Equipment/materials procurement contract

Project Name: Construction Project of National Key Laboratory and Characterization Platform for Advanced Glass Materials

Equipment/Materials: Five-sided heating box furnace

Contract No.: ZYY-CG-K25580-2025-C-GH33-0

Buyer: China Building Materials Glass New Materials Research Institute Group Co., Ltd.

Seller: Luoyang Juxing Kiln Co., Ltd.

Place of signing: Bengbu, Anhui

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Both the buyer and seller shall, in accordance with the Civil Code of the People's Republic of China and other relevant laws and regulations, adhere to the principles of equality and autonomy. Based on the principles of voluntariness, fairness, and integrity, five aspects of the National Key Laboratory and Characterization Platform Construction Project for Advanced Glass Materials were discussed. The supply, installation, and procurement of surface-heated box furnace equipment/materials have been agreed upon by both parties through negotiation, and they agree to proceed as follows:

The contract was signed with a list of terms and conditions.

1. Terminology Definition

The following terms in the contract are interpreted as follows:

1.1 "Contract" refers to an agreement or contract between equal parties (buyer and seller) that establishes, modifies, or terminates civil rights and obligations. This includes mutually interpretable and explanatory agreements, contract attachments, notices of award, and tender documents.

The tender documents and their attachments, technical standards, specifications and requirements, drawings, and other documents signed by the parties constitute the contract.

Component files.

1.2 "Contract Price" means the sum paid by the buyer to the seller upon proper performance of its contractual obligations, as stipulated in the contract.

The price payable to the seller.

1.3 "Goods" means all equipment (materials) that the seller is required to provide to the buyer under the contract to ensure their proper functioning.

Materials, drawings, packing information, and other materials.

1.4 "Services" means the ancillary services related to the goods that the seller undertakes as agreed in the contract.

1.5 “Project Site” refers to the location designated by the Buyer under the Contract for the delivery, installation and operation of the goods.

1.6 "Contract Factory" refers to the advanced glass materials national key laboratory and characterization facility contracted by the owner to the buyer.

The overall supply and installation engineering of the platform construction project.

1.7 "Acceptance Agency" refers to the organization formed by both parties in accordance with the contract (or relevant national procedures) to determine the contractual items.

The acceptance team determined that the goods met the technical specifications.

1.8 “Owner” refers to the investor in the construction of the contract factory.

1.9 “Assessment and Acceptance” refers to the performance testing of assembled equipment, systems, and materials until the owner/buyer issues an “Acceptance Report”.

1.10 "Quality Guarantee Period" refers to the start and end dates of the warranty period for the goods.

2. Scope of Supply

Supply details: See "Attachment: Supply list and technical requirements for five-sided heating box furnace".

3. Contract Price and Payment

3.1 Contract Price

According to the scope of supply stipulated in Clause 2 of the contract, the total amount of this contract, including tax (applicable tax rate 13%), is:

RMB 560,000.00 (in words: Five Hundred and Sixty Thousand Yuan Only). The price excluding tax is RMB 495,575.22, and the tax amount is RMB 64,424.78. If the applicable tax rate is adjusted when the seller issues the invoice, both parties shall abide by the "excluding tax" clause.

The total amount including tax in the contract will be adjusted accordingly based on the principle of "fixed tax price".

The total contract amount includes, but is not limited to: equipment (materials), processing, pre-assembly, inspection, and packaging.

Costs for transportation, installation, training, documentation, etc.

3.2 Payment Terms and Methods:

First Payment (Advance Payment): The buyer shall pay the seller the total contract amount within 10 working days after the contract takes effect.

80% of the payment will be made as a prepayment, amounting to RMB 448,000.00. If the seller defaults, the buyer will be entitled to [further payment].

The amount equal to the prepayment under this contract shall be deducted from the outstanding payments to the seller under other contracts.

ÿ Second Payment (Acceptance Payment): The buyer shall pay the seller within 30 days after the contract factory passes the assessment and acceptance.

10% of the total contract amount will be paid upon acceptance, amounting to RMB 56,000.00.

ÿ Third payment (warranty payment): Within 12 months after acceptance, provided that there are no unresolved quality issues as confirmed by both parties.

Subsequently, the buyer pays the seller 10% of the total contract amount as a product warranty fee, which is RMB

56,000.00 yuan.

A full VAT invoice with a tax rate of 13% will be issued within 3 days after the prepayment.

Payment method: wire transfer or electronic bank acceptance within 6 months.

