

Luoyang Juxing Kiln Co., Ltd.

National High-tech Enterprise, Specialized and Innovative Enterprise, Member of the China Thermal Power Association

Vacuum atmosphere box furnace model GWDL-1000ZQLB



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高温真空烧结炉—加热室
High-temperature vacuum sintering furnace



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I. Technical Parameters:

The GWDL-ZQLB series 1000°C vacuum atmosphere box furnace, as shown in the figure, integrates a temperature control system, vacuum furnace chamber, vacuum pump, gas path, pressure protection, gas flow control, positive and negative pressure display, and water circulation pump. The water circulation tank and furnace body are made of powder. The furnace lining insulation is made of vacuum-formed high-purity alumina lightweight material. It uses high-temperature alloy resistance wire (containing molybdenum) as the heating element.

It is a specialized piece of equipment developed for laboratories in universities and research institutes, as well as industrial and mining enterprises, for the sintering, melting, analysis, and production of ceramics, metallurgy, electronics, glass, chemicals, machinery, refractory materials, new material development, special materials, building materials, metals, non-metals, and other chemical materials.

The control panel is equipped with an intelligent temperature regulator, a power switch, a main heating start/stop button, voltage and ammeters, a computer interface, a water pump switch, a vacuum pump switch, a gas flow meter, positive and negative pressure gauges, an electrical contact pressure gauge, and valves, allowing for real-time monitoring of the system's operating status. This product uses reliable integrated circuitry, providing a good working environment and strong anti-interference capabilities. The furnace shell temperature is $\leq 40^{\circ}\text{C}$ at its highest, significantly improving the working environment. It features microcomputer program control, programmable curves, fully automatic heating/cooling, and the ability to modify temperature control parameters and programs during operation, making it flexible, convenient, and easy to operate.

Temperature control accuracy: $\pm 1^{\circ}\text{C}$ with no overshoot. Rapid heating rate, with a maximum heating rate $\geq 25^{\circ}\text{C}/\text{min}$. The furnace lining insulation is entirely made of vacuum-formed high-purity alumina lightweight material, offering high operating temperature, low heat storage, resistance to rapid heating and cooling, no cracking or slag shedding, and excellent insulation performance (energy saving effect is over 60% of that of traditional electric furnaces). The rational structure, with inner and outer double-layer furnace jackets and air-cooled heat dissipation, can significantly shorten the testing cycle.

II. Main parameters:

category	1000 degrees
parameter	
Model	GWDL-1000XB
power supply	380V
AC; maximum operating temperature; long-term operating	Thermocouple type K, ranging
temperature control range;	from 1050°C to 1000°C and
temperature sensing element.	from 50°C to 1200°C, with a temperature measurement range of 0-1320°C.
The heating element is installed around	the inside of the furnace chamber and uses a high-temperature alloy resistance band (containing molybdenum). The surface temperature can reach 1380 degrees
Temperature control accuracy	$\pm 1^{\circ}\text{C}$ (integrated circuit control, no overshoot) $\pm 1^{\circ}\text{C}$ (depending on the size of
Furnace temperature uniformity	the furnace chamber; large furnace chambers can use multi-point control to achieve better furnace temperature uniformity; optional item).
heating rate	The heating rate is freely adjustable, with the following range: fastest heating rate 20 degrees per minute (20 degrees/min non-linear), slowest heating rate 1 degree per hour (1 degree/h). The electric furnace has a built-in rapid cooling system, which uses a variable
Rapid cooling	frequency fan to quickly inject cold air between the vacuum furnace chamber and the insulation layer to achieve rapid cooling. The high-temperature alloy resistance bands are distributed inside the furnace chamber.
Heating element	
furnace shell material	The 310S stainless steel
discharge rack	furnace body is CNC machined according to the customer's product
Furnace body	design (optional item) , and is manufactured through polishing, grinding, pickling, phosphating, powder coating, and high-temperature baking. It features a two-tone design, a novel and attractive appearance, and possesses oxidation resistance, acid and alkali resistance.

