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ISO9001质量管理体系认证
Certified by ISO9001 quality system
ISO14001环境管理体系认证
Certified by ISO14001 environment system
首批荣获国家质检总局颁发全国工业产品生产许可证
First got the refrigeration equipment
production permit issued by National Quality Testing Bureau

CHILLERS
制冷机组系列
A1-1

Water-cooling chiller system

水冷冷水机组

www.yatai.cc

以前我们认识世界，现在世界认识我们
We knew the world before,the world knows us now.

以人为本/品质/创新/服务

德州亚太集团有限公司

德州市亚太空调设备有限公司

德州亚佳制冷空调工程有限公司

德州亚太集团安装有限公司

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Dezhou Yatai Group Co.,Ltd

Dezhou Yatai Air Conditioning Equipment Co.,Ltd
Dezhou Yajia Refrigeration and Air Conditioning Engineering Co., Ltd.
Dezhou Yatai Group Installation Co., Ltd.
Dezhou Yatai Glass Fiber Reinforced Equipment Co.,Ltd

中国德州亚太集团

DEZHOU YATAI GROUP

CHINA

亚太的品牌理念

全力推动创新科技的应用

致力于人类生活品质的提升、让科技引领生活

创世界满意品牌

THE CONCEPT OF YATAI BRAND

Promotes,with full strength,the application of innovative technology.Strives for the extension of living quality for human being,let the science and technology lead the new life and creates world satisfactory brand.

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World Trusted Quality

德州亚太集团是国内大型暖通空调、洁净技术系统集成供应商。

集多年潜心研究，博采众长自成体系，打造出一流的暖通空调、洁净技术全套设备和众多精品工程。国内以中央电视台新址、酒泉卫星发射中心、北京大兴国际机场、国家质检总局、北京小汤山医院、武汉火神山医院、武汉雷神山医院、三峡工程及近二十个北京奥运场馆等为代表，国外以巴基斯坦乌奇电厂、柬埔寨金边市大都会广场、印度帕帕多拉工程等为代表的重点项目，采用了亚太中央空调设备，长期稳定，节能环保，获得了广泛的赞誉。

ISO9001、14001、3C、UL、CE、CRAA 等一系列认证；主机列入节能产品政府采购清单、数十项国家专利、国家级高新技术企业、中国驰名商标，充分标明了亚太集团的管理水平和产品水平。

与荷兰阿波罗合资，以欧洲标准制造的洁净设备全部返销发达国家、中央空调设备相继进入十几个国家和地区，展示亚太集团已经步出国门，与国际接轨。

植根齐鲁大地，秉持“以人为本”的经营理念，崇尚“以德待人”的儒家文化，亚太集团愿与您共同开创明天的辉煌。

Dezhou Yatai Group is a supplier of large HVAC and clean system in China.

Yatai has developed whole set of advanced HVAC and clean technology equipment and lots of wonderful projects based on long-term research and features of the others.

Many famous projects adopted Yatai central air conditioners that run smoothly, save energy, protect environment and have won good reputation widely like the New CCTV, the Jiuquan Satellite Launching Center, Beijing Daxing International Airport, the General Bureau of National Quality Inspection, Beijing Xiaotangshan hospital, Wuhan Huoshenshan hospital, Wuhan Leishenshan hospital, Three-gorge Engineering Project, and over 20 Beijing Olympic Stadiums in China; the UCH Power Plant in Pakistan, the Phonom Penh Capital Squire in Cambodia, the Priyadarshini Jurala Project in India and others across the world.

Yatai has been certified by ISO9001, 14001, 3C, UL, CE, CRAA, etc.; its chiller names have been put on the government purchasing list as energy saving products and obtained dozens of national patents, titles of National High-technology Enterprise and Chinese Famous Trademark, which fully show the high management levels and product qualities of Yatai Group.

The filtering equipment made according to the European Standards by the joint venture, which is co-invested by Dutch Afpro Company and Yatai, are all exported to the developed countries; our central air conditioners have been exported to over 10 countries or regions, which show that Yatai Group has stepped into oversea markets and been in line with the world.

Located at Shandong Province, insisting on business idea of " humanism " and advocating the Confucianism of " getting along with people by morality ", Yatai Group wishes to create a brilliant future with you.

中国德州亚太集团
CHINA DEZHOU YATAI GROUP

以一流技术研制全方位产品

Developing the omni-directional products by the first-class technology

使用精品 造就精品

世界著名制造商生产的最现代化装备和领先同行业的高科技含量是亚太始终保持竞争优势的强力保证

Using high-quality goods Making high-quality goods

The modemized equipment produced by world famous manufacturers And the high content leading in the same profession

Are Yatai's guarantee of maintaining his competitive advantage all the time

全球信赖品质

World Trusted Quality

CRAA产品认证
Certified by CRAA
ISO9001质量管理体系认证
Certified by ISO9001 quality system
ISO14001环境管理体系认证
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Honorable Qualification

CHILLERS
制冷机组系列

Water-cooling chiller system
水冷冷水机组

目录

CATALOG

Water-cooling chiller system

水冷冷水机组

水冷冷水机组概述

Summary about the water cooled water chillers

亚太牌水冷冷水机组是山东德州亚太集团研制开发的系列中央空调之一，是在充分吸收国际、国内冷冻、空调领域最新发展技术的基础上研制开发设计的成熟定型产品。

该系列机组严格按照国家标准设计与制造，机组采用世界著名制造商生产的高品质、高效率的压缩机、冷媒系统控制元件及电脑器件，通过合理的系统匹配及结构设计，使机组具有能效比高，性能稳定，质量可靠，噪声低，对室外环境无噪声污染等诸多优点。产品广泛应用于水源充足、空调使用面积大、使用空间分散且对环境噪声有严格要求的使用场所。

该系列机组可与风机盘管、柜式空气处理机、吊顶式空气处理机、新风机组、组合空气处理机组等空调末端设备一起组成半集中式或集中式中央空气调节系统，为空调系统提供冷源；也可应用在电子、医药、塑料制品等行业作为工艺冷冻水冷源。

该系列机组是以水为冷源，以水作为载冷介质提供冷源的一体化中央空调设备。亚太牌水冷冷水机组以其高能效比、能量调节范围广、运行能源消耗小、噪音低、结构合理、操作简便、运行安全、安装维护方便等优越特性见长。广泛用于宾馆、商场、办公楼、展览馆、机场、体育馆等公共设施的舒适性中央空调系统，并能满足电子、制药、生物、轻纺、化工、冶金、制药、电力、机械等行业的工艺性空调系统的不同使用要求。

The “Yatai” water cooled water chiller is one of the series central air conditioner researched and developed by Dezhou Yatai Group, and a mature stereotypia product on the base of absorbing the advanced international and domestic technology.

This series chiller is designed and manufactured strictly according to the National Profession Standard, used the high quality and efficiency compressor, the cold media controller and the computer parts made by world famous manufacturers. By the reasonable system match and structural design, make the chillers have many characteristics such as high efficiency, stable performance, reliable quality, low noise, no noise pollution to outdoor environment. They are widely applied in the places where water source is insufficiency, the air conditioning useable area big, the use space scatter, the ambient noise has a strict request.

This series chiller may be formed the half central or central air conditioning system with the terminal air conditioners together such as fan coil, cabinet air processor, suspended ceiling air handler, fresh air breather and combination air handler and so on. They are cooling resources of the air conditioning system, and the technology freezing water resources applied in the profession such as electron, plastic product and so on too.

This series chiller is an integrated central air conditioning equipment which takes water as a cooling resource, as cold carried medium. The “Yatai” water cooled water chiller has a lot of characteristics such as high efficiency, broad energy adjustment scope, small energy consumption, low noise, reasonable structure, simple operation, safe movement, convenient installation and maintenance. Is widely used in the comfortable central air-conditioning system such as hotel, stores, office building, exhibition hall, airport, stadium and so on. It can meet the different operation requirements of the technological air-conditioning system such as electron, drugs manufacture, biology, spins, chemical industry, metallurgy, electric power, machinery and so no.

产品规格命名

Product specification naming

LS BLG □ □ M S

- S：机组类型：S-热回收型，标准型不表示 / Chiller type：S- energy recovery，the standard type no indication
- M：蒸发器型式：M-满液式，J-降膜式，干式不表示 / Evaporator type：M- the flooded，J-Falling-film type,the dry type no indication
- □：制冷剂代号，R22不表示，A代表：R134a / The refrigerant code number,R22 un-indicate,A indicates R134a.
- □：名义制冷量：单位kW / Nominal cooling capacity：Unit kW
- BLG：压缩机类型：半封闭双螺杆式 / Compressor type:Semi-hermetic double screws
- LS：水冷冷水机组的基本代号：LS / Basic code number of water cooled water chiller: LS

LS BLG 660 A

- A：制冷剂为R134a，整体式 / The refrigerant is R134a, the integral type
- 660：名义制冷量：660kW / Nominal cooling capacity: 660kW
- BLG：半封闭双螺杆压缩机 / Semi-hermetic double screw compressor
- LS：水冷冷水机组 / Water cooled water chiller

产品特点
Product characteristics

1、产品适用范围广
★本系列机组制冷量范围为100 kW–5040kW，有多种规格可供选择；
★每种规格机组可配置标准电脑控制或豪华型电脑控制，可供选择；
★可承接低水温型的乙二醇水冷冷水机组、双工况水冷冷水机组、水冷冷凝机组等非标产品；根据需方具体技术要求进行非标设计，可来电来函咨询。
2、机组能效比高，能量消耗少，运行费用低
★亚太集团精选国际知名品牌的高能效比半封闭式螺杆压缩机和制冷系统配件，积百家之长于一身，运用最新空调技术和控制技术进行优化设计，采用先进的加工设备精心制造，经过亚太集团高性能试验室*（*由国家压缩机制冷设备质量监督检验中心认证）的严格检测合格，从根本上确保了亚太牌水冷冷水机组的节能特点和可靠性。
3、无级能量调节技术进一步提升机组节能效果
★亚太集团运用先进的无级能量调节技术，提高了机组能量调节范围，进一步改善机组部分负荷特性系数，与传统的多级能量调节方式相比较，机组节能效果高6%。
4、安全保护措施齐全
★机组均设有温度保护开关、过载继电器、高低压安全开关、干燥过滤器、防冻开关、水流开关及延时启动等保护装置，确保主机安全运行，且检修维护容易。
5、模块化设计
★较大容量机组，采用模块组合式结构，使机组运输、安装及调试与维护更加方便，节省吊运、安装与运行维护费用。
6、外观造型精巧、美观、节省设备安装空间
★机组采用叠放式结构设计，空间利用率高，机组外形尺寸小，设备管理维护方便。
★机组采用高效换热器，采用先进的换热技术设计及制冷系统匹配，提高了机组的换热能力，减小了机组体积和重量，为使用者节省机房建筑空间和建筑造价。
7、超低噪声，运转宁静
★采用了最新半封闭螺杆压缩机，使机组运行更加平稳，减少了机组的噪声和振动。
8、控制先进、质量稳定、性能可靠
★采用先进的微电脑进行智能化控制，全中文显示，操作界面友好，使用者操作时对机组的运行状况一目了然。
★高度自动化，控制功能齐全，能实现机组启停程序管理、定时控制、水泵管理、全功能故障报警及故障自我诊断功能等。同时配备RS485/RS232通讯接口，方便用户实现机组的集中监控和远程监控。
★机组采用的微电脑及电控元件均采用进口国外著名公司的产品，质量好，控制准确，性能可靠，大大减轻了设备管理者的工作量。
★微电脑控制器具有智能控制功能，具备故障自诊断、能量管理、防冻监测、运行模式等多项自动控制功能，确保机组运转高效。同时机组还配置了高低压、防冻、油系统保护、过载保护、欠相逆相等多重安全保护装置，确保机组运转安全。
9、维护管理方便快捷
★机组安装灵活，既可现场控制也可远程控制。
★机组采用开放式结构，没有任何面板，维修空间大，人员进出方便，维护保养方便容易。

1.The product applicable area is broad
★The cooling capacity of this series chiller is from 100 kW to 5040kW, and there are many kinds of specifications to be chosen;
★Each kind of chiller may match a standard computer control or a deluxe computer control;
★Can make the non- standard products such as the low water temperature glycol water cooled water chiller, the double operating condition water cooled water chiller, the water cooled condensation compressor and so on;arries on the non-standard design according to the consumer specific demands, you may call me or send letter for consultation.
2.High efficiency, small energy consumption, low operating cost.
★We select the international well-known brand and high efficiency semi-enclosed screw compressors and the refrigeration parts, accumulates hundred of excel in one body, carries on an optimized design by using the most advanced air conditioning and the control technology, carefully manufacture by using the advanced processing equipment. After the strict examination of Yatai high performance test chamber * (* certificated by National Compressor Refrigeration Equipment Quality Surveillance Test Center), has fundamentally guaranteed the energy saving characteristic and the reliability of the Yatai water cooled water chiller.
3.The stepless energy adjustment technology further promotes the energy saving of the chillers.
★By using the advanced stepless energy adjustment technology, has enlarged the chiller's energy adjustment scope, further improved the chiller's partial load characteristic. The energy saving effect has increased 6% compared with the traditional multistage energy adjustment way.
4.The safekeeping and security measure is complete
★The chillers all have safety devices such as temperature protection switch, overload relay, high and low pressure protective, dry filter, frost-proof switch, fluent switch, time delay start and so on to guarantee they may run safely and their maintenances are easy.
5.Modular design
★The large capacity chiller uses the module combined structure, makes the chiller's transportation, installation and debugging and maintenance be more convenient, and reduces the lift, installation and maintenance cost.
6.The appearance is exquisite and artistic, so that may save the installation space.
★The unit uses layer structural design, the spatial usage is high, unit external dimensions small, the equipment operation and maintenance are convenient.
★he unit uses the highly effective heat interchanger, and the advanced heat transfer technical design and the refrigeration system match, increases the unit's heat transfer ability, reduces the unit volume and the weight, and saves the engine room space and the construction cost for user.
7.Super low noise, tranquil movement
★Has used the most advanced semi-hermetic screw compressor, let the unit movement be steadier, and reduced unit's noise and vibration.
8.The advanced control, the stable quality, the reliable performance
★Uses the advanced microcomputer to carry on the intellectualized control, the operation screen is good, when operating, the movement condition is clear.
★High automation and complete control function may realize the functions such as unit start-stop procedure management, timed control, water pump management, all breakdown report and breakdown self- diagnosis and so on. At the same time provides RS485/RS232 communication connection, make the unit's centralism and long-distance monitoring be convenient for user.
★The microcomputer and the electrical control parts are all from the overseas famous companies, their qualities are good, controls accurate, performances reliable, thus may reduce the worker's work load.
★The microcomputer controller has the intelligence control function, has many automatic control functions such as the breakdown diagnosis, the energy management, the frost-proof monitor, the movement pattern and so on, to guarantee the unit work effectively. At the same time the unit also matches many safekeeping and security installments such as the high-low pressure, frost-proof and oil temperature protection, the over-load protection, short of or counter phases, to guarantee the unit runs safely.
9.The maintenance is convenient and quick
★The unit installation is nimbly, both control on the spot and long-distance.
★The unit uses the open style structure, no any kneading boards, the service space is large, the person passes in and out conveniently, the maintenance is convenient and easy.

产品主要器件
The main parts

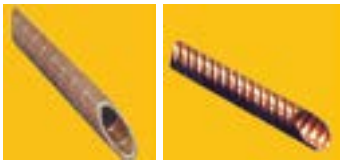
1、壳管式冷凝器

★采用目前最先进的DAE高效冷凝传热管，管外表面的多头螺旋细肋以及螺旋形突起，使换热系统数和换热能力大幅度提高。

★内部结构优化设计，极大地提高了冷凝器抗腐蚀、抗污垢的能力，充分发挥冷凝器换热效果，从而保证机组达到较高的性能水平。

★壳管式冷凝器上还安装安全阀，放气阀等，确保壳管式冷凝器的安全性以及清洗、维护的方便性。

1.Shell and tube type condenser



★Uses the most advanced DAE highly effective condensation heat exchanging pipe, the many screws thin rib and the helix protruding outside the tube surface makes the heat transfer coefficient and the ability enhance large scale.