3.3 Documents provided by the seller (if any):

a) Composition inspection certificates and official purchase invoices for raw materials used in production;	One original copy each
b) Quality inspection reports issued by national authoritative departments; c)	1 original copy
Inspection records and reports between major processes during manufacturing; d) Goods	1 original copy
receipt slips signed by the buyer's designated recipient; e) Complete set of	1 original copy
master and sub-packing lists; f) Electronic	4 sets
files of the complete master and sub-packing lists; g) Instruction manuals and	1 copy
drawings; h) English and Chinese instructions	2 copies
for imported equipment. Note 1: The "Special	One original copy each
VAT Invoice" should be submitted to the buyer's purchasing department, Wang Hui, 19955298399;	
Note 2: Other documents should be submitted to the buyer's receiving manager.	

4. Technical Specifications and Standards

4.1 The performance of the goods delivered by the seller must be equivalent to or better than the technical specifications/standards stipulated in the contract appendix. If the contract...

If the applicable technical specifications/standards are not specified in the appendix or are unclear, the buyer's tender documents should be consulted sequentially.

Components/drawings, national standards, industry standards, and the seller's tender documents shall be followed.

4.2 The equipment (materials) provided by the seller must have a valid production license. If the equipment (materials) provided do not conform to the license or are manufactured beyond the scope of the license, or if the equipment (materials) provided by the seller cannot pass the acceptance inspection by the local authorities for other reasons, the buyer has the right to claim compensation from the seller.

4.3 All units of measurement shall be the legal units of measurement of the People's Republic of China, unless otherwise agreed in the technical specifications.

5. Use and Confidentiality of Contract Documents

5.1 The main text of the contract, the contract attachments, and the drawings and documents used in the performance of the contract are for the sole purpose of performing this contract. And use it.

5.2 Without the prior written consent of the other party, Party B shall not disclose any business or technical information (including unit prices) related to the contract. The total price, contract text, contract attachments, and drawings are provided/disclosed to third parties unrelated to the performance of the contract.

6 Intellectual Property

6.1 The seller shall warrant that the buyer will not be subjected to any third party injury or damage while using the goods or any part thereof. The lawsuit filed by the other party alleges infringement of its patent rights, trademark rights, industrial design rights, or other intellectual property rights.

6.2 If the goods provided by the seller have intellectual property defects or disputes as stated in the preceding clause, the seller shall assist the buyer in resolving the matter with the relevant party. All three parties shall negotiate and bear all legal liabilities and costs arising therefrom. If the use of the equipment (materials) or any part thereof is restricted due to a final ruling constituting infringement, the seller shall bear the relevant liabilities, costs, and appropriate measures. reason.

7. Process Inspection

7.1 The buyer has the right to send inspectors to the seller's (or manufacturer's) premises to inspect the equipment (materials) together with the seller's inspectors. The seller supervises and inspects the manufacturing process and quality, but this does not replace or relieve the seller of its responsibility for product quality.

7.2 If any inspected goods fail to meet the requirements stipulated in the contract, the buyer may refuse to accept the goods. The seller shall promptly replace the rejected goods upon the buyer's request, or make the necessary modifications free of charge to meet the requirements of the contract. Requirements. The buyer has the option to make this choice.

7.3 If, during the warranty period stipulated in Clause 14.2 of the Contract, the quality or specifications of the goods are found to be inconsistent with the Contract requirements based on the inspection results, or the goods are found to be defective, including potential defects or the use of unsuitable materials, the Buyer shall have the right to promptly make a claim against the Seller.

8 packs

8.1 The seller shall provide the necessary packaging for the goods to be delivered to the final destination agreed in the contract, in order to prevent the goods from being damaged during transit. Damaged or lost during transport.

8.2 Packaging shall comply with relevant national or professional standards, including protection against moisture, sunlight, rust, corrosion, and other hazards.

Vibration and other necessary measures to prevent damage, thereby ensuring that the goods can withstand multiple handling, loading and unloading and long-distance transportation.

8.3 If, upon handover of the goods, it is found that the packaging materials, packaging method, or packaging storage and transportation markings do not conform to the terms of the contract...

If the packaging is damaged or fails to meet the relevant requirements, the seller shall be responsible for repairing the packaging and repainting the labels and shall bear the relevant costs.

8.4 The packing list and accompanying product instruction manuals, assembly drawings, and other documents must be sealed in plastic bags.

Pack it and secure it inside the first packaging box.

8.5 The following information should be included on the outside of the packaging box:

Recipient: Name/Phone Number

ÿ Goods Name:

ÿ Carton number/Piece number (sub-carton number/total number of

cartons): ÿ Weight: Net weight/Gross weight

ÿ Dimensions: Length × Width × Height

Shipping unit:

9. Transportation

9.1 The seller shall be responsible for transporting the goods under this contract to the designated location agreed upon by both parties and shall bear the freight and other costs.

