



Programmable Temperature Only Test Chamber 1000L





UKAE LAB LTD. 100% QUALITY GUARANTEE

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1, Pictures Reference





2, Overview

Model No	GTO-080	GTO-150	GTO-225	GTO-408	GTO-800	GTO-1000	GTO-3500
Working room(L)	80	150	225	408	800	1000	3500
Inner chamber size(mm)W*H*D	400*500*400	500*600*500	500*750*600	600*850*800	1000*1000*800	1000*1000*1000	1500*1500*1500
Exterior chamber size(mm)W*H*D	900*900*1500	950*1500*1050	950*1650*1150	1050*1750*1350	1450*1900*1350	1450*1900*1550	W2000*H2000*D2200
Packaging volume(CBM)	2	3	3.5	4.5	5.5	6	10
G.W.(KGs)	300	320	350	400	600	920	1900

1.Description	Programmable Temperature Only Test Chamber
2.Model No	GTO-1000
3.Volume,Size and Weight	
3.1.Inner volume	1000L
3.2.Inner chamber size(mm)W*H*D	1000*1000*1000mm
3.3.Exterior chamber size(mm)W*H*D	1450*1900*1550mm
3.4.Weight(KG)	920KGs
3.5.Power Supply	AC 1Ψ 110V;AC 1Ψ 220V;3Ψ380V 60/50Hz
3.6.Power	18kW
3.7.Current	32A
3.8.Package	Pallet or Wooden Case

3, Performance



1. Temperature Range	-50° C to +200° C -190°C,-160°C,-150°C,-120°C,-100°C,-80°C,-70°C,-60°C,-40°C, -20°C,0°C ~+150°C,200°C,250°C,300°C,400°C,500°C,600°C,700°C,800°C,900°C,
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	1000°C
3,Heating Rate	$\geq 3^{\circ}\text{C}/\text{Min}(-70\sim+180^{\circ}\text{C} \leq 90\text{min})$ Or 3°C/min, 5°C/min, 8°C/min, 10°C/min, 15°C/min,20°C/min,25°C/min, 30°C/min linear or nonlinear average
4,Cooling Rate	$\geq 4.2^{\circ}\text{C}/\text{Min}(+180 \sim -70^{\circ}\text{C} \leq 60\text{min})$ Or 3°C/min, 5°C/min, 8°C/min, 10°C/min, 15°C/min,20°C/min,25°C/min, 30°C/min linear or nonlinear average
5,Control accuracy	0.01°C or based on your custom requirements
6,Temperature Fluctuation	$\leq \pm 2.0^{\circ}\text{C}$ or based on your custom requirements
7,Temperature Error	Temp Precision: $\pm 2^{\circ}\text{C}$ Temp Uniformity: $\pm 1^{\circ}\text{C}$ to $\pm 3^{\circ}\text{C}$ $\leq \pm 1^{\circ}\text{C}$ or based on your custom requirements
10,Standards	1. MIL-STD-810G 2. MIL-STD-810E 3. MIL-STD-810F 4. RTCA/DO-160C/F 5. RTCADO-160G 6. DEF STAN 0035 3-11 (HIGH TEMPERATURES, LOW PRESSURES) 7. DEF STAN 0035 3-12 (LOW TEMPERATURES, LOW PRESSURES) 8. DEF STAN 0035 3-13 (LOW TEMP. AND PRESSURES, HIGH HUMIDITY) 9. GB10590-89 Low-temperature and low atmospheric pressure testing condition 10. GB10591-89 High-temperature and low atmospheric pressure testing condition 11. GB11159-89 low atmospheric pressure technical condition 12. GB/T2423.25-1992 Low-temperature and low atmospheric pressure test chamber 13. GB/T2423.26-1992 High-temperature and low atmospheric pressure test chamber 14. GJB150.2-86 High-temperature and low atmospheric pressure(Altitude) test 15. IEC60068-2-1.1990 Testing methods of Low-temperature test chambers 16. IEC60068-2-2.1974 Testing methods of High-temperature test



	chambers 17.IEC-540 18.ASTM D2436 19.JIS K7212 20.DIN 50011 21.BS2648 22.Mil-Std 202G (conditions 105C, A/B/C/F) 23.IEC 60068-2-39 24.IEC 60068-2-40 25.JIS W 0812 26.ISO 27.ASTM 28.UNE 29.AENOR 30.ICH
11,Working Noise	≤60dB(A) (Cycling temperature 25°C,testing in the less echo anechoic chamber,use A weighting,testing 8 points average,every testing point far away from level noise source 1 meter,Height far away from floor 1 meter)

4,Main Chamber

1,Structure





	 
2,Exterior chamber Material	Superior hot and cold resistance SUS#201 stainless steel (or color plated + electrostatic spraying), or SUS304 Stainless steel plate+ powder coated 3.Box insulation material:
3,Inner chamber Material	Superior hot and cold resistance SUS#304 or SUS#316 stainless steel
4.Insulation Material	Environmental friendly PU & Fiberglass wool
3,Air Circulating Duct	1. Use multi-wing centrifugal circulating fan, strengthen axis and hot cold resistance rotary vane make of aluminum alloy, in order to forced convection. 2. FLOW THROW Air Supply Method, level diffuse vertical heat exchange arc circulation. 3. Program automatic control high speed air cylinder drive high low temperature air supply valve conversion.
4.Standard Configuration	Move caster: 6 pcs Adjustable Interlay Ladder: 5 Sets (height adjustable) Samples Shelves: 2 sets SUS#304 or SUS#316 stainless steel sample stand, hook 8 pcs, Load bearing (uniform distribution): 25kg/layer (sample total load bearing not more than: 60kg) PC, Mobile APP, USB, RS23 or RS-485 communication interface, misoperation hardware lock, communication cable Cable port: Ø100mm 1 pcs (Option 2 Cable ports, or Ø100mm, Ø200mm) on left side
5.Door	Single hinged door (face to box, left hinges, right handle) Door Interlock



6,Control Panel	1.Controller display 2.U disk interface(USB)
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	3.RS485 Computer communication Interface 4.Misoperation hardware locking LOCK 5.Power switch 6.Emergency stop switch 7.Status and sound& light alarm device 
7,Standard Configuration	Refrigeration System,water pan,drain hole,condenser,plate heat exchanger, Transport wind motor refrigeration system safety device (detail see configuration list)
8,Circuit System	IO Panel,tool transformer,ballast,intermediate relay,time relay,solid-state relay,A.C. contactor,thermal relay,fuse,owe reverse-phase relay, air switch
9,Heater	1.Chromel alloy strip heater 2.Heater control method: contactless recurrent pulses tune width, SSR (solid state relay) 3.Heater power: 20KW
10,Power Wire and drain hole	Power Wire at the top of chamber,drain hole at the back of chamber
11,Clean Room Class	Class 100 or Class 1000 Heat-resistant HEPA filter