★The internal structure is designed optimally, enhances the condenser corrosion-resistance and the anti-dirt ability enormously, and displays the condenser heat transfer effect fully, thus to guarantee the unit achieves a high performance capability.

★On the Shell and tube type condenser installs a safety valve and bleeder valve and so on, to guarantee its security and convenience for the clean and maintenance.

2、壳管式蒸发器

★采用管壳式结构，外表采用最新阻燃、防水型的隔热材料保温，水侧工作压力可根据用户需求进行设计。

★蒸发器内设PVC工程塑料挡水板，抗腐蚀能力强。冷冻水沿隔板上下迂回流动，以增加扰流效果提高蒸发器换热能力。蒸发器入口设置特殊设计冷媒均流装置使冷媒在各铜管内分布更为均匀，以提高整台蒸发器的热交换效率。

★采用最新DAC波纹状内螺旋高效换热管，强化氟侧换热能力，提高传热系数，以确保机组良好的制冷性能。

2.Shell and tube type evaporator

★Uses the shell type structure; its surface adopts the latest flame retardant and waterproof heat insulation material; and the working pressure on the water side is designed according to the needs of users.

★Inside the evaporator, there is PVC engineering plastics flap, so the corrosion resistance ability is high. The chilled water flow around the board circuitously, thus may increase stirring effect and enhance the evaporator heat transfer ability. At the evaporator inlet there is a specially design which may let the coolant distribute more evenly, thus may entrance the evaporator's heat change efficiency.

★Uses the newest DAC ripple inside spin highly effective heat exchanging pipe, enhances the heat transfer coefficient, to guarantee the unit good refrigeration performance.

3、半封闭螺杆压缩机

机组采用国外进口的半封闭螺杆压缩机，与活塞式压缩机比较，半封闭螺杆压缩机具有如下优势：

★部件少（约为活塞式压缩机的1/3），结构简单、易损件少，可靠性高、寿命长；

★压缩机吸排气均匀连续，排气温度低，振动小，对湿压缩不敏感，抗液击能力强；

★机组能效比高，经济运行性好。

在能量调节方面，螺杆压缩机更具优势，实行25%~100%范围内的能量调节。

3.Semi-hermetic screw compressor

The unit uses the imported semi-hermetic screw compressor. Compared with the reciprocal compressor, it has the following superiorities:

★The parts are a few (is approximately reciprocal compressor 1/3), the structure is simple, the vulnerable parts few, the reliability high, the life long;

★The compressor's intake and exhaust are even connected, the exhaust temperature is low, the vibration slight, the wet compression is insensitive, the ability of anti-fluid strike high;

★The unit has a high efficiency, the movement is good.

At the energy adjustment aspect, the screw compressor has a lot of superiorities, may make an energy adjustment from 25% to 100%.

4、制冷系统配件

★机组所用制冷系统配件全部进口国外名牌厂家的产品，如可拆式干燥过滤器、供液电磁阀，外平衡式热力膨胀阀、截止阀、视液镜、高低压力控制器、排气温度控制器等均采用世界一流的名牌厂家的产品，确保机组具有较高的性能水平。

4.Refrigeration system fittings

★The unit fittings such as the demountable-type dry filter, fluid solenoid valve, outside balance-like thermal expansion valve, cut-off valve, fluid watching mirror, high and low pressure controller, discharge temperature controller and so on are all imported from the overseas famous factories, to guarantee the unit has a high performance capability.

5、微电脑控制器

★采用知名品牌的宽温型电器元件，微电脑控制器-10℃~50℃环境温度下能稳定、可靠运行。

★具有完善的自动控制功能和很强的抗干扰能力，同时还具备多重保护功能。

★具备RS-232,RS-485标准通讯接口各一个，实现本地PC机远控（1000米以内）或通过MODEM实施远程监控。

5.Microcomputer controller

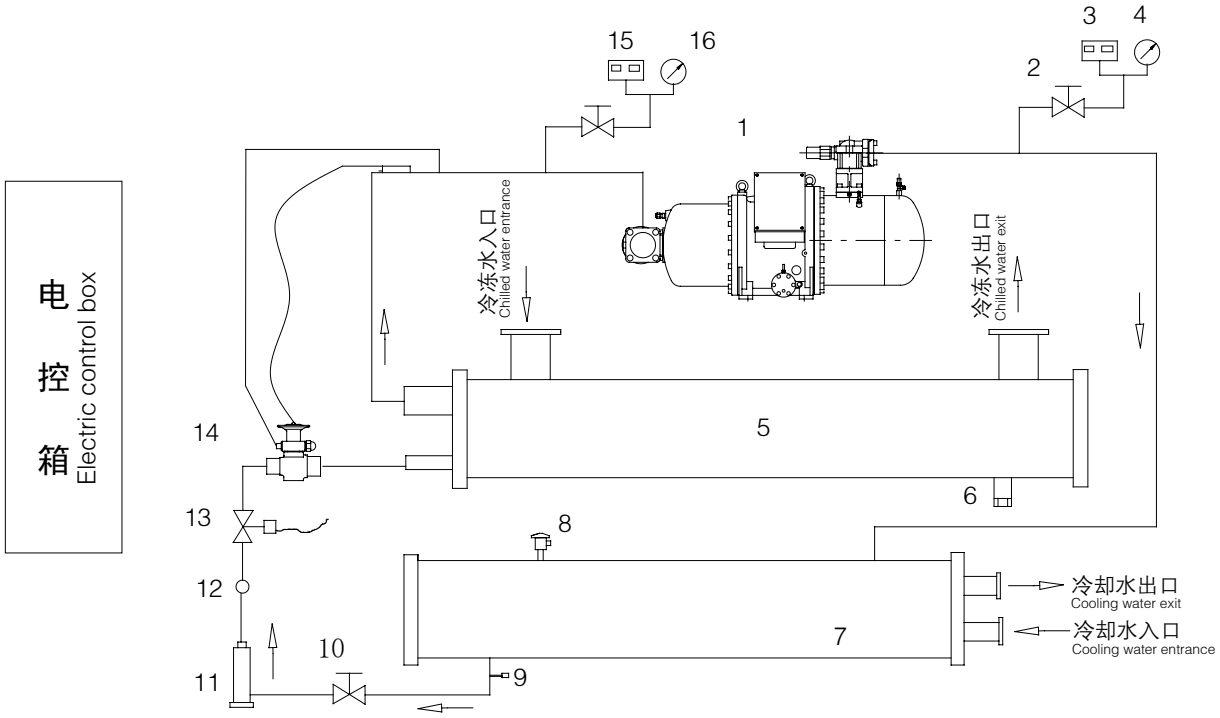
★Uses the well-known brand wide warm electric appliances and microcomputer controllers, the unit may run steady and reliably from -10 ℃ to 50 ℃.

★Has a perfect automatic control function and a very strong anti-jamming ability, meanwhile has the multiple protection function.

★Having RS-232,RS-485 standard communication connection each, realizes local PC far controls (in 1,000 meters) or long-distance monitoring through MODEM.

水冷机组系统原理图

Theory diagram of the water cooled water chiller



1、压缩机	1.Compressor
2、小截止阀	2.Small cut-off valve
3、高压控制器	3.High-pressure controller
4、高压压力表	4.High pressure manometer
5、蒸发器	5.Evaporator
6、泻水阀	6.Pour out valve
7、冷凝器	7.Condenser
8、安全阀	8.Safety valve
9、针阀	9.Pin valve
10、截止阀	10.Cut-off valve
11、干燥过滤器	11.Dry filter
12、视镜	12.Window
13、电磁阀	13.Solenoid valve
14、膨胀阀	14.Expansion valve
15、低压控制器	15.Low pressure controller
16、低压压力表	16.Low pressure manometer

水冷冷水机组主要技术性能参数表1 (R22)

Main technology parameter list 1 of the water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			100	130	160	180	200	250	300	380	400	440	480	560	620	700
制冷量 Cooling capacity	kW		96	130	160	180	200	250	300	380	400	440	480	560	620	700
	10^4kcal/h		8.3	11.2	13.8	15.5	17.2	21.5	25.8	32.7	34.4	37.8	41.3	48.2	53.3	60.2
	RT		27.4	37.1	45.7	51.4	57.1	71.4	85.7	108.6	114.3	125.7	137.1	160.0	177.1	200.0
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire													
	额定电流 Nominal current	A	40	52	62	67	76	94	110	142	154	161	173	198	223	255
	输入功率 Input power	kW	23	30	36	39	44	55	64	82	89	93	100	115	129	148
运行控制方式 Operating control way			可编程控制器 programmable controller													
能量控制 Energy control			33%-100%	每台压缩机 25%-100% Per Compressor 25%~100%												
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor													
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	加油量 Oil charge	L	7	11	11	11	13	13	13	17	17	17	17	21	21	25
制冷剂 Refrigerant	种类 Type		R22													
	充注量 Charge quantity	kg	21	29	36	40	45	56	67	85	89	98	107	125	138	156
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	12 / 7													
	水流量 Water flow	m^3/h	16.5	22.4	27.5	31.0	34.4	43.0	51.6	65.4	68.8	75.7	82.6	96.3	106.6	120.4
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	65	65	65	80	80	80	100	100	100	100	100	125	125	125
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	30 / 35													
	水流量 Water flow	m^3/h	20.6	28.0	34.4	38.7	43.0	53.8	64.5	81.7	86.0	94.6	103.2	120.4	133.3	150.5
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	65	65	65	80	80	80	100	100	100	100	100	125	125	125
外形尺寸 External dimensions	A	mm	2400	2400	2500	2800	3200	3200	3200	3500	3600	3800	3800	3800	3800	3800
	B	mm	1100	1100	1100	1150	1220	1260	1260	1400	1400	1400	1410	1410	1410	1500
	H	mm	1440	1400	1400	1490	1490	1490	1490	1500	1550	1690	1690	1690	1700	1710
机组重量 Weight		kg	1360	1480	1480	1590	1600	2290	2300	2450	2550	2650	2750	3100	3400	3800

注：1、能量控制：标准配置33%～100%为三段式，25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 33%~100% is three sections，25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

水冷冷水机组主要技术性能参数表2 (R22)

Main technology parameter list 2 of the water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			760	800	870	500	600	760	800	880	960	1120	1240	1400	1520	1600	1740
制冷量 Cooling capacity	kW		760	800	870	500	600	760	800	880	960	1120	1240	1400	1520	1600	1740
	10^4kcal/h		65.4	68.8	74.8	43.0	51.6	65.4	68.8	75.7	82.6	96.3	106.6	120.4	130.7	137.6	149.6
	RT		217.1	228.6	248.6	142.9	171.4	217.1	228.6	251.4	274.3	320.0	354.3	400.0	434.3	457.1	497.1
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	273	288	307	2×94	2×110	2×142	2×154	2×161	2×173	2×198	2×223	2×255	2×273	2×288	2×307
	输入功率 Input power	kW	158	167	178	2×55	2×64	2×82	2×89	2×93	2×100	2×115	2×129	2×148	2×158	2×167	2×178
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	25	25	25	2×13	2×13	2×17	2×17	2×17	2×17	2×21	2×21	2×25	2×25	2×25	2×25
制冷剂 Refrigerant	种类 Type		R22														
	充注量 Charge quantity	kg	169	178	194	111	134	169	178	196	214	250	276	312	339	357	388
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	130.7	137.6	149.6	86.0	103.2	130.7	137.6	151.4	165.1	192.6	213.3	240.8	261.4	275.2	299.3
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	150	150	150	125	125	150	150	150	150	150	200	200	200	200	200
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	163.4	172.0	187.1	107.5	129.0	163.4	172.0	189.2	206.4	240.8	266.6	301.0	326.8	344.0	374.1
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	150	150	150	125	125	150	150	150	150	150	200	200	200	200	200
外形尺寸 External dimensions	A	mm	4000	4200	4200	4000	4000	4000	4200	4200	4200	4300	4200	4200	4200	4600	5000
	B	mm	1500	1510	1610	1450	1450	1450	1510	1450	1450	1510	1560	1500	1500	1760	1690
	H	mm	1800	1820	1820	1500	1500	1500	1620	1680	1680	1860	1820	1800	1800	2030	1940
机组重量 Weight		kg	3900	4100	4400	3350	3620	4200	4570	4800	5400	5800	6200	7400	8200	8300	8800

注：1、能量控制：标准配置33%～100%为三段式，25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 33%~100% is three sections，25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

水冷冷水机组主要技术性能参数表3 (R22)

Main technology parameter list 3 of the water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			1920	2020	2260	2520	1760	1920	2240	2480	2800	3040	3200	3480	3840	4040	4520	5040
制冷量 Cooling capacity	kW		1920	2020	2260	2520	1760	1920	2240	2480	2800	3040	3200	3480	3840	4040	4520	5040
	10^4kcal/h		165.1	173.7	194.4	216.7	151.4	165.1	192.6	213.3	240.8	261.4	275.2	299.3	330.2	347.4	388.7	433.4
	RT		548.6	577.1	645.7	720.0	502.9	548.6	640.0	708.6	800.0	868.6	914.3	994.3	1097.1	1154.3	1291.4	1440.0
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire															
	额定电流 Nominal current	A	2×336	2×351	2×390	2×433	4×161	4×173	4×198	4×223	4×255	4×273	4×288	4×307	4×336	4×351	4×390	4×433
	输入功率 Input power	kW	2×195	2×204	2×226	2×251	4×93	4×100	4×115	4×129	4×148	4×158	4×167	4×178	4×195	4×204	4×226	4×251
运行控制方式 Operating control way			可编程控制器 programmable controller															
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%															
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor															
	数量 Quantity	台	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4
	加油量 Oil charge	L	2×25	2×28	2×28	2×28	4×17	4×17	4×21	4×21	4×25	4×25	4×25	4×25	4×25	4×28	4×28	4×28
制冷剂 Refrigerant	种类 Type		R22															
	充注量 Charge quantity	kg	428	450	504	562	392	428	499	553	624	677	713	776	856	900	1007	1123
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	12 / 7															
	水流量 Water flow	m^3/h	330.2	347.4	388.7	433.4	302.7	330.2	385.3	426.6	481.6	522.9	550.4	598.6	660.5	694.9	777.4	866.9
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	200	200	250	250	200	200	250	250	250	300	300	300	350	350	350	350
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	30 / 35															
	水流量 Water flow	m^3/h	412.8	434.3	485.9	541.8	378.4	412.8	481.6	533.2	602.0	653.6	688.0	748.2	825.6	868.6	971.8	1083.6
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	200	200	250	250	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200	2×250	2×250
外形尺寸 External dimensions	A	mm	5800	6000	6000	6200	4200	4400	4600	4800	4800	5000	4800	5100	5800	6000	6000	6200
	B	mm	1700	1900	1900	2000	3100	3100	3100	3100	3400	3400	3220	3400	3600	3600	3800	4000
	H	mm	1940	1940	1940	2000	2350	2350	2350	2350	2350	2550	2350	2400	2500	2500	2600	2600
机组重量 Weight		kg	9400	9600	9800	10000	9600	9800	11600	12400	14800	15000	16400	17000	19000	20000	22000	24000

注：1、能量控制：标准配置33%～100%为三段式，25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 33%~100% is three sections，25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

全热回收式水冷冷水机组主要技术性能参数表1 (R22)