9.2 Throughout the entire transportation process, the seller must take strict rain protection measures. In the event of dampness, rain, or loss, the seller shall be liable for compensation.

The seller shall be responsible for any loss or damage.

9.3 Upon arrival of the goods at the delivery location, the buyer shall arrange for on-site unloading.

9.4 The seller shall notify the buyer of the status of the goods, arrival time, and other information **two** days prior to shipment so that the buyer can arrange for receipt and

warehousing.

10 insurance

Regarding the possibility of loss or damage during the transportation and delivery of the equipment (materials) provided under the contract,

The seller shall be responsible for purchasing insurance.

11 Delivery time and location

The seller shall deliver the goods within the time specified in the contract or its appendix. The actual delivery time shall be determined by the consignee designated by the buyer.

The date on the issued "Goods Receipt" shall prevail.

Delivery time, location, and consignee: See contract appendix: Supply list and technical specifications for five-sided heating box furnace.

beg.

The buyer is responsible for unloading at the owner's factory unless otherwise agreed in the contract.

12 Delivery and Acceptance

Before delivery, the seller or manufacturer shall provide a detailed and comprehensive description of the quality, specifications, performance, quantity, and weight of the goods.

The inspection shall be conducted on the surface, and a certificate of conformity and pre-delivery inspection record shall be provided to the buyer, but these shall not be used as evidence for quality or specification matters.

Final inspection of grade, performance, quantity, or weight.

12.1 After the goods arrive at the site, the buyer may conduct random inspections of the goods. If the inspection results do not meet the technical requirements stipulated in the contract, the seller shall bear the relevant responsibilities.

12.2 The Buyer shall determine the acceptance date within **5** days of the arrival of the goods and notify the Seller **3** days in advance. If the Seller fails to participate in the acceptance at the time specified in the notice after receiving the Buyer's notice, it shall be deemed that the Seller has agreed to the Buyer's unilateral acceptance.

The buyer shall accept and verify the acceptance results; if the buyer fails to conduct acceptance within the specified period, it shall be deemed that the acceptance has been completed.

12.3 Acceptance shall be based on the relevant requirements and standards stipulated in the contract. If the contract does not clearly stipulate them, they shall be handled in accordance with the Civil Code.

The relevant agreements regarding the agreement shall be followed. The acceptance results shall be confirmed by both parties' signatures.

12.4 If the acceptance results do not conform to the contract stipulations, the seller shall be responsible for free replacement or repair, and the buyer has the right to choose in this regard.

Choose the right.

12.5 Acceptance Notes:

The seller's personnel or representative shall deliver the packing list, warranty card, instruction manual, assembly/assembly drawings, factory inspection report, product certificate, and accessories to the buyer's consignee at the owner's factory warehouse.

After delivery and acceptance, the buyer shall sign the "Goods Receipt" and retain the "Goods Receipt". A copy shall be given to the seller's personnel or seller's representative for retention;

If the buyer discovers that the appearance, quality, model, specifications, brand, quantity, etc., of the goods do not conform to the contract requirements... If the packing list or other documents do not match, the buyer has the right to refuse delivery. Furthermore, the buyer will assess the extent of the negative impact this may cause. The right to file a claim against the seller is reserved.

12.6 In the event of any dispute during the acceptance process, both parties shall take effective measures to protect the site and resolve the dispute through negotiation.

If no agreement can be reached through negotiation, the relevant provisions of the contract shall apply.

13. Accompanying services

The seller under this contract shall provide the following services (if any):

Provide tools and equipment needed for cargo assembly/repair;

Provide a detailed operation and maintenance manual;

On-site installation/commissioning guidance;

Provide technical training to the buyer/owner's personnel.

Other after-sales services

14 Guarantees

14.1 The seller warrants that the goods provided under this contract are new, of sufficient value, safe and environmentally friendly, and free from infringement.
And it fully complies with the equipment/material name, model specifications, performance requirements, and brand stipulated in the contract.

14.2 Quality Guarantee Period:

For the **12** consecutive months following the seller obtaining a qualified "Acceptance Report" .

14.3 During the warranty period, the seller shall compensate for any failures caused by defects in design, production, or materials.
The seller shall be responsible for any damages and all costs incurred.

14.4 The Buyer shall notify the Seller in writing as soon as possible of any defects discovered during the warranty period.

14.5 Before the expiration of the warranty period, the seller shall, upon receiving notification, promptly provide free repair or replacement within **24** hours.
The seller shall replace the defective goods or parts and bear all related costs incurred therefrom.