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This electric furnace, a national high-tech enterprise, a specialized and innovative enterprise, and a member of the

	China Thermal Power Association, boasts advantages such as corrosion
resistance, high temperature resistance, and easy cleaning. Its furnace body structure utilizes an internationally advanced air-cooled double-layer structure, ensuring a good working environment.	
Furnace door opening method	The furnace door opens axially at 180 degrees and can rotate 360 degrees, preventing the inner wall of the door from scorching the arms during high-temperature material handling. The standard configuration
Furnace door locking method	includes a manual screw lock (electric locking can be customized upon request). To conserve resources, the furnace is
Water cooling	equipped with an imported hot water circulating pump and a circulating water tank. The imported hot water circulating pump can withstand temperatures up to 160 degrees Celsius and can operate continuously for over one year. The circulating water tank is made of 304 stainless steel and has a capacity of 150L-200L (optional). The furnace opening and door of the inner shell utilize multi-channel pure aluminum water
Water-cooled	circulation heat sinks, significantly reducing the risk
components: circulating water	of excessively high water temperatures. It employs a two-stage direct rotary vane vacuum pump with a 6.67x10 ² Pa
radiator, vacuum pump, vacuum	IGBT DC power supply.
value control power	
supply, vacuum	The system includes a pointer pressure gauge (-0.1 MPa, relative value) and a digital resistance gauge (absolute value). The
value	furnace lining steel plate is 6-20 mm thick, double-sided welded, and can withstand a positive pressure of 0.098 MPa. It uses imported stainless
withstand pressure,	steel valves with dual positive and negative
air circuit valve pressure testing,	pressure indication pointer pressure gauges and two float flow meters (flow
Gas flow meter	meter size optional). More precise mass flow meters can also be selected upon request. This system is specifically designed to prevent danger caused by closed or blocked furnace exhaust
Pressure protection	ports or excessive furnace pressure. The principle is as follows: a signal from an electric contact pressure gauge or pressure sensor drives the control module to close the electromagnetic inlet valve, activate the electromagnetic exhaust valve and alarm, releasing pressure from the exhaust port, triggering an audible and visual alarm and a buzzer. This protects the normal operation of the electric furnace and prevents leaks based on the atmosphere. Function: The gas leak alarm detects that the content of toxic or hazardous gases in the (indoor) air exceeds a certain value, driving
Gas leak alarm	the module to shut down the electric furnace, close the gas supply, and open the exhaust port for ventilation, thus achieving a safer working environment. (This option is optional and requires customer to select when using hydrogen.)
Can open atmosphere	Hydrogen, nitrogen, argon, carbon monoxide, oxygen, etc.
Refractory materials	The furnace lining is made of vacuum-formed high-purity alumina lightweight material. Areas prone to material handling (furnace opening and bottom) use lightweight hollow alumina plates, offering high operating temperatures, low heat storage, resistance to rapid heating and cooling, no cracking or slag shedding, and excellent insulation performance (energy saving is over 80% of that of traditional electric furnaces). A three-layer insulation system is used: aluminum silicate
thermal insulation materials	fiberboard, alumina fiberboard, and alumina (polycrystalline) fiberboard, achieving energy savings of over 80% compared to traditional electric furnaces. The furnace can operate continuously without interruption, with the outer shell temperature below
Furnace shell temperature	45 degrees Celsius. An integrated modular control unit ensures accurate control and
Protect	features dual-loop control and protection, including protection against overshoot, over-adjustment, under-adjustment, thermocouple breakage, phase loss, overvoltage, overcurrent, overtemperature, current feedback, and soft start. An IGBT DC power supply is used.
control	
The display parameters include	temperature, temperature range number, time period, remaining time, output power percentage, voltage, and current. It uses imported buttons with a lifespan of
Button	over 100,000 cycles and is equipped with LED indicator lights.
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. It includes programmable/operable commands such as jump (loop), run, pause, and stop, and allows for programmable operation within the control program.

