LNEYA®



Semiconductor Industry temperature control solutions High precision temp control system

LNEYA THERMO REFRIGERATION CO.,LTD.

2026IC CHILLER V1

Our success comes from assiduously to help customers improve productivity

Company profile



LENYA is a high-end equipment manufacturing enterprise that integrates research and development, production, and sales. Its main products include semiconductor temperature control devices (chiller), thermoelectric chiller, gas temperature control chiller, contact-type high and low temperature tester, direct cooling machine, and aging test chamber. These specialized devices are widely used in fields such as semiconductors, LEDs, LCDs, and solar photovoltaics and other industries.

We have a number of high-quality professional designers with rich experience in ultra-low temperature, high and low temperature development. At present, the company is at the advanced level of the industry in the research and development of single-machine cascade refrigeration technology, and at the international advanced level in the research of high and low temperature rapid rise and cooling technology. The research on temperature control of single medium in the reactor is at an advanced level, and the continuous controllable temperature range is -90℃~+250℃, which can realize accurate linear control of the material temperature of the reactor. The product temperature range can be extended to -180℃~+360℃.The temperature control accuracy is as high as ± 0.002℃

Name of enterprise	LNEYA Thermo Refrigeration Co.,Ltd.	The registered capital	70 million RMB
Plant area	12000 square meters (Guanya Refrigeration) 25,000 square meters (Guanya Intelligent)	The establishment time of the enterprise	2010-11-8
Company staff	400+	R&D personnel	80+
The turnover	More than 350 million RMB		
Patents	130+	Enterprise credit rating	AAA
Qualification and Honor	High and new technology enterprise Province specialized special new small and medium-sized enterprises Province gazelle enterprise Provincial Engineering and Technology Center Second prize of 2022 Science and technology Jiangsu Innovation and Entrepreneurship Competition Intelligent manufacturing benchmark enterprise City Technology Center Siemens ICP partner		
Development platform software	Siemens integrated collaborative design and development management platform and tool software -- Teamcenter+UG+AD	Production management software	MES ERP SRM
Quality system	ISO9001-2018	R&d investment	About 8% of turnover



Business license



CE



ISO



Rhine certification



Explosion-proof Equipment Installation Qualification Certificate



High-tech enterprise



Second prize of 2022 Science and technology Jiangsu Innovation and Entrepreneurship Competition



Gazella Company



Province specialized special new small and medium-sized enterprises



Shanghai University of Technology Joint Research Center for Cryogenic Refrigeration Systems and Key Technologies



Partial models obtained SEMI S2/S23/F47 certification



Invention patent

2010	LNEYA registered in 2010. launched the refrigeration heating dynamic temperature control system and industrial low temperature refrigerator, the products are sold worldwide.
2011	Upgrade the second generation of refrigeration heating temperature control system, testing low temperature freeze.Launched the single-compressor multi-stage cascade technology.
2012	LNEYA launched low temperature freezer, single compressor multi-stage overlapping technology applied to SUNDI series, LT series.
2013	LNEYA launched a multi-cooling heating temperature control system (the third generation). temperature control equipment host can control the corresponding multiple reaction devices, test larger refrigeration capacity ultra-low temperature freezer, circulating air refrigeration heating temperature control system
2014	LNEYA launched the ultra-low temperature refrigerator with large refrigeration capacity and the circulating air refrigeration heating temperature control system, and upgraded the low temperature freeze.
2015	New energy vehicle component test temperature control system and VOCs condensation recovery system were developed
2017	LNEYA launched the new energy automobile component test temperature control system and VOCs condensation recovery device,Testing semiconductor temperature control devices
2019	LNEYA launched the semiconductor temperature control device Chiller, the second generation of new energy vehicle parts test temperature control system and jet high and low temperature impact test machine.
2020	The second generation of VOCs condensation recovery device will be launched, and the jet flow high low temperature impact tester will be upgraded
2021	Launched direct-cooling low-temperature refrigerators and direct-cooling ultra-low-temperature refrigerators and waste liquid distillation capture and recovery devices; invested a total of 10 million yuan to upgrade Ximenzi PLM+UG+AD automated system design system and integrate it with the existing ERP system; LENYA was established as a subsidiary, and acquired a production base for the subsidiary.
2022	Upgraded the control algorithm and adopted electronic expansion valve control for the full low-temperature series;Launched the second-generation semiconductor temperature control device Chiller and jet-type high-low temperature shock testing machine.
2023	Upgraded the control algorithm and fully implemented energy-saving and emission-reducing refrigeration systems;Launched power battery thermal cycling chambers and high-efficiency heat exchange temperature control units; In June, the 25,000 square meter factory of LYENA Intelligent was put into production and operation
2024	Launched the Panel Series Chiller and Rapid Temperature Change Control Chuck for semiconductor aging testing multi-layer thermal chambers and semiconductor thermoelectric coolers;Acquired LYENA Constant Temperature's headquarters production base.
2025	Launched semiconductor aging test multi-layer thermal chambers and semiconductor thermoelectric coolers;Upgraded the high-efficiency heat exchange temperature control units for universities.
2026	The headquarters production base of LYENA Constant Temperature is expected to be put into operation in August, with a construction area of 68,000 square meters



Our Mission ：

Focus on solving customers' wide temperature cooling and heating temperature control problems and reducing energy consumption of cooling and heating systems;
Provide competitive system solutions and services, continue to create greater value for customers;

Our vision:

Become the industry benchmark;

Our values:

Results: Customer first, quality first;
Work: teamwork, teaching and learning;
Life: integrity, passion, dedication, gratitude;
Our success comes from our relentless efforts to help our customers improve their productivity.

LNEYA®

Products Catalogue

CHILLER refrigerated circulator

FLTZ Variable Frequency Series ..... 06~16
FLTZ Variable Frequency Multi Channel Series ..... 17~19
FLTRZ Series ..... 20~24
Ultrapure Water Temp Control Series ..... 25~26
Panel Chiller ..... 27~29
FLTZH high-temp series ..... 30~31
Ambient-temp high-precision series 32
Compressor-Free Heat Exchange Series 33
LT Series Fixed Frequency Series ..... 34~37
LTZ Variable Frequency Series ..... 38~41

Thermoelectric Type CHILLER ..... 42~43

CHILLER DI refrigeration unit 44

CHILLER Gas refrigeration

LQ Series 45
AI Series 46
AES ThermoStream System ..... 47~48
AET Gas Temperature Control System ..... 49~50
High-Speed Optical Module Thermal Analyzer 51

CHILLER Precision Constant temperature and Humidity Unit ..... 52~54

Direct Contact TCU ..... 55~56

CHILLER Direct cooling temp control unit

ZLJ Series 57
ZLTZ High-efficiency Heat exchange and temperature Control unit ..... 58~59

Chuck ..... 60~61

Compressed Gas Dryer 62

Burn-in Test Chamber 63

Fluoride solution recovery device 64

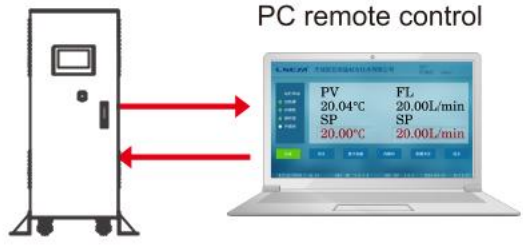
Negative-Pressure Temperature Control System 65



CHILLER REFRIGERATED CIRCULATOR

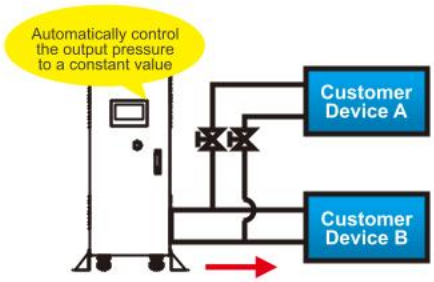
The heating method within 40℃ adopts compressor hot air heating.
Chiller circulation system is fully enclosed and the circulating pump is magnetically driven.
Chiller 100% helium test, 100% safety test to ensure system safety and reliability.
Chiller 100% after 24 hours continuous operation of the copying machine.

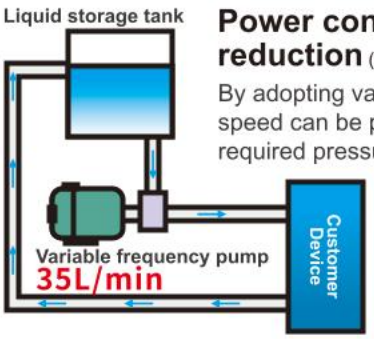
Condenser: Microchannel heat exchanger (air cooled)
Plate heat exchanger (water cooled)
Evaporator: Plate heat exchanger
Throttle equipment: Electronic expansion valve
Control system: PLC programmable controller
Communication: RS485 interface Modbus RTU protocol
Ethernet interface TCP/IP protocol
Operation interface: LNEYA custom 7-inch color touch screen, temperature curve display \EXCEL data export



Circulation system: The whole system is a fully closed system, low temperature does not absorb the water in the air, no volatile thermal media, low temperature automatically supplement the thermal media into the circulation system.
Case material: Cold-rolled plate spray RAL7035
Inside the pipeline contains: SUS304, copper, ceramic, silicon carbide, silicone sealant, PTFE

Frequency conversion energy conservation





Power consumption: Up to 40% reduction (compared with our company standard models)

By adopting variable frequency pumps, the motor speed can be precisely adjusted to match the required pressure levels.

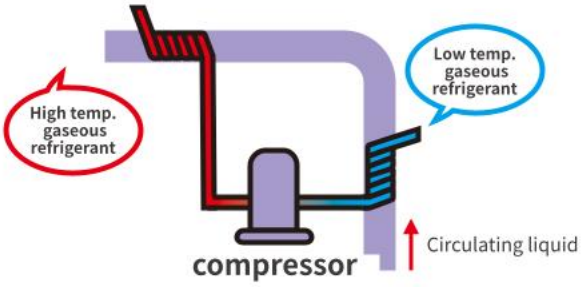


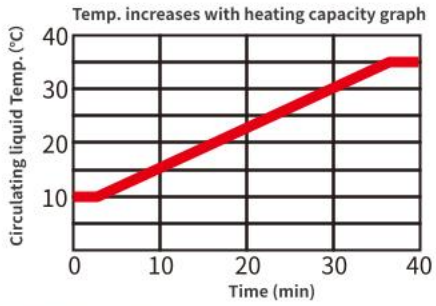
Variable frequency pump can adjust the circulating liquid pressure and flow rate

The output pressure and flow rate of the circulating liquid can be set on the operation panel. Even under various customer piping conditions, without bypass piping adjustment, it can be automatically controlled at the set output pressure through a variable frequency pump. As a result, the power consumption of the pump can be reduced.
Depending on the flow rate, bypass piping may be required

Heating function

Due to the use of heat generated during heating, circulating heating can be achieved without the need for a heater

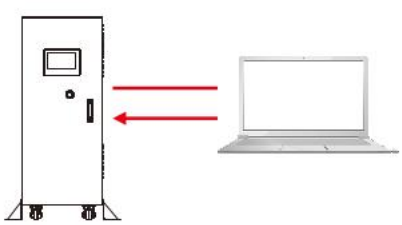




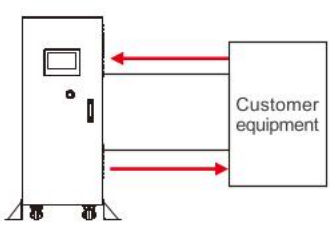
Communication function

Standard serial communication (RS232C,RS485) and contact input/output (3 points output, 2 points input). Depending on the purpose, you can communicate with customer devices or build systems. In addition, there is also a DC24V output, which can be used when setting the flow switch, etc.

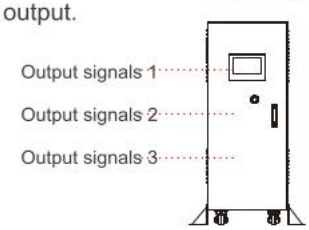
Remote control signal input and output, the use of serial communication can be remote operation.



One of the contact inputs is used for remote operation and the other is used to monitor the flow through the flow switch.



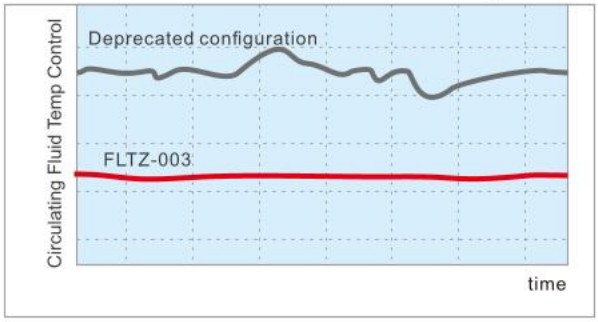
The signal output temperature controller internal alarm and state, according to its content can be divided into three output signals for output.



High-Precision Temperature Control

Temperature Stability: ±0.1°C

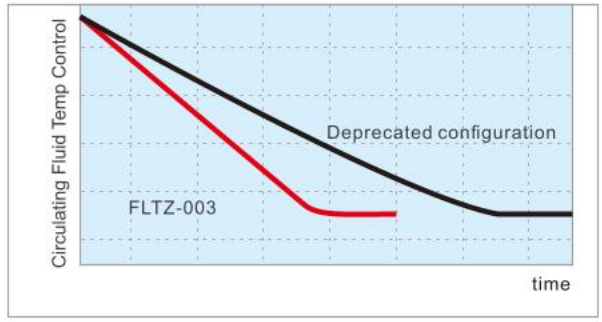
Due to advancements in temperature control technology, a stability of ±0.1°C can be achieved under steady load conditions, with customizable options reaching ±0.01°C.



Cooling Time: Up to 40% reduction

(compared with our company standard models)

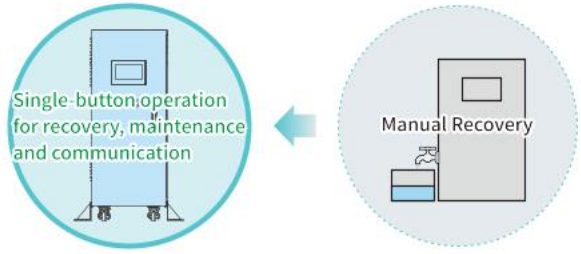
Through advanced temperature control technology, the chiller's capacity is maximized, significantly shortening cooling duration.

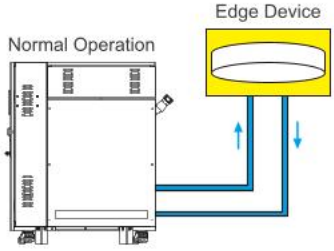


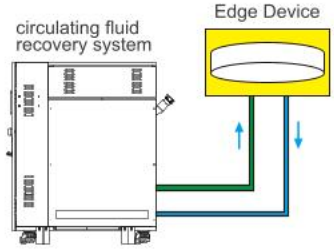
Circulating Fluid Purge & Recovery System

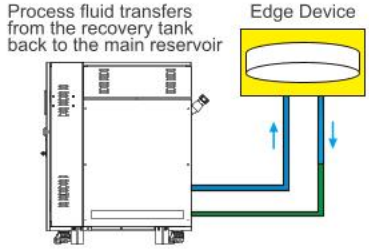
Automatic recovery of circulating fluid from unit tanks

- Maintenance man-hour reduction
- Minimum downtime
- Reduced circulating fluid loss from evaporation or dust contamination







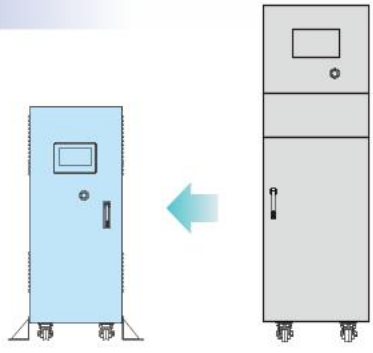


Space Optimization

Installation Area: Maximum 29% reduction

(compared with our company standard models)

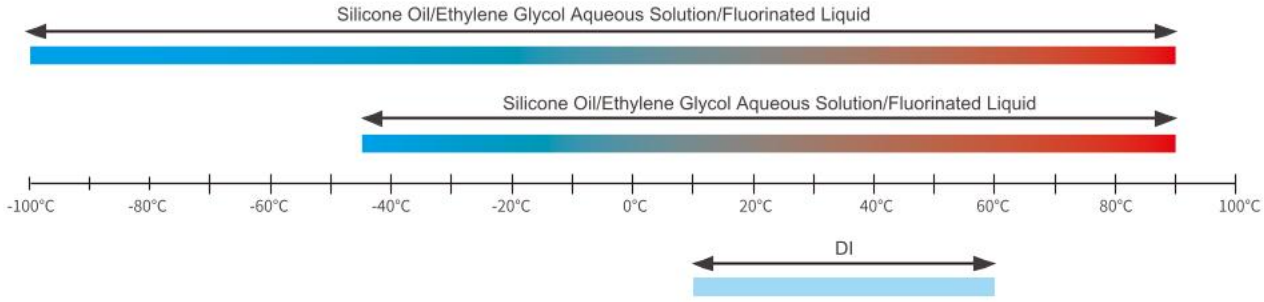
By forcibly exhausting internal valve heat through the rear panel, this design eliminates the need for side venting ports, enabling compact installation.



Circulating Fluid Selection

Which process chemical meets our recirculation requirements?

The selection of circulating fluids for chillers is determined by the customer's required temperature range.



Fluoride liquid

※The following values are reference values. For details, please consult the manufacturer of circulating liquid.

Parameter / Temperature	Density	Specific heat	
	kg/m³	J/(kg.k)	Kcal/(kg.℃)
-10℃	1.87*10³	0.87*10³	(0.21)
+20℃	1.80*10³	0.96*10³	(0.23)
+50℃	1.74*10³	1.05*10³	(0.25)
+80℃	1.67*10³	1.14*10³	(0.27)

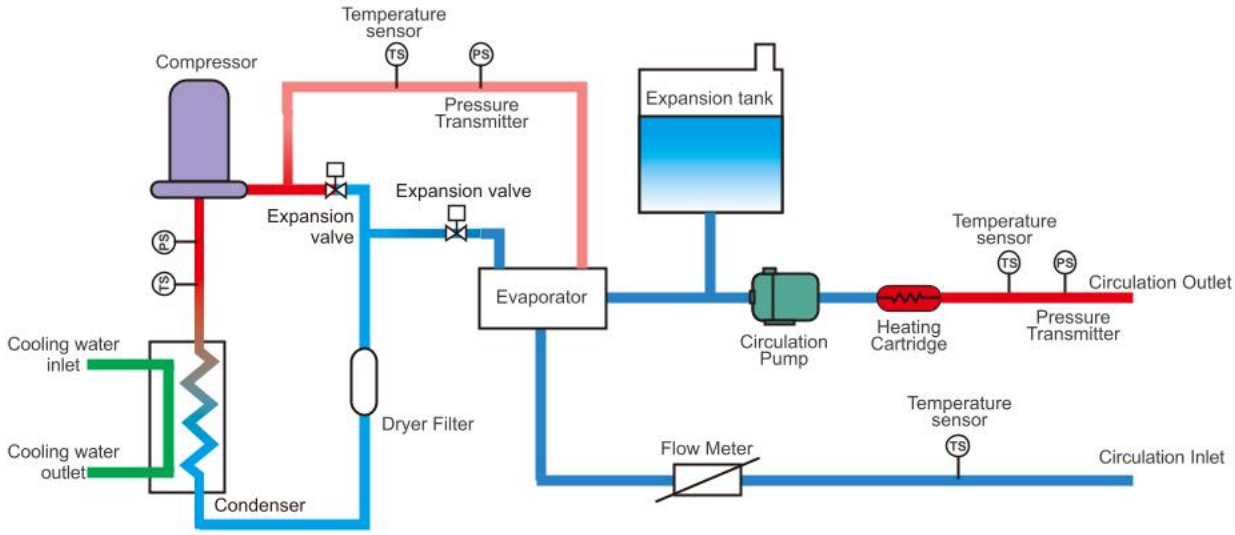
Ethylene glycol aqueous solution

Parameter / Temperature	Density	Specific heat	
	kg/m³	J/(kg·k)	Kcal/(kg·℃)
-10℃	1.10*10³	3.02*10³	(0.72)
+20℃	1.08*10³	3.15*10³	(0.75)
+50℃	1.06*10³	3.27*10³	(0.78)
+80℃	1.04*10³	3.40*10³	(0.81)

DI

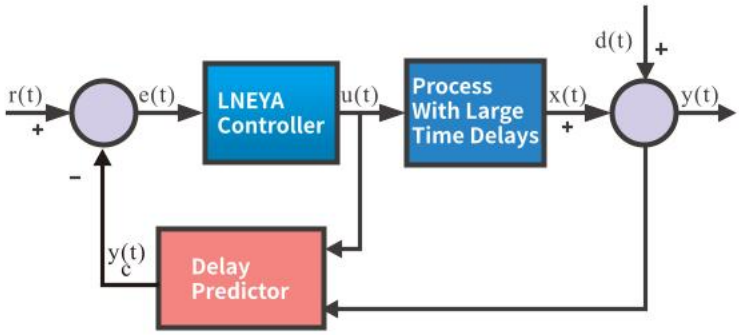
Density:1x10³[kg/m³] Specific heat:4.2x10³[J/(kg·k)] (1.0 [Kcal/(kg·℃)])

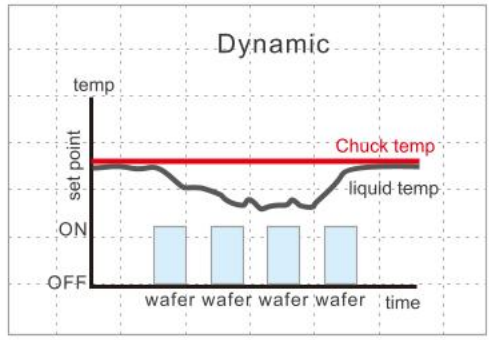
Cycle process



The circulating fluid is delivered to the client-side equipment via the circulation pump in the fluid loop, and after completing thermal exchange with the client equipment, it returns to the main reservoir through the heat exchanger. Under normal operation, the auxiliary tank remains inactive and is only utilized during fluid recovery from client equipment or when transferring fluid from the auxiliary tank to the main reservoir using the internal transfer pump.
In the refrigeration circuit, when the circulating fluid temp exceeds the setpoint, the expansion valve opens to introduce low-temp refrigerant gas into the heat exchanger, thereby cooling the circulating fluid. Conversely, when the circulating fluid temp falls below the setpoint, the expansion valve opens to direct high-temp refrigerant gas that bypasses the water-cooled condenser into the heat exchanger, consequently heating the circulating fluid.

