



挪兰科技

## 专注于粉末涂料行业 制冷设备一站式供应商

Focused on the one-stop supplier of refrigeration  
equipment for the powder coating industry



杭州挪兰机械设备有限公司  
Hangzhou Nolan Machinery Equipment Co.,Ltd  
安徽挪兰科技有限公司  
Anhui Nolan-Tech Co.,Ltd

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## Company Profile 公司简介

杭州挪兰机械设备有限公司成立于2014年4月14日，是一家集设计、销售、研发于一体，专业从事高端制冷设备制造的高科技节能环保企业。2021年，作为明光市重点招商引资的高新技术企业，成立安徽挪兰科技有限公司，占地面积约50亩。主要产品有：工业冷水机组、冷风机、模温控制系统、光伏冷却系统、模具除湿设备、压缩空气净化设备、冷热一体机组、空气调节机组、防爆制冷机组、冷冻式干燥机、干燥上料设备、工业除湿机、吸附式干燥机、精密过滤器、模具除湿机、塑料粉碎机、塑料机械辅机塑料上料机、干燥料斗、混色机、超低温冷水机、低温压缩空气系统、干燥除湿机、表冷器等专业生产厂家。

产品采用CAD设计，主要零部件均选用国外进口元件。设备自动化程度高、操作简便、运行稳定、噪音小、安装方便、外形美观，广泛运用于粉末、涂装、光伏、印染、壁纸、塑胶、电子、电镀、化工等工业行业。我公司能提供适用于世界各地不同电网要求的设备，同时可以为客户设计、定制特殊规格的产品，欢迎客户来电来函索取详细资料。在科技创新的现代化社会，杭州挪兰机械设备有限公司将继续创新、不断开拓，以高质量的产品，公平合理的价格，强大的售后服务队伍竭诚为广大客户服务，满足客户的各种应急维修，悉心打造企业的全部价值，为经济发展与人们的身体健康而努力，并依靠以科技和管理为后盾的经营理念，坚决树立“车无辘不行，人无信不立”的经营理念，我们坚信在全体员工的共同努力和社会各界的大力支持下，挪兰企业必将蓬勃发展，走遍全国，走向世界，与新老、中外客户一起共创辉煌。

Hangzhou Nolan Machinery Equipment Co.,Ltd.was established on April14,2014.It is a high-tech energy-saving and environmental protection enterprise that integrates design,sales,and research and development,specializing in the manufacturing of high-end refrigeration equipment.In 2021,as a key high-tech enterprise introduced for investment in Mingguang City,Anhui Nolan Technology C.,Ltd.was established,covering an area of approximately 50 acres.Our main products include industrial chillers,air coolers,mold temperature control systems,photovoltaic cooling systems,mold dehumidification equipment,compressed air purification equipment,integrated cold and hot units,air conditioning units,explosion-proof refrigeration units,refrigerated dryers,drying and feeding equipment,industrial dehumidifiers,adsorption dryers,precision filters,mold dew point removers,plastic crushers,plastic machinery auxiliary plastic feeders,drying hoppers,color mixers,ultra-low temperature chillers,low-temperature compressed air systems,drying dehumidifiers,surface coolers,and other professional manufacturers.

The product adopts CAD design,and the main components are all imported from abroad.The equipment has a high degree of automation,easy operation,stable operation,low noise,convenient installation,and beautiful appearance.It is widely used in industrial industries such as powder coating,photovoltaics,printing and dyeing,wallpaper,plastics,electronics,forging,and chemical engineering.Our company can provide equipment that meets the requirements of different power grids around the world,and can also design and customize products with special specifications for customers.Customers are welcome to call or write to us for detailed information.In the modern society of technological innovation,Hangzhou Nolan Machinery Equipment Co.,Ltd.will continue to innovate and constantly explore.With high-quality products,fair and reasonable prices,and a strong after-sales service team,we will wholeheartedly serve our customers,meet their various emergency repairs,and carefully build the fullvalue of the enterprise.We strive for economic development and people's physical health,relying on the business philosophy backed by technology and management,and firmly establish the business philosophy of"no car without a shaft,no person without trust cannot stand".We firmly believe that with the joint efforts of allemployees and the strong support of all ectors of society,Nuolan enterprise wiflourish,travel throughout the country,go global,and work together with new and old customers,as well as domestic and foreign customers to create brilliance.



## 工业控温系统的领导者 The leader in the industry of industrial temperature control system

我们秉承持续创新、追求卓越的精神，坚持以科技引领企业发展，全员永葆创新，精雕细琢新的激情与活力，注重团队的学习提升，努力创造卓越绩效，不断促进跨越式发展。我们弘扬和谐共进、致力共赢精神，重视以安全和谐为根本，注重内部的合力协作与外部的广泛合作，实现企业发展的成果共享，共同创造可持续发展的环境。企业要一贯以“融现代科技、造一流产品、尽真诚服务、求共同发展”为质量方针，不断引进、汲取国际先进技术、造出优质的产品及真诚和最快速的售后服务。

We adhere to the spirit of continuous innovation and pursuit of excellence, insist on leading enterprise development with technology,maintain innovation for all employees,refine new passion and vitality,focus on team learning and improvement,strive to create excellent performance,and continuously promote leapfrog development.We promote the spirit of harmony and mutual benefit,attach importance to safety and harmony as the foundation,focus on internal collaboration and extensive external cooperation,achieve the sharing of achievements in enterprise development,and jointly create a sustainable development environmentEnterprises should always adhere to the quality policy of "integrating modern technology,producing first-class products,providing sincere services,and seeking common development",continuouslyintroducing and absorbing international advanced technology,producing high-quality productsand providing sincere and fastest after-sales service.



研发  
Rand D



制造  
Manufacture



销售  
Sale

# Nolan Culture

挪兰文化

# Z



## 企业使命 Corporate mission

谋求节能和效率的有效结合  
To seek efficient combination of energy saving and efficiency



## 企业精神 Corporate spirit

诚信、共赢、学习、创新  
Faith, win-win, learning, innovation



## 企业愿景 Corporate vision

成为工业控温系统的领导者  
To become the leader in the industry of industrial temperature control system



## 工作观 work concept

享受工作，享受生活  
Enjoy work, enjoy life



## 质量观 Quality concept

质量就是生命，质量就是人格  
Quality is life, quality is personality

# Application Area

应用领域



粉末涂装  
Powder coating



制药行业  
Pharmaceutical industry



光伏新能源  
Photovoltaic new energy



印刷行业  
Printing industry



食品行业  
Food industry



注塑行业  
Injection molding industry



电子行业  
Electronic industry



电镀行业  
Electroplating industry



石油化工  
Petrochemical industry

# Development History

## 发展历程

### 2007 年

与苏泊尔、松下、等知名品牌合作；与浙江明泉工业涂装有限公司合作，开启挪兰机械粉末行业合作新纪元。  
Cooperate with well-known brands such as Supor, Panasonic, etc.; Cooperate with Zhejiang Mingquan Industrial Coating Co., Ltd. to usher in a new era of cooperation in the Nolan Machinery Powder Industry.

### 2014 年

杭州挪兰机械设备有限公司成立；首次与央企-中核北方核燃料元件有限公司合作；与山东圣士达机械科技股份有限公司从2014年至今始终保持良好合作。

Hangzhou Nolan Machinery Equipment Co., Ltd. was established; First cooperation with a state-owned enterprise-CNNC North Nuclear Fuel Element Co., Ltd.; we have maintained a good cooperation with Shandong Shengshida Machinery Technology Co., Ltd. since 2014.

### 2015 年

与粉末行业龙头公司-安徽美佳新材料股份有限公司合作，进一步稳固挪兰粉末行业市场。

Cooperate with Anhui Meijia New Materials Co., Ltd., a leading company in the powder industry, to further consolidate the market of Nolan powder industry.

### 2017 年

与国内电池行业领先企业-天能电池合作，为挪兰科技发展奠定坚实基础。

Cooperating with leading domestic battery industry enterprise, Tianneng Battery, lays a solid foundation for the development of Nolan Technology.

### 2018 年

挪兰科技专利申请数量达历年最高。

The number of patent applications for Nolan Technology has reached the highest level in history.

### 2019 年

首次与国企-浙江中法新材料有限公司合作，挪兰国内市场进一步扩大。

For the first time, cooperation with state-owned enterprise Zhejiang Zhongfa New Materials Co., Ltd. has further expanded the domestic market of Nolan.

### 2020 年

拍下安徽工业园区地块，公司规模进一步扩大；与国企擎天材料科技股份有限公司和立邦涂料合作。

Acquiring land in Anhui Industrial Park further expands the company's scale; Cooperate with state-owned enterprise Qingtian Material Technology Co., Ltd. and Nippon Paint.

### 2021 年

安徽挪兰科技有限公司成立；与外企粉末行业代表艾仕得粉末涂料(上海)有限公司合作。

Anhui Nolan Technology Co., Ltd. was established; Cooperate with Axalta Powder Coatings (Shanghai) Co., Ltd., a representative of the foreign powder industry.

### 2024 年

与全球第一粉厂阿克苏诺贝尔粉末涂料有限公司合作；与PPG华佳安徽工厂合作。

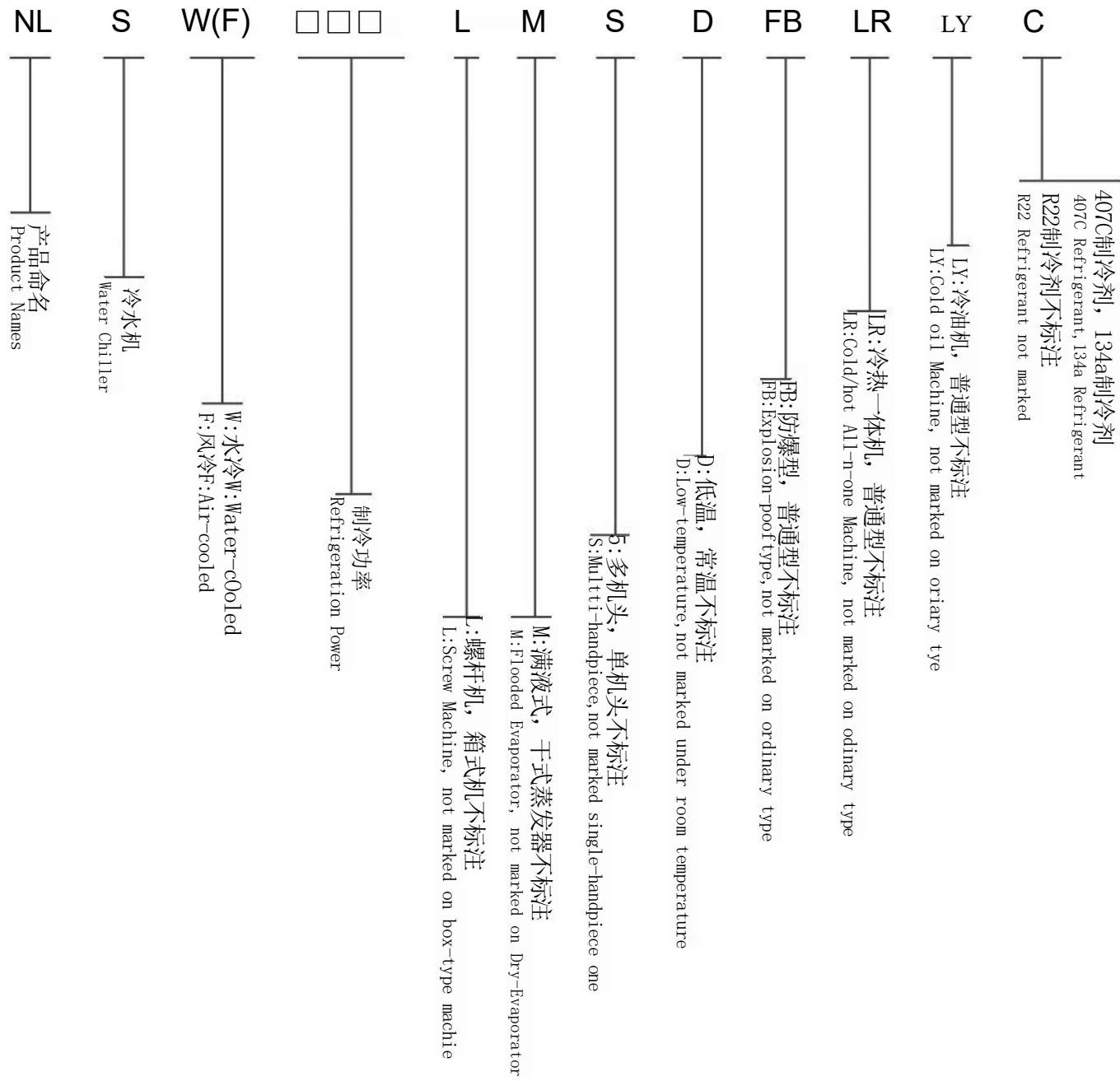
Cooperate with Akzo Nobel Powder Coatings Co., Ltd., the world's first powder factory; Cooperate with PPG Huajia Anhui factory.