14.6 If the seller, upon receiving notification, fails to promptly repair or replace the defect to remedy the deficiency within the time stipulated in the contract,
If the problem arises, the buyer may take necessary remedial measures. The buyer has the right to entrust a third party to handle the emergency, therefore...
The costs incurred shall be borne by the seller, and the buyer's other rights against the seller as agreed in the contract shall not be affected.

15 claims

15.1 If the seller is liable for technical deviations of the goods after delivery but before the expiration of the warranty period,
The buyer then has the right to claim against the seller. Claims can include: repair, replacement, return, price reduction, deduction from the purchase price, etc.
The seller shall compensate for any direct and consequential losses. The seller shall agree to the buyer's claim and bear any resulting costs, including any additional expenses incurred by the buyer.
All expenses including (unloading fees, installation fees, inspection fees, dismantling fees, loading fees, transportation and insurance fees, etc.).

15.2 The Buyer shall be entitled to deduct the costs incurred as a result of a claim from the contract amount or from the performance bond provided by the Seller.
Except for the portion not specified, the buyer reserves the right to seek further recourse from the seller for any shortfall.

16 Notices

16.1 Any changes to the following items by either the buyer or the seller must be communicated and notified in writing:

Changes to design drawings, model specifications, materials, order quantity, and brand (including referenced components); Transportation or
packaging methods;

Delivery location or delivery time;

Contact person;

ÿ Accompanying services.

16.2 If any changes occur in the costs or timeframes of the above modifications, the buyer and seller shall negotiate amicably.

16.3 Changes shall take effect only upon the consent of both the buyer and the seller.

17 Contract Amendments

Any modifications to the main text or appendices of the contract must be agreed to by the other party and confirmed in writing.

18 Subcontracting and Sub-contracting

18.1 The seller shall not subcontract the subject matter; the seller shall obtain the buyer's consent before subcontracting the subject matter.

18.2 Subcontractors/companies must have the corresponding qualifications.

18.3 Subcontracting shall not relieve the seller of any obligation to perform the contract.

19. Performance delays

In the course of contract performance, if one party delays its performance, it shall promptly notify the other party of the reason for the delay and the duration of the delay.

The details, potential impact of the delay, and measures to handle the delay should be provided. The other party should notify the delaying party upon receiving notification.

The delay should be promptly assessed, and a memorandum of understanding or supplementary agreement should be reached with the party causing the delay.

20. Compensation for delays

If the seller fails to deliver the goods within the time stipulated in the contract, and this substantially affects the buyer's overall schedule,

The buyer is entitled to deduct 2% of the value of the delayed goods per week as compensation (less than one week is counted as one week); the maximum compensation is **10% of the total contract amount.**

21 Other liabilities of the seller for breach of contract

21.1 Except for the breach of contract under Clause 20, "Compensation for Delay", the Seller shall be liable for any other breach of contract, including but not limited to shortages, quality issues, or service deficiencies.

In such cases, liquidated damages shall be payable according to the following formula: Liquidated damages = Total contract amount × 3‰ × Number of days of breach. The number of days of breach is from the date of the breach to the date the breach is rectified.

21.2 If the actual loss exceeds the penalty for breach of contract, the breaching party shall also pay the difference.

Contract **22** terminated

22.1 The buyer shall have the right to terminate part or all of the contract if any of the following circumstances occur:

The seller failed to deliver the goods within the period stipulated in the contract;

The seller failed to deliver the goods within the extended period agreed upon by the buyer;

The technical specifications/performance parameters of all or part of the goods supplied by the seller are lower than those agreed in the contract;

During the competition and implementation of the contract, the seller engaged in corrupt and fraudulent activities.

The seller refuses to fulfill its obligations under the contract.

22.2 If the termination of part or all of the contract occurs, the buyer and seller must promptly confirm their rights and establish a "settlement" agreement.

"Calculate the agreement."

23 Force Majeure

23.1 Force majeure refers to an event that was unforeseeable by both parties at the time of conclusion of the contract, and whose occurrence and

The consequences are unavoidable and insurmountable events, such as war, severe fires, floods, typhoons, and earthquakes.

If either party is unable to perform the contract due to a force majeure event, the performance period shall be extended for a period equivalent to the time affected by the event.

23.2 When force majeure occurs, if one party is unable to perform its obligations under the contract, it must promptly notify the other party.

Inform the other party and, within **14** days of the incident , send the relevant supporting documents issued by the authorities by express mail or registered mail.

The letter should be sent to the other party for review and confirmation. If the impact of a force majeure event lasts for more than **six** weeks, the buyer has the right to withdraw the contract.

contract.

