

MODEL K12

Comparison Calibration Furnace

Primarily intended for the comparison of long-stem Standard Platinum Resistance Thermometers (SPRT), the Model K12 furnace provides the best uniformity, stability and the largest operating range available. Designed for the United States Air Force primary metrology laboratory, this furnace is currently being used to calibrate USAF standards for labs throughout the world. The system provides an extremely safe, stable and uniform environment for comparison of up to seven long-stem thermometers.

With new 32-bit signal conditioning, the K12 furnace performance rivals the accuracy and precision of fixed point cells across the full range from 90 to 665 °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 broad operating range—slightly beyond the Aluminum point—allows users to anneal thermometers at the recommended 5 °C above the highest calibration point. With this system, users can complete setpoint transitions in less than 90 minutes, with virtually no temperature overshoot, even in large changes.

Interactive user interface provides convenient system control in a stand-alone configuration. Optional remote interfaces, (RS-232 or IEEE-488), allow the system to serve as an integral part of a completely automated calibration system, dramatically increasing throughput and reducing the cost of primary calibrations.

Standard safety features include a user-adjustable primary high temperature limit to protect standards from extreme temperatures, and a fail-safe watch dog safety to prevent thermal run-away. The system requires no laboratory ventilation system because it emits no gasses or vapors, even at the highest operating temperatures. And, unlike many similar systems, the K12 Comparison Furnace contains absolutely no asbestos products.

TO ORDER, OR FOR MORE INFORMATION:

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SPECIFICATIONS

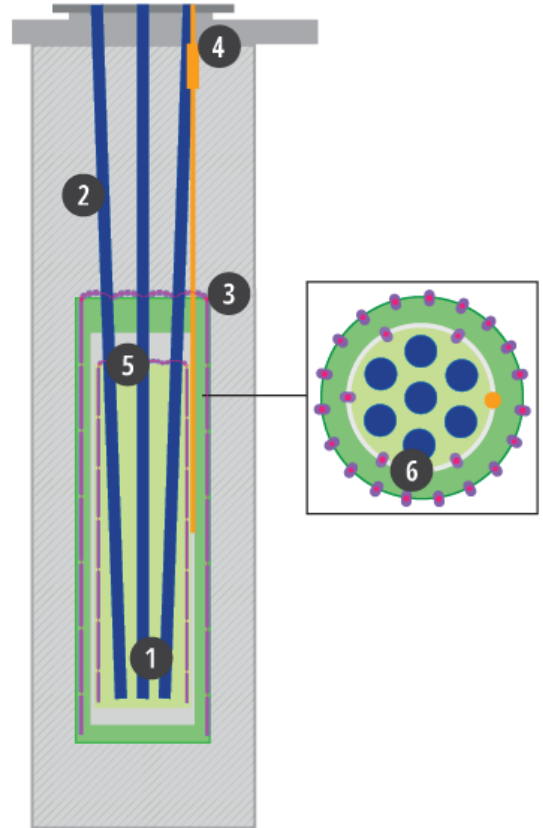
System Operating Range:	90°C to 665°C
Control Stability:	Typical +/-0.000 5°C over 15 minutes
Thermowells:	7ea. Series 600 Inconel ≈0.315" (8.0 mm) I.D. ≈16" (406 mm) deep
Power Requirements:	120 Volts 8 Amps A.C. 47 - 63 Hz.
Cabinet Dimensions:	18" (46 cm) wide 20" (51 cm) deep 36" (92 cm) high
Safety Features:	Adjustable primary high temperature alarm shutoff Redundant watch dog shutoff Emits no vapors or gasses Contains no asbestos

All specifications subject to change without notice.

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KEY TECHNICAL FEATURES

- 1 Peripheral wells, angled-off axis, places thermometer tips in close proximity, minimizing well-to-well differences while still leaving plenty of room for thermometer handles above the furnace
- 2 Dry well comparison furnace emits no fumes or vapors, eliminating many safety concerns and the need to provide fume hoods for high temperature operation
- 3 Linear D.C. heater drive electronics in conjunction with bifilar heater construction minimize electrical interference with precise thermometer resistance measurements
- 4 High temperature PRTs with 32-bit ratiometric signal conditioning are used for all temperature sensing, eliminating thermocouple drift
- 5 Thermally floating inner core constructed of oxygen-free high conductivity copper ensures excellent control of both axial and circumferential gradients. Typical well to well differences are considerably less than 0.001 °C with control stability better than 0.000 5 °C over 15 minutes
- 6 Transient boost heaters, in bifilar orientation, placed around the inner core help provide excellent setpoint transition times, typically less than 90 minutes for a 100 °C setpoint shift. This, in conjunction with 7 thermowells, provides unprecedented accuracy and throughput for primary level calibrations



RANGE OF APPLICATION 90 665

