

幕墙一体式空调器

GLASS FACADE INTEGRATED
SURROUND-LINE CONVECTOR

技术解决方案

TECHNOLOGY
SOLUTIONS

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Glass facade extended
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3年

56个项目通过 LEED 认证

过去的三年中，我们完成了近百个项目，其中 56 项通过 leed 认证，10 项荣获金级认证，1 项铂金级认证。



56

项目通过 leed 认证



10

项目荣获金级认证



1

项目荣获铂金级认证

In the past three years,

we have completed almost hundred of projects, where in 56 projects have been certified by LEED, 10 projects have been granted golden certification and 1 project

has been granted platinum certification.





幕墙扩展式空调器

Glass facade extended surround-line convector

幕墙扩展式空调器，是我们最新开发的幕墙装配一体式末端产品。主要应用于高端建筑玻璃幕墙系统与架空地板的衔接部，解决幕墙周边 3~5m 环境问题。幕墙扩展式空调器沿玻璃幕墙结构连续布置，承担幕墙周边热负荷，围绕建筑内墙形成线性、封闭的空气区间。区间内温度场更加均匀，气流组织更加均匀，有效降低热损失，使区域内环境更舒适、更节能；同时，它在幕墙与架空地板之间，形成一个完美过渡，有机整合了幕墙框架与架空地板的衔接部分，让室内空间表现更加自然、美观、统一。

Glass facade extended surround-line convector is our newly developed glass facade assembling integrated end product, mainly applied in the transition between glass facade system and raised floor of high-end building, solved the environmental problem 3~5m around the facade. Such surround-line convector is provided continuously along the glass facade structure, bears the thermal load around the facade and forms a linear closed air space around internal wall of the building so as to get a more even temperature field and air distribution, effectively reduce heat loss and get a more comfortable and energy-saving interior environment; meanwhile, such surround-line convector also forms a perfect transition between facade and raised floor, organically gets the transition part between facade framework and raised floor integrated so as to show a more natural, beautiful and uniform appearance in indoor space.