Main technology parameter list 1 of the energy recovery water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			100S	130S	160S	180S	200S	250S	300S	380S	400S	440S	480S	560S	620S	700S
制冷量 Cooling capacity	kW		96	130	160	180	200	250	300	380	400	440	480	560	620	700
	10^4kcal/h		8.3	11.2	13.8	15.5	17.2	21.5	25.8	32.7	34.4	37.8	41.3	48.2	53.3	60.2
	RT		27.4	37.1	45.7	51.4	57.1	71.4	85.7	108.6	114.3	125.7	137.1	160.0	177.1	200.0
热回收 Energy recovery	热量 Quantity of heat	kW	99	134	165	185	206	258	309	391	412	453	494	577	639	721
	热回收水温度 Energy recovery water T.	℃	45 – 50													
	水流量 Water flow	m^3/h	17.0	23.1	28.4	31.9	35.5	44.4	53.2	67.4	71.0	78.1	85.2	99.4	110.0	124.2
	接管规格 Pipe specification	DN	65	65	65	80	80	80	100	100	100	100	100	125	125	125
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y–△ Three–phase five–wire													
	额定电流 Nominal current	A	40	52	62	67	76	94	110	142	154	161	173	198	223	255
	输入功率 Input power	kW	23	30	36	39	44	55	64	82	89	93	100	115	129	148
运行控制方式 Operating control way			可编程控制器 programmable controller													
能量控制 Energy control			33%–100%	每台压缩机 25%–100% Per Compressor 25%~100%												
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi–hermetic screw compressor													
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	加油量 Oil charge	L	7	11	11	11	13	13	13	17	17	17	17	21	21	25
制冷剂 Refrigerant	种类 Type		R22													
	充注量 Charge quantity	kg	21	29	36	40	45	56	67	85	89	98	107	125	138	156
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	12 / 7													
	水流量 Water flow	m^3/h	16.5	22.4	27.5	31.0	34.4	43.0	51.6	65.4	68.8	75.7	82.6	96.3	106.6	120.4
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	65	65	65	80	80	80	100	100	100	100	100	125	125	125
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	30 / 35													
	水流量 Water flow	m^3/h	20.6	28.0	34.4	38.7	43.0	53.8	64.5	81.7	86.0	94.6	103.2	120.4	133.3	150.5
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	65	65	65	80	80	80	100	100	100	100	100	125	125	125
外形尺寸 External dimensions	A	mm	2400	2400	2500	2800	3200	3200	3200	3500	3600	3800	3800	3800	3800	3800
	B	mm	1100	1100	1100	1150	1220	1260	1260	1400	1400	1400	1410	1410	1410	1500
	H	mm	1440	1400	1400	1490	1490	1490	1490	1500	1550	1690	1690	1690	1700	1710
机组重量 Weight		kg	1400	1500	1500	1600	1620	2320	2380	2500	2600	2700	2800	3200	3450	3850

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

全热回收式水冷冷水机组主要技术性能参数表2 (R22)

Main technology parameter list 2 of the energy recovery water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			760S	800S	870S	500S	600S	760S	800S	880S	960S	1120S	1240S	1400S	1520S	1600S	1740S
制冷量 Cooling capacity	kW		760	800	870	500	600	760	800	880	960	1120	1240	1400	1520	1600	1740
	10^4kcal/h		65.4	68.8	74.8	43.0	51.6	65.4	68.8	75.7	82.6	96.3	106.6	120.4	130.7	137.6	149.6
	RT		217.1	228.6	248.6	142.9	171.4	217.1	228.6	251.4	274.3	320.0	354.3	400.0	434.3	457.1	497.1
热回收 Energy recovery	热量 Quantity of heat	kW	783	824	896	515	618	783	824	906	989	1154	1277	1442	1566	1648	1792
	热回收水温度 Energy recovery water T.	℃	45 – 50														
	水流量 Water flow	m^3/h	134.8	141.9	154.4	88.7	106.4	134.8	141.9	156.1	170.3	198.7	220.0	248.4	269.7	283.9	308.7
	接管规格 Pipe specification	DN	150	150	150	125	125	150	150	150	150	150	200	200	200	200	200
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	273	288	307	2×94	2×110	2×142	2×154	2×161	2×173	2×198	2×223	2×255	2×273	2×288	2×307
	输入功率 Input power	kW	158	167	178	2×55	2×64	2×82	2×89	2×93	2×100	2×115	2×129	2×148	2×158	2×167	2×178
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	25	25	25	2×13	2×13	2×17	2×17	2×17	2×17	2×21	2×21	2×25	2×25	2×25	2×25
制冷剂 Refrigerant	种类 Type		R22														
	充注量 Charge quantity	kg	169	178	194	111	134	169	178	196	214	250	276	312	339	357	388
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	130.7	137.6	149.6	86.0	103.2	130.7	137.6	151.4	165.1	192.6	213.3	240.8	261.4	275.2	299.3
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	150	150	150	125	125	150	150	150	150	150	200	200	200	200	200
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	163.4	172.0	187.1	107.5	129.0	163.4	172.0	189.2	206.4	240.8	266.6	301.0	326.8	344.0	374.1
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	150	150	150	125	125	150	150	150	150	150	200	200	200	200	200
外形尺寸 External dimensions	A	mm	4000	4200	4200	4000	4000	4000	4200	4200	4200	4300	4200	4200	4200	4600	5000
	B	mm	1500	1510	1610	1450	1450	1450	1510	1450	1450	1510	1560	1500	1500	1760	1690
	H	mm	1800	1820	1820	1500	1500	1500	1620	1680	1680	1860	1820	1800	1800	2030	1940
机组重量 Weight		kg	3950	4150	4500	3400	3680	4300	4650	4900	5500	5900	6300	7500	8300	8400	8900

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

全热回收式水冷冷水机组主要技术性能参数表3 (R22)

Main technology parameter list 3 of the energy recovery water cooled water chiller(R22)

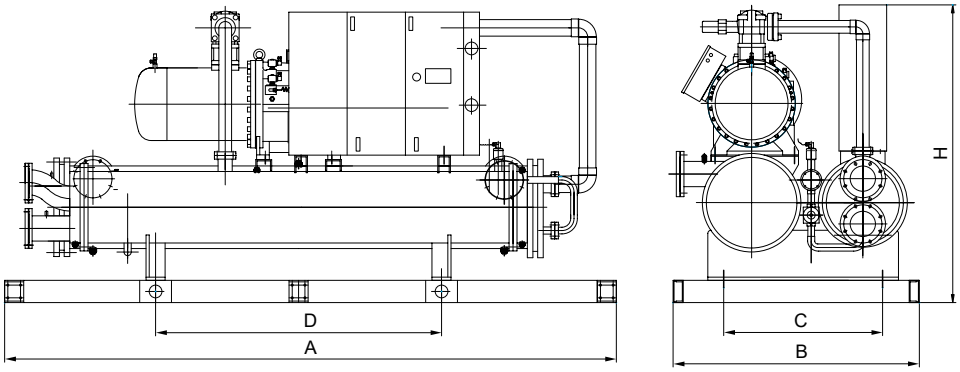
机组型号 LSBLG Unit model LSBLG			1920S	2020S	2260S	2520S	1760S	1920S	2240S	2480S	2800S	3040S	3200S	3480S	3840S	4040S	4520S	5040S
制冷量 Cooling capacity	kW		1920	2020	2260	2520	1760	1920	2240	2480	2800	3040	3200	3480	3840	4040	4520	5040
	10^4kcal/h		165.1	173.7	194.4	216.7	151.4	165.1	192.6	213.3	240.8	261.4	275.2	299.3	330.2	347.4	388.7	433.4
	RT		548.6	577.1	645.7	720.0	502.9	548.6	640.0	708.6	800.0	868.6	914.3	994.3	1097.1	1154.3	1291.4	1440.0
热回收 Energy recovery	热量 Quantity of heat	kW	1978	2081	2328	2596	1813	1978	2307	2554	2884	3131	3296	3584	3955	4161	4656	5191
	热回收水温度 Energy recovery water T.	℃	45 – 50															
	水流量 Water flow	m^3/h	340.6	358.4	401.0	447.1	312.3	340.6	397.4	440.0	496.8	539.3	567.7	617.4	681.3	716.8	801.9	894.2
	接管规格 Pipe specification	DN	200	200	250	250	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200	2×250	2×250
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y–△ Three–phase five–wire															
	额定电流 Nominal current	A	2×336	2×351	2×390	2×433	4×161	4×173	4×198	4×223	4×255	4×273	4×288	4×307	4×336	4×351	4×390	4×433
	输入功率 Input power	kW	2×195	2×204	2×226	2×251	4×93	4×100	4×115	4×129	4×148	4×158	4×167	4×178	4×195	4×204	4×226	4×251
运行控制方式 Operating control way			可编程控制器 programmable controller															
能量控制 Energy control			每台压缩机 25%–100% Per Compressor 25%~100%															
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi–hermetic screw compressor															
	数量 Quantity	台	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4
	加油量 Oil charge	L	2×25	2×28	2×28	2×28	4×17	4×17	4×21	4×21	4×25	4×25	4×25	4×25	4×25	4×28	4×28	4×28
制冷剂 Refrigerant	种类 Type		R22															
	充注量 Charge quantity	kg	428	450	504	562	392	428	499	553	624	677	713	776	856	900	1007	1123
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	12 / 7															
	水流量 Water flow	m^3/h	330.2	347.4	388.7	433.4	302.7	330.2	385.3	426.6	481.6	522.9	550.4	598.6	660.5	694.9	777.4	866.9
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	200	200	250	250	200	200	250	250	250	300	300	300	300	350	350	350
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	30 / 35															
	水流量 Water flow	m^3/h	412.8	434.3	485.9	541.8	378.4	412.8	481.6	533.2	602.0	653.6	688.0	748.2	825.6	868.6	971.8	1083.6
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	200	200	250	250	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200	2×250	2×250
外形尺寸 External dimensions	A	mm	5800	6000	6000	6200	4200	4400	4600	4800	4800	5000	4800	5100	5800	6000	6000	6200
	B	mm	1700	1900	1900	2000	3100	3100	3100	3100	3400	3400	3220	3400	3600	3600	3800	4000
	H	mm	1940	1940	1940	2000	2350	2350	2350	2350	2350	2550	2350	2400	2500	2500	2600	2600
机组重量 Weight		kg	9500	9700	9900	10100	9700	10000	11800	12600	15000	15200	16600	17200	19200	21300	22300	24300

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

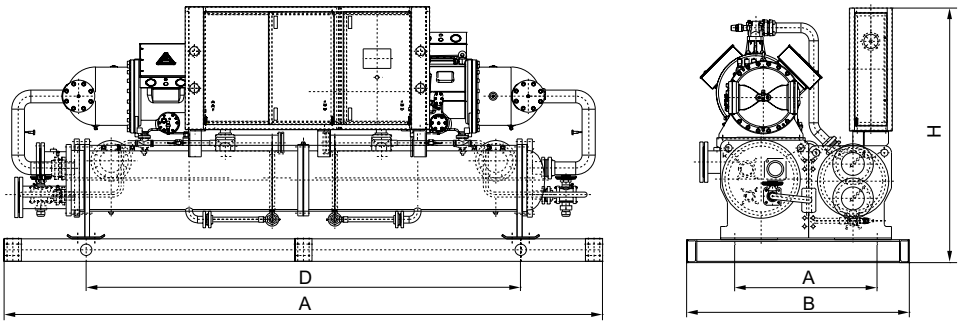
Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

机组外形及安装尺寸
The detailed contour and installation size

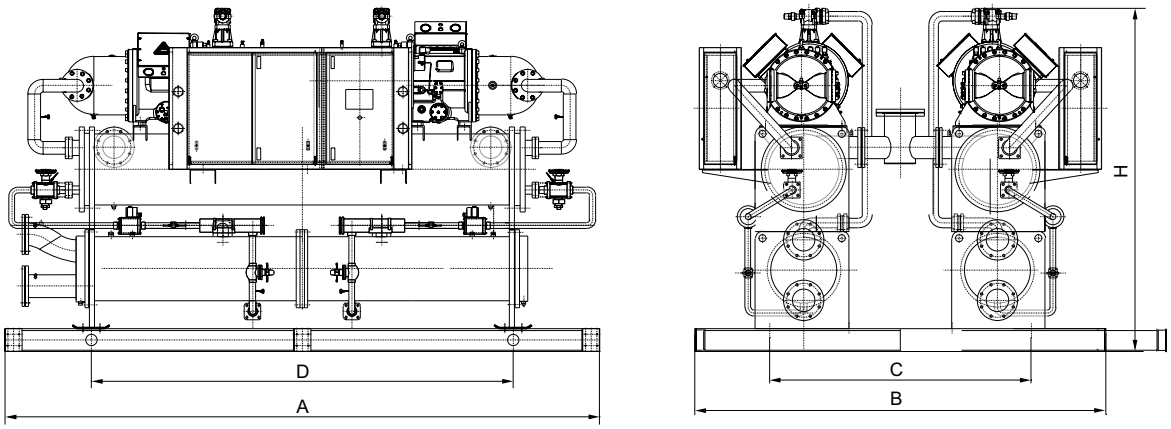
水冷单压缩机外形图
Outline drawing of the water cooled single compressor unit



水冷双压缩机外形图
Outline drawing of the water cooled double compressor unit



水冷四压缩机外形图
Outline drawing of the water cooled four compressor unit



满液式水冷冷水机组产品特点

Characteristics of the flooded water cooled water chiller

国际品质 性能卓越

LSBLG□M系列机组是按照经认证的ISO9001质量体系、ISO14001环境体系灵活的积木化设计技术、先进的DFM生产方式、严格的压力容器规范及制冷设备安全标准进行设计制造。该项技术已达到国际领先水平；性能卓越，在同行业中被誉为“经典之作”。

高效专用压缩机，超低噪声，运行宁静

本系列机组采用世界著名品牌的满液式专用喷油螺杆压缩机。采用第三代型线及精确的转子加工，大大减少泄露和损失；喷油润滑密封使转子在啮合时不直接接触而几乎没有磨损；电机直接驱动转子避免联轴器或齿轮传动所造成的损失；经改进的轴承大大提高设计寿命，特制的油分离器保证更高的分油效率。机组运行更加平稳，减小了机组的噪声和震动。

高效率 低能耗

除压缩机本身的高效率外，本系列机组采用国内独创的满液式蒸发器设计，与干式蒸发器相比，效率平均提高约20%。蒸发器和冷凝器使用最先进的管内外强化肋翅技术，更促进机组效率的提高。

可靠的回油系统

螺杆机组用满液式蒸发器最大的技术障碍是回油。公司经过多年的潜心研究和试验，设计出独特而可靠的回油系统，保证了机组在各种负荷及工况下运行时能可靠的回油。

可靠先进方便的控制系统

采用世界著名的液位控制器及电子膨胀阀控制蒸发器的液面，根据系统负荷的变化自动进行调节。从而保证了蒸发器液面的即时回归。负荷调节方式采用有（无）级滑块调节，在可编程控制系统的控制下，在25%~100%的冷量调节范围内保证随时与负荷匹配；操作面板采用触摸屏，所有操作设定及显示均在此完成；其先进而全面的保护及故障诊断功能，保证机组在尽量减少停机可能性的前提下多制取冷量。

安装调试快捷

管路设计简单，在安装现场只需连接水管；本系列机组标准配备均为随机安装有星三角起动柜，只需简单地接上电源即可运行机组；机组占地面积小及噪声低振动低的特点决定了基础无特殊要求；出厂时每台机组按照GB/T18430.1标准通过严格的性能测试，并已充注了所需的冷冻合成油和制冷剂，大大节约调试时间。

