The Venus\textsuperscript{PLUS} 2140 range offers outstanding performance in an easy to use portable package. As part of the ISOCAL-6 series the Venus\textsuperscript{PLUS} 2140 can be used as a Dry Block, a Liquid Bath, a Blackbody Source for infrared thermometers, a Surface Sensor Calibrator and for performance to a few mK (0.001°C) ITS-90 Fixed Points. The Venus is available in two models, the BASIC (B) and the SITE (S). The B model includes a sophisticated temperature controller with a dual display for Set Temperature and Dry Block Temperature, refer to page 23 for further details. The S model additionally includes an in-built digital indicator to which an external temperature sensor can be connected.

For Dry Block use the unit under test may be compared to the controller value, Isotech recommend the use of an external probe connected to the indicator of the Site model (see page 23) which compensates for the temperature gradient and loading errors. This gives greater accuracy and traceability meeting the requirements of ISO 9000 and other quality standards.

For Liquid Bath, Surface Sensor or Blackbody use an external thermometer should always be used - either with the S model or the B model and a separate stand-alone indicator. For laboratory use the Venus can be used with a laboratory performance temperature indicator such as the Isotech TTI 5 and TTI 6 for outstanding accuracies.

Includes as standard: Windows Software, Computer Interface and 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 good absolute accuracy.

New in the S model is 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 on the inbuilt indicator. 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.

**Key Features**

- **Calibrate Whole Measurement Loop** - using a heat source rather than an electrical simulator a test instrument and probe can be calibrated as a system.

- **Calibrate as a Dry or Liquid Bath**, thermocouples, platinum resistance thermometers, thermistors, liquid in glass, thermostats, semiconductor types.

- **Covers key calibration points** from below to above ambient, 0°C, 121°C (250°F), 135°C.

- **Simple To Use** - Outstanding Value for Money!

- **S Model Includes Universal Input Temperature Indicator** allowing for up to five “correction” points to be programmed.

- **Windows Software and PC Interface as Standard.**

- **Free Evaluation Report** - ask for full data or visit www.isotech.co.uk/industrial
Options

1. Metal Block Insert 951-02-15
   - Standard Insert Included
   - 951-02-15a Blank Insert
   - Insert without pockets for local machining
   - 951-02-15c Special Insert
   - Contact Isotech with your requirements

2. Stirred Liquid Bath 951-06-01
   - Includes a container, magnetic stirrer and probe guide

3. Water/Ice Bath Thermometer Support Kit 951-06-03
   - Allows three thermometers to be suspended in the bath, including liquid in glass types
   - 0.1L of Oil 20ºC to 140ºC

4. Blackbody Target 951-06-04
   - Use with Standard Probe (935-14-82)

5. Surface Sensor Kit 951-06-02
   - Includes an Insert and an angled PRT.

6. Fixed Point Cells D8 Water Slim Cell 17401 Slim Gallium Slim Cell

   Standard Probe 935-14-82
   - Platinum Resistance Thermometer

   UKAS Calibration
   - UKAS Calibration available to Order

   Carrying Case 931-22-27
   - Sturdy case accommodates the unit with room for accessories

VENUSPLUS 2140 Performance

<table>
<thead>
<tr>
<th>Model No.</th>
<th>VENUSPLUS 2140</th>
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</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>55ºC below ambient to +140ºC (absolute minimum -55ºC)</td>
</tr>
<tr>
<td>Absolute stability over 30 minutes</td>
<td>Dry Block Bath ±0.03ºC</td>
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<tr>
<td></td>
<td>Stirred Liquid Bath ±0.025ºC</td>
</tr>
<tr>
<td></td>
<td>Ice/Water Bath ±0.001ºC</td>
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<tr>
<td></td>
<td>Blackbody Source ±0.3ºC</td>
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<tr>
<td></td>
<td>Surface Sensor Calibrator ±0.5ºC</td>
</tr>
<tr>
<td></td>
<td>ITS-90 Fixed Point Apparatus ±0.0005ºC</td>
</tr>
</tbody>
</table>

Computer Interface
- Included with Windows Software (page 72)
  - Cools from 140ºC to 0ºC in 15 minutes
  - Heats from -30ºC to 140ºC in 15 minutes

Best Performance
- See Graph

Calibration volume
- 35mm diameter by 160mm deep

Standard Insert
- 6 pockets, 9.5mm, 8.0mm, 6.4mm, 6.4mm, 4.5mm, 4.5mm, all 157mm deep

Uniformity ±0.018ºC

Display Resolution
- 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 ºC, ºF, K

Power
- 100 to 120V (50 / 60 Hz) or 200 to 240V (50 / 60 Hz)
- 150 Watts

Overall dimensions
- Height 302mm
- Width 176mm
- Depth 262mm

Weight 10.2kg

How to Order VENUSPLUS 2140
- Please specify model type required
- Please specify voltage required
- Please specify options required

Calibration and Uncertainty
A certificate, traceable to National Standards, is included as standard. Recommended is an optional UKAS five-point calibration.

The accuracy will depend very much on the mode of use and the types of sensor to be used. Please contact Isotech for tutorials and uncertainty calculations and comprehensive evaluation reports. The VenusPLUS 2140 meets the Calibration Capacity requirements of EA 10/13, “EA Guidelines on the Calibration of Temperature Block Calibrators”.

To see the ISOCAL-6 in use ask for details of our 27 minute video