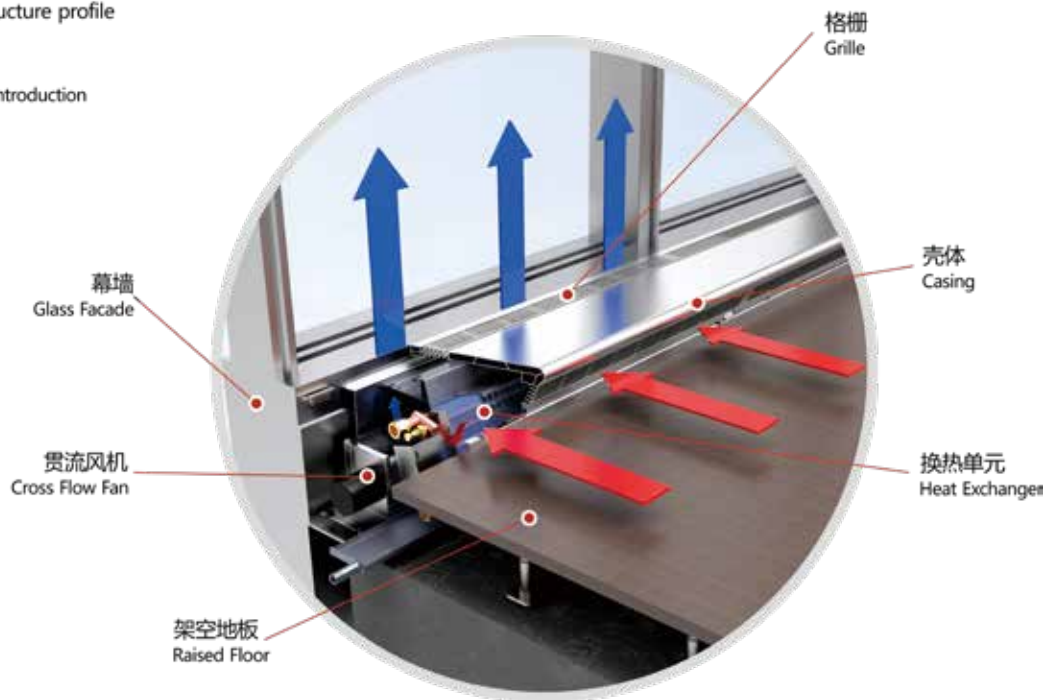


产品结构剖面图

Product structure profile

结构介绍

Structure introduction



产品主要功能及特点

MAIN FUNCTION AND FEATURES



01 与空调系统相辅相成，有效解决幕墙周边 3-5m 的空间环境舒适度问题
幕墙扩展式空调器在幕墙周边形成连续线性的空气隔绝保护层，有效阻隔外部空气侵蚀内部环境；同时对内部环境进行补充和完善，在幕墙内 3-5m 空间中，创造出更舒适的过渡环境。

This product is inevitable to air conditioning system and vice versa and can effectively improve the comfort degree in the space environment 3-5m around facade.

Such surround-line convector can form a continuous linear air insulation layer around the facade to effectively prevent exterior air from corroding interior environment as well as to supplement and perfect the interior environment and create a more comfortable transition environment in the space 3-5m around facade.

02 精选超静音风机
扩展式空调器选用高端进口超静音风机，安静高效，使用寿命长。

Selected ultra-quiet fan.

Extended surround-line convector selects imported high-end ultra-quiet fan with long life.

03 完美匹配，协调统一
幕墙扩展式空调器，可以根据幕墙的高低，定制化设计产品的高度。确保产品成型上表面与幕墙结构衔接处上表面维持一致，提升室内空间的整体性和美观程度。

Perfect matching and uniform coordination.

Curtain wall expansion type air conditioner, can customize the height of the product according to the height of the curtain wall. Ensure that the surface of the product molding is consistent with the surface of the curtain wall structure, and improve the overall and aesthetic level of the interior space.



04 表冷器性能优异，喷涂高规医用级防腐涂料

使用专利技术的医用级防腐涂料喷涂，长久稳定，有效去除甲醛，延长产品使用寿命，抗病毒、杀菌、防霉、除臭，祛除室内各种气态污染物。

The surface air cooler performs well and is painted with high-standard medical anticorrosive paint .

It is painted with patented medical anticorrosive paint which is stable for long time and can effectively get rid of methanol and various gas pollutants indoor, prolong product's service life and has antiviral, sterilization, mould proof and deodorization functions.

05 造型自由定制

我们根据不同的建筑设计方案和空间设计方案，提供不同的产品造型设计方案。可以根据客户的要求，自定义设计方案。

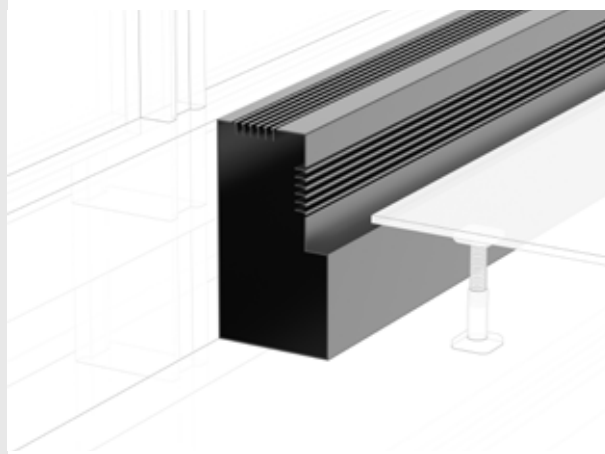
Customized modeling.

We can provide different product modeling design solution on the basis of different architectural design scheme and spatial design scheme and customize the design scheme to the satisfaction of customer.

