

Luoyang Juxing Kiln Co., Ltd.

GWDL-900XL Box-type Resistance Furnace Technical Data





### Technical indicators

The GWDL-XL series high-temperature furnace, as shown in the figure, integrates the control system and the furnace chamber. The furnace lining uses vacuum-formed high-purity...

It is made of alumina lightweight material.

It uses high-temperature electric heating elements for heating; it is specifically designed for laboratories in universities, research institutes, and industrial and mining enterprises for heating ceramics.

Porcelain, metallurgy, electronics, glass, chemicals, machinery, refractory materials, new material development, special materials, building materials, gold

Specialized equipment developed for sintering, melting, analyzing, and producing metal, non-metal, and other compound materials.

The control panel is equipped with an intelligent temperature regulator to control the power switch, main heating start/stop button, and electric...

The system includes a voltmeter, ammeter, computer interface, and observation/air inlet to monitor its operating status at any time.

The product adopts reliable integrated circuitry, has a good working environment, is resistant to interference, and the furnace shell temperature is 45°C at the highest temperature.

The working environment is greatly improved, with microcomputer program control, programmable curves, fully automatic heating/cooling, and can operate continuously.

It allows for flexible and convenient modification of temperature control parameters and programs, and is easy to operate.

Product Name: Resistance Furnace / Box-type Electric Furnace / Muffle Furnace	
Model: GWDL-XL	Specifications: 900 degrees
Technical parameters	

Maximum operating temperature	900 degrees
Long-term operating temperature	850 degrees
Furnace size	850*750*750
Temperature control range	100-900 degrees
Temperature control accuracy	±1 degree
Furnace temperature uniformity	±5 degrees
Temperature sensing element	K-type thermocouple
Heating element material	High-temperature alloy resistance wire (fixed at both ends)
Heating element installation location	All sides + bottom
Temperature zone	3 temperature zones: bottom + front and back + left and right.
heating rate	Maximum heating rate: 20 degrees Celsius per minute (non-linear)
Furnace body structure and materials	<p>The electric furnace body adopts an air-cooled double-layer carbon steel furnace body structure with effective air-cooled guide baffles.</p> <p>The entire furnace shell is circulated with cold air, which eventually cools the conductive plates of the heating element before being discharged from the furnace body.</p> <p>This avoids high-temperature oxidation of the conductive sheet of the heating element and ensures a good working environment.</p>
Door opening method	<p>The furnace door opens 180 degrees axially to the side, and the door lock is located on the side of the furnace door.</p> <p>It is equipped with an elastic lock, which can effectively lock the refractory material; the elasticity of the lock absorbs the expansion of the refractory material.</p> <p>The expansion phenomenon ensures the free expansion and contraction of refractory materials under thermal expansion and contraction, and effectively seals them.</p>
Refractory insulation materials	<p>The furnace lining is made of vacuum-formed high-purity alumina lightweight material, and its operating temperature is [not specified].</p> <p>High heat capacity, low heat storage, resistant to rapid heating and cooling, no cracking, no flaking, and good thermal insulation performance.</p>
Fan	Mixer blower + frequency converter + water cooling
Air intake	<p>Add a blower (60W), with bottom air intake.</p> <p>Below 520 degrees Celsius, the blower should be fully operational; above 520 degrees Celsius, the blower should be turned on for 30 seconds every 10 minutes to maintain the temperature.</p> <p>Full speed ahead after the end</p>
touchscreen	<p>Chinese menu, storage of multiple heating process curves, storage of historical curves and data reports</p> <p>(7 inches)</p>
Exhaust gas purification	<p>The organic waste gas is heated to above 760 degrees Celsius (the exact temperature depends on the composition), causing the waste...</p> <p>VOCs in the air are oxidized and decomposed into carbon dioxide and water.</p> <p>The furnace chamber uses quartz tubes with a diameter of 50 mm at both ends and 150 mm in the middle, with a heating height of 600 mm.</p>
The furnace shell temperature is less than	room temperature +20 degrees Celsius.
Security Protection	<p>An integrated modular control unit is adopted, ensuring accurate control precision, and a dual-loop control system is designed.</p> <p>It features dual-circuit protection, including overshoot, overadjustment, underadjustment, thermocouple breakage, phase loss, and overcurrent protection.</p> <p>Protections include overvoltage, overcurrent, overtemperature, current feedback, and soft start.</p>
Power off when door is opened	<p>The furnace body is designed with a function to open the furnace door and disconnect the main heating circuit when the temperature is high during operation.</p> <p>Yes, it greatly protects against the risk of electric shock when handling materials at high temperatures.</p>

