

## HIGHLIGHTS

- ✓ Affordable reference probe
- ✓ Accuracy  $\pm 0.015$  °C at 0.01 °C
- ✓ Temperature range: -200 °C to 420 °C
- ✓ Customized dimensions available



## OVERVIEW

AM1730 series Secondary Reference PRT provides our customers an affordable reference probe for precision temperature measurement and calibration in labs and fields. The PRT features accuracy of  $\pm 0.015$  °C, short term stability of  $\pm 0.007$  °C. Two different lengths of PRTs are available at 9-inch and 12-inch.

To reach the best performance in stability and repeatability, the sensing element is specially designed to protect the platinum sensing wire from contamination at high temperature. A unique support structure and filling material provide the best balance among the hysteresis effect, mechanical shock and thermal shock performance. This high performance probe meets ITS-90 criteria of reference thermometer fully.

## FEATURES

- Temperature range: -200 °C to 420 °C
- Accuracy:  $\pm 0.015$  °C
- Long term drift:  $\pm 0.01$  °C
- Short term stability: 0.007 °C
- Durable and shock resistance
- Temperature Coefficient 0.003925
- $W(Ga) \geq 1.11807$
- Inconel™ sheath
- Customized dimensions available

## SPECIFICATIONS

|                           |                                                                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature Range         | 1730-12: -200°C to 420°C<br>1730-9: -60°C to 300°C                                                                                                                         |
| Resistance at 0 °C        | Nominal 100 Ω                                                                                                                                                              |
| Temperature Coefficient   | 0.003925 Ω/ Ω/°C                                                                                                                                                           |
| Accuracy                  | ±0.025°C at -196 °C<br>±0.015°C at 0.01 °C<br>±0.035°C at 420 °C                                                                                                           |
| Drift                     | ±0.01°C at 0 °C after 100 hours at 420 °C                                                                                                                                  |
| Short Term Stability      | ±0.007°C                                                                                                                                                                   |
| Thermal Shock             | ±0.005°C after 10 times thermal cycles from minimum to maximum temperatures                                                                                                |
| Hysteresis                | ≤0.005°C                                                                                                                                                                   |
| Self-heating              | 50 mW/°C                                                                                                                                                                   |
| Response Time             | 9 seconds for 63% response to step change in water moving at 3 feet per second                                                                                             |
| Measurement Current       | 0.5 mA or 1 mA                                                                                                                                                             |
| Sensor Length             | 32 mm                                                                                                                                                                      |
| Sensor Location           | 5 mm from tip                                                                                                                                                              |
| Insulation Resistance     | >1000 MΩ at room temperature                                                                                                                                               |
| Sheath Material           | Inconel™                                                                                                                                                                   |
| Dimension                 | 1730-12: 0.25 inch X 12 inch (6.35 mm X 305 mm)<br>1730-9: 0.187 inch X 9 inch (4.75 mm X 229 mm)                                                                          |
| External Leads            | Teflon™ –insulated copper wire, 4 leads, 2.5 meters                                                                                                                        |
| Handle Dimension          | 1730-12: 15mm (OD) x 65mm (L)<br>1730-9: 10mm (OD) X 50 mm (L)                                                                                                             |
| Handle Temperature Range* | -50°C to 180°C                                                                                                                                                             |
| Calibration Options       | 1730-12-T, PRT with NIST traceable calibration and data<br>1730-9-T, PRT with NIST traceable calibration and data<br>NVLAP - Accredited Calibrations available per request |

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

## OPTIONAL ACCESSORIES

| Model | Description          |
|-------|----------------------|
| 9001  | Wooden Carrying Case |



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