24 Dispute Settlement

24.1 In the event of a dispute arising within the statutory or contractually agreed period, both parties shall endeavor to resolve the dispute through friendly consultation.

24.2 If the parties cannot resolve the matter amicably through negotiation, they shall file a lawsuit in the People's Court at the buyer's location in accordance with the law.

24.3 During the course of litigation, except for the part of the contract that is in litigation, the other parts of the contract shall continue to be performed.

25 Applicable Law

This contract shall be interpreted in accordance with the current laws and regulations of the People's Republic of China. Any matters not set forth in this contract or relating to applicable laws shall be deemed invalid.

Where a provision of law is ambiguous, the interpretation of the applicable law shall prevail.

26 Contract Effectiveness and Invalidity

26.1 The terms of this contract shall become effective upon signature or seal by both parties.

26.2 This Contract shall automatically become invalid upon the performance of all obligations by both parties.

26.3 This contract is made in five copies, four for the buyer and one for the seller, all of which have equal legal effect.

buyer: China Building Materials Glass New Materials Research Institute Group Co., Ltd. (Official Seal/Contract Seal)	Seller: Luoyang Juxing Kiln Co., Ltd. (Official Seal/Contract Seal)
December 2025	December 2025
Postal code: 233010	post code:
Address: No. 1047, Tushan Road, Bengbu City, Anhui Province; Address: Xinghe Science and Technology Industrial Park, Jianxi District, Luoyang City, Henan Province	No. 1 Yeyi Road
Telephone: 0552-4076408	Telephone: 0379-69936789
Fax: 0552-4081941	fax:
Credit Code: 913403004852224289	Credit Code: 91410305555716723L
Opening Bank: China Construction Bank Bengbu High-tech Development Zone Branch; Opening Bank: China Construction Bank Luoyang Zhongzhou West Road Branch	
Account: 34001626108053001388	Account: 4100 1539 1120 5020 1359
Contact Person: Wang Hui 19955298399	Contact Person: Wang Guoqing

Attachment: Supply list and technical requirements for five-sided heating box furnace

sequence Number	name	Specifications / Instructions	Quantity Notes	
1. Main unit of the device		All-in-one machine	4 units	
2. Heating wire spare parts		Contains 5–8 roots	4 sets of spare parts	
3. Thermocouple		K type	4	
4. Crucible tongs		High-temperature work	4 sets	
5. Furnace bottom refractory plate			4 pieces	
6. High-temperature gloves		High temperature protection	4 sets	
7. Instruction Manual		Randomly provided	4 random documents	
8 Product Certificates		Certificate of Quality from Factory	4 random documents	
9. Acceptance Report		Factory inspection report	4 random documents	
10. Sales delivery note		Original factory accompanying documents	4 random documents	
11. Warranty Card			4 copies	
12 Gaoqiang Glass New Material Science and Technology Industrial Park, No. 751 Donghai Avenue, Longzihu District, Bengbu City, Anhui Province 13003022178 Delivery period: Within 2 months after prepayment				

GWDL-XL Five-Sided Heating Box-Type Electric Furnace Technical Specifications

I. Product Introduction

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 forming. It is made of high-purity alumina lightweight material.

It uses high-temperature alloy resistance wire for heating; it is a special equipment developed for laboratories of universities, research institutes and industrial and mining enterprises for 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, a voltmeter, an ammeter, and a computer connection for real-time monitoring of the system's operating status. This product utilizes reliable integrated circuitry, offers excellent operating conditions and interference resistance, features microcomputer program control, programmable curves, and fully automatic heating/cooling. During operation...

