

# **PR310 Series Thermocouple Calibration Furnace**

**PANRAN**

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PANRAN instruments are available in South Africa from Intercal (Pty) Ltd

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The PR310 series thermocouple calibration furnaces feature built-in different temperature field accessories, which can meet the verification/calibration needs of thermocouples with different types. This product complies with the requirements of JJF 1184-2024 "Test Specification for Temperature Uniformity in Thermocouple Calibration Furnaces", and features a wide temperature field range, fast heating and cooling speeds, and excellent long-term stability.



## I Technical Parameters

### ■ General Technical Parameters

Furnace cavity dimension	Φ40mm×600mm
Dimensions	680mm×520mm×380mm
Weight	25kg
Rated power	3kw
Working environment	(-5~35)°C, (0~80)%RH, non-condensing

### ■ Temperature Field Specification

Model	PR310A	PR310B	PR310C	PR310H
Applicable Scope	S/R working thermocouple verification/calibration	Sheathed thermocouple calibration	Base metal thermocouple calibration	Thermocouple calibration
Temperature Range(°C)	300°C~1200°C			300°C~1300°C

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Control Thermocouple Type	S	N	N	Optional S/N
Matching Isothermal Block	Coaxial Cleaning Ceramic Tube (Inner Diameter approx. $\phi 20\text{mm}$ )	Optional PR1142A/B Isothermal Block	Optional PR1145A/B Isothermal Block	Optional Coaxial Cleaning Ceramic Tube / PR1142A / PR1145A
Regulations/ Specifications	JJG141-2013	JJF1262-2010	JJF1637-2017	Customized products, one type of temperature field accessory can be optionally selected as needed to meet the requirements of corresponding regulations and specifications.
Test Temperature Point	420°C, 1000°C, 1085°C	400°C, 1000°C	400°C, 1000°C	
Temperature Field Specification	The maximum temperature point inside the furnace deviates from the geometric center of the furnace by no more than 20mm, and within $\pm 20\text{mm}$ of the maximum temperature point, there is a uniform temperature field with a temperature gradient $\leq 0.4\text{ }^\circ\text{C}/10\text{mm}$ .	Within 30mm axially from the bottom of the hole, the temperature difference shall not exceed $0.5\text{ }^\circ\text{C}$ ; the absolute value of the temperature difference between any holes in the same cross-section at the bottom of the hole shall $\leq 0.25\text{ }^\circ\text{C}$ .	Within the axial 30mm of the effective working area, the absolute value of the temperature difference between any two points shall $\leq 0.5\text{ }^\circ\text{C}$ ; within the radial radius of not less than 14mm, the absolute value of the temperature difference between any two points on the same cross-section shall $\leq 0.25\text{ }^\circ\text{C}$ .	

■ Matching Isothermal Block



Coaxial Cleaning Ceramic Tube



PR1142 Isothermal Block



PR1145 Isothermal Block

■ Basic Parameters of Isothermal Block

Model	PR1142A	PR1142B	PR1145A	PR1145B
Material	Nickel-based alloy	High-temperature alloy	Nickel-based alloy	High-temperature alloy
Temperature resistance	1300°C	1100°C	1300°C	1100°C
Length	115mm		154mm	
Insertion depth	90mm		135mm	
Opening	$\phi 8\text{mm} \times 7\text{ pcs}$		$\phi 28\text{mm}$	

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## II. Additional Thermocouple Calibration Equipment

### ■ Short Thermocouple Calibration Furnace



Model	PR321A	PR321E
Applicable scope	Short thermocouple	Short base metal thermocouple
Temperature range	300°C~1200°C	300°C~1200°C
Furnace cavity dimension	Φ40×300mm	Φ40×300mm
Temperature field specification	The temperature difference within 40mm is $\leq 1^{\circ}\text{C}$	Built-in isothermal block: within 30mm of the axial direction from the bottom of the hole, the absolute value of the temperature difference between any two points is $\leq 1^{\circ}\text{C}$ ; the absolute value of the temperature difference between any two points on the same section at the bottom of the hole is $\leq 0.5^{\circ}\text{C}$

### ■ Thermocouple Annealing Furnace



Model	PR323
Applicable scope	Working noble metal thermocouple

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Temperature range	300~1100°C
Furnace cavity dimension	Φ40×1000mm
Temperature field specification (1100°C)	The furnace operates at a common temperature of 1100°C, featuring a uniform temperature zone of ±20°C. The length of the uniform temperature zone exceeds 400 mm, with one end positioned within 100 mm from the furnace opening
Regulations/specifications	JJG 141-2013 Verification Regulation of Working Noble Metal Thermocouples

Note: Please specify sealing test or opening test when ordering

■ **SPRT Annealing Furnace**



Model	PR340
Applicable scope	Standard platinum resistance thermometer
Temperature range	200~700°C
Opening size	Φ8mm×3
Temperature field specification	When the furnace temperature is stable, the deviation from the set point temperature is less than 5°C, and the fluctuation is ≤0.5°C/min; the length of the uniform temperature field is not less than 60mm, and the temperature difference between any two points in the temperature field is not greater than 1°C
Regulations/specifications	JJG 160-2007 Verification Regulation of Standard Platinum Resistance Thermometer

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