Dynamic Temperature Control Principle





Change the control settings of the method, the response as soon as possible in the process of the system lags behind, be the smallest system overshoot.Controlled by two PID control loop structure, known as the two sets of control loops:the master loop and auxiliary loop. The control output of the master loop serves as the setpoint of the auxiliary loop.
System with feed forward with PV, the master PID loop operation results of the PV output and feed forward signals as the composite of the settings from the control loop, through such control of the temp gradient to ensure the accuracy of temp control system.

Precise dynamic control of fluid temperature

·Stage temperature stability
·Reduced first wafer effect
·Improved wafer-to-wafer stability
·Improved critical dimension (CD) deviation
·Small sidewall angle deviation in etch profile

CHILLER refrigerated circulator

FLTZ Variable Frequency Series



Principle:
The single-channel variable-frequency chiller integrates a single-stage vapor compression refrigeration system with a circulating fluid system to provide both cooling and heating with precise temperature control. It supplies constant-temperature coolant for processes such as etching, lithography, and coating & developing equipment.

Core Technologies & Advantages:
1.High efficiency and energy saving:
Built-in VFD automatically adjusts pump and compressor speed according to thermal load, matching terminal demand and avoiding full-load opposition between the compressor and electric heater to reduce energy consumption.
2.Precise temperature control:
PID or PLC control with temperature stability ≤ ±0.1 °C, suitable for precision manufacturing.
3.Multi-application compatibility:
Supports fluorinated liquids, glycol-water solutions, and DI water. DI water meets low conductivity requirements for microelectronics applications.

Active thermal control

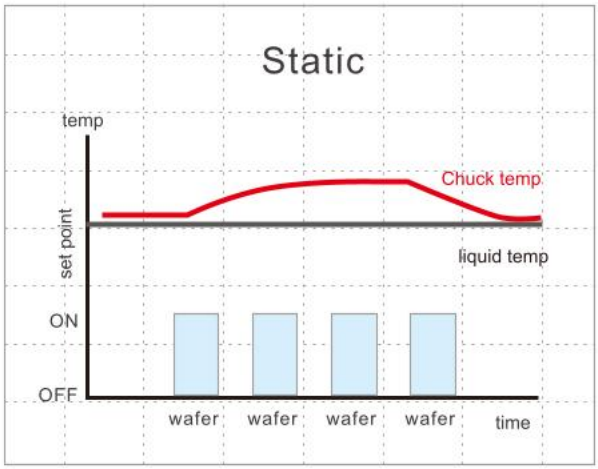
Comparison Between Dynamic and Static Temp Control

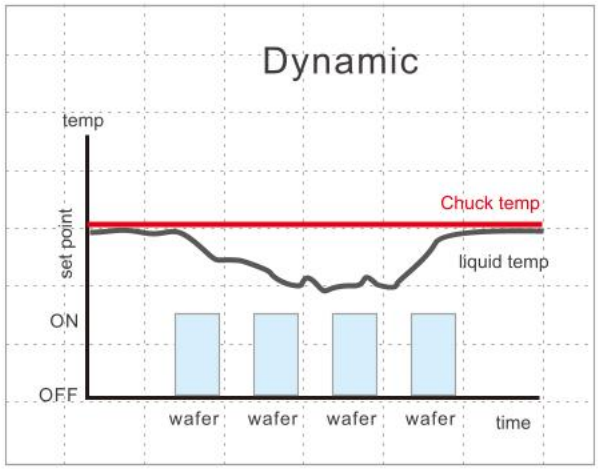
Temperature drift

·Sidewall Passivation Failure
·Wafer-to-wafer temperature instability
·Constant liquid reservoir temperature
·Stage temperature fluctuation
·Etch rate instability

Precise dynamic control of fluid temp

·Stage temperature stability
·Reduced first wafer effect
·Improved wafer-to-wafer stability
·Improved critical dimension (CD) deviation
·Small sidewall angle deviation in etch profile





FLTZ Variable Frequency Series +5℃～+40℃

Model	FLTZ-001 FLTZ-001W	FLTZ-002 FLTZ-002W	FLTZ-003 FLTZ-003W	FLTZ-004 FLTZ-004W	FLTZ-006 FLTZ-006W	FLTZ-008 FLTZ-008W	FLTZ-010 FLTZ-010W	FLTZ-015 FLTZ-015W
Temperature range	+5℃ ~ +40℃(Expandable to 90℃)							
Control mode	Circulating liquid outlet temperature control							
	Workload temperature control (optional)							
Control accuracy	±0.1℃ (±0.01℃available on request)							
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)							
Cooling capacity @20℃	2.5kW	6kW	9kW	10kW	15kW	20kW	25kW	38kW
Heating power	0.5kW	1kW	1.5kW	2kW	3kW	4kW	5.5kW	7.5kW
Refrigerating medium	Fluorinated liquid, ethylene glycol aqueous solution, or DI water, etc.							
Refrigerant	R1234yf/CO2/R410A/R448A							
Medium flow/ pressure	15LPM @3bar	15LPM @3bar	30LPM @3bar	30LPM @3bar	30LPM @3bar	30LPM @5bar	30LPM @5bar	30LPM @5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc3/4
Cooling water@23℃	0.6m³/h	1.1m³/h	1.6m³/h	2.2m³/h	3.3m³/h	4.4m³/h	5.5m³/h	8m³/h
Cooling water connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc1	Rc1 1/4
Expansion tank volume	10L	10L	10L	15L	15L	20L	25L	35L
Flow control	15~25LPM	15~25LPM	15~25LPM	15~30LPM	15~30LPM	15~30LPM	20~50LPM	20~50LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	7-inch color touch screen							
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring							
Communication type	MODBUS RTU/TCP protocol or ETHERCAT, LONWORKS etc.							
Installation environment	No corrosive or flammable gas.30-70%(No condensation)							
Power supply	220 VAC ±10%1PH 220 VAC ±10%3PH (Customizable)		380 VAC ± 10%, 3PH(Customizable) / 220 VAC ± 10%, 3PH(Customizable)					
Total power consumption	2.5kW	4.5kW	6kW	7kW	11kW	15kW	18.5kW	25kW
Shell material	Cold rolled steel powder coating(RAL7035)							
Dimensions(W) cm	40*90*100	48*100*115	48*100*115	50*108*130	50*108*140	80*100*165	90*110*165	100*120*165
Non-standard customization	With automatic purging, refilling, and draining functions, Customizable design to meet SEMI or CE standards							

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

FLTZ Variable Frequency Series -25℃~+90℃

Model	FLTZ-202 FLTZ-202W	FLTZ-203 FLTZ-203W	FLTZ-204 FLTZ-204W	FLTZ-206 FLTZ-206W	FLTZ-208 FLTZ-208W	FLTZ-210 FLTZ-210W	FLTZ-215 FLTZ-215W
Temperature range	-25℃ ~ +90℃						
Control mode	Circulating liquid outlet temperature control						
	Workload temperature control (optional)						
Control accuracy	±0.1℃ (±0.01℃available on request)						
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)						
Cooling capacity @-15℃	1kW	2kW	2.5kW	4kW	6kW	8kW	12kW
Cooling capacity @-20℃	0.8kW	1.5kW	2kW	3.5kW	5kW	6.5kW	10kW
Heating power	1.5kW	1.5kW	2kW	3kW	4kW	5.5kW	7.5kW
Refrigerating medium	Fluorinated liquid, ethylene glycol aqueous solution						
Refrigerant	R454C/R290/CO2						
Medium flow/ pressure	15LPM @3bar	15LPM @3bar	30LPM @3bar	30LPM @3bar	30LPM @3bar	30LPM @5bar	30LPM @5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Cooling water@23℃	1.1m³/h	1.6m³/h	2.2m³/h	3.3m³/h	4.4m³/h	5.5m³/h	8m³/h
Cooling water connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc1	Rc1 1/4
Expansion tank volume	10L	10L	15L	15L	20L	25L	35L
Flow control	15~25LPM	15~25LPM	15~30LPM	15~30LPM	15~30LPM	20~50LPM	20~50LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	7-inch color touch screen						
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring						
Communication type	MODBUS RTU/TCP protocol, ETHERCAT, LONWORKS etc.						
Installation environment	No corrosive or flammable gas.30-70%(No condensation)						
Power supply	380 VAC ± 10%, 3PH/220 VAC ± 10%, 3PH(Customizable)						
Total power consumption	4.5kW	6kW	7kW	11kW	15kW	18.5kW	25kW
Shell material	Cold rolled steel powder coating(RAL7035)						
Dimensions(W) cm	48*100*115	48*100*115	50*108*130	50*108*140	80*100*165	90*110*165	100*120*175
Non-standard customization	With automatic purging, refilling, and draining functions,Customizable design to meet SEMI or CE standards						

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

FLTZ Variable Frequency Series -40℃～+90℃

Model	FLTZ-402 FLTZ-402W	FLTZ-403 FLTZ-403W	FLTZ-404 FLTZ-404W	FLTZ-406 FLTZ-406W	FLTZ-408 FLTZ-408W	FLTZ-410 FLTZ-410W	FLTZ-415 FLTZ-415W
Temperature range	-40℃ ~ +90℃						
Control mode	Circulating liquid outlet temperature control						
	Workload temperature control (optional)						
Control accuracy	±0.1℃ (±0.01℃available on request)						
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)						
Cooling capacity @-10℃	1.5kW	3kW	3.2kW	5kW	7kW	9kW	13kW
Cooling capacity @-30℃	0.6kW	1kW	1.3kW	2kW	2.8kW	4kW	5.5kW
Heating power	1kW	1.5kW	2kW	3kW	4kW	5.5kW	7.5kW
Refrigerating medium	Fluorinated liquid, ethylene glycol aqueous solution						
Refrigerant	R454C/R290/CO2						
Medium flow/ pressure	15LPM @3bar	15LPM @3bar	25LPM @3bar	25LPM @3bar	25LPM @3bar	30LPM @5bar	30LPM @5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Cooling water@23℃	1.1m³/h	1.6m³/h	2.2m³/h	3.3m³/h	4.4m³/h	5.5m³/h	8m³/h
Cooling water connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc1	Rc1 1/4
Expansion tank volume	10L	10L	15L	15L	20L	25L	35L
Flow control	15~25LPM	15~25LPM	15~30LPM	15~30LPM	15~30LPM	20~50LPM	20~50LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	7-inch color touch screen						
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring						
Communication type	MODBUS RTU/TCP protocol, ETHERCAT, LONWORKS etc.						
Installation environment	No corrosive or flammable gas.30-70%(No condensation)						
Power supply	380 VAC ± 10%, 3PH / 220 VAC ± 10%, 3PH(Customizable)						
Total power consumption	4.5kW	6kW	7kW	11kW	15kW	18.5kW	25kW
Shell material	Cold rolled steel powder coating(RAL7035)						
Dimensions(W) cm	48*100*115	50*108*140	50*108*140	50*108*150	80*100*165	90*110*165	100*120*175
Non-standard customization	With automatic purging, refilling, and draining functions,Customizable design to meet SEMI or CE standards						

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

FLTZ Variable Frequency Series -80℃~+50℃

Model	FLTZ-803 FLTZ-803W	FLTZ-805 FLTZ-805W	FLTZ-806 FLTZ-806W	FLTZ-808W	FLTZ-8010W	FLTZ-8015W	FLTZ-8025W
Temperature range	-80℃ ~ +50℃(Expandable to 100℃)						
Control mode	Circulating liquid outlet temperature control						
	Workload temperature control (optional)						
Control accuracy	±0.1℃ (±0.01℃available on request)						
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)						
Cooling capacity @-25℃	3kW	4.5kW	5kW	6.5kW	9kW	14kW	25kW
Cooling capacity @-55℃	1kW	2.5kW	2.8kW	3.2kW	4.8kW	7.5kW	10.2kW
Cooling capacity @-70℃	0.6kW	1.2kW	1.5kW	2kW	2.8kW	5.5kW	8kW
Heating power	1.5kW	2.5kW	3kW	4kW	5.5kW	7.5kW	11kW
Refrigerating medium	R454C/R290/CO2/R508B						
Refrigerant	Fluorinated liquid						
Medium flow/ pressure	15LPM @3bar	20LPM @3bar	25LPM @3bar	35LPM @5bar	35LPM @5bar	35LPM @5bar	35LPM @5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc3/4	Rc3/4
Cooling water@23℃	2m³/h	3m³/h	3.6m³/h	4.8m³/h	7m³/h	10m³/h	15m³/h
Cooling water connection size	Rc1/2	Rc3/4	Rc3/4	Rc3/4	Rc1	Rc1 1/4	Rc2
Expansion tank volume	15L	15L	15L	30L	30L	40L	40L
Flow control	15~25LPM	15~25LPM	15~30LPM	20~50LPM	20~50LPM	20~50LPM	20~50LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	7-inch color touch screen			10-inch color touch screen			
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring						
Communication type	MODBUS RTU/TCP protocol, ETHERCAT, LONWORKS etc.						
Installation environment	No corrosive or flammable gas.30-70%(No condensation)						
Power supply	380 VAC ± 10%, 3PH(Customizable)						
Total power consumption	8.5kW	12.5kW	16kW	22kW	27.5kW	38kW	60kW
Shell material	Cold rolled steel powder coating(RAL7035)						
Dimensions(W) cm	65*90*165	70*95*175	70*95*175	80*120*185	80*120*185	100*130*185	120*160*195
Non-standard customization	With automatic purging, refilling, and draining functions,Customizable design to meet SEMI or CE standards						

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

FLTZ Variable Frequency Series -100℃～+90℃

Model	FLTZ-1002W	FLTZ-1004W	FLTZ-1006W
Temperature range	-100℃ ~ +90℃ (Expandable to 100℃)		
Control mode	Circulating liquid outlet temperature control		
	Workload temperature control (optional)		
Control accuracy	±0.1℃ (±0.01℃available on request)		
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)		
Cooling capacity @-90℃	1.5kW	3kW	6kW
Heating power	3.5kW	5.5kW	15kW
Refrigerating medium	Fluorinated liquid		
Refrigerant	Mixed refrigerant		
Medium flow/pressure	30LPM@6bar	30LPM@6bar	30LPM@6bar
Medium connection size	Rc3/4	Rc3/4	Rc3/4
Cooling water@23℃	6.6m³/h	10m³/h	18m³/h
Cooling water connection size	Rc1	Rc1 1/2	G2
Expansion tank volume	30L	30L	40L
Flow control	20LPM~40LPM	20LPM~40LPM	20LPM~40LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	10-inch color touch screen		
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring		
Communication type	MODBUS RTU/TCP protocol, ETHERCAT, LONWORKS etc.		
Installation environment	No corrosive or flammable gas.30-70%(No condensation)		
Power supply	380 VAC ± 10%, 3PH(Customizable)		
Total power consumption	20.5kW	27.5kW	55kW
Shell material	Cold rolled steel powder coating(RAL7035)		
Dimensions(W) cm	80*120*185	100*150*185	120*160*195
Non-standard customization	With automatic purging, refilling, and draining functions,Customizable design to meet SEMI or CE standards		

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER refrigerated circulator

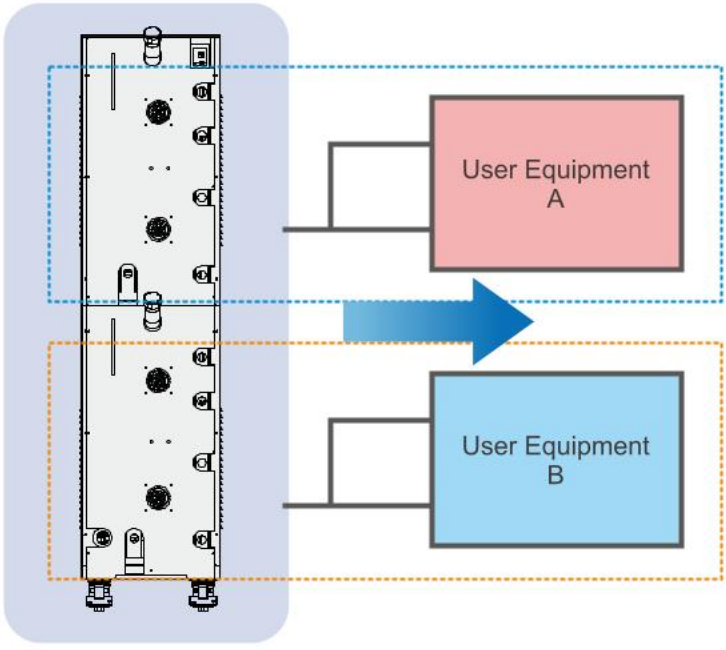
FLTZ Variable Frequency Series

Multi channel independent temperature control, which can have a separate temperature range, cooling and heating capacity, thermal conductivity medium flow rate, etc., adopts two independent systems. According to the required temperature range, steam compression refrigeration or ETCU non compressor heat exchange system can be selected. The system can be used for universal expansion tanks, condensers, cooling water systems, etc., which can effectively reduce equipment size and operation steps.



A power Supply System for multi-channel temperature control with reduced wiring complexity

Active thermal control



Control mode example

In the case of dual channels, the equipment is equipped with 2 sets of independent systems that maintain the same size as a single channel chiller and individually control the temp of the 2 fluid channel systems.

User devices A and B can be set to the same temp range, or they can be different. Independent temp control is not affected by each other. Similarly, 3 channels are 3 sets of independent systems.

Dual-Channel Series

All models support customizable dual-channel, triple-channel, and quad-channel configurations, with varying power levels for each channel.

Model	FLTZ-D-202W		FLTZ-D-203W		FLTZ-D-B003B203W	
Channel coefficient	CH1	CH2	CH1	CH2	CH1	CH2
Medium temp range	-20℃~+90℃	-20℃~+90℃	-20℃~+90℃	-20℃~+90℃	-20℃~+90℃	-20℃~+90℃
Control system	PLC controller		PLC controller		PLC controller	
Control model	Outlet temperature control mode (internal sensor)					
	Load temperature control mode (via communication)					
Control accuracy	±0.1℃					
Cooling capacity	1kW@-20℃	1kW@-20℃	2.5kW@-15℃	2.5kW@-15℃	4kW@-15℃	20kW@cooling water temp+10℃
	4kW@10℃	4kW@10℃	6kW@10℃	6kW@10℃	10kW@10℃	
Heating power	1.6kW	1.6kW	5.5kW	5.5kW	2kW	5.5kW
Refrigerating medium/Resistivity	DI WATER@10~18MΩ·cm		Fluorinated liquid		Fluorinated liquid	
Medium flow/Pressure	20LPM@5bar	20LPM@5bar	20LPM@3bar	20LPM@3bar	20LPM@5bar	20LPM@5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Cooling water	20℃@2.5m³/h@2~4bar		20℃@3.5m³/h@2~4bar		20℃@2.7m³/h @2~4bar	20℃@3.5m³/h @2~4bar
Cooling water connection size	Rc3/4		Rc3/4		Rc3/4	Rc3/4
Channel temp control	PID control independent temp regulation for each channel					
Flow control per group	15~20LPM variable frequency adjustment					
Flow display accuracy	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM
Tank volume	15L	15L	15L	15L	15L	15L
Control panel	7-inch color touch screen					
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring					
Safety interlock	EMO+INTERLOCK					
Lockable tag device	LOTO					
Leak detection device	Internal and external LEAK SENSON					
Communication Protocol	MODBUS RTU/TCP protoco、ETHERCAT、LONWORKS etc.					
Installation environment	No corrosive or flammable gas 30-70%(No condensation)					
Power supply	220 VAC±10%,3PH(Customizable)		380 VAC±10%,3PH(Customizable)		220 VAC±10%,3PH(Customizable)	
Total power consumption	11kW(49A)		18kW (48A)		14.5kW (55A)	
Shell meterial	Cold rolled steel powder coating(RAL7035)					
Dimensions cm	60*85*140		75*110*170		46*90*187	
Non-standard customization	Equipped with ion exchange resin filter With automatic purging, refilling, draining functions Customizable dual-channel liquid level balancing		With automatic purging, refilling, draining functions Customizable design to meet SEMI S2 / SEMI F47 standards Customizable dual-channel liquid level balancing			

Triple-Channel Series

All models support customizable dual-channel, triple-channel, and quad-channel configurations, with varying power levels for each channel.

