洛阳炬星电窑炉
LUOYANG JUXING KILN CO., LTD
高新技术企业/专精特新企业
专业的高温加热制造工厂 (-60°C~2600°C)
中国热处理行业协会理事单位
ISO45001:职业健康安全管理体系认证
ISO14001:环境管理体系认证
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GWDL-1200ZQLB Atmosphere Box Furnace **2000*400*300** Technical Data

The GWL-ZQLB series vacuum atmosphere box furnace, as shown in the figure, integrates a temperature control system, a vacuum furnace chamber, and a vacuum pump.

The gas circuit, pressure protection, gas flow control, positive and negative pressure display, and water circulation pump are integrated into one unit. The water circulation tank and the furnace body are made of powder.

The furnace lining is made of vacuum-formed alumina lightweight material.

It uses electric heating elements; it is specifically designed for laboratories in universities and research institutes, as well as industrial and mining enterprises, to heat ceramics and metallurgical materials.

Gold, electronics, glass, chemicals, machinery, refractory materials, new material development, special materials, building materials, metals, non-metals

Specialized equipment developed for sintering, melting, analyzing, and producing other chemical and physical materials.

The control panel is equipped with an intelligent temperature regulator, a power switch, a main heating start/stop button, and voltage and ammeters.

Computer interface, water pump switch, vacuum pump switch, gas flow meter, positive and negative pressure gauges, electrical contact pressure gauge, valves.

To facilitate real-time monitoring of the system's operational status, this product employs reliable integrated circuitry, offers a favorable working environment, and is highly resistant to interference.

The furnace shell temperature is ÿ40ÿ during operation, greatly improving the working environment. It features microcomputer program control, programmable curves, and automatic operation.

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The system can heat up/cool down, and the temperature control parameters and program can be modified during operation, making it flexible, convenient, and easy to operate.

Temperature control accuracy: ±1ÿ with no overshoot; constant temperature accuracy: ±5ÿ. Rapid heating rate: ÿ45ÿ/min.

The furnace lining material is made of vacuum-formed alumina lightweight material, which has a high operating temperature, low heat storage, and is resistant to rapid heating and cooling without cracking.

It does not shed slag and has good heat insulation performance. Its reasonable structure, with inner and outer double-layer furnace jackets and air-cooled heat dissipation, can greatly shorten the testing cycle.

Temperature Project	900ÿ
Maximum operating temperature	1200°
Frequently used temperature	900° can be set
Voltage: AC three-phase 380V/50-60HZ	
Heating element silicon carbide rod	
Location of heating element	left and right sides of the furnace
Temperature sensing element and temperature measurement range	Nickel-chromium and nickel-silicon K temperature measurement range: 0-1350ÿ
Number of program curve segments	Group 1 has 50 segments, Group 2 has 22 segments, and Group 3 has 8 segments (adjustable).

Heating rate adjustable from	1ÿ/h to 20ÿ/min
The bottom of the furnace door equipment is 1000 mm above the ground.	
Vacuum range: 100 Pa - 10ÿ⁴ Pa	
Micro-positive pressure	Slight positive pressure (within 10 kPa) and negative pressure (within 30 minutes) will prevent heating from fully opening. PID control can be set and includes an electronic pressure gauge.
Temperature zone	3 Temperature Zone Design
Rate	The heating rate is freely adjustable, with an adjustment range of 20 degrees per minute (20 degrees/min) for a fast heating rate and 1 degree per hour (1 degree/h) for a slow heating rate.
Furnace body	The furnace body is machined using CNC machine tools, and undergoes polishing, grinding, pickling, phosphating, powder coating, and high-temperature baking. It features a two-tone design, a novel and attractive appearance, and possesses advantages such as oxidation resistance, acid and alkali resistance, corrosion resistance, high-temperature resistance, and easy cleaning.
The furnace body adopts an air-cooled double-layer structure, ensuring a good working environment.	
Furnace door opening method	The furnace door opens axially to the side at a 180-degree angle.
The furnace inlet, furnace door, and furnace top of the water-cooled furnace lining, and the 1-inch water-cooling pipe interfaces.	
Vacuum pump and vacuum value	A two-stage direct rotary vane vacuum pump with a pump capacity of 60 cubic meters per hour and a furnace inlet size of 3 inches is used.
Vacuum pressure gauge -0.1 MPa and digital positive and negative pressure indicator.	
Pressure resistance	The furnace lining steel plates are 6-20mm thick, double-sided welded, and can withstand a positive pressure of 0.1MPa.
The gas circuit valves are made of stainless steel.	