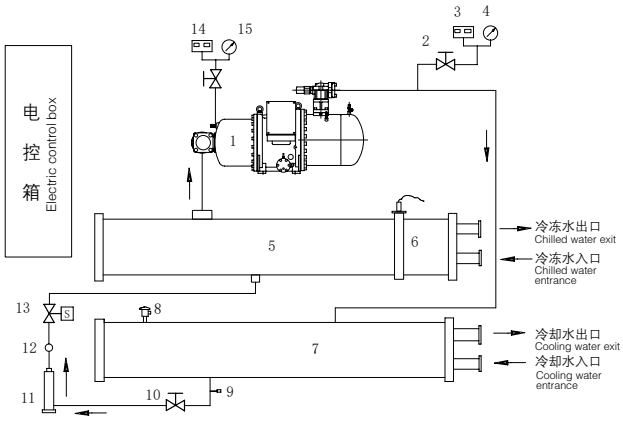
远程控制

本系列机组可根据用户的需要配置远程控制接口。可以加配一个远程显示屏用于远距离的显示和设定。

The international quality, remarkable performance
The LSBLG□M series chiller is designed and manufactured according to ISO9001 quality system, ISO14001 environment system, advanced DFM production method, strict pressure vessel standard and refrigeration equipment security standard. This technology has achieved the international leading level; The performance is remarkable. This chiller is called "classical work" in the refrigeration profession.
Highly effective special-purpose compressor, super low noise, tranquil movement
This series chiller uses the world famous brand flooded special-purpose oil-sprayed screw compressor. Uses the third generation streamlined and precise rotor, reduces the leak and the loss greatly; The oil-sprayed lubrication seal lets the rotor no-directly contact and no worn nearly when meshing; The electrical machinery directly drives the rotor, may avoid the loss which created by the shaft coupling or the gear drive; The improved bearing lengthens the design life greatly. The special oil separator guarantees the higher efficiency of oil-separated. The unit movement is steadier.
High efficiency and low energy consumption
Besides the compressor high efficiency itself, this series chiller uses the domestic creative flooded evaporator, its efficiency enhances approximately 20% on an average compared with the dry type evaporator. The most advanced rib-wing-strengthened technology in and out the tube is used in the evaporator and the condenser, which has promoted the unit efficiency.
Reliable oil return system
The biggest technology barrier is an oil return when the flooded evaporator used in the screw unit. The unique and reliable oil return system has been designed by our company after many year study and experiment, to guarantee unit can return oil reliably at each kind of load and operating mode.
Reliable advanced convenient control system
Uses the world famous fluid position controller and the electronic expansion valve to control the evaporator liquid level, automatically adjusts according to the system load change. Thus has guaranteed the evaporator liquid level return immediately. The load adjustment uses step (stepless) slide adjustment, may match with the load as necessary under the PLC system control in 25%~100% cold quantity adjustment. Operation panel is the touch screen, all operations and sets have been done at this. Its advanced and complete protection and breakdown-diagnosis function guarantees the chiller may make more cooling capacity under the unit turned off as soon as possible.
Quick installation and debugging
The pipeline design is simple, only connects the water pipe on the site. This series chiller standard match all has the star triangle starting cabinet, only simply joins the power source can start the unit. The foundation did not have the special request, for the unit area is small, the noise low, the vibration small. Each unit has passed through the strict performance test according to GB/The T18430.1 standard. And has sufficiently poured the freezing synthetic oil and the refrigerant which are needed, saves the debugging time greatly.
Long-distance control
This series chiller may dispose the long-distance control connection according to the user's need. May add a long-distance display monitor which is used in the long-distance demonstration and setting.

满液式水冷冷水机组系统原理图

Theory diagram of the flooded water cooled water chiller



1.压缩机 2.小截止阀 3.高压控制器 4.高压压力表 5.满液式蒸发器 6.液位传感器 7.冷凝器 8.安全阀 9.针阀 10.截止阀 11.干燥过滤器 12.视镜 13.电子膨胀阀 14.低压控制器 15.低压压力表

1.the compressor 2.Small cut-off valve 3.High-pressure controller 4.High pressure manometer 5.Flooded evaporator 6.Fluid position sensor 7.Condenser 8.Safety valve 9.Pin valve 10.Cut-off valve 11.Dry filter 12.Window 13.lectron expansion valve 14.Low pressure controller 15.Low pressure manometer

满液式水冷冷水机组主要技术参数表1（R22）

Main technology parameter list 1 of the water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			180M	210M	230M	280M	330M	360M	380M	430M	480M	520M	570M	620M	680M	780M	860M
制冷量 Cooling capacity	kW		180	210	228	280	330	360	380	430	479	520	570	620	680	780	860
	10^4kcal/h		15.5	18.1	19.6	24.1	28.4	31.0	32.7	37.0	41.2	44.7	49.0	53.3	58.5	67.1	74.0
	RT		51.4	60.0	65.1	80.0	94.3	102.9	108.6	122.9	136.9	148.6	162.9	177.1	194.3	222.9	245.7
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	62	72	78	98	112	120	128	144	165	174	190	201	223	254	287
	输入功率 Input power	kW	36.2	41.6	45.3	56.7	64.8	69.8	74.0	83.2	95.8	100.8	110.0	116.6	129.1	147.2	166.4
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
	加油量 Oil charge	L	11	13	13	13	13	17	17	17	17	17	21	21	21	25	2×17
制冷剂 Refrigerant	种类 Type		R22														
	充注量 Charge quantity	kg	62	72	78	96	113	123	130	147	150	178	195	213	233	267	295
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	31	36	39	48	57	62	65	74	82	89	98	107	117	134	148
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	125	150	150
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	39	45	49	60	71	77	82	92	103	112	123	133	146	168	185
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	125	150	150
外形尺寸 External dimensions	L	mm	3600	3200	3300	3300	3700	3600	3600	3650	3770	3770	3900	4100	4100	4100	4100
	W	mm	1400	1400	1400	1400	1400	1400	1410	1410	1580	1580	1600	1700	1700	1700	1700
	H	mm	1800	1600	1600	1650	1700	1700	1750	1750	1720	1800	1800	1850	1850	1850	1800
机组重量 Weight		kg	1600	1700	1900	2200	2400	2600	2700	2900	3500	3600	3700	3800	4000	4500	4700

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

满液式水冷冷水机组主要技术参数表2（R22）

Main technology parameter list 1 of the water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			960M	1040M	1080M	1140M	1240M	1360M	1560M	1720M	1940M	2140M	2260M	2520M	2800M	3320M	4020M	4480M
制冷量 Cooling capacity	kW		958	1040	1080	1140	1240	1360	1560	1720	1940	2140	2260	2520	2800	3320	4020	4480
	10^4kcal/h		82.4	89.4	92.9	98.0	106.6	117.0	134.2	147.9	166.8	184.0	194.4	216.7	240.8	285.5	345.7	385.3
	RT		273.7	297.1	308.6	325.7	354.3	388.6	445.7	491.4	554.3	611.4	645.7	720.0	800.0	948.6	1148.6	1280.0
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire															
	额定电流 Nominal current	A	331	348	360	380	403	446	508	553	622	682	713	790	877	1036	1260	1401
	输入功率 Input power	kW	191.6	201.6	208.4	220.0	233.2	258.2	294.4	320.4	360.4	395.0	413.0	457.8	508.4	600.2	730.2	811.8
运行控制方式 Operating control way			可编程控制器 programmable controller															
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%															
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor															
	数量 Quantity	台	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	2×17	2×17	2×21	2×21	2×21	2×21	2×25	2×25	2×25	2×25	2×28	2×28	2×28	2×28	2×28	2×28
制冷剂 Refrigerant	种类 Type		R22															
	充注量 Charge quantity	kg	328	357	370	391	425	466	535	590	665	734	775	864	960	1138	1378	1536
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	12 / 7															
	水流量 Water flow	m^3/h	165	179	186	196	213	234	268	296	334	368	389	433	482	571	691	771
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	150	150	150	150	200	200	200	200	200	200	250	250	250	300	300	300
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	30 / 35															
	水流量 Water flow	m^3/h	206	224	232	245	267	292	335	370	417	460	486	542	602	714	864	963
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	150	150	150	150	200	200	200	200	200	200	250	250	250	300	300	300
外形尺寸 External dimensions	L	mm	4200	4500	4650	4650	4700	4700	4750	4750	5000	5200	5800	6000	6200	6400	6600	6800
	W	mm	1730	1730	1800	1850	1900	1900	1960	1960	1960	1960	2100	2100	2100	2300	2300	2500
	H	mm	1800	1800	1890	1890	2000	2010	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
机组重量 Weight		kg	5100	6200	6600	6800	7200	8000	9000	9400	10000	11000	12000	14000	16000	19000	21000	25000

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

满液全热回收式水冷冷水机组主要技术参数表1（R22）

Main technology parameter list 1 of the energy recovery (flooded)water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			180MS	210MS	230MS	280MS	330MS	360MS	380MS	430MS	480MS	520MS	570MS	620MS	680MS	780MS	860MS
制冷量 Cooling capacity	kW		180	210	228	280	330	360	380	430	479	520	570	620	680	780	860
	10^4kcal/h		15.5	18.1	19.6	24.1	28.4	31.0	32.7	37.0	41.2	44.7	49.0	53.3	58.5	67.1	74.0
	RT		51.4	60.0	65.1	80.0	94.3	102.9	108.6	122.9	136.9	148.6	162.9	177.1	194.3	222.9	245.7
热回收 Energy recovery	热量 Quantity of heat	kW	185	218	237	291	343	374	395	447	498	541	593	645	707	811	894
	热回收水温度 Energy recovery water T.	℃	45 – 55														
	水流量 Water flow	m^3/h	31.9	37.6	40.8	50.2	59.1	64.5	68.1	77.0	85.8	93.2	102.1	111.1	121.8	139.7	154.1
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	125	150	150
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	62	72	78	98	112	120	128	144	165	174	190	201	223	254	287
	输入功率 Input power	kW	36.2	41.6	45.3	56.7	64.8	69.8	74.0	83.2	95.8	100.8	110.0	116.6	129.1	147.2	166.4
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
	加油量 Oil charge	L	11	13	13	13	13	17	17	17	17	17	21	21	21	25	2×17
制冷剂 Refrigerant	种类 Type		R22														
	充注量 Charge quantity	kg	62	72	78	96	113	123	130	147	150	178	195	213	233	267	295
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	31	36	39	48	57	62	65	74	82	89	98	107	117	134	148
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	125	150	150
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	39	45	49	60	71	77	82	92	103	112	123	133	146	168	185
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	125	150	150
外形尺寸 External dimensions	L	mm	3200	3200	3300	3600	3600	3600	3600	3650	3770	3700	3900	4100	4100	4100	4100
	W	mm	1400	1400	1400	1400	1400	1400	1410	1410	1580	1500	1600	1700	1700	1700	1700
	H	mm	1500	1600	1600	1650	1700	1700	1750	1750	1720	1800	1800	1850	1850	1850	1800
机组重量 Weight		kg	1650	1750	1950	2250	2450	2650	2750	2950	3550	3650	3750	3850	4050	4550	4800

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

满液全热回收式水冷冷水机组主要技术参数表2（R22）

Main technology parameter list 2 of the energy recovery (flooded)water cooled water chiller(R22)

机组型号 LSBLG Unit model LSBLG			960MS	1040MS	1080MS	1140MS	1240MS	1360MS	1560MS	1720MS	1940MS	2140MS	2260MS	2520MS	2800MS	3320MS	4020MS	4480MS
制冷量 Cooling capacity	kW		958	1040	1080	1140	1240	1360	1560	1720	1940	2140	2260	2520	2800	3320	4020	4480
	10^4kcal/h		82.4	89.4	92.9	98.0	106.6	117.0	134.2	147.9	166.8	184.0	194.4	216.7	240.8	285.5	345.7	385.3
	RT		273.7	297.1	308.6	325.7	354.3	388.6	445.7	491.4	554.3	611.4	645.7	720.0	800.0	948.6	1148.6	1280.0
热回收 Energy recovery	热量 Quantity of heat	kW	996	1082	1123	1186	1290	1414	1622	1789	2018	2226	2350	2621	2912	3453	4181	4659
	热回收水温度 Energy recovery water T.	℃	45 – 55															
	水流量 Water flow	m^3/h	171.6	186.3	193.5	204.2	222.1	243.6	279.5	308.1	347.5	383.4	404.9	451.4	501.6	594.7	720.1	802.5
	接管规格 Pipe specification	DN	150	150	150	150	200	200	200	200	200	200	250	250	250	300	300	300
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y–△ Three–phase five–wire															
	额定电流 Nominal current	A	331	348	360	380	403	446	508	553	622	682	713	790	877	1036	1260	1401
	输入功率 Input power	kW	191.6	201.6	208.4	220.0	233.2	258.2	294.4	320.4	360.4	395.0	413.0	457.8	508.4	600.2	730.2	811.8
运行控制方式 Operating control way			可编程控制器 programmable controller															
能量控制 Energy control			每台压缩机 25%–100% Per Compressor 25%~100%															
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi–hermetic screw compressor															
	数量 Quantity	台	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	2×17	2×17	2×21	2×21	2×21	2×21	2×25	2×25	2×25	2×25	2×28	2×28	2×28	2×28	2×28	2×28
制冷剂 Refrigerant	种类 Type		R22															
	充注量 Charge quantity	kg	328	357	370	391	425	466	535	590	665	734	775	864	960	1138	1378	1536
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	12 / 7															
	水流量 Water flow	m^3/h	165	179	186	196	213	234	268	296	334	368	389	433	482	571	691	771
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	150	150	150	150	200	200	200	200	200	200	250	250	250	300	300	300
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger															
	进/出水温度 Inlet/outlet water T.	℃	30 / 35															
	水流量 Water flow	m^3/h	206	224	232	245	267	292	335	370	417	460	486	542	602	714	864	963
	水侧压力降 Water side pressure drop	kpa	≤70															
	接管规格 Pipe specification	DN	150	150	150	150	200	200	200	200	200	200	250	250	250	300	300	300
外形尺寸 External dimensions	L	mm	4200	4500	4650	4650	4700	4700	4750	4750	5000	5200	5800	6000	6200	6400	6600	6800
	W	mm	1730	1730	1800	1850	1900	1900	1960	1960	1960	1960	2100	2100	2100	2300	2300	2500
	H	mm	1800	1800	1890	1890	2000	2010	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
机组重量 Weight		kg	5200	6300	6700	6900	7300	8100	9100	9500	10100	11100	12100	14200	16200	19200	21200	25200

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

降膜式水冷冷水机组主要技术参数表1（R22）

The main technology parameter table 1 of the falliny-film type water cooled water chiller (R22)

机组型号 LSBLG Unit model LSBLG			180J	210J	230J	290J	340J	370J	440J	500J	540J	590J	640J	700J	730J
制冷量 Cooling capacity	kW		180	209	231	290	340	369	440	500	540	588	636	701	729
	10^4kcal/h		15.5	18.0	19.9	24.9	29.2	31.7	37.8	43.0	46.4	50.6	54.7	60.3	62.7
	RT		51.4	59.7	66.0	82.9	97.1	105.4	125.7	142.9	154.3	168.0	181.7	200.3	208.3
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire												
	额定电流 Nominal current	A	61	69	77	94	110	118	141	160	171	184	198	219	222
	输入功率 Input power	kW	35.2	40.1	44.5	54.6	63.7	68.6	81.7	92.7	99.1	106.8	114.8	126.9	128.9
运行控制方式 Operating control way			可编程控制器 programmable controller												
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%												
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor												
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	1
	加油量 Oil charge	L	11	11	13	13	13	17	17	17	17	17	21	21	25
制冷剂 Refrigerant	种类 Type		R22												
	充注量 Charge quantity	kg	41	48	53	66	78	84	101	114	123	134	145	160	167
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	12 / 7												
	水流量 Water flow	m^3/h	31.0	35.9	39.7	49.9	58.5	63.5	75.7	86.0	92.9	101.1	109.4	120.6	125.4
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	125	125	125	125	125	150
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	30 / 35												
	水流量 Water flow	m^3/h	38.7	44.9	49.7	62.4	73.1	79.3	94.6	107.5	116.1	126.4	136.7	150.7	156.7
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	125	125	125	125	125	150
外形尺寸 External dimensions	L	mm	3100	3200	3200	3400	3400	3600	3600	3700	3700	3700	3800	4200	4200
	W	mm	1400	1400	1400	1400	1400	1400	1410	1410	1430	1430	1500	1700	1700
	H	mm	1600	1600	1600	1650	1700	1700	1750	1750	1750	1750	1800	1850	1850
机组重量 Weight		kg	1650	1700	1900	2100	2300	2500	2700	2900	3100	3400	3500	4000	4200