5,Refrigeration System

1,Cooling System	Binary overlay cooling system,Dual stack refrigeration system
2,Refrigeration	High-Quality High-Perfomance Tecumseh or Bitzer



Compressor	Full-Hermatic Compressor Unit or Semi-Hermetic Compressor Unit
3,Evaporator	Extra fins rifled tube exchanger (use superior copper added rinsing aluminium film special technology customization)
4,Condenser	Air-cooled or Water-cooled,shell and tube exchanger
5,Throttling device	Expansion Val+capillary tube
6,Defrost Device	Program automatic control defrosting cycle(manual control),use hot defrosting temperature control principle,PID electrodeless adjust compressor exhaust transmission quantity,energy-efficient.
7,Plate Heat Exchanger	Stainless steel brazing plate heat exchanger
8,Refrigerator Control	1,Self-running PID Control system according to testing condition to perform excellent energy saving and full output. 2,Evaporator cooling capacity switch by system driver drive solenoid valves 3,Compressor return air cooling circuit
9,Refrigerant	R404a/R23 (ozone waste index is 0, R23 for overlay refrigeration system use)

6, Electric control system(ECS)

1,Controller	7Inch or 15 Inch TH5600 PID Controller Popular PID controller with touch-screen operation Stores 120 different profiles with up to 1200 steps each (ramp, soak, jump, auto-start, end) Step types include: ramp, soak, jump, auto-start, and end Ethernet interface for remote monitoring and operation RECOMMENDED OPTIONS Dry air purge, to compensate for quickly shrinking air during cooling, as well as to reduce risk of condensation. Product temperature control, allows feedback from a second sensor on the product. Ensures faster completion of transition steps.
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	Battery Climatic Chamber, Hazard Level 6 Controller
2,Operation mode	Program mode
3,Setting mode	English Menu(Option Russian,Spanish,South Korean,Japanese.,etc) PID Control
4,Program volume	T-touch 1.Program: Maximum 120 set 2.Cycle number: Maximum can infinite loop
5,Setting range	Adjust by devices' temperature working range
6,Resolution	Temperature: 0.01°C
7,Input	T model thermocouple
8,Communication function	PC,Mobile APP,USD,RS-232 or RS-485 interface,misoperation hardware locking LOCK,random complimentary computer communication software
9,Control	1. Anti reset wind-up PID 2. BTC balance tempering control +DCC intelligent cold quantity control +DEC intelligent electrical control
10,Curve record function	Have battery protections' RAM, can save devices' setting,time of sampling value and sample time; Maximum recording time is 180 days(when sampling period is 60S)
11,Auxiliary function	1.Fault alarm and cause,code manage prompt function 2.Outage protection function 3.Top and buttom limitation temperature protection function 4.Calendar timing function (autostart and autostop operation) 5.Self-diagnostic function
12,Temperature measurement	USA OmegaT-shape thermocouple temperature sensor



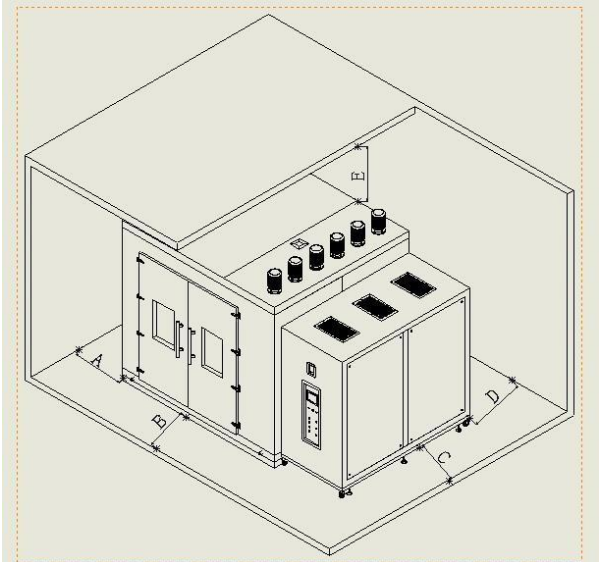
7,Protection

1,Test chamber	1.Adjustable over temperature protection 2.Air conditioning channel limit over temperature protection 3.Fan motor overheat protection
	X1 OHP (Over-Heat protection of High temperature Zone) X2 UTP (Ultralow temperature protection of Low temperature Zone) X3 PSP (Phase sequence protection) X4 OPR404 (Overcurrent protection of R404 High temperature Compressor) X5 OPR23 (Overcurrent protection of R23 Low temperature Compressor) X6 OPMH (Overcurrent protection of motor for High temperature Zone) X7 OPML (Overcurrent protection of motor for Low temperature Zone) X8 HVPR404 (High voltage protection of R404 Compressor) X9 LVPR404 (Low-voltage protection of R404 Compressor) X10 HVPR23 (High voltage protection of R23 Compressor) X11 LVPR23 (Low-voltage protection of R23 Compressor) X12 LGP (Lack of gas protection for Pneumatic door)
2,Other	1.Emergency stop protection 2.Main Power phase sequence and default phase protection 3.Overload and short circuit protection 4.Cabinet multi-open cause refrigeration system failure alarm protection 5.Air compressor air feed lack alarm protection

8,Other Configuration

1,Power cable	Five wick (four wire three phase+protective earth wire) cable 1 strip (about 4 meter long)
2,Power switch	NFB circuit breaker
3,Transport	Chamber is integral type, overall transport
4,Installation Size	1.Floor Leveling, Excellent Ventilation 2.Around Chamber No Strong Vibration 3.Around Chamber No Strong Electromagnetic Field Affect 4.Around Chamber No Flammable,Explosive,Corrosive Substance And Dust 5.Around Chamber Have Appropriate Use And Maintenance Space,Shown Below:



	 A: ≥30cm B: ≥80cm C: ≥60cm D: ≥60cm E: ≥30cm
5,Environmental condition	1. Temperature: 5°C~28°C 2. Relative Humidity: ≤85% 3. Air Pressure: 86kPa~106kPa
6,Power Condition/Power	1. Voltage Range: 3 φ AC (380±38) V 2. Four Wire Three Phase+ Protective Earth Wire 3. Frequency Allow Wave Range: 60/50Hz 4. Protective Earth Wire Earth Resistance Less Than 4Ω 5. Require User At installation Site For Device Configuration Accordingly Volumetrics' Air Or Power Switch, In Addition This Switch Much Be Independence Supply For This Chamber Use
7,Max Power	15A,7KW (At Ambient Temperature+25°C, No Sample, Operating Conditions Stability After one hour can get the date)
8,Other	When testing open the chamber door can cause chambers' temperature and humidity Fluctuation; If multi-open the door or open the door for long time when testing or testing sample emission humidity, can cause refrigeration system heat exchanger freeze result in fail to work.