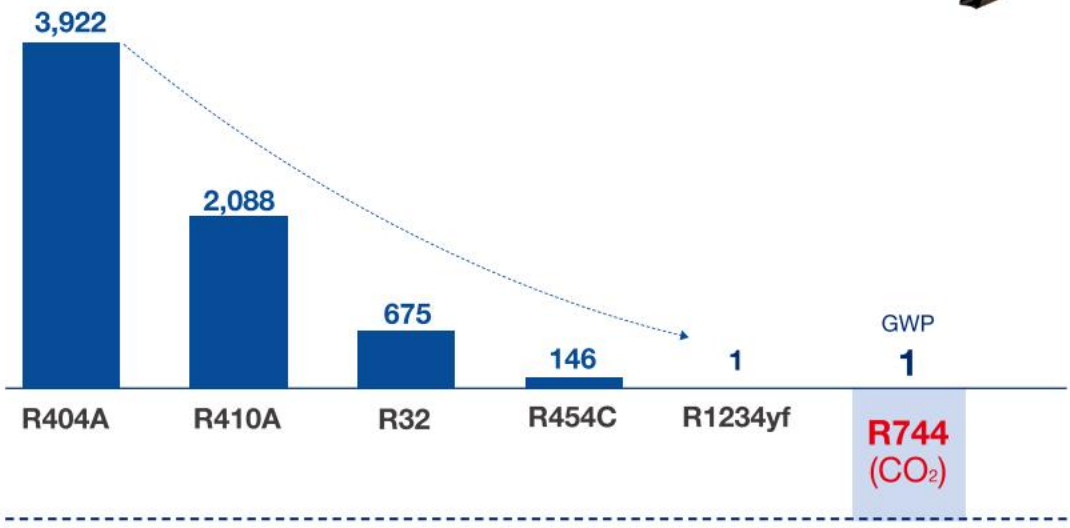
Model	FLTZ-T-B203B205A1W			FLTZ-T-B440A2A2W			FLTZ-T-B210A1C1W		
Channel coefficient	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
Medium temp range	-10℃~60℃	30℃~80℃	-10℃~80℃	-40℃~50℃	30℃~120℃	30℃~50℃	-25℃~90℃	30℃~90℃	25℃~160℃
Control system	PLC controller			PLC controller			PLC controller		
Control model	Outlet temperature control mode (internal sensor)								
	Load temperature control mode (via communication)								
Control accuracy	±0.1℃								
Cooling capacity	4kW@-10℃ 16kW@20℃	6kW @+10℃	3kW@-10℃ 10kW@20℃	20kW @-30℃	20kW @50℃	25kW @35℃	10kW @-10℃	10kW @30℃	4kW @100℃
Heating power	5.5kW	5.5kW	4kW	5.5kW	15kW	5.5kW	2kW	7.5kW	7.5kW
Refrigerating medium/Resistivity	Fluorinated liquid			Fluorinated liquid			Fluorinated liquid		
Medium flow/ Pressure	17LPM @7bar	17LPM @7bar	17LPM @7bar	30LPM @11.5bar	30LPM @11.5bar	23LPM @10bar	30LPM @6.5bar	30LPM @6.5bar	30LPM @6.5bar
Medium connection size	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4
Cooling water	20℃ @2.7m³/h @2~4bar	20℃ @2.5m³/h @2~4bar	20℃ @1.6m³/h @2~4bar	20℃ @20m³/h @2~4bar	20℃@7m³/h @2~4bar		20℃@5m³/h@2~4bar		
Cooling water connection size	Rc3/4	Rc3/4	Rc3/4	Rc1 1/4	Rc1 1/4	Rc1 1/4	Rc1	Rc1	Rc1
Channel temp control	PID control, independent temperature regulation for each channel								
Flow control per group	15~20LPM variable frequency adjustment								
Flow display accuracy	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM	±0.5 LPM
Tank volume	40L	40L	40L	25L	25L	25L	25L	25L	25L
Control panel	7-inch color touch screen			10-inch color touch screen					
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring								
Safety interlock	EMO+INTERLOCK								
Lockable tag device	LOTO								
Leak detection device	Internal and external LEAK SENSON								
Communication Protocol	MODBUS RTU/TCP protocol、ETHERCAT、LONWORKS etc.								
Installation environment	No corrosive or flammable gas 30-70%(No condensation)								
Power supply	220 VAC±10%,3PH(Customizable)			380 VAC±10%,3PH(Customizable)			380 VAC±10%,3PH(Customizable)		
Total power consumption	31kW(113A)			65kW(136A)			34kW(135A)		
Shell meterial	Cold rolled steel powder coating(RAL7035)								
Dimensions cm	70*100*185			115*150*210			105*135*195		
Non-standard customization	With automatic purging, refilling, and draining functions.Customizable design to meet SEMI S2 / SEMI F47 standards								

CHILLER refrigerated circulator
FLTRZ Series

- Efficient and energy-saving: The variable frequency compressor unit changes the operating speed of the DC compressor at any time according to the user's cold and hot load requirements through a built-in variable frequency device, maintaining the stable working state of the unit and achieving energy-saving effects.
- Fast cooling: The frequency conversion unit adopts advanced frequency conversion technology to accurately control the operating speed of the compressor and fan.
- Ultra low noise: The variable frequency unit adopts a variable frequency vortex or dual rotor compressor, greatly reducing the imbalance of the rotation and making the vibration of the unit very small.
- High environmental adaptability: The variable frequency unit adopts low-frequency starting, with a small starting current. Strong adaptability to voltage.
- Long lifespan: The variable frequency unit will not tart and stop frequently, effectively reducing losses during unit start and stop and extending unit lifespan.



Refrigerant CO_2 GWP=1 ODP=0



GWP = 1 Compliant with each country's refrigerant regulations

EU refrigerant regulations	GWP150 or less
US refrigerant regulations	GWP700 or less
California, US refrigerant regulations	GWP750 or less

* "GWP" indicates the global warming potential. The values are based on the IPCC AR4.

FLTRZ +10°C～+25°C Series

Model		FLTRZ-001W FLTRZ-001	FLTRZ-003W FLTRZ-003	FLTRZ-006W FLTRZ-006	FLTRZ-011W FLTRZ-011
Medium temp range		+10°C～+25°C			
Temp control accuracy		±0.1°C(Customizable ±0.01°C)			
Compressor		Compressor (Variable frequency control)			
Throttling method		Electronic expansion valve			
Cooling capacity AT 10°C		3kW	7kW	13kW	25kW
Internal circulation volume		4L	5L	8L	12L
Expansion tank volume		10L	10L	15L	25L
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0			
Heat transfer fluid		Silicone oil, fluorinated liquid, ethylene glycol aqueous solution, pure water, etc.			
Inlet /outlet connection size		M24*1.5	M30*1.5	M38*1.5	M38*1.5
Cooling Water Temp 20°C	Cooling water flow	700L/H	1650L/H	3200L/H	5600L/H
	Connection size	M30*1.5	M38*1.5	M38*1.5	M45*1.5
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.			
Power supply		1PH 220V 50Hz/3PH 220V 50&60Hz/ 3PH 380V 50Hz/3PH 460V 60Hz		3PH 380V 50Hz/3PH 460V 60Hz	

FLTRZ-S +10°C～+25°C Series

Model		FLTRZ-001WS FLTRZ-001S	FLTRZ-003WS FLTRZ-003S	FLTRZ-006WS FLTRZ-006S	FLTRZ-011WS FLTRZ-011S
Medium temp range		+10°C～+25°C			
Temp control accuracy		±0.005°C (Steady state of outlet temperature)			
Compressor		Compressor (Variable frequency control)			
Throttling method		Electronic expansion valve			
Cooling capacity AT 10°C		3kW	7kW	13kW	25kW
Internal circulation volume		4L	5L	8L	12L
Expansion tank volume		10L	10L	15L	25L
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0			
Heat transfer fluid		Silicone oil, fluorinated liquid, ethylene glycol aqueous solution, pure water, etc.			
Inlet /outlet connection size		M24*1.5	M30*1.5	M38*1.5	M38*1.5
Cooling Water Temp 20°C	Cooling water flow	700L/H	1650L/H	3200L/H	5600L/H
	Connection size	M30*1.5	M38*1.5	M38*1.5	M45*1.5
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.			
Power supply		1PH 220V 50Hz/3PH 220V 50&60Hz/ 3PH 380V 50Hz/3PH 460V 60Hz		3PH 380V 50Hz/3PH 460V 60Hz	

1.Models with "W" in the name indicate water-cooled units; models without "W" are air-cooled.
2.Rated test conditions: inlet water temperature 15 °C; outlet water temperature 20 °C.
3.The supplied cooling water temperature must not exceed 15 °C. Excessive cooling water temperature will affect the minimum operating temperature of the unit.
4.The data in this table is for reference only; please refer to the unit nameplate specifications.
5.For special non-standard customization, please contact us.

FLTRZ -25℃～+90℃ Series

Model		FLTRZ-201W	FLTRZ-203W	FLTRZ-206W	FLTRZ-211W
Medium temp range		-25℃～+90℃			
Temp control accuracy		±0.1℃(Customizable ±0.01℃)			
Compressor		Compressor (Variable frequency control)			
Throttling method		Electronic expansion valve			
Flow rate		30~60L/min		60~120L/min	
Cooling capacity kW	90℃	3kW	7.5kW	13kW	25kW
	50℃	3kW	7.5kW	13kW	25kW
	0℃	2.7kW	6.4kW	11.7kW	22.5kW
	-10℃	2.1kW	5.2kW	9.5kW	19kW
	-20℃	1.3kW	3.4kW	6.2kW	12.4kW
Internal circulation volume		4L	5L	8L	12L
Expansion tank volume		10L	10L	15L	25L
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0			
Heat transfer fluid		Silicone oil, fluorinated liquid, ethylene glycol aqueous solution, etc.			
Inlet /outlet connection size		M24*1.5	M30*1.5	M38*1.5	M38*1.5
Cooling Water Temp 20℃	Cooling water flow	700L/H	1650L/H	3200L/H	6000L/H
	Connection size	M30*1.5	M38*1.5	M38*1.5	M45*1.5
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.			
Power supply		1PH 220V 50Hz/3PH 220V 50&60Hz/ 3PH 380V 50Hz/3PH 460V 60Hz		3PH 380V 50Hz/3PH 460V 60Hz	

FLTRZ -25℃～+90℃ dual-channel Series

Model		FLTRZ-D-D3D3W	
Piping		Channel 1	Channel 2
Medium temp range		-25℃～+90℃	-25℃～+90℃
Temp control accuracy		±0.1℃(Customizable ±0.01℃)	±0.1℃(Customizable ±0.01℃)
Cooling capacity AT -10℃		5.2kW	5.2kW
Cooling capacity AT -20℃		3.4kW	3.4kW
Inlet /outlet connection size		M30*1.5	
Cooling Water Temp 20℃	Cooling water flow	3300L/H	
	Connection size	M38*1.5	
Heat transfer fluid		Silicone oil, fluorinated liquid, ethylene glycol aqueous solution, etc.	
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0	
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.	
Power supply		1PH 220V 50Hz/3PH 220V 50&60Hz/3PH 380V 50Hz/3PH 460V 60Hz	

1.Models with "W" in the name indicate water-cooled units; models without "W" are air-cooled.
2.Rated test conditions: inlet water temperature 15 °C; outlet water temperature 20 °C.
3.The supplied cooling water temperature must not exceed 15 °C. Excessive cooling water temperature will affect the minimum operating temperature of the unit.
4.The data in this table is for reference only; please refer to the unit nameplate specifications.
5.For special non-standard customization, please contact us.

FLTRZ -40℃~+90℃ Series

Model		FLTRZ-401W	FLTRZ-403W	FLTRZ-406W	FLTRZ-411W
Medium temp range		-40℃~+90℃			
Temp control accuracy		±0.1℃(Customizable ±0.01℃)			
Compressor		Compressor (Variable frequency control)			
Throttling method		Electronic expansion valve			
Flow		30~60L/min		60~120L/min	
Cooling capacity kW	90℃	3.5kW	7.5kW	13kW	25kW
	50℃	3.5kW	7.5kW	13kW	25kW
	0℃	2.7kW	6.4kW	11.7kW	22.5kW
	-15℃	1.5kW	3.7kW	6.8kW	13kW
	-25℃	1kW	2.6kW	5kW	9.6kW
	-35℃	0.2kW	0.7kW	1.5kW	3kW
Internal circulation volume		4L	5L	8L	12L
Expansion tank volume		10L	10L	15L	25L
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0			
Heat transfer fluid		Silicone oil, fluorinated fluid, ethylene glycol aqueous solution, etc.			
Inlet /outlet connection size		M24*1.5	M30*1.5	M38*1.5	M38*1.5
Cooling Water Temp 15℃	Cooling water flow	700L/H	1650L/H	3200L/H	6000L/H
	Connection size	M30*1.5	M38*1.5	M38*1.5	M45*1.5
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.			

FLTRZ -40℃~+90℃ dual-channel Series

Model		FLTRZ-D-E6E6W	
Piping		Channel 1	Channel 2
Medium temp range		-40℃~+90℃	-40℃~+90℃
Temp control accuracy		±0.1℃(Customizable ±0.01℃)	±0.1℃(Customizable ±0.01℃)
Cooling capacity AT -15℃		6.8kW	6.8kW
Cooling capacity AT -35℃		2.2kW	2.2kW
Inlet /outlet connection size		M38*1.5	
Cooling Water Temp 15℃	Cooling water flow	6000L/H	
	Connection size	M45*1.5	
Heat transfer fluid		Silicone oil, fluorinated liquid, ethylene glycol aqueous solution, etc.	
Refrigerant		Carbon dioxide (CO_2): GWP = 1; ODP = 0	
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.	
Power supply		3PH 380V 50Hz/3PH 460V 60Hz	

1.Models with "W" in the name indicate water-cooled units; models without "W" are air-cooled.
2.Rated test conditions: inlet water temperature 15 °C; outlet water temperature 20 °C.
3.The supplied cooling water temperature must not exceed 15 °C. Excessive cooling water temperature will affect the minimum operating temperature of the unit.
4.The data in this table is for reference only; please refer to the unit nameplate specifications.
5.For special non-standard customization, please contact us.

FLTRZ -70℃～+90℃ Series

Model		FLTRZ-801W	FLTRZ-803W	FLTRZ-806W	FLTRZ-811W
Medium temp range		-70℃～+90℃			
Temp control accuracy		±0.1℃(Customizable ±0.01℃)			
Compressor		Compressor (Variable frequency control)			
Throttling method		Electronic expansion valve			
Flow		30~60L/min		60~120L/min	
Cooling capacity kW	90℃	3kW	7.5kW	13kW	25kW
	20℃	3kW	7.5kW	13kW	25kW
	-55℃	0.6kW	1.8kW	3.5kW	7kW
	-65℃	0.3kW	0.9kW	1.81kW	4kW
Internal circulation volume		4L	5L	8L	12L
Expansion tank volume		10L	10L	15L	25L
Refrigerant		R744 (CO_2)/R508B			
Heat transfer fluid		Silicone oil, fluorinated fluid			
Inlet /outlet connection size		M24*1.5	M30*1.5	M38*1.5	M38*1.5
Cooling Water Temp 15℃	Cooling water flow	900L/H	2250L/H	4400L/H	8000L/H
	Connection size	M30*1.5	M38*1.5	M38*1.5	M45*1.5
Process temp control		The remote target temperature can be controlled by combining the self-developed model-free self-constructed tree algorithm and the cascade algorithm.			
Power supply		1PH 220V 50Hz/3PH 220V 50&60Hz/ 3PH 380V 50Hz/3PH 460V 60Hz		3PH 380V 50Hz/3PH 460V 60Hz	

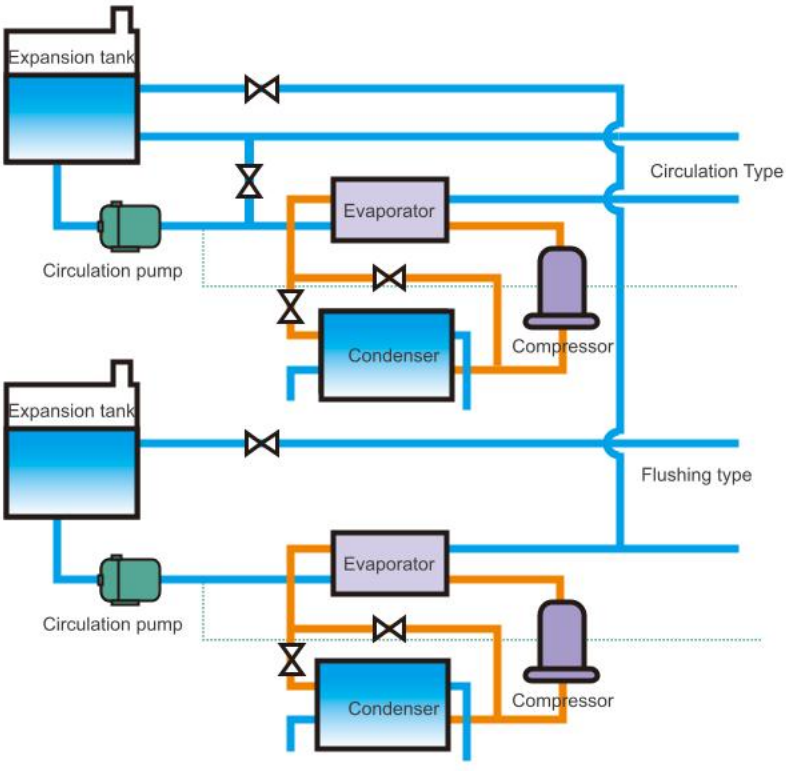
1.Models with “W” in the name indicate water-cooled units; models without “W” are air-cooled.
2.Rated test conditions: inlet water temperature 15 °C; outlet water temperature 20 °C.
3.The supplied cooling water temperature must not exceed 15 °C. Excessive cooling water temperature will affect the minimum operating temperature of the unit.
4.The data in this table is for reference only; please refer to the unit nameplate specifications.
5.For special non-standard customization, please contact us.

CHILLER refrigerated circulator
Ultrapure Water Temp Control Series



Applications:
The Chiller is composed of two core systems: a closely coupled refrigeration cycle and a medium circulation cycle. Through efficient heat exchange between the media in the two circulation channels, it achieves precise and stable temperature control of the target equipment.

Core Technologies & Advantages:
1.High Cleanliness: The built-in filter effectively prevents scale formation, reduces free ion contamination at the source, protects key components of the cooling system, and significantly improves operational efficiency. At the same time, it lowers the conductivity of the cooling water, prevents current leakage, and avoids electrochemical interference with precision electronic components or processing procedures.
2.Precise Temperature Control: Employs intelligent algorithms to achieve rapid dynamic temperature response with a control accuracy of ±0.1°C (optional ±0.01°C), ensuring excellent temperature tracking performance.
3.Energy Efficiency: Utilizes frequency conversion adaptive regulation of compressors and pumps, soft start, and waste heat recovery technologies to achieve high efficiency and energy savings.
4.Applicable Scenarios: This chiller can replace freon-based cleaning and is widely used in precision cleaning with ultrapure water in the production of semiconductor wafers, photovoltaic cells, LCD panels, and lithium batteries.



Principle:

The refrigerant circulates within the system, achieving cooling through four processes: compression, condensation, throttling, and evaporation. Simultaneously, the secondary coolant (medium) flows in an independent circulation loop, continuously delivering cooling capacity to the target equipment via a plate heat exchanger and is reused in a closed loop.

FLTZ-U +15℃～+40℃

Model	FLTZ-U-003W	FLTZ-U-D001W		FLTZ-U-D002W		FLTZ-U-D003W	
Channel type	1-loop independent	2-loop independent		2-loop independent		2-loop independent	
Channel Model	CH1	CH1	CH2	CH1	CH2	CH1	CH2
Circulation Mode	Flushing type	Circulation Type	Circulation Type	Circulation Type	Flushing type	Circulation Type	Flushing type
Temp Range	+15℃~+40℃	+15℃~+40℃		+15℃~+40℃		+15℃~+40℃	
Temp Control Accuracy	±0.1℃	±0.1℃	±0.1℃	±0.1℃	±0.1℃	±0.1℃	±0.1℃
Cooling Capacity	9.4kW@20℃	0.6kW@20℃	0.6kW@20℃	1.5kW@20℃	6.3kW@20℃	3kW@20℃	6.2kW@20℃
Heating Capacity	10kW	0.6kW	2kW	1.5kW	12.5kW	3kW	12.5kW
Circulating liquid type/resistivity	DI WATER@ 10~18MΩ·cm	DI WATER@10~18MΩ·cm		DI WATER@10~18MΩ·cm		DI WATER@10~18MΩ·cm	
Circulating liquid flow/pressure	45LPM @0.4MPa	6LPM @0.45MPa	10LPM @0.43MPa	15LPM @0.45MPa	25LPM @0.43MPa	18LPM @0.45MPa	30LPM @0.43MPa
Connection size	Rc3/4	Rc3/8	Rc3/8	Rc1/2	Rc1/2	Rc1/2	Rc3/4
PCW Temperature	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃
PCW flow	2m³/h	1.3m³/h	1.3m³/h	2m³/h	2m³/h	3.8m³/h	3.8m³/h
PCW pressure	2~6bar	2~6bar	2~6bar	2~6bar	2~6bar	2~6bar	2~6bar
PCW connection size	Rc3/4	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Overload protection	Thermal overload protection for compressor, circulation pump, and heater						
Power supply protection	Overcurrent, over/under voltage, phase-loss and etc. protection						
Liquid level protection	Low flow, low liquid level protection etc.						
Safety interlock	EMO+INTERLOCK						
Lockable tag device	LOTO device						
Leak detection device	Internal and external LEAK SENSON						
Communication protocols	MODBUS RTU/TCP protocol or ETHERCAT、LONWORKS etc.						
Ambient Temp	+10℃~+40℃						
Ambient Humidity	30~70%RH						
Power supply	220VAC±10% , 3PH(Customizable))						
Dimensions cm	45*90*150	43*90*150		45*120*150		65*115*170	

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER refrigerated circulator

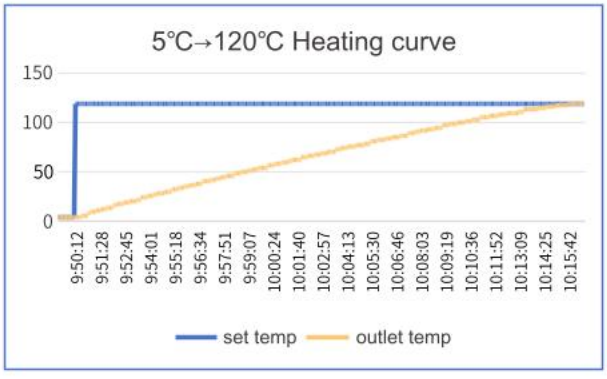
Panel Chiller

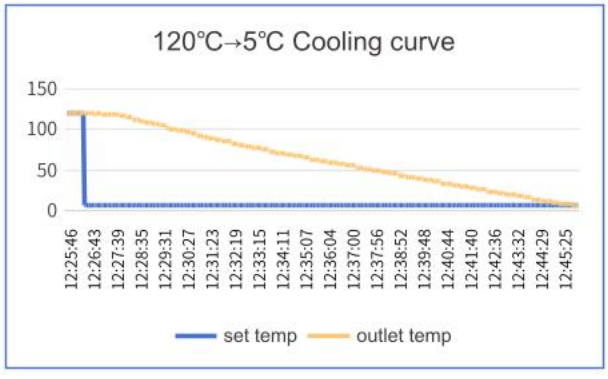


Application:
This series is currently primarily used in panel manufacturing processes such as thin-film deposition and etching, OLED vacuum coating, Micro-LED heat transfer, laser processing, and more.