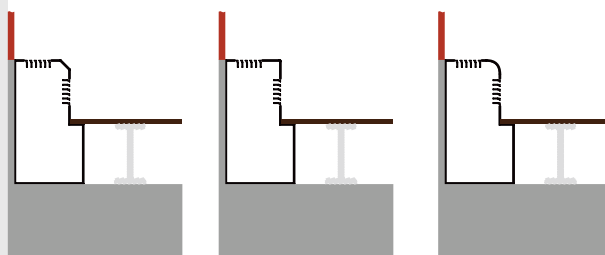


01 直角造型及其造型延伸

Right-angle modeling and Extension of modeling



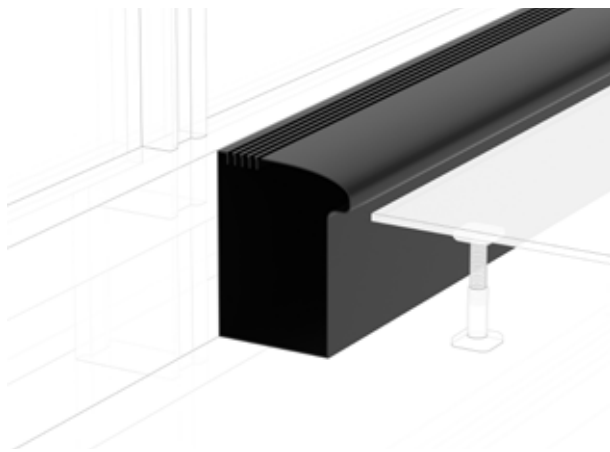
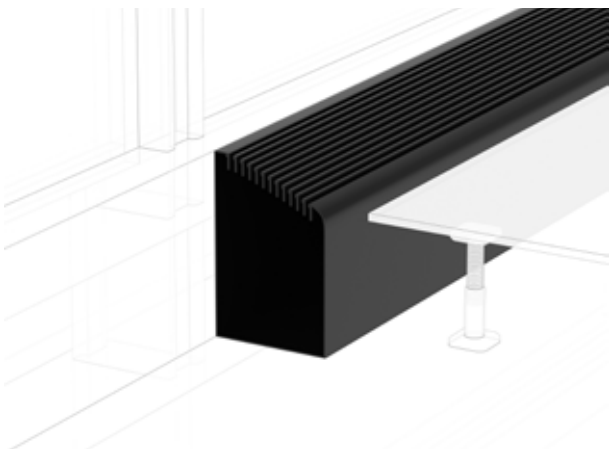
造型 A 延伸





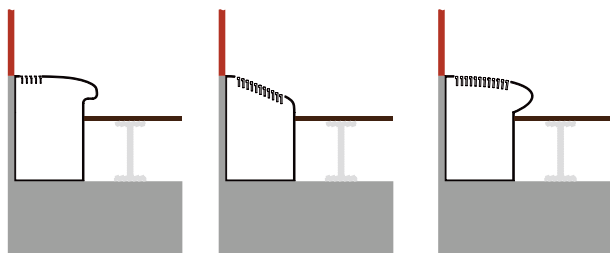
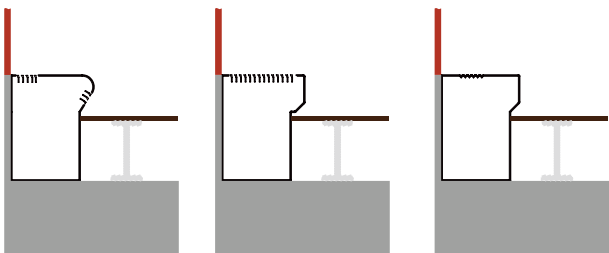
02 斜面造型及其造型延伸
Arc modeling and Extension of modeling

03 弧形造型及其造型延伸
Beveled modeling and Extension of modeling



造型 B 延伸

造型 C 延伸



型号	风速等级	风量 m ³ /h	声压等级 dB(A)	制冷量 W	制热量 W	长度 mm	高度 mm	宽度 mm	电机数量 台	功率 W
FTLBKD260-1250/320	5	360	40	1535	2880	1250	260	320	1	32
	4	300	37	1278	2190					
	3	234	38	1000	1820					
	2	180	36	766	1314					
	1	150	35	640	1150					
FTLBKD260-2000/320	5	720	42	2460	4600	2000	260	320	2	64
	4	600	39	2076	3876					
	3	468	37	1600	3000					
	2	360	35	1281	2325					
	1	300	34	1025	1920					
FTLBKD260-2750/320	5	1080	44	3690	6915	2750	260	320	3	96
	4	900	41	3114	5814					
	3	702	39	2400	4500					
	2	540	37	1868	3488					
	1	450	36	1540	2800					
FTLBKD300-1250/340	5	475	41	1643	3068	1250	300	340	1	48
	4	404	38	1397	2609					
	3	356	36	1231	2299					
	2	318	34	1100	2054					
	1	271	33	937	1750					
FTLBKD300-2000/340	5	950	43	3287	6137	2000	300	340	2	96
	4	808	40	2795	5219					
	3	712	38	2463	4599					
	2	637	36	2204	4115					
	1	542	35	1675	3501					
FTLBKD300-2750/340	5	1425	45	4930	9205	2750	300	340	3	144
	4	1211	42	4190	7823					
	3	1069	40	3698	6905					
	2	955	38	3304	6196					
	1	812	37	2809	5244					





