

# ISOCAL - 6 Range Hyperion • Drago

- 65 x 160mm Diameter Calibration Volume
- Portable Liquid Bath
- Convertible for Dry Block Operation
- Calibrate all Sensor types

The Hyperion and Drago have a large calibration volume, 65mm x 160mm deep, which makes them ideal to use as portable liquid baths. Stirred liquid baths are suitable for temperature sensors of all types, sizes and shapes.

Liquid Baths can provide smaller calibration uncertainties than dry blocks and, when used with suitable reference thermometers, accuracies of up to 0.005°C can be achieved. The sensors can be placed directly into the stirred liquid thus avoiding the need for specially drilled blocks.

An ideal combination would be to use one of the Isotech TTI temperature indicators and semi standard probe, for example the 935-14-16 Semi Standard.

Alternatively, the SITE model includes an inbuilt temperature indicator and can be provided with a reference probe and calibration certificate thus giving a complete traceable solution in a single portable unit.

These models are part of the Isocal-6 family and with a reference probe can be used with different accessories for Dry Block, Infrared, Surface Calibration and even with ITS-90 Fixed Point Cells for uncertainties to 0.001°C.

In the optional Dry Block Mode, the large 65mm diameter block allows for the calibration of either larger probes or for calibrating many sensors simultaneously over the range -25°C to +250°C. Fully compatible with the leading I-Cal Easy automatic calibration software you can also benefit from the combination of award winning flexibility and large calibration capacity.



## Specification

Model	936 Hyperion <sup>PLUS</sup>	934 Drago <sup>PLUS</sup>
Temperature Range	-25°C to 140°C (1)	30°C to 250°C (2)
Stability	Dry Block: ±0.03°C, Blackbody: ±0.3°C, Surface Sensor: ±0.5°C, Liquid Bath: ±0.025°C, ITS-90 Cells: ±0.0005°C, Ice Bath: ±0.001°C (not Calisto)	
Accuracy (3)	0.15°C	0.15°C
Uniformity - Between Wells Dry Block Mode (Radial)	<0.008°C	<0.008°C
Uniformity - Radial Liquid Bath Mode	<0.009°C	<0.007°C at 250°C
Uniformity - Lower 40mm (Axial) Dry Block Mode	<0.040°C	<0.040°C
Uniformity - Lower 40mm (Axial) As Liquid Bath	<0.011°C	<0.013°C at 250°C
Heating Time	-20°C to 140°C: 40 Mins	30°C to 250°C: 40 Mins
Cooling Time	140°C to 20°C: 90 Mins 20°C to -25°C: 80 Mins	250°C to 30°C: 90 Mins
Insert Diameter	65mm	
Immersion Depth	160mm	
Insert Types	Standard 8 x 8mm + 2 x 4.5mm, Undrilled or Custom	
PC Interface	Included - Supplied with PC Cable and Software	
Power	200 Watts	1000 Watts
Voltage	115Vac or 230 Vac 50/60Hz	
Dimensions	302 x 176 x 262 mm	
Weight	12kg	8kg

(1) In ambient of 20°C: Minimum Temperature is 45°C Below Ambient, Absolute Minimum -35°C

(2) In ambient of 20°C

(3) Dry Block Mode only: Comparing 4.5mm Well to Controller Display Value.

A three point traceable calibration certificate is included.

Features (Basic & Site)	936 Hyperion <sup>PLUS</sup>	934 Drago <sup>PLUS</sup>
Dry Block	✓	✓
Stirred Liquid Bath Option	✓	✓
Stirred Ice Bath Operation	✓	✓
Surface Sensor Option	✓	✓
Infrared Calibration Option	✓	✓
ITS-90 Fixed Point Cells	Water, Gallium	Gallium
Additional 8mm Pre-heat Pocket	✓	✓
Configurable Units: °C, °F and K	✓	✓
Supply Voltage Power Correction with Digital Filtering	Provides High Stability protecting against noise and supply voltage variation	
Additional Features (Site)		
Independant Temperature indicator	✓	✓
Universal Input Types PT100	✓	✓
Thermocouples Types K,N,R,S,L,PL2,T,J,E	✓	✓
Linear Process Inputs Including 4-20 mA	✓	✓
Stand Alone Thermostat Testing	✓	✓
Thermostat Testing With PC	✓	✓
Five Point Digital Probe Matching	✓	✓
Configurable Units: °C, °F and K	✓	✓

Calibrate all sensor types - Thermocouples, PRT's, Thermistors, Thermostats, Infrared, Surface Sensors...



### 1 Dry Block Mode with Inserts

Standard Insert is:  
8 x 8mm + 2 x 4.5mm all 157mm Deep.  
All Inserts have a 4mm tapped hole to suit supplied extractor tool.

#### Alternative Inserts

Blank Insert

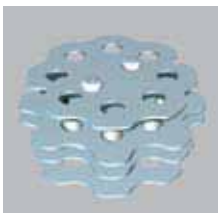


### 2 Stirred Liquid Mode with Liquid Container Kit

Allows liquid bath use, includes container, magnetic stirrer, probe guide and sealing cap.

### 3 Stirred Ice Bath Mode with Liquid Container Kit

Uses same liquid kit to provide 0°C reference as a stirred ice bath.



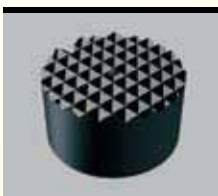
#### Additional Accessories for use with the above kit

##### Thermometer Support Kit

Supports up to eight thermometers into liquid. Suits probes 5mm - 8mm in diameter.