Product Advantages:
Stable Operation: Precisely tailored to meet industry demands, integrated with multiple safety protection functions to ensure stable panel process operation.
Wide Temperature Range & Precise Control:
-20°C~+120°C, with control accuracy up to ±0.01°C.
High Efficiency & Energy Saving: Utilizes full-frequency conversion technology combined with compressor waste heat recovery, reducing energy consumption by 20%.
Low Fluorinated Fluid Loss: Closed-loop circulation system design minimizes fluorinated fluid volatilization at high temperatures.
Compact Equipment Size: Multi-channel integration for more efficient space utilization.

Precise temperature control - case curve





CASE STUDY
Through control optimization and algorithm upgrades, multiple algorithmic models are applied to achieve dynamic temperature control. Additionally, refrigeration components are optimized, and electronic expansion valves enable precise temperature regulation, ensuring high accuracy and minimal overshoot. The optimized system achieved the following results:
① High temperature control accuracy: ±0.1℃ for both no-load and load conditions.
② Minimal temperature overshoot during ramp-up and ramp-down: less than ±1℃ under no-load conditions.

Single-/Dual-/Triple-Channel Series

High-end panel precision temperature controllers designed for OLED deposition, IBE, and ICP processes. The cooling channel precisely controls the BOTTOM temperature, while the heating channels regulate TOP and WALL temperatures. High stability and precision ensure critical CD dimension parameters are maintained during processing.

Model	FLTZ-B-P001W	FLTZ-B-D001W		FLTZ-B-T001W		
Channel type	1-loop independent	2-loop independent		3-loop independent		
Channel Model	CH1	CH1	CH2	CH1	CH2	CH3
Temp Range	+25℃~+30℃	-20℃~+90℃	+25℃~+90℃	+10℃~+90℃	+10℃~+90℃	+10℃~+90℃
Temp Control Accuracy	±0.1℃	±0.1℃	±0.1℃	±0.1℃	±0.1℃	±0.1℃
Cooling Capacity	21kW@25℃	35kW@5℃	30kW@PCW10℃	7kW@10℃	3kW@10℃	8kW@10℃
Heating Capacity	2kW	4kW	38kW	2kW	4kW	6kW
Circulating liquid type/Resistivity	DI WATER @10~18MΩ·cm	Glycol-water solution	Glycol-water solution	Fluorinated fluid HT-170	Fluorinated fluid HT-170	Fluorinated fluid HT-170
Circulating liquid flow/Pressure	80LPM@0.5MPa	25LPM@0.4MPa	25LPM@0.4MPa	35LPM@0.5MPa	35LPM@0.5MPa	35LPM@0.5MPa
Circulating liquid connection size	Rc1	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4
PCW Temperature	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃
PCW flow	3.6m³/h	6m³/h	5.5m³/h	3.5m³/h	3.5m³/h	3.5m³/h
PCW pressure	2~6bar	2~6bar	2~6bar	2~6bar	2~6bar	2~6bar
PCW connection size	Rc1	Rc1 1/4	Rc1 1/4	Rc1	Rc1	Rc1
Overload protection	Thermal overload protection for compressor, circulation pump, and heater					
Power supply protection	Overcurrent, over/under voltage, phase-loss and etc. protection					
Liquid level protection	Low flow, low liquid level protection etc.					
Safety interlock	EMO+INTERLOCK					
Lockable tag device	LOTO device					
Leak detection device	Internal and external LEAK SENSON					
Communication protocols	MODBUS RTU/TCP protocol or ETHERCAT、LONWORKS etc.					
Ambient Temp	+10℃~+40℃					
Ambient Humidity	30~70%RH					
Shell material	Cold-rolled steel, RAL 7035 powder-coated					
Power supply	220VAC±10% , 3PH(Customizable)					
Dimensions cm	60*105*135	78*100*190		85*100*180		

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

Quad-Channel Series

Designed for large-size panels, suitable for RGB-OLED panel manufacturing in vacuum deposition and ion beam etching (IBE/ICP) processes. The cooling channels provide dual independent outputs for the BOTTOM, with no interference between channels. The design reduces equipment footprint, saving valuable floor space.

Model	FLTZ-B-F001W			
Channel type	4-loop independent			
Channel Model	CH1	CH2	CH3	CH4
Temp Range	-20℃~+90℃	-20℃~+90℃	+30℃~+120℃	+30℃~+120℃
Temp Control Accuracy	±0.1℃	±0.1℃	±0.1℃	±0.1℃
Cooling Capacity	12kW@10℃	12kW@10℃	5kW@30℃	5kW@30℃
Heating Capacity	6kW	6kW	20kW	40kW
Circulating liquid type/Resistivity	Fluorinated fluid HT-135	Fluorinated fluid HT-135	Fluorinated fluid HT-170	Fluorinated fluid HT-170
Circulating liquid flow/Pressure	45LPM@0.5MPa	45LPM@0.5MPa	45LPM@0.5MPa	50LPM@0.5MPa
Circulating liquid connection size	Rc3/4	Rc3/4	Rc3/4	Rc3/4
PCW temperature	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃	+18℃~+22℃
PCW flow	1.5m³/h	1.5m³/h	2.3m³/h	3.5m³/h
PCW pressure	2~6bar	2~6bar	2~6bar	2~6bar
PCW connection size	Rc1 1/2			
Overload protection	Thermal overload protection for compressor, circulation pump, and heater			
Liquid level protection	Overcurrent, over/under voltage, phase-loss and etc. protection			
Liquid level protection	Low flow, low liquid level protection etc.			
Safety interlock	EMO+INTERLOCK			
Lockable tag device	LOTO device			
Leak detection device	Internal and external LEAK SENSON			
Communication protocols	MODBUS RTU/TCP protocol or ETHERCAT、LONWORKS etc.			
Ambient Temp	+10℃~+40℃			
Ambient Humidity	30~70%RH			
Shell material	Cold rolled steel powder coating(RAL7035)			
Power supply	220VAC±10% , 3PH(Customizable)			
Dimensions cm	120*160*185			

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER refrigerated circulator

FLTZH high-temp series

Application:
The CHILLER High-Temperature Series is primarily used in the field of thin film deposition, suitable for processes such as CVD, PECVD, MOCVD, etc., that require removing high-temperature heat, meeting the demands of semiconductor high-temperature testing.

Core Technologies & Advantages:
1.Wide High-Temperature Range: Outlet temperature up to 300°C.
2.Precise Temperature Control: Employs intelligent algorithms to achieve rapid dynamic temperature response with a control accuracy of ±0.1°C (optional ±0.01°C), ensuring excellent temperature tracking performance.
3.Energy Efficiency: Utilizes frequency conversion adaptive regulation, soft start, and other technologies to achieve high efficiency and energy savings.
4.Low Fluorinated Fluid Loss: Special sealing and circulation design minimizes fluorinated fluid volatilization loss caused by high temperatures.
5.High Cleanliness: Internal pipes are pickled and passivated for high cleanliness, free from impurity ions, and do not cause any contamination to the process.



Model		FLTZH-5W	FLTZH-10W
Medium temp range		+50℃ ~ +220℃	+50℃ ~ +220℃
Control system		PLC controller	PLC controller
Temp Control Point Mode		Outlet temperature control mode (internal sensor)	
		CHUCK Temperature Control Mode (Communication)	
Temp Difference Control		Configurable temperature difference between the control setpoint and the outlet temperature	
Communication protocol		MODBUS RTU protocol RS 485 interface , Ethernet interface	
External temp input feedback		Via communication	Via communication
Temp control accuracy		±0.1℃	±0.1℃
Chuck temp control accuracy		±0.5℃	±0.5℃
Heating power		5.5kW	10kW
Cooling capacity kW AT	+220℃	5.5kW	10kW
	+150℃	5.5kW	10kW
	+100℃	3.5kW	6kW
	+50℃	1.1kW	2kW
Flow/Pressure		8LPM 4bar	8LPM 4bar
Control panel		7-inch touch screen	7-inch touch screen
Connection size		Rc1/2	Rc3/4
Cooling water connection size		Rc1/2	Rc3/4
Cooling water flow		20LPM max at 25℃	35LPM max at 25℃
Shell material		Cold rolled steel powder coating(RAL7035)	Cold rolled steel powder coating(RAL7035)
Heat transfer medium		Fluorinated fluid	Fluorinated fluid
Dimensions cm		45*85*90	55*105*120
Power supply		220V 3-phase 4-wire 32A	220V 3-phase 4-wire 32A

FLTZH Dual-Channel Series

Model		FLTZH-2W-2T		FLTZH-5W-2T		FLTZH-10W-2T		FLTZH-5W-2T-HV	
Medium temp range		+50℃ ~ +220℃		+50℃ ~ +220℃		+50℃ ~ +220℃		+50℃ ~ +300℃	
Control system		PLC controller							
Temp Control Point Mode		Outlet temperature control mode (internal sensor)							
		CHUCK Temperature Control Mode (Communication)							
Temp Difference Control		Configurable temperature difference between the control setpoint and the outlet temperature							
Communication protocol		MODBUS RTU protocol RS 485 interface , Ethernet interface							
External temp input feedback		Via communication							
Temp control accuracy		±0.1℃							
Chuck temp control accuracy		±0.5℃							
Heating power		2.5kW	2.5kW	5.5kW	5.5kW	10kW	10kW	5.5kW	5.5kW
Cooling capacity kW AT	220℃	2.5kW	2.5kW	5.5kW	5.5kW	10kW	10kW	5.5kW	5.5kW
	150℃	2.5kW	2.5kW	5.5kW	5.5kW	10kW	10kW	5.5kW	5.5kW
	100℃	1.5kW	1.5kW	3.5kW	3.5kW	6kW	6kW	3.5kW	3.5kW
	50℃	0.5kW	0.5kW	1.1kW	1.1kW	2kW	2kW	1.1kW	1.1kW
Flow/Pressure		8LPM 4bar	8LPM 4bar	8LPM 4bar	8LPM 4bar	15LPM 4bar	15LPM 4bar	8LPM 4bar	8LPM 4bar
Control panel		7-inch touch screen							
Safety protection		Self-diagnostic system with phase sequence protection, current monitoring, leak alarm, triple heating protection, and inlet/outlet pressure & flow interruption protection							
Closed circulation system		Fully sealed system with no oil mist at high temperature, no moisture absorption at low temperature, stable system pressure during operation, and automatic thermal fluid replenishment at low temperature							
Connection size		Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc1/2	Rc1/2
Cooling water connection size		Rc1/2		Rc1/2		Rc3/4		Rc1/2	
Cooling water flow		20LPM max at 25℃		40LPM max at 25℃		70LPM max at 25℃		40LPM max at 25℃	
Shell material		Cold rolled steel powder coating(RAL7035)							
Heat transfer medium		Fluorinated fluid		Fluorinated fluid		Fluorinated fluid		Fluorinated fluid	
Dimensions cm		45*85*130		45*85*145		55*105*160		45*110*145	
Power supply		220V 3PH 4-wire 32A		220V 3PH 4-wire 32A		220V 3PH 4-wire 32A		220V 3PH 4-wire 32A	

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER refrigerated circulator

Ambient-temp high-precision series



Applications:
The high-precision chiller series integrates a vapor compression refrigeration system with a circulating fluid system to provide both cooling and heating with high-precision temp control. It is suitable for lithography, coating & developing equipment, and other processes requiring precise thermal management.

Core Technologies & Advantages:
1.High-precision temperature control:
PID or PLC control maintains temperature fluctuations ≤ ±0.005℃, ideal for ultra-precision manufacturing.
2.Multi-application compatibility:
Supports fluorinated liquids, glycol-water solutions, and DI water.

Model	FLS-001S FLS-001WS	FLS-002S FLS-002WS	FLS-003S FLS-003WS	FLS-004S FLS-004WS	FLS-006S FLS-006WS	FLS-008S FLS-008WS	FLS-010S FLS-010WS
Temperature range	+15℃~+25℃						
Control mode	Outlet temperature control mode (internal sensor)						
	Workload temperature control (optional)						
Temp control accuracy	±0.005℃ (Outlet temperature stability)						
Process temp control	The remote target temperature can be controlled by combining the self created model free self built tree algorithm and cascade algorithm (dynamic temperature control)						
Cooling capacity@20℃	2.5kW	6kW	9kW	10kW	15kW	20kW	25kW
Refrigerating medium	Fluorinated fluid, ethylene glycol aqueous solution, purified water, DI water, etc.						
Medium flow/pressure	15LPM@3bar	15LPM@3bar	30LPM@3bar	30LPM@3bar	30LPM@3bar	30LPM@5bar	30LPM@5bar
Medium connection size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Cooling water@23℃	0.6m³/h	1.1m³/h	1.6m³/h	2.2m³/h	3.3m³/h	4.4m³/h	5.5m³/h
Connection size	Rc3/8	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc3/4	Rc1
Expansion tank volume	10L	10L	10L	15L	15L	20L	25L
Flow control	15~25LPM	15~25LPM	15~25LPM	15~30LPM	15~30LPM	15~30LPM	20~50LPM
Flow display accuracy	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM	±0.5LPM
Control panel	7-inch color touch screen						
Safety protection	Self-diagnostic system with phase loss, over/under voltage and current protection, leak alarm, triple heating protection, and inlet/outlet pressure & flow monitoring						
Communication Protocol	MODBUS RTU/TCP protocol or ETHERCAT、LONWORKS etc.						
Installation environment	No corrosive or flammable gas 30-70%(No condensation)						
Power supply	220 VAC ± 10% 1PH/220 VAC ± 10% 3PH /380 VAC ± 10% 3PH(Customizable)			380 VAC ± 10% 3PH/220 VAC ± 10% , 3PH(Customizable)			
Total power consumption	2kW	3.5kW	4.5kW	5kW	7kW	10.5kW	12.5W
Shell material	Cold rolled steel powder coating(RAL7035)						
Dimensions cm	40*80*100	40*80*115	50*95*130	50*95*130	50*100*140	80*100*165	90*110*165
Non-standard customization	With automatic purging, refilling, and draining functions. Customizable design to meet SEMI tandards						

CHILLER refrigerated circulator

Compressor-Free Heat Exchange Series

Principle:
A chiller achieves heat exchange between plant water and coolant medium through a heat exchanger. A circulation pump drives the circulation of the coolant medium, while simultaneously realizing precise temperature control. It is suitable for heating and cooling in fields such as lithography machines, thin film deposition equipment, and ion implanters.



Core Technologies & Advantages:
1.Integrated heating and cooling equipment
The equipment has a simple structure; continuous temp rise and fall can be achieved by using a heat exchanger
2.Precise temperature control
Adopting PID algorithm or PLC control, it achieves a temp fluctuation of ≤ ±0.05℃
3.Multi-scenario adaptation
Supports the use of different media, including pure water, ethylene glycol, and heat transfer oil.

Model	ETCU-005W	ETCU-015W	ETCU-030W	ETCU-050W	ETCU-100W	ETCU-200W	ETCU-300W
Temperature range	Cooling water temp +5℃~+90℃						
Coolant Outlet Temp	Cooling water temp+5℃						
Cooling Water Temp	7℃~30℃						
Coolant Flow	15LPM	40LPM	60LPM	110LPM	200LPM	400LPM	600LPM
Cooling Water Flow	0.9m³/h	1.5m³/h	3.6m³/h	6.4m³/h	13.4m³/h	27.4m³/h	41.4m³/h
Expansion tank volume	10L	10L	15L	30L	60L	120L	240L
Cooling capacity	5kW	15kW	30kW	60kW	100kW	200kW	300kW
Heating power	1kW	3kW	6kW	12kW	20kW	40kW	60kW
Temp control accuracy	±1℃ (Optional electric heating with ±0.1℃ customization)						
Control mode	Circulating liquid outlet temperature control						
	Workload temperature control (optional)						
Process temp control	Dynamic control of target workload temperature using proprietary model-free tree and cascade algorithms						
Flow/PressureMAX	15LPM@3bar	40LPM@3bar	60LPM@3bar	110LPM@2.5bar	200LPM@2.5bar	400LPM@2bar	600LPM@2bar
Control panel	Color touchscreen displays set and measured temp, records temp curves, exports data in Excel format						
Coolant	Deionized water, ethylene glycol aqueous solution, fluorinated fluid.						
Coolant connection size	Rc1/2	Rc1/2	Rc3/4	Rc1 1/4	Rc2	DN65	DN80
Cooling water connection size	Rc1/2	Rc3/4	Rc1	Rc1 1/4	Rc2	DN65	DN80
Power supply	380 VAC ± 10% , 3PH(Customizable)/220 VAC ± 10% , 3PH(Customizable)						
Total power(max)	1kW	3kW	4kW	5kW	6kW	8kW	10kW
Total power including electric heating(max)	6kW	6kW	10kW	17kW	26kW	48kW	70kW
Shell material	Cold-rolled steel, RAL 7035 powder-coated						
Communication protocol	MODBUS RTU/TCP protocol or ETHERCAT、LONWORKS etc.						
Dimensions cm	40*80*80	45*85*85	50*90*105	60*120*150	60*130*160	65*135*160	70*180*160
Non-standard customization	Equipped with a debris filter or ion exchange resin filter.With automatic purging,refilling,and draining functions						

CHILLER refrigerated circulator

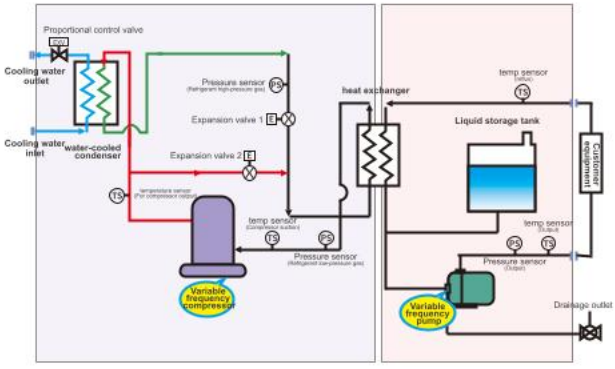
LT Fixed frequency series

Refrigerator

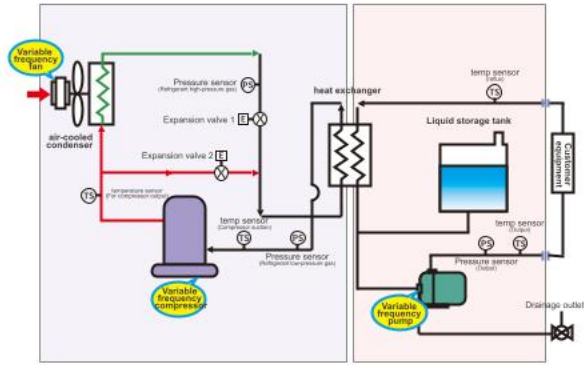


- Temperature ranges from -80℃~+30℃;
- Adopt using secondary sub cooling technology, rapid cooling and low temp limit;
- Adopt famous brand semi-closed piston compressor, semi-closed bipolar piston compressor, semi-hermetic screw compressor; plate heat exchanger, small volume, high efficiency;
- Generator cooling water circuit use intermediate heat exchanger, improve system reliability and safety;
- 4.3-inch color touch screen,automatic control, temperature curve display, temp record U disk, fault alarm;
- Offer machine installation and system test, users only need to finish the installation of refrigerant and cooling water;
- Factory testing: each refrigerating unit is on load test of not less than 12 hours in the factory.

Water-cooled



Air-cooled



Freezing circuit

The compressor compresses the refrigerant gas and discharges it as a high-temp, high-pressure gas. Gas is cooled and liquefied through an air-cooled condenser in air-cooled machines. Water cooling is cooled and liquefied by a water-cooled condenser. The high-pressure refrigerant gas after liquefaction expands and lowers its temp. when passing through expansion valve 1. In the evaporator, it evaporates after obtaining the heat of the circulating liquid. The evaporated refrigerant gas is sucked in and compressed again by the compressor. When heating the circulating liquid, high-temp. and high-pressure refrigerant gas flows into the evaporator through the bypass circuit through expansion valve 2 to heat the circulating liquid.

Circulating liquid circuit

The circulating liquid flowing out of the pump is heated or cooled by the customer's equipment before returning to the temp controller. The circulating liquid reaches the set temperature through the freezing circuit and is then output to the customer's device side through a temperature controller.

