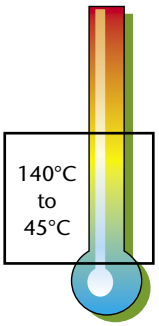
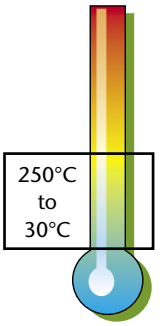
ISOCAL-6®

936 Hyperion and 934 Drago



HYPERION



DRAGO

To calibrate temperature sensors to 250°C look no further than Isotech's portable stirred liquid baths. The Hyperion calibrates from 45°C below ambient to 140°C and the Drago from 30°C to 250°C. The large calibration volume is more than twice the size of alternative products. The useable area is a full 65mm diameter by 160mm depth. The overall well depth of 190mm allows room for space at the top of the well and for the magnetic stirrer, at the bottom.

Stirred liquid baths are suitable for temperature sensors of all types, shapes, and sizes. Accuracies are much greater than those from Dry Blocks alone and with suitable reference thermometers performance of up to 0.005°C is achievable.

The Hyperion and Drago are available in two models. If the liquid is directly in the block then the controller only model, or BASIC model, can be selected. This model is also suitable where an external indicator and standard will be used. Alternatively the SITE model includes a built in temperature indicator for high accuracy digital matching to a reference probe or display a sensor under test. For best accuracy an external indicator can be used, an ideal combination is a TTI model and a 935-14-16 Standard Probe, see Thermometry section.

When using a separate indicator and probe then different accessories can be added for Dry Block, Blackbody, Surface Sensor, Liquid Containers and even ITS-90 fixed point operation.

All Isocal-6 calibrators include as standard: Cal Notepad Windows Software, Serial Computer Interface with a Ramp-to-Set-Point Feature. Increased resolution of ±0.01 available throughout the range via the PC interface and from -19.99 to +99.99 locally on the auto-ranging front display. The controller features multi-point block to display correction giving excellent absolute accuracy.

The SITE model indicator has universal sensor input allowing Platinum Resistance Thermometers, Thermocouples (types K, N, R, S, L, B, PL2, T, J and E) along with Linear Process Inputs, including 4-20mA current transmitters, to be displayed. The indicator can be programmed with up to five calibration points to provide high accuracy digital probe matching. The indicator and controller are both addressable over the communications link.

New! The SITE model can now be used with the supplied Cal NotePad software to test thermostats.

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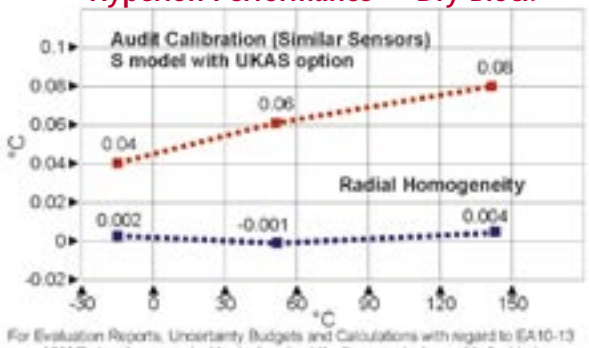
Features

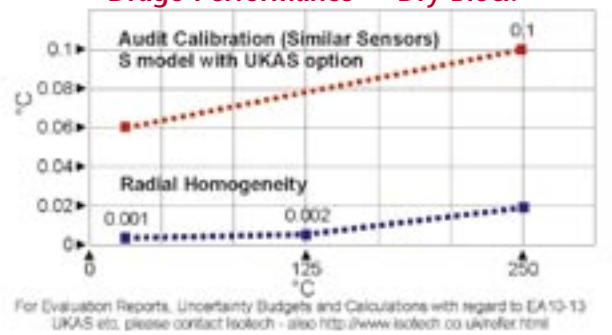
- **65mm Diameter Calibration Volume**
- **Portable Liquid Bath** for high-accuracy calibration of awkwardly shaped sensors
- **Convertible for Dry Block Operation** and more
- **Calibrate All Sensor Types**
- **Windows Software and PC Interface as Standard**

Hyperion Performance — Dry Block



For Evaluation Reports, Uncertainty Budgets and Calculations with regard to EA10-13 UKAS etc. please contact Isotech - also http://www.isotech.co.uk/refer.html

Drago Performance — Dry Block



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To see the ISOCAL-6 in use ask for our 27-minute video supplied on CD-Rom

Liquid Bath Accessories

Thermometer Support Kit

Supplied as standard.

