



YL-2290 Walk-In Environmental Test Room













Product	
.1Name	Walk-In Environmental Test Room
.2Model	YL-2290
Applicability and Limitation Statement	
.1 Applicability	A)This test room is to perform simulated high and low temperature and gradual change,damp heat on various electronics and other products,components and other materials. B)Performance in addition to those may lead to staff hurt and equipment damaged.
.2Specimen Limit	A)Inflammable,explosive and effumability materials test and storage; B)Corrosive material test and storage and living beings as well; C)Strong electromagneticfield test and storage.
Volumn & Dimension	
.1Effective Volumn	Approx.45M ³
.2 Inner Dimension	4500mm*2300mm*4000mm (W*H*D)
.3 Outer Dimension	5500mm*2750mm*4650mm (W*H*D) Height is without motor Notice: The outer dimension is subject to final design and confirmed three viewing drawing.
Performance	
.1. Condition	Water cooling water temperature+27℃, when no-load without specimen(Part of parameters accord to remark)
.2. Temp./Hum. Range	-40℃~+80℃ / 30%(limited temperature section,see area map)~95%RH

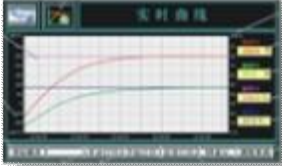

.3. Temp./Hum.Fluctuation	$\pm 0.5^{\circ}\text{C}$ / $\pm 2.5\% \text{R.H.}$
.4. Temp./Hum.Deviation	$\leq \pm 2^{\circ}\text{C}$ / A)>75%RH: $\leq \pm 2, -3\% \text{RH}$, B)<75%RH: $\leq \pm 5\% \text{RH}$
.5. Temp. Uniformity	$\leq 2^{\circ}\text{C}$ (-40~+100 $^{\circ}\text{C}$ range)
.6. Heat Up Time	-40 $^{\circ}\text{C}$ up to +80 $^{\circ}\text{C}$ approx. 43 mins,no-load
.7. Cooling Time	+20 $^{\circ}\text{C}$ fall to-40 $^{\circ}\text{C}$ approx.80 mins,no-load
.8. Heat up and cooling overshooting	$\leq \pm 3^{\circ}\text{C}$
.9. Max. Load	Total weight is equivalent to 500kg iron.
.10. Constant Max. Radiation Load	No radiation
.11. Noise	$\leq 75\text{dB}$ (Sound Level A, when constant)
.12. Standard	GB/T2423.1-2001 test A: low temperature(part) GB/T2423.2-2001 test B:high temperature(part) * GB/T2423.3-2006 test Cab:constant damp heat GB/T2423.4-1993 test Db: interchange damp heat GB/T2423.34-2005 test Z/AD:humid combination
.13. Temp./Humd.Area map	


Structure & Material		Images
.1. Outside	Plastic Injection zinc plating colorful steel plate	
.2. Inside	SUS#304 stainless steel plate	
.3. Insulating Layer	Stereoplasm PU foaming and glass wool	
.4. Door of Room	80*180cm double door	
.5. Viewing Window	Heating sweat proofing 3 layers vacuum big galss viewing window	
.6. Seal	Imported silica gel sealing strips	
.7. Pressure Balance Port	With sweat proofing line,all aluminium alloy square	

.8. Light	Anti-explosion energy saving light 2 sets	
. Air Supply Thermometric System		Images
.1 Air Supply Feature	Air-out in the top of Air conditioning cabinet;air return at the bottom	
.2 Cycling Motor	Taiwan Tatung Low voltage asynchronization motor	
.3 Wind Wheel	Multi-wing centrifugal cycling fan,high and low temperature resist alluminum alloy blade	
.4 Sensor	PT100 platinum resistor sensor (wet and dry bulb)	
. Cooling and Freezing System		Images
.1 Cooling method	Mechanical vapour compression	
.2 Compressor	Germany Bitzer semi-intensive piston 2 sets	
.3 Refrigerating fluid	No Fluorine environmental-friendly HFC R404A/R23	
.4 Condenser	Water cooling efficient shell tube type	
.5 Evaporimeter	Efficient multi-section with hydrophillic film radiator-fan evaporimeter(radiator-fan thicken type)	

