

### MODEL K22

## Comparison Calibration Cryostat

Primarily intended for the comparison of long-stem Standard Platinum Resistance Thermometers (SPRTs), the Model K22 cryostat provides the best uniformity, stability and the broadest operating range available. The safe, stable and uniform environment allows users to compare up to seven long stem thermometers.

System performance rivals fixed point cells in accuracy and precision along the range from  $-190$  to  $+2$  °C at a fraction of the cost. In addition, the ability to compare thermometers at temperatures between the fixed points provides an additional check on your calibrations. The system operates economically over the complete range from the Triple Point of Argon through the Triple Point of Water, using Liquid Nitrogen as an expendable coolant. Six peripheral thermowells are arranged off-axis at an angle of approximately  $2.2^\circ$  to allow the sensing end of the thermometer to be in close proximity to the center thermowell while still providing generous clearance for the termination end of the thermometer.

Interactive user interface on a sloping front panel provides convenient system control in a stand-alone configuration. Optional remote interfaces, (RS-232 or IEEE-488), allow users to integrate the K22 into an automated calibration system, dramatically increasing throughput and reducing the cost of primary-level calibrations.



### SPECIFICATIONS

System Operating Range:	$-190^\circ\text{C}$ to $+2^\circ\text{C}$
Control Stability:	Typical $\pm 0.0005^\circ\text{C}$ over 15 minutes
Thermowells:	7ea. Type 304 Stainless Steel $\approx 0.315$ " (8.0 mm) I.D. $\approx 16$ " (406 mm) deep
Power Requirements:	120 / 240 Volts 8 / 4 Amps Max. A.C. 47 - 63 Hz.
Refrigerant:	Liquid nitrogen
Cabinet Dimensions:	18" (46 cm) wide 20" (51 cm) deep 36" (92 cm) high
Safety Features:	Adjustable primary high temperature alarm shutoff Redundant watch dog shutoff

### TO ORDER, OR FOR MORE INFORMATION:

PHONE – (303)651-1678

FAX – (303)651-1668

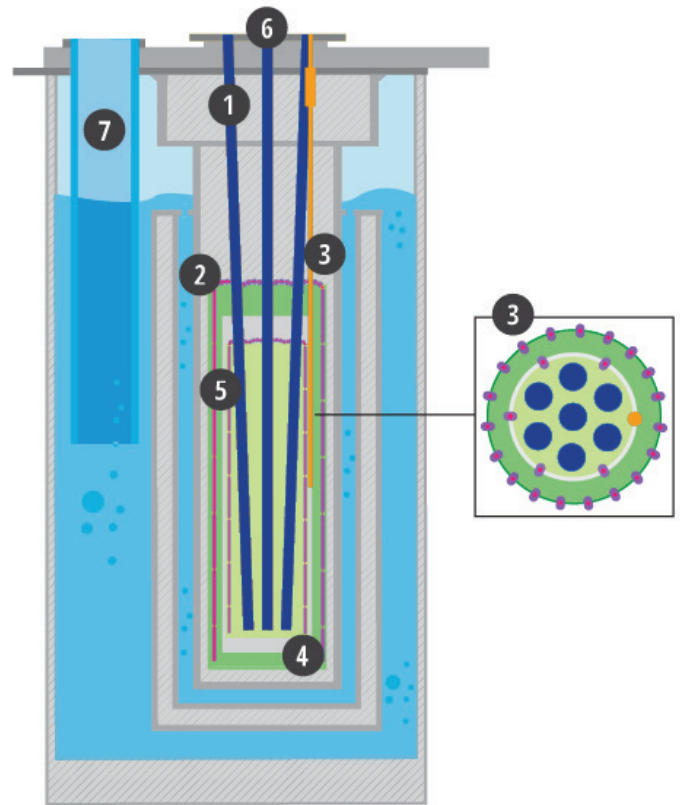
EMAIL – [info@pondengineering.com](mailto:info@pondengineering.com)

All specifications subject to change without notice.

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# KEY TECHNICAL FEATURES

- 1 Peripheral wells, angled off-axis, place thermometer tips in close proximity, minimizing well-to-well differences while leaving plenty of room for thermometer handles above the cryostat
- 2 Linear D.C. heater drive electronics and bifilar heater orientation minimize electrical interference with precise thermometer resistance measurements
- 3 High-precision PRTs with 20-bit ratiometric signal conditioning are used for all temperature sensing, eliminating thermocouple drift
- 4 Thermally floating inner core of oxygen-free high-conductivity copper ensures excellent control of axial and circumferential gradients. Typical well-to-well differences are  $<0.0005^{\circ}\text{C}$  with control stability better than  $0.0005^{\circ}\text{C}$  over 15 minutes
- 5 Transient boost heaters, also in bifilar orientation, around the inner core reduce setpoint transition times (less than 90 minutes for  $100^{\circ}\text{C}$  shift)
- 6 Seven thermowells provide unprecedented throughput
- 7 Liquid nitrogen fill port and internal storage dewar ensure continuous purging of thermowells with dry nitrogen vapor to prevent atmospheric gas condensation or freezing



RANGE OF APPLICATION  $-190$    $+2$