9 Temperature Only Test Chambers

Temperature only test chamber/High low temperature test chamber

Temperature chamber models designed to save lab space

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14.GB/T2423.22-2001 temperature testing method



- 15.IEC60068-2-1.1990 low-temperature testing method
- 16.IEC60068-2-2.1974 high-temperature testing method
- 17.GJB150.3 high-temperature test
- 18.GJB150.4 low-temperature test
- 19.GJB150.9 humidity test

Technical parameters:

Model No		GTO-080	GTO-150	GTO-225	GTO-408	GTO-800	GTO-1000
Working room(L)		80	150	225	408	800	1000
Inner chamber size(mm)W*H*D		400*500*400	500*600*500	500*750*600	600*850*800	1000*1000*800	1000*1000*1000
Exterior chamber size(mm)W*H*D		900*900*1500	950*1500*1050	950*1650*1150	1050*1750*1350	1450*1900*1350	1450*1900*1550
Packaging volume(CBM)		2	3	3.5	4.5	5.5	6
G.W.(KGs)		300	320	350	400	600	700
Heating & Cooling Rate		1°C/min, 3°C/min, 5°C/min, 8°C/min, 10°C/min, 15°C/min, 20°C/min, 25°C/min, 30°C/min linear average or nonlinear average					
Performance	Temperature range	-160°C, -150°C, -120°C, -100°C, -80°C, -70°C, -60°C, -40°C, -20°C, 0°C~+150°C, 200°C, 250°C, 300°C, 400°C, 500°C					
	Temp.fluctuation	±0.5°C					
	Temp.Uniformity	±1.5°C, No-load operation, After steady state 30 min.					
	Temp.resolution	0.01°C					
	Heating rate	≥3°C/min					
	Cooling rate	≥1°C/min					
Material	Inner chamber material	SUS#304 stainless steel plate					



	Exterior	Stainless steel plate+ powder coated
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Accessories	Multi-layer vacuum glass observation window,Cable port(50mm),Controlling
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	status indicator lamp,Chamber light,Specimen loading shelf(2pcs,position adjustable), Guaze 5pcs,Operation manual 1 set.
Safety protection device	Over-heat protection circuit breaker,Compressor overload protection,Control system overload protection,Humidifying system overload protection,Overload indicator lamp.
Power supply	AC 1Ψ 110V;AC 1Ψ 220V;3Ψ220V;3Ψ380V,60/50Hz
Customized service	Welcome to Non-standard,Specail requirements,OEM/ODM orders.
The technical information will be subjected to change without notice	

Optional accessories

- 1,Inner glass door with manual operating ports.
- 2,Temp./Humi.Recorder.
- 3,RS-485 interface can be linked to Personal computer(PC) and achieve multi-level control & recording software management.
- 4,Liquid nitrogen(LN2)/Liquid Carbon Dioxide(LCO2) fast cooling-down system.

1. Do you offer after-sales service? How can I ask for that? And how about the warranty?

Every machine from our factory has a 14-month warranty after shipment. Generally, we offer 12 months for the FREE maintenance, while considering of sea transportation, we can extend 2 months for our customers.

If your machine doesn't work, you can send E-mail to us and we will try our best to find the problem by email or skype video chat if neccesary. After confirmation of the problem, we can send you new spare parts or provide on-site repair.

2. What's the delivery term?

At most of time, we have stock in the factory. If there is no stock, normally, the delivery time is 15-20 working days after deposit receipt. If you are in urgent need, we can consider making a special arrangement for you.



10, Configuration List

Item No	Description	Model No	Brand name	Origin	Remarks
1	Touch-screen controller with RS485+USB	TH5600	UK AE LABTOP®	China	
2	Vacuum pump and systems	LV-100	LEYBOLD or LEYNOW	Germany	
3	Electromagnetic Switch	SP-11/16/18 CU-11/16/18	SHIHLIN/SHIH II	Taiwan	
4	Thermorelay	380V\5.5-8.5A(8.5-12.5A)	SHIHLIN/SHIH II	Taiwan	
5	Intermediate relay	MY2J or MY2N-JS	Omron	Japan	
6	Time relay	AH3-2	CKC	Japan	
7	Ove reverse phase relay	DPA51CM44	GAVAZZI	Switzerland	
8	Overtemperature Protection	TS-320S	RAINBOW	South Korea	
9	SSR	20A~40A	KaiTong/Yang Ming	Taiwan	
10	Temperature sensor	-100~300°C(PT100 or T model thermocouple)	Omega	USA	
11	Signal indication	LA12D	Tianyi	Shanghai	
12	Flashlight buzzer	LA42S	Tianyi	Shanghai	
13	Machine tool control transformer	250W	Huada	Taiwan	
14	No-fuse switch	380V/40A/60A/100A	SHIHLIN	Taiwan	
15	Button switch	240V 5A	CKC	Japan	
16	Emergency stop button	240V 5A	CKC	Japan	
17	Heater	20KW	Longxing	Taiwan	
18	Centrifugal exhaust fan	380V 90W	Yizheng	Taiwan	
19	Circulating fan	1/2P /1P	Daoma/Yizheng	Taiwan	
20	Wind Wheel	6F、9F、12F	Shangyu	Taiwan	
21	Sweatproof line	24VDC50W	GOOLMAX	Taiwan	
22	High temperature wire	Optional	Jinmingtai	China	
23	Electric wire	Optional	Jinmingtai	China	
24	Cylinder	50-125	Airtac	Taiwan	



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25	Air-operated solenoid valve	4V220	Airtac	Taiwan	
26	Air pressure switch	1/6	SNS	Japan	
27	Air pressure adjusting valve	AW2000	SNS	Japan	
28	Air throttle	1/6	SNS	Japan	
29	Condenser	9P	Keweili	Taiwan	
30	Cooling fan(air-cooled dedicated)	380V400MM		UK AE LABTO P®	
31	Water tower(water-cooled dedicated)	Optional	Liangyan	China	
32	Water pump(water-cooled dedicated)	1.5P~5P	Kenfolai	China	
33	Cooling temperature protector	TS-110	RAINBOW	South Korea	
34	Dry filter	DCL032/053/083/085	Danfoss	Denmark	
35	Expansion valve	TS2	Danfoss	Denmark	
36	Magnetic valve	3/8 or 5/8	Saglnomlya/Castel	Japan/Italy	
37	Hot gas by-pass valve	DPR343	Saglnomlya	Japan	
38	Plate heat exchanger	Optional	TOSLEVO	Japan	
39	Evaporator	9P	Zhongli	Taiwan	
40	Refrigerant	R404A/R23	Dupont	USA	
41	Refrigerant oil	RL32H	Emkarate	England	
42	Oil separator	Large scale system assort 55824/55855	Emerson	USA	
43	Flash Chamber	3/8"	Fuzhou	Taiwan	
44	High low voltage switch	Large scale system assort D606M	Saglnomlya	Japan	
45	Oil pressure switch	Large scale system assort C106S	Saglnomlya	Japan	
46	Suspension hose	P5、P8	Packless	USA	
47	Technology Valve	1/4"	Fuzhou	Taiwan	
48	Copper material miscellaneous accessories	Optional	Xiongde	Taiwan	