幕墙一体式空调器

Glass Facade Integrated Surround-Line Convectors

目前，高层框架结构建筑通常采用大面积玻璃幕墙，用于解决自然光采光和节能的问题。使用大面积玻璃幕墙，围护结构附近区域极易形成冷（热）区，造成该区域内人体极度不适。幕墙一体式空调器可完美解决这个问题，在围护结构附近形成均匀的温度场和合理的气流组织，极大的提高该区域环境舒适度。

幕墙一体式空调器主要结构包含内置换热单元、壳体、结构配合件、支架及零部件，与幕墙装配为一体，即可承担围护结构的冷（热）负荷，消除围护结构附近的冷（热）区，又可装饰幕墙，作为窗台使用。实现结构与功能的统一。

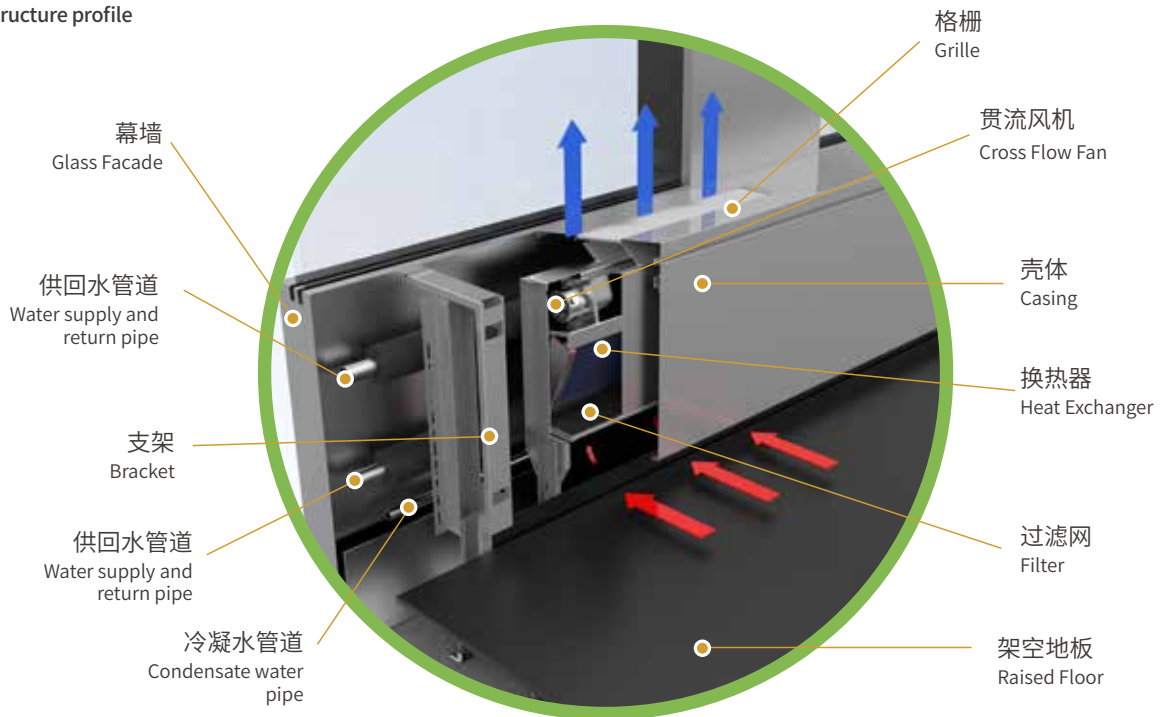
At present, high-rise frame structural building generally adopts large glass facade to solve the natural lighting and energy saving problems. Using large glass facade is easy to form a cold (hot) zone in area nearby the enclosure and cause extremely uncomfortable feeling in human body in this area. However, facade integrated surround-line convectors can perfectly solve this problem and form an even temperature field and rational gas distribution adjacent to the enclosure and thus can greatly improve the environment comfort level in this area.

