ADT850

Laboratory Thermocouple Calibration Furnace

Metrology Made Simple

- Temperature control from 300°C to 1200°C
- 3-in-1 furnace with 9 unique modes
- Stability of ±0.1°C
- Radial uniformity of ±0.2°C @ 1200°C
- Axial uniformity of ±0.2°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 is 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!

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com
Rev # 20210419

Corporate Headquarters
2900 Saturn Street #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

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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 accustom too 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.



Mode Selection

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.

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



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

General Specifications

Specification	*ADT850*
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, <2000 m altitude
Storage Temperature	-20°C to 70°C
Display Screen	7 in (178 mm) color touch screen
Display Resolution	0.01°C
Display Accuracy (Long empty chamber mode)	±5°C

Specification	*ADT850*
Heater Power	4000 W (220 V AC)
System Power	20 A, 220 V ±10% 50/60Hz
Power Protection	30 A, 250 V 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***
Application	Noble and base metal TC calibration	Base metal TC calibration	Noble metal TC calibration
Configuration (insert)	Empty chamber, without insert	Long cup insert or multi-hole insert	20 mm (ID) alumina tube
Insert Dimension	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)
Immersion Depth	310 to 370 mm (geometrical center: 340 mm)	370 mm to the bottom of insert	310 to 370 mm(geometrical center: 340 mm)
Stability	±0.1°C full range	±0.1°C full range	±0.1°C full range
Axial Uniformity	±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)
Radial Uniformity	±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

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Performance Specifications

	Short Immersion			Annealing furnance
Mode	**Short empty chamber mode**	**Short cup mode / Short insert mode**	**Short alumina tube mode**	**TC annealing mode**
Application	Short noble and base metal TC Calibration	Short base Metal TC calibration	Short Noble Metal TC calibration	Nobel metal TC annealing
Configuration (insert)	Empty chamber, without insert	Short cup insert or multi-hole insert	16 mm (ID) alumina tube	Without insert
Insert Dimension	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
Immersion Depth	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
Stability	±0.1°C full range	±0.1°C full range	±0.1°C full range	±0.1°C full range
Axial Uniformity	±0.5°C in full range (within ±20 mm axial length from geometrical center)	±0.5°C in 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)
Radial Uniformity	±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

Ordering Information

Model Number

ADT850 — 1200 — ALUM

Insert Style:
ALUM = Alumina tube (noble metal)
CUPL = Long cup style (base metal)
NO = No insert

Accessories

Standard Accessories		
Item / 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.	
Alumina tube (8 mm OD)	4 pcs	
Fuse, T12A 250V	3 pcs	
Nickle wire (Expt ADT850-1200-ALUM)	1 roll	
ADT110-850-ALUM (Only for ADT850-1200-ALUM)	1 set	
ADT110-850-CUP-LONG (Only for ADT850-1200-CUPL)	1 set	
Insulator set	2 sets	
Alumina tube 6 mm OD x 4 mm ID x 400 mm L	2 pcs	
Alumina tube 6 mm OD x 4 mm ID x 700 mm L	2 pcs	
Report of test with data	1 pc.	

TC Calibration Kit Ordering Information

ADT110 — 850 — Style • • Insert Length

- Style: **CUP**, **INS**, **ALUM**
- Insert Length: **LONG**, **SHORT**

Optional Accessories		
Model	***Description***	***Picture***
AM1210-20-CJ or AM1210-20	Reference TC - Type S: Platinum/10% Rhodium vs. platinum - 20" length (available w/ or without cold junction)	
9085	Ice Point Dewar 120 mm OD x 95 mm ID x 300 mm H (4.75" OD x 3.75" ID x 11.8" H)	
9080	Cable Kit (includes TC plug, compensation cable, S,R,B,K,J,T,E,N)	
ADT110-850-CUP-LONG	TC calibration Kit, for base metal calibrations in the ADT850, includes: long cup insert and insulator set	
ADT110-850-CUP-SHORT	TC calibration Kit, for base metal calibrations in the ADT850, includes: short immersion cup insert and insulator set	
ADT110-850-INS-LONG	TC calibration Kit, for base metal calibrations in the ADT850, includes: multi-hole insert for deep immersion (7 x 8.5 mm ID holes) and insulator set	
ADT110-850-INS-SHORT	TC calibration Kit, for base metal calibrations in the ADT850, includes: multi-hole insert for short immersion (7 x 8.5 mm ID holes) and insulator set	
ADT110-850-ALUM	TC calibration Kit, for noble metal calibrations in the ADT850, includes 26 mm OD x 20 mm ID x 630 mm L alumina tube (1 pc), 20 mm OD insulator (2 pcs),22 mm OD x 16 mm ID x 630 mm L alumina tube (1 pc), 16 mm OD insulator (2 pcs), 6 mm OD x 4 mm ID x 700 mm L alumina tube (2 pcs)	

AM1210-20-CJ Type S Reference Standard Thermocouple	
Temperature Range	0°C to 1300°C
Type	Type S: Platinum/10% Rhodium vs. platinum w/ cold junction
Long Term Drift	±0.5°C at 1084.62°C after 1 year typical usage
Short Term stability	±0.2°C at 1084.62°C
Diameter of thermocouple wire	0.5 mm
Sheath Material	Alumina
Sheath Dimensions	OD: 6 mm (0.236"); Length: 600 mm (23.6")
External Lead Wire	S type thermocouple wire 600 mm (23.6")
Protective Carrying Case	Included
Documentation	Report of test with data

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

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