# Qualification Honor

## 资质荣誉



## Type Arrangement 型号编制说明



## 一款节能环保型低温冷风机

An energy-saving and environmentally friendly low-temperature air cooler



### 性能特点

本公司专业研发生产用于粉末行业的, 一款节能环保型空气降温、除尘, 无废热排放的制冷循环系统。

本产品是一款全新的节能、环保、高效型科技产品, 采用新风冷却循环方式。具有降温快、无污染、无粉尘及废热空气排放的优点, 属高效节能环保产品。

使用本产品可减少人工、场地, 提高产品质量及产量。

本产品采用热泵原理制冷, 无废热排放, 节约运行成本。冷风出风温度高低可调, 常规设备温度可达0至25度(0度以下可定做), 充分满足粉末冷却要求, 取代传统空调及水冷机组。

本产品采用进口制冷配件和先进的CPU和PLC控制系统, 自动检测, 显示制冷运行, 保护设备正常运行。

### Performance Characteristics

Our company specializes in the development and production of an energy-saving and environmentally friendly air cooling, dust removal, and non-waste heat discharge refrigeration cycle system for the powder industry.

This product is a brand new energy-saving, environmentally friendly, and high-efficiency technology product, using fresh air cooling circulation method. It has the advantages of fast cooling, pollution-free, dust-free, and waste hot air emissions, and is an efficient, energy-saving, and environmentally friendly product.

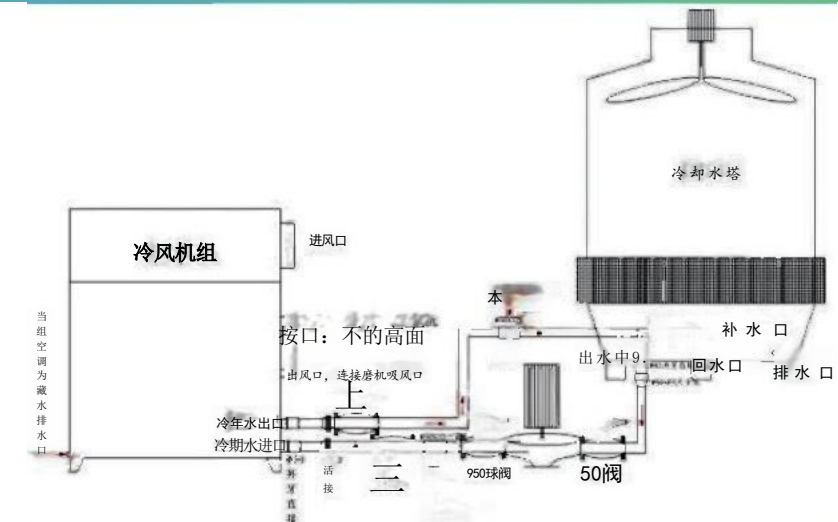
Using this product can reduce labor and space, improve product quality and production output.

This product adopts the principle of heat pump refrigeration, with no waste heat discharge and cost saving. The temperature of the cold air outlet can be adjusted, and the temperature of conventional equipment can reach 0 to 25 degrees (customized below 0 degrees), fully meeting the requirements of powder cooling and replacing traditional air conditioning and water cooling units.

This product adopts imported refrigeration accessories and advanced CPU and PLC control systems for automatic detection, display the refrigeration operation to protect the normal operation of the equipment.

### 冷风机安装示意图

### Installation Diagram of Air Cooler



## 技术参数

## Technical Parameters

型号Model	NLSW	3	5	8	10S	12S	15S	19S	21S	25S	30S	40S	50S	60S	80S
制冷量 Refrigerating capacity	10MP Kcal	79	13.3	21.3	278	31.1	41.7	49	54.2	62.3	83.4	111.1	124.5	166.8	228
	KW	9.2	15.5	24.8	32.3	48.5	576	63	72.4	97	127.2	144.8	194	265.2	
压缩机 Compressor	功率Power KW	2.2	3.7	5.9	74	8.9	11	14.3	15.4	18.4	22	29.4	36.8	44.1	58.8
	数量Quantity	1	L	1	2	2	3	3	3	3	3	4	4	4	4
整机功率	KW	2.2	3.7	5.9	74	8.9	11	14.3	15.4	18.4	22	29.4	36.8	44.1	58.8
蒸发器 Evaporator	形式Form	高效紫铜管套铝翅片 Efficient copertube with aluminum flsleve													
	风量 Air volume	500-1500	600-2500	800-4000	900-5000	1100-6000	1600-7500	2000-9500	2500-10600	2800-12000	3500-15000	4000-20000	4500-25000	5500-30000	6500-40000
	出口尺寸 outlet size	φ125	φ150	φ200	φ300	φ300	300	300	300	φ350	φ350	φ400	φ400	500	800
冷凝器 Condenser	形式Form	壳管式shellan tubetype													
	水流量 Discharge m <sup>3</sup> /h	2.2	3.5	5.2	6.5	7.9	10.3	14	16	21	27	33	42	54	78
	接口尺寸 Water pipeinterface	DN25	DN25	DN40	DN40	DN40	DN40	DN50	DN50	DN50	DN65	DN65	DN80	DN80	DN100
冷却水泵 Chiled water pump	功率Power KW	0.11-0.37	0.25-0.55	0.37-0.75	0.55-1.75	0.75-1.1	1.1-1.5	1.5-2.2	1.5-2.2	2.2-3	3-4	4-5.5	4-5.5	5.5-7.5	5.5-11
外形尺寸 Dimension	长 L (mm)	1100	1100	1260	1360	1360	1360	1360	1550	1650	2100	2360	2360	2360	2860
	宽 W (mm)	850	850	900	1000	1000	1000	1000	1000	1100	1200	1200	1200	1200	1300
	高 H (mm)	1350	1350	1400	1750	1750	1750	1750	1750	1850	1850	1850	1850	1850	1850
机组重量Weight(kg)		150	150	260	350	400	500	650	680	950	1500	1500	1800	2000	2400
安全保护装置 Safety protection deice		缺逆相报警, 高低压保护, 过载电流保护, 缺水报警, 防冻保护, 延时保护等。 Lackof reverse phase alam, High and lowvoltage protection, verload curen protection, Water shortage alarm, Antfreeze protection, Delay protecion, etc.													
制冷工况 Refrigeration conditions		进风温度35℃以下, 出风温度0-25℃可调(0℃以下可定做) The inlet temperatureis below35℃, and the outlet temperature can be adjusted from0-25℃(customized below0℃)													
		冷却水入口30°℃、冷却水出口35°℃ coling waterinlet temperature:30° ;coling water outlet temperature:35℃													
制冷剂Gryogen		R22或(其它制冷剂: R407C、R410A、R404A、R134a)R22 or (other refrigerants;R407C、R410A、R4044、R134a)													
电源/电压Powersupply/viltage		380V/3PH/50HZ (其他电压: 460V/3PH/60HZ、220V/3PH/60HZ)、380/3PH/50HZ (other voltages:460V/3PH/60HZforoptio)													

### 友情提示:

- 1、机组安全工作范围: 冷风进出温度-2℃~+40℃;
- 2、机组最低使用出风温度-2℃; 出风温度≤-2℃时, 需另行订制;
- 3、-2℃出风时, 制冷量降低30%;
- 4、采用R407C 制冷剂时, 机组制冷量减少约5%, 耗电减少约5%; 采用R134a制冷剂时, 机组制冷减少约34%耗电减少约36%。

### Friendly tips:

1. Unit safety working range: Cold air inlet and outlet temperature -2℃~+40℃;
2. The minimum operating air outlet temperature of the unit is -2℃; When the outlet temperature is ≤-2℃, it needs to be customized separately;
3. When the temperature is -2℃, the cooling capacity decreases by 30%;
4. When using R407C refrigerant, the cooling capacity of the unit is reduced by about 5%, and the power consumption is reduced by about 5%; When using R134a refrigerant, the refrigeration of the unit is reduced by about 34%, and the power consumption is reduced by about 36%.

## 风冷式冷风机

### Air-cooled cold air units



## 性能特点

## Performance Characteristics

- ★ 风机选用进口优质风机, 并且经过科学选型以及采用电脑选型软件, 因此风机效率高, 噪音低, 性能可靠, 可保证风量和电机, 风机轴承采用锂基润滑脂, 常规长期运行不用添加润滑油;
- ★ 采用风冷式冷凝器, 换热器采用铜管套铝翅片, 铜管为等边叉排布置, 铝翅片为双曲波纹形, 管孔经二次翻边, 通过机械涨管, 使铜管和翅片紧密接触, 因此具有传热效果, 空气阻力小, 易于清洁的优点。配合优质的冷凝风扇, 风量大, 噪音小, 效果出众。而且风冷式冷凝器使用起来方便, 不需要另外配置冷却塔;
- ★ 风冷式工业冷风机结构采用组合式钣金结构, 方便维修以及内部清理, 根据冷凝风扇的出风方向, 科学地在钣金上冲散热孔, 具有散热和美观机器的作用;
- ★ 风冷式工业冷风机经过科学设计, 充分考虑技术参数的优化组合, 各项指标先进合理。同时可根据用户的要求进行改型设计, 提供不同性能指标的产品。
- ★ The fan is selected from imported high-quality fans, which have undergone scientific selection and computer selection software. Therefore, the fan has high efficiency, low noise, reliable performance, and can ensure air volume and motor performance. The fan bearings are made of lithium-based grease, and no lubricating oil is added for regular long-term operation;
- ★ The air-cooled condenser is used, and the heat exchanger is equipped with copper tubes covered with aluminum fins. The copper tubes are arranged in equal side staggered rows, and the aluminum fins are hyperbolic corrugated. The pipe holes are double flanged, and the copper tubes and fins are tightly contacted through mechanical expansion. Therefore, it has the advantages of heat transfer effect, low air resistance, and easy cleaning. Equipped with high-quality condensing fans, it has high air volume, low noise, and outstanding results. Moreover, the air-cooled condenser is convenient to use and does not require additional cooling water towers;
- ★ The structure of the air-cooled industrial cooling fan adopts a combination sheet metal structure, which is convenient for maintenance and internal cleaning. According to the air outlet direction of the condensing fan, scientifically punching heat dissipation holes on the sheet metal has the function of heat dissipation and aesthetic machine;
- ★ The air-cooled industrial cooling fan has undergone scientific design, fully considering the optimized combination of technical parameters, and all indicators are advanced and reasonable. At the same time, it can be redesigned according to users' requirements, providing products with different performance indicators.

## 技术参数

## Technical Parameters

型号Model	NLFF	3	5	8	105	125	155	195	215	255	305	405	505
	10MP Kcal	7.6	12	19	25.8	29.3	38.7	45.7	50.5	59.2	77.4	103.2	118.3
	KW	8.85	14	22.1	30	34.4	45	53.2	58.8	68.8	90	120	137.6
压缩机	功率Power KW	2.2	3.7	5.9	7.4	8.9	11	14	15.4	18.4	22	29.4	35.8
	数量Quantity	1	1	1	2	2	3	3	3	3	3	4	4
盖想边率	KW	2.63	4.02	6.4	8.04	10.1	12.56	15.7	17.1	20.74	24.4	32.6	40.4
蒸发器 Evaporator	形式Form	高效紫铜管套铝翅片Efficient copper tube with aluminum foil sleeve											
	流量m <sup>3</sup> /h Water flow	500-1000	600-2500	800-4000	900-5000	1100-6000	1600-7500	2000-9500	2500-10600	2800-12000	3500-15000	4000-20000	4500-25000
	出风口尺寸 Aoutletsze	125	φ150	②200	300	300	300	300	300	φ350	φ350	②400	400
冷凝器 Condenser	形式Form	高效紫铜管套铝翅片+外转子低噪音风机fcentcoperubewih aluminum foiland eteal otorforlow-nolsefan											
	冷却风量m <sup>3</sup> /h Cooling airvolume	3400	5800	9600	13000	17000	21000	26000	29000	31500	34880	48800	62680
加风机	功率Ponerw	0.18	0.32	0.5	0.64	1.2	1.56	1.7	1.7	2.34	2.4	3.2	3.6
外形尺寸 Dimension	长 L (mm)	1360	1360	1594	1594	1594	1710	2060	2060	2590	2880	3200	3200
	宽 W (mm)	710	710	907	907	907	1000	1100	1100	1140	1140	1400	1400
	高 H (mm)	1350	1350	1560	1560	1560	1850	1850	1850	1990	2160	2000	2200
机组重量Weight(kg)		250	250	380	500	680	1100	1100	1100	1250	1400	1800	2000
安全保护装置 Safety protetio deice		缺逆相报警, 高低压保护, 过载电流保护, 缺水报警, 防冻保护, 延时保护等。 Lackof everse phase alam, High and lowvotage protection, verload curen protetion, wate shortage alarm, Antfreeze protection, Dely protection, etc.											
制冷工况 Refrigeration conditions		进风温度35℃以下, 出风温度0-25℃可调(0℃以下可定做) The nle temperature s below35℃, and the outlet temperature can be adjusted fion0-25℃(customized below0℃ 环境温度≤35℃ Ambientempertures35℃											
制冷剂Cryogen		R22或(其它制冷剂: R407C、R410A、R404A、R134a)R22or(otherefigrans:R407C、R410A、R404A、R134a)											
电源/电压Poersupy/votage		380V/3PH/50HZ(其他电压: 460V/3PH/60HZ、220V/3PH/60HZ), 380v/3PH/50HZ(otherevotages:460V/3PH/60HZfor option)											