Such surround-line convectors are mainly composed of built-in heat exchanger, casing, structural fitting, support and components and when being assembled together with glass facade, can bear cold (hot) load on the enclosure, eliminate cold (hot) zone nearby the enclosure but also can be a decoration to glass facade and can be used as sill to get the structure and function uniformed.



产品结构剖面图

Product structure profile



MAIN FUNCTION AND FEATURES 产品主要功能及特点

01

线性出风，可无限延展，均匀连续

幕墙一体式空调器沿幕墙连续布置，线性出风，能够承担围护结构冷热负荷，消除围护结构附近的冷（热）区，在室内形成合理的制冷（采暖）气流组织，建筑空间内温度场均匀，空气对流柔和，大大提高室内空间舒适度。

It adopts linear air-out mode, can be infinitely extended and is provided with even and continuous protection.

Continuous arrangement of assembly of curtain wall one-piece air-conditioner, along the wall of a continuous arrangement, linear wind, able to bear the palisade structure heat load, eliminate the palisade structure near the cold (hot) area, form a reasonable cooling (heating) in indoor air distribution, uniform temperature field in space, air convection downy, greatly improve the indoor comfort space.



02

造型可定制设计，与幕墙结构协调统一

幕墙一体式空调器通过结构配合件，与幕墙结合如一，是完善幕墙的重要部分可作窗台使用，装饰效果好；还可保护幕墙，修正幕墙设计与土建施工的误差，消除幕墙玻璃结露现象，实用性强。

Modeling can be customized design, and the curtain wall structure coordination and unity.

Exposed convector is integrated with glass facade by structural fittings and is a key part to perfect the glass facade. With good decorative effect, it can be used as a sill. With good practicality, it can also be used to protect the glass facade, correct any error between glass facade design and civil construction and eliminate condensation on the glass.





03

参数化设计，批量自动化生产，工期短

我们使用先进的参数化设计软件进行产品设计，并将设计好的文件自动转入生产加工程式。设计周期短，生产速度快，产品质量好。

In parametric design, automatic production in batches and with short construction period.

We use advanced parametric design software to design the product and have the designed document automatically shift into production process. This product is of short design period, good quality and with high production speed.



04

安装维护方便

幕墙一体式空调器外观无任何连接件，壳体与面板安装牢固，拆解简单方便，易于后期维护和拆卸。

Convenient for mounting and maintenance.

Exposed convector has no any connector in appearance. The casing and panel are firmly mounted and are easy to be dismantled and convenient for later maintenance and removal.



05

承担值班热负荷，有效节能

中央空调系统冬季采暖时，夜间或节假日无人时，停止中央空调运行会对建筑内设施造成影响或损坏。这时选用幕墙一体式空调器，可有效封闭冷空气进入，防止室内热量外流，有效节能。

Can bear duty heat load and effectively save energy.

During heating by central air conditioning system in winter, if the central surround-line convector stops work when there is no person indoor at night or in holidays, facilities in the building may be affected or damaged. At this time, using exposed convector may effectively prevent cold air from entering into and indoor heat from flow out and thus play a role of effective energy saving.



06

选用国际顶级进口风机，质量可靠

我们根据客户需求，定制国际顶级进口风机单元。主要风机供应商均为德国、美国等地国际领先风机制造商。

With imported international top grade fan with reliable quality.

We customize the imported international top grade fan unit as required by customer. The main fan suppliers are international leading fan manufacturers in Germany, America and other countries.



