Use
- Thermostat Testing - The Site models can test thermostats with or without a PC - on contact close the indicator display is frozen.
- PC Interface and Software

The Isocal-6 Calibration 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. The Isocal-6 includes a removable metal insert as standard for use as a Dry Block Calibrator. 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. Angled probes will not readily fit into a metal block, but can be placed into the liquid. Liquid baths are ideal for awkwardly shaped or short sensors and provide better axial and radial 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 which details our Isocal-6 Range.



<http://www.isotech.co.uk/>



Model	Europa-6	Venus	Calisto	Hyperion	Drago	Oceanus	Stabilities (Specifications are the same for all models)
Temperature Range*	-45 to 140°C	-35 to 140°C	30 to 250°C	-25 to 140°C	30 to 250°C	-25 to 140°C	Metal Block ±0.03°C
Calibration Volume	35 x 160mm	35 x 160mm	35 x 160mm	65 x 160mm	65 x 160mm	50 x 300mm	Liquid Bath ±0.025°C
Heat / Cool Speed	●●●●●	●●●●●	●●●●●	●●●●○	●●●●○	●●●○○	Ice/Water Bath at 0°C ±0.001°C
*In ambient of 20°C							Blackbody ±0.3°C
							Surface Sensor Kit ±0.5°C
							ITS-90 Fixed Point Cells ±0.0005°C

High Temperature Block Baths

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 added.

Our Block Baths feature the Isotech plug-in, dual display, controllers which are exceptionally easy to use with a clear user interface and are supplied with Windows software, Computer Interface and a Ramp to Set Point Feature as standard. The controller features multi-point block to display correction giving excellent absolute accuracy.

All Isotech Block Baths are available in both Basic and Site models. Site models feature a built-in indicator to which an external standard thermometer can be connected giving greater accuracy, eliminating any temperature gradient and loading errors. For laboratory accuracy these baths can be used with a high-end temperature indicator, such as one of Isotech's True Temperature Indicators (TTI).



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Model	Jupiter	Gemini	Medusa	Pegasus	Stabilities (Specifications are the same for all models)
Temperature Range	35 to 650°C	35 to 700°C	30 to 700°C	150 to 1200°C	Metal Block ±0.03°C
Calibration Volume	35 x 148mm	64 x 160mm	45 x 285mm	33.5 x 130mm	Blackbody ±0.2°C
Heat / Cool Speed	●●●●●	●●●○○	●●●○○	●●●○○	Surface Sensor Kit ±0.5°C

Isotech Fast Calibrators

■ Quick-Cal & Fast-Cal



Working on site?

Having to carry the device?

Then choose our handheld Quick Cal or fast response Fast-Cal Calibrators.

Together they span the range -35°C to 650°C and have been designed to be both rugged and light weight.



Isotech True Temperature Indicators

■ milliK



The milliK is a very high accuracy thermometer - capable of performance to 0.003°C with SPRTs and PRTs and also enables high accuracy measurement from thermistors, thermocouples and even 4-20 mA process inputs. It can be expanded to have up to 33 flexible inputs.

In addition to low uncertainty measurements from Reference Standards and Industrial sensor measurement the milliK can control Isotech temperature sources, sequencing through a programmable list of temperature set points and log data to internal memory or a USB drive.

■ TTI-10



The TTI-10 is a high accuracy handheld temperature indicator with two platinum resistance thermometer inputs.

It is particularly suitable as a portable reference thermometer to use alongside Isotech temperature calibrators.

The TTI-10 is also suited for high accuracy measurements in industrial and scientific applications.

■ Industrial Reference Probes



These industrial platinum resistance thermometers and thermocouples are ideal for field and lab use.

Suitable for use as working standards in Dry Blocks and Liquid Baths or as high accuracy probes for our range of True Temperature Indicators.

They cover a temperature range from -200°C to 1300°C.

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