



# ATMOSPHERE FURNACE TT-AF-64-1400

1400°C chamber atmosphere furnace features a flange-sealed body for reliable operation. During heat treatment, protective gases such as nitrogen, argon, or oxygen can be introduced for processing carbon, metal, and biomass materials. It is also suitable for sintering ternary lithium battery materials.

|                            |                                  |
|----------------------------|----------------------------------|
| Model No.                  | TT-AF-64-1400                    |
| Inner Dimension (WxDxH MM) | 400x400x400                      |
| Continuous Temperature     | 1300°C                           |
| Max Temperature            | 1400°C                           |
| Voltage                    | 380V/18kw                        |
| Heating Element            | Silicon Carbide Rod (SiC) heater |
| Temperature Precision      | ±1°C                             |
| Thermocouple               | S type                           |

## APPLICATIONS

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- **Pilot-Scale Production:** Primary application for high-throughput heat treatment, sintering, and annealing in a substantial 400 x 400 x 400mm chamber (64L capacity), ideal for scaling up processes.
- **Advanced Materials Processing:** Optimized for the sintering of ternary lithium battery materials, ceramics, and other industrial components that require stable thermal cycles up to 1300°C continuous operation.
- **Precise Atmosphere Management:** Features a flange-sealed body for reliable processing under controlled atmospheres (N2, Ar, O2) and includes pre-evacuation vacuum capability up to 20,000Pa.

- **Complex Process Control:** Supports advanced, multi-stage processing requirements with a program controller capable of executing up to 30 segments for customized and repeatable thermal curves.
- **Cost-Effective Industrial Option:** Designed for durability and continuous factory-scale production, with chamber options available up to 1000L in the series.

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## FEATURES

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### Furnace Shell

- Constructed from Q235 low-carbon steel with an electrostatically resistant, anti-corrosion surface.
- Sturdy tank-style shell design ensures a low external surface temperature.
- Furnace door with flange-sealed structure and manual screw compression; side-opening design for easier operation.

### Refractory Material

- Multi-layer insulation system made of lightweight alumina ceramic fiber and other high-quality insulating boards. Asbestos-free, with low heat loss and reduced energy consumption.

**Heating System**

- Premium heating elements securely mounted on both sides of the furnace, providing free-radiation heating for energy efficiency, high performance, and long service life.
- Dual-side (left and right) heating elements ensure excellent temperature uniformity inside the chamber.

**Temperature Control Panel**

- PID control with SSR output for precise temperature regulation.
- Equipped with an international-standard thermocouple for durability and accuracy.
- Chamber capacity options up to 1000L, suitable for factory-scale production.

**Program Controller**

- Advanced controller capable of handling complex process requirements.
- User-friendly operation with flexible programming.
- Supports up to 30 programmable segments for a single curve.
- Over-temperature and fault alarms with automatic safety protection.

**Vacuum Atmosphere Function**

- Furnace chamber includes adjustable inlet and outlet ports for introducing protective gases.
- High-performance rotary vane vacuum pump capable of achieving a vacuum level of 20,000 Pa.
- Optional gas circuit control unit available, supporting 1-3 adjustable float flow meters.

**TECHNICAL SPECIFICATIONS**

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|               |                    |        |          |           |         |       |                 |                     |
|---------------|--------------------|--------|----------|-----------|---------|-------|-----------------|---------------------|
| Product Model | Chamber Size □ mm□ | Volume | Max Temp | Work Temp | Voltage | Power | Heating Element | Controller Accuracy |
|---------------|--------------------|--------|----------|-----------|---------|-------|-----------------|---------------------|

|               |             |     |        |        |                               |       |       |      |
|---------------|-------------|-----|--------|--------|-------------------------------|-------|-------|------|
| TT-AF-8-1200  | 200×300×120 | 8L  | 1200°C | 1100°C | 220V (110V is also available) | 3KW   | HRE   | ±1°C |
| TT-AF-12-1200 | 200×300×200 | 12L | 1200°C | 1100°C | 220V (110V is also available) | 4KW   | HRE   | ±1°C |
| TT-AF-18-1200 | 250×300×250 | 18L | 1200°C | 1100°C | 220V (110V is also available) | 6KW   | HRE   | ±1°C |
| TT-AF-30-1200 | 300×500×200 | 30L | 1200°C | 1100°C | 380V                          | 7.5KW | HRE   | ±1°C |
| TT-AF-8-1400  | 200×200×200 | 8L  | 1400°C | 1350°C | 220V (110V is also available) | 5KW   | SIC   | ±1°C |
| TT-AF-12-1400 | 200×300×200 | 12L | 1400°C | 1350°C | 220V (110V is also available) | 5KW   | SIC   | ±1°C |
| TT-AF-18-1400 | 250×300×250 | 18L | 1400°C | 1350°C | 220V (110V is also available) | 6KW   | SIC   | ±1°C |
| TT-AF-36-1400 | 300×400×300 | 36L | 1400°C | 1350°C | 380V                          | 12KW  | SIC   | ±1°C |
| TT-AF-45-1400 | 300×500×300 | 45L | 1400°C | 1350°C | 380V                          | 14KW  | SIC   | ±1°C |
| TT-AF-8-1700  | 200×200×200 | 8L  | 1700°C | 1600°C | 220V (110V is also available) | 5KW   | MoSi2 | ±1°C |
| TT-AF-12-1700 | 200×300×200 | 12L | 1700°C | 1600°C | 220V (110V is also available) | 6KW   | MoSi2 | ±1°C |
| TT-AF-20-1700 | 250×320×250 | 20L | 1700°C | 1600°C | 380V                          | 7KW   | MoSi2 | ±1°C |
| TT-AF-36-1700 | 300×400×300 | 36L | 1700°C | 1600°C | 380V                          | 13KW  | MoSi2 | ±1°C |



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