##### Oils

C10 Oil -35°C – 140°C 1L  
C20 Oil 20°C – 200°C 1L  
VH Oil 150°C – 250°C 1L



### 4 Infrared Calibration Mode with Blackbody Target



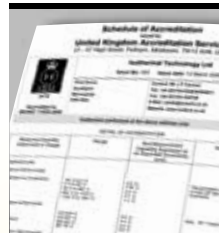
### 5 Surface Sensor Calibration with Surface Sensor Kit

Includes an Insert and an angled platinum resistance thermometer.



### 6 ITS-90 Fixed Point Cells

Water Triple Point Cell (Hyperion)  
Gallium Slim Cell  
Cell Holder Assembly



#### UKAS Calibration

UKAS Calibration available to order, legally traceable in more than 70 countries.



#### Standard Probe

Platinum Resistance Thermometer.  
4mm diameter.



#### Carrying Case

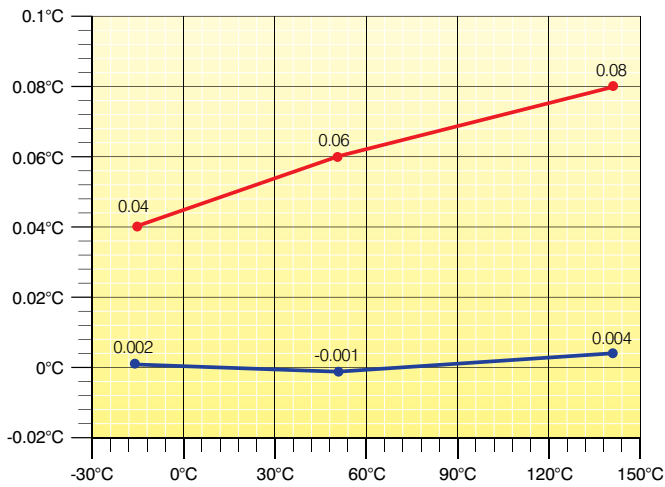
Sturdy case accommodates the unit with room for accessories

#### How To Order

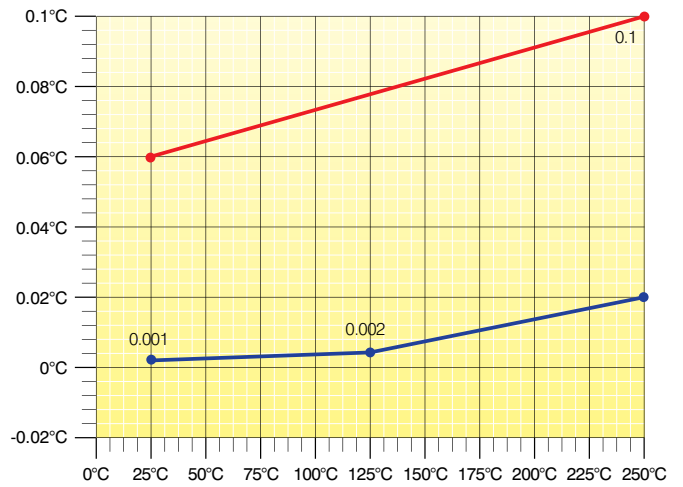
Specify Model, Basic or Site, Supply Voltage, Accessories and if UKAS Calibration is required.

# Isocal-6 Performance and Use

**Hyperion<sup>PLUS</sup> Performance - Dry Block**



**Drago<sup>PLUS</sup> Performance - Dry Block**



- Audit Calibration (Similar Sensors) S model with UKAS option
- Radial Homogeneity

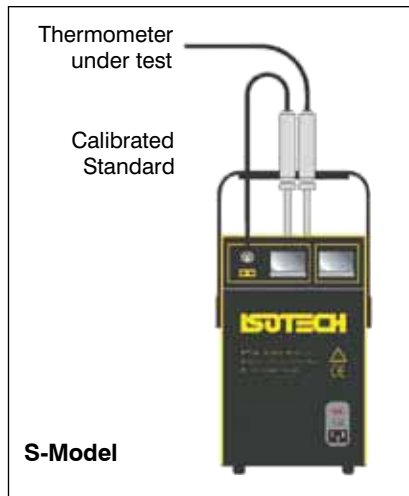
## Alternative Methods of Calibrating with an Isocal-6



### A Basic Dry Block Calibrator

For quick and easy Testing and Calibration. Relies on using the temperature controller value, "controller accuracy".

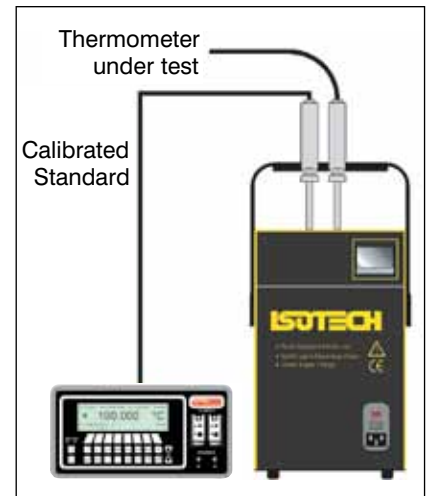
Using a standard thermometer (not shown) compensates for temperature gradients and loading errors giving best performance.



### An ISO 9000 Calibration System

Thermometer under test is compared to a calibrated standard and inbuilt independent temperature indicator.

For best practice calibration with established traceability and uncertainty.



### Using an External Indicator

Thermometer under test is compared to a calibrated standard and external temperature indicator.

For best practice calibration with established traceability and uncertainty.

One indicator may be used with several Isocal-6 or similar.

Calibration is needed only for the probe and indicator.

*For liquid bath, surface sensor or black body always use a standard thermometer connected to the S-model or stand alone indicator as above.*



**UKAS Calibration** available for these systems - *International Traceability - Best Practice*