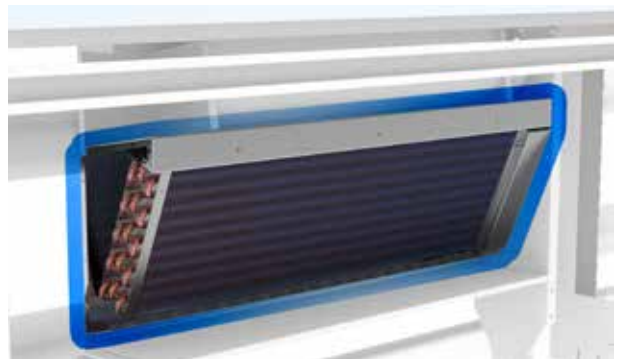
07

选用精加工表冷器，换热迅速

针对各个项目的冷、热负荷要求的不同，我们定制设计专用表冷器。在确保产品功能稳定、高效的前提下，降低产品成本，提供更高的经济价值回馈我们的用户。

Select fine machining surface air cooler available for rapid heat exchange.

We customize special-purpose surface air cooler as per different requirement for cold and hot load supplies for each project. It is to reduce product cost provided that the product function stability and efficiency are guaranteed, so as to provide our customer with high-efficient and economic product.



08

特殊结构设计

针对客户的特殊要求，我们提供特殊设计。如增加扶手设计，提供特殊表面纹理设计，等等 ...

