The NEW Advanced Range of Portable Temperature Calibrators

Portable Dry Blocks, Liquid Baths and Multi-functional Heat Sources

PROVISIONAL
Advanced Range

Isotech has been providing calibration solutions for more than 30 years, from Primary Standards for National Metrology Institutes through to handheld calibrators for service engineers.

Our portable calibrators have set a number of world firsts, the first Dry Blocks to feature an independent inbuilt temperate indicator and the first Dry Blocks to reach -100°C. The award winning ISOCAL-6 was the first calibrator to offer both Dry Block and Liquid Bath use, and remains the only device to offer six modes of calibration.

These new advanced models add extra features bring benefits of greater performance, more input channels, advanced logging and remote monitoring with a bright full colour display.

<table>
<thead>
<tr>
<th>Isocal-6</th>
<th>TEMP. RANGE</th>
<th>PAGE</th>
</tr>
</thead>
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<tr>
<td>Hyperion / Drago</td>
<td>-25°C to 250°C</td>
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</tr>
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<td>Europa / Venus / Calisto</td>
<td>-45°C to 250°C</td>
<td>8</td>
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<table>
<thead>
<tr>
<th>Dry Block Calibration</th>
<th>TEMP. RANGE</th>
<th>PAGE</th>
</tr>
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<tr>
<td>Jupiter</td>
<td>35°C to 660°C</td>
<td>12</td>
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<tr>
<td>Gemini</td>
<td>35°C to 700°C</td>
<td>16</td>
</tr>
<tr>
<td>Pegasus</td>
<td>150°C to 1200°C</td>
<td>20</td>
</tr>
</tbody>
</table>
**The New Advanced Range**

**Best Performance**
- Benefit from advanced temperature controller that provides best performance
- Resolution to 0.001°C - Superior Stability
- Control parameters automatically optimised with temperature

**Easily View in all conditions**
- Large Bright Colour Display
- Similar to Smartphone
- Crystal clear display with full colour graphics

**View from Anywhere**
- 21st Century Connectivity with Ethernet and inbuilt webservice
- Connect to the network and view the calibrator from anywhere, on your Notepad, Tablet or Smartphone

**Save Time and Money**

**AUTOMATIC TEMPERATURE CYCLING**
- Program the ADVANCED with the temperature points you need, store commonly used ranges. The calibrator can then automatically follow these points and log your data

**Safely store and secure all the data you need**
- Massif Internal Memory can safely store all your data
- Store a lifetime of data on a USB Drive
- Open CSV Files or Secure File Format for Data Security

**Speaks five languages**
- English, French, German, Italian and Spanish
- Simple to use with clear user interface

**Connect More Probes**

**UP TO 3 INPUT CHANNELS**
- Inbuilt reference system two universal inputs for PRT, Thermocouple or Process Input and a third thermocouple input
- Input types include Process Input including 4-20mA, PRT, and Thermocouple Types B, C, D, E, J, K, L, N, R, S, T, U

**Greater Accuracy**
- Eliminate Offsets
- Connect a reference probe to one of the external probe inputs and the calibrator can trim the block temperature to remove offsets

**Thermostat Testing**
- Test Two Thermostats Simultaneously

**The Software You Need**
- PC Tools for reviewing data and creating calibration temperature programs

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**Thermostat Testing**

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**Connect More Probes**

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**Greater Accuracy**

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**The Software You Need**

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Advanced Features including inbuilt three channel temperature indicator
- Portable Liquid Bath with large 65mm volume
- Convertible for Dry Block and multi-function use

The Hyperion and Drago have large calibration volumes, 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.

These models are part of the award winning 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 Dry Block Mode the large 65mm diameter block allows for the calibration of either larger probes or for calibrating many sensors simultaneously.

As a Liquid bath the sensors can be placed directly into the stirred liquid thus avoiding the need for specially drilled blocks. If the liquid is directly in the block then the controller only model, or Basic (B) model, can be selected. However, instead of putting liquids directly in the block liquid containers can be used to facilitate rapid change of fluids. For greater accuracy, or 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.

I-Cal EASY calibration software can be added to create a powerful solution for the automatic calibration of thermometers.