Simply place the probes in the basket.

Part Number 936-06-02

Lid

Supplied as standard.

Seals the bath and prevents spills while the unit is being moved.

Part Number 936-02-14

Support Kit

Optional.

Use in place of the basket to suspend up to eight probes with a diameter range of 5 to 8mm. Useful with liquid in glass thermometers as well as RTDs and TCs. Fits directly into the block and into the optional liquid containers.

Part Number 936-06-08

Metal Insert

Optional.

A Metal Insert can be placed into the calibration volume to convert for Dry Block use. The standard block has eight 8mm pockets and two 4.5mm pockets all 157mm deep. Blank and specially drilled inserts are avail.

Standard Insert Part Number 936-06-01

SPECIFICATIONS

Temperature Range	**Hyperion:**	45 below ambient to +140°C (absolute minimum -45°C)
	Drago:	+30°C to +250°C in an ambient of 25°C or below
Liquid Bath Accuracy	≤0.2°C Throughout entire temperature range	
Calibration Volume	65mm diameter by l60mm deep	
Absolute stability over 30 minutes	Stirred Liquid Bath:	±0.025°C
	Dry Block Bath:	±0.03°C
	Ice / Water Bath:	±0.001°C
	Blackbody Source:	±0.3°C
	Surface Sensor Calibrator:	±0.5°C
	ITS-90 Fixed Point Apparatus:	±0.0005°C
Computer Interface	Included with Windows Software	
Thermal Performance	As a liquid comparison bath Uniformity down to ±0.005°C over the full range	
Display Resolution	0.01	-19.99 to 99.99
	0.1	-55.0 to -20.0 and 100.0 to 140.0
		PC can display 0.01 across whole range with the software included
Indicator Units	°C, °F, K	
Power	110VAC ±10% (50/60 Hz) **Hyperion:** 200 Watts **Drago:** 1000 Watts	
Overall Dimensions	302mm x 176mm x 262mm (HxWxD)	
Weight	**Hyperion:**	26.5 lbs (12kg)
	Drago:	17.6 lbs (8kg)

Note: Instead of putting liquids directly in the block liquid containers can be used to facilitate rapid change of liquids. When using a liquid container, Dry Block Insert, Blackbody Target or the Surface Sensor Kit a separate reference thermometer should be used to compensate for the varying offset between the controller and the accessory temperature. Suitable choices include the SITE model with probe or a stand-alone indicator such as an Isotech TTI model.

ACCESSORIES

Stirred Liquid Bath Water / Ice Bath	**936-06-02:**	Includes a container, magnetic stirrer and probe guide
Metal Block Insert	**936-06-01:**	Standard Insert *8x8mm + 2x4.5mm diameter holes 157mm deep*
	936-06-01b:	Blank Insert
	936-06-01c:	Special Insert
Blackbody Target	**936-06-03:**	Use with Standard Probe (935-14-61-DB)
Surface Sensor Kit	**936-06-04:**	Includes Insert and angled PRT
Fixed Point Cells	**D8:**	Water Slim Cell
	ITL-M-17401-M:	Gallium Slim Cell
	ITL-M-17156-M:	Indium Slim Cell
Standard Probe	**935-14-61-DB:**	Platinum Resistance Thermometer
Carrying Case	**931-22-65:**	Sturdy case accommodates the unit
Liquid	**936-06-07:**	1 Litre of C10 Oil (Hyperion) (-35°C to +140°C)
	580-06-09:	1 Litre of C20 Oil (Drago) (from ambient to + 200°C)
	915-09:	1 Litre of V.H.T. Oil (Drago) (from + 150°C to 250°C)
Thermometer Holder	**936-06-08:**	Supports up to eight thermometers into the liquid. Suits probes of 5mm to 8mm in diameter.
NIST Calibration	NIST Calibration is free with purchase	

HOW TO ORDER

936 Hyperion
936 Hyperion-SITE
934 Drago
934 Drago-SITE

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ISOCAL-6®

Introduction to the Isocal-6 Calibration System

What is Isocal-6?