LT-S Series

Model	LT-1S	LT-1.5S LT-1.5WS	LT-2S LT-2WS	LT-3S LT-3WS	LT-5S LT-5WS
Temperature range	+10℃ ~ +30℃				
Temperature control	ASET controller 4.3-inch touch screen				
Temp control accuracy	±0.1℃ (outlet temperature)				
Temp Feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)				
Cooling capacity 20℃	2kW	3kW	6kW	8kW	11kW
Circulation Pump Flow Max	8L/min	8L/min	20L/min	20L/min	50L/min
	1.6BAR	1.6BAR	2.5BAR	2.5BAR	2.5Bar
Compressor	Piston/rotor/scroll compressor				
Evaporator	Plate Heat Exchanger				
Operation panel	4.3-inch color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format				
Safety protection	Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.				
Refrigerant	R-134A/R407C				
Interface size	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc3/4
Power 50Hz Max	Single-phase 220V/50Hz，3-phase 380V/50Hz				
Shell material	Cold rolled steel plate with plastic spraying RAL7035				
Communication protocol	MODBUS RTU protocol RS485 interface				

LT Series

Model	LT-1 LT-1W	LT-1.5 LT-1.5W	LT-2 LT-2W	LT-3 LT-3W	LT-5 LT-5W
Temperature range	+10℃~+30℃ (Below 10°C, use ethylene glycol water solution)				
Temperature control	ASET controller 4.3-inch touch screen		ASET multifunctional controller 7-inch touch screen		
Temp control accuracy	±0.5℃				
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)				
Cooling capacity 15℃	2kW	3kW	6kW	8kW	14kW
Circulation Pump Flow Max	30L/min	30L/min	30L/min	30L/min	50L/min
	1.6BAR	1.6BAR	1.6BAR	1.6BAR	2BAR
Compressor	Rotor compressor/Scroll compressor				
Evaporator	Plate Heat Exchanger				
Operation panel	Color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format				
Safety protection	Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.				
Refrigerant	R-410A/R407C				
Interface size	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc1
Dimensions cm (A)	30*60*71.8	30*60*71.8	45*70*160	45*70*160	55*110*170
Dimensions cm (W)	30*60*71.8	30*60*71.8	45*70*130	45*70*130	40*90*165
Cooling water	0.8m³/h Rc1/2	0.8m³/h Rc1/2	1.3m³/h Rc1/2	2m³/h Rc3/4	4m³/h Rc1
Power 50Hz Max	220V 1PH 1.3kW	220V 1PH 1.5kW	220V 1PH 2.2kW	380V 3PH 5kW	380V 3PH 7.5kW
Weight	110kg	145kg	180kg	225kg	290kg
Shell material	Cold rolled steel plate with plastic spraying RAL7035				
Communication protocol	MODBUS RTU protocol RS485 interface				

Model	LT2-1 LT2-1W	LT2-1.5 LT2-1.5W	LT2-2 LT2-2W	LT2-3 LT2-3W	LT2-5 LT2-5W
Temperature range	-25℃~+30℃				
Temperature control	ASET controller 4.3-inch touch screen		ASET multifunctional controller 7-inch touch screen		
Temp control accuracy	±0.5℃				
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)				
Cooling capacity -15℃	0.7kW	1.3kW	2kW	3kW	5kW
Circulation Pump Flow Max	30L/min	30L/min	30L/min	30L/min	30L/min
	1.6BAR	1.6BAR	1.6BAR	1.6BAR	1.6BAR
Compressor	Rotor compressor/Scroll compressor				
Evaporator	Plate Heat Exchanger				
Operation panel	Color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format				
Safety protection	Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.				
Refrigerant	R454C/R290/CO2/R507				
Interface size	Rc1/2	Rc1/2	Rc3/4	Rc3/4	Rc3/4
Dimensions cm (A)	30*60*71.8	30*60*71.8	45*70*160	45*70*160	55*110*170
Dimensions cm (W)	30*60*71.8	30*60*71.8	45*70*130	45*70*130	40*90*165
Cooling water	0.6m³/h Rc1/2	0.6m³/h Rc1/2	1.9m³/h Rc3/4	2.1m³/h Rc3/4	4.2m³/h Rc1
Power 50Hz Max	220V 1PH 1.3kW	220V 1PH 1.7kW	220V 1PH 3.2kW	380V 3PH 4.5kW	380V 3PH 8kW
Weight	120kg	140kg	160kg	170kg	220kg
Shell material	Cold rolled steel plate with plastic spraying RAL7035				
Communication protocol	MODBUS RTU protocol RS485 interface				

Model		LT4-1.5 LT4-1.5W	LT4-2 LT4-2W	LT4-3 LT4-3W	LT4-5 LT4-5W
Temperature range		-37℃ ~ +30℃	-45℃ ~ +30℃		
Temperature control		4.3-inch touch screen	ASET multifunctional controller 7-inch touch screen		
Temp control accuracy		±0.5℃			
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)			
Cooling capacity	-20℃	1.1kW	1.6kW	2.5kW	4.8kW
	-35℃	/	0.6kW	1.4kW	2.4kW
Circulation Pump Flow Max		20L/min	20L/min	30L/min	30L/min
		0.7BAR	0.7BAR	1.6BAR	1.6BAR
Compressor		Rotor compressor/Scroll compressor			
Evaporator		Plate Heat Exchanger			
Operation panel		Color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format			
Safety protection		Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.			
Refrigerant		R454C/R290/CO2/R507			
Interface size		Rc3/4	Rc3/4	Rc3/4	Rc3/4
Dimensions cm (A)		30*60*71.8	45*70*160	45*70*160	55*110*170
Dimensions cm (W)		30*60*71.8	45*70*130	45*70*130	40*90*165
Cooling water		1.3m³/h Rc1/2	1.9m³/h Rc3/4	2.1m³/h Rc3/4	4m³/h Rc1
Power 50Hz Max		220V 1PH 2.1kW	220V 3PH 2.7kW	380V 3PH 5kW	380V 3PH 6.2kW
Weight		140kg	185kg	230kg	270kg
Shell material		Cold rolled steel plate with plastic spraying RAL7035			
Communication protocol		MODBUS RTU protocol RS485 interface			

Model		LT6-1.5 LT6-1.5W	LT6-2 LT6-2W	LT6-3 LT6-3W	LT6-5 LT6-5W
Temperature range		-60℃ ~ -30℃			
Temp control		ASET multifunctional controller 7-inch touch screen			
Temp control accuracy		±0.5℃			
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)			
Cooling capacity	-40℃	0.8kW	1.4kW	2.2kW	3.8kW
	-55℃	0.5kW	0.8kW	1.3kW	2.2kW
Circulation Pump Flow Max		20L/min	20L/min	35L/min	35L/min
		0.7BAR	0.7BAR	1BAR	1BAR
Compressor		Piston/rotor compressor			
Evaporator		Plate Heat Exchanger			
Operation panel		7-inch color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format			
Safety protection		Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.			
Refrigerant		R454C/R290/CO2/R23			
Interface size		Rc3/4	Rc3/4	Rc3/4	Rc3/4
Dimensions cm (A)		55*70*175	55*70*175	65*85*185	70*85*185
Dimensions cm (W)		55*70*175	55*70*175	65*85*185	70*85*185
Cooling water		1.5m³/h Rc3/4	2.5m³/h Rc3/4	2.9m³/h Rc1	4.5m³/h Rc1 1/4
Power 50Hz Max		220V 1PH 3.5kW	380V 3PH 7kW	380V 3PH 8kW	380V 3PH 13kW
Weight		185kg	230kg	275kg	340kg
Shell material		Cold rolled steel plate with plastic spraying RAL7035			
Communication protocol		MODBUS RTU protocol RS485 interface			

Model		LT8-1.5 LT8-1.5W	LT8-2 LT8-2W	LT8-3 LT8-3W	LT8-5 LT8-5W
Temperature range		-75℃ ~ -40℃	-80℃ ~ -40℃		
Temp control		PLC controller 7-inch touch screen			
Temp control accuracy		±0.5℃			
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)			
Cooling capacity	-60℃	0.5kW	0.8kW	1.4kW	2kW
	-70℃	0.3kW	0.6kW	0.85kW	1.3kW
Circulation Pump Flow Max		20L/min	20L/min	35L/min	35L/min
		0.7BAR	0.7BAR	1BAR	1BAR
Compressor		Piston/rotor/scroll compressor			
Evaporator		Plate Heat Exchanger			
Operation panel		7-inch color touch screen displays set temp and measured temp, records temp curve, and exports data in Excel format			
Safety protection		Self-diagnosis function; refrigerator overload protection; high and low pressure sensors, overload relays, thermal protection devices and other safety protection functions.			
Refrigerant		R454C/R290/CO2/R410A/R508B/R23			
Interface size		Rc3/4	Rc3/4	Rc3/4	Rc3/4
Dimensions cm (A)		55*70*175	65*85*185	65*85*185	70*85*185
Dimensions cm (W)		55*70*175	65*85*185	65*85*185	70*85*185
Cooling water		1.5m³/h Rc3/4	2.5m³/h Rc3/4	2.9m³/h Rc1	4.5m³/h Rc1 1/4
Power 50Hz Max		220V 1PH 3.5kW	380V 3PH 7kW	380V 3PH 8kW	380V 3PH 13kW
Weight		185kg	230kg	275kg	340kg
Shell material		Cold rolled steel plate with plastic spraying RAL7035			

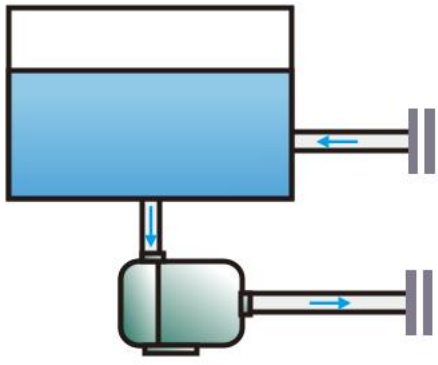
CHILLER Low Temp Circulator

LTZ variable frequency series

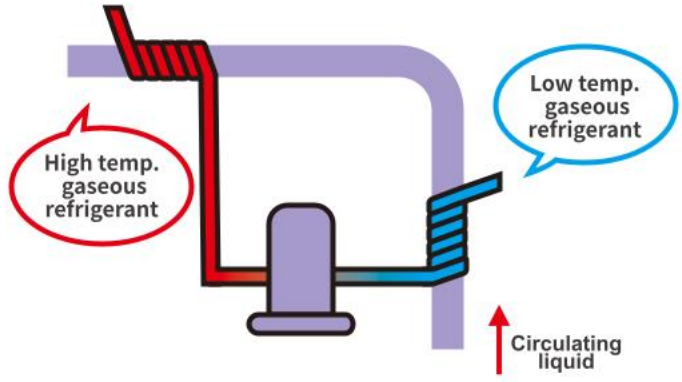
- Efficient and energy-saving: The variable frequency compressor unit changes the operating speed of the DC compressor at any time according to the user's cold and hot load requirements through a built-in variable frequency device, maintaining the stable working state of the unit and achieving energy-saving effects.
- Fast cooling: The frequency conversion unit adopts advanced frequency conversion technology to accurately control the operating speed of the compressor and fan.
- Ultra low noise: The variable frequency unit adopts a variable frequency vortex or dual rotor compressor, greatly reducing the imbalance of the rotation and making the vibration of the unit very small.
- High environmental adaptability: The variable frequency unit adopts low-frequency starting, with a small starting current. Strong adaptability to voltage.
- Long lifespan: The variable frequency unit will not tart and stop frequently, effectively reducing losses during unit start and stop and extending unit lifespan.



What are the advantages of the variable frequency series compared with the fixed frequency series?



Frequency conversion circulating pump



Frequency conversion compressor

Power consumption: up to 40% lower (compared with our company standard models)

Through the variable frequency pump,the motor speed can be controlled at the appropriate value corresponding to the required pressure.

Cooling water: up to 60% reduction
(compared with our company standard models)

Through separate control, the expansion valve is given the most appropriate control, the heat discharge of cooling water is reused and the power consumption is reduced, so the demand of cooling water is reduced.

Model	LTZ-2H LTZ-2WH	LTZ-4H LTZ-4WH	LTZ-6H LTZ-6WH	LTZ-10H LTZ-10WH
Temp range	+5℃~+90℃ (Ethylene glycol aqueous solution)			
Temp control	PLC controller, control the water tank outlet temperature			
Temp control accuracy	±0.3℃			
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)			
Heating power	3.5kW	5.5kW	7.5kW	15kW
Cooling capacity 10℃	4kW	8kW	12kW	20kW
Circulation Pump	20L/min 2bar	35L/min 2bar	50L/min 2bar	100L/min 2bar
Compressor	Piston/rotor/scroll compressor (Variable frequency control)			
Evaporator	Plate Heat Exchanger			
Refrigerant	R407C/R410A			
Interface size	Rc3/4	Rc3/4	Rc1	Rc1
Dimensions cm(A)	40*90*165	55*110*170	55*110*170	100*150*195
Dimensions cm(W)	40*90*165	40*90*165	40*90*165	95*145*185
Cooling water	1.9m³/h Rc3/4	3.6m³/h Rc1	4m³/h Rc1	7.5m³/h DN40
Power 50Hz Max	380V 3PH 7kW	380V 3PH 12kW	380V 3PH 17kW	380V 3PH 29kW
Weight	270kg	320kg	360kg	600kg

Model	LTZ4-2H LTZ4-2WH	LTZ4-4H LTZ4-4WH	LTZ4-6H LTZ4-6WH	LTZ4-10H LTZ4-10WH
Temp range	-40℃~+90℃			
Temp control	PLC controller, control the water tank outlet temperature screen			
Temp control accuracy	±0.3℃			
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)			
Heating power	2.5kW	5.5kW	7.5kW	10kW
Cooling capacity -15℃	2kW	4.5kW	7kW	11.5kW
Cooling capacity -35℃	0.7kW	1.5kW	2.3kW	3.8kW
Circulation Pump	20L/min 2bar	35L/min 2bar	50L/min 2bar	100L/min 2bar
Compressor	Piston/rotor/scroll compressor (Variable frequency control)			
Evaporator	Plate Heat Exchanger			
Refrigerant	R454C/R290/CO2/R410A			
Interface size	Rc3/4	Rc3/4	Rc1	Rc1
Dimensions cm(A)	40*90*165	55*70*175	65*85*185	70*85*185
Dimensions cm(W)	40*90*165	55*70*175	65*85*185	70*85*185
Cooling water	1.4m³/h Rc1/2	2.4m³/h Rc3/4	3.6m³/h Rc1	4.6m³/h Rc1 1/2
Power 50Hz Max	380V 3PH 6kW	380V 3PH 11.5kW	380V 3PH 15kW	380V 3PH 25kW
Weight	180kg	260kg	320kg	390kg

Model	LTZ-6 LTZ-6W	LTZ-10 LTZ-10W	LTZ-15 LTZ-15W	LTZ-20W	LTZ-30W	LTZ-40W
Temp range	+10℃~+30℃ (Below 10°C, use ethylene glycol water solution)					
Temp control	PLC controller, control the water tank outlet temperature screen					
Temp control accuracy	±0.5℃					
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity 20℃	23kW	35kW	58kW	79kW	120kW	165kW
Circulation Pump	5m³/h 2bar	5m³/h 2bar	11m³/h 2bar	14m³/h 2bar	19m³/h 2bar	28m³/h 2bar
Compressor	Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator	Plate Heat Exchanger					
Refrigerant	R407C/R410A					
Interface size	DN25	DN32	DN40	DN50	DN50	DN65
Dimensions cm(A)	55*110*170	100*175*180	145*245*225	145*245*225	/	/
Dimensions cm(W)	40*90*165	95*145*185	100*150*185	200*145*205	250*145*225	250*145*225
Cooling water	4m³/h DN25	10m³/h DN40	14m³/h DN50	17m³/h DN50	25m³/h DN65	38m³/h DN50
Power 50Hz Max	380V 3PH 9kW	380V 3PH 14kW	380V 3PH 22kW	380V 3PH 26kW	380V 3PH 38kW	380V 3PH 48kW
Weight	360kg	600kg	800kg	950kg	1100kg	1350kg

Model		LTZ2-6 LTZ2-6W	LTZ2-10 LTZ2-10W	LTZ2-15 LTZ2-15W	LTZ2-20W	LTZ2-30W	LTZ2-40W
Temp range		-25℃~+30℃					
Temp control		PLC controller, control the water tank outlet temperature screen					
Temp control accuracy		±0.5℃					
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity	-5℃	10.2kW	18kW	26.5kW	28.4kW	58.5kW	64.5kW
	-15℃	7kW	11kW	16.2kW	18.2kW	39.6kW	43.32kW
Circulation Pump		2.5m³/h 2bar	4.2m³/h 2bar	6m³/h 2bar	6.7m³/h 2bar	15m³/h 2bar	15m³/h 2bar
Compressor		Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator		Plate Heat Exchanger					
Refrigerant		R454C/R290/CO2/R410A					
Interface size		DN20	DN25	DN32	DN32	DN50	DN50
Dimensions cm(A)		55*110*170	100*150*195	100*150*215	/	/	/
Dimensions cm(W)		40*90*165	95*145*185	100*150*185	100*150*185	200*145*205	200*145*205
Cooling water		4m³/h DN25	6.5m³/h DN32	9m³/h DN40	9m³/h DN40	19m³/h DN65	21m³/h DN65
Power 50Hz Max		380V 3PH 9kW	380V 3PH 14kW	380V 3PH 22kW	380V 3PH 25kW	380V 3PH 40kW	380V 3PH 45kW
Weight		360kg	600kg	800kg	950kg	1100kg	1350kg

Model		LTZ4-6 LTZ4-6W	LTZ4-10 LTZ4-10W	LTZ4-15 LTZ4-15W	LTZ4-20W	LTZ4-30W	LTZ4-40W
Temp range		-45℃ ~ +20℃					
Temp control		PLC controller, control the water tank outlet temperature screen					
Temp control accuracy		±0.5℃					
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity	-20℃	5.7kW	9.9kW	14.8kW	18.5kW	28.1kW	32.4kW
	-35℃	2.85kW	5.03kW	7.7kW	10.8kW	14.5kW	17.4kW
Circulation Pump		1.5m³/h 2bar	2.4m³/h 2bar	3.5m³/h 2bar	4.5m³/h 2bar	6.8m³/h 2bar	7.7m³/h 2bar
Compressor		Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator		Plate Heat Exchanger					
Refrigerant		R454C/R290/CO2/R410A					
Interface size		DN15	DN20	DN25	DN25	DN32	DN40
Dimensions cm(A)		55*110*170	80*120*185	100*170*185	/	/	/
Dimensions cm(W)		40*90*165	80*120*185	100*150*185	100*150*185	200*145*205	200*145*205
Cooling water		4m³/h DN25	4.9m³/h DN32	8.3m³/h DN40	9m³/h DN40	16m³/h DN50	20m³/h DN65
Power 50Hz Max		380V 3PH 7.5kW	380V 3PH 14kW	380V 3PH 15kW	380V 3PH 23kW	380V 3PH 35kW	380V 3PH 38kW
Weight		340kg	650kg	800kg	950kg	1100kg	1350kg

Model		LTZ6-6 LTZ6-6W	LTZ6-10 LTZ6-10W	LTZ6-15 LTZ6-15W	LTZ6-20W	LTZ6-30W	LTZ6-40W
Temp range		-60℃ ~ -30℃					
Temp control		PLC controller, control the water tank outlet temperature screen					
Temp control accuracy		±0.5℃					
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity	-40℃	6.2kW	9.1kW	12.8kW	17.5kW	28kW	31.7kW
	-55℃	4.9kW	7.2kW	10kW	13.8kW	22.1kW	25.1kW
Circulation Pump		2.4m³/h 2bar	3.8m³/h 2bar	5.3m³/h 2bar	7m³/h 2bar	10m³/h 2bar	12.1m³/h 2bar
Compressor		Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator		Plate Heat Exchanger					
Refrigerant		R454C/R290/CO2/R410A/R508B/R23					
Interface size		DN20	DN25	DN32	DN32	DN40	DN40
Dimensions cm(A)		80*120*185	100*150*185	145*250*225	/	/	/
Dimensions cm(W)		70*100*175	100*150*185	100*150*185	200*145*205	250*145*225	250*145*225
Cooling water		5m³/h DN32	8m³/h DN40	12m³/h DN50	14m³/h DN50	25m³/h DN65	30m³/h DN80
Power 50Hz Max		380V 3PH 13.5kW	380V 3PH 21kW	380V 3PH 28kW	380V 3PH 43kW	380V 3PH 63kW	380V 3PH 73kW
Weight		450kg	850kg	1000kg	1200kg	1600kg	2000kg

Model		LTZ8-6 LTZ8-6W	LTZ8-10 LTZ8-10W	LTZ8-15 LTZ8-15W	LTZ8-20W	LTZ8-30W	LTZ8-40W
Temp range		-80℃ ~ -50℃					
Temp control		PLC controller, control the water tank outlet temperature screen					
Temp control accuracy		±0.5℃					
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity	-60℃	5.8kW	8.6kW	12kW	16.5kW	26.6kW	30kW
	-70℃	3.7kW	5.5kW	7.7kW	10.6kW	17kW	19.2kW
Circulation Pump		2.3m³/h 2bar	3.4m³/h 2bar	4.6m³/h 2bar	6.5m³/h 2bar	11m³/h 2bar	12m³/h 2bar
Compressor		Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator		Plate Heat Exchanger					
Safety protection		Self-diagnosis function; freezer overload protection; high and low pressure protection, thermal protection device and various security protection functions					
Refrigerant		R454C/R290/CO2/R410A/R508B/R23					
Interface size		DN20	DN25	DN25	DN32	DN40	DN40
Dimensions cm(A)		80*120*185	100*150*185	145*250*225	/	/	/
Dimensions cm(W)		70*100*175	100*150*185	100*150*185	200*145*205	250*145*225	250*145*225
Cooling water		5m³/h DN32	8m³/h DN40	12m³/h DN50	14m³/h DN50	25m³/h DN65	30m³/h DN80
Power 50Hz Max		380V 3PH 13.5kW	380V 3PH 21kW	380V 3PH 28kW	380V 3PH 43kW	380V 3PH 63kW	380V 3PH 73kW
Weight		450kg	850kg	1000kg	1200kg	1600kg	2000kg

Model		LTZ10-4W	LTZ10-6W	LTZ10-10W	LTZ11-6W	LTZ11-10W	LTZ11-15W
Temp range		-100℃ ~ -65℃			-115℃ ~ -80℃		
Temp control		PLC controller, control the water tank outlet temperature screen					
Temp feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)					
Cooling capacity	-80℃	0.8kW	1.4kW	2.1kW			
	-90℃	0.6kW	1.1kW	1.7kW	1.1kW	1.7kW	2.8kW
	-100℃				0.8kW	1.2kW	2kW
Circulation Pump		20L/min 2bar	20L/min 2bar	30L/min 2bar	20L/min 2bar	30L/min 2bar	40L/min 2bar
Compressor		Piston/rotor/scroll compressor (Variable frequency control)					
Evaporator		Plate Heat Exchanger					
Refrigerant		Mixed refrigerant					
Safety protection		Self-diagnosis function; freezer overload protection; high and low pressure protection, thermal protection device and various security protection functions					
Interface size		Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4	Rc3/4
Dimensions cm		55*100*175	70*100*175	100*150*185	70*100*175	100*150*185	100*150*185
Cooling water		2.5m³/h Rc3/4	3.3m³/h Rc1	9m³/h DN40	3.3m³/h Rc1	9m³/h DN40	11m³/h DN40
Power 50Hz Max		380V 3PH 6kW	380V 3PH 8.5kW	380V 3PH 17kW	380V 3PH 8.5kW	380V 3PH 17kW	380V 3PH 23kW
Weight		200kg	250kg	450kg	250kg	450kg	600kg

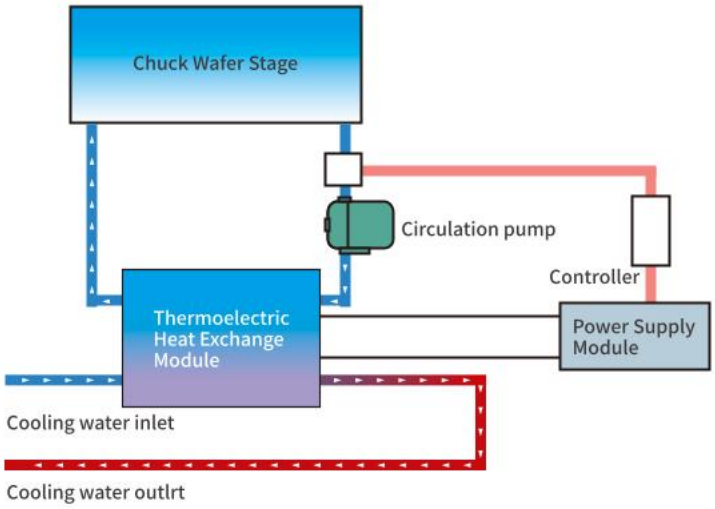
1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

Thermoelectric Type CHILLER
TEC Series

- High reliability and low operating cost.
- Small industrial space footprint.
- Extremely low thermal conductive fluid filling volume.
- Low energy consumption, no compressor and no refrigerant in the system, while only outputting when loaded, drastically reducing energy consumption.
- When heating or cooling, the hot and cold components do not directly contact the thermal conductive fluid.
- Dynamic temperature control for precise process temperature regulation and fast response.
- The temperature drift protection function stabilizes the etching profile.
- Improves wafer-to-wafer stability.
- Modular components make maintenance more convenient.
- Uses perfluorinated liquids.