These new ADVANCED models offer a wide range of features and benefits including an independent three channel temperature indicator allowing test probes to be compared to a reference probe. Calibration temperatures can be stored and programmed in for automatic temperature cycling and data logging. The latest technology is used to deliver superior stability, greater accuracy and best performance.
ADVANCED SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hyperion 4936</th>
<th>Drago 4934</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature Range</strong></td>
<td>-25°C to 140°C †</td>
<td>30°C to 250°C ‡</td>
</tr>
<tr>
<td><strong>Stability</strong></td>
<td>Liquid Bath: ±0.005°C Dry Block: ±0.005°C</td>
<td>Liquid Bath: ±0.01°C Dry Block: ±0.01°C</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>0.001°C Over Full Range</td>
<td>0.001°C Over Full Range</td>
</tr>
<tr>
<td><strong>Display Accuracy</strong></td>
<td>0.15°C</td>
<td>0.15°C</td>
</tr>
<tr>
<td><strong>Uniformity - Radial, Liquid Bath Mode</strong></td>
<td>&lt;0.009°C</td>
<td>&lt;0.007°C</td>
</tr>
<tr>
<td><strong>Uniformity - Axial, Liquid Bath Mode (40mm)</strong></td>
<td>&lt;0.011°C</td>
<td>&lt;0.013°C</td>
</tr>
<tr>
<td><strong>Uniformity - Radial, Dry Block Mode (Between Wells)</strong></td>
<td>&lt;0.008°C</td>
<td>&lt;0.008°C</td>
</tr>
<tr>
<td><strong>Uniformity - Axial, Dry Block Mode (40mm)</strong></td>
<td>&lt;0.040°C</td>
<td>&lt;0.040°C</td>
</tr>
<tr>
<td><strong>Heating Time</strong></td>
<td>-20°C to 140°C: 40 Mins</td>
<td>30°C to 250°C: 40 Mins</td>
</tr>
<tr>
<td><strong>Cooling Time</strong></td>
<td>140°C to 20°C: 90 Mins</td>
<td>250°C to 30°C: 90 Mins</td>
</tr>
<tr>
<td><strong>Calibration Volume</strong></td>
<td>65 x 160mm</td>
<td></td>
</tr>
<tr>
<td><strong>Standard Insert</strong></td>
<td>8 x 8mm Pockets and 2 x 4.5mm, all 157mm deep</td>
<td></td>
</tr>
<tr>
<td><strong>Input Channels</strong></td>
<td>Full range of inputs and accuracies with calibration options available online</td>
<td></td>
</tr>
<tr>
<td><strong>PC Interface</strong></td>
<td>Ethernet - supporting software and USB Host</td>
<td></td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>115Vac or 230Vac 50/60Hz 200 Watts</td>
<td>115Vac or 230Vac 50/60Hz 1000 Watts</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>335H x 208W x 307D mm</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>12kg</td>
<td>8kg</td>
</tr>
</tbody>
</table>

(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.

ADVANCED FEATURES

- Digital Display of Set and Nominal Block Temperature
- PC Interface: Ethernet (Optional Serial Legacy Kit available)
- Two channel thermostat testing
- Inbuilt Temperature Indicator for Reference Probe and two universal inputs for PRT, Thermocouple or Process inputs and a further Thermocouple input
- Automatic Temperature Cycling - Create Programs from front panel or on PC with included software
- Data Logging with export to USB
- Offset Elimination - block can follow reference input
- Speaks five languages: English, French, German, Italian and Spanish
- In Built Web Server
- Tamper Proof Data - in accordance with 21 CFR, Part 11.

Hyperion Performance - Dry Block

Drago Performance - Dry Block

- Audit Calibration (Similar Sensors)
- Radial Homogeneity

See Evaluation Reports for full details
http://www.isotech.co.uk
Isocal-6 Ultimate Flexibility - Hyperion & Drago

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

1. Dry Block Mode with Inserts
   936-06-01a 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
   936-06-01b Blank Insert
   936-06-01c Special Insert. Contact IsoTech with your requirements.

2. Stirred Liquid Mode with Liquid Container Kit
   Hyperion and Drago are ready to use as portable liquid baths. To get started simply add a suitable liquid into the unit and you are ready to go. We include a magnetic stirrer, probe basket and sealing lid.
   Add a Liquid Container Kit to facilitate rapid change of liquids, the liquid now goes into the removable container rather than directly into the block. Includes container, magnetic stirrer, probe guide and sealing cap.
   936-06-02

3. Stirred Ice Bath Mode with Liquid Container Kit
   Uses same liquid kit to provide 0°C reference as a stirred ice bath.

4. Infrared Calibration Mode with Blackbody Target
   936-06-03 Use optional Probe 936-14-61DB.

5. Surface Sensor Calibration with Surface Sensor Kit
   936-06-04 Includes an Insert and an angled platinum resistance thermometer.

6. ITS-90 Fixed Point Cells
   B8 0.01°C Water Triple Point Cell (Hyperion)
   17401 Slim 29.7648°C Gallium Slim Cell
   936-06-09 Cell Holder Assembly

   Additional Accessories for use with the above kit

   Thermometer Support Kit
   936-06-08 Supports up to eight thermometers into liquid. Suits probes 5mm - 8mm in diameter.

   Oils
   936-06-07 C10 Oil -35°C - 140°C 1L
   580-06-09 C20 Oil 20°C - 200°C 1L
   915/09 VH Oil 150°C - 250°C 1L

   Calibration
   Includes three point traceable calibration certificate for block temperature

   UKAS Calibration
   Recommended: Options for block temperature and reference thermometer inputs (simulation).
   Legally traceable in more than 70 countries.

   Standard Probe
   935-14-61/DB Platinum Resistance Thermometer.
   Probe diameter 4mm, recommended pocket size 4.5mm.

   Current Loop Interface
   935-06-161 24VDC Power Supply and Terminal Box. Powers 4-20mA Current Transmitters with 4mm terminal posts for easy connection.

   Carrying Case
   931-22-111 Sturdy case with room for accessories. Features wheels and pull out handle.
The world’s leading National Metrology Institutes choose Isotech - shouldn’t you?

Isotech manufacture the widest range of temperature calibration equipment from hand held thermometers to Primary Standards. With Isotech solutions you can expand your equipment no matter what the requirement.

Isotech have been pioneering the latest developments in Temperature Metrology for more than 30 years, benefit from our know how, experience and global network.

Hyperion & Drago Benefits

**Excellent Uniformity**

- The Hyperion uses specially designed thermolectric heat pumps positioned in four heating / cooling zones around the block.

**Excellent Stability**

- The Advanced model automatically compensates for power fluctuations and features advanced PID algorithms with digital filtering to deliver world class control and superior stability.