### 友情提示:

- 1、机组安全工作范围: 冷冻水进水温度-10℃~+20℃;
- 2、机组最低使用出水温度-10℃;出水温度≤5℃时, 应添加适量的防冻液;
- 3、-5℃出水时, 制冷量降低38%;-10℃出水时, 制冷量降低50%;
- 4、采用R407C 制冷剂时, 机组制冷量减少约5%, 耗电减少约5%;采用R134a 制冷剂时, 机组制冷量减少约34%, 耗电减少约36%;

### Friendly tips:

- 1.Safe operating condition of the unit,the inlet temperature of the chilled water being-10℃~+20℃;
- 2.The lowest outlet water temperature of the unit is-10℃;when the outlet water temperature iss≤5℃,antifreeze solution should be used;
- 3.When the outlet water temperature is-5℃,the refrigeration capacity is reduced by 38%;when the outlet water temperature is-10℃,the refrigeration capacity is reduced by 50%;
- 4.When using R407C refrigerant,the refrigeration capacity is reduced by about 5%,power consumption is reduced by about 5%;when using R134a refrigerant,the refrigeraion capacity is reduced by about 34%,power consumption is reduced by about 36%;



## 水冷箱式冷水机组

Water-cooled box chiller

## 产品介绍

## Product Introduction

NUOLAN 水冷机组是一种提供冷冻水的制冷设备, 适用于中央空调系统和工业工艺过程需冷冻水的使用场合, 被广泛地用于中央空调系统和冶金、石油化工、机械、医药、电子电镀、电泳、铝氧化、超声波清洗冷却、印刷、人造革、真空镀膜、壁纸、等工业生产需要冷冻水的工艺场所。NUOLAN 系列水冷箱式冷水机组可提供-10~+30℃冷冻水, 可作为冰蓄冷、低温送风空调及各类其它有-10℃以上冷冻水需求场所, 能精确控制现代工业机械化生产所要求的温度, 从而大大提高了生产效率及产品质量。

NUOLAN water-cooled chiller is a kind of cooling equipment providing chilled water and applicable to occasions like the central air-conditioning systems and industrial processes which require chilled water.Such chiller has been widely used in the central air-conditioning system in the production and process of metallurgy,petrochemical engineering,machinery,pharmaceutical,electronic products,electroplating,electrophoresis,aluminum oxidation,ultrasonic cleaning and cooling,printing,artificial leather,vacuum coating,wallpaper and other industrial occasions requiring chilled water. NUOLAN water-cooled box chiller can provide chilled water with the temperature of-10~+30℃ for ice storage,cold air distribution and all other occasions requiring chilled water above -10℃.It can precisely control the temperature required by the mechanized production of modern industry thus greatly improving the production efficiency and product quality.

## 性能特点

## Performance Characteristics

- ★采用国际顶级品牌全封闭涡旋式压缩机, 及国际名牌制冷阀件;
- ★标配高品质不锈钢多级离心式水泵和不锈钢水箱;
- ★高效外螺纹铜管壳管式冷凝器, 确保冷水机高效率的换热效果;
- ★采用国际名牌“施耐德”电气, 和进口微电脑数显温控器;
- ★采用多重保护装置; 确保机组常年稳定运行;
- ★超宽冷冻水温可变范围, 满足不同用户要求;
- ★使用乙二醇作载冷剂更可使冷冻出水温度最低至-10℃以上;
- ★可选配环保型R407C、R410、R404a、RR134a制冷剂;
- ★防爆、高精度及其它特殊机组可定制。

- ★Using hermetic scroll compressor of global top brands and refrigeration valves of internationally well-known brands;
- ★Standard high-quality stainless steel multistage centrifugal pumps and stainless steel water box;
- ★Using High-efficiency cooper shell-and-tube condenser with external thread to ensure efficient heat transfer of the chiller;
- ★Using products of intentionally well-known Schneider Electric and imported microprocessor temperature controller;
- ★Using multiple protection systems to ensure the perennial and stable operation of the unit;
- ★Ultra wide temperature range of chilled water to satisfy the requirements of various users;
- ★Using ethylene glycol as secondary refrigerant to make sure the minimum outlet water temperature above-10℃;
- ★Optional environmentally friendly refrigerants like R407C,R410,R404a,and Rr134a;
- ★Explosion-proof,high-precision and can be customized for other special units.

## 技术参数

## Technical Parameters

型号Model	NLSW	03	05	08	10S	125	155	205	255	305	405	505	60S	805
制冷量 Refrigerating capacity	10MP Kcal	7.9	13.3	21.3	27.8	31.1	41.7	55.5	62.3	83.4	111.1	124.5	166.8	228
	Kw	9.2	15.5	24.8	32.3	36.2	48.5	64.6	72.4	97	129.2	144.8	194	265.2
压缩机 Compressor	功率Power kW	2.25	3.75	6.3	7.5	8.9	11.5	14.7	179	23	29.5	35.8	45	60
	数量Quantity	1	1	1	2	1	2	2	2	2	A	4	4	4
整机功率	KW	2.8	4.85	7.8	8.8	10	14.5	18	20.5	28	35.5	42.5	36	68.5
蒸发器 Evaporator	形式Form	水箱盘管式、高效壳管式、不锈钢板式watertank plate tube, high emciency shelu-and-tube, stainless steel plate												
	水流量 wate flow	1.4	2.25	4	5	6	8.5	11.2	13	18	22	25	36	47
	接口尺寸 Interface dmension	DN25	DN25	DN25	DN25	DN40	DN40	DN40	DN65	DN65	DN65	DN65	DN65	DN65
冷凝器 Condenser	形式Fom	壳管式、不锈钢板式shelland tube type, stainless steelplate												
	水流量 Dischargem <sup>3</sup> /h	2.2	3.5	5.2	6.5	7.9	10.3	14	16	21	27	33	42	54
	接口尺寸 Water pipeinterface	DN25	DN25	DN40	DN40	DN40	DN40	DN50	DN50	DN50	DN65	DN65	DN65	DN65
冷却水泵 Chilledwater pump	功率PowerKw	0.37	0.55	0.75	0.75	1.1	1.5	2.2	2.2	3	4	4	5.5	5.5
	最大扬程(m)	28	30	28	34	33.5	32	33	28	28	31	31	32	35
水箱容积	L	60	60	120	150	150	200	250	300	350	500	600	600	700
外形尺寸 Dimension	长 L (mm)	820	820	1200	1500	1500	1700	1700	1800	1800	1800	2000	2400	2600
	宽 W (mm)	470	470	600	650	650	950	1000	1000	1000	1200	1300	1300	1300
	高 H (mm)	1040	1040	1290	1310	1310	1600	1700	1700	1800	1800	2000	2000	2100
机组重量Weight (kg)		150	180	260	350	400	500	650	800	950	1500	2000	2000	2400
安全保护装置 Safety protection deice		缺逆相报警, 高低压保护, 过载电流保护, 缺水报警, 防冻保护, 延时保护等。 Lack of reverse phae alarm, High and lowvoltage protection, Overload curent protection, Water shortage alam, Antifreeze protection, Delay protection, etc												
制冷工况 Refrigeration conditions		冷冻水入口12℃、冷冻水出口7℃ chiled water inlet temperature:12℃:chiled water outettemperature:7℃;												
		冷却水入口30℃、冷却水出口35℃ cooling water inet temperature:30℃:coling water outet temperature:35℃												
制冷剂Cryogen		R22或(其它制冷剂: R407C、R410A、R404A、R134a)R22 or (otherefrigerants:R407C、R410A、R404A、R134a)												
电源/电压Powersupbyvotage		380V/3PH/50HZ(其他电压: 460V/3PH/60HZ、220V/3PH/60HZ), 30v/3HV/50HzZ (athervotages460V/3PH/60HZfor opion)												

### 友情提示:

- 1、机组安全工作范围: 冷冻水进水温度-10℃~+20℃;
- 2、机组最低使用出水温度-10℃;出水温度≤5℃时, 应添加适量的防冻液;
- 3、-5℃出水时, 制冷量降低38%;-10℃出水时, 制冷量降低50%;
- 4、采用R407C 制冷剂时, 机组制冷量减少约5%,耗功减少约5%;采用R134a 制冷剂时, 机组制冷量减少约34%,耗功减少约36%;

### Friendly tips:

- 1.Safe operating condition of the unit:the inlet temperature of the chilled water being-10℃~+20℃;
- 2.The lowest outlet water temperature of the unit is -10℃;when the outlet water temperature is≤5℃,antifreeze solution should be used;
- 3.When the outlet water temperature is-5℃,the refrigeration capacity is reduced by 38%;when the outlet water temperature is-10℃,the refrigeration capacity is reduced by50%;
- 4.When using R407C refrigerant,the refrigeration capacity is reduced by about 5%,power consumption is reduced by about 5%;when using R134a refrigerant,the refrigeration capacity is reduced by about 34%,power consumption is reduceaby about 36%;

## 风冷箱式冷水机组

### Air-cooled box chiller



## 产品介绍

## Product Introduction

NUOLAN 系列风冷箱式冷水机组是一种提供冷冻水的制冷设备, 适用于中央空调系统和工业工艺过程需冷冻水的使用场合, 被广泛用于中央空调系统和冶金、石油化工、机械、医药、电子电镀、电泳、铝氧化、超声波清洗冷却、印刷、人造革、真空镀膜、壁纸、等工业生产需要冷冻水的工艺场所。

NUOLAN 系列风冷箱式冷水机组可提供-10~+30℃冷冻水, 可作为冰蓄冷、低温送风空调及各类其它有-10℃以上冷冻水需求场所, 能精确控制现代工业机械化生产所要求的温度, 从而大大提高了生产效率及产品质量。

NUOLAN air-cooled box chiller is a kind of cooling equipment providing chilled water and applicable to occasions like the central air-conditioning systems and industrial processes which require chilled water.Such chiller has been widely used in the central air-conditioning system in the production and process of metallurgy,petrochemical engineering,machinery,pharmaceutical,electronic products,electroplating,electrophoresis,aluminum oxidation,ultrasonic cleaning and cooling,printing,artificial leather,vacuum coating,wallpaper and other industrial occasions requiring chilled water NUOLAN air-cooled box chiller can provide chilled water with the temperature of-10~+30 Cfor ice storage,cold air distribution and all other occasions requiring chilled water above-10 C.It can precisely control the temperature required by the mechanized production of modern industry,thus greatly improving the production efficiency and product quality.

## 性能特点

## Performance Characteristics

- ★采用国际顶级品牌全封闭涡旋式压缩机, 及国际名牌制冷阀件;
- ★标配高品质不锈钢多级离心式水泵和不锈钢水箱;
- ★高效外螺纹铜管壳管式冷凝器, 确保冷水机高效率的换热效果;
- ★采用国际名牌“施耐德”电气, 和进口微电脑数显温控器;
- ★采用多重保护装置; 确保机组常年稳定运行;
- ★超宽冷冻水温可变范围, 满足不同用户要求;
- ★使用乙二醇作载冷剂更可使冷冻出水温度最低至-10℃以上;
- ★可选配环保型R407C、R410、R404a、RR134a 制冷剂;
- ★防爆、高精度及其它特殊机组可定制。

- ★Using hermetic scrollcompressor of global top brands and refrigeration valves of internationallywell-known brands;
- ★Standard high-quality stainless steelmultistage centrifugal pumps and stainless steel water box;
- ★Using High-efficiency cooper shell-and-tube condenser with external thread, to ensure efficient heat transfer of the chiller;
- ★Using products of internationally well-known Schneider Electric and imported microprocessor temperature controller;
- ★Using multiple protection systems to ensure the perennial and stable operation of the unit;
- ★Ultra wide temperature range of chilled water to satisfy the requirements of various users;
- ★Using ethylene glycol as secondary refrigerant to make sure the minimum outletwater temperature above-10℃;
- ★Optional environmentally friendly refrigerants like R407C,R410,R404a,and Rr134a;
- ★Explosion-proof,high-precision and can be customized for other special units.