49	Dehumidifier		Munter	USA	Option
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11, After-sales Service And Quality Assurance

11.1. UK AE LAB Limited Warranty

UK AE LAB warrants Test Equipment's manufactured by UK AE LAB and supplied under this contract to be free from defects in materials and workmanship under normal use and proper maintenance. UK AE LAB will repair or replace any defective part for a period of ONE YEARS from the date of invoice. UK AE LAB reserves the right to require any defective part be returned, freight prepaid, to UK AE LAB's factory or to inspect any defective part at the Purchaser's site. UK AE LAB shall have sole discretion to determine whether any part is defective and whether any defective part will be repaired

or replaced. This limited warranty shall extend to any standard chamber accessory and component part which is normally sold by UK AE LAB. Non-standard accessories and component parts specified by the Purchaser shall be warranted only to the extent of the original manufacturer's warranty, if any exists.

If the repair or replacement is performed in the FIRST YEAR from the date of invoice, UK AE LAB will also pay for the labor associated with the repair at the Purchaser's site, subject to UK AE LAB's prior approval. During the SECOND and THIRD YEAR of the warranty period, Purchaser will be responsible for the installation and cost of installation of replacement or repaired parts.

Purchaser shall notify UK AE LAB in writing of any alleged defect within 10 days after its discovery within the warranty period. UK AE LAB reserves the right to satisfy the labor portion of this limited warranty either through its own service personnel or an authorized agent. In order to provide expeditious service, UK AE LAB reserves the right to satisfy its limited warranty obligation by sending replacement parts to be installed by the Purchaser if they can be installed easily without special tools or training.

UK AE LAB reserves the right to satisfy this limited warranty by requiring the Purchaser to return the Equipment to UK AE LAB when such return is feasible.

UK AE LAB must initiate field service for in-warranty claims. Purchaser will not be reimbursed for labor if they initiate service on their own without prior approval from UK AE LAB. Replacement parts must be supplied by UK AE LAB for in-warranty claims. Purchaser will not be reimbursed for parts they buy on their own without prior approval from UK AE LAB.

The following parts are excluded from this limited warranty and are sold as-is or are considered expendable: interior light bulb, viewing window, paint and cosmetic surface finishes and treatments, port plugs, and refrigerant.

This limited warranty shall extend in full to Equipment installed within continental CHINA. For all other locations, Purchaser is responsible for all labor costs for repairs or parts installation, and for all shipping costs associated with providing replacement parts.

This limited warranty does not cover: (1) Defects or damages arising as the result of shipment by



common carriers or private transportation, unless UK AE LAB undertakes shipment and transportation of the Equipment to Purchaser's site or contractually assumes the risk of damage to



the Equipment in shipment; (2) Defects or damages arising out of, or as the result, of mishandling, modification, or improper start up, installation or maintenance of the Equipment (including start up, installation or maintenance not in accordance with UK AE LAB's written procedures); (3) Defects or damages resulting from, or arising out of, abuse, misuse, neglect, intentional damage, accident, fire, flood, earthquake, or any other act of God.

This warranty as to Equipment is LIMITED to repair or replacement of parts or Equipment in the determination of UK AE LAB.

THE FORGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. UK AE LAB DISCLAIMS ANY LIABILITY FOR ANY DAMAGES RESULTING FROM DELAY OR LOSS OF USE IN SERVICE OR REPAIR, OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE EQUIPMENT, EXCEPT AS STATED IN THIS PARAGRAPH.

This limited warranty cannot be modified in any way except in writing by both UK AE LAB and Purchaser. Invalidation of any one or more of the provisions of this limited warranty shall in no way affect any of the other provisions hereof, which remain in full force and effect.

This limited warranty shall be extended only to the first Purchaser of this Equipment and is not transferable.

11.2. Quality Assurance

1. Quality assurance system: Accordance with ISO9001 quality management system, ISO14001 environmental management system, Europe CE certification and calibration., etc.

2. Quality Filter: We have specialized meter aging table, Motor test table, mechanical vibrator table and environmental test chamber, equipment and facility to test high and low temperature, humidity, vibration for the component when they enter the factory, every production process will proceed self-inspection and mutual inspection after that inspect by quality department when the quality is good can enter into the next process; when the product leave factory will inspect by intelligence temperature humidity roving measuring apparatus (D64_2) and match with special high precision testing platinum resistor, carry out strict inspection when the goods leave factory.



12,Pictures(Reference Only)





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13,Full Range of UK AE LAB Test Equipments:



YOU WILL ON

Thermal Vacuum Chamber 热真空试验舱外太空模拟试验舱



Thermal Vacuum Chamber 热真空试验舱



Ultra-Low Pressure Test Chamber 超低压试验箱



Super Huge Thermal Vacuum Chamber 大型空间环境模拟设备



Outer Space Simulation Test Chamber 外太空模拟试验舱



Ultra High Vacuum System 超真空系统

Vacuum Equipments 真空设备



Vacuum Oven 真空烤箱



Thermal Vacuum System 热真空系统



Vacuum Plus Nitrogen Chamber 真空氮气烤箱



Large Custom Vacuum Plus Nitrogen Chamber 大型非标定制真空氮气烤箱



Vacuum Drying Oven 真空干燥箱



Cylindrical Vacuum Chamber 圆柱形真空箱



Vacuum Plus Nitrogen Drying Equipment 真空氮气干燥设备



Vacuum Plus Nitrogen Drying Oven 真空氮气干燥箱



Large Custom Vacuum Chamber 大型非标定制真空箱



Vacuum Storage Chamber 真空氮气储存箱



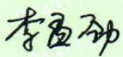
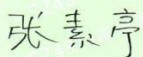
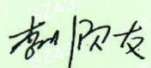
Vacuum Plus Nitrogen Storage Chamber 真空氮气储存箱



Vacuum Furnace 2500°C 真空炉 2500°C



15, Calibration & CE certificates:

	深圳市四三一检测有限公司 SHENZHEN FOUR THREE ONE ONE TESTING CO.,LTD			中国认可 国际互认 校准 CALIBRATION CNAS L7875
校准证书 CALIBRATION CERTIFICATE				
证书编号 Certificate No.	18AA044700001	 18AA044700001		
委托方 Client	TEOMA ENGINEERING LIMITED			
委托方地址 Address	RM 1101 11/F, SAN TOI BLDG, NO.139 CONNAUGHT RD CENTRAL, HK			
计量器具名称 Description	2 Zone Thermal shock test chambers			
规格/型号 Model/Type	GTS-126			
制造单位 Manufacturer	TEOMA ENGINEERING LIMITED			
出厂编号 Serial No.	20180612001			
管理编号 Asset No.	/			
结论 Conclusion	见校准结果			
校准日期 Date of Calibration	2018 年 7 月 12 日 Year Month Day			
批准人 Approved Signatory				
核验员 Inspected by				
校准员 Calibrated by				
 签发单位(专用章) Stamp				
				