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

II. Technical Parameters	
highest temperature	1100ÿ
Long-term operating temperature	1000ÿ
Temperature control range	RT-1100ÿ
The furnace adopts a three-point temperature control system: the first measuring point is located at the furnace door, the second measuring point is located at the furnace bottom, and the third measuring point is distributed on both sides and the rear wall of the furnace body to ensure that the temperature inside the furnace is uniform and controllable.	
Temperature control	±1ÿ
accuracy, furnace temperature	ÿ±5ÿ
uniformity, furnace chamber dimensions	ÿ300mm×300mm×400mm
(mm), voltage	380V, 50Hz
Power	12kW
temperature sensing element	K-type thermocouple
Heating element material	High-temperature alloy resistance wire
Heating element installation location	Five-sided heating (arrangement can be customized), with resistance wires spirally wound inside corundum tubes. The non-uniform distribution is secured to the furnace interior on five sides (both sides, furnace door, rear wall, and bottom) via pre-cut refractory bricks. Each heating element is fixed to the furnace wall at both ends with ceramic rods to prevent shrinkage at high temperatures. The bottom of each heating element's corundum tube is also supported by ceramic rods to prevent bending and deformation at high temperatures. The heating elements are fully exposed to the furnace wall for better heating performance, longer heating wire lifespan, and easier replacement. The maximum heating rate is 30 degrees Celsius per minute
heating rate	(non-linear), and the slowest is 1 degree Celsius per hour (non-linear). The cooling rate is continuously adjustable from 0.5-15°C/min.
Cooling system	Equipped with a forced air cooling structure, the blower is controlled by a frequency converter and can be linked to a PLC process curve to automatically adjust airflow and speed according to a preset temperature program, achieving a stable and controllable cooling process. The electric furnace body adopts an advanced air-cooled double-layer carbon
Furnace body structure and materials	steel structure. Effective air-cooling guide baffles ensure overall cold air circulation within the furnace shell, ultimately cooling the conductive plates of the heating elements before they are discharged from the furnace body, preventing high-temperature oxidation of the conductive plates and guaranteeing a good working environment. The furnace
Door opening method	door opens 180 degrees axially to the side. The door lock is located on the side and is equipped with an elastic lock, which effectively locks the furnace. The elasticity of the lock absorbs the expansion of the refractory material, ensuring free expansion and contraction of the refractory material and effectively sealing the furnace lining.
Refractory insulation materials	The furnace lining is made of imported German vacuum-formed high-purity alumina lightweight material, which has high operating temperature, low heat storage, resistance to rapid heating and cooling, no cracking, no slag shedding, and good thermal insulation performance

The furnace shell temperature can be maintained for long-term (20 days) operation without interruption. The shell temperature is ÿRT+45ÿ. An integrated	
Security Protection	modular control unit is adopted, which has accurate control precision. It is designed with dual-loop control and dual-loop protection, and has protection against overshoot, overshoot, undershoot, thermocouple breakage, phase loss, overvoltage, overcurrent, overtemperature, current feedback, and soft start. The furnace body is designed with a function to open the furnace door and disconnect
Power off when door is opened	the main heating circuit when the temperature is high during operation, greatly protecting against the risk of electric shock during high-temperature material handling. It employs closed-loop technology with thyristor module
Safe temperature control	trigger control, phase-shift trigger control, or zero-crossing triggering, allowing for continuous adjustment of output voltage, current, or power, and providing 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. The furnace control system supports preset heating programs and remote management, and provides a visual presentation of material status, real-time furnace temperature, and the heating process through a multimedia display terminal.
Temperature control program management and status display interface	
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 a 50-segment programmable control function, 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. The 50-segment programmable 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 recalled arbitrarily during use. The panel
Number of segments in the heating curve	includes two buttons: a main power button/knob and a heating chamber on/off button/knob.
III. Warranty Scope and Period: The electric	
furnace is covered by a one-year free warranty. The furnace bottom plate and heating elements are not covered (free replacement for natural damage within three months). IV. Packing List: 1 pair of high-	
temperature gloves; 1 furnace	
bottom plate; 1 crucible tong; 1 copy of the main unit instruction manual; 1 copy of the warranty card; 1 copy of the delivery note and equipment acceptance form.	
V. Precautions 1. To avoid	
affecting the service life of the electric furnace, it is recommended that the maximum heating and cooling rates be 0.5-15ÿ/min. (Rapid heating at high temperatures will shorten the lifespan of the heating elements.) 2. This box furnace does not use 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. This is normal and	
will not affect the use of the furnace. These cracks 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, and we will take appropriate measures. The furnace undergoes special treatment.
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, and we will take appropriate measures. The furnace undergoes special treatment.
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.
VI. Shipping Details
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 locations closer to the destination, our company will provide the transportation. Dedicated vehicle transportation will be arranged (packaging includes wooden pallets and cardboard boxes).

2、触摸屏控制系统展示：

Project Name	Touchscreen Function Introduction
Size,	7-inch TFT true color
shape, resolution,	206W*156H*50D(mm)
backlight	800*480
power,	led
weight	5W
	1Kg
language	You can switch freely between Chinese and English.
Full-screen display and operation	Instrument panel, bar chart, historical trends, data reports, alarm information, Data export, process flow, system management, etc.
Controlled object	Temperature, pressure, flow rate, liquid level, etc.
controls the number of electric furnaces	Units 1-6
Temperature control	Touch screen + high-precision integrated module