## 技术参数

## Technical Parameters

型号Model	NLSF	-01	-02	-03	-05	-08	-10S	-12S	-15S	-20S	-25S	-30S	-40S	-50S
制冷量 Refrigerating capacity	10M <sup>3</sup> Kcal	2.4	4.7	7.6	12	19	25.8	29.3	38.7	51.6	59.2	77.4	103.2	118.3
	KW	2.75	5.5	8.85	14	22.1	30	34.4	45	60	68.8	90	120	137.6
压缩机 Compressor	功率Power KW	0.8	1.5	2.25	3.75	6.3	7.5	8.9	11.5	14.7	17.9	23	29.5	35.8
	数量Quantity	L	1	L	1	1	2	1	2	2	2	2	4	4
整机功率	KW	1.36	2.2	3	4.18	7.55	9.3	11.5	14.5	19	23	29	37	44
蒸发器 Evaporator	形式Form	水箱盘管式、高效壳管式、不锈钢板式water tank plate tube higheficency shel-and-tube, stainless steel plate												
	水流量 Water flow	0.5	1	1.4	2.25	4	5	6	8.5	11.2	13	18	22	25
	接口尺寸 Interface dimension	DN15	DN25	DN25	DN25	DN40	DN40	DN50	DN50	DN50	DN50	DN65	DN65	DN65
冷凝器 Condenser	形式Form	高效紫铜管套铝翅片+外转子低噪音风机high efficiency red copper pipes cover in aluminum fins+outer rotor low noise fan												
	冷却风量(m/h) Amount of cooling air	1450	2900	3400	5800	9600	13000	17000	21000	26000	31500	34880	48800	62680
	风扇功率(kw) Fan power	0.08	0.16	0.18	0.32	0.50	0.90	1.20	1.56	1.80	2.34	2.40	3.20	3.60
冷却水泵 Chilled water pump	功率Power KW	0.25	0.25	0.37	0.55	0.75	0.75	0.75	1.1	1.5	2.2	2.2	3	4
	扬程(m) Lit	22	28	28	28	28	28	28	28	28	28	28	28	28
水箱容积 Water tank volume	L	30	40	60	60	150	200	200	350	350	450	450	550	600
外形尺寸 Dimension	长 L (mm)	700	800	1050	1200	1600	1600	1650	1850	2100	2300	2500	2800	3000
	宽 W (mm)	550	660	620	660	860	860	950	950	1100	1100	1200	1200	1200
	高 H (mm)	990	1300	1300	1300	1500	1600	1700	1700	1800	1800	2000	2000	2100
机组重量Weight (kg)		80	120	160	200	320	450	660	750	1000	1200	1400	1700	1900
安全保护装置 Safety protection device		缺逆相报警, 高低压保护, 过载电流保护, 缺水报警, 防冻保护, 延时保护等。 Lack of reverse phase alarm, High and low voltage protection, Overload current protection, Water shortage alarm, Antifreeze protection, Delay protection, etc.												
制冷工况 Refrigeration conditions		冷冻水入口12℃、冷冻水出口7℃; 环境温度≤35℃ Chilled water inlet temperature: 12℃; chilled water outlet temperature: 7℃; Ambient temperature ≤ 35℃												
制冷剂Cryogen		R22或(其它制冷剂: R407C、R410A、R404A、R134a) R22 or (other refrigerants: R407C、R410A、R404A、R134a)												
电源/电压Power supply/voltage		380V/3PH/50HZ (其他电压: 460V/3PH/60HZ、220V/3PH/60HZ)、3BDv/3PH/50HZ (at other voltages: 460V/3H/60HZ for option)												

### 友情提示:

- 1、机组安全工作范围: 冷冻水进水温度-10℃~+20℃;
- 2、机组最低使用出水温度-10℃; 出水温度≤5℃时, 应添加适量的防冻液;
- 3、-5℃出水时, 制冷量降低38%; -10℃出水时, 制冷量降低50%;
- 4、采用R407C 制冷剂时, 机组制冷量减少约5%, 耗电减少约5%; 采用R134a 制冷剂时, 机组制冷量减少约34%, 耗电减少约36%;

### Friendly tips:

- 1、Safe operating condition of the unit: the inlet temperature of the chilled water being -10℃~+20℃
- 2、The lowest outlet water temperature of the unit is -10℃; when the outlet water temperature is ≤5℃, antifreeze solution should be used;
- 3、When the outlet water temperature is -5℃, the refrigeration capacity is reduced by 38%; when the outlet water temperature is -10℃, the refrigeration capacity is reduced by 50%;
- 4、When using R407C refrigerant, the refrigeration capacity is reduced by about 5%, power consumption is reduced by about 5%; when using R134a refrigerant, the refrigeration capacity is reduced by about 34%, power consumption is reduced by about 36%;

## 水冷螺杆式工业冷水机组

## Water cooled screw industrial chiller unit



## 产品介绍

## Product Introduction

NUOLAN 系列水冷螺杆冷水机组是一种提供冷冻水的制冷设备, 适用于中央空调系统和工业工艺过程需冷冻水的使用场合, 被广泛地用于宾馆、办公楼、医院、商场等大中型建筑的中央空调系统, 更适合作为有色金属冶金、粉末、化工及医药中间体、石油化工、粮油、食品、机械、医药、电子、空气分离等生产加工的工艺冷源。NUOLAN 系列水冷螺杆冷水机组可提供 -10 ~ +30℃ 冷冻水, 可适用水蓄冷、低温送风空调及其它各类 -5℃ 以上冷冻水需求场所, 也可提供 30 ~ 52℃ 的热水供暖用。

NUOLAN series water-cooled screw chiller is a kind of refrigeration equipment that provides chilled water. It is suitable for the use of central air conditioning system and industrial processes that require chilled water. It is widely used in central air conditioning systems of large and medium-sized buildings such as hotels, office buildings, hospitals, shopping malls, etc. And it is more suitable as a process cold source for production and processing of non-ferrous metal metallurgy, powder, chemical and pharmaceutical intermediates, petrochemical, grain and oil, food, machinery, medicine, electronics, air separation, etc. The NUOLAN series water-cooled screw chiller can provide -10~+30℃ chilled water, suitable for ice storage, low-temperature air conditioning, and other places with a demand for chilled water above -5℃. It can also provide hot water at 30-52℃ for heating.

## 性能特点

## Performance Characteristics

- ★独立制冷系统设计, 多机头机组相对独立, 运动部件减至最少, 运行可靠;
- ★采用进口高效型半封闭双螺杆压缩机, 能效比高, 运行可靠, 寿命长;
- ★压缩机内设有专利的排气消气器, 保证机组的低噪音运行;
- ★各制冷系统压缩机在最小负荷(25%)下, 星三角降压启动, 有效地降低了启动电流及对电网的冲击;
- ★柔性化的能调设计, 可使机组在25%~100%间连续性能量调节(无级能调) 保证压缩机效能的完全发挥并帮助用户最大程度地节约运行费用;
- ★采用高精度大屏幕触摸屏, 全数字化汉显, 可实现远程控制;
- ★选用国际著名品牌的热力膨胀阀、电磁阀、单向阀等控制元件, 保证机组在宽广的使用工况范围内高效可靠的工作;
- ★产品经制造厂全面的检测和满负荷运行试验合格后带冷媒出厂, 保证设备在水、电到位后开机即可工作;
- ★热回收型采用专利的聚热器技术, 夏季热回收量可达制冷量的30%~40%, 工艺用冷水机组冬季使用时热回收量最高可达75%;
- ★可适用多种环保冷媒工质如HFC134a, HFC407C, HFC404A 等, 满足国际环保要求;
- ★防爆、高精度及其它特殊机组可定制。

- ★Independent refrigeration system design, and multi head units are relatively independent, with minimal moving parts and reliable operation;
- ★Adopting imported high-efficiency semi-enclosed twin screw compressor, with high energy efficiency ratio, reliable operation, and long service life;
- ★The compressor is equipped with a patented exhaust degasser to ensure low noise operation of the unit;
- ★At the minimum load (25%) of each refrigeration system compressor, the star-delta voltage reduction start, which can effectively reduce the impact of starting current on the power grid in a timely manner;
- ★The flexible adjustable design can enable the unit to continuously adjust energy between 25%-100% (stepless adjustable) to ensure the full performance of the compressor and help users save operating costs to the greatest extent possible;
- ★Adopting high-precision large screen touch screen and fully digital Chinese display, remote control can be achieved;
- ★Select internationally renowned brands of thermal expansion valves, solenoid valves, one-way valves and other control components to ensure efficient and reliable operation of the unit within a wide range of operating conditions;
- ★The product has undergone comprehensive inspection by the manufacturer and passed the full load operation test before leaving the factory with refrigerant, ensuring that the equipment can start working after water and electricity are in place;
- ★The heat recovery type adopts patented heat collector technology, with a heat recovery capacity of 30%-40% of the cooling capacity in summer. The process water chiller can achieve a maximum heat recovery capacity of 75% when used in winter;
- ★Suitable for various environmentally friendly refrigerant working fluids such as HFC134a, HFC407C, HFC404A, etc., all of which meet international environmental requirements;
- ★Explosion proof, high-precision, and other special units can be customized.

技术参数

Technical Parameters

型号Model	NLSW	40L	50L	60L	80L	100L	120L	150L	180L	200L
名义制冷量 Nominal Refrigeration Capacity	KW	128	160	184	244	332	392	522	613	714
	Kcal/h( $\times 10^4$ )	11	13.8	15.8	21	28.6	32.5	44.9	52.7	61.4
电源电压 voltage	3/N/PEAC380V/50Hz									
压缩机 Compressor	形式Form	半封闭螺杆式压缩机 semi-hermetic screw compressors								
	数量Quantity	1台 table								
	功率Power kw	28	37	39	52	67	81	105	120	138
制冷剂Refrigerants	R22									
制冷剂量 Refrigeration doses(kg)	30	38	45	62	75	95	120	145	168	
控制方式 control mode	微电脑触摸屏控制 Touch screen control microcomputer									
保护功能 Protection function	漏电相保护、油压差保护、高低压保护、水系统故障保护、防冻保护、压缩机过热处理保护等。 Reverse-phase leakage protection, Oil differential protection, High and low voltage protection, Water system fault protection, Frost protection, Thermal overload protection compressor etc.									
能量控制段 Energy control section%	0/33/66/100									
冷凝器 Condenser	形式Form	高效外螺纹管壳管式 High efficient external screwed shell and tube								
	进出水温度℃ Inlet/outlet temperature℃	30/35								
	水程阻力 (kpa) water resistance	$\leq 60$								
	水流量 water flow $m^3/h$	27	34.5	37	60	75	98	120	150	170
	法兰管径 Diameter	DN65			DN80		DN100		DN125	
蒸发器 Evaporator	进出水温度℃ inlet/outlet temperature℃	12/7								
	水程阻力 (kpa) water resistance	$\leq 60$								
	水流量 water flow $m^3/h$	22	27.6	32	40	57	65	90	105	123
	法兰管径 Diameter	DN65			DN80		DN100		DN125	
热能回收 Heat recovery	7℃供水时热量 ( $\times 10^4$ ) Kcal/h Heat at 7℃ when water is supplied	3.3	3.6	5.7	6.2	7.3	8.5	12	12.8	14
	热水温度 Circulating water	30-52℃								
外形尺寸 Dimension	长 L (mm)	2200	2300	2400	3000	3300	3300	3600	3600	3800
	宽 W (mm)	800	900	900	950	950	1100	1400	1400	1400
	高 H (mm)	1200	1200	1200	1200	1200	1600	2240	2240	2300
机组重量 weight (Kg)	980	1100	1200	1500	1600	2400	3500	3800	4000	

友情提示：

- 1、制冷量名义工况为冷凝器进水温度30℃，出水温度35℃，蒸发器进水温度12℃，出水温度7℃；
- 2、采用R407C制冷剂时，机组制冷量减少约5%，功耗减少约5%；采用R134a制冷剂时，机组制冷量减少约34%，功耗减少约36%；
- 3、-5℃出水时制冷量降低约38%，-10℃出水时制冷量降低约50%；
- 4、热回收机组的热回收器根据客户要求加装。

Friendly tips:

- 1, The nominal conditions of refrigeration capacity: the inlet water temperature of the condenser being 30℃, the outlet water temperature being 35℃, the inlet water temperature of the evaporator being 12℃, and the outlet water temperature being 7℃;
- 2, When using R407C refrigerant, refrigeration capacity is reduced by about 5%, power consumption reduced by about 5%; when using R134a refrigerant, refrigeration capacity is reduced by about 34%, power consumption is reduced by about 36%;
- 3, When the outlet water temperature is -5℃, the refrigeration capacity is reduced by about 38%. When the outlet water temperature is -10℃, the refrigeration capacity decreases by about 50%.
- 4, Heat recovery units will be equipped with heat recoverer based on customer requirements.