实验室地址: 深圳市宝安区西乡街道前进二路135号航城工业区B栋4楼401 ADD: B401, Hangcheng Industrial District, No.135, Qianjin Second Road, Baoan District, Shenzhen 邮编(Post Code): 518101 电话(Tel): 0755-23057616 传真(Fax): 0755-23057616 网址(HTTP): www.sz4311.com 邮箱(E-mail): sz4311@126.com				
第 1 页 共 3 页 Page 1 of 3				



深圳市四三一一检测有限公司
SHENZHEN FOUR THREE ONE ONE TESTING CO.,LTD

校准说明

DIRECTIONS OF CALIBRATION

证书编号: 18AA044700001
Certificate No.

- 1、本机构管理体系符合ISO/IEC 17025: 2005的要求。
(The quality system is in accordance with ISO/IEC 17025:2005.)
- 2、本机构出具的数据均可溯源至国家计量基准和国际单位制(SI)。
(All data issued by the laboratory are traced to National Primary Standards and International System of Units(SI).)
- 3、本结果只与受校准样品有关。
(The results relate only to the items calibrated.)
- 4、未经本机构书面批准, 不得部分复制此证书。
(This certificate shall not be reproduced except in full, without the written approval of the laboratory.)
- 5、证书内页中“P”代表“Pass”, “F”代表“Fail”, “N/A”代表“Not Applicable”。
(In the datesheet, "P" represents "Pass" and "F" represents "Fail" and "N/A" represents "Not Applicable".)
- 6、本次校准参照的技术依据文件: (Reference documents for the calibration)

JJF 1101-2003 《环境试验设备 温度湿度校准规范》《C.S. for Environmental Testing Equipments》

7、本次校准使用的主要测量标准(Main Standards of Measurement Used in the Calibration.):

计量标准名称 Description	编号 Serial No.	计量特性 Metrological Characteristic	证书编号 Certificate No.	有效期 Exp. Date
温湿度校验系统	101710	$U_H=2.0\%RH$ $U_T=0.3^{\circ}C$	GFJGJL2032171215208	2018.12.11

8、校准地点、环境条件 (Place and environmental conditions of the calibration):

地点 本实验室 Place	温度 $20^{\circ}C$ Temperature	湿度 60 %RH Humidity
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9、建议复校时间间隔(Recalibration interval): 12 个月, 但送校单位应按实际使用情况来定。

10、备注(Notes): /



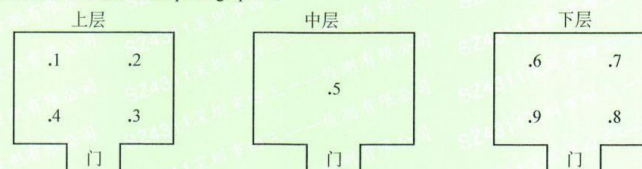
深圳市四三一检测有限公司
SHENZHEN FOUR THREE ONE ONE TESTING CO.LTD

校准结果
Result of Calibration

证书编号: 18AA044700001
Certificate No.

(一): 温度测量

1 测量点布置图 (Measurement point graph):



2 温度测量 (Temperature measurement):

设定值 (Setting): 80 °C
指示值 (Indicated): 80 °C

测量点 (Measuring point)	最大值 (Max)	最小值 (Min)
温度(Temp.) (°C)	(°C)	(°C)
1	80.59	80.07
2	80.57	80.02
3	80.60	80.08
4	80.59	80.00
5	80.57	80.02
6	80.59	80.08
7	80.56	80.02
8	80.56	80.15
9	80.58	80.05

	允许误差 (MPE)	结论(P/F)
温度偏差 (Temp deviation): -0.3 °C	±2.0 °C	P
温度波动度 (Temp fluctuation): ± 0.3 °C	±0.5 °C	P
温度均匀度 (Temp uniformity): 0.4 °C	2.0 °C	P

(二): 控制器: 正常

The controller: Normal

备注 (Notes):

- 按用户要求指定温度点校准;
- 各校准点位置与工作室内壁的距离不小于各边长的1/10;
- 校准时设备处于 空载 状态。
- 本次测量结果扩展不确定度(Expanded uncertainty of the measurement results):
温度: $U=0.4^{\circ}\text{C}$, $k=2$;
- 依据(Reference document)
JJF 1059.1-2012 测量不确定度评定与表示
(JJF 1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

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CERTIFICATE

RADER CERTIFICATION UK CO., LTD



Certificate of Conformity

No.: RCO19CE120016C

The following product has been tested by us with the listed standards and found in conformity with the European directive EMC 2014/30/EU and LVD 2014/35/EU. It is possible to use CE marking to demonstrate the conformity with this EMC and LVD Directive.

Applicant: UK AE LAB .COM

CHASE BUSINESS CENTRE (CHD, 39-41 Chase Side, London N14 5BP, United Kingdom

Manufacturer: UK AE LAB .COM

CHASE BUSINESS CENTRE (CHD, 39-41 Chase Side, London N14 5BP, United Kingdom

EUT: RAPID-RATE THERMAL CYCLE CHAMBER

Brand Name: 

Model No.: GTC-800

Test Report No.: RCO19CE120014, RCO19CE120015

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards: EN 61326-1:2013

EN 61010-1:2010+A1:2019



Marsh Wu
Laboratory Manager

Issue Date: January 3, 2020



Due Date: January 2, 2025

The test report was carried out from submitted type samples of a product in conformity with the specification of the respective standards. The certificate holder has the right to fix the CE-mark for EMC and LVD Directive on the product complying with the inspection samples.

RADER CERTIFICATION UK CO., LTD.