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

降膜式水冷冷水机组主要技术参数表2（R22）

The main technology parameter table 2 of the falliny-film type water cooled water chiller (R22)

机组型号 LSBLG Unit model LSBLG			820J	880J	1000J	1080J	1180J	1280J	1400J	1460J	1640J	1780J	1860J	2000J	2220J	2340J
制冷量 Cooling capacity	kW		818	880	1000	1080	1176	1272	1402	1458	1636	1776	1858	2000	2220	2340
	10^4kcal/h		70.3	75.7	86.0	92.9	101.1	109.4	120.6	125.4	140.7	152.7	159.8	172.0	190.9	201.2
	RT		233.7	251.4	285.7	308.6	336.0	363.4	400.6	416.6	467.4	507.4	530.9	571.4	634.3	668.6
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire													
	额定电流 Nominal current	A	253	282	320	342	369	396	438	445	505	545	573	611	683	701
	输入功率 Input power	kW	146.3	163.4	185.4	198.2	213.6	229.6	253.8	257.8	292.6	315.8	332.0	354.2	396.0	406.0
运行控制方式 Operating control way			可编程控制器 programmable controller													
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%													
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor													
	数量 Quantity	台	1	2	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	25	2×17	2×17	2×17	2×17	2×21	2×21	2×25	2×25	2×25	2×26	2×25	2×25	2×28
制冷剂 Refrigerant	种类 Type		R22													
	充注量 Charge quantity	kg	187	201	229	247	269	291	320	333	374	406	425	457	507	535
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	12 / 7													
	水流量 Water flow	m^3/h	140.7	151.4	172.0	185.8	202.3	218.8	241.1	250.8	281.4	305.5	319.6	344.0	381.8	402.5
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	150	150	150	150	150	200	200	200	200	200	200	200	250	250
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	30 / 35													
	水流量 Water flow	m^3/h	175.9	189.2	215.0	232.2	252.8	273.5	301.4	313.5	351.7	381.8	399.5	430.0	477.3	503.1
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	150	150	150	150	150	200	200	200	200	200	200	200	250	250
外形尺寸 External dimensions	L	mm	4200	4200	4500	4500	4600	4600	4800	4800	4900	5000	5000	5200	5400	5600
	W	mm	1700	1700	1700	1730	1730	1800	1850	1850	1900	1900	1900	1900	1900	1900
	H	mm	1850	1850	1800	1800	1800	1890	1890	1890	2020	2020	2020	2050	2050	2050
机组重量 Weight		kg	4400	4500	5500	5800	6000	6700	7800	8200	8800	9000	9200	9600	10000	11000

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型水冷冷水机组主要技术性能参数表1 (R134a)

Main technology parameter list 1 of the water cooled water chiller(R134a)

机组型号 LSBLG Unit model LSBLG			110A	140A	170A	200A	220A	270A	340A	410A	520A	580A	640A	680A	820A	1040A	1160A
制冷量 Cooling capacity	kW		106	137	168	196	221	270	339	410	518	581	641	678	820	1036	1162
	10^4kcal/h		9.1	11.8	14.4	16.9	19.0	23.2	29.2	35.3	44.5	50.0	55.1	58.3	70.5	89.1	99.9
	RT		30.3	39.1	48.0	56.0	63.1	77.1	96.9	117.1	148.0	166.0	183.1	193.7	234.3	296.0	332.0
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	39	49	59	69	79	98	121	140	175	197	216	242	281	351	394
	输入功率 Input power	kW	22.4	28.3	34.3	40.0	46.0	56.8	70.0	81.3	101.6	114.2	125.2	140.0	162.6	203.2	228.4
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
	加油量 Oil charge	L	11	13	13	13	16	16	20	20	25	25	25	2×20	2×20	2×25	2×25
制冷剂 Refrigerant	种类 Type		R134a														
	充注量 Charge quantity	kg	28	36	44	51	58	71	89	108	136	152	168	178	215	272	305
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	18	24	29	34	38	46	58	71	89	100	110	117	141	178	200
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	125	125	125	125	125	150	150	150
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	23	29	36	42	48	58	73	88	111	125	138	146	176	223	250
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	125	125	125	125	125	150	150	150
外形尺寸 External dimensions	L	mm	3000	3000	3300	3300	3300	3300	3800	3800	3800	3800	3850	4200	4800	4800	5000
	W	mm	1150	1150	1220	1260	1260	1310	1410	1410	1460	1460	1500	1560	1660	1700	1700
	H	mm	1440	1440	1490	1490	1490	1680	1700	1760	1800	1800	1800	1760	1850	1870	1870
机组重量 Weight		kg	1590	1760	2290	2400	2450	2550	3100	3800	4200	4800	5200	5800	7400	8200	8400

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型水冷冷水机组主要技术性能参数表2 (R134a)

Main technology parameter list 2 of the water cooled water chiller(R134a)

机组型号 LSBLG Unit model LSBLG			1280A	1350A	1510A	1680A	1880A	2010A	1360A	1560A	1640A	2080A	2320A	2560A	2700A	3020A	3360A	3760A	4020A
制冷量 Cooling capacity	kW		1282	1350	1510	1680	1880	2010	1356	1564	1640	2072	2324	2564	2700	3020	3360	3760	4020
	10^4kcal/h		110.3	116.1	129.9	144.5	161.7	172.9	116.6	134.5	141.0	178.2	199.9	220.5	232.2	259.7	289.0	323.4	345.7
	RT		366.3	385.7	431.4	480.0	537.1	574.3	387.4	446.9	468.6	592.0	664.0	732.6	771.4	862.9	960.0	1074.3	1148.6
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire																
	额定电流 Nominal current	A	432	449	500	559	628	658	483	549	561	701	788	864	898	1000	1117	1255	1316
	输入功率 Input power	kW	250.4	260.0	289.8	323.6	363.6	381.2	280.0	318.0	325.2	406.4	456.8	500.8	520.0	579.6	647.2	727.2	762.4
运行控制方式 Operating control way			可编程控制器 programmable controller																
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%																
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor																
	数量 Quantity	台	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4
	加油量 Oil charge	L	2×25	2×28	2×28	2×28	2×28	2×28	4×20	4×20	4×20	4×25	4×25	4×25	4×28	4×28	4×28	4×28	4×28
制冷剂 Refrigerant	种类 Type		R134a																
	充注量 Charge quantity	kg	336	354	396	441	493	527	356	410	430	543	610	673	708	792	881	986	1054
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																
	进/出水温度 Inlet/outlet water T.	℃	12 / 7																
	水流量 Water flow	m^3/h	221	232	260	289	323	346	233	269	282	356	400	441	464	519	578	647	691
	水侧压力降 Water side pressure drop	kpa	≤70																
	接管规格 Pipe specification	DN	200	200	200	200	200	200	200	200	200	200	250	250	250	250	300	300	300
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																
	进/出水温度 Inlet/outlet water T.	℃	30 / 35																
	水流量 Water flow	m^3/h	276	290	325	361	404	432	292	336	353	445	500	551	581	649	722	808	864
	水侧压力降 Water side pressure drop	kpa	≤70																
	接管规格 Pipe specification	DN	200	200	200	200	200	200	2×125	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200
外形尺寸 External dimensions	L	mm	5400	5800	6200	6400	6600	6600	5200	5200	5400	5400	5400	5400	5800	6200	6400	6600	6600
	W	mm	1800	1800	1800	1800	1900	1900	3000	3000	3000	3000	3000	3100	3400	4000	4500	5000	5000
	H	mm	1870	1870	1900	1900	2000	2000	1900	2000	2000	2000	2100	2100	2100	2200	2500	2500	2500
机组重量 Weight		kg	8500	8600	8700	8800	9000	9100	9200	9400	9800	10200	10600	11600	12800	13900	15000	16200	17400

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型全热回收式水冷冷水机组主要技术性能参数表1 (R134a)

The main technical performance parameter table 1 of the green, environment-friendly and total heat recovery type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			110AS	140AS	170AS	200AS	220AS	270AS	340AS	410AS	520AS	580AS	640AS	680AS	820AS	1040AS	1160AS
制冷量 Cooling capacity	kW		106	137	168	196	221	270	339	410	518	581	641	678	820	1036	1162
	10^4kcal/h		9.1	11.8	14.4	16.9	19.0	23.2	29.2	35.3	44.5	50.0	55.1	58.3	70.5	89.1	99.9
	RT		30.3	39.1	48.0	56.0	63.1	77.1	96.9	117.1	148.0	166.0	183.1	193.7	234.3	296.0	332.0
热回收 Energy recovery	热量 Quantity of heat	kW	109	141	173	202	228	278	349	422	534	598	660	698	845	1067	1197
	热回收水温度 Energy recovery water T.	℃	45 – 55														
	水流量 Water flow	m^3/h	18.8	24.3	29.8	34.8	39.2	47.9	60.1	72.7	91.9	103.1	113.7	120.3	145.5	183.8	206.2
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	125	125	125	125	125	150	150	150
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire														
	额定电流 Nominal current	A	39	49	59	69	79	98	121	140	175	197	216	242	281	351	394
	输入功率 Input power	kW	22.4	28.3	34.3	40.0	46.0	56.8	70.0	81.3	101.6	114.2	125.2	140.0	162.6	203.2	228.4
运行控制方式 Operating control way			可编程控制器 programmable controller														
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%														
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor														
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
	加油量 Oil charge	L	11	13	13	13	16	16	20	20	25	25	25	2×20	2×20	2×25	2×25
制冷剂 Refrigerant	种类 Type		R134a														
	充注量 Charge quantity	kg	28	36	44	13	58	71	89	108	136	152	168	178	215	272	305
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	12 / 7														
	水流量 Water flow	m^3/h	18	24	29	34	38	46	58	71	89	100	110	117	141	178	200
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	125	125	125	125	125	150	150	150
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger														
	进/出水温度 Inlet/outlet water T.	℃	30 / 35														
	水流量 Water flow	m^3/h	23	29	36	42	48	58	73	88	111	125	138	146	176	223	250
	水侧压力降 Water side pressure drop	kpa	≤70														
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	125	125	125	125	125	150	150	150
外形尺寸 External dimensions	L	mm	3000	3000	3300	3300	3300	3300	3800	3800	3800	3800	3850	4200	4800	4800	5000
	W	mm	1150	1150	1220	1260	1260	1310	1410	1410	1460	1460	1500	1560	1660	1700	1700
	H	mm	1440	1440	1490	1490	1490	1680	1700	1760	1800	1800	1800	1760	1850	1870	1870
机组重量 Weight		kg	1640	1810	2340	2450	2500	2600	3150	3850	4270	4870	5270	5900	7500	8340	8540

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型全热回收式水冷冷水机组主要技术性能参数表2 (R134a)

The main technical performance parameter table 2 of the green, environment-friendly and total heat recovery type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			1280AS	1350AS	1510AS	1680AS	1880AS	2010AS	1360AS	1560AS	1640AS	2080AS	2320AS	2560AS	2700AS	3020AS	3360AS	3760AS	4020AS
制冷量 Cooling capacity	kW		1282	1350	1510	1680	1880	2010	1356	1564	1640	2072	2324	2564	2700	3020	3360	3760	4020
	10^4kcal/h		110.3	116.1	129.9	144.5	161.7	172.9	116.6	134.5	141.0	178.2	199.9	220.5	232.2	259.7	289.0	323.4	345.7
	RT		366.3	385.7	431.4	480.0	537.1	574.3	387.4	446.9	468.6	592.0	664.0	732.6	771.4	862.9	960.0	1074.3	1148.6
热回收 Energy recovery	热量 Quantity of heat	kW	1320	1391	1555	1730	1936	2070	1397	1611	1689	2134	2394	2641	2781	3111	3461	3873	4141
	热回收水温度 Energy recovery water T.	℃	45 – 55																
	水流量 Water flow	m^3/h	227.4	239.5	267.9	298.1	333.5	356.6	240.6	277.5	291.0	367.6	412.3	454.9	479.0	535.8	596.1	667.1	713.2
	接管规格 Pipe specification	DN	200	200	200	200	200	200	2×125	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y–△ Three–phase five–wire																
	额定电流 Nominal current	A	432	449	500	559	628	658	483	549	561	701	788	864	898	1000	1117	1255	1316
	输入功率 Input power	kW	250.4	260.0	289.8	323.6	363.6	381.2	280.0	318.0	325.2	406.4	456.8	500.8	520.0	579.6	647.2	727.2	762.4
运行控制方式 Operating control way			可编程控制器 programmable controller																
能量控制 Energy control			每台压缩机 25%–100% Per Compressor 25%~100%																
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi–hermetic screw compressor																
	数量 Quantity	台	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4
	加油量 Oil charge	L	2×25	2×28	2×28	2×28	2×28	2×28	4×20	4×20	4×20	4×25	4×25	4×25	4×28	4×28	4×28	4×28	4×28
制冷剂 Refrigerant	种类 Type		R134a																
	充注量 Charge quantity	kg	336	354	396	441	493	527	356	410	430	543	610	673	708	792	881	986	1054
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																
	进/出水温度 Inlet/outlet water T.	℃	12 / 7																
	水流量 Water flow	m^3/h	221	232	260	289	323	346	233	269	282	356	400	441	464	519	578	647	691
	水侧压力降 Water side pressure drop	kpa	≤70																
	接管规格 Pipe specification	DN	200	200	200	200	200	200	200	200	200	200	250	250	250	250	300	300	300
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																
	进/出水温度 Inlet/outlet water T.	℃	30 / 35																
	水流量 Water flow	m^3/h	276	290	325	361	404	432	292	336	353	445	500	551	581	649	722	808	864
	水侧压力降 Water side pressure drop	kpa	≤70																
	接管规格 Pipe specification	DN	200	200	200	200	200	200	2×125	2×150	2×150	2×150	2×200	2×200	2×200	2×200	2×200	2×200	2×200
外形尺寸 External dimensions	L	mm	5400	5800	6200	6400	6600	6600	5200	5200	5400	5400	5400	5400	5800	6200	6400	6600	6600
	W	mm	1800	1800	1800	1800	1900	1900	3000	3000	3000	3000	3000	3100	3400	4000	4500	5000	5000
	H	mm	1870	1870	1900	1900	2000	2000	1900	2000	2000	2000	2100	2100	2100	2200	2500	2500	2500
机组重量 Weight		kg	8650	8750	8850	8950	9150	9250	9400	9600	10000	10400	10800	11800	13000	14100	15200	16400	17600

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型满液式水冷冷水机组主要技术性能参数表1 (R134a)

The main technical performance parameter table 1 of the green, environment-friendly and flooded type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			130AM	180AM	220AM	240AM	280AM	320AM	370AM	410AM	430AM	470AM	530AM	580AM	640AM
制冷量 Cooling capacity	kW		127	177	219	240	276	317	369	404	431	466	526	578	634
	10^4kcal/h		10.9	15.2	18.8	20.6	23.7	27.3	31.7	34.7	37.1	40.1	45.2	49.7	54.5
	RT		36.3	50.6	62.6	68.6	78.9	90.6	105.4	115.4	123.1	133.1	150.3	165.1	181.1
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire												
	额定电流 Nominal current	A	41	59	69	77	86	101	116	126	130	144	159	176	202
	输入功率 Input power	kW	23.5	34.1	40.0	44.4	49.7	58.5	67.0	73.1	75.3	83.2	92.4	102.0	117.0
运行控制方式 Operating control way			可编程控制器 programmable controller												
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%												
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor												
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	2
	加油量 Oil charge	L	11	13	13	13	17	17	17	21	21	21	25	25	2×17
制冷剂 Refrigerant	种类 Type		R134a												
	充注量 Charge quantity	kg	52	72	89	98	113	129	151	165	176	190	215	236	259
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	12 / 7												
	水流量 Water flow	m^3/h	21.8	30.4	37.7	41.3	47.5	54.5	63.5	69.5	74.1	80.1	90.5	99.4	109.0
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	100	100	100	125	125	125
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	30 / 35												
	水流量 Water flow	m^3/h	28.4	39.6	49.0	53.7	61.7	70.9	82.5	90.3	96.4	104.2	117.6	129.2	141.7
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	100	100	100	125	125	125
外形尺寸 External dimensions	L	mm	3400	3600	3600	3600	3800	3800	3800	3900	3900	3900	3900	3900	4200
	W	mm	1300	1400	1400	1400	1400	1500	1500	1600	1600	1600	1600	1600	1700
	H	mm	1500	1600	1600	1600	1700	1700	1700	1800	1800	1800	1800	1800	1930
机组重量 Weight		kg	1700	1900	2300	2500	2900	3200	3300	3600	3800	4000	4500	4700	4800

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型满液式水冷冷水机组主要技术性能参数表2 (R134a)

The main technical performance parameter table 2 of the green, environment-friendly and flooded type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			740AM	810AM	860AM	930AM	1050AM	1160AM	1270AM	1450AM	1530AM	1700AM	1900AM	2270AM	2760AM	3060AM
制冷量 Cooling capacity	kW		738	808	862	932	1052	1156	1268	1449	1526	1700	1898	2264	2754	3062
	10^4kcal/h		63.5	69.5	74.1	80.2	90.5	99.4	109.0	124.6	131.2	146.2	163.2	194.7	236.8	263.3
	RT		210.9	230.9	246.3	266.3	300.6	330.3	362.3	414.0	436.0	485.7	542.3	646.9	786.9	874.9
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire													
	额定电流 Nominal current	A	231	252	260	287	319	352	377	442	459	512	572	673	818	910
	输入功率 Input power	kW	134.0	146.2	150.6	166.4	184.8	204.0	218.2	256.2	266.0	296.6	331.2	390.0	474.2	527.4
运行控制方式 Operating control way			可编程控制器 programmable controller													
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%													
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor													
	数量 Quantity	台	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	2×17	2×21	2×21	2×21	2×25	2×25	2×25	2×25	2×28	2×28	2×28	2×28	2×28	2×28
制冷剂 Refrigerant	种类 Type		R134a													
	充注量 Charge quantity	kg	301	330	352	381	430	472	518	592	623	694	775	924	1124	1250
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	12 / 7													
	水流量 Water flow	m^3/h	126.9	139.0	148.2	160.3	180.9	198.8	218.1	249.2	262.4	292.3	326.4	389.3	473.6	526.6
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	125	150	150	150	150	150	150	200	200	200	200	250	250	250
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	30 / 35													
	水流量 Water flow	m^3/h	165.0	180.6	192.7	208.4	235.2	258.4	283.5	323.9	341.2	380.1	424.3	506.1	615.7	684.5
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	125	150	150	150	150	150	150	200	200	200	200	250	250	250
外形尺寸 External dimensions	L	mm	4500	4500	4500	4700	4700	4800	4900	5100	5400	5600	5800	6000	6000	6000
	W	mm	1700	1760	1760	1860	1860	1960	1960	1960	2100	2100	2100	2300	2500	2800
	H	mm	1930	1930	1930	1930	1930	2020	2020	2020	2080	2080	2080	2100	2100	2150
机组重量 Weight		kg	5700	6100	6600	7200	7800	8200	8800	9200	9300	9500	9800	10100	10500	10800

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型满液全热回收式水冷冷水机组主要技术性能参数表1 (R134a)

The main technical performance parameter table 1 of the green, environment-friendly, flooded and total heat recovery type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			130AMS	180AMS	220AMS	240AMS	280AMS	320AMS	370AMS	410AMS	430AMS	470AMS	530AMS	580AMS	640AMS
制冷量 Cooling capacity	kW		127	177	219	240	276	317	369	404	431	463	526	578	634
	10^4kcal/h		10.9	15.2	18.8	20.6	23.7	27.3	31.7	34.7	37.1	39.8	45.2	49.7	54.5
	RT		36.3	50.6	62.6	68.6	78.9	90.6	105.4	115.4	123.1	132.3	150.3	165.1	181.1
热回收 Energy recovery	热量 Quantity of heat	kW	131	182	226	247	284	327	380	416	444	477	542	595	653
	热回收水温度 Energy recovery water T.	℃	45 – 55												
	水流量 Water flow	m^3/h	22.5	31.4	38.9	42.6	49.0	56.2	65.5	71.7	76.5	82.1	93.3	102.5	112.5
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	100	100	100	125	125	125
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire												
	额定电流 Nominal current	A	41	59	69	77	86	101	116	126	130	144	159	176	202
	输入功率 Input power	kW	23.5	34.1	40.0	44.4	49.7	58.5	67.0	73.1	75.3	83.2	92.4	102.0	117.0
运行控制方式 Operating control way			可编程控制器 programmable controller												
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%												
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor												
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	1	1	2
	加油量 Oil charge	L	11	13	13	13	17	17	17	21	21	21	25	25	2×17
制冷剂 Refrigerant	种类 Type		R134a												
	充注量 Charge quantity	kg	52	72	89	98	113	129	151	165	176	189	215	236	259
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	12 / 7												
	水流量 Water flow	m^3/h	21.8	30.4	37.7	41.3	47.5	54.5	63.5	69.5	74.1	79.6	90.5	99.4	109.0
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	100	100	100	125	125	125
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger												
	进/出水温度 Inlet/outlet water T.	℃	30 / 35												
	水流量 Water flow	m^3/h	27.3	38.1	47.1	51.6	59.3	68.2	79.3	86.9	92.7	99.5	113.1	124.3	136.3
	水侧压力降 Water side pressure drop	kpa	≤70												
	接管规格 Pipe specification	DN	65	65	80	80	80	100	100	100	100	100	125	125	125
外形尺寸 External dimensions	L	mm	3400	3600	3600	3600	3800	3800	3800	3900	3900	3900	3900	3900	4200
	W	mm	1300	1400	1400	1400	1400	1500	1500	1600	1600	1600	1600	1600	1700
	H	mm	1500	1600	1600	1600	1700	1700	1700	1800	1800	1800	1800	1800	1930
机组重量 Weight		kg	1750	1950	2350	2550	2950	3250	3350	3650	3850	4060	4560	4760	4880

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型满液全热回收式水冷冷水机组主要技术性能参数表2 (R134a)

The main technical performance parameter table 2 of the green, environment-friendly, flooded and total heat recovery type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			740AMS	810AMS	860AMS	930AMS	1050AMS	1160AMS	1270AMS	1450AMS	1530AMS	1700AMS	1900AMS	2270AMS	2760AMS	3060AMS
制冷量 Cooling capacity	kW		738	808	862	926	1052	1156	1268	1449	1526	1700	1898	2264	2754	3062
	10^4kcal/h		63.5	69.5	74.1	79.6	90.5	99.4	109.0	124.6	131.2	146.2	163.2	194.7	236.8	263.3
	RT		210.9	230.9	246.3	264.6	300.6	330.3	362.3	414.0	436.0	485.7	542.3	646.9	786.9	874.9
热回收 Energy recovery	热量 Quantity of heat	kW	760	832	888	954	1084	1191	1306	1492	1572	1751	1955	2332	2837	3154
	热回收水温度 Energy recovery water T.	℃	45 – 55													
	水流量 Water flow	m^3/h	130.9	143.4	152.9	164.3	186.6	205.1	225.0	257.1	270.7	301.6	336.7	401.7	488.6	543.2
	接管规格 Pipe specification	DN	125	150	150	150	150	150	150	200	459	200	200	250	250	250
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y–△ Three–phase five–wire													
	额定电流 Nominal current	A	231	252	260	287	319	352	377	442	200	512	572	673	818	910
	输入功率 Input power	kW	134.0	146.2	150.6	166.4	184.8	204.0	218.2	256.2	266.0	296.6	331.2	390.0	474.2	527.4
运行控制方式 Operating control way			可编程控制器 programmable controller													
能量控制 Energy control			每台压缩机 25%–100% Per Compressor 25%~100%													
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi–hermetic screw compressor													
	数量 Quantity	台	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	2×17	2×21	2×21	2×21	2×25	2×25	2×25	2×25	2×28	2×28	2×28	2×28	2×28	2×28
制冷剂 Refrigerant	种类 Type		R134a													
	充注量 Charge quantity	kg	301	330	352	378	430	472	518	592	623	694	775	924	1124	1250
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	12 / 7													
	水流量 Water flow	m^3/h	126.9	139.0	148.3	159.3	180.9	198.8	218.1	249.2	262.5	292.4	326.5	389.4	473.7	526.7
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	125	150	150	150	150	150	150	200	200	200	200	250	250	250
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger													
	进/出水温度 Inlet/outlet water T.	℃	30 / 35													
	水流量 Water flow	m^3/h	158.7	173.7	185.3	199.1	226.2	248.5	272.6	311.5	328.1	365.5	408.1	486.8	592.1	658.3
	水侧压力降 Water side pressure drop	kpa	≤70													
	接管规格 Pipe specification	DN	125	150	150	150	150	150	150	200	200	200	200	250	250	250
外形尺寸 External dimensions	L	mm	4500	4500	4500	4700	4700	4800	4800	5100	5400	5600	5800	6000	6000	6000
	W	mm	1700	1760	1760	1860	1860	1960	1960	1960	2100	2100	2100	2300	2500	2800
	H	mm	1930	1930	1930	1930	1930	2020	2020	2020	2080	2080	2080	2100	2100	2150
机组重量 Weight		kg	5780	6180	6680	7300	7900	8300	8900	9300	9440	9640	9940	10260	10660	10960

注：1、能量控制：标准配置 25％～100％为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

绿色环保型降膜式水冷冷水机组主要技术性能参数表 (R134a)

The main technical performance parameter table of the green, environment-friendly and falling-film type of water-cooled chillers (R134a)

机组型号 LSBLG Unit model LSBLG			200AJ	230AJ	260AJ	300AJ	330AJ	360AJ	390AJ	440AJ	480AJ	560AJ	600AJ	660AJ	720AJ	880AJ	1120AJ	1220AJ	1370AJ	1520AJ	1700AJ	1920AJ	2360AJ	2880AJ
制冷量 Cooling capacity	kW		198	230	260	300	331	360	390	439	480	558	600	662	720	878	1116	1218	1372	1516	1702	1920	2362	2876
	10^4kcal/h		17.0	19.8	22.4	25.8	28.5	31.0	33.5	37.8	41.3	48.0	51.6	56.9	61.9	75.5	96.0	104.7	118.0	130.4	146.4	165.1	203.1	247.3
	RT		56.6	65.7	74.3	85.7	94.6	102.9	111.4	125.4	137.1	159.4	171.4	189.1	205.7	250.9	318.9	348.0	392.0	433.1	486.3	548.6	674.9	821.7
电器参数 Electrical equipment parameter	启动方式 Start way		三相五线/380/50HZ Y-△ Three-phase five-wire																					
	额定电流 Nominal current	A	60	69	78	90	100	107	114	128	140	163	180	200	213	256	326	355	399	437	490	545	666	809
	输入功率 Input power	kW	34.7	40.0	45.2	52.2	57.8	61.8	65.9	74.3	81.2	94.4	104.4	115.6	123.6	148.6	188.8	205.4	231.0	253.2	284.0	316.0	385.6	468.8
运行控制方式 Operating control way			可编程控制器 programmable controller																					
能量控制 Energy control			每台压缩机 25%-100% Per Compressor 25%~100%																					
压缩机 Compressor	类型 Type		进口半封闭螺杆式压缩机 Imported semi-hermetic screw compressor																					
	数量 Quantity	台	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
	加油量 Oil charge	L	13	13	17	17	17	17	17	21	21	25	2x17	2x17	2x17	2x21	2x21	2x25	2x25	2x25	2x28	2x28	2x28	2x28
制冷剂 Refrigerant	种类 Type		R134a																					
	充注量 Charge quantity	kg	51	59	67	77	85	93	100	113	123	143	154	170	185	226	287	313	353	390	438	494	607	740
冷冻水 Chilled water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																					
	进/出水温度 Inlet/outlet water T.	℃	12 / 7																					
	水流量 Water flow	m^3/h	34.1	39.6	44.7	51.6	56.9	61.9	67.1	75.5	82.6	96.0	103.2	113.9	123.8	151.0	192.0	209.5	236.0	260.8	292.7	330.2	406.3	494.7
	水侧压力降 Water side pressure drop	kpa	≤70																					
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	150	150	150	150	200	200	200	200	250	250
冷却水 Cooling water	型式 Pattern		壳管式换热器 Shell and tube type exchenger																					
	进/出水温度 Inlet/outlet water T.	℃	30 / 35																					
	水流量 Water flow	m^3/h	42.6	49.5	55.9	64.5	71.2	77.4	83.9	94.4	103.2	120.0	129.0	142.3	154.8	188.8	239.9	261.9	295.0	325.9	365.9	412.8	507.8	618.3
	水侧压力降 Water side pressure drop	kpa	≤70																					
	接管规格 Pipe specification	DN	80	80	80	80	100	100	100	100	125	125	125	125	150	150	150	150	200	200	200	200	250	250
外形尺寸 External dimensions	L	mm	3600	3800	3800	3800	3800	3800	3900	3900	3900	3900	3900	4200	4500	4600	4700	4700	5000	5200	6000	6400	6400	6600
	W	mm	1400	1400	1400	1400	1500	1500	1600	1600	1600	1600	1600	1700	1700	1760	1760	1860	1960	1960	1960	1960	1960	1960
	H	mm	1600	1600	1700	1700	1700	1700	1700	1800	1800	1800	1800	1930	1930	1930	1930	1930	2020	2020	2030	2030	2030	2030
机组重量 Weight		kg	2300	2500	2900	3000	3200	3300	3600	3800	4000	4500	4700	4800	5700	6100	6600	7200	8800	9000	9400	9600	10000	11000

注：1、能量控制：标准配置 25%～100%为四段式；若需连续控制，须特殊定货。
2、制冷量及功率标定工况：冷冻水进水温度12℃，出水温度7℃；冷却水进水温度30℃，出水温度35℃。
3、工作范围：冷却水进水温度18℃～32℃，冷却水出水温度23℃～37℃；冷冻水出水温度5℃～20℃，冷冻水进水温度10℃～25℃。

Note：1、Energy control：Noted dispose 25%~100% is four sections；If needs the stepless control, must specially order.
2、Cooling capacity and nominal power operating mode：Chilled water entering T. is 12℃, leaving T. 7℃；Cooling water entering T. is 30℃, leaving T. 35℃；
3、Operating region：Cooling water entering T. is 18℃~32℃, cooling water leaving T. is 23℃~37℃；Chilled water leaving T. is 5℃~20℃, chilled water entering T. is10℃~25℃；

机组吊运及安装
Lift and installment of the unit

中央空调机组一定要请专业人员安装，不可自行安装。安装时，应确保满足以下条件：

（一）机房要求

1、为了便于设备操作和设备检修，机组的主操作面，应留有1–1.5米的空间，换热器的两端留有足够维修空间，其余间隔距离至少能让设备管理人员正常通行。

2、机组运行时，因压缩机排气端、排气管、冷凝器外壳的温度均高于环境温度而向四周散发热量，使机房温度升高，恶化电动机及操作人员的工作环境，故机房应保持良好通风（如有条件可安装通风设备），以保证机房温度不超过35℃。

3、为了不使机组运行噪声外传，影响周围环境，机房应有良好隔音效果；如有条件，可在机房内采取相应的隔音措施。

（二）机组搬运

机组在吊运过程中，须小心操作注意安全，以免伤及人身或设备。在起吊绳索与机组接触的地方，要放置垫块；对重量较重的机组，在机器顶部之上的吊索之间要加支撑杆，以避免吊索对机组的压力。搬运时，宜采用叉车或吊车；吊装中，吊索与机组应连接牢固，机组平稳无倾斜，同时确保吊索不与机组热交换器、压缩机、电控箱、制冷器件和管道接触，以免伤及设备。吊装方法如下图所示：

The central air conditioning unit must be installed by the specialist, mustn't install by oneself. When installed must satisfy the following condition.