Dynamic Temp Control Schematic Diagram



Temperature control solution, the process uniformity between wafer batches and chambers is significantly improved.

Working Principle: Real-time monitoring of the reflux liquid temperature in the chamber, and dynamic adjustment of the supply liquid temperature to compensate for thermal load variations during the process.

*On-site Temperature Control System
*Rapid Temperature Ramp Rate – Significantly improves chamber productivity
*Compressor-free POU System – Energy consumption reduced by approximately 50%

The thermoelectric chiller, with a temperature range of -20°C to 90°C, is tailor-made for the semiconductor industry to enable rapid and precise temperature control within this range, meeting any demanding process requirements. Based on the validated thermoelectric heat conduction principle, its temperature control system delivers repeatable temperature control for plasma etching applications, while the dynamic temperature management for electrostatic chucks (ESC) makes it applicable to all types of etching processes. Additionally, it features energy efficiency, space-saving design, and stable temperature control, providing reliable and precise temperature assurance for wafer etching processes

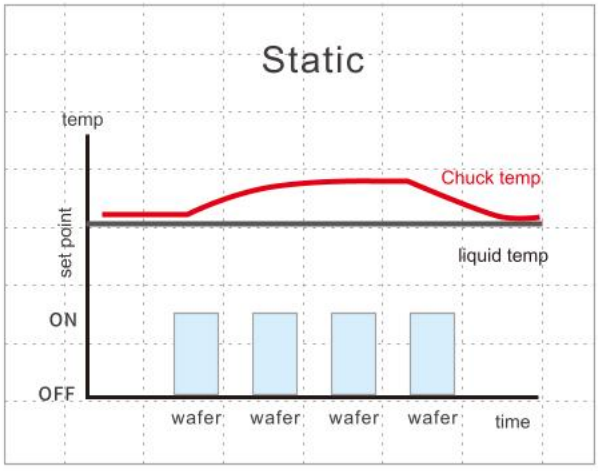
Comparison Between Dynamic and Static Temp Control

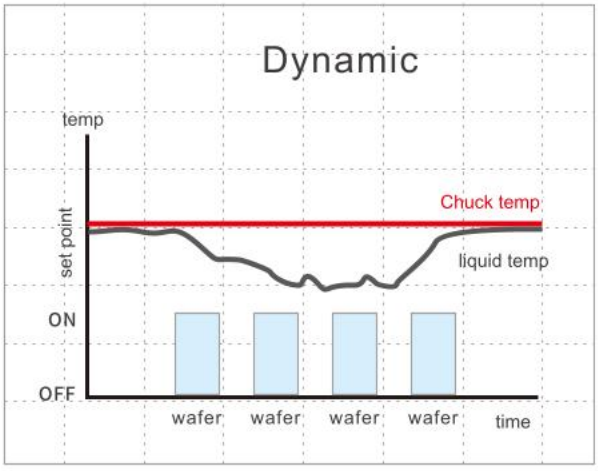
Temperature drift

·Sidewall Passivation Failure
·Wafer-to-wafer temperature instability
·Constant liquid reservoir temperature
·Stage temperature fluctuation
·Etch rate instability

Precise dynamic control of fluid temp

·Stage temperature stability
·Reduced first wafer effect
·Improved wafer-to-wafer stability
·Improved critical dimension (CD) deviation
·Small sidewall angle deviation in etch profile





Active thermal control

Model		TEC-1200W	TEC-2500W	TEC-4500W
Temp Range		-20℃~+90℃	-20℃~+90℃	-20℃~+90℃
Temp Control Accuracy		±0.1℃		
Cooling Capacity	20℃	1200W	2450W	4500W
	10℃	900W	1925W	3500W
	0℃	600W	1400W	2600W
	-10℃	350W	875W	1600W
	-20℃	80W	350W	700W
Heating Power		> 3000W	> 6000W	> 12000W
Pump type		DC magnetic drive pump	DC magnetic drive pump	DC magnetic drive pump
Pressure (bar)		≤4	≤4	≤4
Flow		15L/min at 2bar	15L/min at 2bar	15L/min at 2bar
Fluid		Galden HT135	Galden HT135	Galden HT135
Cooling Water Temp		DI < 20℃	Di < 20℃	Di < 20℃
Cooling Water Flow		≥12L/min	≥20L/min	≥32L/min
CDA activation temperature		< 30℃	< 30℃	< 30℃
CDA Pressure		0.5-0.8bar	0.5-0.8bar	0.5-0.8bar
CDA Flow		2-3m³/h	2-3m³/h	2-3m³/h
CDA Dew point temperature		≤30℃	≤30℃	≤30℃
Power supply voltage		AC208V three-phase 50/60Hz		

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER DI refrigeration unit

2 centigrade Pure water DI refrigeration temperature control unit



Suitable for situations where DI water is required from 2°C to 5°C in the manufacturing process. Normal temperature DI water into the temperature control unit,and then demand target temperature DI Water is Present, solve the problem of freezing easily when water temperature is controlled within 5°C.

The equipment automatically adjusts the temperature and cooling capacity of the refrigeration system according to the different water inputs and temperatures to reach the DI temperature required by the target.

The use of variable frequency control allows the output to be well regulated even when the water flow rate is unstable, thus achieving a high degree of temperature control accuracy.

Model	LTZ-3DI LTZ-3WDI	LTZ-6DI LTZ-6WDI	LTZ-15WDI
DI temp range	2℃ ~ +10℃	2℃ ~ +10℃	2℃ ~ +10℃
Temp control accuracy	±0.5℃	±0.5℃	±0.5℃
Temp feedback	Temperature feedback PT100 (inlet temperature, outlet temperature)		
Cooling capacity 3℃	4kW	9kW	22kW
Compressor	Inverter compressor		
Throttling method	Electronic expansion valve		
DI heat exchanger	Plate Heat Exchanger		
Input, Display	7-inch color touch screen\PLC controller		
Communication	Modbus RTU protocol RS485 interface, Ethernet TCP/IP protocol		
Safety protection	Self-diagnosis function; refrigerator overload protection; high and low voltage protection, overload relay, thermal protection device, exhaust and suction temperature protection, sensor fault protection and other safety protection functions. Anti-icing technology.		
Refrigerant	R134A		
Interface size	Rc1/2	Rc3/4	Rc3/4
Water-cooled @ 20 ℃	1500L/H Rc1/2	3000L/H Rc3/4	4500L/H Rc3/4
Water-cooled condenser	The condenser of the water-cooled equipment adopts a plate heat exchanger, which requires water supply from a chiller or a closed cooling tower		
Air-cooled condenser	Microchannel Heat Exchanger	Microchannel Heat Exchanger	Microchannel Heat Exchanger
Power supply	380V 50HZ, optional three-phase 220V 460V		
Pipe material	SUS304		
Shell material	Cold rolled steel plate with plastic spraying RAL7035		

CHILLER Gas refrigeration
LQ Series



The use of gas (non-corrosive) cooling: such as dry compressed air, nitrogen, argon and other normal temperature gas into the LQ series equipment, the gas can reach the target low temperature, supply the demand test components or heat exchangers

Model	LQ4-1.5W	LQ4-3W	LQ4-6W	LQ4-8W	LQ8-1.5W	LQ8-2W	LQ8-5W	LQ8-8W	LQ11-2W	LQ11-4W	LQ11-6W	LQ11-10W
Gas flow	15m³/h	30m³/h	60m³/h	100m³/h	15m³/h	30m³/h	60m³/h	100m³/h	15m³/h	30m³/h	60m³/h	100m³/h
Inlet temp	35℃											
Dew point	≤-20℃											
Temp range	-40℃~0℃				-80℃~-40℃				-110℃~-80℃			
Control system	Feedback PID + Our special dynamic control calculation, PLC controller											
Communication protocol	MODBUS RTU protocol RS 485 interface											
Pressure monitoring	Evaporator inlet/outlet anti-freeze blockage pressure monitoring protection											
Defrost control	Defrost control based on pressure monitoring											
Cooling capacity	0.5kW @-35℃	1kW @-35℃	1.7kW @-35℃	3.4kW @-35℃	0.7kW @-75℃	1.4kW @-75℃	2.8kW @-75℃	4.6kW @-75℃	0.7kW @-105℃	1.5kW @-105℃	2.9kW @-105℃	4.9kW @-105℃
Heat exchanger material	SUS304											
Gas inlet/outlet size	NPT1/2	NPT1/2	NPT1	DN40	NPT1/2	NPT1/2	NPT1	DN40	NPT1/2	NPT1/2	NPT1	DN40
Condensing method	Direct cooling											
Drain outlet size	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2	Rc1/2
Display and record	7-inch color touch screen, temperature curve display and logging											
Safety protection	Self-diagnostic system with chiller overload, high/low pressure protection, thermal protection, and multiple safety features											
Compressor	Rotary / piston / scroll compressors											
Refrigerant	R454C/R290/CO2/R410A								Mixed refrigerant			
Cooling water flow /interface(≤32℃)	800L/H ZG1/2	1000L/H ZG1/2	2400L/H ZG1	3000L/H ZG1	900L/H ZG1/2	1200L/H ZG1/2	2400L/H ZG1	4000L/H DN32	800L/H ZG1/2	1000L/H ZG1/2	2000L/H ZG1	2600L/H ZG1
Power supply 380V/50Hz MAX	1PH 220V 1.5kW	2kW	4kW	6kW	1PH 220V 2.3kW	3kW	7.5kW	12kW	1PH 220V 1.5kW	3.2kW	5kW	8kW
Dimensions cm	55*100 *170	80*120 *185	100*150 *185	120*150 *185	80*120 *185	80*120 *185	100*150 *185	120*150 *185	55*100 *170	80*120 *185	100*150 *185	120*150 *185
Shell material	Cold rolled steel powder coating(RAL7035)											
Transfer pump	Optional recovery transfer pump											
Explosion-proof	Isolation type Exd IICT4, ExdIIBT4											

CHILLER Gas refrigeration
AI Series



※ Used in high and low temp testing of semiconductor equipment
※ Electronic equipment high temperature and low temperature thermostat testing cold and heat sources
※ Independent refrigeration circulating air units
※ Can work continuously for a long time, automatic defrost, it will not affectthe storage temperature during defrosting
※ Modular design, easy replacement of standby machine
※ Solve the problem of frequent opening and closing, and frosting of evaporation system; Evaporation is not affected during the defrosting
※ It is simple to build a set of high and low temp constant temp room

Model		AI-6535/AI-6535W	AI-8035W	AI-1055W
Temperature range		-65℃ ~ +125℃	-80℃ ~ +125℃	-105℃ ~ +125℃
Control mode		PID Adaptive controller		
Communication protocol		MODBUS RTU Protocol, RS 485 Interface		
Temperature feedback		Temperature feedback PT100 (inlet temperature, outlet temperature)		
Operation panel		7-inch touch screen, show temp curve/ EXCEL date output		
Temperature accuracy		±0.1℃ (Steady state outlet temperature)		
Heating power		3.5kW	3.5kW	3.5kW
Cooling capacity	125℃	3.5kW	3.5kW	3.5kW
	0℃	3.5kW	3.5kW	3.5kW
	-20℃	3kW	3.5kW	3.5kW
	-40℃	2.1kW	2.5kW	3.5kW
	-60℃	1kW	2.1kW	3kW
	-75℃		1kW	2kW
	-95℃			1kW
Circulating air flow		550m³/h	550m³/h	550m³/h
Inlet and outletair intertace		DN125	DN125	DN125
Compressor		Emerson Copeland scroll flexible compressor		
Safety protection		Self-diagnosis function; Phase sequence protection. freezer overload protection; high pressure switch. overload relay. thermal protection device.		
Defrosting device		There are installed defrosting device and condensate drain inside		
Continuous running		Running continuously		
Timing operation		Can set timed start and stop time		
Refrigerant		R454C/R290/CO2/R23	R454C/R290/CO2/R508B	R454C/R290/CO2/R23/R14
Water-cooled		1200L/H 1.5bar~4bar	1600L/H 1.5bar~4bar	2600L/H 1.5bar~4bar
Dimension cm		55*100*175	55*100*175	70*100*175
Weight		280kg	300kg	360kg
Shell material		Cold rolled steel plate with plastic spraying RAL7035		

CHILLER Gas refrigeration
AES Series



The jet flow high and low temperature impact tester provides precise and rapid ambient temperature for chips, modules, integrated circuitboards, electronic components, etc. It is an indispensable instrument for electrical performance test, failure analysis and reliability evaluation of products.

Compared to the traditional thermostat, there are several features:

Temperature range: -120℃~+225℃
The rising and cooling rate is very fast, +150℃~-55℃<10 seconds
Maximum atmospheric discharge:30m^3/h
Real-time monitoring of the measured IC real temperature, closed-loop feedback, real-time adjustment of gas temperature
Controllable rise and fall time, programmed operation, manual touch remote control
Test conditions: ambient temperature +20℃, 30m^3/h, 5Bar, compressed air or ammonia gas

Model	AES-8035
Temperature range	-80℃ ~ 225℃ (Adjustable)
Heating power	3kW
Air cooling handing	≤500LPM(30m³/H)
Air requirements	Temp: < 35℃ Pressure:0.5 ~ 1MPa Air dew point: < 10℃ Solid particle size: < 0.1μm aAir oil content Max:0.01mg/m³
Connection size	Inlet PT1/2
Temp monitoring	Outlet temperature：Type T Thermocouple
	Workpiece temperature：Type T Thermocouple, Type K Thermocouple
Air flow monitoring	Gas flow sensor
Display	Outlet Temperature Display, Workpiece Temperature Display, Supply Flow Display
Operation panel	HMI
Controller	PLC control and supports pre-set multi-stage program control
Power	MAX 6kW 220V 50HZ/60HZ
High-temp cooling	Possess high-temperature 225℃ direct cooling technology to meet the target and quickly cool down during high-temperature operation.
Display function	Performance Parameter Test and Display (1) Spray nozzle and workpiece temperature display (on display screen); (2) Supply air flow rate display (via gas flow meter). Operating Condition Indication (1) Power on/off status; (2) Unit operating status; (3) Alarm value display and recording; buzzer alarm prompt.

AESR Series

Model	AESR-8035 AESR-8035C
Temperature range	-80℃~+225℃
Temperature stability	±0.1℃ (outlet steady state)
Cooling method	Air cooled
Temp control method	Outlet temperature (Type T thermocouple)/ Workpiece temperature (Type T, Type K thermocouple)
Refrigerant	R744/R508B
Ambient temperature	20℃ ~ 30℃
Ambient humidity	30%RH ~ 70%RH
Altitude m	Below 3,000
Gas type	Compressed air
Air requirements	Temp: < 35℃, Pressure:0.5 ~ 1MPa, Dew point temp: < 10℃, Solid particle size: < 0.1μm , Max oil content:0.01mg/m³
Heating power W	3000
Air handing	30m³/h
Pressure range	0.6~0.8Mpa
Heat exchanger type	Plate heat exchanger
Connection(inlet)	Rc1/2
Connection(outlet)	Rc3/8
Voltage(Customisable)	1~220V±10 [%] ,50Hz±5Hz
High-temp protection	Temperature sensor
High-pressure protection	Pressure sensor
Compressor overload	Breaker
Flow rate protection	Flow meter
Residual current protection	Residual current device
Dimension cm	51*78*110
Weight kg	260

CHILLER Gas refrigeration
AET Series



Compressed air enters the gas rapid temperature change testing machine, which is equipped with a dryer. The gas is pre dried to a dew point temperature of -70°C or below and then cooled, heated and controlled to provide stable flow, pressure and constant temperature gas. The temperature of the target object is controlled (such as various temperature control chucks, chamber environments, heat support plates, material shuttles, chambers, electronic components, etc.), the temperature of the process can be controlled according to the temperature sensor on the remote chuck, the temperature of the output gas can be automatically adjusted.

Model	AET-4025 AET-4025C	AET-4050 AET-4050C	AET-4095 AET-4095C	AET-7025 AET-7025C	AET-7050W AET-7050WC	AET-7095W AET-7095WC
Temperature range	-40℃ ~ 250℃	-40℃ ~ 250℃	-40℃ ~ 250℃	-75℃ ~ 250℃	-75℃ ~ 250℃	-75℃ ~ 250℃
Temp accuracy	±0.1℃（Steady state outlet temperature）					
Cooling method	Air-cooled	Air-cooled	Air-cooled	Air-cooled	Water-cooled	Water-cooled
Temp control method	Control the outlet air temperature/the material temperature					
Refrigerant	R454C/R290/CO2			R454C/R290/CO2/R508B		
Ambient temp	20℃ ~ 30℃					
Ambient humidity	30%RH ~ 70%RH					
Height m	≤ 3,000					
Gas type	Compressed air					
Air requirements	Air filter < 1um, Air oil content < 1mg/m³, Air dew point ： < 10℃ , Pressure 6bar~8bar					
Heating power	3000W	3000W	4000W	3000W	3000W	4000W
Air handing	25m³/h	50m³/h	95m³/h	25m³/h	50m³/h	95m³/h
Pressure range	0.6~0.8Mpa					
Evaporator	Plate Heat Exchanger					
Connection size(Inlet)	Rc1/2	Rc1/2	Rc3/4	Rc1/2	Rc1/2	Rc3/4
Connection size(Oulet)	Rc3/8	Rc1/2	Rc3/4	Rc3/8	Rc1/2	Rc3/4
Voltage	1PH AC220V±10 [%]					
High-temp protection	Temperature sensor					
High-pressure protection	Pressure sensor					
Compressor overload	Circuit breaker					
Flow protection	Flow meter					
Earth leakage protection	Earth leakage circuit breaker					
Dimension cm	43*46*112	52*57*132	60*63*160	54*69*112	65*85*132	75*95*160
Weight	140kg	190kg	260kg	180kg	250kg	330kg

AETR Series

Model	AETR-4025 AETR-4025C	AETR-4050 AETR-4050C	AETR-4095 AETR-4095C	AETR-7025 AETR-7025C	AETR-7050 AETR-7050C	AETR-7095 AETR-7095C
Temp range	-40℃~+250℃	-40℃~+250℃	-40℃~+250℃	-75℃~+250℃	-75℃~+250℃	-75℃~+250℃
Temp stability	±0.1 (outlet steady state)					
Cooling method	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled
Temp control method	Control outlet temperature/material temperature					
Refrigerant	R744	R744	R744	R744/R508B	R744/R508B	R744/R508B
Ambient temp	20 ~ 30	20 ~ 30	20 ~ 30	20 ~ 30	20 ~ 30	20 ~ 30
Ambient humidity	30 ~ 70	30 ~ 70	30 ~ 70	30 ~ 70	30 ~ 70	30 ~ 70
Height m	Below 3,000	Below 3,000	Below 3,000	Below 3,000	Below 3,000	Below 3,000
Gas type	Compressed air	Compressed air	Compressed air	Compressed air	Compressed air	Compressed air
Heating power W	3000	3000	4000	3000	3000	4000
Air handing	25m³/h	50m³/h	95m³/h	25m³/h	50m³/h	95m³/h
Air requirements	Air filter < 1um air oil content < 1mg/m³ Air dew point : < 10℃ Pressuer 6bar~8bar					
Pressure range	0.6~0.8Mpa	0.6~0.8Mpa	0.6~0.8Mpa	0.6~0.8Mpa	0.6~0.8Mpa	0.6~0.8Mpa
Heat exchanger type	Plate heat exchanger					
Connection(inlet)	Rc1/2	Rc1/2	Rc3/4	Rc1/2	Rc1/2	Rc3/4
Connection(outlet)	Rc3/8	Rc1/2	Rc3/4	Rc3/8	Rc1/2	Rc3/4
Voltage	1~220V±10%,50Hz±5Hz		3~380V±10% 50Hz±5Hz	1~220V±10%, 50Hz±5Hz	3~380V±10%,50Hz±5Hz	
High-temp protection	Temperature sensor					
High-pressure protection	Pressure sensor					
Compressor overload	Breaker					
Flow rate protection	Flow meter					
Residual current protection	Residual current device					
Dimension cm	54*69*112	65*93*132	60*63*160	54*85*112	65*93*132	75*105*160
Weight kg	140	190	260	180	250	330

CHILLER Gas refrigeration

High-Speed Optical Module Thermal Analyzer

High and Low Temperature Test System for Semiconductor Test Platforms. Thermal Source for High/Low Temperature and Constant Temperature Testing of Electronic Devices.