Add: 710, Jiangong Building, Zizhu 7th Road, Futian District, Shenzhen, China

Tel: 86-755-36626058 Web: www.rocon.cn



16, Hear what our clients are saying:

Hear what our clients are saying.		Hear what our clients are saying.	
 "Grande team responds quickly. They are meticulous with our products and have discovered areas for improvement in our products."	 "Your lab and test equipment are first class and well maintained. We really appreciate the extra mile."	HUAWEI "We have always gone to Grande Test Chamber for all testing needs. They are a top notch organization and they will get the job done for you."	BYD "We are grateful and happy for the work and advice on the project. I appreciate your quick work."
ARISTA "I found Grande Labs as the best place to perform testing due to technical understanding of staff, state of the art equipments, clean facility, quality customer support, and a detailed test report."	 Microsoft "I have worked closely with Grande Environmental test chambers for the past 2 years for Accelerated Thermal Cycling. They are easy to work with, solution oriented and knowledgeable in applied reliability. The test chambers are clean, well organized and have the latest equipment with a range of chambers to choose from. The staff is friendly, resourceful and competent. Grande Environmental test chambers has definitely been a value-add in our product development and reliability improvement efforts!"	Resysnet Engineering "Grande makes our company reliant on their services. We have saved design cycles and mitigated risk by releasing truly reliable products."	
Volkswagen "The test reports you have supplied to us have been accurate, detailed, and professional; and were a great help to communicate the test results, design issues, and process deficiencies we found to the rest of the product development team."	 EMERSON Network Power "I have not found a more comprehensive, better written report in my 18 years of testing experience."	 Extreme Connect Beyond the Network "I would highly recommend Grande test chambers as a partner in developing a world class reliability program."	stryker "The Grande team is by far the most professional Test chambers in the valley. We've used others and the difference is dramatic. Grande provides everything we look for in a partner lab: clean facilities, the latest test equipment, a strong customer service focus, and expertise in reliability test techniques. As a manufacturer of minimally invasive surgical equipment, we must ensure high reliability. Reliant has been a true partner in our efforts to improve reliability and customer satisfaction -- and the results have been noticeable."
 Allied Telesis "Allied Telesis would have no hesitation in recommending Grande Test Chambers as a complete service provider with the willingness to go the extra mile while maintaining professionalism and the privacy of their customers."	 Trimble "I found Grande teams to be efficient with time, knowledgeable about testing electronics and really great service."	SIGIKID Germany "Grande has been one of the best companies I have ever had the opportunity to work with. Great service, friendly personnel, very knowledgeable staff to assist with test setups/configuration and absolutely wonderful reports with high level of detail in a timely fashion"	 infinera "Grande Test Chamber is very flexible and accommodating in everything they do."

18, Significant Customers of AE LAB UK Automatic Test Equipment Limited

UK AE LAB's Team have served more than 10,000 customers from over the worlds,below is the list of Significant customer list:

Automatic Test Equipment Limited has had the privilege of serving many Fortune 500 companies and global industries. Our growing network of customers include major corporations such as:





German Aerospace Center

Algerian Space Agency (ASAL)

The Exploration Company GMBH

Ateliers Bigata Military & Space Programs

Airbus is a leader in designing, manufacturing and delivering aerospace products, services and solutions to customers on a worldwide scale.



CATL is a global leader of new energy innovative technologies, committed to providing premier solutions and services for new energy applications worldwide. <https://www.catl.com/en/>



HUAWEI



Go Further





天津大学
Tianjin University



清华大学
Tsinghua University



東京大学
THE UNIVERSITY OF TOKYO



Stanford
University



- 3M Corporation
- ABB Inc.
- ABC Group
- Abu Dhabi Metal Pipes & Profiles
- Agri-Food Canada
- Airboss
- Akron Rubber Development Lab
- Alaska Railroad Corp.
- Alcan
- Alcoa Corp
- Alitalia
- Allegheny Ludlum Steel Corporation
- Allergan
- Alstom
- American Packaging Corp
- Apple Computer
- Argonne National Laboratory
- Ash Grove Cement
- Atomic Energy of Canada
- Autoliv North America
- BAE Systems
- Bang & Olufsen
- Bank of Canada
- BASF Corporation
- Bayer Corp
- Bell Helicopter
- Bethlehem Steel



- BF Goodrich Aerospace



- Biltrite Industries
- Black & Decker Corp
- BodyCote Material Testing
- Boeing Corporation
- Bombardier
- Bosch
- Boston Scientific
- BP British Petroleum
- Bridgestone / Firestone
- Buffalo State University
- Cabot Corporation
- Cameron Romania S.A.
- Canadoil Pipe Limited
- Carlisle Tire & Wheel
- Caterpillar
- Cemex Inc.
- Chatham Steel
- Chevron
- Cisco Systems
- Coca-Cola
- Colgate-Palmolive Company
- Colorado State University
- Continental Teves
- Cooper Tire Company
- Cornell University
- Cornerstone Research Group, Inc.
- CTL Group
- Dana Corporation
- De Havilland
- Delphi Automotive
- DHL
- Disneyland
- DOW Chemical
- DOW Corning
- E.I. Dupont
- Eaton Corp
- Eli Lilly & Company
- Emirates Techno Casting
- Esco Corp
- Exxon Mobil



- Federal Mogul Corporation



- Fisher Scientific
- Ford Motor Company
- Fort James Corporation
- Freudenberg N.O.K.
- Frisa Aerospace SA de VE
- Future Pipe Industries
- G.E. Company
- Gates Corporation
- GE Global Research Center
- General Motors Corporation
- Genpak LLC
- Georgia Institute of Technology
- Georgia Pacific
- Gerdau Steel
- GKN Aerospace
- Goodrich Corporation
- Goodyear Tire & Rubber Company
- H.C. STARCK
- Harley-Davidson
- Hitachi
- Hoeganaes Corporation
- Holcim
- Honeywell
- HP (Hewlett-Packard)
- Hydro Aluminum
- Illinois Department of Transportation
- Intel Corp
- International Tubular
- Iowa Dept. of Transportation
- James Hardie Building Products
- Jindal Stainless / Aluminium
- Johnson Controls
- Jordan University of Science
- Kaiser Aluminum
- Kobelco
- Kruger Inc.
- Kuwait Airways
- Lafarge
- LanXess Corporation
- Leco



- Lehigh Portland Cement



- Lockheed Martin
- Los Alamos National Laboratory
- Magna Group
- Merck Company
- Metso Paper
- Metzeler
- Michelin North America
- Mitsubishi
- Mittal Steel
- Motorola
- MTS Mfg Inc.
- National Composite Centre
- New Mexico University
- Nike
- Nikon Research Corp of America
- Nissan
- NIST
- North American Stainless
- Northrop Grumman Corp.
- Nova Chemicals
- NRC National Research Council of Canada
- NSK Corporation
- Nucor Steel
- Oak Ridge National Laboratory
- Ohio Dept. of Transportation
- Owens Corning
- Packaging Corporation of America
- Pakistan International Airlines
- Parker Hannifin Corp.
- Pennsylvania Dept of Transportation
- Petro-Canada
- Petronas Nasional Berhad
- Pfizer Inc.
- PolyOne
- Pratt & Whitney
- Praxair
- Proceq
- Procter & Gamble
- Purdue University
- Raytheon



