



2-ZONE TUBE FURNACE 1200°C - TT-TF2Z-100- 1200

2-Zone Tube Furnace 1200°C – TT-TF2Z-100-1200 is designed for sintering and high-temperature heat treatment of metals, ceramics, nanomaterials, semiconductors, powder metallurgy, and other advanced materials. It is widely used in universities, research institutions, manufacturing facilities, and sectors such as petrochemical and aerospace.

APPLICATIONS

2-Zone Tube Furnace 1200°C – TT-TF2Z-100-1200

2-Zone Tube Furnace 1200°C – TT-TF2Z-100-1200

2-Zone Tube Furnace 1200°C – TT-TF2Z-100-1200

- **Advanced Ceramics & Structural Materials** – Provides precise two-zone sintering and annealing for ceramics, refractories, and structural composites. Enhances thermal stability, mechanical strength, and oxidation resistance through uniform temperature control.
- **Nanomaterials & Functional Composites** – Enables controlled thermal treatment of nanoparticles, thin films, and engineered composites. Independent zone control ensures reproducibility for advanced material research in electronics, energy storage, and catalysis.

- **Semiconductor & Electronics Industry** – Facilitates oxidation, diffusion, and annealing processes for semiconductor substrates and microelectronic components. Dual-zone precision delivers consistent heating profiles critical for device fabrication.
- **Powder Metallurgy & Alloy Development** – Supports densification, phase transformation, and sintering of metallic powders and advanced alloys. Dual-zone operation ensures better temperature gradients for homogeneous material properties.
- **Chemical & Petrochemical Applications** – Provides accurate high-temperature processing for catalyst activation, decomposition studies, and controlled atmosphere reactions. Widely used for petrochemical testing and industrial laboratory studies.
- **Aerospace Materials Engineering** – Used for the heat treatment of aerospace-grade alloys, superalloys, and protective coatings. Improves fatigue resistance, durability, and performance in extreme environments.
- **Energy & Battery Research** – Suitable for sintering electrodes, electrolytes, and fuel cell materials. Dual-zone capability enhances the precision needed for next-generation battery and hydrogen energy materials.
- **Universities & Research Institutions** – Applied in material science, chemistry, physics, and engineering laboratories. Offers flexible programming, high safety standards, and reproducibility for academic and industrial R&D.
- **Industrial Quality Control & Certification** – Provides consistent high-temperature conditions for product validation and compliance testing. Meets international standards including ISO9001, CE, SGS, and TÜV.

Furnace Shell

- Constructed from Q235 low-carbon steel, the shell features an electrostatically resistant, corrosion-resistant finish. A durable double-layer metal frame integrates with a heat-insulating fan structure to maintain a low external temperature. The horizontal layout with a top-opening design ensures convenient operation.

Refractory Material

- The multi-layer insulation system combines lightweight alumina ceramic fiber with a high-performance insulation board. It is asbestos-free, offering low heat loss and reduced energy consumption.

Heating System

- Equipped with high-quality HRE heating elements, the system delivers efficient, radiation-based heating throughout the chamber. The elements are arranged in a ring or on both sides for excellent thermal uniformity. The dual-zone design allows each zone to be controlled independently for enhanced temperature consistency.

Temperature Control Panel

- Utilizes PID and SSR control for precise temperature regulation. Features a high-grade N-type nickel-chromium-silicon thermocouple with a measurement range of 0–1300°C and extended durability. A built-in safety switch powers off the unit when the furnace door is opened.

Program Controller

- Supports PID with SSR/SCR control for accurate temperature management. Includes a long-lasting, internationally standardized thermocouple. Offers up to 30 programmable segments for customized heating curves. Also includes a heating indicator and an over-temperature alarm buzzer.

Vacuum and Atmosphere Capability

- Includes a 304 stainless steel sealing flange to create a vacuum or introduce a controlled atmosphere within the furnace tube.
- Comes standard with a high-purity quartz glass working tube. Optional metal or corundum tubes are available to suit varying process requirements.

TECHNICAL SPECIFICATIONS

Product Item	Heating Zone mm	Tube Size (mm)	Max Temperature	Work Temperature	Voltage	Power	Heating Element	Temperature Accuracy
TT-TF2Z-40-1200	300+300	Φ40×1200	1200°C	1100°C	220V (110V is also available)	3.6KW	HRE	±1°C
TT-TF2Z-60-1200	300+300	Φ60×1200	1200°C	1100°C	220V (110V is also available)	5.2KW	HRE	±1°C
TT-TF2Z-80-1200	300+300	Φ80×1200	1200°C	1100°C	220V (110V is also available)	5.2KW	HRE	±1°C
TT-TF2Z-100-1200	300+300	Φ100×1200	1200°C	1100°C	220V (110V is also available)	5.2KW	HRE	±1°C
TT-TF2Z-40-1400	300+300	Φ40×1200	1400°C	1350°C	220V (110V is also available)	4KW	SIC	±1°C
TT-TF2Z-60-1400	300+300	Φ60×1200	1400°C	1350°C	220V (110V is also available)	6KW	SIC	±1°C
TT-TF2Z-80-1400	300+300	Φ80×1200	1400°C	1350°C	380V	8KW	SIC	±1°C
TT-TF2Z-100-1400	300+300	Φ100×1200	1400°C	1350°C	380V	10KW	SIC	±1°C
TT-TF2Z-40-1700	300+300	Φ40×1200	1700°C	1600°C	220V (110V is also available)	6KW	MoSi2	±1°C

TT-TF2Z-60-1700	300+300	Φ60×1200	1700℃	1600℃	380V	8KW	MoSi2	±1℃
TT-TF2Z-80-1700	300+300	Φ80×1200	1700℃	1600℃	380V	10KW	MoSi2	±1℃
TT-TF2Z-100-1700	300+300	Φ100×1200	1700℃	1600℃	380V	12KW	MoSi2	±1℃



TORONTECH

Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com



USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia

