

Productive Freeze Dryer

1. Freeze-dryer working principle

Freeze drying is an advanced method of dehydration, whose process takes advantage of the principle of ice crystal's lyophilization under purified vacuum condition, in which the water in ice form on the frozen goods can be directly lyophilized into steam without melting in advance, thus the goods are dried. Through freeze drying processing items are easy to long-term preservation, after adding water, which can be restored to the original state and keep the biochemical characteristics and structure of the material. Freeze drying has more demonstrated its advantage for thermally labile substances, such as antibiotics, vaccine, blood products, enzymes and other biologics.

2. Application area

1.1 Food industry

Vacuum freeze dryer could be used in the drying vegetables, meat, fish, condiment instant food and specialty etc. for keeping the foods original fresh look, smell, taste, shape. The freeze-dried products can regain water competently and could be easily longer stored and less-costly transported.

1.2 Nutrition and health care industry

Vacuum freeze dryer nurture products such as Royal jelly, ginseng, terrapin, rainworm etc. are more natural and original.

1.3 Pharmaceutical industry

Vacuum freeze dryer could be used in the drying of Chinese and western leechdom, such as blood serum, blood plasma, bacterin, enzyme, antibiotics, hormone, etc.

1.4 Biomedicine research

Vacuum freeze dryer could long-termly store blood, bacteria, artery, bones, skin, cornea, nerve tissue and organs, etc which can regain water and rebirth competently.

3. Key features

1.11 Imported refrigerating compressor, reliable, long working time;

1.12 Cascade refrigerating technology, reduce freeze drying time, low noise, large refrigerating capacity and water catching ability. high-quality secure performance;

1.13 Touch screen, LED display, graph and data show freeze drying process, PID control, convenient to know more information according the data;

1.14 With viewing windows, convenient to observe freeze drying process. Pre-freeze function, automatic from vacuum to dried, easy to operation.

1.15 Chamber made of 304 Stainless steel, anti-corrosion, easy to clean, can be able to bear the



Silver Double Inc.
Website: www.sidolim.com
Email: sale@sidolim.com

techservice@sidolim.com

long term usage;

- 1.16 Silicone oil as the freeze medium, temperature inaccuracy $\leq 1^{\circ}\text{C}$, freeze drying evenly;
- 1.17 It protects samples by filling with inert gas;
- 1.18 Rectangular shape shelves has high intensity, easy to operate and clean. Chamber using high light transmittance, observe the process visually.
- 1.19 Temperature recorders is optional features, set recording spot, monitor real time.
- 1.20 Eutectic point test device and stoppering device are optional features.

4. Specifications list

Type	Usable shelf area	Condenser final temperature	Ice capacity	Final vacuum	Power
SDL-PFD-50	5 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	50Kg/24h	$\leq 10\text{Pa}$	33kw including heating 4kw
SDL-PFD-50(with capping type)	5 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	50Kg/24h	$\leq 10\text{Pa}$	33kw including heating 4kw
SDL-PFD-75	7.5 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	75Kg/24h	$\leq 10\text{Pa}$	42kw including heating 6kw
SDL-PFD-100	10 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	100Kg/24h	$\leq 10\text{Pa}$	55kw including heating 7kw
SDL-PFD-100(with capping type)	10 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	100Kg/24h	$\leq 10\text{Pa}$	55kw including heating 7kw
SDL-PFD-150	15 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	150Kg/24h	$\leq 10\text{Pa}$	70kw including heating 8 kw
SDL-PFD-200	20 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	200Kg/24h	$\leq 10\text{Pa}$	106kw including heating 10kw
SDL-PFD-300	30 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	300Kg/24h	$\leq 10\text{Pa}$	127kw including heating 15kw
SDL-PFD-500	50 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	500Kg/24h	$\leq 10\text{Pa}$	90KW
SDL-PFD-1000	100 m ²	$\leq -60^{\circ}\text{C}$ (idling condition)	1000Kg/24h	$\leq 10\text{Pa}$	205KW

Stoppering, De-icing(optional features); 10-200 m² can be produced according to customer requirements.

All products should be subjected to any change without notification.

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Industry Cold Water Machine

1 Key features

- 2.1 Low noise, high precision temperature control, stable and reliable performance;
- 2.2 Imported vortex compressor host, stable performance of refrigeration;
- 2.3 Digital display water temperature;
- 2.4 Automatic control and protection alarm device, fault signal output;
- 2.5 Adjustable Water temperature and flow according to need;
- 2.6 The stainless steel tank and water pump;
- 2.7 Simple operation, long time continuous work;
- 2.8 According to the different requirements, design and produce a body and fission machine;
- 2.9 Foreign high efficiency compressor, safe and energy-saving, low noise;
- 2.10 Italian and German expansion valves, electromagnetic valves and other refrigerant accessories;
- 2.11 Imported Japanese temperature controller, precisely, stable, reliable;
- 2.12 Original electrical components, such as Siemens, Mitsubishi, Omron etc.

3 Products List

Product Name	Type	Cooling capacity		Outlet pressure Kgf/cm	Water flow l/min	Power W	Tank volume L	external dimensions (L*W*H)
		Kw/h	Kca/h					
Industry cooling water cycle machine	SDL-CW-0.3HP	0.3	258	0.1-0.6	0-20	260	5	505*230*500
	SDL-CW-0.6HP	0.6	516	0-2	0-60	1000	15	650*500*765
	SDL-CW-1HP	2.5	2150	0-2	0-60	1340	27	650*550*915
	SDL-CW-1.5HP	4	3440	0-2	0-60	1800	45	800*600*1065
	SDL-CW-2HP	5	4300	0-2	0-60	2200	45	800*600*1065
	SDL-CW-2.33HP	7.38	6346.8	0-2	0-60	2760	45	800*600*1065
	SDL-CW-3HP	9.43	8109.8	0-2	0-60	3300	60	550*880*1160
	SDL-CW-4HP	12.6	10836	0-2	0-60	4300	80	1200*715*1105
	SDL-CW-5HP	15.9	13674	0-2	0-60	6200	110	1350*750*1445



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	SDL-CW-6HP	18.9	16254	0-2	0-60	6410	180	1350*800*1500
	SDL-CW-8HP	24.9	21414	0-2	0-60	7150	180	1350*800*1580
	SDL-CW-10HP	32.5	27950	0-2	0-60	9900	200	1350*900*1845
	SDL-CW-12HP	37.2	31992	0-2	0-60	11500	260	1610*900*1850
	SDL-CW-15HP	48.6	41796	0-2	0-60	15100	300	1800*800*1800
	SDL-CW-20HP	63	54180	0-2	0-60	18420	350	2000*800*2000
	SDL-CW-30HP	97.5	83850	0-2	0-60	29750	400	2300*1350*2000
	SDL-CW-40HP	63*2	54180*2	0-2	0-60	35400	450	2520*1450*2030
	SDL-CW-50HP	79*2	67940*2	0-2	0-60	42300	500	2520*1800*2030
	SDL-CW-60HP	97.5*2	83850*2	0-2	0-60	60000	550	2520*1960*2170
Note	The cooling capacity is based on the inlet water is 12°C, the outlet water is 7°C, the cooling air inlet is 30°C, and the air outlet is 40°C.							

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Ultra-low Temperature Refrigerator

2 Key features

- 1.13 Refrigeration system using imported components, reliable, long working time;
- 1.14 Special designed compress unit make sure low power supply.
- 1.15 Adopt efficient air cooling condenser, cooling effect is good, fast refrigeration;
- 1.16 Thermal insulation door and secondary seal inside doors, make it easy to use and reduce cooling loss, save energy;
- 1.17 Environmental ultra thick insulation layer, reducing cold energy loss effectively, saving energy, increasing rof service life;
- 1.18 Control and the inside temperature indicating device installed in the front of the box, without opening, can view and adjusting the inside temperature, beautiful, practical, generous;
- 1.19 Microcomputer temperature control, temperature digital display, easy to see;
- 1.20 Microcomputer control, more precise and safe;
- 1.21 System is equipped with safety protection device, ensure the system safe and reliable operation;
- 1.22 With perfect sound-light alarm system;
- 1.23 Perfect alarm system (over-temperature alarm system fault alarm) and temperature recording system (optional) to ensure the items in preserve in safety.
- 1.24 Horizontal products can be produced according to customer requirements with visualization glass doors on top.

2 Ultra-low temperature refrigerator list

Product	Series	Model	Working chamber (L)	Inner Dimension (W*D*H mm)	Outside dimension (W* D* H mm)	Power (W)	Range (°C)
Industry Ultra-low Temperature Refrigerator	-86°C horizontal type	86-60-H	60	400*400*360	600*680*920	300	-40~-86
		86-118-H	118	700*470*360	900*750*920	500	
		86-218-H	218	960*470*570	1160*750*860	600	
		86-318-H	318	1330*470*570	1530*750*860	650	
		86-460-H	460	1380*500*660	2110*885*1095	780	



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-105℃ horizontal type	105-118-H	120	500*400*560	1270*780*965	550	-60~-105
-135℃ horizontal type	135-118-H	120	500*400*560	1270*780*965	550	-86~-135
-153℃ horizontal type	153-118-H	118	500*400*560	1270*780*965	3800	-110~ -153
-165℃ horizontal type	165-118-H	118	500*400*560	1270*780*965	4800	-120~- 165
-180℃ horizontal type	180-118-H	118	500*400*560	1270*780*965	8500	-140~- 180
-45℃ quick-free zer	SDL-160	160	520*560*1010	760*820*1675	1500	-15~-45
	SDL-228	228	500*560*1010	760*820*1675	1600	

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