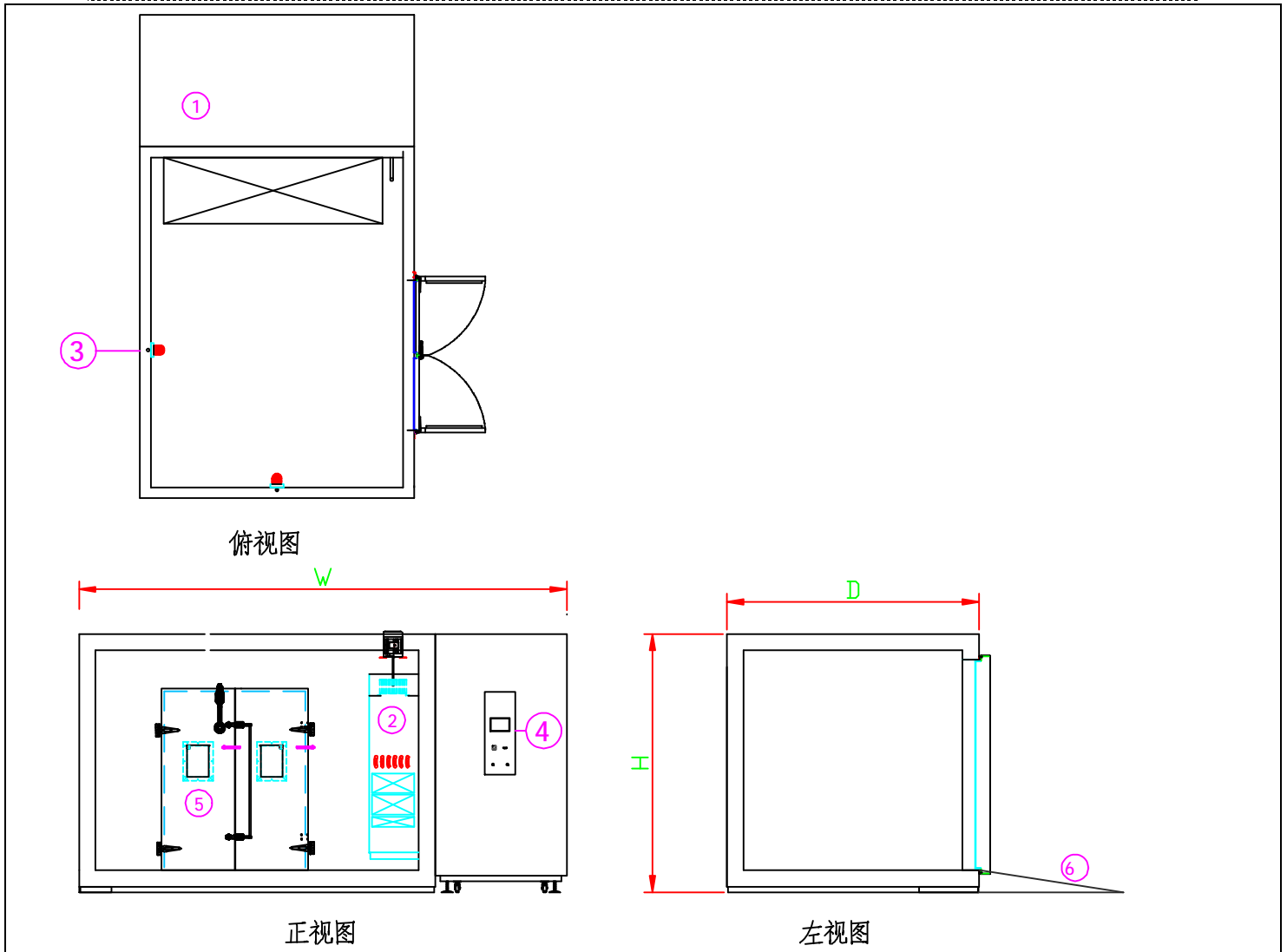
.6 Oil Separator	Emerson AW55877	
.7 Expansion Valve	Danfoss thermostatic expansion valve	
.8 Solenoid Valve	Japan Saginomiya and Danfoss	
.9 Level Glass	Danfoss	
.10 Other Accessories	All are international brands,qualified products.(Image on the right is dry filter.)	
.11 Dehumidification	Dehumidification by cooling and freezing system (air inside of room go through evaporator lower than dew-point temperature ,moisture separate out.)	
.12 System Feature	<p>According to different working conditions to switchover flow of cooling system automatically,constant section turn off unnecessary system to realize energy saving operation.</p> <p>Energy Regulator Introduction:</p> <p>1)Cooling control Effect evaporators combination may get much more uniform and efficient energy exchange efficiency and cooling output; Flow control is adjusted automatically by each matched thermostatic expansion valve.</p> <p>2)Energy regulator control Bitzer CR Energy Regulator Device Energy regulating valve working principle: Correcting element hold the sniffer valve of compressor away against valve seat,to let sniffer valve be on all the time. During suction of compressor,low pressure vapour is input by sniffer valve, vent valve keeps closed due to incapable of reaching high pressure, make output gas of the cylinder be zero to adjust gas output. Reach to constant section,after control system decides delay</p>	