**Calibrate More Sensors**

- Industry leading 65mm diameter well allows for larger probes, or a greater number of smaller probes allowing you to calibrate more sensors.

Calibrating with an Advanced Model

**ADVANCED Model**

The ADVANCED model includes an indicator with channels for both a reference probe and units under test. This allows best practice calibration with established traceability and uncertainty. Advanced features include automatic temperature cycling and logging.

How To Order

1 - Select Desired Options and Accessories
2 - Supply Voltage: Specify either 115Vac 50/60Hz or 230Vac 50/60Hz
Advanced Features including inbuilt three channel temperature indicator
- 35 x 160mm Calibration Volume
- Multi-Function - Six Modes including Dry Block and Liquid Bath

These models will calibrate temperature probes from -45°C to 250°C with unrivalled flexibility. As a traditional Dry Block, several thermometers can be quickly calibrated.

Accessories are available to convert to a stirred liquid bath, for surface sensor calibration, to calibrate infrared thermometers and even to use as an ITS-90 Fixed Point System with calibration uncertainties as small as 0.0005°C.

These award winning calibrators are easy to use - see the pictorial guide.

These new ADVANCED models offer a wide range of features and benefits including an independent three channel temperature indicator allowing test probes to be compared to a reference probe. Calibration temperatures can be stored and programmed in for automatic temperature cycling and data logging. The latest technology is used to deliver superior stability, greater accuracy and best performance.

Isotech is a world leader in temperature calibration, providing many nations with their Primary Standards and operates a full scale UKAS accredited calibration laboratory. We can offer a range of calibration options to meet your requirements.

Benefit from our experience and understanding in calibration at all levels, our evaluation reports, our tutorials and uncertainty calculations.

http://www.isotech.co.uk/industrial/

These models meet the calibration capacity requirements of EURAMET/cg-13/v.01, “EA Guidelines on the Calibration of Temperature Block Calibrators, formerly EA10/13. accuracy and best performance.

World’s First Multi-Functional Baths
SIX FUNCTIONS

- Black Body
- Block Bath
- Ice Bath
- ITS - 90
- Liquid Bath
- Surface Sensor

ISOICAL - 6 Range
Advanced Europa Venus Calisto

ISOICAL - 6
LIQUID & DRY BLOCK
ADVANCED SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Europa 4520</th>
<th>Venus 4951</th>
<th>Calisto 4953</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>-45°C to 140°C (1)</td>
<td>-35°C to 140°C (2)</td>
<td>30°C to 250°C (3)</td>
</tr>
<tr>
<td>Stability</td>
<td>Dry Block / Liquid Bath: ±0.01°C, Ice Bath: ±0.001°C</td>
<td>Blackbody: ±0.3°C, Surface Sensor: ±0.5°C, ITS-90 Cells: ±0.0005°C</td>
<td>±0.025°C</td>
</tr>
<tr>
<td>Display Resolution</td>
<td>0.001°C over whole range</td>
<td>0.01°C over whole range</td>
<td>0.01°C over whole range</td>
</tr>
<tr>
<td>Accuracy (4)</td>
<td>0.15°C</td>
<td>0.15°C</td>
<td>0.25°C</td>
</tr>
<tr>
<td>Uniformity - Between Wells</td>
<td>&lt;0.008°C</td>
<td>&lt;0.008°C</td>
<td>&lt;0.02°C at 250°C</td>
</tr>
<tr>
<td>Dry Block Mode (Radial)</td>
<td>&lt;0.040°C</td>
<td>&lt;0.040°C</td>
<td>&lt;0.25°C</td>
</tr>
<tr>
<td>Uniformity - Lower 40mm (Axial)</td>
<td>&lt;0.02°C</td>
<td>&lt;0.02°C</td>
<td>&lt;0.011°C at 250°C</td>
</tr>
<tr>
<td>Dry Block Mode</td>
<td>&lt;0.026°C</td>
<td>&lt;0.026°C</td>
<td>&lt;0.02°C at 250°C</td>
</tr>
<tr>
<td>Uniformity - Radial Liquid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath Mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Time</td>
<td>-30°C to 140°C: 15 Mins</td>
<td>-30°C to 140°C: 15 Mins</td>
<td>25°C to 250°C: 15 Mins</td>
</tr>
<tr>
<td>Cooling Time</td>
<td>140°C to 0°C: 15 Mins</td>
<td>140°C to 0°C: 15 Mins</td>
<td>250°C to 30°C: 25 Mins</td>
</tr>
<tr>
<td>Calibration Volume</td>
<td>35 x 160mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Insert</td>
<td>6 pockets, 2 x 4.5mm, 2 x 6.4mm, 1 x 8.0mm, 1 x 9.5mm diameter, all 157mm deep</td>
<td>Choice of Three - See Accessories</td>
<td></td>
</tr>
<tr>
<td>PC Interface</td>
<td>Ethernet - supporting software and USB Host</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>335H x 208W x 307D mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>300 Watts</td>
<td>150 Watts</td>
<td>8kg</td>
</tr>
<tr>
<td>Voltage</td>
<td>115Vac or 230 Vac 50/60Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>14kg</td>
<td>10.2kg</td>
<td>8kg</td>
</tr>
</tbody>
</table>

1) In ambient of 20°C: Minimum Temperature is 65°C Below Ambient, Absolute Minimum -55°C
2) In ambient of 20°C: Minimum Temperature is 55°C Below Ambient, Absolute Minimum -45°C
3) In ambient of 20°C
4) Dry Block Mode only: Comparing 4.5mm Well to Controller Display Value.