Start heating,	Touch operation
temporarily set	Touch operation
heating, stop heating	Touch operation
Temperature profile compilation	Touch operation, 30 segments per curve
There is no limit to the number of temperature curves that can be stored (each curve can be named in Chinese or Spanish).	
Real-time status display	Running curve name, running segment number, segment time, segment running time, Digital temperature, real-time curve, 100% power output
Select segment number to start (cross segment) Startup)	Touch operation
Historical range	Adjustable
curve (graphics and text) Stored for approximately 20 months	
Data reports (Excel) can store approximately 20 months of data and can be displayed simultaneously from multiple locations (can be expanded using a USB flash drive).	
Historical curves and report records (Save) interval	Adjustable from 1 second to 3600 seconds, supports simultaneous display of multiple points (can be expanded by inserting a USB flash drive). exhibition)
The alarm indicator changes color (to red).	
Alarm message language	Chinese display (alarm time and event description in Chinese)
Data export interface	USB
Printer interface	parallel port
The touchscreen is password protected (operation is prohibited without the password).	
Communication port	RS485

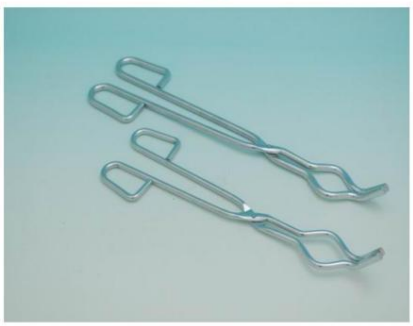
VII. List of Main Components of Juxing Kiln

Serial Number	Item Name		Classification 1200 Spend	1400 Spend	1600 Spend	1700 Spend	1800 Spend	1900 Spend	factory	Remark
1. Outer shell		Double outer shell	• • • • •					•	Juxing Kiln furnace	
2	electro-thermal element	electric heating instrument	high temperature alloy resistance Silk	Silicon carbon Great	silicon molybdenum Great	1800 Type Silicon molybdenum rod	1850 Type Silicon molybdenum rod	1900 Type 1 silicon molybdenum Great	Juxing Kiln furnace	
3	Electrical appliances control part	Temperature controller 858P 858P 858P 858P 858P 858P							Xiamen Yu electricity	
4		Thermocouple K		S	B	B	B	B+ light fiber	Taisho/ bright	
5		Voltmeter • • • • • Ammeter • • • • •						• Chint		
6								• Chint		
7		SCR Adjustment • • • • •						• Western Germany		

		Power tools							Menkang 106/16 E	
8		Contactor • • • • •						•	Zhengtai/	
9		Air circuit breaker • • • • •						•	Delixi Zhengtai/	
10		Button • • • • •						•	Delixi Zhengtai/	
11		Buzzer • • • • •						•	Delixi Zhengtai/	
12		Fast melting • • • • •						Delixi •		
13		Transformer • • • • •						•	Mingrongjuxing Kiln	
14		Ceramic fiberboard / Modular	1260 1500 1700 1800 1850					Zirconia fiber 2100	Juxing Kiln	
15	Refractory and heat-insulating furnace	furnace opening insulation plug bricks (inner door)	• • • • •					•	Juxing Kiln	
16		Sintering plate	Quartz ceramics	Quartz ceramics	Corundum Mullite	Corundum Mullite	Corundum Mullite	Zirconia fiber 2100	Juxing Kiln	