	time automatically, turn on the energy regulating valve of Bitzer semi-intensive compressor and uninstal some operation gas cylinder,then regulate energy output(usually regulate according to 33%,50%,66%), turn off unnecessary evaporators to match and energy saving to make system stable for a longer time.	
1. Heating and Humidifying System		Images
.1. Heating Pipe	Fin type nichrome electrical heated tube	
.2. Humidifying Pipe	A) Humidification drum (boiler type) is faster, more accurater,without scale in cabinet,good low damp and easy to clean,compared to traditional surface humidification. B) Humidification pipe is made of stainless steel seamless tube,the insulation resistance is more than 50MΩ,with preventing dry heating controller. C) Humidification drum is made of stainless steel,with waterlevel viewing window.	
.3. Control Mode	Output singal by controller, It is controlled by high-accuracy noncontacting switch via solid-state relay.	
2. Controller and Control Circuit		
.1. Control Mode	High-accuracy resistance-type touch screen,may control by external mouse	
.2. Display	7 inch TFT Truecolor LCD (resolution 800*480)	
.3. Input Force	2 sets input,support wet and dry bulb PT100 and humidity transmitter, thermocouple T,K,E etc.	
.4. Accuracy	0.1 high-accuracy sampling	
.5. System Capacity	120 sets of programs*1000 sections (may cycle1,000 times separately) ,sections of each program needs may be divided randoml,each program may connect freely(at most 20 steps connection)	
.6. Operation Mode	Fixed value(slope)/Program operation mode	
.7. Output Model	PID+SSR/SCR automatic positive and negative bothway sync output	

<p>8. Software Function</p>	<p>1. Temp. and humid. graph: No rec paper: build-in record program,controller memory may save 24H run 300days. Convenient to autogenerate temp. and humid. graph,and convert to xls.</p> <p>2. Perfectionism port: External USBport: can connect to printer directly,realize local data print by wire,easy to convert to history graphs and data freely by U disk through USB port. External LAN standard network port: no need to deploy server specially,can join up to LAN of company computers,one can connect to and monitor 16 sets equipments,convenient and efficient.</p> <p>3. Real time monitoring can: monitor 1~16 sets controller operation situation at one time,like monitor controller real data,singal point situation,actual output situation etc. Support remote(outer net) fault diagnosis: Technical staff open IE browser and enter the IP address of controller through network when customer assists to leave port,and enter login interface to choose operate or monitor to diagnosis.</p> <p>4. Sequential control 2 sets sequential output control port,match with 10 kinds of time control modes,may supply on and off singal output set by procedure requirements,cabinet insie test power supply needs to connect separately and special power-supply system.</p> <p>5. Fault display 16 sets fault alarming output,chinese and english Humanity fault reminder and trouble shooting.</p> <p>6. Reservation start All test conditions may set reservatation to operation when power on.</p>	
<p>9. Control Circuit main component</p>	<p>Main components of control circuit are all outstanding brands(right is TAIAN electromagnetic switch)</p>	
<p>0. Defencive Function</p>		<p>Images</p>

	<ol style="list-style-type: none"> 1. Specimen over-temperature protection(individual) 2. With non-fuse protection switch 3. Heater over-temperature protection switch 4. Compressor overload over-temperature 5. Compressor high and low voltage protection 6. System over-current protection device 7. Controller fault autodiagnosis and display 8. Low cooling water pressure protection 	
1. Other Parts		
1.1 Standard Device	<ol style="list-style-type: none"> 1. RO pure water machine one set 2. Relay 20L water tank one type 3. Operation manual maintenance manual 4. This equipment will be checked by quality check center in house, and issue inspection report which one year period of validity. 	
1.2 Optional	<ol style="list-style-type: none"> 1. Add 3 layers vacuum glass viewing window 2. Test hole dia. 50mm, 100mm, choose by customer(Optional) 	
2. Service Conditions		
	<ol style="list-style-type: none"> 1. Temperature: 5°C-35°C 2. Related Humidity: ≤85%R.H. 3. Atmospheric Pressure: 80kPa~106kPa 4. No strong vibration around 5. Power supply voltage: <ol style="list-style-type: none"> 5.1 Power connection: 380V AC(±10%), three phase and protective grounding wire, grounding resistance ≤4Ω; use 3P 100A air switch 5.2 Nominally max. power: approx. <u>35</u> KW 5.3 Max. working current: approx. <u>60</u> A 6. Cooling water: <ol style="list-style-type: none"> 6.1 Recommend to choose cooling water tower: <u>25</u> RT 6.2 Water pipe size: <u>2</u> inch 6.3 Cycling water volume: approx. <u>260</u> L/Min 7. Frequency: 50±0.5Hz 8. Humidification water; Resistivity(≥500MΩ; 9. Ambient air quality requirement: No high concentration dust and inflammable, explosive air and dust, no strong electromagnetic radiation source around. 10. It is not allowed to test and store inflammable, explosive and goods which produce volatilize and corrosive gas. 11. Specimen placement requirements: <ol style="list-style-type: none"> A) The total mass of specimen can't exceed 80KG per one cubic meter 	