ADVANCED FEATURES

- Digital Display of Set and Nominal Block Temperature
- PC Interface: Ethernet (Optional Serial Legacy Kit available)
- Two channel thermostat testing
- Inbuilt Temperature Indicator for Reference Probe and two universal inputs for PRT, Thermocouple or Process inputs and a further Thermocouple input
- Automatic Temperature Cycling - Create Programs from front panel or on PC with included software
- Data Logging with export to USB
- Offset Elimination - block can follow reference input
- Speaks five languages: English, French, German, Italian and Spanish
- In Built Web Server
- Tamper Proof Data - in accordance with 21CFR, Part 11.

See Evaluation Reports for full details http://www.isotech.co.uk
**Isocal-6 Ultimate Flexibility - Europa, Venus & Calisto**

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

1. **Dry Block Mode with Inserts**
   - 951-02-15 An Insert is included:
     
     - (2 x 4.5mm, 2 x 6.4mm, 1 x 8mm & 1 x 9mm) x 157mm Deep.
   
   All Inserts have a 4mm tapped hole to suit supplied extractor tool.

   **Alternative Inserts**
   - 951-06-07 Alternative Insert type B
     - 13mm, 10mm, 8mm, 5mm and 3.5mm dia.
     - holes, all 157mm deep
   - 951-06-08 Alternative Insert type C
     - 8mm, 6 x 6.5mm dia.
     - holes, all 157mm deep
   - 951-02-15a Blank Insert without pockets for local machining. Includes M4 tapped hole for supplied extractor tool.
   - 951-02-15c Custom insert. Isotech can provide custom drilled pockets, minimum of 3mm separation between holes. Contact Isotech with your requirements.

2. **Stirred Liquid Mode with Liquid Container Kit**
   - Allows liquid bath use, includes container, magnetic stirrer, probe guide and sealing cap. 951-06-01

3. **Stirred Ice Bath Mode with Liquid Container Kit**
   - Uses same liquid kit to provide 0°C reference as a stirred ice bath (Not Calisto)

4. **Infrared Calibration Mode with Blackbody Target**
   - 951-06-04 Use optional Probe 934-14-82/DB placed in the auxiliary block pocket for use as a reference.

5. **Surface Sensor Calibration with Surface Sensor Kit**
   - 951-06-02 Includes angled platinum resistance thermometer.

6. **ITS-90 Fixed Point Cells**
   - 17724M Slim Mercury Cell (Europa Only).
   - B8 Water Triple Point Cell (Venus and Europa)
   - 17401M Slim Gallium Cell (Europa, Venus and Calisto)

7. **Standard Probe**
   - 935-14-82/DB Platinum Resistance Thermometer.
   - Probe diameter 4mm, recommended pocket size 4.5mm. Angled head feature avoids sensors in block.

8. **Current Loop Interface**
   - 935-06-161 24VDC Power Supply and Terminal Box.
   - Powers 4-20mA Current Transmitters with 4mm terminal posts for easy connection.

9. **Carrying Case**
   - 931-22-111 Sturdy case with room for accessories. Features wheels and pull out handle.

**Oils**
- 520-05-01 C10 Oil -35°C – 140°C 0.1L
- 951-06-06 C20 Oil 20°C – 200°C 0.1L
- 953-04-01 VH Oil 150°C – 250°C 0.1L
The world’s leading National Metrology Institutes choose Isotech - shouldn’t you?

Isotech manufacture the widest range of temperature calibration equipment from hand held thermometers to Primary Standards. With Isotech solutions you can expand your equipment no matter what the requirement.

Isotech have been pioneering the latest developments in Temperature Metrology for more than 30 years, benefit from our know how, experience and global network.

Europa, Venus & Calisto Benefits

**Excellent Uniformity**

- The specially designed thermoelectric heat pumps positioned in four heating / cooling zones around the block.

**Calibrating with an Advanced Model**

**Advanced Model**

The ADVANCED model includes an indicator with channels for both a reference probe and units under test. This allows best practice calibration with established traceability and uncertainty. Advanced features include automatic temperature cycling and logging.

**Excellent Stability**

- The Advanced models automatically compensate for power fluctuations and feature advanced PID algorithms with digital filtering to deliver world class control and superior stability.

**ISOCAL-6 Benefit**

- Isotech introduced the ISOCAL-6 as the worlds first multi-functional bath with 6 operating modes.

**How To Order**

1. Select Desired Options and Accessories
2. Supply Voltage: Specify either 115Vac 50/60hz or 230Vac 50/60Hz

**Calibration**

Includes three point traceable calibration certificate for block temperature

**UKAS Calibration**

Recommended: Options for block temperature and reference thermometer inputs (simulation). Legally traceable in more than 70 countries.
Advanced Features including inbuilt three channel temperature indicator
- 35 x 160mm Calibration Volume
- Fast with wide operating range

The Jupiter Dry Block range offers industry-leading performance in an easy to use portable package - ideal for the calibration of thermocouples and platinum resistance thermometers. It has been designed for fast heating and cooling for convenient field use. For flexibility surface sensor and infrared thermometer accessories can be added.

The standard insert can hold up to six thermometers. For larger blocks see the Gemini and Medusa range.