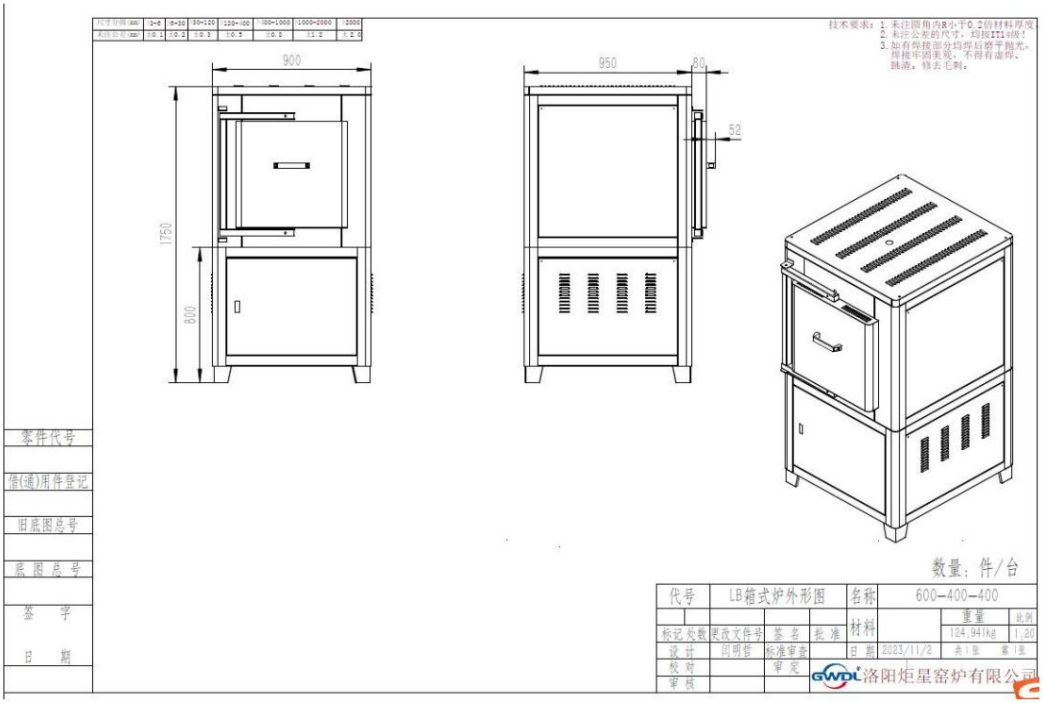
Random spare parts

坩埚钳



高温手套

External schematic diagram



1 概述

1.1 主要特点

● 新型 AI 人工智能算法，即使是大滞后系统也能精确控制，对 PID 参数适应性更强。
● 除经典的 AT 自整定功能外，具备 AAT 先进快速自整定功能，能在设备通电升温时分析升温曲线计算 PID 参数，无需如传统 AT 那样来回振荡，大大节约设备调试时间；
● 输入可自由选择热电偶、热电阻、电压、电流并可扩充输入及自定义非线性校正表格，部分输入类型测量精度可达 0.05 级。
● 高精度低温漂测量技术，采用宇电订制的 22/24BIT 高分辨率 A/D 转换器，同时具备 50Hz/60Hz 干扰抑制功能。
● 供电采用全球通用的 100~240VAC 范围开关电源，提供全面电源防护功能，即使长时间误接 380VAC 也不会烧坏；也可选择 24VDC 电源供电，并具备多种外型尺寸供选择。
● 重视节能与环保的设计理念，精选“发烧”级节能元器件，无输出及报警时整机功耗仅 0.2W 左右，使得仪表自身温升大幅度降低从而提升产品可靠性和稳定性。
● 采用先进的模块化结构，提供丰富的输出规格，能广泛满足各种应用场合的需要，交货迅速且维护方便。
● 允许编辑操作权限及现场参数表，并可设定密码，形成“定制”仪表。
● 支持多种通信协议，包括宇电自主开发简洁高效的 AIBUS 协议、通用型 MODBUS 协议等；通过多功能通信控制器可以实现包括 TCP 等多种网络连接方式。

● 强抗干扰设计，通过 6KV 群脉冲抗干扰测试，抗干扰性能符合在严酷工业条件下电磁兼容（EMC）的要求。
● 数码管升级为新一代自发光 LED 显示技术，无漏光或视角问题，发光效率更高，颜色更艳丽，功耗大幅度降低，并可选不同 LED 颜色搭配模式。
● 电网欠压瞬时断电保护功能，启动电压低至 50VAC 左右，电网瞬时断电后持续工作时间长达 1 秒左右。
● 设计使用温度范围宽达-10~+60 度，并采用高精度晶体振荡器，实际老化测试温度高达 100 度。
● 当仪表具有多组输入输出时，能提供完善的电源及光电隔离解决方案。
● 内建程序控制功能，参数 Pno 程序段数设置为 0 时可完全兼容定点操作模式，设置为 1 时仅需设置给定值和定时控制时间，AI-8*8 系列可支持长达 50 段程序控制功能。
● 自动/手动无扰动切换功能，可设置作为手操器使用。
● 具备外给定值控制功能（仅 AI-8*8 系列）以及测量值/给定值变送为 4~20mA 或 0~20mA 输出功能。
● 内建 50 点表格/折线处理功能，可用于测量值输入多点修正和高温炉输出跟随测量值限幅等功能。
● 外部事件输入功能支持给定值切换、PID 参数切换及手动/自动无扰动切换等功能。
● 包括上限、下限、正偏差、负偏差等多种报警模式功能，可自由设置报警输出位置。
● 多种热电偶冷端补偿方式选择：除普通的内部补偿模式外，支持高精度的外接 CU50 及冰点补偿方式。
● 传感器断线时可以定义输出百分比，可选择人为设置或系统自主限制。
● 多种盘装及导轨安装方式可选：包括 48*48、72*72、48*96、96*48、96*96、160*80、80*160 等盘装形式和 D7 导轨安装型模块。