Safe temperature control	Employing closed-loop technology with thyristor module trigger control, phase-shift trigger control, or zero-crossing triggering the output voltage, current, or power is continuously adjustable, exhibiting constant voltage, constant current, or constant power characteristics. The current loop is the inner loop, and the voltage loop is the outer loop. When a sudden load is applied or the load current exceeds the current limit, the output current of the voltage regulator is limited to the rated current range, ensuring normal operation of the output and the voltage regulator. Simultaneously, the voltage loop also participates in regulation, limiting the output current of the voltage regulator to the rated current range, maintaining constant output current and voltage with sufficient adjustment margin. This protects the heating elements from excessive current and voltage surges, achieving safe, reliable, and precise control.
Temperature profile setting	Employing an intelligent temperature controller, it offers multiple adjustment modes including standard PID, AI-based APID , and MPT. It features self-tuning and self-learning capabilities, excellent control characteristics with no overshoot or undershoot, and 30- segment programmable control. It can achieve temperature rise and fall control with arbitrary slopes and provides programmable /operable commands such as jump (loop), run, pause, and stop , allowing modification of the program at any time during operation. Utilizing an AI-based adjustment algorithm with curve fitting capabilities, it achieves smooth and even curve control.
Number of segments in the heating curve	The 50- segment program control function allows input settings: 50 segments for one curve, 28 segments for two curves, 15 segments for three curves, and 9 segments for five curves; multiple curves can be input simultaneously and can be called up arbitrarily during use.
The panel has two buttons: a main power button/knob and a heating chamber on button/knob.	
Random accessories include one	crucible tong, one pair of high-temperature gloves, and one furnace bottom pad.
Warranty coverage and period	
The electric furnace comes with a one-year free warranty, but the furnace bottom plate and heating elements are not covered by the warranty (they will be replaced free of charge if they fail naturally within three months).	
Packing list	
One electric furnace, one crucible tong, one pair of high-temperature gloves, one furnace bottom firing plate, one instruction manual, one certificate of conformity, one acceptance report (factory inspection report), and one sales delivery note.	
Precautions	
1. To avoid affecting the lifespan of the electric furnace, it is recommended that the maximum heating and cooling rates be 1-15 $\text{^\circ}$ /min. (Rapid heating at high temperatures will shorten the lifespan of the heating element.)	
2. This box-type furnace does not have a vacuum sealing structure, so flammable and explosive gases must not be introduced.	
3. After a period of use, minor cracks may appear in the furnace chamber of this box furnace. This is normal and will not affect its use. It can be repaired with an alumina coating.	
4. It is not recommended to introduce corrosive gases. If you need to introduce highly corrosive gases such as S or Na, please inform us in advance so that we can perform special treatment on the furnace.	
5. High-temperature solution must not leak onto the furnace bottom. To prevent this, a pad or alumina powder can be used for isolation.	
6. The instrument should be placed in a well-ventilated, dry place.	

Shipping Information

1. The electric furnace is packaged in three layers: first wrapped in foam paper, then wrapped in plastic film, and finally packed in a wooden crate.

2. Free domestic door-to-door delivery (free delivery within city limits)

3. We will be responsible for any damage that occurs during the transportation of the electric furnace.

4. Logistics methods: transportation by road, rail, ship (for foreign trade export), and air (for foreign trade export). For nearby locations, our company will arrange dedicated vehicles for transportation

(packaging is wooden pallets and cardboard boxes).