1.Engine room request:

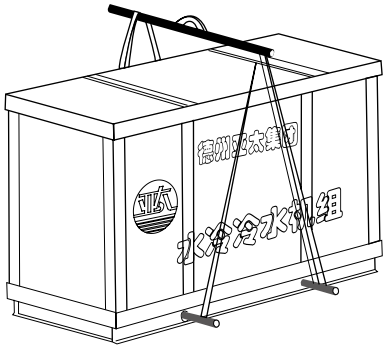
(1).In front of the unit operation surface, should have an 1-1.5 meter space in order to be advantageous for the operation and the overhaul. At the either end of the heat interchanger, should have a space or window for pulling out heat pipe. The other both side gaps are big enough for operator walking.

(2). The engine room should maintain a good ventilation (installing a draft equipment is better) to guarantee the its temperature does not surpass 35℃, because when working the exhaust end and exhaust pipe of the compressor, and the condenser casing may send out heat to the ambient, lets the engine room T. be up, and worsens the electric motor and operator's working condition.

(3).The engine room should have a good sound-insulated effect, so that no noise spreads into the environment. If possible, the corresponding sound-insulated measure should be taken.

2.Chiller transport

During the lifts and the transport, must operate carefully to keep the person or equipment from accident. At the contact place of the rope and the unit, you should lay a cushion. If the chiller is very heavy, you must put a sustainer between the ropes to reduce the pressure from the ropes. When transporting, suitably uses forklift or crane. In the hoisting, the suspension cable and the unit should connect reliably, the unit must be steady and no inclination. At the same time, makes sure that the ropes mustn't touch with the heat interchanger, the compressor, the electric control box, the refrigeration component and the pipeline, in case the unit is ruined. The hoisting method is shown as following chart:

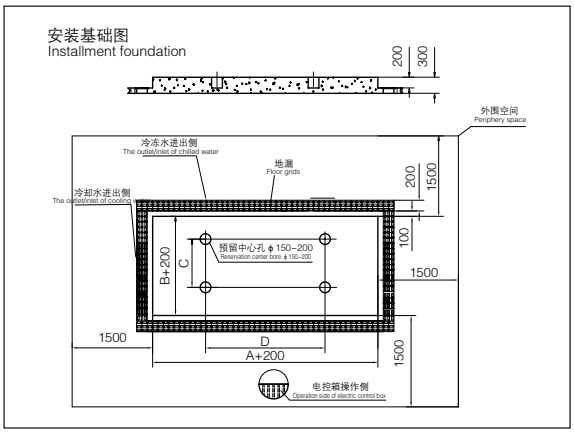


（三）设备安装基础

机组运转平稳，有轻微振动，一般情况不需作防震基础。为了便于安装和维护，安装基础应高出地面15~20厘米，基础平面必须保证水平平整，同时在安装基础四周设置浅水槽，以便于机组冬季停止运行时排放机组冷凝器、蒸发器中存水。基础平面图见下图：

3.Equipment installation foundation

The chiller runs smoothly, sometimes has a slight vibration, so the quakeproof basis is usually unnecessary. The foundation should be as tall as 15~20cm than the ground in order to install and maintain. The basic plane level must be is smooth. At the same time there should be a ripple tank around the foundation, to discharge the water stored in the condenser and the evaporator when the chiller does not work in winter. The foundation plan is as follows.



（四）机组的安装

每台亚太牌机组在出厂前都经过了严格的检测和测试，确保机组的性能指标和产品质量。用户在搬动和安装过程中必须十分小心，尤其不得损坏机组的控制系统和管路。

1、在拆开外包装之前，尽可能将机组运至靠近安装位置的地方，保持机组向上。

2、吊装中，吊索强度必须三倍于机组重量，吊装时人绝不允许站在机组底下。机组的重量请查机组铭牌。

3、机组就位于基础之后，必须作水平校正，水平度偏差应为0.02%以内。

4、与机组连接的冷却水，冷冻水管道，进出口方位必须按照规定，管道通径不可过小。管道上应安装水流开关，并与压缩机连锁控制，确保机组安全可靠运行。

5、为了便于观察机组及整个空调系统的运行情况和变化，冷却水、冷冻水进出口处均应装设温度、压力指示仪表。

6、向机组提供的动力电源，容量要足够，电源电压波动不能超过±10%，机组应按要求妥善接地。

（五）水系统及水管的配接

1、冷冻水管必须保温，以防止冷量损失和凝结水形成。

2、为保证水质，机组的水系统须安装水处理设备，以免结垢。

3、接管的接口尺寸应符合《机组性能参数表》要求。

4、机组冷冻水系统应按要求安装合适的膨胀水箱，膨胀水箱具备自动补水及冷冻水系统的膨胀收缩作用。

5、水系统应按要求安装自动排气阀。自动排气阀必须设在冷冻水系统最高点。在水系统管道连接完毕，必须进行管路清洗、检漏试压并经检验合格后，打开排气阀，排尽系统内空气后关闭。

6、循环水初次运行，先关闭进、出口阀门，开启旁通阀门，待

水泵运行一段时间后，检查水系统清洁情况，如水质脏，需清洁水管路，直至清洁为止，如管道内有杂物需清洁水过滤器，全部清洁完毕，方可打开进出口阀门，关闭旁通阀门，开始投入正常使用。

7、多台机组并联时须设分水器、集水器及水力平衡阀。

8、排水阀必须安装在水系统的最低点处。

9、水管的设计请参考《空气调节设计手册》，工程施工、验收参见GB50243《通风与空调工程施工及验收规范》。

（六）电源连接

1、按照要求进行配线和接线，配线和接线严格按《机组电器原理图》执行。

2、机组应有良好的接地。接地线切不可接到煤气管、水管、电话线上，接地不良会导致触电事故。

3、动力电源接线必须确保相序正确（L1、L2、L3对应端子排上R、S、T）。相序不对时，系统不能启动，控制器缺电无任何显示，此时应认真检查电源相序。

（七）维修和保养

1、维修：机组的维修和维护只能由受过专业训练且有经验的专职人员来进行。设备检修工作完成后重新开机前应仔细检查机组各功能器件、保护装置和控制元件是否正常。确认系统正常后，严格按《使用说明书》规定的开机规程重新开机。

2、保养：为保持机组优异的性能、可靠性和使用寿命，请严格按《使用说明书》规定要求进行正确、定期的设备维护。冬季气温低于或接近0℃的地区，如冬季机组停止运行，冷冻水系统和冷却水系统（含机组蒸发器、冷凝器）必须将系统中存水排除干净，以免气温在0℃以下时发生结冰现象，致使水系统管路和机组发生冻裂现象，造成无谓的设备损失。

4.Unit installment

Each Yatai unit has passed through the strict examination and test before leaving the plant to guarantee the performance data and the quality. The user have to be extremely careful when the unit is moved or installed, especially mustn't damage the control system and the pipeline.

(1).Before opening the outside wrapping, move the unit nearly to installment position as far as possible and make sure the unit is up.

(2).In the hoisting, the rope strength must be three times the weight of the unit. When lifting, man mustn't stand under the unit. The unit weight may be looked up its data plate.

(3).After located on the foundation, must make a horizontal adjustment, the level deviation should be less 0.02%.

(4).The inlet and the outlet position of the cooling and chilled water pipe which connects with the unit must defer to the stipulation. The pipe diameter is not too small. A fluent switch should be installed on the pipeline and linked with unit to guarantee the unit works safely and reliably.

(5). The temperature and the pressure gauges must be installed at the inlet and the outlet of the cooling and chilled water in order to observe the unit and the entire air-conditioning system working.

(6).The power and the capacity must be enough. The voltage flutter should not be over ± 10%, the unit should earth properly according to the request.

5.Water system and pipe connection

(1).The chilled water pipe must be warm-keeping in order to prevent the energy loosing and the condensing water forming.

(2).A filter must be fitted in the inlet pipeline to keep the water quality is good.

(3).The pipe connection size should conform to the request of "Unit Performance Parameter list".

(4).The appropriate expansion water tank should be fixed in the unit chilled water system according to the request, it is located at the highest point of this system to maintain the system's automatic gas-exhausted function. The expansion tank has the function of automatic water-made-up and inflation and contraction of the chilled water system.

(5).The automatic steam-exhausted valve and the fluent switch should be installed in the water system. The valve must be fixed at the highest point of the chilled water system. After the water pipeline connecting, must have a leakage and pressure test. If qualified after this examination, turn on the steam-exhausted valve, drain away the air in the chilled water system, then is closed. If the water and the pipe are not clean, after 30 minutes of the pump running, clean the filter.

(6).When the circulating water move at the first time, close the inlet and outlet valve and open the by-pass valve first. After the pump working a few moments, open the outlet valve just, and close the by-pass valve, the put into the normal use.

(7).Must fix the distributor, the collector and the hydrodynamic balance valve when multi-units are paralleled.

(8).The water-drained valve must be installed at the lowest point of the water system.

(9).When designing the water pipe, please refer to "Air conditioning Design Handbook". When constructing and approving the project, please refer to GB50243 "To ventilate with Air conditioning Project Construction And Approval Standard".

6.Power source connection

(1).Match and connect the wire according to the request, strictly refer to "Equipment Electric Appliance Schematic Diagram".

(2).Must have a good earth. The earth wire mustn't touch the gas pipe, water pipe and telephone line. Bad earth may have a electric shock accident.

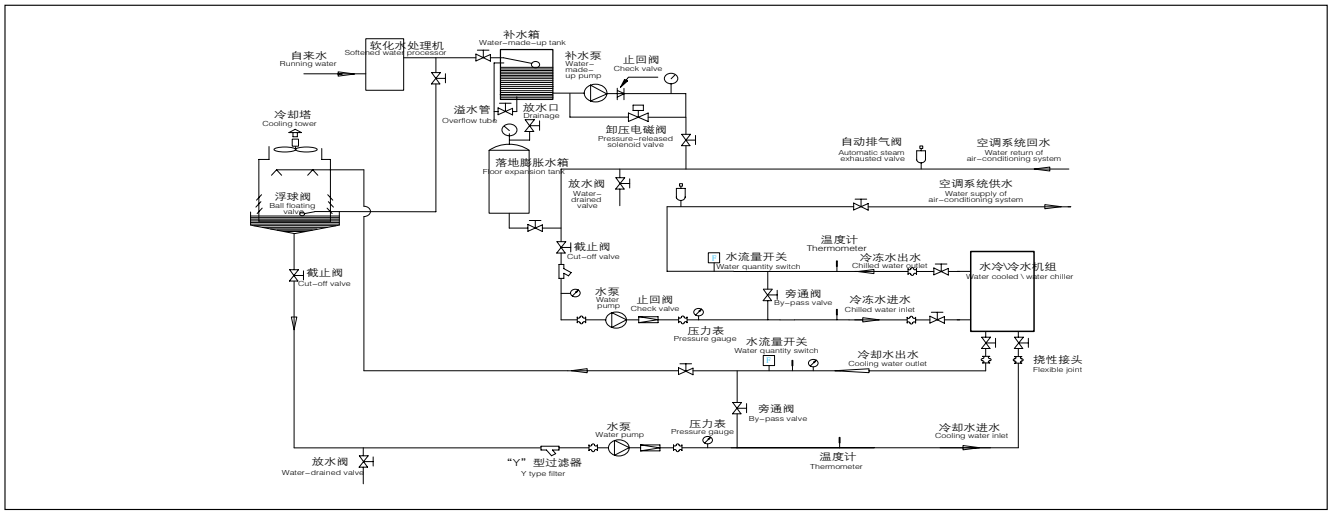
(3).The power-supply wiring must guarantee the phases are correct (L1, L2, L3 correspond with the terminal's R, S, T). If the phases are wrong the unit cannot work, the controller electric lacking has no indication, you should inspect the phases earnestly this time.

7.Service and maintenance

1、Service:The service and the maintenance only can be done by the trained and experienced specialist. After overhauling, you should carefully inspect all the parts, protection devices and controllers before re-starting the unit.

After confirming, re-start the unit according to the regulations stipulated in the "Instruction of Equipment Operation ".

2、Maintenance:Please do the regular and right maintenance strictly according to the "Instruction of Equipment Operation" in order to maintain the unit outstanding performance,the reliability and the service life.At the areas where the winter temperature is lower than or approaches 0 ℃, if the chiller does not work in winter, the water stored in chilled and cooling water system must be drain away completely in case the ice-made or crack would be taken place and the senseless losses happened.



选型指导
Shaping instruction

一、舒适空调的室内设计参数
Ⅰ The design data of the comfortable air conditioning room

人体活动 Human body moving	房间用途 Room usage	夏季 Summer				冬季 Winter				运行控制条件（冬夏） Operating control condition (winter summer)			
		Clo	等效温度(℃) Equivalent effective temperature (℃)	温度(℃) Temperature (℃)	湿度% Humidity %	Clo	等效温度(℃) Equivalent effective temperature (℃)	温度(℃) Temperature (℃)	湿度% Humidity %	Clo	等效温度(℃) Equivalent effective temperature (℃)	温度(℃) Temperature (℃)	湿度% Humidity %
静坐轻度活动 Sit quietly ormove light	会场、宴会厅、礼堂、剧院 Conference site、Banquet hall、Assembly hall、Theater	0.6–0.9	25	24–25	50–70	0.8–1	22	22–24	30–50	1.0–1.6	22–25	22–25	30–70
坐轻度活动 Sit or move light	办公室、银行、旅馆、餐厅、学校、住宅 Office、Bank、Hotel、Dining room、School、Housing	0.2–0.4	28	27–28	50–70	1.0–1.2	18	18–20	30–50	1.2–0.2	18–26	18–28	30–70
中等活动 Move mildly	百货公司、商店、快餐、打字 Department store、Store、Fast-food、Typing	0.2–0.4	16.5	25–26	50–70	1.0–1.2	16.5	16.5–185	30–50	1.2–0.2	16.5–26	16.5–26	30–70
观览场所 Visiting place	体育馆、展览馆 Stadium、Exhibition hall	0.2–0.4	15	27–28	50–70	1.1–1.3	15	15–18	30–50	1.3–0.2	15–28	15–28	30–70

