

Model K34M/XR Secondary Metrology Furnace

Pond Engineering's K34 Furnace provides an affordable, compact system for the preparation and maintenance of Secondary Metal Fixed Point Cells. Optional comparison blocks allow users to perform precision calibration from 90 C to 1000 C. The innovative two-zone furnace offers the user active control of both the primary setpoint and temperature gradient between the main zone and guard block.

Core and guard zone blocks of machined graphite suspended in a high-temperature vacuum insulation jacket maximize efficiency. This configuration provides excellent axial and circumferential gradient control while maintaining a wide setpoint operating range. A single furnace, with the optional extended temperature range configuration, covers the entire range of ITS-90 metal fixed points from Indium through Silver. Custom configurations with even higher upper operating temperature limits available upon request. Rapid heating and stabilization times coupled with integrated user prompts and configuration functions make calibrations quick and simple.

Interactive controls on a sloping front panel increase usability in a stand-alone configuration. Optional remote interface (RS-232 or IEEE-488) allows users to integrate the K23 into an automated calibration system. Communication software available for either interface option allows users to monitor and configure the system from any remote computer with a graphical user interface.

Accessories include a full range of Metal Fixed Point Cells and equilibration blocks for use up to 670 C or 1000 C respectively. The high temperature block features seven Inconel thermowells in a graphite block under a sealed inert gas atmosphere. Both blocks are configured with one center well on axis and six peripheral wells oriented 2.2 degrees off axis.



System Specifications

System Setpoint Range:	K34M : 150 °C to 670 °C K34XR : 150 °C to 1000 °C
Control Stability:	K34M : +/- 0.01 °C K34XR : +/- 0.02 °C
Setpoint Accuracy:	K34M : +/- 0.3 °C K34XR : +/- 0.5 °C
Main Well:	Series 600 Inconel 1.66"(42mm)Dia., 12"(304mm)Deep.
Preheat Well:	Series 600 Inconel 0.325"(8.2mm)Dia. 12"(304mm)Deep.
Operator Interface:	Manual Front Panel (Optional IEEE-488 or RS-232 Remote)
Power Requirements:	120 Volts, 5 Amps Maximum A.C. 60 Hz. (Other Input Power Available on Special Order)
Ambient Operating Range:	15 °C to 30 °C Non Condensing
Cabinet Physical Dimensions:	12"(30.5cm)Wide 8.5"(21.6cm)Deep 18"(45.7cm)High

To Order or For More Information:

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① High Temperature evacuated multilayer insulation allows for the use of a low level power supply, even in high temperature operation, and improve temperature uniformity.

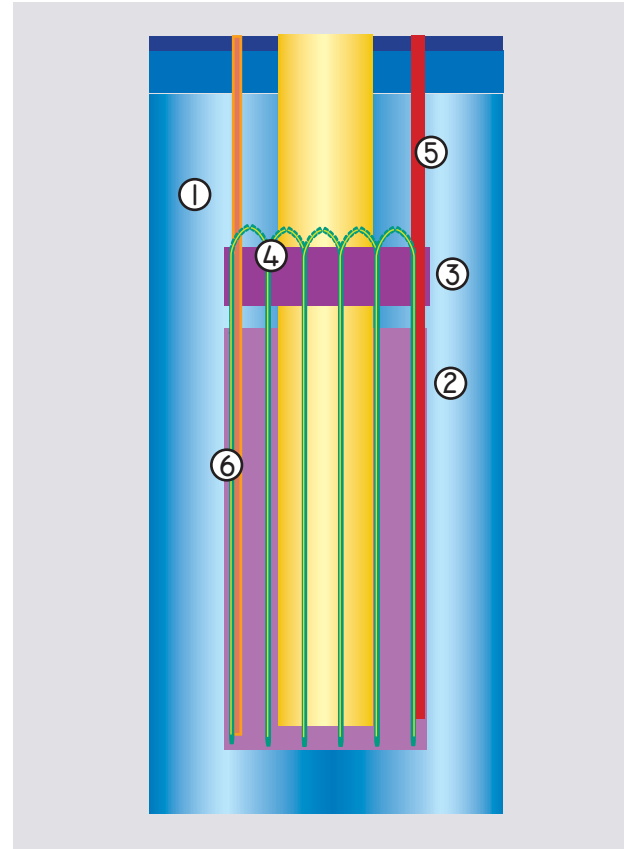
② Main zone of machined graphite, with nearly 10 times the thermal conductivity of nickel - iron alloys, provides exceptional temperature uniformity.

③ Guard block, driven by an integrated two zone controller, eliminates axial gradients and even compensates for the stem conduction of the particular thermometers you are calibrating.

④ Heater assemblies in bifilar orientation, with linear DC drive electronics, minimize inductive coupling with thermometers and electrical noise interference with measuring instruments.

⑤ High temperature platinum resistance thermometers with 20 bit ratiometric signal conditioning (no thermocouples) provide unsurpassed stability and accuracy.

⑥ Overtemperature protection (both primary and secondary) is ensured by dual sensors and integrated microprocessor based controller with watchdog safety shutoffs.



Range of Application 90  1100

