

# ADT 850 Laboratory Thermocouple Calibration Furnace



- Temperature control from 300°C to 1200°C
- 3-in 1 furnace with 9 unique modes
- Stability of  $\pm 0.1^\circ\text{C}$
- Radial uniformity of  $\pm 0.2^\circ\text{C}$  @ 1200°C
- Axial uniformity of  $\pm 0.2^\circ\text{C}$  @ 1200°C
- Multi-zone temperature control
- Quick cool technology
- Sliding probe holder provides mechanical stability and precise probe depth control
- Pivoting color touchscreen display
- Alumina and metal inserts available
- Patent pending EMF shielding technology
- Advanced safety control
- Wi-Fi Communications

### Overview

Thermocouple calibration work can be challenging. Here at Additel, we understand the difficulties of this type of work. Traditional furnace designs require several individual devices to meet industry standards for various calibration applications. To address this costly reality, Additel has created a multi-purpose furnace to help save time, money and space in your calibration facility. Our new ADT850 Laboratory Thermocouple Calibration Furnace is like having three separate furnaces in one. Users can select optimized settings for shorter probes, longer probes and even annealing purposes. The ADT850 horizontal furnace can be used in (9) different modes/configurations to help meet even the most challenging calibration requirements and standards. Additel's 850 furnace is packed with many additional features and a performance you will not find anywhere else. The ADT850 is commonly used in a multitude of industries such as energy, calibration laboratories, aerospace and metallurgy to name a few. It is generally used by primary and secondary calibration laboratories to calibrate various length noble and base metal thermocouples with the lowest possible uncertainties. Additel's ADT850 is the most stable and versatile furnace available!

### Industrial Design

With our customer's needs in mind, we have designed our all new ADT850 Laboratory Thermocouple Calibration Furnace with a modern look and feel. Users will experience that same easy to use menu structure and touchscreen interface that they have become accustomed to when using genuine Additel products. The display pivots and tilts so users can customize the product to fit their needs.

The ADT850 also includes a sliding probe holder labeled with measurement gradients to help safely insert standard and UUT probes to correct depths. The advanced probe holder design includes a clamp to securely hold the test probe in place at all times.

With an unmatched flexibility, the ADT850 provides calibration and annealing support for a wide variety of thermocouple types and lengths. The unique selectable "mode of operation" integrated into the touchscreen interface allows users to select from (9) different modes, accounting for immersion depths from 200 mm to 370 mm. This coupled with the variety of insert types to accommodate reliable and repeatable measurements for both metal and ceramic style probes, gives users the flexibility to easily calibrate a wide variety of thermocouple sizes and quantities. These groundbreaking features make the ADT850 Laboratory Thermocouple Calibration furnace the most versatile and cost saving full sized thermocouple calibration furnace on the market.



Mode Selection



ADT110-850-ALUM  
Tube Style Furnace Insert (Alumina)










ADT110-850-CUP-LONG  
Cup Style Furnace Insert (Long version – Metal)









**General Specifications**

Specification	ADT 850
Temperature Range	300°C to 1200°C
Heating Time	(23°C~1200°C) 40 mins, (empty well)
Cooling Time	(1200°C~300°C) 90 mins, (empty well)
Operating Conditions	0°C to 50°C, 0-90%RH (0°C~50°C), non-condensing, <2000m altitude
Storage Temperature	-20°C to 70°C
Display Screen	7 in (178 mm) colour touch screen
Display Resolution	0.01°C
Display Accuracy (Long empty chamber mode)	±5°C
Heater Power	4000W (220V AC)
System Power	20 A, 220V ±10% 50/60 Hz
Power Protection	30 A, 250V resettable circuit breaker
SIZE (W x H x L)	342 x 424 x 680 mm (13.5 x 16.7 x 26.8 in)
Weight	45 kg (99.2 lbs) without insert
Communication	Wi-Fi, Bluetooth, USB, LAN
Warranty	1 year