The Isocal-6 is a flexible range of calibration systems that can calibrate all types of temperature sensors and share common features.

What is special about the Isocal-6 range?

Previously temperature calibration baths were specified by type, for example, Dry Block Bath, Liquid Bath, Blackbody, Fixed-Point Apparatus, etc.

Each different calibrator type has unique advantages over another, for example, Portable Stirred Liquid Baths have a large well which is filled with liquid. The temperature sensors are placed directly into the liquid avoiding the need for specially drilled blocks. They are ideal for awkward shaped and short sensors. Angled probes will not readily fit into a metal block but can be placed into the liquid.

Accuracies are in general better than dry blocks due to lack of air gaps and the temperature uniformity of the stirred liquid.

If a laboratory standard temperature indicator is added much greater accuracies than those from Dry Blocks alone can be achieved, due to better axial and radial uniformity and with suitable reference thermometers performance of up to 0.005°C is achievable.

However dryblocks typically heat and cool much faster, are less messy and more portable. For more information on Dryblocks refer to our dedicated section on page 73.

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.

What are these different modes?

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 Stirred Liquid Bath
- A Stirred Ice Bath 0°C Reference (Cooling models only)
- A Blackbody Source for IR thermometers
- A Calibrator for Surface Sensors
- An ITS-90 Fixed Point Apparatus

What if only one option is required?

The advantage of the Isocal-6 is that you need only purchase the main apparatus initially, and add other accessories at any time, to increase your accuracy, stability and overall capability.

What temperature range is covered?

Different 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 higher temperatures see the other Dry Block Calibrators that go to 1200°C, many with accessories for Surface Sensor and Blackbody use.

The Isocal-6 range is divided into two groups. The first group, including the Europa, Venus and Calisto models are supplied standard in the Dry Block configuration and have a large 35mm x 160mm calibration volume. The second group includes the Hyperion and Drago which are supplied standard in the liquid bath configuration and have a larger calibration volume of 65mm x 190mm for ultimate performance and versatility. Each group has all the Isocal-6 accessories available to it.

What performance can be achieved?

This varies on the way it is used, for an ITS-90 fixed point apparatus uncertainties of better than 0.001°C can be achieved — see the uncertainty graphs for other modes of operation.

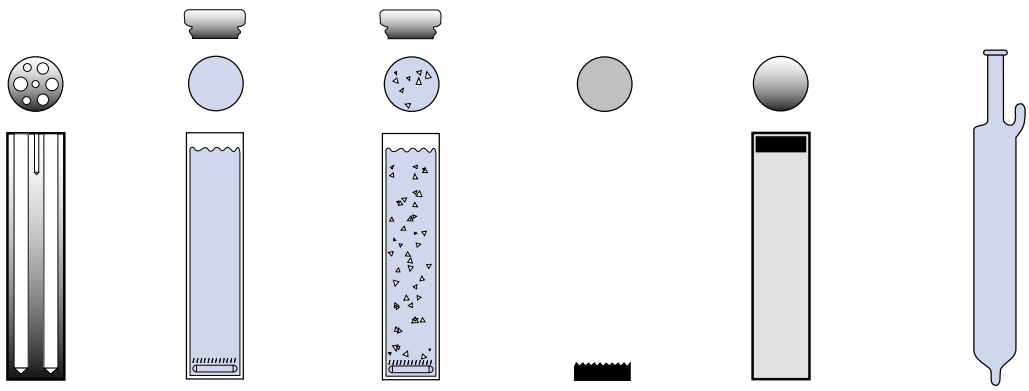
Local support?

Isotech has an extensive network of authorized representatives throughout North America who are skilled in temperature metrology and eager to provide both before and after sales support.

Made to last?

All Isotech products are engineered for long life. If you have ever tried to get inside the dashboard of a motor car you will appreciate that cheapness goes with inaccessibility for repair and maintenance. Isotech's products are designed for long life, easy repair, accessibility and maintenance.

The ISOCAL-6 is currently subject to a patent application (reference 9900158.8).



Metal Block Bath | Stirred Liquid Bath | Stirred Ice/Water Bath | Blackbody Source | Surface Sensor Calibrator | ITS-90 Fixed-Point Apparatus

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