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	director, can modify the program at any time; adopts artificial intelligence adjustment algorithm with curve fitting function, which can obtain smooth curve control effect; see the electric furnace video 30 segment (50 segment
Multiple curve inputs	can be customized) program control function, can input settings: one curve is 30 (50) segments, two curves are 14 (28) segments/line, three curves are 9 (15) segments/line, five curves are 5 (9) segments/line; multiple curves can be input at the same time, and can be called at will when used. Siemens S7-200 crucible tongs, a pair of high temperature gloves, a DVD data disk.
PLC	Warranty scope and period:
Random accessories	the electric furnace is covered by a one-year free warranty, the heating element is not
	covered by the warranty (free replacement within three months of natural damage) 1. It comes with a touch screen control system, which can record the heating curve,
Optional	cooling curve, pressure curve, etc. in real time. 1. In order not to affect the service life of the electric furnace, we recommend the
Precautions	<p>maximum heating rate and cooling rate to be</p> <p>10-20y/min (Rapid heating will shorten the lifespan of the heating element).</p> <p>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.</p> <p>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.</p>
Packing list	One electric furnace, one crucible tong, one pair of high-temperature gloves, one data CD, one instruction manual, one certificate of conformity, one acceptance report (factory inspection report), and one sales delivery note. 1. The electric furnace is packaged
Shipping Information	<p>in three layers: wrapped in foam paper, then wrapped in plastic film, and finally placed in a wooden crate.</p> <p>Package</p> <p>2. Free delivery within China (free delivery within the city). 3. We will bear any damage that occurs during the transportation of the electric furnace. 4. Logistics methods: truck, rail, ship (foreign trade export), air freight (foreign trade export). For nearby locations, our company will arrange special vehicles for transportation (packaging is wooden pallets and cardboard boxes).</p>

III. Specifications and Prices

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name	Specifications and Models	Loading dimensions (diameter - length) in mm	External dimensions (mm)	Voltage ACV	power kw	weight (kg)	Mechanical pump price: 10,000 yuan	Roots pump unit	diffusion pump unit	Molecular pump unit
Vacuum	GWDL-1200ZQLB/D200-L300 D200-L300 700x650x1500 380 10 260	6.5	GWDL-1200ZQLB/D250-L400 D250-L400 800x750x1550 380 15				8	12 14		
	420 GWDL-1200ZQLB/D300-L400 D300-L400 900x750x1550 380 16	4.5	GWDL-1200ZQLB/D400-L500 D400-L500				8	10 14 16		
	1000x850x1550 380 24 520 10.5 12.5 17 19						9	11 15 17		
atmosphere box	GWDL-1200ZQLB/D500-L600 D500-L600 1000x850x1650 380 30 650	14.5	17 22 25 GWDL-1200ZQLB/D600-L800 D600-L800 1150x1000x1800 380 45 750 17.5 20 25							
	20 GWDL-1200ZQLB/D700-L900 D700-L900 1400x1200x1900 380 60	9.20	21.5 24 30 35 GWDL-1200ZQLB/D800-L1000 D800-L1000 1700x1500x2000 380 75 1500							
	24.5 27 34 40	1. Special furnace chamber dimensions can be customized according to customer requirements (delivery time 30 days)! 2. Dimensions are in millimeters (mm). The dimensions shown are for reference only; the actual dimensions shipped shall prevail. 3. High-temperature chamber vacuum: Mechanical pump unit:								
Note:	6.67x10 ¹ Pa ; Roots pump unit: 6.67x10 ² Pa ; Diffusion pump unit: 6.67x10 ³ - ⁴ Pa; Molecular pump unit: 6.67x10 ⁵ - ⁶ Pa									
	4. Optional items for customers: Costs will be charged separately.									

IV. List of Major Components:

List of main components of Juxing kiln,					
Serial Number	Item Name	Manufacturer's Notes			
		categorized by 1000 degrees.			
1.	Outer shell	Double-	•	Juxing	
2	heating element	shell electric heater	High-temperature alloy resistance wire (containing molybdenum)	Kiln,	
3	Electrical control section	Temperature controller	858P	Juxing	
4		thermocouple	K	Kiln,	
5		Voltmeter	•		
6		Ammeter	•		
7		SCR power regulator	•	Xiamen	
8		contactor	•	Yudian	
9		circuit breaker	•	Dazheng/	
10		Button	•	Guangming Zhengtai, Juxing Kiln, Zhengtai/Delixi Zhengtai/D	

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11		buzzer	•	Chint/Germany Lixi	
12		Fast-	•	Mingrong	
13		melting DC power source	•	Yingjie	
14	refractory Heat insulation furnace	ceramic fiber Viagra/ Module	1260	Juxing Kiln furnace	
15	vacuum room	310S	310S stainless steel	Juxing Kiln furnace	
16	Loading plate	Sintering plate	310S stainless steel	Juxing Kiln furnace	

V. Product video address: (text with hyperlink)

[GWDL-1200 °C Quartz Glass Liner Vacuum Atmosphere Box-Type Electric Furnace - Luoyang Juxing Kiln](#)

[Limited Liability Company](#)