技术参数

Technical Parameters

型号Model	NLSW	250L	300L	360LS	400LS	500LS	600LS	800LS	1000LS	1200LS	
名义制冷量 Nominal Refrigeration Capacity	KW	845	990	1226	1428	1690	2088	2856	3380	4176	
	Kcal/h( $\times 10^4$ )	72.7	85.1	105.4	122.8	145.3	179.6	245.6	290.7	359.1	
电源电压 voltage	3/N/PEAC380V/50Hz										
压缩机 Compressor	形式Form	半封闭螺杆式压缩机 semi-hermetic screw compressor									
	数量Quantity	1台 table			2台 table			4台 table			
	功率Power Kw	165	191	240	276	330	420	552	660	840	
制冷剂Refrigerants	R22										
制冷剂量 Refrigeration doses(kg)	195	246	290	336	390	492	672	780	984		
控制方式 control mode	微电脑触摸屏控制 Touch screen control microcomputer										
保护功能 Protection function	漏电相保护、油压差保护、高低压保护、水系统故障保护、防冻保护、压缩机过热处理保护等。 Reverse-phase leakage protection, Oil differential protection, High and low voltage protection, Water system fault protection, Frost protection, Thermal overload protection compressor etc.										
能量控制段 Energy control section%	0/33/66/100	6级能量调节或无级能量调节 Energy regulation or stepless energy regulation			12级能量调节或无级能量调节 12 energy regulation or stepless energy regulation						
冷凝器 Condenser	形式Form	高效外螺纹管壳管式 High efficient external screwed shell and tube									
	进出水温度℃ inlet/outlet temperature℃	30/35									
	水程阻力 (kpa) water resistance	$\leq 60$									
	水流量 water flow $m^3/h$	195	250	300	340	390	500	680	780	1000	
	法兰管径 Diameter	DN150		DN150*2			DN150*4				
蒸发器 Evaporator	进出水温度℃ inlet/outlet temperature℃	12/7									
	水程阻力 (kpa) water resistance	$\leq 60$									
	水流量 water flow $m^3/h$	141.8	200	245	286	340	418	571	976	835	
	法兰管径 Diameter	DN125		DN150			DN150*2				
热能回收 Heat recovery	7℃供水时热量 ( $\times 10^4$ ) Kcal/h Heat at 7℃ when water is supplied	42.5	58.8	72.6	79.7	85.1	95.2	150	170	191	
	热水温度 Circulating water	30-52℃									
外形尺寸 Dimension	长 L (mm)	3800	4000	4000	4000	4500	5600	5800	6200	6200	
	宽 W (mm)	1450	1450	1450	1450	1450	2000	2000	2200	2200	
	高 H (mm)	2100	2200	2200	2200	2200	2600	2600	2600	2600	
机组重量 weight (Kg)	4200	4500	4800	5300	6500	9500	12500	14000	17600		

友情提示：

- 1、制冷量名义工况为冷凝器进水温度30℃，出水温度35℃，蒸发器进水温度12℃，出水温度7℃；
- 2、采用R407C制冷剂时，机组制冷量减少约5%，功耗减少约5%；采用R134a制冷剂时，机组制冷量减少约34%，功耗减少约36%；
- 3、-5℃出水时制冷量降低约38%，-10℃出水时制冷量降低约50%；
- 4、热回收机组的热回收器根据客户要求加装。

Friendly tips:

- 1, The nominal conditions of refrigeration capacity: the inlet water temperature of the condenser being 30℃, the outlet water temperature being 35℃, the inlet water temperature of the evaporator being 12℃, and the outlet water temperature being 7℃;
- 2, When using R407C refrigerant, refrigeration capacity is reduced by about 5%, power consumption reduced by about 5%; when using R134a refrigerant, refrigeration capacity is reduced by about 34%, power consumption is reduced by about 36%;
- 3, When the outlet water temperature is -5℃, the refrigeration capacity is reduced by about 38%. When the outlet water temperature is -10℃, the refrigeration capacity decreases by about 50%.
- 4, Heat recovery units will be equipped with heat recoverer based on customer requirements.

# 气悬浮变频离心式冷水机组

Air suspension variable frequency centrifugal chiller unit



## 产品介绍

## Product Introduction

挪兰气悬浮变频离心水冷机组是采用动压气浮轴承技术的永磁同步变频离心式冷水机组。采用永磁同步电机、双级补气、电机直驱叶轮、高速转子动力学设计方法、高效蒸发器等多项技术的应用，提升了机组的节能性。同时，采用了气悬浮轴承替代传统的机械轴承，实现了制冷系统无油运行，避免了复杂的润滑油系统进一步提升性能。可靠的工业级微电脑控制系统，群控技术及楼宇通讯接口，保证了机组优良的操作性能及丰富的扩展性。该机组可广泛用于宾馆、商场、影剧院、医院、学校、办公楼等民用建筑中的空调系统，以及电子制造、医药化工等医药工艺冷却过程，特别适用于大型空调系统的节能改造项目。

The Nuolan air suspension variable frequency centrifugal water cooling unit is a permanent magnet synchronous variable frequency centrifugal water cooling unit using dynamic pressure air bearing technology. The application of multiple technologies such as permanent magnet synchronous motor, two-stage air supply, motor direct drive impeller, high-speed rotor dynamics design method, and high-efficiency evaporator has improved the energy-saving performance of the unit. At the same time, air suspension bearings were used to replace traditional mechanical bearings, achieving oil-free operation of the refrigeration system and avoiding the need for complex lubricating oil systems to further improve performance. The reliable industrial grade microcomputer control system, group control technology, and building communication interface ensure excellent operational performance and rich scalability of the unit. This unit can be widely used in air conditioning systems in civil buildings such as hotels, shopping malls, cinemas, hospitals, schools, and office buildings, as well as in cooling processes in electronic manufacturing, pharmaceutical and chemical industries. It is particularly suitable for energy-saving renovation projects of large-scale air conditioning systems.

## 型号说明

## Model Description



## 压缩机亮点

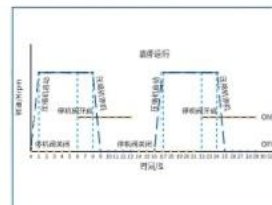
## Highlights of Compressor



### 无油、高效 oil free, efficient

压缩机采用气悬浮轴承，转子在运行中处于悬浮状态，轴承无摩擦，运转噪音低，机械损失小。运行无需润滑油系统、无需启机前准备，可连续启停，且无需维护。实现了无油运行，避免油膜覆盖在换热管上导致换热效率下降，减少了润滑油对于换热的影响，保证产品在整个使用寿命周期上具有可持续性。

Adopting a new structural design and optimizing the arrangement of the tube bundle, the external threads of the heat exchange tubes adopt advanced thread structures, resulting in thinner liquid films and reduced thermal resistance; By utilizing oil-free specialized piping technology, the optimal spacing and position of the condenser tubes can be obtained, optimizing the specialized arrangement structure of the heat exchange tube group for condensation, and further improving the heat transfer efficiency. Efficient subcooling zone: Add a separate group of subcooling tubes at the bottom of the condenser to improve the subcooling degree of the refrigerant and significantly improve energy efficiency.



### 耐久、可靠 Durable and reliable

压缩机启停耐久性试验，累计启停超过25万次，压缩机无故障。试验过程：压缩机以高转速启动并维持该转速5s后，控制系统给出停机命令且停机阀打开，2s后压缩机停机，转速为0.4s后停机阀关闭，3s后压缩机重新启动，进入下一个启停周期。

Compressor start stop durability test, with a cumulative start stop of over 25000 times, and no faults in the compressor. Experimental process: The compressor is started at high speed and maintained at that speed for 5 seconds. The control system gives a shutdown command and the shutdown valve opens. After 2 seconds, the compressor shuts down. At a speed of 0.4 seconds, the shutdown valve closes. After 3 seconds, the compressor restarts and enters the next start stop cycle.



### 超高速大功率永磁同步电机技术 ultra high speed and high power permanent magnet synchronous motor technology

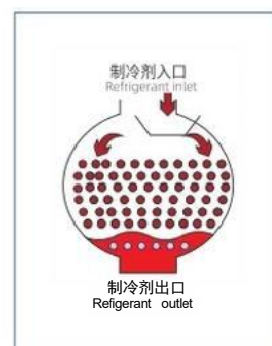
电机功率密度高，体积小，重量轻，结构紧凑；电机效率高，在机组运行范围内，对电机采用液态制冷剂冷却技术，从压缩机壳体喷洒低温液态制冷剂，通过壳体中的流道孔，均匀喷洒在电机腔中，制冷剂蒸发吸热，从而带走热量。

The motor has high power density, small size, light weight, and compact structure; The motor has high efficiency within the operating range of the unit, liquid refrigerant cooling technology is used for the motor. Low temperature liquid refrigerant is sprayed from the compressor housing and evenly sprayed into the motor chamber through the flow channel holes in the housing. The refrigerant evaporates and absorbs heat, thereby taking away the heat.

## 功能特点

## Functional Features

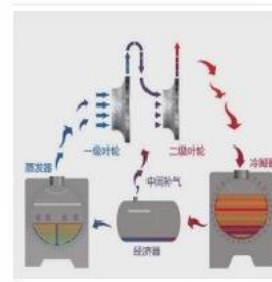
### 高效换热器技术 Efficient heat exchanger technology



### 冷凝器&高效过冷技术 condenser & efficient undercooling technology

采用新型结构设计，优化管束布置，换热管外螺纹采用先进螺纹结构，液膜更薄，热阻减少；运用无油专用布管技术，获得最佳冷凝管间距和位置，优化换热管群冷凝专用布置结构，传热效率进一步提高。高效过冷区：在冷凝器的底部增设一组单独的过冷管群，提高制冷剂过冷度，能效显著提高。

Adopting a new structural design and optimizing the arrangement of the tube bundle, the external threads of the heat exchanger tubes adopt advanced thread structures, resulting in thinner liquid films and reduced thermal resistance; By utilizing oil-free specialized piping technology, the optimal spacing and position of the condenser tubes can be obtained, optimizing the specialized arrangement structure of the heat exchange tube group for condensation, and further improving the heat transfer efficiency. Efficient subcooling zone: Add a separate group of subcooling tubes at the bottom of the condenser to improve the subcooling degree of the refrigerant and significantly improve energy efficiency.



### 双级压缩技术 & 高效经济器 Dual stage compression technology & high-efficiency economizer

更高效：机组采用双级压缩补气增焓技术，相比单级制冷循环效率提高了5~6%；

更稳定：采用双级压缩，压缩机运行更可靠，使用寿命增长；

高效经济器：过冷度可增大至10℃以上，名义工况下，能力最大可提升8%。

More efficient: The unit adopts a two-stage compression air replenishment enthalpy increasing technology, which improves the efficiency by 5-6% compared to a single-stage refrigeration cycle;

More stable: Adopting two-stage compression, the compressor operates more reliably and has an extended service life;

Efficient economizer: The subcooling can be increased to over 10°C, and under nominal operating conditions, the maximum capacity can be increased by 8%.