These award winning calibrators are easy to use - see the pictorial guide. The new ADVANCED model offers a wide range of features and benefits including an independent three channel temperature indicator allowing test probes to be compared to a reference probe. Calibration temperatures can be stored and programmed in for automatic temperature cycling and data logging. The latest technology is used to deliver superior stability, greater accuracy and best performance.

Isotech is a world leader in temperature calibration, providing many nations with their Primary Standards and operates a full scale UKAS accredited calibration laboratory. We can offer a range of calibration options to meet your requirements.

Benefit from our experience and understanding in calibration at all levels, our evaluation reports, our tutorials and uncertainty calculations.

These models meet the calibration capacity requirements of EURAMET/cg-13/v.01, “EA Guidelines on the Calibration of Temperature Block Calibrators, formerly EA10/13.”

Calibrating with an Advanced Model

ADVANCED Model

The ADVANCED model includes an indicator with channels for both a reference probe and units under test. This allows best practice calibration with established traceability and uncertainty. Advanced features include automatic temperature cycling and logging.
**ADVANCED SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature Range</strong></td>
<td>Jupiter 4852</td>
</tr>
<tr>
<td><strong>Stability over 30 minutes</strong></td>
<td></td>
</tr>
<tr>
<td>At 50°C</td>
<td>±0.02°C</td>
</tr>
<tr>
<td>At 250°C</td>
<td>±0.02°C</td>
</tr>
<tr>
<td>At 650°C</td>
<td>±0.03°C</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td>0.01°C over whole range</td>
</tr>
<tr>
<td><strong>Blackbody Source</strong></td>
<td>±0.3°C</td>
</tr>
<tr>
<td><strong>Surface Sensor Calibrator</strong></td>
<td>±0.5°C</td>
</tr>
<tr>
<td><strong>Cools from 650°C to 150°C</strong></td>
<td>in 60 minutes</td>
</tr>
<tr>
<td><strong>Heats from 30°C to 650°C</strong></td>
<td>in 20 minutes</td>
</tr>
<tr>
<td><strong>Best Performance</strong></td>
<td>See Graph</td>
</tr>
<tr>
<td><strong>Calibration range</strong></td>
<td>35mm diameter by 148mm deep</td>
</tr>
<tr>
<td><strong>Standard Insert</strong></td>
<td>6 pockets, 2 x 4.5mm, 2 x 6.4mm, 1 x 8.0mm, 1 x 9.5mm diameter, all 140mm deep</td>
</tr>
<tr>
<td><strong>Indicator units</strong></td>
<td>°C, °F, K</td>
</tr>
<tr>
<td><strong>PC Interface</strong></td>
<td>Ethernet - supporting software and USB Host</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>115Vac or 230Vac 50/60Hz 1000 Watts</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>335H x 208W x 307D mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>8.5kg</td>
</tr>
</tbody>
</table>

**ADVANCED FEATURES**

- Digital Display of Set and Nominal Block Temperature
- PC Interface: Ethernet (Optional Serial Legacy Kit available)
- Two channel thermostat testing
- Inbuilt Temperature Indicator for Reference Probe and two universal inputs for PRT, Thermocouple or Process inputs and a further Thermocouple input
- Automatic Temperature Cycling - Create Programs from front panel or on PC with included software
- Data Logging with export to USB
- Offset Elimination - block can follow reference input
- Speaks five languages: English, French, German, Italian and Spanish
- In Built Web Server
- Tamper Proof Data - in accordance with 21CFR, Part 11.

[Graph showing Calibration and Radial Homogeneity] See Evaluation Reports for full details [http://www.isotech.co.uk]
### Accessories - Jupiter

<table>
<thead>
<tr>
<th><strong>Metal Block Insert 852-07-11</strong></th>
<th><strong>Air Cooling 853-04-02</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Insert included.</td>
<td>For use with an air</td>
</tr>
<tr>
<td>Size: 2 x 4.5mm, 2 x 6.4mm, 1 x 8mm and 1 x 9.5mm all 140mm deep</td>
<td>supply this accessory</td>
</tr>
<tr>
<td><strong>Alternative Inserts</strong></td>
<td>allows air to be blown</td>
</tr>
<tr>
<td><strong>852-09-03</strong> Alternative Insert type B</td>
<td>into the block for rapid</td>
</tr>
<tr>
<td>13mm, 10mm, 8mm, 5mm and 3.5mm diameter holes, all 140mm deep</td>
<td>cooling.</td>
</tr>
<tr>
<td><strong>852-09-04</strong> Alternative Insert type C</td>
<td><strong>Standard Probe 935-14-72/DB</strong></td>
</tr>
<tr>
<td>8mm, 6 x 6.5mm diameter holes, all 140mm deep</td>
<td>Platinum Resistance</td>
</tr>
<tr>
<td><strong>852-07-07</strong> Blank Insert without pockets for local machining. Includes M4 tapped hole for supplied extractor tool.</td>
<td>Thermometer for use up to 660°C.</td>
</tr>
<tr>
<td><strong>852-07-07C</strong> Custom Insert. Isotech can provide custom drilled pockets, minimum of 3mm separation between holes. Contact Isotech with your requirements.</td>
<td>Probe diameter 6mm, recommended pocket size 6.5mm.</td>
</tr>
<tr>
<td><strong>Blackbody Kit 852-09-05</strong> Includes a Blackbody target and Sensor.</td>
<td><strong>Current Loop Interface 935-06-161</strong></td>
</tr>
<tr>
<td><strong>Surface Sensor Kit 852-07-15</strong> Includes angled thermocouple.</td>
<td>24VDC Power Supply and Terminal Box. Powers 4-20mA Current Transmitters with 4mm terminal posts for easy connection.</td>
</tr>
<tr>
<td><strong>Calibration</strong> Includes three point traceable calibration certificate for block temperature</td>
<td><strong>Carrying Case 931-22-111</strong></td>
</tr>
<tr>
<td><strong>UKAS Calibration</strong> Recommended: Options for block temperature and reference thermometer inputs (simulation). Legally traceable in more than 70 countries.</td>
<td>Sturdy case with room for accessories. Features wheels and pull out handle.</td>
</tr>
</tbody>
</table>
The world’s leading National Metrology Institutes choose Isotech - shouldn’t you?