One pressure gauge with dual pointer indicators for positive and negative pressure detection (digital vacuum gauge or other options are optional).	
Gas flow meter with 2 floats	
Pressure protection	This system was specifically designed to prevent hazards caused by closed or blocked furnace exhaust ports, or excessive furnace pressure. Its principle is as follows: a signal from an electric contact pressure gauge or pressure sensor drives the control module to close the electromagnetic intake valve, activate the electromagnetic exhaust valve and alarm, releasing pressure from the exhaust port and triggering an audible and visual alarm. This protects the normal operation of the electric furnace.
Gas leak alarm	Based on the ambient atmosphere, this system prevents leaks. Function: When the gas leak alarm detects that the concentration of toxic or hazardous gases in the (indoor) air exceeds a certain value, the drive module shuts off the electric furnace and gas supply, while opening the exhaust vents and ventilation, thus achieving a safer working environment. (Optional)
It can be used with atmospheres such as hydrogen, nitrogen, argon, carbon monoxide, and oxygen.	
Refractory materials	The furnace lining uses vacuum-formed alumina fiber lightweight board material. Lightweight hollow spherical alumina plates are used in areas prone to material handling (furnace bottom). This material offers high operating temperature, low heat storage, resistance to rapid heating and cooling, and is crack-free, slag-free, and has good insulation properties.
thermal insulation materials	It adopts four layers of insulation: alumina fiber cotton, alumina fiber board, and alumina polycrystalline fiber board. The selected materials result in excellent energy-saving performance.
Furnace shell temperature	For long-term use without shutting down the furnace, the outer casing temperature should be less than 45 degrees Celsius.
Protect	The system employs an integrated modular control unit, ensuring accurate control precision. It also features dual-loop control and dual-loop protection, providing protection against overshoot, over-adjustment, under-adjustment, thermocouple breakage, phase loss, overvoltage, overcurrent, overtemperature, current feedback, and soft start.
control	Employing closed-loop technology and thyristor module trigger control, this system uses a phase-shift trigger control method, allowing for continuous adjustment of output voltage, current, or power. It features 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.

Display parameters include	temperature, temperature range number, time interval, remaining time, output power percentage, voltage, and current.
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, exhibiting excellent control characteristics with no overshoot or undershoot. It boasts 30-segment programmable control, enabling temperature rise and fall control with arbitrary slopes. Programmable/operable commands such as jump (loop), run, pause, and stop are available, and the program can be modified at any time during operation. Utilizing an AI-powered adjustment algorithm with curve fitting capabilities, it achieves smooth and even curve control.
Multiple curve inputs	The program control function has 30 segments (50 segments can be customized). The input settings are: 30 (50) segments for one curve, 14 (28) segments for two curves, 9 (15) segments for three curves, and 5 (9) segments for five curves. Multiple curves can be input at the same time and can be called up at will when in use.
Communication interface	The electric furnace is equipped with an RS485 communication interface with a communication distance of up to 1700 meters. It can be controlled by computer to start, pause, stop, set and read the heating curve, and set parameters. It is highly reliable and easy to operate. The computer screen displays a wealth of information, including measured values, setpoints, output values, time intervals, segment numbers, heating curves, and power percentage curves. Heating curves can be stored on the computer and can be recalled and modified at will. Setpoints and commonly used parameters can be modified. Historical curves and historical reports can be filtered by time interval (1 second to 1 hour) and can be stored for a long time.
Random accessories include	one crucible tong and one pair of high-temperature gloves.
Warranty coverage and period	The electric furnace comes with a one-year free warranty, but the heating element is not covered by the warranty (it will be replaced free of charge if it fails naturally within three months).
Precautions	1. To avoid affecting the lifespan of the electric furnace, we recommend a heating and cooling rate of 10-20ÿ/min (too rapid heating will shorten the lifespan of the heating element).
	2. After a period of use, minor cracks may appear in the furnace chamber of this electric furnace. This is normal and will not affect its use. It can be repaired with an alumina coating.
	3. High-temperature solution must not leak onto the furnace bottom. To prevent this, a pad or alumina powder can be used for isolation.
	4. The instrument should be placed in a well-ventilated, dry place.

Packing list	One electric furnace, one furnace door heat insulation plug (for electric furnaces above 1700 degrees Celsius), one crucible tong, one pair of high-temperature gloves, one instruction manual, one certificate of conformity, and one sales delivery note.
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 (for export).
	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 car, 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).

Kiln main component configuration list

sequence number	Project Name		Classification						Manufacturer's Notes	
			1200 degrees	1400 degrees	1600 degrees	1700 degrees	1800 degrees	1900 degrees		
1. Double-layer outer shell •				•	•	•	•	•	Torch Star kiln	
2	electric heating element Item	electric heater	High temperature alloy resistance wire	Silicon carbide rods and silicon molybdenum rods		1800 type silicon molybdenum rod	1850 type silicon molybdenum rod	Type 1900 silicon molybdenum rod	Torch Star kiln	
3		Temperature controller 858P		858P	858P	858P	858P		Xiamen Yu Dian	
4		Thermocouple	K	S	B	B	B	B+ fiber	Taisho/ bright	
5		Voltmeter •		•	•	•	•	•	Chint	
6		Ammeter •		•	•	•	•	•	Chint	
7		SCR power regulator •		•	•	•	•	•	Torch Star kiln	
8		Contactor •		•	•	•	•	•	Chint Deli West	
9	Electrical control Control part	circuit breaker	•	•	•	•	•	•	Chint Deli West	
10		Button	•	•	•	•	•	•	Chint Deli West	
11		Buzzer •		•	•	•	•	•	Chint Deli West	
12		Fast melting	•	•	•	•	•	•	Mingrong	
13 Transformer •				•	•	•	•	•	Torch Star kiln	
14		Ceramic fiberboard / 1260	Module	1500	1700	1800		1850	Zirconia fiber V2100	Torch Star kiln
15	Refractory Bar Hot furnace	Furnace opening heat insulation plug Brick (inner door)	•	•	•	•	•	•	Torch Star kiln	
16. Firing plate quartz ceramic				Quartz ceramic porcelain	Corundum Lai Shi	Corundum stone	Corundum stone	Zirconia fiber V2100	Torch Star kiln	

Thank you for contacting us!
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