**Performance Specifications**

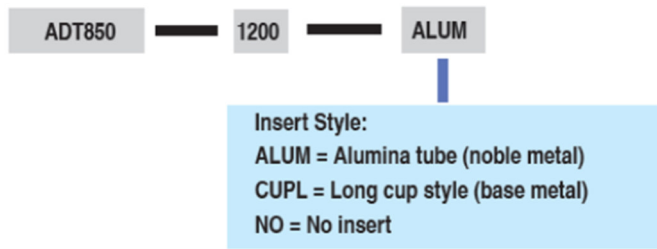
Long (Deep) Immersion				
Mode	Long empty chamber mode	Long cup mode / Long insert mode	Long alumina tube mode	
<b>Application</b>	Noble and base metal TC calibration	Base metal TC calibration	Noble metal TC calibration	
<b>Configuration (insert)</b>	Empty chamber, without insert	Long cup insert or multi-hole insert	20 mm ID alumina tube	
<b>Insert Dimension</b>	N/A	Cup Insert: 36.5 x 28.5 x 80 mm Block insert: 36.5 x 80 mm	26 mm OD x 20 mm ID x 630 mm L	
<b>Immersion Depth</b>	310 to 370 mm (geometrical center: 340 mm)	370 mm to the bottom of insert	310 to 370 mm (geometrical center: 340 mm)	
<b>Stability</b>	±0.1°C full range	±0.1°C full range	±0.1°C full range	
<b>Axial Uniformity</b>	±0.2°C full range (within ±30 mm axial length from geometrical center)	±0.2°C full range (within 60 mm from bottom of the insert)	±0.2°C full range (within ±30 mm axial length from geometrical center)	
<b>Radial Uniformity</b>	±0.2°C @ 300°C ±0.2°C @ 700°C ±0.2°C @ 1200°C (within 14 mm from geometrical center)	±0.1°C @ 300°C ±0.15°C @ 700°C ±0.2°C @ 1200°C (within 14 mm from geometrical center)	N/A	
Short Immersion				Annealing furnace
Mode	Short empty chamber mode	Short cup mode / Short insert mode	Short alumina tube mode	TC Annealing mode
<b>Application</b>	Short noble and base metal TC calibration	Short base metal TC calibration	Short noble metal TC calibration	Nobel metal TC annealing
<b>Configuration (insert)</b>	Empty chamber, without insert	Short cup insert or multi-hole insert	16 mm ID alumina tube	Without insert
<b>Insert Dimension</b>	N/A	Cup Insert: 36.5 x 28.5 x 80 mm Block insert: 36.5 x 80 mm	22 mm OD x 16 mm ID x 630 mm L	N/A
<b>Immersion Depth</b>	200 to 240 mm (geometrical center: 220 mm)	240 mm to the bottom of insert	200 to 240 mm (geometrical center: 220 mm)	100 mm to 500 mm
<b>Stability</b>	±0.1°C full range	±0.1°C full range	±0.1°C full range	±0.1°C full range
<b>Axial Uniformity</b>	±0.5°C in full range (within ±20 mm axial length from geometrical center)	±0.5°C full range (within 40 mm from bottom of the insert)	±0.4°C full range (within ±20 mm axial length from geometrical center)	20°C @ 1100°C within 400 mm range (from 100 to 500 mm)
<b>Radial Uniformity</b>	±0.3°C @ 300°C ±0.3°C @ 700°C ±0.3°C @ 1200°C (within 14 mm from geometrical center)	±0.25°C @ 300°C ±0.25°C @ 700°C ±0.25°C @ 1200°C (within 14 mm from geometrical center)	N/A	N/A

Standard Accessories		
Model	Quantity	Picture
Power Cord.	1 pc	
Network Cable	1 pc	
Type N Control TC-Left	1 pc	
Type N Control TC-Middle	1 pc	
Type N Control TC-Right	1 pc	
Fuse, T12A 250V	3 pcs	
Nickel wire (Expt ADT850-1200-ALUM)	1 roll	
ADT110-850-Alum (Only for ADT 850-1200-Alum)	1 set	
ADT110-850-CUP-LONG (Only for ADT110-850-CUPL)	1 set	
Insulator set	2 sets	
Alumina tube 6 mm OD x 4mm ID x 400 mm L	2 pc.	
Alumina tube 6 mm OD x 4mm ID x 700 mm L	2 pc.	
Report of test with data	1 pc.	

Optional Accessories		
Model	Description	Picture
<b>AM1210-20-CJ or AM1210-20</b>	Reference TC - Type S: Platinum/10% Rhodium vs. Platinum - 20" length (available w/ or without cold junction)	
<b>9085</b>	Ice Point Dewar OD 205mm x ID 130mm x H 320mm, inner depth 260mm (OD 8.07" x ID 5.12" x H 12.60")	
<b>9080</b>	Cable Kit (includes TC plug, compensation cable, S, R, K, J, T, E, N)	
<b>ADT110-850-CUP-LONG</b>	TC calibration Cup for base metal calibrations in the ADT850, includes: long immersion cup insert	
<b>ADT110-850-CUP-SHORT</b>	TC calibration Cup for base metal calibrations in the ADT850, includes: short immersion cup insert	
<b>ADT110-850-INS-LONG</b>	TC calibration Insert, for base metal calibrations in the ADT850 includes: multi-hole insert for deep immersion (7 x 8.5mm ID holes)	
<b>ADT110-850-INS-SHORT</b>	TC calibration Insert, for base metal calibrations in the ADT850 includes: multi-hole insert for short immersion (7 x 8.5mm ID holes)	
<b>ADT110-850-ALUM</b>	TC calibration Kit for noble metal calibrations incl.: 26 mm OD x 20 mm ID x 630 mm L alumina tube (1pc), 20 mm OD insulator (2pc), 22mm OD x 16 mm ID x 630mm L alumina tube (1pc), 16 mm OD insulator (2pcs), 6mm OD x 4 mm ID x 700 mm L alumina tube (2 pcs)	

## Ordering Information

### ■ Model Number



## AM1210-20-CJ Type S Reference Standard Thermocouple

<b>Temperature Range</b>	0°C to 1300°C
<b>Type</b>	Type S: Platinum/10% Rhodium vs. platinum w/ cold junction
<b>Long Term Drift</b>	±0.5°C at 1084.62°C after 1 year typical usage
<b>Short Term stability</b>	±0.2°C at 1084.62°C
<b>Diameter of thermocouple wire</b>	0.5 mm
<b>Sheath Material</b>	Alumina
<b>Sheath Dimensions</b>	OD: 6 mm (0.236"); Length: 600mm (23.6")
<b>External Lead Wire</b>	S type thermocouple wire, 600 mm (23.6")
<b>Protective Carrying Case</b>	Included
<b>Documentation</b>	Report of test with data

Note: ISO 17025 accredited probe calibration available, contact europascal for more information

## ■ TC Calibration Kit Ordering Information

