

## HIGHLIGHTS

- ✓ Affordable reference probe
- ✓ Accuracy  $\pm 0.015$  °C at 0.01 °C
- ✓ Temperature range: -200 °C to 670 °C
- ✓ Customized dimensions available



## OVERVIEW

AM1751 Secondary Reference PRT provides our customers an affordable reference probe for precision temperature measurement and calibration. This PRT features accuracy of  $\pm 0.015$  °C at 0.01 °C and short term stability of  $\pm 0.007$  °C. Two different lengths of PRTs are available at 12-inch and 20-inch.

The sensing element is designed to protect the platinum sensing wire from contamination at high temperatures, giving the device a high level of stability and repeatability in performance. A uniquely designed support structure and filling material provides excellent balance between the hysteresis effect, mechanical shock and thermal shock performance. This high performance probe fully meets ITS-90 criteria for reference thermometers.

## FEATURES

- Temperature range: -200 °C to 670 °C
- Accuracy:  $\pm 0.015$  °C at 0.01 °C
- Long term drift:  $\pm 0.01$  °C
- Short term stability: 0.007 °C
- Durable and shock resistance
- Temperature Coefficient 0.003925  $\Omega / \Omega / ^\circ\text{C}$
- $W(\text{Ga}) \geq 1.11807$
- Inconel™ sheath
- Customized dimensions available

## SPECIFICATIONS

<b>Temperature Range</b>	1751-12: -200 °C to 670 °C 1751-20: -200 °C to 670 °C
<b>Resistance at 0 °C</b>	Nominal 100 Ω
<b>Temperature Coefficient</b>	0.003925 Ω/ Ω/°C
<b>Accuracy</b>	±0.025 °C at -196 °C ±0.015 °C at 0.01 °C ±0.035 °C at 420 °C ±0.05 °C at 661 °C
<b>Drift</b>	±0.01 °C at TPW after 100 hours at 661 °C
<b>Short Term Stability</b>	±0.007 °C
<b>Thermal Shock</b>	±0.005 °C after 10 times thermal cycles from minimum to maximum temperatures
<b>Hysteresis</b>	≤0.005 °C
<b>Self-heating</b>	50 mW/°C
<b>Response Time</b>	9 seconds for 63% response to step change in water moving at 3 feet per second
<b>Measurement Current</b>	0.5 mA or 1 mA
<b>Sensor Length</b>	32 mm
<b>Sensor Location</b>	5 mm from tip
<b>Insulation Resistance</b>	>1000 MΩ at room temperature
<b>Sheath Material</b>	Inconel™
<b>Dimension</b>	1751-12: 0.25 inch X 12 inch (6.35 mm X 305 mm) 1751-20: 0.25 inch X 20 inch (6.35 mm X 500 mm)
<b>External Leads</b>	Teflon™ –insulated copper wire, 4 leads, 2.5 meters
<b>Handle Dimension</b>	15 mm (OD) X 65 mm (L)
<b>Handle Temperature Range*</b>	-50 °C to 180 °C
<b>Optional Calibration</b>	NIST traceable calibration and data available per request, Ordering # 5007

\*Handle temperature outside this range will cause damage to the probe.

## OPTIONAL ACCESSORIES

Model	Description
9001	Wooden Carrying Case for 1751-12
9002	Wooden Carrying Case for 1751-20