Isotech manufacture the widest range of temperature calibration equipment from hand held thermometers to Primary Standards. With Isotech solutions you can expand your equipment no matter what the requirement.

Isotech have been pioneering the latest developments in Temperature Metrology for more than 30 years, benefit from our know how, experience and global network.

Jupiter Benefits

- The Jupiter calibration block features uniform heating with a custom wound heater over an extended length of the block. The block itself is made from copper which has a very high thermal conductivity; much superior to the aluminium bronze alloys used elsewhere. A propriety process is used to protect the copper from oxidising. This combination of materials and expert knowledge delivers superior performance.

660°C Operation

- The Jupiter ADVANCED operates to 660°C maximum; matched to the upper limit of the high temperature Isotech Semi Standard Platinum Resistance Thermometers. This allows maximum accuracy with no risk to exceeding the temperature limit of the PRT. This gives greater accuracy than extending the range beyond 660°C and having to use an inferior thermometer or thermocouple.

How To Order

1 - Select Desired Options and Accessories
2 - Supply Voltage:
   Specify either 115Vac 50/60hz or 230Vac 50/60Hz
Advanced Features including 3 channel reference thermometer

Large High Capacity Blocks - fixed or removable 64 x 160mm

Calibrate Large Diameter Probes

The Gemini range of Dry Blocks have high capacity allowing a large number of probes to be calibrated together. They are also suitable to accept large diameter probes with the block volume of a nominal 64 x 160mm.

Whilst the large block takes longer to heat and cool than the Jupiter and Fast-Cal models it can calibrate thermocouples, resistance thermometers, thermostats and sensors that are too large for the smaller blocks.

Available with a fixed block with four 8mm and four 19.5mm pockets or the LRI version which has a removable block. With the LRI model blocks can be drilled to custom configurations.

This new ADVANCED model offers a wide range of features and benefits including an independent three channel temperature indicator, allowing test probes to be compared to a reference probe. Calibration temperatures can be stored and programmed in for automatic temperature cycling and data logging. The latest technology is used to deliver superior stability, greater accuracy and best performance.

Isotech is a world leader in temperature calibration, providing many nations with their Primary Standards and operates a full scale UKAS accredited calibration laboratory. We can offer a range of calibration options to meet your requirements.

Benefit from our experience and understanding in calibration at all levels, our evaluation reports, our tutorials and uncertainty calculations.

These models meet the calibration capacity requirements of EURAMET/cg-13/v.01, “EA Guidelines on the Calibration of Temperature Block Calibrators, formerly EA10/13.”

Calibrating with an Advanced Model

**ADVANCED Model**

The ADVANCED model includes an indicator with channels for both a reference probe and units under test. This allows best practice calibration with established traceability and uncertainty. Advanced features include automatic temperature cycling and logging.
ADVANCED FEATURES

- Digital Display of Set and Nominal Block Temperature
- PC Interface: Ethernet (Optional Serial Legacy Kit available)
- Two channel thermostat testing
- Inbuilt Temperature Indicator for Reference Probe and two universal inputs for PRT, Thermocouple or Process inputs and a further Thermocouple input
- Automatic Temperature Cycling - Create Programs from front panel or on PC with included software
- Data Logging with export to USB
- Offset Elimination - block can follow reference input
- Speaks five languages: English, French, German, Italian and Spanish
- In Built Web Server
- Tamper Proof Data - in accordance with 21CFR, Part 11.

ADVANCED SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model: Gemini 4857</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>550</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>35°C to 550°C</td>
</tr>
<tr>
<td>Absolute stability over 30 minutes</td>
<td>At 35°C ±0.05°C</td>
</tr>
<tr>
<td></td>
<td>At 550°C ±0.05°C</td>
</tr>
<tr>
<td>Display Resolution</td>
<td>0.01°C over whole range</td>
</tr>
<tr>
<td>Cools from 550°C to 275°C</td>
<td>35 minutes</td>
</tr>
<tr>
<td>from 550°C to 60°C</td>
<td>345 minutes</td>
</tr>
<tr>
<td>Heats from 30°C to 550°C</td>
<td>35 minutes</td>
</tr>
<tr>
<td>from 50°C to 700°C</td>
<td>110 minutes</td>
</tr>
<tr>
<td>Best Performance</td>
<td>See Graph</td>
</tr>
<tr>
<td>Calibration volume</td>
<td>65mm diameter x 160mm deep</td>
</tr>
<tr>
<td>Standard Insert</td>
<td>Fixed Block 8 x 8mm pockets 4 x 19.5mm pockets All 160mm deep</td>
</tr>
<tr>
<td></td>
<td>8 x 8mm pockets all 154mm deep</td>
</tr>
<tr>
<td>Indicator units</td>
<td>°C, °F, K</td>
</tr>
<tr>
<td>PC Interface</td>
<td>Ethernet - supporting software and USB Host</td>
</tr>
<tr>
<td>Voltage</td>
<td>115Vac or 230Vac 50/60Hz</td>
</tr>
<tr>
<td>Power</td>
<td>600 Watts</td>
</tr>
<tr>
<td>Dimensions</td>
<td>335H x 208W x 307D mm</td>
</tr>
<tr>
<td>Weight</td>
<td>8.5kg</td>
</tr>
</tbody>
</table>

