

# 4500 High Accuracy SMART PROBE THERMOMETER

The **Model 4500** Series Ultra-High Accuracy Thermometer takes metrology-level temperature measurement to the laboratory, the production floor and the field.

Ultra-high system accuracy is achieved because the thermometer and probe function as if they were calibrated together as a system even though they can be purchased separately. The 4500 System uses coefficients stored in each probe with the Steinhart-Hart algorithm to calculate the exact temperature reading every time you plug in a probe to take a measurement.

The 4500 series thermometers accept a wide range of plug-in probes equipped with proprietary Smart Probe system. The probes utilize super stable thermistors capable of providing high resolution, fast response and ultra high accuracy.



**4500 Thermometer**

**For a complete system choose the 4500 Thermometer and one or more probes of your choice.**

## **System Features**

- ..High system accuracy
- ..NIST Traceable calibration included
- ..Interchangeable temperature probes
- ..Hand-held Flexibility
- ..Hold reading button
- ..°C/°F Display
- ..Auto Shut Off
- ..Three Decimal Place Mode
- ..Delta T
- ..Function Keys
- ..Min/Max reading
- ..RS-232 serial port




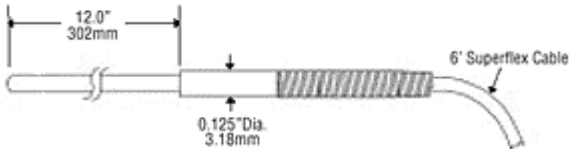
## **Applications**

- ..Calibrate/verify your PCR Thermal Cycler
- ..Reference thermometer for your liquid bath
- ..Clinical Laboratory Quality Control
- ..Chemical & Petroleum Regulatory/Safety
- ..Metrology
- ..DNA Thermal Cycler Plate Uniformity
- ..Autoclave Integrity

## **Specifications**

- Resolution:** 0.001° C. step change
- Display:** LCD 4 1/2 digit 0.6" high. Function icons.
- Maximum Meter Range:** -40 to +150°C (-40 to +299°F)
- Power:** 9 volt Alkaline battery or external 12 VDC. Battery life 25 hours, typical; 15 with RS-232.
- Reading Rate:** 2 per second (update every 524 milliseconds)

## Smart Probes for Model 4500 Thermometer - plug & play

<p><b>SP230 0.2ml probe</b></p> <p><b>Temperature probe for 0.2 ml well thermal cyclers</b>            Temperature Range: 4°C to +99°C            Accuracy: <math>\pm 0.10^{\circ}\text{C}</math>            (accuracy specification includes 4500 thermometer)</p>	 <p><b>SP230 Probe 0.2ml probe</b></p>
<p><b>SP250 0.5ml probe</b></p> <p><b>Temperature probe for 0.5 ml well thermal cyclers</b>            Temperature Range: 4°C to +99°C            Accuracy: <math>\pm 0.10^{\circ}\text{C}</math>            (accuracy specification includes 4500 thermometer)</p>	 <p><b>SP250 Probe 0.5ml probe</b></p>
<p><b>SP210 0.02ml probe</b></p> <p><b>Temperature probe for 384 well (0.02 ml) thermal cyclers</b>            Temperature Range: 4°C to +99°C            Accuracy: <math>\pm 0.10^{\circ}\text{C}</math>            (accuracy specification includes 4500 thermometer)</p>	 <p><b>SP210 Probe 0.02ml probe</b></p>
<p><b>SP646 Stainless Steel G.P. probe</b></p> <p><b>Stainless Steel Tube Probe For water baths, block calibrators &amp; other general purpose use</b></p> <p>Sheath Size: 0.156"(5/32")dia. x 12.0"L            Temperature Range: -40°C to +150°C            Accuracy: 0 to 100°C <math>\pm 0.025^{\circ}\text{C}</math>                          -25 to 125°C <math>\pm 0.05^{\circ}\text{C}</math>                          -40 to 150°C <math>\pm 0.15^{\circ}\text{C}</math>            (accuracy specification includes 4500 thermometer)</p>	 <p><b>SP646 Stainless Steel Probe for general purpose use</b></p>