## 技术参数

## Technical Parameters

型号 Model	制冷量 Refrigeration capacity		输入功率 Input power	COP	压缩机数量 Number of compressors	蒸发器 Evaporator		冷凝器 Condenser	
	KW	RT				水流量 Discharge	水接管口径 Diameter of inlet and outlet pipe	水流量 Discharge	水接管口径 Diameter of inlet and outlet pipe
NLSW	KW	RT	KW	—	—	m <sup>3</sup> /h	DN	m <sup>3</sup> /h	DN
006512	225	64	37.2	6.05	1	39	100	45	100
008012	282	80	47.0	6.00	1	49	100	57	100
009512	339	96	56.3	6.02	1	58	125	68	100
010512	376	107	62.2	6.05	1	65	125	75	125
012012	414	118	68.6	6.03	1	71	125	83	125
013512	470	134	77.9	6.03	1	97	125	94	125
014512	503	143	83.0	6.06	1	104	125	101	125
016512	584	166	91.2	6.40	1	121	150	116	150
019012	670	191	104.6	6.41	1	138	150	133	150
022512	788	224	122.9	6.41	1	163	150	157	150
026012	906	258	141.1	6.42	1	187	200	180	200
027512	967	275	145.0	6.67	1	200	200	191	200
029512	1044	297	157.4	6.63	1	216	200	207	200
032012	1129	321	168.6	6.70	1	194	200	223	200
038012	1329	378	195.9	6.78	1	229	200	262	200
058022	2031	578	297-5	6.83	2	349	250	401	250
066022	2321	660	340.8	6.81	2	399	250	458	250
071522	2514	715	368.6	6.82	2	432	250	496	250
077022	2708	770	397.6	6.81	2	466	300	534	300
120032	4255	1210	624.0	6.82	3	732	350	839	350

### 友情提示:

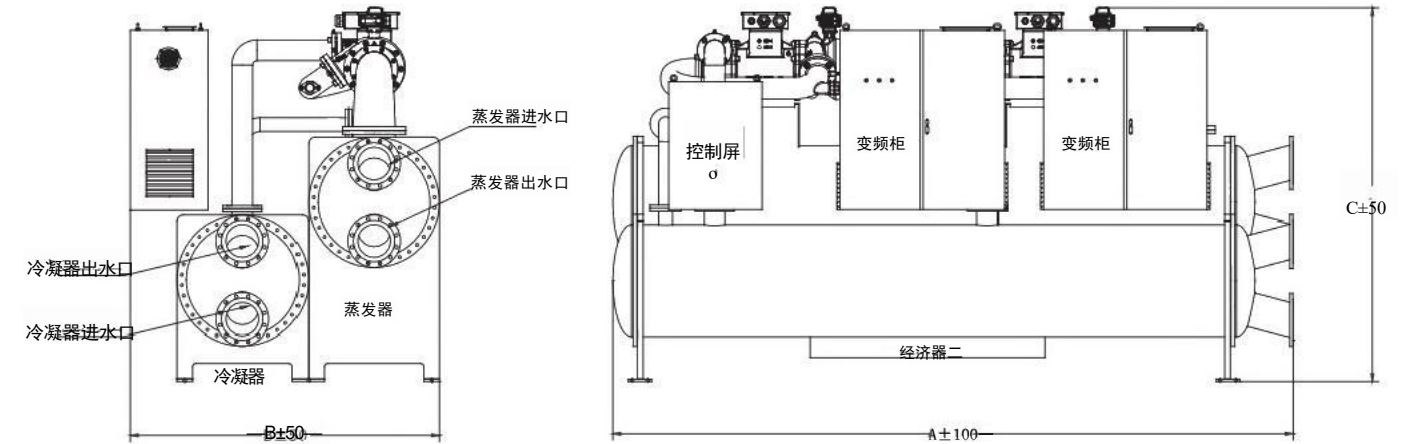
- 1、机组设计制造标准参照GB/T18430.1《蒸汽压缩循环冷水(热泵)机组工商业用及类似用途的冷水(热泵)机组》;
- 2、冷水侧污垢系数0.018m<sup>2</sup>·C/kW;冷却水侧污垢系数0.044m<sup>2</sup>·C/kW;
- 3、冷凝器和蒸发器水侧设计压力1.0MPa;
- 4、如有特殊要求,订货前请提出要求规范。
- 5、以上参数可能会随机组优化而变动。

### Friendly tips:

- 1.The design and manufacturing standards for the unit refer to GB/T18430.1 "Steam compression cycle chilled water (heat pump) units for commercial and similar purposes";
- 2.Cold water side fouling coefficient 0.018m<sup>2</sup>-C/kW;The fouling coefficient on the cooling water side is 0.044m<sup>2</sup>-C/kW;
- 3.The design pressure on the water side of the condenser and evaporator is 1.0MPa;
- 4.If there are special requirements,please specify the requirements before placing an order.
- 5.The above parametes may vary due to random group optimization.

## 外形尺寸

## External Dimensions



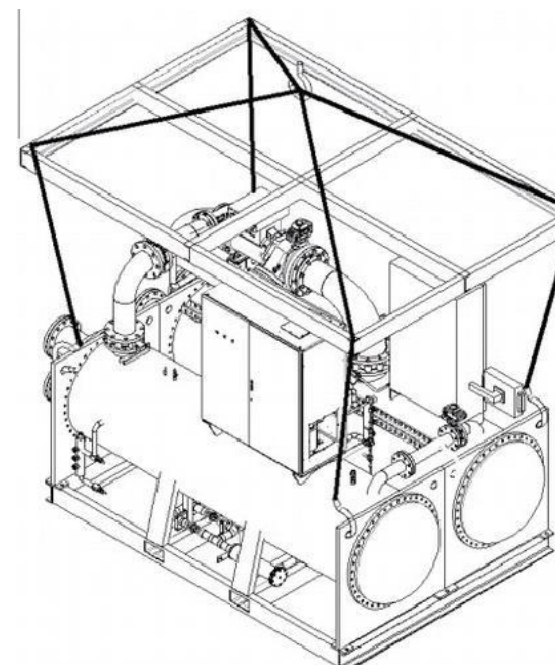
机组型号	006512	008012	009512	010512	012012	013512	014512	016512	019012	022512	026012	027512	029512	032012	038012	058022	066022	071522	077022	120032
A	2150	2150	2150	2150	2150	3100	3100	3100	3100	3100	3100	3100	3100	3800	3800	4300	4300	4300	4300	5500
B	1300	1350	1400	1450	1550	1350	1350	1550	550	1650	1650	1700	1800	1700	1950	1950	2000	2000	2050	2200
C	2100	2100	2100	2100	2100	2100	2250	2250	250	2350	2350	2350	2350	2550	2550	2700	2700	2700	2700	2800

注:以上机组外形参数可能会随机组优化而变动,最终以公司提供的技术参数为准。

Note:The external parameters of the above units may vary due to random group optimization,and the final technical parameters provided by the company shall prevail.

## 吊装运输

## Hoisting Transportation

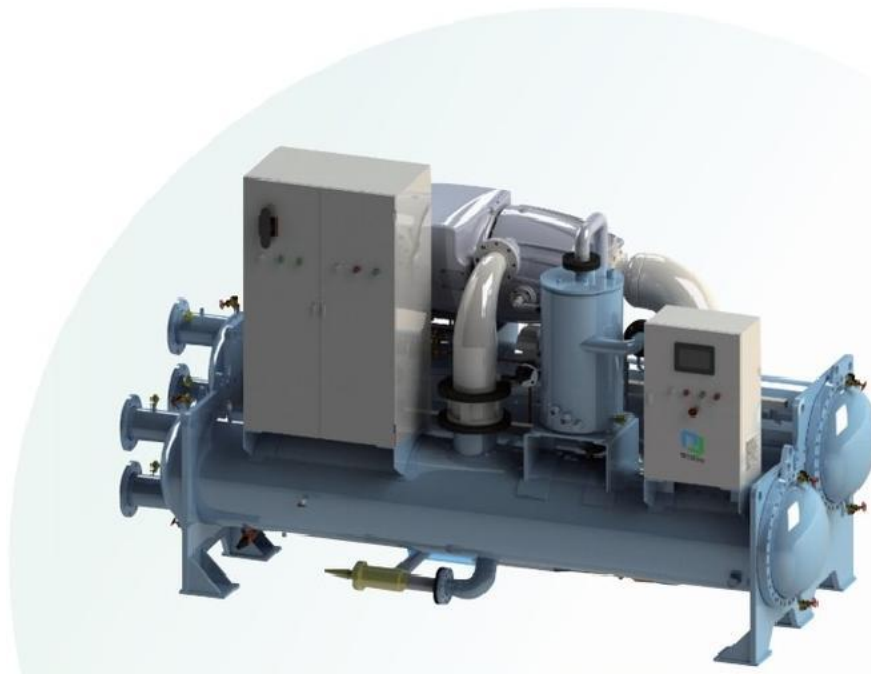


- ★ 应事先制定机组搬运计划,其内容应包括机组搬运日期、外型尺寸、重量、搬运路径、墙体或楼板预留孔洞及起重设备;
- ★ 机组搬运时,应按照工地安全法规的要求进行,起吊设备应设专人指挥,并有警戒措施,以确保人员及机械的安全;
- ★ 采取吊装时,对机组应制作专用吊具,并确保所采用的吊装设备、吊钩以及吊索牢固,能足以承受机组的重量;
- ★ 机组的搬运、吊卸,须用滚筒或吊钩,不得直接敲击及将绳索套于脆弱之部位,如铜管、阀门、控制箱等零部件,绳索与机组接触处应有保护垫,防止机组损伤;
- ★ 机组须小心搬运,避免过度摇晃及碰撞,以免对机组、人员、建筑物造成损伤。

- ★ Unit handling plan should be developed in advance,which should include the unit handling date,external dimensions,weight,handling path,reserved holes in walls or floors,and lifting equipment;
- ★ When transporting the unit,it should be carried out in accordance with the requirements of the construction site safety regulations.The lifting equipment should be commanded by a dedicated person and equipped with warning measures to ensure the safety of personnel and mechanical equipment;
- ★ When using lifting equipment,special lifting devices should be made for the unit,and it should be ensured that the lifting equipment,hooks,and slings used are firm enough to withstand the weight of the unit;
- ★ The handling,lifting,and unloading of the unit must be carried out using rollers or hooks.It is not allowed to directly strike or put ropes on fragile parts such as copper pipes,valves,control boxes,etc.Protective pads should be placed at the contact between the ropes and the unit to prevent damage to the unit;
- ★ The crew must be handled carefully to avoid excessive shaking and collision,in order to prevent damage to the crew, personnel,and buildings.

# 磁悬浮冷水机组

Maglev chiller



## 产品介绍

## Product Introduction

磁悬浮冷水机组是挪兰科技利用公司核心技术开发的一款产品，可应用于对冷水有大量需求的人居和工业环境，与传统冷水机组相比，该产品具有更高的能效比，IPLV达到11.2，可节能30%~50%。同时，具有无油、噪音更低、维保更方便等特点。

The maglev chiller is developed by NUOLAN based on its key technology. It can be used in residential and industrial environments. Product features: higher energy efficiency ratio, IPLV reaching 11.2, energy saving of 30%~50%. At the same time, it is featured by oil-free, lower noise, and easier maintenance.

## 性能特点

## Performance Characteristics

### ★驱动效率高

挪兰磁悬浮冷水机组采用高速电机直驱结构和磁悬浮轴承技术，无需联轴器、齿轮增速箱，结构简单，无机械摩擦，传动效率百分百。

### ★High drive efficiency

NUOLAN maglev chiller adopts directly driving structure high-speed motor and magnetic levitation bearing technology, which requires no couplings and gear-up boxes. It features simple structure, no mechanical friction and 100% transmission efficiency.

### ★气动效率高

挪兰全自主开发的制冷压缩机采用双级压缩机+级间补气技术，与传统螺杆压缩机等容积式压缩机和单级离心压缩机相比，气动效率可提高5%~10%，且运行范围更宽。

### ★High pneumatic efficiency

NUOLAN independently developed refrigeration compressor uses two-stage compressor+inter-stage air replenishment technology. Compared with traditional screw compressors and single-stage centrifugal compressors, the pneumatic efficiency of NUOLAN compressors can be increased by 5%-10% and the operating range will be wider.

### ★换热效率高

冷水机组中与冷媒一起参与系统循环的润滑油会附着在换热管束表面，降低换热效率。研究表明，系统的含油量越高，系统换热效率越低。磁悬浮冷水机组运行无机械摩擦，不需要润滑油，采用高效换热管换热，加强流动湍流，增强换热效果，确保系统换热效率持久高效。

### ★High heat exchange efficiency

The lubricating oil for system circulation together with the chiller refrigerant will attach to the surface of the heat exchange tube, thus reducing the heat exchange efficiency. Research shows that the higher the oil content in the system, the lower the heat exchange efficiency. The maglev chiller operates without mechanical friction and does not require lubricating oil. It uses high-efficiency heat exchange tubes for heat exchange, which can enhance flow turbulence, improve heat exchange capacity and ensure highly efficient system heat exchange and long service life.

### ★运行成本低

驱动效率高、气动效率高和换热效率高，这“三高”带来的优势就是机组的运行效率与传统机组相比，可提高30%~50%。对于用户而言，最大的优势就是可大大降低运行成本。

### ★Low operating cost

The unit features high drive efficiency, excellent pneumatic efficiency, and outstanding heat exchange efficiency. Compared with traditional units, its operating efficiency can be increased by 30% to 50%. Therefore, it can significantly reduce the operating costs.