AUDIT CALIBRATION (SIMILAR SENSORS)

GEMINI

RADIAL HOMOGENEITY

See Evaluation Reports for full details

http://www.isotech.co.uk
Accessories - Gemini

Metal Block Sleeves

**GeminiPLUS 550**
Set of four Sleeves to suit the block. Optional single hole sizes 4, 6, 8, 10, 12, 14mm diameter all 150mm deep.

- 857-07-01 Undrilled sleeves for local machining.
- 857-07-03 1 sleeve with 2 holes 4.5mm x 150mm deep.

**GeminiPLUS 700**
Set of four Sleeves to suit the block. Optional single hole sizes 4, 6, 8, 10, 12, 14mm diameter all 150mm deep.

- 857-07-02 Blank sleeves for local machining.
- 857-07-04 1 sleeve with 2 holes 4.5mm x 150mm deep.

**Note:** The use of sleeves will introduce an additional thermal gradient into the block. This can be avoided by using the LRI model with a block drilled for specific probes.

Removable Inserts

**GeminiPLUS 550 LRI**
- 976-07-01a Included as Standard Removable insert with eight 8mm pockets
- 976-07-01b Blank Insert Insert without pockets for local machining
- 976-07-01c Custom Insert Contact Isotech with your requirements

**GeminiPLUS 700 LRI**
- 976-07-02a Included as Standard Removable block with eight 8mm pockets
- 976-07-02b Blank Insert Insert without pockets for local machining
- 976-07-02c Custom Insert Contact Isotech with your requirements

Calibration
Includes three point traceable calibration certificate for block temperature

**UKAS Calibration**
Recommended: Options for block temperature and reference thermometer inputs (simulation).
Legally traceable in more than 70 countries.

Current Loop Interface

**935-06-161**
24VDC Power Supply and Terminal Box.
Powers 4-20mA Current Transmitters with 4mm terminal posts for easy connection.

Standard Probe

**935-14-72/DB**
Platinum Resistance Thermometer for use up to 650°C.

**935-14-63**
Type N Thermocouple for use up to 700°C.

Carrying Case

**931-22-111**
Sturdy case with room for accessories. Features wheels and pull out handle.

Metal Block Sleeves

**GeminiPLUS 550**
Set of four Sleeves to suit the block. Optional single hole sizes 4, 6, 8, 10, 12, 14mm diameter all 150mm deep.

- 857-07-01 Undrilled sleeves for local machining.
- 857-07-03 1 sleeve with 2 holes 4.5mm x 150mm deep.

**GeminiPLUS 700**
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- 857-07-04 1 sleeve with 2 holes 4.5mm x 150mm deep.

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- 976-07-01b Blank Insert Insert without pockets for local machining
- 976-07-01c Custom Insert Contact Isotech with your requirements

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- 976-07-02b Blank Insert Insert without pockets for local machining
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Isotech have been pioneering the latest developments in Temperature Metrology for more than 30 years, benefit from our know how, experience and global network.

Gemini Benefits

- The Gemini has a large block with sufficient mass to accommodate larger sensors, a larger number of sensors. The fixed block has four 19.5mm pockets and four 8mm pockets.

- The LRI model with its removable block can be custom drilled. The larger blocks take longer to heat and cool then the Jupiter but the larger size allows larger probes than can be accommodated in a 35mm block. We can also provide custom blocks to simulate applications, allowing probes that would otherwise be unsuitable for Dry Block calibration to be evaluated.

How To Order

1 - Select Desired Options and Accessories
2 - Supply Voltage:
   Specify either 115Vac 50/60hz or 230Vac 50/60Hz
Advanced Features including 3 channel reference thermometer
High Temperature Thermocouple Calibration Furnace
33.5 x 130mm Calibration Volume

The Pegasus range offers extreme high temperature calibration in an easy to use portable package - ideal for the calibration of high temperature thermocouples. It has been designed for fast heating and finds applications in the glass, electrical power, automotive and material processing industries.

This new ADVANCED model offers a wide range of features and benefits including an independent three channel temperature indicator, allowing test probes to be compared to a reference probe. Calibration temperatures can be stored and programmed in for automatic temperature cycling and data logging. The latest technology is used to deliver superior stability, greater accuracy and best performance.

A Blackbody target can be added for the calibration of infrared thermometers.

The standard insert has four 8mm pockets 80mm deep. The metal insert is strategically placed beneath 50mm of insulation to provide optimal performance over the radiant temperature range.

The optional Blackbody target is used with a specially angled Type R thermocouple that sits immediately behind the target area.

Benefit from our experience and understanding in calibration at all levels, our evaluation reports, our tutorials and uncertainty calculations.

Isotech is a world leader in temperature calibration, providing many nations with their Primary Standards and operates a full scale UKAS accredited calibration laboratory. We can offer a range of calibration options to meet your requirements.