Non-contact thermal testing
Eliminates mechanical stress on modules, ideal for delicate or specialty packages

Uniform thermal field, circulating air envelops the module with minimal temperature gradient

No wear risk, avoids repeated mechanical clamping issues common in contact-type TEC systems

Compact design, plug-and-play, easy to relocate

Highly interactive with test systems, controllable Tc and Tj (requires chip junction temperature signal input)



Model	AET-50
Temperature range	0℃~+70℃
Temp accuracy	±0.5℃
Temp rise and fall capability	Supports rapid cool-down directly from 70°C operating temperature, enabling fast temperature reduction while the device is under high-temperature operation.
Cooling capacity	50W@0℃
Control panel	4.3-inch touch screen
Controller	PLC (Programmable Logic Controller) ,standard with MODBUS RTU protocol and RS485 interface, with other communication protocols available as options.
Power supply	single-phase 220V 50Hz
Dimensions (mm)	490*255*285
Operation mode	Direct blow/circulating air
Safety protection	Equipped with a thermal protection device to ensure equipment safety

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

CHILLER Precision Constant Temp and Humidity Unit

Precision Constant Temperature and Humidity Unit



This precision constant temperature and humidity unit is an air conditioning equipment that can accurately control environmental temperature and humidity, and is suitable for places or enclosed spaces with strict environmental requirements. The unit is typically used in premises with high cleanliness and strict temperature/humidity requirements, such as pharmaceutical factories, hospitals, laboratories, and semiconductor manufacturing fields, maintaining temperature and humidity within a set range with minimal fluctuation. It adopts high-quality clean fans, clean cabinets, and processes to avoid secondary environmental pollution. It can be adapted to partial fresh air functions, conveniently meeting the HVAC requirements of special use environments while satisfying process requirements. With year-round operation, it offers higher reliability

Model	LW-0010-BW	LW-0030-BW	LW-0050-BW	LW-0070-BW	LW-0090-BW	LW-0100-BW
Rated Airflow	1000m³/h	3000m³/h	5000m³/h	7000m³/h	9000m³/h	10000m³/h
Applicable Equipment Cabin Volume	5 ~ 10m³	20 ~ 30m³	40 ~ 50m³	60 ~ 70m³	80 ~ 90m³	90 ~ 100m³
Adjustable Temp&Humidity Range	21℃ ~ 24℃					
Temp Control Accuracy	±0.1℃ (±0.01℃ available on request)					
Max Cooling Capacity	2kW /@25℃	5kW /@25℃	9kW /@25℃	12kW /@25℃	15kW /@25℃	17kW /@25℃
External Static Pressure of Supply Air	0 ~ 200Pa		0 ~ 250Pa		0 ~ 300Pa	
Equipment Ambient Temperature	23±2 ℃ / 40%RH ~ 60%RH					
Supply Air Outlet Connection Diameter	φ200mm	φ300mm	φ400mm	φ450mm	φ500mm	φ500mm
Unit Drain Pipe Connection	Rc1/2					
Cooling Water Temperature	18℃ ~ 22℃					
Cooling Water Connection	Rc1/2		Rc3/4		Rc1	
Power Supply	3 ~ 380v±10%; 50Hz±5Hz Three-phase five-wire system					
Unit Rated Input Power	1kW	2kW	2.5kW	3kW	4kW	4kW
Unit Noise Level	≤75dB(A)				≤80dB(A)	
Maximum Input Power of Unit	2kW	4kW	6kW	8kW	10kW	10kW
Refrigerant/Charge Quantity	R410A/1.5Kg	R410A/2Kg	R410A/2.5Kg	R410A/3Kg	R410A/4Kg	R410A/4Kg
Safety Protection Functions	Power overvoltage and undervoltage protection; phase reversal and loss protection; motor overheat and overload protection; compressor discharge temp overheat protection; system high pressure protection; system low pressure protection; temp module fault protection; adjustable over-temp protection; fan motor overheat protection, etc.					

1. Temperature and humidity control can work at various set values, and the unit can also operate stably at a fixed temperature and humidity.
2. The unit can be matched with an appropriate fresh air volume according to actual conditions to meet HVAC fresh air requirements.
3. Temperature and humidity ranges of fresh air and return air for precision constant temperature and humidity units.
4. Constant static pressure at the supply fan outlet when operating at the maximum rated process air volume; adjustable according to whether FFU is installed at the end.
5. 40 °f is equivalent to 400 ppm $CaCO_3$.
6. Cooling water quality requirement: not lower than *Code for Design of Industrial Circulating Cooling Water Treatment* GB50050-95.
7. Air supply ducts must be insulated, and the pipeline length shall be as short as possible during on-site installation.

Model	LWX-0010-BW	LWX-0030-BW	LWX-0050-BW	LWX-0070-BW	LWX-0090-BW	LWX-0100-BW
Rated Airflow	1000m³/h	3000m³/h	5000m³/h	7000m³/h	9000m³/h	10000m³/h
Applicable Equipment Cabin Volume	5 ~ 10m³	20 ~ 30m³	40 ~ 50m³	60 ~ 70m³	80 ~ 90m³	90 ~ 100m³
Adjustable Temp&Humidity Range	22℃ ~ 24℃ / 45%RH ~ 60%RH					
Temp Control Accuracy	±0.1(±0.01℃ available on request)					
Humidity Control Accuracy	±1 %RH					
Max Cooling Capacity	3kW /@25℃	7kW /@25℃	12kW /@25℃	16kW /@25℃	21kW /@25℃	23kW /@25℃
Max Humidification Capacity	2Kg/h	5Kg/h	6Kg/h	8Kg/h	10Kg/h	10Kg/h
External Static Pressure of Supply Air	0 ~ 200Pa		0 ~ 250Pa		0 ~ 300Pa	
Equipment Ambient Temperature	23±2 ℃ / 40%RH ~ 60%RH					
Supply Air Outlet Connection Diameter	φ200mm	φ300mm	φ400mm	φ450mm	φ500mm	φ500mm
Humidification Makeup Water Pipe Connection	Rc3/4					
Unit Drain Pipe Connection	Rc1/2					
Humidification Water Supply Temp Range	10℃ ~ 40℃					
Humidification Makeup Water Pressure	1 ~ 4bar					
Water Quality Requirement	*Conductivity 75~1250μs/cm *Water hardness not exceeding 40°f *Free of organic compounds					
Cooling Water Temperature	18℃ ~ 22℃					
Cooling Water Connection	Rc1/2		Rc3/4		Rc1	
Power Supply	3 ~ 380v±10%; 50Hz±5Hz Three-phase five-wire system					
Unit Rated Input Power	1kW	2.5kW	3kW	3.5kW	4.5kW	4.5kW
Unit Noise Level	≤75dB(A)				≤80dB(A)	
Maximum Input Power of Unit	2.5kW	6kW	8kW	10kW	12kW	12kW
Refrigerant/Charge Quantity	R410A/1.5Kg	R410A/2Kg	R410A/2.5Kg	R410A/3Kg	R410A/4Kg	R410A/4Kg
Safety Protection Functions	Power overvoltage and undervoltage protection; phase reversal and loss protection; motor overheat and overload protection; compressor discharge temp overheat protection; system high pressure protection; system low pressure protection; temp module fault protection; adjustable over-temp protection; fan motor overheat protection, etc.					

1.Temp and humidity control can be applied under various set temp, and the unit can also operate stably at a fixed working temp and humidity.
2.The unit can be equipped with an appropriate fresh air volume according to actual conditions to meet HVAC fresh air requirements, with the humidification capacity matching the maximum fresh air volume.
3.Operating temperature and humidity ranges for fresh air and return air of precision constant temperature and humidity units.
4.Constant static pressure at the supply fan air outlet when operating at the maximum rated process air volume; it can also be adjusted according to whether FFU is installed at the end.
5.40 °f corresponds to 400 ppm of $CaCO_3$.
6.Cooling water quality requirement: Not lower than Code for Design of Industrial Circulating Cooling Water Treatment GB50050-95.
7.The air supply ducts must be insulated, and the pipeline length shall be minimized during on-site installation.



CHILLER Precision Constant Temp and Humidity Unit

Mini Precision Constant Temperature and Humidity Unit (Air-Cooled)



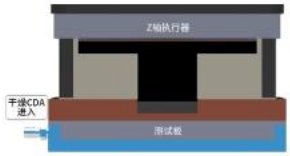
In the production facilities for semiconductors, liquid crystals, solar panels, and other devices, the equipment, production processes, inspection processes, and spaces require highly precise and stable air handling. Fullarea air handling to meet these needs incurs extremely high related costs and maintenance expenses. The Miniature Precision Constant Temperature and Humidity Unit is specifically designed to provide high-precision air handling systems for local high-quality spaces, minimizing energy consumption.

Model	LMW-01BS	LMWX-01BS	LMW-03BT	LMWX-03BT
Rated Airflow	0.7 ~ 1.0m³/min		2.0 ~ 4.0m³/min	
Adjustable Temp&Humidity Range	21 ~ 25℃	21 ~ 25;45% ~ 60%RH	21 ~ 25℃	21 ~ 25;45% ~ 60%RH
Temp Control Accuracy	±0.1℃ (±0.01℃ available on request)			
Humidity Control Accuracy	/	±1.0%RH	/	±1%RH
Maximum Cooling Capacity	0.2/0.25kW	0.37/0.45kW	1.3kW	1.3kW
Reheating Capacity	0.1/0.13kW	0.4kW	0.5kW	0.7kW
Max Humidification Capacity	/	0.8Kg/h	/	2.3Kg/h
Humidification Water Supply Temp Range	/	10 ~ 40℃	/	10 ~ 40℃
Humidification Makeup Water Pipe Connection	/	Rc1/2	/	Rc1/2
Humidification Makeup Water Pressure	/	0.3 ~ 2bar	/	0.3 ~ 2bar
Water Quality Requirement	/	*Conductivity75~1250μs/cm *Water hardness not exceeding 40°f *Free of organic compounds	/	*Conductivity75~1250μs/cm *Water hardness not exceeding 40°f *Free of organic compounds
Max External Static Pressure of Supply Air	120/130Pa	120/160Pa	110/150Pa	110/150Pa
Supply Air Outlet Connection Diameter	φ75mm	φ100mm	φ100mm	φ100mm
Equipment Ambient Temperature	+20 ~ +25℃ ; 45%RH ~ 60%RH			
Ambient Temp Accuracy Range	±1℃ ; ±5%RH			
Power Supply	1 ~ 220V ±10%; 50/60Hz±5Hz		3 ~ 380V ±15%; 50Hz±5Hz	
Unit Rated Input Power	0.32/0.34kW	1.2/1.2kW	0.75kW	2.7kW
Max Operating Current of Unit	1.7/1.82A	6.4/6.4A	1.35A	4.8A
Unit Noise Level(50/60Hz)	54/56dB(A)	58/60dB(A)	65dB(A)	66dB(A)
Max Input Power of Unit	0.34/0.38kWA	1.5/1.5kWA	1.4kWA	4kWA
Refrigerant/Charge Quantity	R134A/0.13Kg	R407C/0.3Kg	R410A/0.4Kg	R410A/0.48Kg
Unit Overall Dimensions mm	500*412*346	630*390*765	590*480*1070	680*520*1350

CHILLER Contact-Type High and Low Temperature Tester
Direct Contact TCU

The equipment has an operating temperature range of -75 to 200°C, supporting rapid heating and cooling from extremely low to high temperatures. The maximum rate can reach 75°C per minute. It can precisely control the temperature, with an error typically within ±0.2°C.

Applied in chip R&D: Verifying the performance of chips under different temperatures during the design phase.
Quality Control: During the chip manufacturing process, conduct reliability testing to ensure products meet the standards.
Failure Analysis: Through high and low temp testing, analyze the failure modes of chips under extreme temperatures



The test head is designed with a dry airflow channel layout to supply low dew point gas, enabling the DUT and test head to remain in a stable dry environment without condensation

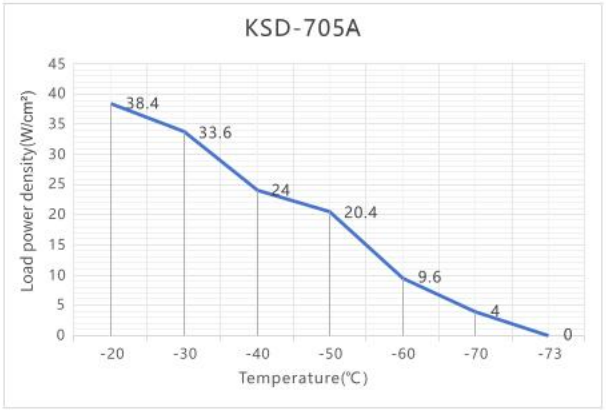


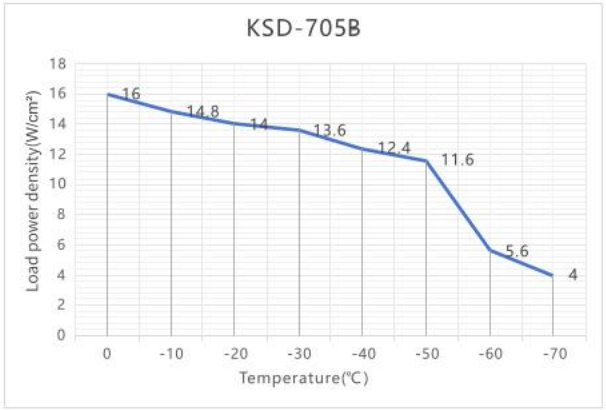
Test head Z-axis actuator
Can apply 70~300kgf to the DUT (Device Under Test)
Enables stable pressure adjustment

Sensors are installed on the plunger module for faster temp response.The equipment is equipped with an external sensor receiving port for direct measurement of the tested component. Switching to workpiece mode enables direct control of the tested component'stemperature.



Active thermal control





Note: The above experimental data are from the LNEYA laboratory. Actual performance may vary depending on real operating conditions.
(Test method: A high-temperature heater was used to simulate the chip. The charts are not presented in the conventional power–temperature format; instead, power density is used to provide a direct comparison with competing products.)

KSD Series

Model		KSD-705-A	KSD-705-B	KSD-710
Temperature Range		-70℃~+200℃	-75℃~+200℃	-75℃~+200℃
Temperature Accuracy		±0.2℃	±0.2℃	±0.2℃
Temperature ramp rate		Up to 75℃/min	Up to 75℃/min	Up to 75℃/min
Cooling Capacity	0℃	250W	1000W	2000W
	-40℃	150W	800W	1500W
	-55℃	100W	450W	900W
Test probe specifications		75*75mm	75*75mm	120*120mm
Temp monitoring type		T type/K type/PT100	T type/K type/PT100	T type/K type/PT100
Temp control point location		Plunger surface temperature,actual chip junction temperature (customer connection required)		
Control panel		7-inch touch screen	7-inch touch screen	7-inch touch screen
Controller		PLC programmable controller, Modbus RTU protocol and RS485 interface are supported as standard, with optional support for other communication protocols.		
Power Supply		1PH AC220V 50/60Hz	3PH AC380V 50Hz	3PH AC380V 50Hz
Product Dimension mm		465*600*365	600*860*760	600*860*760
Test specimen		Equipped with Z-axis pneumatic actuator		External cylinder of test stand
CDA Requirments		Equipped with LNEYA Dryer gas dryer series		
Communication		Modbus RTU /TCP 、Profibus DP 、CAN 、Profinet		

KSDR Series

Model		KSDR-705-B	KSDR-710
Temperature Range		-75℃~+200℃	-75℃~+200℃
Temperature Accuracy		±0.2℃	±0.2℃
Temperature ramp rate		Up to 75℃/min	Up to 75℃/min
Cooling Capacity	0℃	1000W	2000W
	-40℃	800W	1500W
	-55℃	450W	900W
Test probe specifications		75*75mm	120*120mm
Temp monitoring type		T type/K type/PT100	T type/K type/PT100
Temp control point location		Plunger surface temperature, actual chip junction temperature (customer connection required)	
Control panel		7-inch touch screen	7-inch touch screen
Refrigerant		R744(CO2)/R508B	
Controller		Standard PLC with Modbus RTU, RS485 interface, other communication protocols are optional	
Power Supply		3PH 380V 50Hz	3PH 380V 50Hz
Product Dimension cm		60*86*76	60*86*76
Test specimen		Equipped with Z-axis pneumatic actuator	External cylinder of test stand
CDA Requirments		Equipped with LNEYA Dryer gas dryer series	
Communication		Modbus RTU /TCP, Profibus DP, CAN, Profinet	

CHILLER Direct cooling temp control unit
ZLJ Series

The refrigerant in the refrigeration system is directly output and evaporated into the target control element (heat exchanger) for heat exchange, so as to cool the target control object. The heat exchange capacity is higher than that of the fluid (gas) transported into the heat exchanger, which is especially suitable for the application of the heat exchanger with a small heat exchange area, but a large heat exchange. It can also be used as a gas trap, the refrigerant is directly evaporated into the trap, and the gas in the space is rapidly captured through the condensation effect on the surface of the trap.



Model	ZLJ-41W	ZLJ-43W	ZLJ-46W
Temp range	-40℃ ~ -15℃		
Temp control accuracy	±1℃ (Steady state outlet temperature)		
Cooling capacity@-35℃	0.25kW	0.7kW	1.5kW
High temp cooling	With high temp 150℃direct cooling technology, to meet the goal of rapid cooling in high temp operation		
Refrigerant	R454C/R290/R507		
Dimension cm	20*57*65	30*55*65	33.5*60*65
Circuit breaker	6A	6A	16A

Model	ZLJ-81W	ZLJ-83W	ZLJ-86W
Temp range	-80℃ ~ -50℃		
Temp control accuracy	±1℃ (Steady state outlet temperature)		
Cooling capacity@-70℃	0.3kW	0.6kW	1.5kW
Refrigerant	R454C/R290/R508B		
High temp cooling	With high temp 150℃direct cooling technology, to meet the goal of rapid cooling in high temp operation		
Dimension cm	20*57*65	30*55*65	33.5*60*65
Circuit breaker	10A	16A	25A

Model	SLJ-3W	SLJ-4W	SLJ-6W	SLJ-11W
Temp range	-150℃ ~ -110℃			
Cooling capacity@-120℃	3kW	4kW	6kW	11kW
Cooling capacity@-135℃	2.5kW	3.3kW	5kW	9kW
Refrigerant	LNEYA -150 mixed refrigerant			
Dimension cm	75*75*175	75*75*175	95*100*205	130*200*350
Circuit breaker	40A	55A	65A	100A

Chiller direct cooling temperature control unit

ZLTZ Series



The new direct cooling machine is suitable for semiconductor, data center,new energy and other industries that need efficient, compact, reliable and accurate heat dissipation, especially in the field of high power density,limited space and temperature sensitive areas with significant advantages.

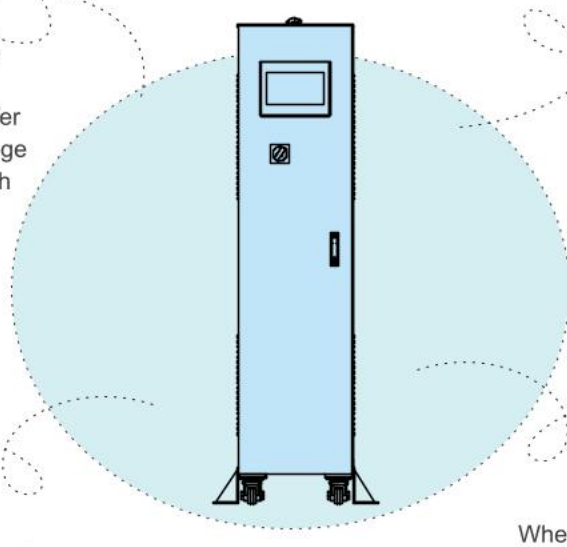
The new direct cooling machine has no secondary heat transfer, which reduces the heat transfer loss caused by secondary heat transfer and improves energy efficiency by more than 30% compared with traditional liquid cooling equipment.

The new direct cooling machine can provide pure liquid heat transfer medium. Compared with the gas-liquid two-phase mixed heat transfer medium of the traditional direct cooling machine, the new direct cooling machine makes full use of the latent heat heat transfer of the refrigerant, greatly improves the heat transfer density, reduces the required heat transfer area, and can meet the high power density requirements of semiconductor and other industries.

The new direct cooling machine has the ability of multi-channel liquid supply, and can accurately control the refrigeration capacity of each branch to meet the temperature control requirements of each branch.

High heat transfer capacity

Ideal for high heat-load temperature control applications, this system delivers over 5 times the heat transfer efficiency of thermal oil heat exchange under the same flow conditions. With minimal inlet-outlet temperature differential and highly uniform emperature distribution, it is particularly suited for large-scale heat exchange and precision temperature control.



