

## TECHNICAL DATA

# Fluke 9118A Thermocouple Calibration Furnace



## Key features

- High-performance thermocouple calibrations up to 1200 °C.
- Horizontal, open-ended tube furnace.
- Temperature range of 300 °C to 1200 °C.
- Comparison calibration of noble and base-metal thermocouples by secondary high-temperature labs and instrument shops.
- Ideal for industries such as aerospace, automotive, energy, metals, and plastics.

## Product overview: Fluke 9118A Thermocouple Calibration Furnace

*Precision Calibration for High-Temperature Thermocouples*

The Standard for High-Temperature Thermocouple Calibration

The Fluke 9118A Thermocouple Calibration Furnace delivers unrivaled performance and flexibility for demanding high-temperature calibration labs. Engineered for accuracy, reliability, and ease of use, the 9118A furnace helps you meet industry standards while improving productivity and lowering cost of ownership.

## Key Features and Benefits of the Fluke 9118A

- **Wide Temperature Range** – Calibrate thermocouples from 300 °C to 1200 °C, covering most high-temperature industrial and laboratory applications.
- **Flexible Configuration** – Easily switch between tube furnace and isothermal block configurations to calibrate a wide variety of thermocouple types—accommodating both base-metal and noble-metal designs.
- **Outstanding Uniformity and Stability** – Achieve industry-best temperature uniformity and stability:
  - Axial uniformity:  $\pm 0.2$  °C over a 60 mm zone at 1200 °C
  - Radial uniformity:  $\pm 0.25$  °C at 1200 °C (isothermal block)
  - Temperature stability:  $\pm 0.1$  °C or better across the full range
- **Automated Setpoint Control** – Boost lab productivity with programmable, automated temperature setpoint control. Supports up to eight setpoints, ramp rates, and dwell times—plus remote automation and data logging with the Fluke 1586A Super-DAQ.
- **Non-Metallic, Contamination-Free Block** – Ceramic alumina well and isothermal block minimize thermocouple contamination and reduce ongoing calibration costs.

## Specifications: Fluke 9118A Thermocouple Calibration Furnace

General specifications	
<b>Operating conditions</b>	
<b>Operating temperature</b>	5 °C to 40 °C
<b>Storage temperature</b>	-20 °C to 70 °C
<b>Humidity</b>	80 % maximum for temperatures <31 °C, decreasing linearly to 50 % at 40 °C
<b>Altitude</b>	<2,000 m (6,562 feet)
<b>Power requirements</b>	230 V ac ( $\pm 10$ %), 50/60 Hz, 20 A
<b>Heater power</b>	4000 watts at 230 V ac
<b>Over-current protection</b>	
<b>System</b>	20 A, 250 V resettable circuit breaker
<b>Main heater fuse</b>	F 12 A, 250 V
<b>Zone heater fuse</b>	F 12 A, 250 V
<b>Computer interface</b>	RS-232 and USB
<b>Display</b>	Monochrome LCD, °C or °F user-selectable
<b>Display resolution</b>	0.1 °C or °F
<b>Size (H x W x L)</b>	400 mm x 337 mm x 700 mm (15.7 in x 13.3 in x 27.6 in)
<b>Net weight</b>	29 kg (63.9 lb) without isothermal block
<b>Isothermal block (optional)</b>	
<b>Isothermal block construction</b>	Alumina
<b>Block outer diameter</b>	37 mm (1.5 in)
<b>Block length</b>	380 mm (15.0 in)

<b>Well diameter</b>	(four wells total) 6.7 mm (0.26 in)			
<b>Well depth</b>	365 mm (14.4 in)			
<b>Net weight</b>	0.84 kg (1.9 lb) isothermal block only			
<b>Accuracy specifications</b>				
All accuracy specifications except temperature are for a period of 1 year after calibration, at 13 °C to 33 °C				
<i>The furnace can be used with or without an Isothermal Block installed. Unique calibration parameters are necessary for each configuration. Calibration does NOT come standard from the factory for each configuration. Ensure that the furnace has been properly calibrated for the desired mode of operation.</i>				
<b>Furnace temperature range</b>	300 °C to 1200 °C			
<b>Set-point accuracy</b>	± 5 °C			
<b>Radial uniformity</b>				
<b>Temperature</b>	<b>9118A</b> (14 mm from geometry central point)	<b>9118A-ITB</b> (hole to hole)		
<b>300 °C</b>	± 0.5 °C	± 0.1 °C		
<b>700 °C</b>	± 0.5 °C	± 0.20 °C		
<b>1200 °C</b>	± 0.5 °C	± 0.25 °C		
<b>Axial uniformity</b>				
<b>Temperature</b>	<b>9118A</b> (± 30 mm axial length from geometry central point)	<b>9118A-ITB</b> (at 60 mm from full immersion)		
<b>Full range</b>	± 0.25 °C	± 0.2 °C		
<b>Temperature stability</b>				
<b>Specification</b>	<b>9118A</b>	<b>9118A-ITB</b>		
<b>Stability</b>	± 0.2 °C	± 0.1 °C		
<b>Stabilization time</b>	2 hours, full range	3 hours at or below 700 °C 2 hours above 700 °C		
Note: Temperature stability measured as 2-sigma over 30 minutes				
	<b>9118A</b>	<b>9118A-ITB</b>		
<b>Heating time (23 °C to 1200 °C)</b>	40 minutes	45 minutes		
<b>Cooling time (1200 °C to 300°C)</b>	180 minutes	200 minutes		

## Ordering information



### 9118A

Thermocouple Calibration Furnace

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### 9118A-ITB

Thermocouple Calibration Furnace with Isothermal Block

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01/2026

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