	B) The total volumn of specimen cant exceed 2/5 of the test room,each level placement area cant exceed 2/5 of the section surface.Otherwise it may affect performance of test room or cant work properly.	
3. After Service		
	<p>1.Train operation and maintenance staff free of charge at our site or customer's site.</p> <p>2.Equipment warranty period: one year. Mainten once each Seaso,total four times (This service is only for domestic customers.)</p> <p>3.Rounded maintenance service team,supplying the quickest and professional maintenance service (maintenance reply in 12Hr, and arrive on site 24Hr to solve problems)</p>	
4. Standard and Norm		Remark
	<p>1. Design and manufacture according to GB/T10586-2006 and GB/T10592-1989*</p> <p>2. Certificate according to GB/T5170.2-1996 and GB/T5170.5-1996.</p>	<p>GB/T5170.5-1996. Both temperature uniformity and humidity uniformity are under the condition of noload.</p>
5.Structure Diagram		



16. Bill Of Material					
Name	Brand	Specification(W*H*D)	Origin	Q'ty	R
A. Structure Part					
Room Body	Jagwire	Thickness 10cm	Taiwan	1type	
Floor Reinforcement	Jagwire	3mm	Taiwan	1type	
Climatic Conditioning Cabinet	Yuelian	Stainless Steel	China	1type	
Machine set and Control Cabinet	Yuelian	Cold-roll steel sheets baking finish	China	1group	
Double Door	Jagwire	Color Board	Taiwan	1type	
Viewing Window	Peixin	30*40cm multi-layer vacuum	Taiwan	1type	
Baking Finish	Yuelian	Computer White	China	1type	
Cycling Motor	Tatung	1/2HP	Taiwan	4groups	
B. Cooling Part					
Compressor	Bitzer	Semi-intensive	Germany	2 sets	

Capacity Adjusting Valve	Bitzer	15HP assort	Germany	1 type
Condensator	Shengtai	Water cooling shell tube type	Taiwan	1group
Evaporimeter	Zhongli	3/8 fin-type	Taiwan	2groups
Shakeproof hosepipe	Packless	1-1/8", 1-3/8"	U.S.A	2pcs
Oil Separator	Emerson	AW series	Mexico	1 type
High and low voltage switch	Danfoss	HNS	Denmark	1 type
Dryer	Danfoss	DML	Denmark	1group
Hydraulic Pressure Switch	Danfoss	FQS	Denmark	1type
Viewing Window	Danfoss	SGN	Denmark	1 type
Solenoid Valve	Saginomiya/Danfoss	SEV/EVR	Japan/ Denmark	6 types
Expansion Valve	Danfoss	TES	Japan	6 types
Evaporation Pressure Regulating Valve	Danfoss	KVP	Denmark	1set
Coolants and consumable items	Dupont	R404A	U.S.A	2bottles
C.Control Part				
Controller	UMC	UMC1207	Japan	1 set
Sensor	Omeca	PT100	U.S.A	1type
Power Switch	Taian	Earth Leakage Protection	Taiwan	1type
Contactora	Taian		Taiwan	8types
Heating Pipe	Longxing	Fin type nichrome	Taiwan	12types
Thermoreplay	Fuji		Japan	6types
Owe anti-phase protector	Taian	APR3	Taiwan	1type
Over Temperature Protection	Zhihe	50°C~300°C	Taiwan	3types
SSR	Yangming	SSR	Taiwan	6groups
Timer	Omron	3MIN	Japan	1 group
Relay	Omron	2P,4P	Japan	10sets
Cable	Chengtiantai	0.75~25 square	China	1 set
D.Humidification and Dehumidification Part				
Humidification Barrel	Yuelian	4.5KW	China	2 groups
Pump water motor	Delta	24VRO	U.S.A	1 type
Water cup	Yuelian	PE die sinking	China	2 groups
Water pipe and joint	Fine Quality	Sillica Gel	China	2 groups