ESC Chuck

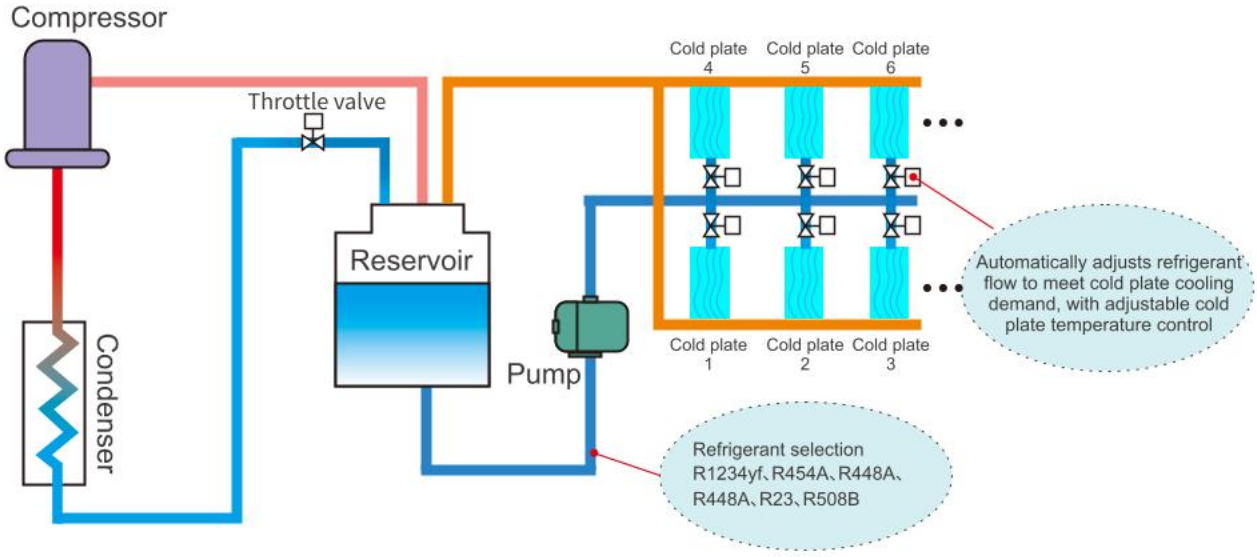
One ZLTZ temperature control unit drives multiple ESC chucks at independent temperatures

Cold Plate / Heat Sink Plate

Designed for high heat absorption and ultra-uniform temperature control applications, with automatic refrigerant recovery during cold plate replacement.

High-Temp Cooling Capacity

When maintaining the chuck at a constant 200°C, the refrigeration system provides continuous cooling capacity to ensure prolonged stable operation of the equipment



Model		ZLTZ-3 ZLTZ-3W	ZLTZ-6 ZLTZ-6W	ZLTZ-10 ZLTZ-10W	ZLTZ-15W
Temperature Range		-10℃~+25℃			
Cooling Capacity	0℃	8.1kW	16.25kW	28.5kW	40.2kW
	-10℃	5.48kW	11kW	19.35kW	26.6kW
Interface size	Outlet	φ12	φ12	φ28	φ28
	Inlet	φ20	φ20	φ35	φ35
Water-cooling	at 25℃	2m³/h	4m³/h	6.2m³/h	10m³/h
Cooling water interface		Rc3/4	Rc3/4	Rc1	Rc1 1/4

Model		ZLTZ4-3 ZLTZ4-3W	ZLTZ4-6 ZLTZ4-6W	ZLTZ4-10 ZLTZ4-10W	ZLTZ4-15W
Temperature Range		-40℃~+20℃			
Cooling Capacity	-10℃	5.2kW	11.15kW	18.4kW	26.3kW
	-20℃	3.47kW	7.41kW	12.3kW	18.35kW
	-30℃	2.24kW	4.81kW	7.92kW	11.8kW
	-40℃	1.36kW	2.95kW	4.7kW	5.83kW
Interface size	Outlet	φ12	φ12	φ16	φ22
	Inlet	φ22	φ22	φ35	φ35
Water-cooling	at 25℃	2m³/h	4.2m³/h	5.3m³/h	6.2m³/h
Cooling water interface		Rc3/4	Rc3/4	Rc3/4	Rc1

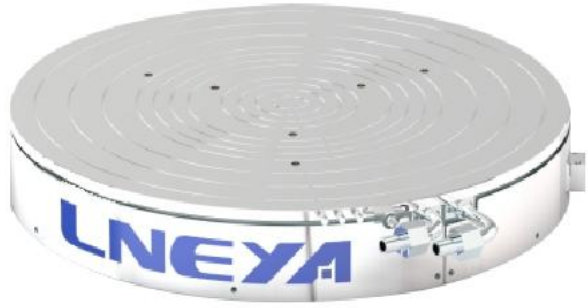
1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

Chiller refrigeration heating chuck

Vacuum Temperature Control Chuck

Probe stations are core equipment for testing the electrical performance of semiconductor wafers and chips. Their temp stability directly determines testing accuracy and equipment reliability.

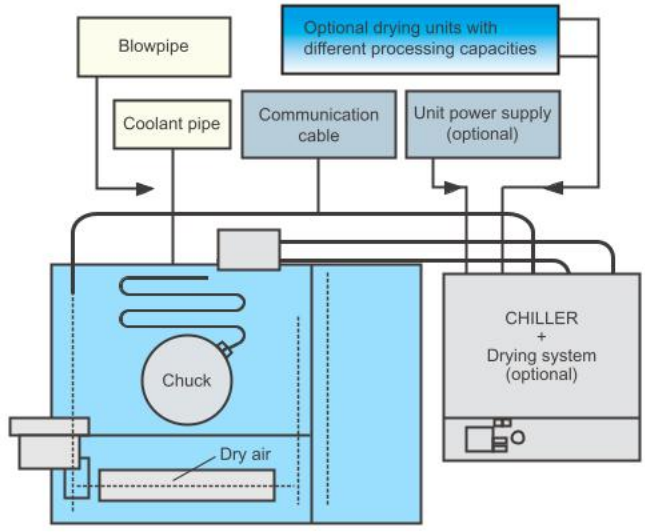
This solution provides an integrated high-precision temp control system for probe stations. It consists of a complete closed-loop system including a chiller , a chuck, a dryer, and an electrical control cabinet. Through active thermal control technology, it achieves precise temperature regulation and efficient heat dissipation for the wafer, the main body of the probe station, and other key components. This effectively suppresses temp drift during testing, ensuring consistency of test data and long-term stable operation of the equipment. The entire system offers high temp control accuracy, fast response speed, and stable, reliable operation. It meets the demanding requirements of semiconductor wafer inspection, reliability testing, and high-end probe station integration, comprehensively improving testing efficiency and product yield.



Temp control solution introduction

This temp control can be flexibly configured according to the probe station's required chuck temperature range, chuck or cold plate size, and load power.

For example, for a 12-inch chuck requiring a process temperature range of -45~200℃ and a heat transfer chip with a power of 2.5KW, our GY-CP-12HCV (chuck) + GY-PCH-805 (chuck: including dryer) + DX-CHUCK-3 (temperature control module) can be configured.



Precision temp Control, High Stability. The CHILLER outlet temp control accuracy can reach up to ±0.01℃. It offers long-term stability and reliability, with a low failure rate, high operating efficiency, precise temp control, and stable output, suitable for 7×24 hour continuous operation.

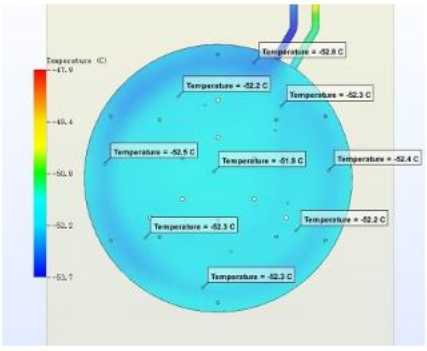
Compact Size, High Integration. The CHILLER integrates functions such as a CDA drying treatment unit, an automatic condensate recovery device, leak alarm, and fault self-diagnosis capabilities.

Advanced Energy-Saving Technology. It utilizes compressor waste heat recovery technology, combined with variable frequency hardware and algorithms, to improve energy efficiency by 20-30%.

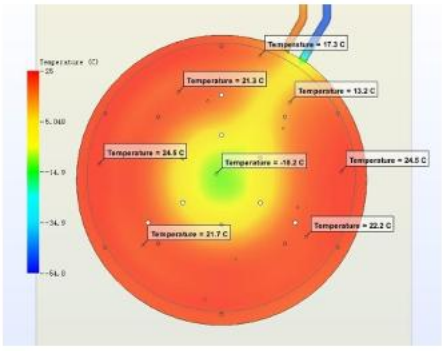
Advantages

1. Broad temp Range, Full Coverage for All Testing Scenarios.
Overcoming the narrow temp range limitations of conventional chucks, this solution enables segmented continuous precision temp control across low, ambient, and high-temp ranges. It covers the full temp requirements for mainstream chip testing. temp zones can be switched with one click without needing to replace components, eliminating cumbersome debugging processes. It is fully compatible with 8-inch and 12-inch wafers of different specifications, easily handling various applications such as routine wafer electrical testing and automotive-grade chip burn-in testing.
2. Ultra-Precision temp Control, Eliminating temp Drift.
Equipped with a high-precision temp sensing module and closed-loop active temp control technology, the temp control accuracy reaches industry-leading levels. It offers exceptional temp field uniformity, minimizing temp differences across the entire wafer surface. This fundamentally prevents test data inaccuracies and drift caused by temp fluctuations, ensuring every electrical test result is accurate, stable, and repeatable.
3. Efficient Vacuum Hold-Down, Zero-Damage Wafer Fixation.
Featuring an optimized vacuum adsorption structure, the adsorption force is uniform, gentle, stable, and strong. It is suitable for wafers and chips of various thicknesses and specifications. The adsorption process leaves no scratches, deformation, or displacement, completely preventing wafer shift during testing that could affect measurement accuracy. Additionally, the vacuum circuit design is simple with fast response times.

Chuck Thermal Simulation Diagram:



No-load
Real-time temperature monitoring



Full-load 4kW
Real-time monitoring of cooling rate

Chuck type	GY-CP-8HCV		GY-CP-12HCV			GY-CP-SQ3434HCV
Matching Chiller	GY-PCH-803 GY-PCH-803W	GY-PCH-805 GY-PCH-805W	GY-PCH-803 GY-PCH-803W	GY-PCH-805 GY-PCH-805W	GY-PCH-8010 GY-PCH-8010W	GY-PCH-8010 GY-PCH-8010W
Temperature range	-45℃~200℃	-55℃~200℃	-45℃~200℃	-55℃~200℃	-65℃~200℃	-65℃~200℃
Chiller power supply	380 VAC ± 10%, three-phase (customizable)					
Chiller total power	8.5kW	12.5kW	8.5kW	12.5kW	27.5kW	27.5kW
Temp Control Module	DX-CHUCK-3					
Temperature uniformity	±0.5℃					
Chuck h eating capacity	1.5kW@DC48V		2.5kW@DC120V			3kW@DC48V
Chuck surface treatment	Nickel Plating/Gold Plating					
Temp control method	Equipped with multiple temperature sensors, it allows multi-zone temperature control with precise PID temperature regulation					
	If there are other requirements, non-standard customization is available					

Dryer
DR Series



Distributed gas sources used in sensors, semiconductor manufacturing, film and packaging material licensing, powder material transportation, spraying systems, food industry, pharmaceutical industry, etc. that require -80℃ low dew point drying and cleaning.
Additional filtration of oil and particulate matter, with airflow passing through a filtration level of 0.01 μm, the pre filter prevents the desiccant from being contaminated by dust and oil (which greatly shortens the lifespan of the desiccant)
The compressed air dryer consists of multiple sets of filter cartridges filled with desiccants. The compressed air in the form of mist alternately flows through multiple sets of filter elements, and the moisture in the air will accumulate on the surface of the dryer. After the filtration process reaches a predetermined duration, the airflow will switch to other filter elements, and a portion of the airflow (discharge airflow) will be used to regenerate the dryer of the first filter element. The flushing airflow will be released into the atmosphere. The service life of desiccants is approximately 15000 working hours.

Model	DR-500	DR-1000	DR-2000
Pressure range	0.6~1.0Mpa		
Dew point temperature	-70℃		
Gas processing capacity	650L/min	1300L/min	2500L/min
Finished gas volume	500L/min	1000L/min	2000L/min
Connection Size	Φ12 Trachea	Φ16 Trachea	Φ16 Trachea
Power	220V 15W		
Dimension cm	35*22*132	40*70*140	40*100*140

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

Chamber Test Chamber

Chip Burn-in Test Chamber



A Chip Burn-in Test Chamber is a device specifically designed to simulate the operating conditions of chips under extreme environments. By precisely controlling environmental parameters such as temperature and humidity, it replicates extreme conditions like high temperature, high humidity, and high-stress that chips may encounter in actual use, accelerating the chip aging process. This method enables the screening of early-failure chips within a short period, optimizing design schemes, improving product yield, and ensuring the stability and reliability of chips in long-term use

Model	GD-518-A-DC	GD-518-A-2-DC	GD-518-B1-DC	GD-518-B-DC	GD-518-B-2-DC
Inner Chamber Dimensions	60*138*65	Left 60*138*65 Right 60*138*65	60*138*65	60*138*65	Left 60*138*65 Right 60*138*65
Temp Range	RT+10℃~+150℃		-20℃~+150℃	-40℃~+150℃	-40℃~+150℃
Heating Rate	RT+10℃→+125℃ Linear 2℃/ min		-20℃→125℃ Linear 2℃/ min	-40℃→+125℃ Linear 2℃/ min	
Cooling Rate	+125℃→RT+10℃ Linear 2℃/ min		125℃→-20℃ Linear 2℃/ min	+125℃→-40℃ Linear 2℃/ min	
Load	24 layers (10kW, number of layers customizable)				
Temp Fluctuation	Temperature control accuracy of air outlet ≤±0.1℃				
Temp Uniformity	≤1℃ （No-load）				
	≤±3℃ （Full-load 10kW）				
Refrigerant	R1234yf/CO2	R1234yf/CO2	R454C/R290/CO2	R454C/R290/CO2/R23	R454C/R290/CO2/R23
Viewing Window	300*117				
Heater	Electric heating				
Water-cooled Condenser	Plate Heat Exchanger				
Air Circulation	Extended shaft motor, stainless steel centrifugal fan blade				
Refrigeration Mode	Single-Stage Refrigeration	Single-Stage Refrigeration	Single-Stage Refrigeration	Cascade Refrigeration	Cascade Refrigeration
Compressor	Branded Inverter Compressor				
Control Mode	Segmented Fuzzy PID Algorithm Control				
Communication Protocol Interface	TCP/RS485 (CAN Customizable)				
Operation Panel	7-inch color touch screen, temperature curve display, Excel data export				
Sensors	PT100 Class A Platinum Resistor				
Protection Devices	Heater dual-temp protection, refrigeration system protection, electrical overcurrent and overload protection, etc.				
Dimensions cm	228*210*200	456*210*200	228*210*200	228*210*200	456*210*200
Power Supply	380V 50HZ				
Thermal Insulation Material	Glass fiber wool & polyurethane				
Inner Chamber Material	SUS304 stainless steel				
Outer Case Material	Cold rolled steel plate with plastic spraying RAL7035				
Compliance Standards	GB/T 2423.1;GB/T 2423.2;GB/T 2423.3;GB/T 2423.4;GB/T 5170.2;GB/T 5170.5;GB/T 11158; GB/T 10589;GB/T 10592; GB/T 10586;IEC 60068-3-5				

Recovery System

Fluorinated Liquid Recovery System



The fluorinated liquid recovery system features an integrated air-cooled design. It uses premium-brand compressors, condensers, and evaporators to form a refrigeration system that provides the cooling source for the evaporator. The evaporator exchanges heat with the client-side fluorinated liquid circulation system, condensing and recovering the fluorinated liquid.

The control system adopts a PLC + touchscreen configuration, capable of displaying ambient temperature and providing under-voltage and phase-loss alarms. The local touchscreen allows full temperature monitoring and displays the real-time status of fluorinated liquid recovery, helping clients manage fluorinated liquid usage efficiently.

The system delivers excellent electromechanical performance: high control precision, stable operation, and high reliability. It is user-friendly and easy to maintain and service.

Model	FHY-HS01
Ambient temperature	15℃~35℃
Environmental humidity	Not greater than85%
Device Power Supply	Single-phase 220V/50Hz (customizable according to customer requirements)
Rated Power	1.8kW
Maximum Operating Current	10A
Cooling Method	Air cooling
Noise	< 70dB
Temperature Control Accuracy	±1℃
Vacuum Pump Exhaust Volume	210L/min(Max)
Recovery Capacity (Gaseous)	450ml (gas state) /H (Max)
Recovery Time	Less than 2 hours
Net Loss Rate of Fluorinated Liquid	Less than 10%
Cold Storage Tank Volume	5L/8L
Refrigerant	R1234yf/CO2/1.2kg
Types of Recoverable Fluorinated Liquid	3M-7100,3M-7200, Changru 7100, Changru 7200, and other volatile fluorinated liquids
Communication Method	RS232/RS485/USB
Inlet and Outlet Interfaces	Rc1/2
Circulating Recovery System	The whole system is a fully closed system, which does not absorb moisture from the air and does not volatilize the heat-conducting medium.
Operation Interface	Lneya Custom 7-inch Color Touchscreen with Temperature Curve Display and Excel Data Export
Dimensions	L：65cm；W：48cm；H：130cm Customizable to client needs

1.Rated test conditions: dry-bulb 20 °C; wet-bulb 16 °C.
2.Data are for selection reference only and subject to change without notice; nameplate parameters prevail.
3.For special non-standard customization please contact us.
4.Water-cooled units require a closed cooling tower or chiller water supply. If an open cooling tower is used a filter must be installed. Supply pressure: 1.5–4 bar.

LNEYA®

Negative Pressure Type Temperature Control System

Negative Pressure Type Temp Control System

The negative pressure type temperature control system achieves precise temperature control through fluid circulation in a negative pressure environment. Principle: The negative pressure generator drives the circulation of heat-conducting media (water/oil), avoiding leakage risks, and is suitable for cooling various types of boards



Leakage Prevention Design
The pipeline remains under negative pressure during system operation. Even if the pipeline ruptures, high-temperature media will not leak, ensuring high safety.

High Efficiency and Energy Saving
Fully enclosed cycle and closed-loop circulation reduce heat energy loss.

Precise Temperature Control
Using PID algorithm or PLC control to achieve temperature fluctuation ≤ ±0.3℃, suitable for precision manufacturing scenarios

Multi-Scene Adaptability
Supports various media such as pure water, fluorinated liquid, ethylene glycol aqueous solution, etc., with a temperature control range from ambient temperature to 80℃

Model		ZLFQ-30	ZLFQ-80	ZLFQ-180
Rated Heat Exchange Capacity		30kW	80kW	180kW
Primary Side (Medium Side)	Working Medium	Pure water on the medium side, ethylene glycol aqueous solution, etc.		
	Rated Flow Rate	60LPM	150LPM	300LPM
	Liquid Storage Volume	60L	120L	180L
	Supply and Return Liquid Temp	25/35℃	25/35℃	25/35℃
	Temp Control Accuracy	±0.3℃	±0.3℃	±0.3℃
	Vacuum Pump Air Extraction Capacity	75m³/h	130m³/h	250m³/h
	Negative Pressure Head	70KPA	70KPA	70KPA
	Internal Circulation Pump Configuration	1+1 Redundancy	1+1 Redundancy	1+1 Redundancy
	Interface Size	Rc1	Rc1 1/4	Rc2
Secondary Side (Cooling Side)	Cooling Medium	PCW	PCW	PCW
	Cooling Flow Rate	2.5m³/h	6m³/h	15m³/h
	Filtration Accuracy	50um	50um	50um
	Interface Size	Rc3/4	Rc1	Rc2
Control System		PLC Controller, Feedforward Control + Lag-Compensated PID Algorithm		
Communication Protocol		RS485 Serial Port MODBUS RTU Protocol / Ethernet Interface TCP/IP Protocol		
Liquid Supply Leakage Rate		Negative Pressure Circulating Leak-free System		
Safety Protection		Equipped with self-diagnosis function, equipment overload protection, low liquid level protection, etc.		
Other Functions		Automatic leak detection, automatic liquid discharge, automatic liquid replenishment, etc.		
Power Supply		AC220V/50HZ，6A(max)	AC220V/50HZ，8A(max)	AC220V/50HZ，12A(max)
Overall Dimensions cm		80*70*185	130*70*185	130*105*185

Warranty

The equipment warranty period is 13 months from the factory date (human factors. damage caused by natural disasters are not covered by the warranty).

Extended warranty period (with 10% increase of equipment price the warranty can be extended to 24 months).

During the warranty period:
A. Lneya will provide replacement parts for free if something is irreversible damaged (not caused by improper personnel operations).
B.Lneya can provide remote technical support via email / phone call directly or with assistance of local distributor.
C.If remote support does not solve the issue, then Lneya will authorize a local distributor to provide service support on site, the Buyer then bears the traveling costs and accomodation fee.

After the warranty period:
A. All technical questions will be answered by Lneya directly or by local partner via phone call or email immediatly.
B. While local maintenance/service is necessary, Lneya could arrange technician to provide on-site service. Buyer need to support travelling expenses and accommodation fee. (Lneya bear cost of labor).
C. If local maintenance/servie is necessary, Lneya could arrange a technician to provide on-site service.



Heartfelt services

www.lneya.com

Customer Service Hotline

+86 15251521128



Address: No.55, Hanlin Road, Xishan District, Wuxi City
Zip code: 214000
TEL: +86-15251521128
Overseas sales: info@lneya.com
Overseas after-sales: services@lneya.com
https://www.lneya.com

* Due to the need for continuous improvement of products, so the appearance and specification of products contained here shall be a little different from practicality. Please understand.
* As the brief introduction of the product is presswork, so the products'color shall be a little different from practicality. Please understand.
* The brand mentioned in catalogue, LNEYA is the brand of WUXI GUANYA REFRIGERATION TECHNOLOGY CO.,LTD. Other trademarks are hold by brand company.