

# HIGH PRECISION SUB ZERO DRY BLOCK TEMPERATURE CALIBRATOR

MODEL : TCAL 1503 / - 45



## INTRODUCTION

**SANSEL Model TCAL 1503 series of Dry well Temperature calibrator range from -45 to 1200°C in model (TCAL 1503 / -45, TCAL 1503 / -35, TCAL 1503 / 300 , TCAL 1503 / 600 & TCAL 1503 / 1200) are high precision, better resolution, stability, fast in heating and cooling. More well dia and depth to calibrate more number of temperature sensor at a time with better uniformity.**

**These models can meet any calibration requirement in laboratories or in on site applications. This models are inbuilt measuring facility of the Thermocouples, RTD, Resistance, millivolt & milliamps to directly read the signals from most of the temperature sensors, indicator with sensor and Transmitter. Temperature range from -45 to 130 °C with high resolution 0.01 °C up to 130 °C. This model is mainly used in all industries, like Pharmaceutical, food, Research & calibration laboratories etc.,**

**These models are using 4.3" True colour TFT display with Touch screen, easy to read multi parameter at the same time like, Block temperature, set temperature, measure value, Real time clock with date & time, Control Output %, Stability time & status, Range of the equipment with necessary unit of measurement and three soft touch keys are used for measure configuration, settings, calibration etc., It has one more advantage of help menu for operating instruction of the equipment via the same screen , Hence no need of Hard copy of Instruction manual.**

## FEATURES

- ✓ 4.3 inch True TFT DISPLAY with touch screen
- ✓ Portable & Rugged
- ✓ Range from Amb. -45\* to 130 °C
- ✓ Resolution 0.01 °C
- ✓ Stability  $\pm 0.02^{\circ}\text{C}$
- ✓ Radial Uniformity better than  $\pm 0.02^{\circ}\text{C}$
- ✓ Axial uniformity upto 40mm better than  $\pm 0.2^{\circ}\text{C}$
- ✓ UUC measure option provided
- ✓ Stabilization time & status indication provided
- ✓ Inter changeable insert to suit different diameter sensor - up to 30 mm
- ✓ Optional PC Interface with automatic calibration software

## Technical Specifications

Model	TCAL 1503 / -45
Display	4.3 inch True TFT LCD Display with Touch screen
Temperature Range	-45* to 130°C* @23°C Ambient
Resolution	0.01°C
Stability	$\pm 0.02^{\circ}\text{C}$
Radial uniformity	Better than $\pm 0.02^{\circ}\text{C}$
Axial uniformity ( 40 mm )	$\pm 0.1^{\circ}\text{C}$ at -45°C $\pm 0.1^{\circ}\text{C}$ at -30°C $\pm 0.05^{\circ}\text{C}$ at 0°C $\pm 0.05^{\circ}\text{C}$ at 100°C $\pm 0.2^{\circ}\text{C}$ at 130°C
Temperature Readout	°C / °F (selectable)
Stabilization Time	10 minutes
Heating time	25 mins (25 to 130 °C) 75 mins (-45 to 130 °C) 52 mins (-45 to 25 °C)
Cooling time	30 mins (25 to -45 °C) 15 mins (25 to -30 °C) 65 mins (130 to 25 °C)
Well Dimension	30 x 160 mm (dia x height)
Test sensor immersion depth	130 mm
Standard well holes in mm	Insert No. 1 $\rightarrow$ 5.1, 6.2, 6.2 & 8.1, Insert No. 2 $\rightarrow$ 6.2, 6.2 & 10.2
Measure inputs	RTD-PT 100, PT 1000 / TC - J, K, R, S, T, E, B , N , Analog - mA, mV, ohms
UUC Sensor supply input	24V DC $\pm 10\%$ / 50mA max.
Power supply	230V AC $\pm 10\%$ / 50Hz (optional 110V AC)
Power Consumption	500 VA
Switch test	Provided
Overall Dimension in mm	390 x 185 x 356 (L x B x H) (Approx.)
Weight	16.6 kg (with well insert) (Approx.)

Note: Due to continuous product improvements, Published specifications may change with out notice

## **SANSELSOFT Calibration software (optional)**

Optional fully automatic documentation calibration software “SANSELSOFT” is provided with TCAL 1503 / -45 to calibrate different variety of UUC automatically from your PC or Laptop and generate the calibration report with exact results without your presence always near TCAL 1501 / -45 , will save your time to concentrate in various jobs. The SANSELSOFT calibration software having easy following steps makes your calibration easy , effective & time saver.

### **Step 1**

- ❖ Create tag of Device / Unit under calibration (DUC/ UUC)
- ❖ Select tag of Device / Unit under calibration (DUC/ UUC) (if already tag created)

### **Step 2**

- ❖ Specify calibration procedure

### **Step 3**

- ❖ Select source calibration
- ❖ Select measurement calibration (if different measurement equipment available)

### **Step 4**

- ❖ Select mode of calibration
- ❖ Select mode of Measurement (if different measurement equipment available)

### **Step 5**

- ❖ Initialize source / Measurement Calibrators

### **Step 6**

- ❖ Perform calibration

### **Step 7**

- ❖ Specify Report number, Conclusion & Remarks

### **Step 8**

- ❖ Print / Export Report

SANSELSOFT designed for perform calibration on field instruments with the use of standards and software communication. This software designed in the way, user can easily perform calibration. SANSELSOFT has powerful database support to maintain complete track records of each device calibration for long time.

SANSELSOFT supports communication interface standards RS 232 and provides facility to add new standard/DUC instrument library. SANSELSOFT can be adopted for various types of instruments like electronic, electrical, temperature, pressure and optical measurement devices. SANSELSOFT increases Standard's Life-time by eliminating key operations and saves maintenance cost.

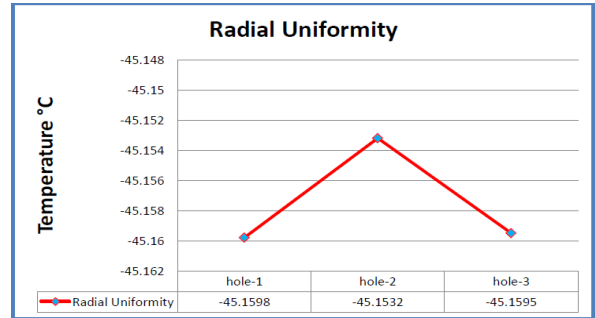
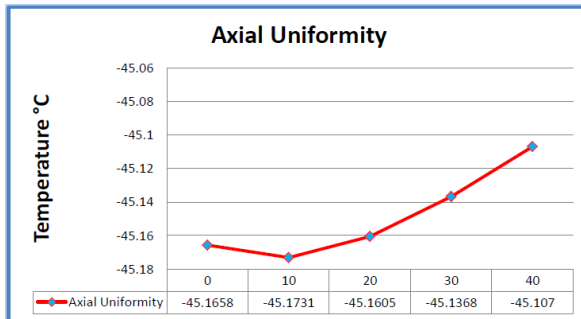
## Standard Delivery

1. Basic Instrument
2. Instruction Manual
3. Traceable Calibration Certificate
4. Mains Card
5. Spare Fuses
6. Well tool
7. Standard well insert – 2 nos

## Optional

1. Master Indicator with sensor
2. Additional well insert
3. Carrying case

## Axial & Radial Uniformity chart



Carrying case



## SANSEL INSTRUMENTS AND CONTROLS SANSEL CALIBRATION LABORATORIES

ISO/IEC 17025 Accredited Calibration Laboratory by NABL CC - 2879

( Thermal, Mechanical, Electro-Technical, Dimension Parameters )

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