



TORONTECH



LIFTING SINTERING FURNACE TT-LF-300- 1700

The Lifting Sintering Furnace TT-LF-300-1700 is designed for high-temperature sintering of advanced materials such as electronic ceramics, magnetic materials, functional ceramics, structural ceramics, ITO targets, and composite materials. With precise temperature control and robust construction, it ensures stable and efficient performance in demanding thermal processes.

This furnace is ideal for small-scale production in both laboratories and industrial environments. Equipped with a spacious 300L chamber, reliable MoSi₂ heating elements, and accurate $\pm 1^{\circ}\text{C}$ temperature precision, it delivers consistent, reproducible results for research and specialized material processing applications.

APPLICATIONS

- **Electronic Ceramics** – Enables high-temperature sintering and densification of electronic ceramic components, ensuring superior electrical insulation, dielectric properties, and long-term stability.
- **Magnetic Materials** – Provides precise and uniform heating for magnetic material processing, supporting the development of ferrites and advanced magnetic ceramics used in electronics and communication industries.
- **Functional & Structural Ceramics** – Facilitates the sintering of high-performance ceramics with excellent thermal resistance, mechanical strength, and chemical durability for industrial and engineering applications.
- **ITO Targets & Thin Films** – Supports sintering of indium tin oxide (ITO) targets used in displays, solar cells, and optoelectronic devices, ensuring high density, uniformity, and conductivity.
- **Composite Materials** – Optimized for the consolidation and thermal processing of composite systems, enabling enhanced performance for aerospace, automotive, and energy-related applications.

- **Nanomaterials Research** – Provides precise thermal control for advanced nanostructures and composites, supporting research in functional materials, catalysis, and next-generation energy storage.
- **Semiconductor Materials** – Suitable for annealing, oxidation, and sintering of semiconductor substrates at ultra-high temperatures, critical for microelectronics, photonics, and optoelectronics.
- **Research & Industrial Production** – Designed for small-scale production and laboratory use, combining reproducible results with high durability for universities, R&D centers, and specialized industries.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel with a surface treatment that resists static buildup and corrosion.
- Durable metal shell design ensures low external surface temperature.
- Equipped with a flange-sealed door and manual screw-lock mechanism, featuring a side-opening configuration for easier operation.
- The bottom platform is driven by a servo motor with PLC-based precision control. Rotation direction and speed are adjustable, allowing forward and reverse motion. This ensures uniform heat distribution and consistent sample heating at high temperatures.

Refractory Material

- Multi-layer insulation system made from lightweight alumina ceramic fiber and premium thermal insulation boards. The design is free from asbestos, minimizes heat loss, and supports low energy consumption.

Heating System

- Premium resistance heating elements provide efficient, radiant heating throughout the chamber—designed for durability and long service life.
- Ring-shaped heating elements on all sides ensure consistent temperature distribution within the furnace.
- Optional features include a top exhaust port and a regulated air inlet at the bottom of the furnace.
- The loading tray at the base can accommodate stacked containers, allowing for two or three layers of materials, depending on the furnace configuration.

Temperature Control Panel

- High-precision PID controller with SSR/SCR control for stable and accurate temperature regulation.
- Equipped with a long-lasting thermocouple built to international standards.

Program Controller

- Advanced controller to support complex thermal processes.
- User-friendly interface with flexible programming capabilities.
- Supports up to 30 programmable segments per heating curve.
- Includes over-temperature protection and fault alarms for automatic safety response.

Functional Options

- Optional air-cooling system for rapid cooling—can bring the furnace temperature down to 400°C quickly.
- Optional manual or automatic air inlet control to support controlled atmosphere processing.

TECHNICAL SPECIFICATIONS

Model	Chamber Size□ mm □	Volume	Max Temperature	Working Temperature	Voltage	Power	Heating Element	Temperature control accuracy
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TT-LF-96-1200	400×600×400	96L	1200℃	1100℃	380V	18KW	HRE	±1℃
TT-LF-288-1200	600×800×600	288L	1200℃	1100℃	380V	30KW	HRE	±1℃
TT-LF-640-1200	800×1000×800	640L	1200℃	1100℃	380V	45KW	HRE	±1℃
TT-LF-96-1400	400×600×400	96L	1400℃	1300℃	380V	21KW	SIC	±1℃
TT-LF-288-1400	600×800×600	288L	1400℃	1300℃	380V	30KW	SIC	±1℃
TT-LF-640-1400	800×1000×800	640L	1400℃	1300℃	380V	50KW	SIC	±1℃
TT-LF-96-1700	400×600×400	96L	1700℃	1600℃	380V	25KW	MoSi2	±1℃
TT-LF-150-1700	500×600×500	150L	1700℃	1600℃	380V	35KW	MoSi2	±1℃
TT-LF-324-1700	600×900×600	324L	1700℃	1600℃	380V	60KW	MoSi2	±1℃
TT-LF-640-1700	800×1000×800	640L	1700℃	1600℃	380V	80KW	MoSi2	±1℃
TT-LF-96-1800	400×600×400	96L	1750℃	1700℃	380V	25KW	MoSi2	±1℃
TT-LF-150-1800	500×600×500	150L	1750℃	1700℃	380V	35KW	MoSi2	±1℃
TT-LF-324-1800	600×900×600	324L	1750℃	1700℃	380V	60KW	MoSi2	±1℃



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