## 性能分析

## Performance Analysis

序号 Serial Number	项目tem	螺杆式冷水机组 Screw chiller	离心式冷水机组 Centrifugal chiller	磁悬浮冷水机组 Maglev chiller
1	制冷量 Refrigeration capacity	400RT	400RT	400RT
2	输入功率 Input power	275kW	252kw	220kw
3	Cop	5.1	5.6	6.4
4	制冷运行费用(元) Refrigeration operating costs (CNY)	1,215,000	1,137,000	757,000
5	年节省电费(元) (以0.75元/度、年运行8000h、负荷率以60%计) Annual electricity savings (Based on 0.75 yuan /kwh, annual operation of 8000 hours, and load rate of 60%) (CNY)	458,000	380,000	
6	3年累计节省电费(元) Cumulative electricity savings over 3 years (CNY)	1,374,000	114,000	
7	1年维护费用(元) Maintenance cost over 1 year (CNY)	29,000	43,000	
8	3年累计维护费用(元) Cumulative maintenance costs over 3 years (CNY)	87,000	129,000	
9	3年相对节约费用(元) Cost savings over 3 years (CNY)	1,461,000	1,269,000	

技术参数

Technical Parameters

型号Model	NLSW	2505G-3MM	3005G-3MM	2505G-3MZ	3005G-3MZ	3505G-3MZ	2505W-3L	3005W-3L <sup>5</sup>	3505W-3LS	4005W-4LS	4505W-4LS	5005W-5LS	5505W-5L	6005W-6L <sup>5</sup>	7005W-7LS	8005W-7L
制冷量 Refrigerating capacity	kw	250	1055	880	1055	1230	880	1055	1230	1406	1582	1758	1934	2110	2462	2813
	rt	880	300	250	300	350	250	300	350	400	450	500	550	600	700	800
出水温度 Outlet water temperature	°C	-7~0	-7~0	-2~5	-2~5	-2~5	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20
输入功率 Input power	kw	2175	254.9	184.4	212.0	245.1	136.9	163.3	195.0	220.9	241.0	268.4	300.4	306.2	366.9	430.6
COP	w/w	4.05	4.14	4.77	4.98	5.02	6.42	6.46	6.31	6.37	6.57	6.55	6.44	6.89	6.71	6.53
IPLV	w/w	/	/	/	/	/	8.17	8.65	8.92	8.79	9.17	9.40	9.54	9.34	9.68	9.84
额定转速 Rated speed	rpm	15000	15400	13700	13900	14400	13800	14400	15200	12900	13300	13700	14100	11900	12600	13100
配电功率 Distribution power	kw	261	306	221	254	294	164	196	234	265	289	322	360	367	440	517
蒸发器流量 Evaporator flow rate	m <sup>3</sup> /h	168	202	168	202	235	151	181	212	242	272	302	333	363	423	484
压降 Pressure drop	kpa	81	89	76	84	84	81	84	87	84	85	82	81	81	81	80
冷冻水管径 Chilled water pipe diameter	DN(mm)	200	200	200	200	200	200	200	200	200	250	250	250	300	300	300
冷凝器流量 Condenser flow rate	m <sup>3</sup> /h	189	227	189	227	265	189	227	265	302	340	378	416	454	529	605
压降 Pressure drop	kpa	72	64	72	64	72	72	64	72	72	72	72	71	72	72	70
冷却水管径 Chilled water pipe diameter	DN(mm)	200	200	200	200	200	200	200	200	200	250	250	250	300	300	300
外形尺寸 Dimension	长L (mm)	4352	4352	4352	4352	4275	4275	4275	4275	4296	4352	4360	4360	4352	5111	5111
	宽W (mm)	1960	2070	1960	2070	2070	1701	1701	1701	1008	2070	2103	2103	2070	2276	2276
	高H (mm)	2068	2068	2068	2068	2068	1878	1818	1818	1887	2375	1980	1980	2375	2370	2370
机组重量 Unit weight	Kg	6000	6100	6000	6100	6250	5200	5200	6000	6000	6800	6800	6800	7600	8200	8680
运行重量 Operating weight	Kg	6630	6770	6630	6770	7040	5770	5870	6790	6890	7810	7930	8030	8970	9790	10520

友情提示:

- 表中常温机组参数依据国标GB/T18430.1-2007 规定给定, 工况条件: 冷冻水出水温度7°C, 水流量=制冷量x0.172m<sup>3</sup>/(h·kW); 冷却水进水温度30°C, 水流量=制冷量x0.215m<sup>3</sup>/(h·kW);
- 常温机组能效等级根据标准: GB19577-2015《冷水机组能效限定值及能效等级》;
- 低温机组工况条件: 载冷剂为体积浓度30%的乙二醇溶液, 冷冻水出水温度0°C或-5°C, 乙二醇溶液流量=制冷量x0.191m<sup>3</sup>/(h·kW); 冷却水进水温度30°C, 水流量=制冷量x0.215m<sup>3</sup>/(h·kW);
- 蒸发器、冷凝器水侧承压为1.0MPa。高于1.0MPa 工作压力应在订货时须注明;
- 配置电源380V-3P-50HZ, 压缩机启动电流2A, 机组使用冷媒R134a;
- 由于产品改良和优化, 上述参数可能会有所更改, 以产品铭牌为准;
- 公司产品型号在扩展中, 如有其他需求, 请详询技术人员。

技术参数

Technical Parameters

型号Model	NLSW	900Dw-S	ODw-LS	100w-5s	200w-6L5	1300w-6S	40Dw-7S	1500w-715	1600rw-5LS	700Tw-s1s	900rw-6S5	900w-6LS	200rw-71S	2100rw-7S	200w-71	2300Tw-75
制冷量 Refrigerating capacity	kw	3165	3517	3869	4220	4572	4924	5275	5626	5979	6331	6682	7033	7385	7737	8089
	rt	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
出水温度 Outlet water temperature	°C	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20	5~20
输入功率 Input power	kw	235.3*2	265.9*2	304.2*2	306.2*2	335.5*2	366.9*2	399.1*2	289.2*3	311.9*3	306.1*3	325.5*3	346.9*3	366.9*3	388.3*3	409.8*3
COP	w/w	6.72	6.61	6.36	6.89	6.81	6.71	6.61	6.48	6.39	6.89	6.84	6.78	6.71	6.64	6.58
IPLV	w/w	9.70	9.65	9.71	9.96	9.86	9.98	10.05	9.81	9.75	10.19	10.21	10.19	10.15	10.09	9.99
额定转速 Rated speed	rpm	13300	13700	14100	11900	12200	12600	13000	13900	14200	11900	12100	12300	12600	12800	13100
配电功率 Distribution power	kw	282*2	319*2	365*2	367*2	402*2	440*2	478*2	347*3	374*3	367*3	390*3	476*3	440*3	465*3	491*3
蒸发器流量 Evaporator flow rate	m <sup>3</sup> /h	544	605	665	726	786	847	907	968	1028	1089	1149	1210	1270	1330	1391
压降 Pressure drop	kpa	70	70	70	70	70	70	70	63	70	73	80	74	81	74	79
冷冻水管径 Chilled water pipe diameter	DN(mm)	350	350	350	400	400	400	400	450	450	450	450	450	450	450	450
冷凝器流量 Condenser flow rate	m <sup>3</sup> /h	680	756	832	907	983	1058	1134	1210	1285	1361	1436	1512	1587	1663	1769
压降 Pressure drop	kpa	70	70	70	70	70	70	70	69	70	58	63	58	63	58	62
冷却水管径 Chilled water pipe diameter	DN(mm)	350	350	350	400	400	400	400	450	450	450	450	450	450	450	450
外形尺寸 Dimension	长L (mm)	5700	5700	5700	5900	5900	5900	5900	5800	5800	7900	7900	7900	7900	7900	7900
	宽W (mm)	2600	2600	2600	3200	3200	3300	3300	2800	2800	3200	3200	3200	3200	3200	3200
	高H (mm)	2300	2300	2300	2700	2700	2800	2800	2400	2400	3100	3100	3100	3100	3100	3100
机组重量 Unit weight	Kg	9680	9940	10210	11520	11780	12060	12320	13800	13800	15280	15280	15890	15890	16640	16640
运行重量 Operating weight	Kg	11920	12400	12950	14510	15020	15550	16060	17960	18040	19080	19160	20110	20190	21090	21170

Friendly tips:

- The parameters of the room temperature unit in the table are given according to the national standard GB/T18430.1-2007. The operating conditions are: chilled water outlet temperature of 7°C, water flow rate=refrigeration capacityx0.172m<sup>3</sup>/(h·kW); Cooling water inlet temperature is 30°C, water flow rate=cooling capacityx0.275m<sup>3</sup>/(h·kW);
- The energy efficiency level of room temperature units is based on the standard GB19577-2015 "Minimum allowable values and energy efficiency levels for chiller units";
- Low temperature unit operating conditions: The refrigerant is a 30% volume concentration ethylene glycol solution, the chilled water temperature is 0°C or -5°C, and the ethylene glycol solution flow rate is calculated as refrigeration capacity multiplied by 0.191m<sup>3</sup>/(h·kW); Cooling water inlet temperature of 30°C, water flow rate=cooling capacityx0.215m<sup>3</sup>/(h·kW);
- The pressure on the water side of the evaporator and condenser is 1.0MPa. The working pressure higher than 1.0MPa should be specified when ordering;
- Configure power supply of 380V-3P-50HZ, compressor starting current of 2A, and use refrigerant R134a for the unit;
- Due to product improvements and optimizations, the above parameters may be subject to change, and the product nameplate shall prevail;
- The company's product models are being expanded. If you have any other requirements, please consult our technical personnel for more details.

# 降膜式变频螺杆机组

## Falling film variable frequency screw unit



### 产品介绍

NUOLAN 系列降膜式变频螺杆机组可为宾馆、医院、体育馆、饭店、娱乐中心、商业大厦、写字楼等场所的中央空调系统提供冷水或为纺织、化工、石油、铝氧化、医药、塑胶等工矿企业提供工艺冷冻水，该产品制造工艺技术成熟、运行稳定可靠。NUOLAN 系列降膜式变频螺杆机组可提供-5~+30℃冷冻水，可适用水蓄冷、低温送风空调及各类其它有-5℃以上冷冻水需求场所，也可提供30-52℃的热水供采暖用。

The NUOLAN series falling film variable frequency screw unit can provide cold water for the central air conditioning system of hotels, hospitals, gyms, restaurants, entertainment centers, commercial buildings, office buildings and other places, or process cold water for textile, chemical, petroleum, aluminum oxide, pharmaceutical, plastic and other industrial and mining enterprises. The manufacturing technology of this product is mature, and the operation is stable and reliable. The NUOLAN series falling film variable frequency screw unit can provide -5~+30℃ chilled water, which is suitable for ice storage, low-temperature air conditioning, and various other places with a demand for chilled water above -5℃. It can also provide hot water of 30~52℃ for heating.

### 性能特点

- ★ 采用先进的半封闭螺杆式压缩机保证机组长期安全稳定运行，使用寿命长；
- ★ 采用高效降膜式蒸发器，使COP值较传统的干式蒸发器大大提高，运行费用节省15-25%；
- ★ 机组采用PLC控制技术，实现“一键开机”和全自动运行；机组控制系统可内置WEB浏览器，用户可通过INTERNET网在任何一台电脑上均可远程监控机组的运行状况和查询机组的工作参数；
- ★ 机组保护功能齐全：系统的高/低压保护、油位过低保护、排气温度过高保护、水系统断流保护、防冻保护、电源的缺(逆)相保护等安全保护功能，保证机组运行稳定、安全；
- ★ 根据用户需求，可增加热回收功能，夏季热回收量可达制冷量的30%-40%，冬季使用时热回收量最高可达75%，在满足制冷的同时将热源侧废弃的热量进行部分或全部回收加以利用，大大降低了机组的运行费用；
- ★ 换热管外翅设计增强液核沸腾所需的汽化核心，提高了管外换热效率；换热管内内脊设计，增大换热面积提高了管内换热效率，增加扰动使层流变成紊流而延缓结垢；
- ★ 电子膨胀阀更精确的调节制冷剂流量和控制蒸发器的液位；
- ★ 高效的二次油分，可靠的引射泵回油系统，完美解决了降膜式机组的回油问题，确保了压缩机长时间运行不失油，使机组运行稳定可靠；
- ★ 可适用多种环保制冷剂如HFC134a、HFC407C、HFC404A等，满足国际社会环保要求；
- ★ 防爆、高精度及其它特殊机组可定制。

### Performance Characteristics

- ★ Adopting advanced semi-enclosed screw compressors to ensure long-term safe and stable operation of the unit, with a long service life;
- ★ Adopting an efficient falling film evaporator, the COP value is greatly increased compared to traditional dry evaporators, which can save 15-25% in operating costs;
- ★ The unit adopts PLC control technology to achieve "one click start" and fully automatic operation. The unit control system can be equipped with a built-in WEB browser, and users can remotely monitor the operation status of the unit and query its working parameters on any computer through the INTERNET network;
- ★ The unit has complete protection functions: high/low pressure protection of the system, low oil level protection, high exhaust temperature protection, water system interruption protection, antifreeze protection, and phase loss (reverse) protection of the power supply, ensuring stable and safe operation of the unit;
- ★ According to users' needs, heating and recovery functions can be added. In summer, the heat recovery capacity can reach 30% to 40% of the cooling capacity; and in winter, the heat recovery capacity can reach up to 75%. While meeting the cooling requirements, some of the waste heat on the heat source side can be recycled and utilized, greatly reducing the operating cost of the unit;
- ★ The design of the outer fins of the heat exchange tube enhances the vaporization core required for bubble boiling, improving the heat transfer efficiency outside the tube. The design of the inner ridge of the heat exchange tube increases the heat transfer area, improves the heat transfer efficiency inside the tube, and increases disturbance to turn laminar flow into turbulent flow and delay scaling;
- ★ Electronic expansion valve for more precise regulation of refrigerant flow and control of evaporator liquid level;
- ★ Efficient secondary oil separation and reliable injection pump return oil system perfectly solve the return oil problem of the falling film unit, ensuring that the compressor runs for a long time without losing oil, and also ensuring stable and reliable operation of the unit;
- ★ Suitable for various environmentally friendly refrigerant working fluids such as HFC134a, HFC407C, HFC404A, etc., all of which meet international environmental requirements;
- ★ Explosion proof, high-precision, and other special units can be customized.

