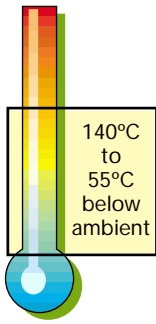


# Venus<sup>PLUS</sup> 2140

ISOCAL-6® Range



The Venus<sup>PLUS</sup>2140 range offers outstanding performance in an easy to use portable package. As part of the ISOCAL-6 series the Venus<sup>PLUS</sup>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. 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, the use of an external probe connected to the indicator of the Site model which compensates for the temperature gradient and loading errors, is recommended. 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.

Includes as standard: Windows Software, Computer Interface and a Ramp to Set Point Feature. Increased resolution of  $\pm 0.01$  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.



The S model 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 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.

**New!** The Site model can now be used with the supplied Cal Notepad software to test thermostats.

## 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



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## Options

	1. Metal Block Insert	951-02-15	Standard Insert <i>Included</i>
		951-02-15A	Blank Insert <i>Insert without pockets for local machining</i>
		951-02-15C	Special Insert <i>Contact AOIP with your requirements</i>

Alternative Metal Block Inserts			
	951-06-07	Standard Insert type B 13mm, 10mm, 8mm, 5mm and 3.5mm diameter holes, all 157mm deep	
	951-06-08	Special Insert type C 8mm, 6 x 6.5mm diameter holes, all 157 deep	

2. Stirred Liquid Bath	951-06-01	Includes a container, magnetic stirrer and probe guide <i>Allows three thermometers to be suspended in the bath, including liquid in glass types</i>
3. Water/Ice Bath	951-06-03	
Thermometer Support Kit	951-06-06	
		0.1L of Oil 20°C to 140°C

4. Blackbody Target	951-06-04	Use with Standard Probe (935-14-82)
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5. Surface Sensor Kit	951-06-02	Includes an Insert and an angled PRT.
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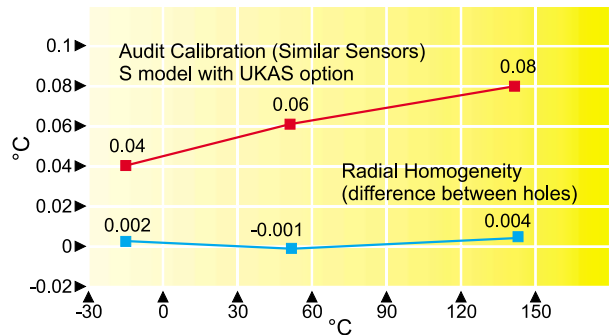
6. Fixed Point Cells	D8 17401 Slim	Water Slim Cell Gallium Slim Cell
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Standard Probe	935-14-82	Platinum Resistance Thermometer
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UKAS Calibration	UKAS Calibration available to Order	
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Carrying Case	931-22-64	Sturdy case accommodates the unit with room for accessories
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## VENUS<sup>PLUS</sup> 2140 Performance



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>

Model No. VENUS<sup>PLUS</sup> 2140

Temperature Range 55°C below ambient to +140°C (absolute minimum -55°C)

<b>Absolute stability over 30 minutes</b>	Dry Block Bath	±0.03°C
	Stirred Liquid Bath	±0.025°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 (page 74)

Cools from 140°C to 0°C in 15 minutes

Heats from -30°C to 140°C 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 ±0.018°C

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 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 Venus<sup>PLUS</sup> 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 AOIP for tutorials and uncertainty calculations and comprehensive evaluation reports. The Venus<sup>PLUS</sup> 2140 meets the Calibration Capacity requirements of EA 10/13, "EA Guidelines on the Calibration of Temperature Block Calibrators".