PR331 Short Multi-zone Temperature Calibration Furnace

PANRAN

- ✓ Short precious metal thermocouple verification
- ✓ Short base metal, thin film thermocouple calibration
- ✓ Uniform temperature field position adjustable
- ✓ No isothermal block is required

Typical Applications:

- Short precious metal thermocouple verification
- Short base metal thermocouple calibration
- Thin film thermocouple calibration

PR331 series Short-type Temperature Calibration Furnace using innovative technologies such as multi-zone coupling control, DC heating, automatic heat dissipation, etc., It has the function of adjusting the position of the uniform temperature field and the uniformity of the temperature field covering the full temperature range, which greatly reduces the uncertainty caused by the constant temperature source during the traceability of the short thermocouple.

I. Features

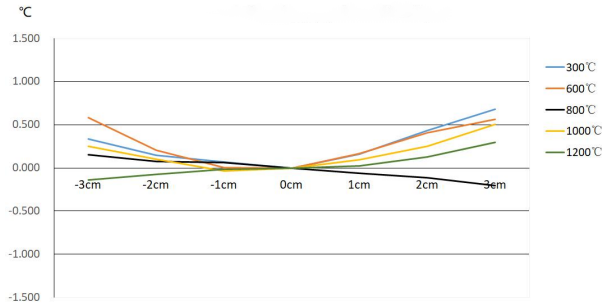
1. The Position of Uniform Temperature Field is Adjustable

The three-zone heating technology is adopted, which is convenient to adjust the position of the uniform temperature field.In order to better match thermocouples of different lengths,Two temperature field positions, 100mm and 150mm away from the furnace mouth, are preset in the program to correspond to the

sensors being calibrated with different lengths.

2. Temperature Field Uniformity Covering the Full Range

Excellent temperature field distribution characteristics can be obtained in the range of 300℃～1200℃ without using a isothermal block. The maximum temperature difference in the 40mm axial space in the central area ≤ 0.8℃, and the temperature gradient ≤ 0.3℃/10mm.



Distribution characteristics of typical central temperature field at different temperature points

3. The full Range Temperature Stability is Better Than 0.2℃/10min

Integrated Panran's new generation PR2601 master controller,with 0.01-class electrical measurement accuracy, and according to the control requirements of the calibration furnace,targeted optimizations has been made in terms of measurement speed, reading noise, control logic, its full-scale temperature stability is better than 0.2℃/10min.

4. Full DC Drive with Automatic Heat Dissipation

The power components are driven by full DC,which avoids the disturbance caused by electric leakage at high temperature and other high-voltage safety hazards from the source. At the same time, the controller will automatically adjust the heat dissipation according to the current working conditions, so that the temperature balance in the furnace cavity can be achieved as soon as possible.

5. Various Types of Thermocouples are Available for Temperature Control

Short thermocouples vary greatly in size and shape.In order to more flexibly adapt to different thermocouples to be calibrated, a thermocouple socket with integrated reference end compensation is designed, which can quickly connect various types of temperature-controlled thermocouples.

II. Other Functions

■ Temperature control sensor multi-temperature points correction ■ Adaptive temperature control parameters ■ Real-time temperature, power curve display ■ Built-in reference junction compensation	■ Custom temperature fluctuation calculation ■ Custom alarm temperature upper and lower limits ■ WIFI expandable ■ Optional units °C, °F, K

III. Technical Parameters

1. Product Selection and Technical Parameters(300℃～1200℃)

Item \ Model	PR331A	PR331B	Remarks
Front 100mm Temperature Field	●	○	Temperature upper limit 1000℃
Working Temperature Range	300℃～1200℃		/
Temperature Stability	≤0.2℃/10min		/
Temperature Control Accuracy	0.6℃, when ≤600℃ 0.1%RD, when ＞600℃		Center point temperature
Radial Temperature Field Uniformity	≤0.5℃		Furnace cavity geometric center
40mm Axial Temperature Field	Uniformity ≤0.8℃ Gradient ≤0.3℃/10mm		300℃～1200℃ Furnace cavity geometric center ±20mm
60mm Axial Temperature Field	Uniformity ≤1.5℃ Gradient ≤0.6℃/10mm		300℃～1200℃ Furnace cavity geometric center ±30mm

2. General Technical Parameters

Item	Parameters
Furnace Cavity Dimension	φ40mm×300mm
Dimensions	370×250×500mm (L×W×H)
Weight	22kg
Rated Power	1.5kW
Power Supply	220VAC±10%
Working Environment	-5～35℃, 0～80%RH Non-condensing

Storage Environment	-20～70℃, 0～80%RH Non-condensing