- Rehau



- Revlon
- Rinker
- Rollex Corporation
- Rolls Royce
- Royal Canadian Mint
- Royal Institute of Technology
- SABIC
- Saint-Gobain
- Samsung
- San Francisco State University
- San Jose State University
- Sandia National Laboratories
- Sartomer Company
- Schlumberger
- SGS North America Inc
- Shanghai Automotive
- Shimadzu
- Shurtan Gas Chemical Complex
- Siemens
- Sika
- Smithers Scientific Services, Inc.
- Smurfit-Stone
- Snap-On Tools
- SNC Lavalin
- Sonoco
- Sony
- Stackpole Ltd.
- Steyr
- TaylorMade/ Adidas
- Tetra Pak
- Texas A&M University
- Thyssen Krupp
- Timken
- Tinker Air Force Base
- Toledo/ GT Technologies
- Toshiba
- Toyota R&D
- TRW Automotive
- Tyco Healthcare / Electronics
- UCLA



- Underwriters Laboratories Inc



- United Space Alliance (NASA)
- Université Laval
- University of Akron
- University of Hawaii
- University of Maryland
- University of Massachusetts
- University of Missouri – Rolla
- University of Texas
- University of Toronto
- University of Washington
- University of Wisconsin
- Uraplast
- US Army Corps of Engineers
- US Rubber
- USAF (US Air Force)
- V.A.W of America
- Valeo Inc.
- VirginiaTech
- Visteon
- Voith
- VWR International
- Washington State University
- Weatherford
- Welspun
- Westinghouse
- Weyerhaeuser
- Whirlpool
- Xerox Corporation
- Zyvex Corporation

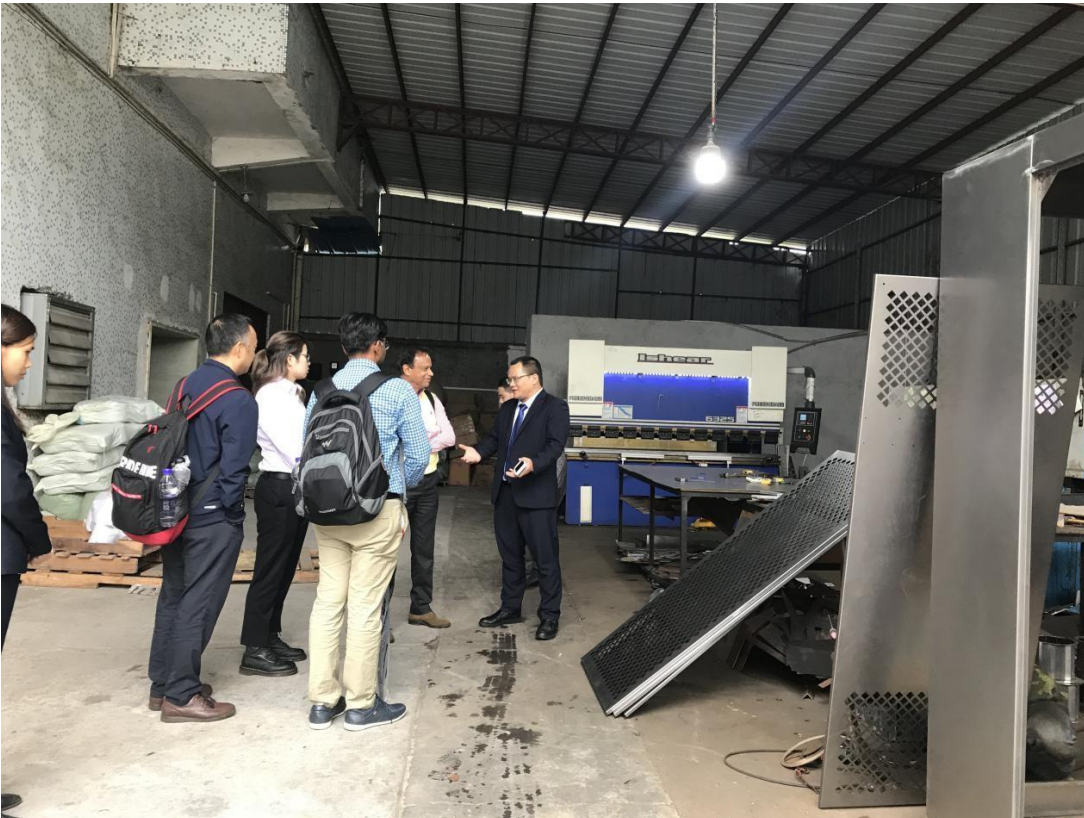


Found in 1905 Panasonic Subsidiary Customer Visiting:





Singapore Customer Visiting:





Bangladesh Customer Visiting:





Germany Customer Calibrating:



Brazilian Customer

Russian Customer





Pakistan Professors



USA Customers



Dubai Weapon Factory Customer



Indian Engineer





Doctor of Berlin University:



Car Engineer





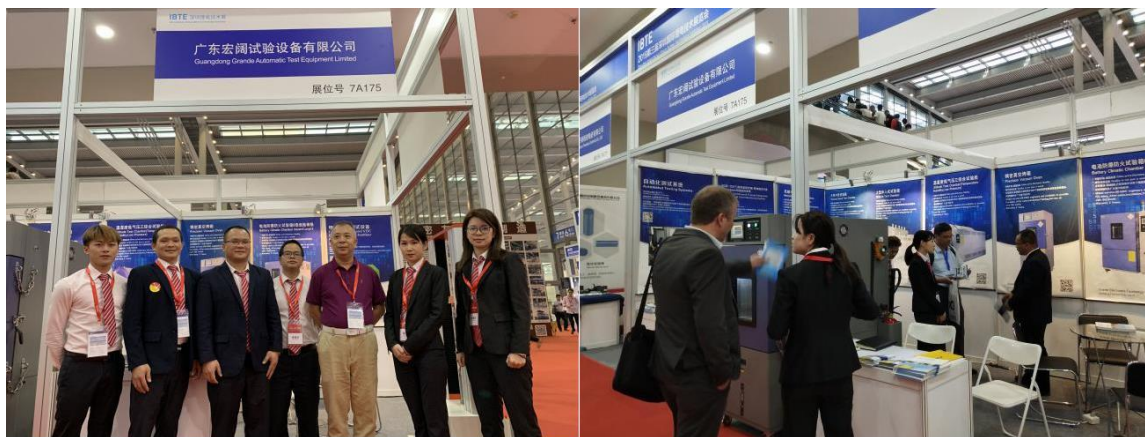
Tata Group





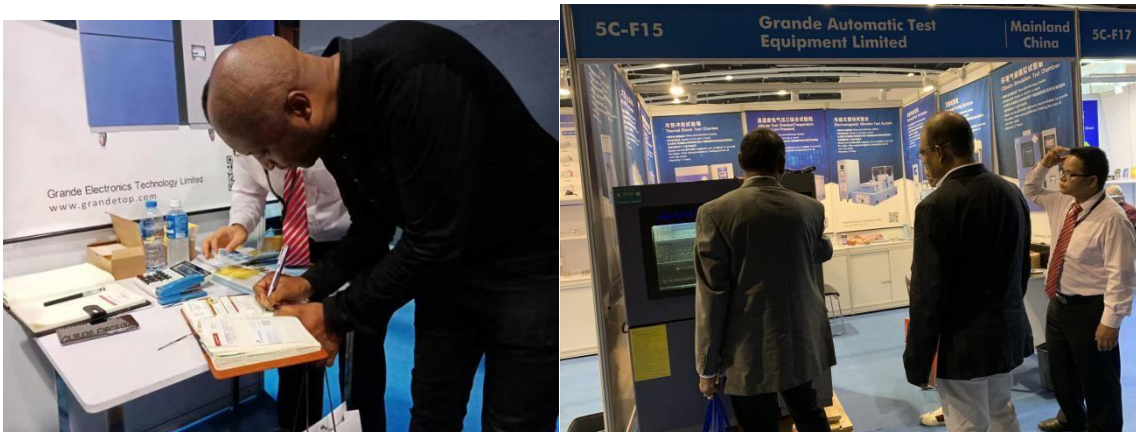
20,Global Fair:

Booth No:7A175,Shenzhen International Lithium Battery Technology
Exhibition,4-6th,November,2019



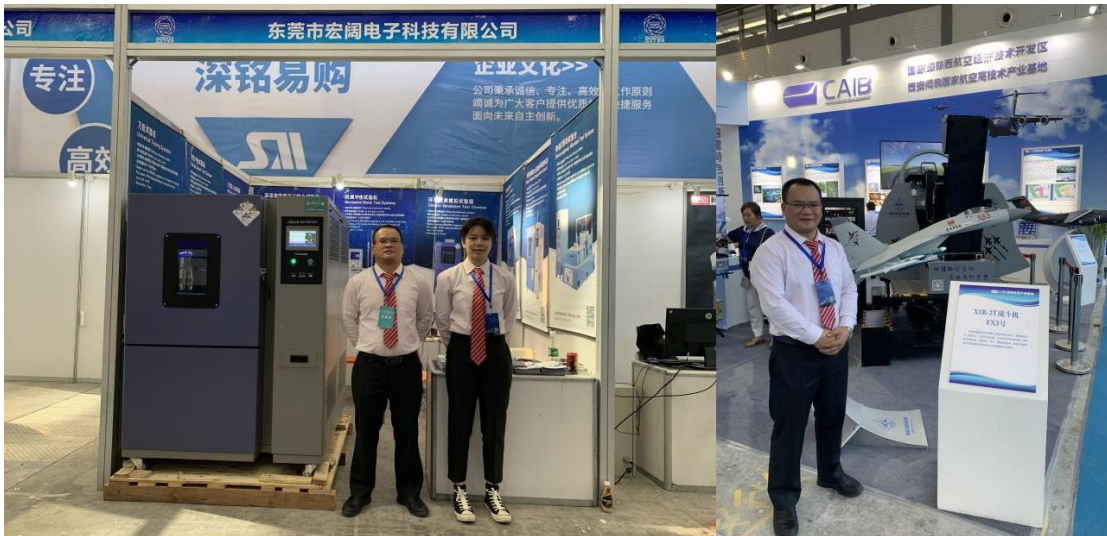


Booth No:5C-F15,HKTDC Hongkong Electronics Fair(Autumn Edition) 13-16 October,2019



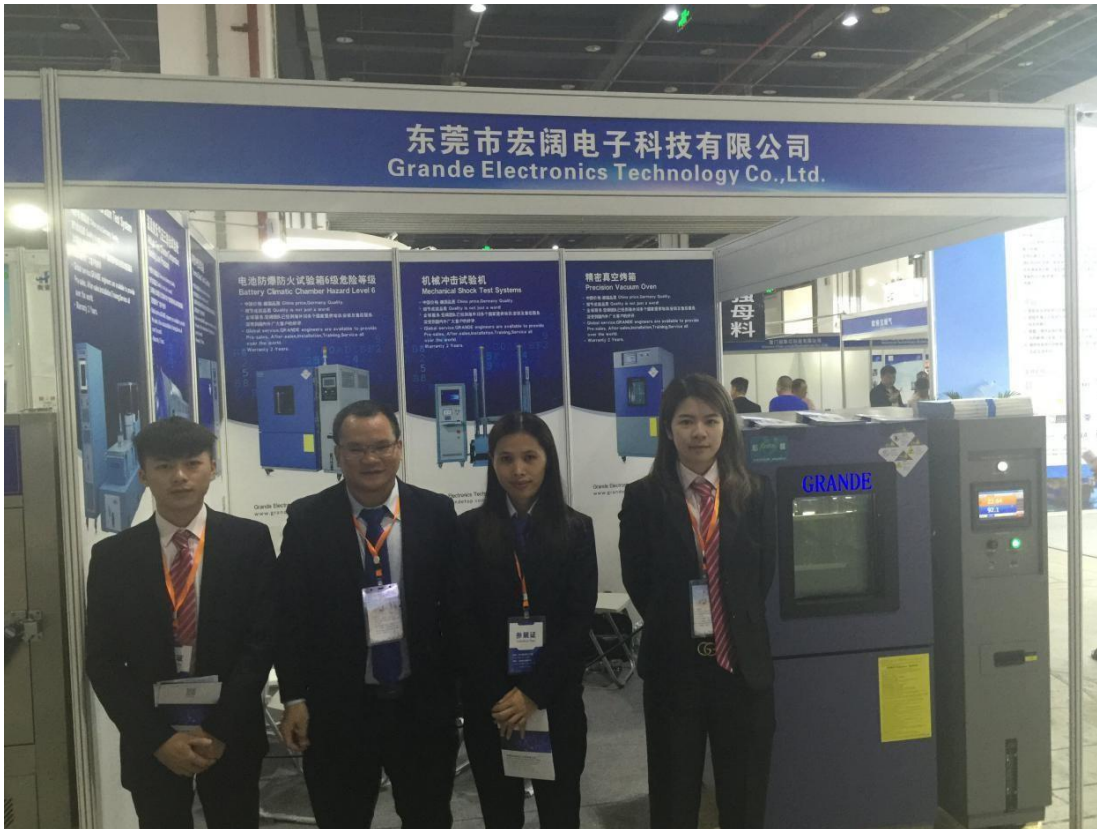


Booth No:D05-1,2019 China Xi 'An The International Military National Defense Electronic Exhibition,15-17th August,2019





Booth No:219,The 7th Shanghai International Testing Machine & Environmental Test Device Expo 2019,May 15-17th





Booth No:5C-D27 HKTDC Hongkong Electronics Fair(Spring Edition) 13-16 April,2020





RosUPack fair in Moscow, on June 26-29th, 2018