二、建筑物冷负荷概算指标
Ⅱ The budgetary data of the building cold load

建筑物 Building		冷负荷W/m² Cooling load W/m²		逗留者m²/人 Stayer m²/People	照明W/m² Light W/m²	送风量l/sm² Air flow l/m²
		显冷负荷 Sensible cooling load	总冷负荷 Total cooling load			
办公室 Office	中部区 Middle area	65	95	10	60	5
	周边 Peripheral	110	160	10	60	6
	个人办公室 Individual office	160	240	15	60	8
	会议室 Conference room	185	270	3	60	9
学校 School	教室 Classroom	130	190	2.5	40	9
	图书馆 Library	130	190	6	30	9
	自助餐厅 Buffet	150	260	1.5	30	10
公寓 Apartment	高层，南向 High floor，Southing	110	160	10	20	10
	高层，北向 High floor，Northing	80	130	10	20	9
戏院、大会堂 Theater、Meeting hall、		110	260	1	20	12
实验室 Laboratory		150	230	10	50	10
图书馆、博物馆 Library、Museum		95	150	10	40	8
医院 Hospital	手术室 Operating room	110	380	6	20	8
	公共场所 Public place	50	150	10	30	8
卫生所、诊所 Health station、Clinic		130	200	10	40	10
理发室、美容院 Barber’s、Beauty shop		110	200	4	50	10
百货商店 Department store	地下 Underground	150	250	1.5	40	12
	中间层 Middle floor	130	225	2	60	10
	上层 High floor	110	200	3	40	8
药店 Pharmacy		110	210	3	30	10
零售店 Retail shop		110	160	2.5	40	10
精品店 Novelty shop		110	160	5	30	10
酒吧 Bar		130	260	2	15	10
餐厅 Dining room		110	320	2	17	12
饭店 Hotel	房间 Room	80	130	10	15	7
	公共场所 Public place	110	160	10	15	8
工厂 Factory	装配室 Assembly room	150	260	3.5	45	9
	轻工业 Light industry	160	260	15	30	10

三、水管流速选择

Ⅲ The choice of water speed in pipe

1、GB50013《室外给水设计规范》推荐流速

1.The recommend speed according to GB50013 " Design Standard of Water Supply Outdoor "

管道种类 Pipeline type	管道公称直径（mm） Pipeline nominal diameter(mm)		
	＜250	250-1000	＞1000
水泵吸水管 Pump suck pipe	1.0-1.2	1.2-1.6	1.5-2.0
水泵出水管 Pump outlet pipe	1.5-2.0	2.0-2.5	2.0-3.0

2、设计手册推荐的流速（m/s）

2.Recommendation water speed according to design hand book(m/s)

管道种类 Pipeline type	推荐流速（m/s） Recommendation speed	管道种类 Pipeline type	推荐流速（m/s） Recommendation speed
水泵吸水管 Pump suck pipe	1.2-2.1	集管 gathering pipe	1.2-4.5
水泵出水管 Pump outlet pipe	2.4-3.6	排水管 Discharge pipe	1.2-2.0
一般供水干管 Ordinary water supply main pipe	1.5-3.0	接自城市供水管 Connect with running water	0.9-2.0
室内供水立管 Water supply erect pipe	0.9-3.0		

3、不同直径管道和管件的比价

随着直径的增大，管道本身和阀门等配件的价格以及安装费用都大幅度上升。因此，对大直径管道，流速宜选择接近上限的数值。

3.Price ratio of different pipe diameter and type

Along with the diameter increasing, the price of pipe itself and fittings such as valve and the installment cost may rise largely. So to the large diameter, the speed should be chosen the nearly upper one.

四、膨胀水箱的设计与选用

1、水箱容积计算

★V=α*△tmax*Vc

式中V—膨胀水箱的有效容积（即相当于检查管到溢流管之间高度的容积），L；α—水的单位体积膨胀系数，α=0.00006；△tmax—系统内水温的最大波动值绝对值，考虑在膨胀水箱内应经常储存足够水容量，以补偿系统内水冷时体积的收缩量，一般以20℃水温起计算；Vc—系统内的水容量，L；

15-5℃冷系统，△max=|5℃-20℃|=15℃时；V=0.009Vc

45-40℃暖系统，△max=|45℃-20℃|=25℃时；V=0.015Vc

60-50℃暖系统，△max=|60℃-20℃|=40℃时；V=0.024Vc

95-70℃暖系统，△max=|95℃-20℃|=75℃时；V=0.045Vc

110-70℃暖系统，△max=|110℃-20℃|=90℃时；V=0.054Vc

130-70℃暖系统，△tmax=|130℃-20℃|=110℃时；V=0.066Vc

当中V的计算值小于Vc的2%时，按Vc的2%选型；双管制冷热水系统必须按制冷、供暖两种工况进行校核，按最大值造型。

Ⅳ The choice of water speed in pipe

1. Water tank volume computation

In the formula of V=α*△tmax*Vc,

V- the expansion tank valid volume (that is the volume from the inspect pipe to overflow pipe)，L; α—water expansion coefficient per volume，α=0.00006；

△tmax—water T. biggest undulating absolute value in the system，Considering there is enough water in the expansion tank always to compensate the contraction when cold, calculate by water T. 20℃ generally. ；Vc - system water capacity, L;

15-5 ℃ cold system, when△ max=|5 ℃ -20 ℃ |=15 ℃; V=0.009Vc

45-40 ℃ warm system, when△ max=|45 ℃ -20 ℃ |=25 ℃; V=0.015Vc

60-50 ℃ warm system, when△ max=|60 ℃ -20 ℃ |=40 ℃; V=0.024Vc

95-70 ℃ warm system, when△ max=|95 ℃ -20 ℃ |=75 ℃; V=0.045Vc

110-70 ℃ warm system, when△ max=|110 ℃ -20 ℃ |=90 ℃; V=0.054Vc

130-70 ℃ warm system, when△ max=|130 ℃ -20 ℃ |=110 ℃; V=0.066Vc

When the V value is smaller than 2% Vc, shape according to Vc=2%; The double barrel refrigeration hot water system must be checked according to refrigeration, heating two kind of working condition, model according to the maximum value.

2、膨胀水箱选用

（1）开式高位膨胀水箱：适用于中小型低温水供暖系统，膨胀水箱规格见下表，构造见国标图。

2.Selection of the expansion tank

（1）Is suitable in the middle or small type low T. water heating system, the specification of the expansion water tank is as follow list, the structure is as National Standard Picture.

型号 Model	方形 Square					圆形 round			
	公称容积（m^3） Nominal volume(m^3)	有效容积（m^3） Effective volume(m^3)	外形尺寸（mm） External dimensions(mm)			公称容积（m^3） Nominal volume(m^3)	有效容积（m^3） Effective volume(m^3)	筒体（mm） Barrel shell(mm)	
			长 Length	宽 Width	高 Height			内径 Inside diamete	高度 Height
1	0.5	0.61	900	900	900	0.3	0.35	900	700
2	0.5	0.63	1200	700	900	0.3	0.35	800	800
3	1.0	1.15	1100	1100	1100	0.5	0.54	900	1000
4	1.0	1.20	1400	900	1100	0.5	0.59	1000	900
5	2.0	2.27	1800	1200	1200	0.8	0.83	1000	1200
6	2.0	2.06	1400	1400	1200	0.8	0.81	1100	1000
7	3.0	3.05	2000	1400	1400	1.0	1.1	1100	1300
8	3.0	3.20	1600	1600	1400	1.0	1.2	1200	1200
9	4.0	4.32	2000	1600	1500	2.0	2.1	1400	1500
10	4.0	4.37	1800	1800	1500	2.0	2.0	1500	1300
11	5.0	5.18	2400	1600	1500	3.0	3.3	1600	1800
12	5.0	5.35	2200	1800	1500	3.0	3.4	1800	1500
13						4.0	4.2	1800	1800
14						4.0	4.6	2000	1600
15						5.0	5.2	1800	2200
16						5.0	5.2	2000	1800

（2）膨胀水箱设计安装要点

★膨胀水箱应考虑防止水箱内水的热损失和冬季防冻，应采取保温措施；

★膨胀管–在机械循环系统中接至系统定压点，一般接至水泵吸入口前；

★循环管–接至系统定压点前的水平回水干管上，该点与定压点之间应保持1.5–3m的距离；

★膨胀管、溢水管和循环管上严禁安装阀门，而排水管和信号管上应设置阀门；

★膨胀管、循环管、信号管均应保温

★一般开式膨胀水箱内的水温不应超过95℃。

(2).Design and installment gist of expansion water tank.

☆Should consider the heat loss and anti-freezing in winter, and take the heat preservation measure.

☆The bulged tube – should joint at the constant pressure spot in the machinery circulatory system, and at the inlet of the pump generally.

☆The circulation pipe-should joint at the level return water main pipe before the constant pressure spot, the distance between this point and the constant pressure spot should be 1.5-3m.

☆Valve mustn't be fixed at the bulged tube, overflow tube and circulation tube, however it should be fixed at the water-drained pipe and the signal pipe.

☆The bulged tube, circulation tube and signal pipe should be kept warm.

☆The water T. should be not more than 95℃ in the expansion tank generally.

五、常用单位换算表

V Conversion table of the common unit

类别 Category	（非法定单位）×（换算系数）=法定单位 (illegal unit) × (conversion factor) = the legal unit		
质量 Mass	lbf	0.4536	kg
	吨（t）	1000	
速度 Velocity	ft/s	0.3048	m/s
	ft/min	0.0051	
密度 Density	lb/in^3	27679.9	kg/m^3
	lb/ft^3	16.0185	
压强 Intensity of pressure	kgf/cm^2	9.8067×10^4	Pa
	mm H_2O	9.8067	
	mmHg(torr)	133.322	
	bar	1×10^5	
	atm	101325	
能、功、热 Energy、Power、Heat	KW・h	3.6×106	J
	kgf・m	9.8067	
	Hp・h	2.68×10^6	
	Btu	1055.06	
功率 Power	Kcal/h	1.163	W
	Btu/h	0.2931	
	kgf・m/s	9.8067	
	Hp	745.7	
导热系数 Heat conducting coefficient	kcal/(m・h・℃)	1.163	W/m・℃
	Btu(ft・h F)	1.7307	
传热系数 Heat transfer coefficient	$kcal/(m^2 \cdot h \cdot ℃)$	1.163	$W/(m^2 \cdot ℃)$
	$Btu/(ft^2 \cdot h \cdot ℃)$	5.678	
比热容、比热焓、比熵 Specific heat by volume、Specific heat by enthalpy、Specific entropy	kcal/(kg・℃)	4186.8	J/(kg・℃)
	Btu/(lb・F)	4186.8	
	kgf・m/(kg・℃)	9.8067	
冷量 Cooling capacity	U・S・RT	3516.91	W

空调设备咨询表
Consultation table of air conditioning equipment

设备名称 Equipment name		设备型号 Equipment model	
设备数量 Equipment quantity		设备交货期 Delivery term	
设备使用地点 Place of use		使用电源 Power source	

详细技术要求 Detailed specification				
序号 Serial number	内容名称 Content name	单位 Unit	参数要求 Parameter request	备注 Note
1	制冷量 Cooling capacity	kW		
2	冷冻水进水温度 Chilled water inlet T.	℃		标准机型为12℃ Standard type is 12 ℃
3	冷冻水出水温度 Chilled water outlet T.	℃		标准机型为7℃ Standard type is 7 ℃
4	安装尺寸要求（L×W×H） Installation size(L×W×H)	mm		
5	电控要求 Electric control		□普通型 ordinary □ 豪华型 deluxe	
6	集中监控通讯接口 Central monitoring communication connection			
7	任选项要求 Arbitrary option		□RS485 □RS232	请在2种中选择 Please choose in 2 kinds
			□水流开关 Water flow switch	
			□远程控制箱 Remote control box	

注：以上表格请认真填写，以便确认提供设备技术要求是否满足需方要求；如有需要请在□内打“√”,不需要在□内打“×”。
Note: Earnestly fill in the form above in order to confirm the equipment specification whether satisfies the consumer request, if needs please hit "√" in □; if not, hit "×" in □.

订货注意事项
Attention when ordering

1、在合同中请按型号说明写清楚产品的详细的技术要求，交货时期；
2、要采用特殊品牌压缩机时合同中要注明；
3、机组由普通型电脑控制和豪华型电脑控制两种方式，选用哪种电脑控制，需在合同中注明；
4、对电脑控制的机型，如果要求进行联网控制，也要在合同中注明；
5、如果是订购模块式机组，则应注明机组的组合方式；
6、如因产品本身而发生的质量问题，自出厂之日起，一年内免费维修；超过一年时，酌情收取一定的维修工本费用；
7、产品的调试除特殊情况在合同上注明外，均由本公司授权的技术人员负责，并收取一定的调试费；
8、特殊要求的非标志产品请与本公司技术部门联系，并在合同中注明；
9、如对设备有特殊要求请填写《空调设备咨询表》并传回公司确认；

1.Please write the detailed specification and the delivery time clearly according to the model in the contract.
2.Must indicate in the contract if using the special brand compressor.
3.The controlling way is divided into ordinary or deluxe computer two kinds, must indicate which kind in the contract.
4.If the computer controlled chiller needs be controlled through the networking, you should indicate in the contract, too.
5.If ordering the module chiller, then should indicate the chiller combination way.
6.If the product quality is bad, there is one year free service since leaving the plant. After one year, charge the certain service cost properly.
7.The debugging must be done by our company's technician and charge a certain debugging fee, except the peculiar request in the contract.
8.As for the special non-standard one, you should contact with technology department of our company and indicate in the contract.
9.If having a special request to the equipment please fill in "Air Conditioning Equipment Consultation Table" and send to our company to confirm.







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www.yatai.cc

地址：德州市大学东路
电话：（0534）2551888　传真：（0534）2551887
电子信箱：yatai@yatai.cc
Add:East of University Road,Dezhou City
Tel:（0534）2551888　Fax:（0534）2551887
Http://www.yatai.cc　E-mail:yatai@yatai.cc

亚太集团各办事处联系方式：How to contact the branches of Yatai Group：

北京办事处
电话：(010)51908328
传真：(010)51908329
Beijing Office
Tel:(010)50918328
Fax:(010)50918329

天津办事处
电话：(022)28350313
传真：(022)28350323
Tianjin Office
Tel:(022)28350313
Fax:(022)28350323

山西办事处
电话：(0351)3377255
传真：(0351)3377256
Shanxi Office
Tel: (0351)3377255
Fax: (0351)3377256

陕西办事处
电话：(029)87998107
传真：(029)87998105
Shanxi Office
Tel: (029)87998107
Fax: (029)87998105

内蒙古办事处
电话：(0471)6914102
传真：(0471)6914103
Neimenggu Office
Tel: (0471)6914102
Fax: (0471)6914103

河南办事处
电话：(0371)66205099
传真：(0371)66205228
Henan office
Tel: (0371)66205099
Fax: (0371)66205228

辽宁办事处
电话：(024)31963712
传真：(024)31963711
Liaoning Office
Tel: (024)31963712
Fax: (024)31963711

青岛办事处
电话：(0532)82887975
传真：(0532)82887976
Qingdao Office
Tel: (0532)82887975
Fax: (0532)82887976

安徽办事处
电话：(0551)64274878
传真：(0551)64274868
Anhui Office
Tel:(0551)64274878
Fax:(0551)64274868

四川办事处
电话：(028)83317691
传真：(028)83317692
Sichuan Office
Tel:(028)83317691
Fax:(028)83317692

甘肃办事处
电话：(0931)2791920
传真：(0931)2791920
Gansu Office
Tel:(0931)8426317
Fax:(0931)8426357

吉林办事处
电话：(0431)81232176
传真：(0431)81232178
Jilin Office
Tel: (0431)81232178
Fax: (0431)81232178

徐州办事处
电话：(0516)83061415
传真：(0516)83061462
Xuzhou office
Tel: (0516)83061415
Fax: (0516)83061462

黑龙江办事处
电话：(0451)51757348
传真：(0451)51754348
Heilongjiang office
Tel: (0451)51757348
Fax: (0451)51754348

宁夏办事处
电话：(0951)7659633
传真：(0951)7659633
Ningxia Office
Tel: (0951)7659633
Fax: (0951)7659633

新疆办事处
电话：(0991)6634488
传真：(0991)6628805
Xinjiang Office
Tel: (0991)6634488
Fax: (0991)6628805

雄安新区办事处
电话：(0312)5621156
传真：(0312)5621157
Xiongan New Area Office
Tel: (0312)5621156
Fax: (0312)5621157

湖北办事处
电话：(027)84638881
传真：(027)84638882
Hubei Office
Tel: (027)84638881
Fax: (027)84638882