Calibrating with an Advanced Model

ADVANCED Model
The ADVANCED model includes an indicator with channels for both a reference probe and units under test. This allows best practice calibration with established traceability and uncertainty. Advanced features include automatic temperature cycling and logging.
ADVANCED SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pegasus 4853</strong></td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>150°C to 1200°C</td>
</tr>
<tr>
<td>Absolute stability over 30 minutes</td>
<td>At 150°C ±0.1°C</td>
</tr>
<tr>
<td></td>
<td>At 1200°C ±0.2°C</td>
</tr>
<tr>
<td></td>
<td>Blackbody Source ±0.3°C</td>
</tr>
<tr>
<td>Display Resolution</td>
<td>0.1°C over whole range</td>
</tr>
<tr>
<td>Cools from 1200°C to 800°C</td>
<td>in 50 minutes*</td>
</tr>
<tr>
<td></td>
<td>in 180 minutes*</td>
</tr>
<tr>
<td></td>
<td>*substantially reduced by the cooling adaptor</td>
</tr>
<tr>
<td>Heating Rate</td>
<td>25°C / minute</td>
</tr>
<tr>
<td>Calibration volume</td>
<td>33.5mm diameter by 130mm deep</td>
</tr>
<tr>
<td>Standard Insert</td>
<td>4 x 8mm Pockets all 80mm deep + 50mm top insulator</td>
</tr>
<tr>
<td>Indicator units</td>
<td>°C, °F, K</td>
</tr>
<tr>
<td>PC Interface</td>
<td>Ethernet - supporting software and USB Host</td>
</tr>
<tr>
<td>Power</td>
<td>115Vac or 230Vac (50 / 60 Hz) 800 Watts</td>
</tr>
<tr>
<td>Dimensions</td>
<td>335H x 208W x 307D mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13kg</td>
</tr>
</tbody>
</table>

ADVANCED FEATURES

- Digital Display of Set and Nominal Block Temperature
- PC Interface: Ethernet (Optional Serial Legacy Kit available)
- Two channel thermostat testing
- Inbuilt Temperature Indicator for Reference Probe and two universal inputs for PRT, Thermocouple or Process inputs and a further Thermocouple input
- Automatic Temperature Cycling - Create Programs from front panel or on PC with included software
- Data Logging with export to USB
- Offset Elimination - block can follow reference input
- Speaks five languages: English, French, German, Italian and Spanish
- In Built Web Server
- Tamper Proof Data - in accordance with 21CFR, Part 11.

* See Evaluation Reports for full details [http://www.isotech.co.uk](http://www.isotech.co.uk)
Accessories - Pegasus

**Metal Block Insert**
853-06-01 Standard Insert Included
Four 8mm pockets.
Pocket depth 80mm +
50mm insulator.
Effective depth 130mm.
853-06-02 Blank Insert
Insert without pockets for
local machining
853-06-02b Custom Insert
Contact Isotech with
your requirements

**Blackbody Kit**
853-06-03 Includes a Blackbody
target and Sensor

**Calibration**
Includes three point traceable calibration
certificate for block temperature
**UKAS Calibration**
Recommended: Options for block
temperature and reference thermometer
inputs (simulation).
Legally traceable in more than 70
countries.

**Standard Probe**
935-14-91 Type R Platinum
Thermocouple for use
up to 1200°C.

**Air Cooling**
853-04-02 For use with a compressor
this accessory allows air
to be blown into the
block for rapid cooling.

**Ceramic Insulators**
853-06-04 Spare insulation pack
Includes 2 x standard
tops and 2 x standard
bottoms.

**Current Loop Interface**
935-06-161 24VDC Power Supply
and Terminal Box.
Powers 4-20mA
Current Transmitters
with 4mm terminal posts
for easy connection.

**Carrying Case**
931-22-111 Sturdy case with room
for accessories.
Features wheels and
pull out handle.

**Current Loop Interface**
935-06-161 24VDC Power Supply
and Terminal Box.
Powers 4-20mA
Current Transmitters
with 4mm terminal posts
for easy connection.

**Carrying Case**
931-22-111 Sturdy case with room
for accessories.
Features wheels and
pull out handle.
The world’s leading National Metrology Institutes choose Isotech - shouldn’t you?

Pegasus Benefits

The Pegasus features a small tube furnace to allow operation to 1200°C in a portable case. With a ceramic furnace construction temperature gradients are larger than with lower temperature metal blocks.

The Isotech furnace benefits over other designs by using a specially wound furnace tube assembly. They are manufactured in our factory with the turns concentrated at the ends of the furnace, where the heat losses are greatest. This gives an improved temperature profile and lower uncertainty.

Insulators are provided for the top and bottom of the furnace which further improve temperature uniformity.

The effective immersion depth is 130mm, 80mm in the metal insert and then a further 50mm in the furnace tube.

*Benefit from Isotech’s design and experience*

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**How To Order**

1. Select Desired Options and Accessories
2. Supply Voltage:
   - Specify either 115Vac 50/60hz or 230Vac 50/60Hz

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The New Advanced Range

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Portable
Isotech Fast Calibrators

Quick-Cali & 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.

For more information and full specifications:
www.isotech.co.uk

Telephone: +44 (0)1704 543830
Fax: +44 (0)1704 544799 Email: info@isotech.co.uk Web: www.isotech.co.uk
Isothermal Technology Limited Pine Grove, Southport, Merseyside PR9 9AG England