### 技术参数

### Technical Parameters

型号 Model	NLSW	310UMD	380JMD	420JMD	460JMD	540JMD	610JMD	700UMD	760UMD	820UMD	1090JMS	1210JMS	13307JMS	16307JMS
制冷量 Refrigerating capacity	KW	308	379	421	456	544	607	693	763	815	1088	1214	1526	1630
	Kcal/h(×10 <sup>4</sup> )	26.5	32.6	36.2	39.2	46.8	52.2	59.6	65.6	70.1	93.6	104.4	131.2	140
	RT	88	108	120	130	155	173	198	218	233	311	347	436	466
能效比COPEnergyefficiency ratio		6.25	6.36	6.38	6.36	6.45	6.51	6.66	6.66	6.66	6.45	6.51	6.66	6.66
压缩机 Compressor	形式Form	先进非对称半密封双螺杆式Advanced asymmetric semi sealed tin screw type												
	制冷输入功率 Cooling input power	49.3	59.5	66.1	71.7	84.3	93.3	104	115	122	168.6	186.6	230	244
	制冷运行电流 Refrigeration operating current	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9
	容量控制 Capacity control	0-25%-50%-75%-100% (25%为启动)												
冷凝器 Condenser	形式Form	高效外螺纹管壳管式Efficient external threaded shell and tube type												
	冷却水流量 Cooling water flow rate	80	98	110	119	141	158	179	198	211	282	316	396	422
	水管接口 Water pipe interface	DN125	DN125	DN125	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200	DN250	DN250
	水压降 Water pressure drop	50	50	55	55	60	60	60	65	65	65	65	70	70
蒸发器 Evaporator	形式Form	高效降膜式Efficient falling film type												
	冷冻液流量 Refrigerant flow rate	53	65	72	78	94	104	119	131	140	188	208	262	280
	水管接口 Water pipe interface	DN125	DN125	DN125	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200	DN250	DN250
	水压降 Water pressure drop	50	50	55	55	60	60	60	65	65	65	65	70	70
节流方式Throttling mode	电子膨胀阀Electronic expansion valve													
安全保护装置safety protection device	高低压保护、防冰、过热保护(双重)、安全阀、过载保护、欠相、逆相、欠电压、过电压、水流保护等。 High and low voltage protection, anti-icing, overheating protection (dual), safety valve, overload protection, underphase, reverse, undervoltage, overvoltage, water flow protection, etc.													
制冷剂Refrigerant	R22													
外形尺寸 Dimension	长L (mm)	3200	3600	3600	3600	3700	3700	3700	3700	3700	4420	4500	4800	5090
	宽W (mm)	1070	1100	1150	1200	1200	1200	1250	1300	1300	1500	1500	1700	1840
	高H (mm)	1640	1640	1700	1700	1750	1750	1950	1930	1940	1750	1960	1980	2040
噪音值 Noise value	dB(A)	67	67	67	68	69	70	70	71	71	71	71	72	72
整机质量 Overall quality	Kg	2400	2600	2700	2800	2900	3000	3300	3500	3800	5800	6000	6600	7000
运转重量 Running weight	Kg	2850	3050	3200	3350	3400	3500	3650	3900	4200	6800	7000	7300	7800

#### 友情提示:

1. 制冷工况：冷水进水温度12℃，冷水出水温度7℃；冷却水进水温度30℃，冷却水出水温度35℃；
2. 本系列机组采用进口温度控制器和PLC控制器；
3. 电源制式：3P-380V-50Hz，允许电压波动±10%，允许相间电压差±2%；
4. 噪音测定位置为距主机前方2m，高1.5mm处，前后左右四点平均值；
5. 提供R134a工质的机组，参数和外形尺寸请向我公司索取

#### Friendly tips:

1. Refrigeration conditions: The inlet temperature of cold water is 12℃, and the outlet temperature of cold water is 7℃; The inlet temperature of cooling water is 30℃, and the outlet temperature of cooling water is 35℃;
2. This series of units adopts imported temperature controllers and PLC controllers;
3. Power supply system: 3P-380V-50Hz, allowable voltage fluctuation ±10%, allowable voltage difference between phase with phase at ±2%;
4. The noise measurement position is located at a distance of 2 meters in front of the main engine and a height of 1.5mm, with the average value of the four points in front, back, left, and right;
5. The unit of R134a working fluid can be provided. Please contact us for parameters and overall dimensions.

# 冷却塔

Cooling tower



## 性能特点

## Performance Characteristics

NUOLAN 冷却塔采用“瓶”形设计，风阻最小，整塔结构轻盈精巧，组装方便。塔体采用优质玻璃钢制作而成，表面胶衣采用进口原料，抗紫外线照射，可保持常年不老化、不褪色。

传动部件采用户外立式冷却塔专用电机和风机，具有节能高效等优点；减速器采用冷却塔专用减速器，具有运转平稳、寿命长、噪音低等特点。

填料经热工测试中心测试，具有再分布均匀、亲水性好，风阻小，耐高温等特点。

冷却塔底盘可作集水盘使用，并配有自动补水，排污等装置，可作闭式循环水池使用，无需另设水池。

- ★The NUOLAN cooling tower adopts a "bottle" shaped design with the advantage of minimal wind resistance, and the entire tower structure is lightweight and exquisite, making assembly convenient.
- ★ The tower body is made of high-quality fiberglass, and the surface gel coat is made of imported raw materials, which is resistant to ultraviolet radiation and can maintain year-round aging and color fastness.
- ★ The transmission components adopt outdoor vertical cooling tower dedicated motors and fans, which have the advantages of energy conservation and efficiency. The reducer adopts a dedicated cooling tower reducer, which has the characteristics of smooth operation, long service life, and low noise.
- ★ The filler has been tested by the thermal testing center and has the characteristics of uniform redistribution, good hydrophilicity, small wind resistance, and high temperature resistance.
- ★The cooling tower chassis can be used as a water collection tray and is equipped with automatic water replenishment, sewage discharge and other devices. It can be used as a closed circulating water tank without the need for a separate water tank.

## 技术参数

## Technical Parameters

规格 Specification	型号 Model	冷却水量 Cooling flow (m³/h)	风机风量 Fan air volume (km³/h)	电机功率 Motor power (kw)	进塔水压 Inlet water pressure (Kpa)	制品重量 Products weight (kg)	运转重量 operating weight (kg)	噪声 Noise (DB)	外形尺寸 (mm) dimension	
									塔高 Tower height	最大直径 Diameter
标准普通型系列 Ordinary type series	BL-5	5	4	0.18	19.6	60	140	43	1410	930
	BL-8	8	5	0.18	19.6	70	155	43.5	1560	930
	BL-15	15	10.5	0.37	24.5	120	350	47	1780	1250
	BL-30	30	174	0.75	27	180	390	50	1980	1620
	BL-50	50	36.0	1.1	27	360	750	54	2010	1840
	BL-80	80	50.0	2.2	28	580	1190	58	2680	2500
	BL-100	100	65.0	2.2	28	800	1720	59.5	2820	2900
	BL-150	150	90.0	4	28	1200	2290	59.5	3350	3300
	BL-200	200	138	5	28	1800	3550	62	3900	4000
	BL-250	250	150	7.5	28	2200	3810	63.5	4165	4500
	BL-300	300	200	7.5	28	2460	5110	64	4435	4900
	BL-350	350	240	11	28	2980	5480	64	4735	5300
	BL-400	400	240	11	28	3360	7140	65	4820	6100
BL-500	500	320	15	28	3950	8690	66	5145	6800	
BL-600	600	400	22	28	4600	9400	69	5730	8000	

设计工况：  
进水温度：37°C；出水温度：32°C；湿球温度：28°C；干球温度：31.5°C；大气压力：1013hPa。  
Design working conditions:

Inlet water temperature: 37°C; outlet water temperature: 32°C; wet bulb temperature: 28°C; dry bulb temperature: 31.5°C; atmospheric pressure: 1013hPa.

## Partial Partner

部分合作伙伴


# 10余年坚持不懈初心不变

## Table of Part Achievement

### 部分业绩表

浙江恒辉新材料有限公司	大钹科技(长兴)有限公司	华辰远铭新材料(南通)有限公司	临朐金盾工贸有限公司
浙江旗创科技集团有限公司	四川奥美瑞品彩粉末涂料有限公司	河北冀州塑料科技有限公司	南京双新新材料有限公司
宁波金狮塑粉有限公司	安徽美佳新材料股份有限公司	胜芳镇奥祥塑粉厂	湖北润佳新材料科技有限公司
宁波一贝新材料科技有限公司	安徽桑瑞泰粉末材料有限公司	廊坊雨金塑粉有限公司	张家港市华辰塑粉有限公司
擎天材料科技有限公司	艾仕得粉末涂料(上海)有限公司	江西睿智环保科技有限公司	德汇新材料科技南通有限公司
福建万安实业集团有限公司	河北万兴粉末涂料有限公司	立邦涂料(天津)有限公司	安徽哈船新材料科技有限公司
广东华彩粉末科技有限公司	浙江聚华材料科技股份有限公司	庞贝捷华佳科技(黄山)有限公司	信和新材料股份有限公司
浙江中法新材料有限公司	德清金秋塑粉有限公司	廊坊市卓创涂料有限公司	河南斯帝克涂装新材料有限公司
浙江超浪新材料有限公司	浙江明泉工业涂装有限公司	廊坊市华钜涂料有限公司	洛阳乐卡粉末有限公司
浙江创基实业有限公司	天津百诗特科技发展有限公司	廊坊市燕美化工有限公司	洛阳市兆兴粉末涂料有限公司
浙江兴顺新材料有限公司	浙江双金粉末涂料有限公司	安徽罗斯夫新材料科技有限公司	郑州恒诺机械有限公司
河北燕美涂料涂装有限公司	山东圣士达机械科技股份有限公司	江苏德博金属制品有限公司	陕西正阳邦格恩新材料科技有限公司
廊坊泰铭金属涂装材料有限公司	黄山华佳表面科技有限公司	上海华染涂料科技有限公司	和瑞美新材料科技(河南)有限公司
巨野金华塑粉有限公司	江阴市玲珑高分子材料有限公司	天津耐尔新材料科技股份有限公司	河南卧龙涂料科技有限公司
烟台万亨智能设备有限公司	沈阳三氏化工涂料有限公司	洛阳市兆兴粉末涂料有限公司	金湖飞虹涂装材料有限公司
海阳市静电设备有限公司	武汉银彩科技有限公司	上海国丽粉体涂料有限公司	江阴市玲珑高分子材料有限公司
南昌宝元实业有限公司	河北聚华材料科技有限公司	山东锦峰粉末科技有限公司	江苏双硕涂装设备有限公司
波瑞泽(浙江)新材料有限公司	黄山惠久粉末材料有限公司	江西安风实业有限公司	宜春市置胜隆科技有限公司
浙江昊杨新能源科技有限公司	廊坊市开元盛琳粉末涂料有限公司	江西佳仕达粉末涂料有限公司	江西金海金属有限公司
滨州市新科奥德科技有限公司	常州市碳素新材料科技有限公司	山东金彩粉末涂料有限公司	新红资(厦门)塑化有限公司
云南力华喷涂材料有限公司	安徽柏枝新材料有限公司	沧州银鉴机箱粉末有限公司	广西广云铝业有限公司
业彩环保科技江苏有限公司	华辰环保科技(江苏)有限公司	福州宏涂环保超浪有限公司	泉州万鑫涂料有限公司

中国兰走遍全国走向世界

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提供优质冷水机组解决方案  
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