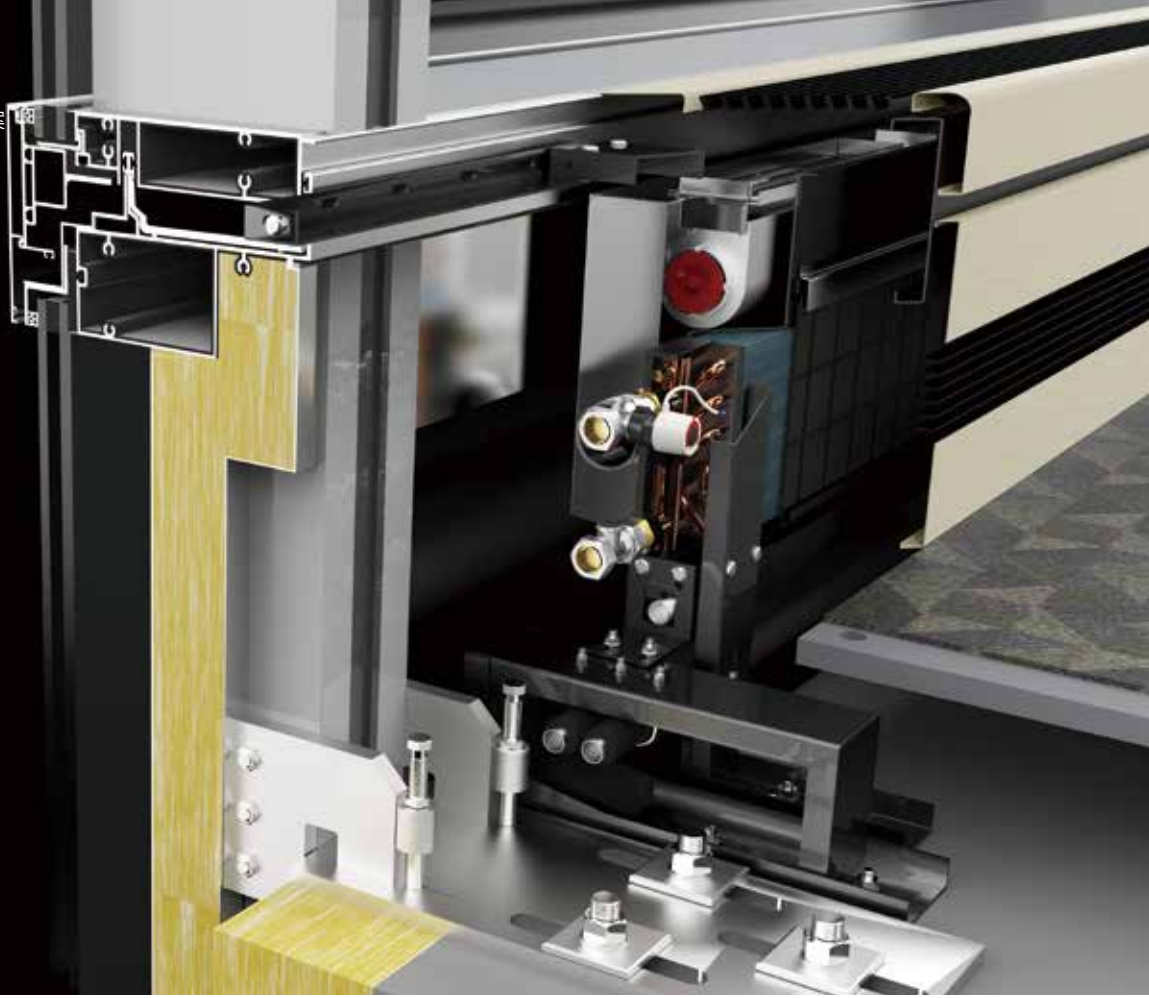
Special structural design

We provide special design on the basis of customer's special requirement, such as adding handrail design, providing special surface texture design and etc.

FSLC **X** **(X X)** **X** **X** **-X/X** **-(n)**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① 佛瑞德幕墙一体式空调器；
Freedom curtain wall integrated air conditioner;
- ② H: 风机冷暖两用型 / 无: 自然对流型 /G: 高静压；
H: fan cooling&heating dual purpose/no: natural convection /G: high static pressure;
- ③ 进风方式 (X: 下进风 Q: 前进风);
Wind inlet mode (X: downward wind inlet Q: forward wind);
- ④ 出风方式 (S: 上出风);
Air outlet mode (S: upper air outlet);
- ⑤ 设备高度 (mm);
Equipment height (mm);
- ⑥ 仅代表散热芯类型；
Represents only the type of heat sink;
- ⑦ 设备长度 (mm);
Equipment length (mm);
- ⑧ 设备厚度 (mm);
Equipment thickness (mm);
- ⑨ n 管制产品，无此项为两管制 / 自然对流型；
n controlled products, no two controlled/natural convection type;





01 冷暖两用型 ❄️☀️

幕墙一体式空调器冷暖两用型在内置换热单元增设贯流风机，加强室内空气对流效果，增加冷（热）空气的上升高度，加大幕墙保护面积，特别适用于层高比较高或者大堂挑空区域，有较高的冷（热）负荷，夏季、冬季均可开启使用。

Cooling and heating combined type

Curtain wall one-piece dual-purpose air-conditioner changes in temperature, displacement thermal unit add tubular fan, strengthen indoor air convection effect, increase the rising height of the cold (hot) air, increase the curtain wall protection area, especially suitable for the height is higher or the lobby carry empty area, have higher cold (hot) load, summer and winter all can use.



夏季温度场对比图



冬季温度场对比图

两管制

参数详表

型号	风速等级		声压等级 dB(A)	风量 m ³ /h	制冷量W		制热量W		功率 W	长度 mm	高度 mm	宽度 mm
	无极调速	三档调速			16/19/27-19.5°C	7/12/27-19.5°C	50/40/20°C	60/50/21°C				
FSLCH600 -1250/180	100%	高	38	346	768	1506	1926	2937	32	1250	600	180
	80%		37	291	691	1354	1732	2640				
	60%	中	36	225	637	1249	1598	2436				
	40%		34	163	471	924	1182	1802				
	20%	低	32	90	303	593	759	1157				
FSLCH600 -2000/180	100%	高	40	692	1528	2997	3834	5844	64	2000	600	180
	80%		39	581	1374	2694	3447	5254				
	60%	中	38	450	1268	2486	3180	4847				
	40%		36	325	938	1839	2353	3587				
	20%	低	33	180	602	1181	1510	2302				
FSLCH600 -2750/180	100%	高	42	1038	2266	4443	5683	8663	96	2750	600	180
	80%		41	872	2037	3994	5109	7789				
	60%	中	39	675	1879	3685	4713	7185				
	40%		37	488	1391	2727	3488	5317				
	20%	低	34	270	893	1750	2239	3413				
FSLCH600 -1250/210	100%	高	39	420	866	1698	2173	3312	48	1250	600	210
	80%		38	353	787	1543	1973	3008				
	60%	中	37	273	694	1361	1742	2655				
	40%		36	198	549	1077	1377	2099				
	20%	低	34	109	356	697	892	1360				
FSLCH600 -2000/210	100%	高	41	840	1724	3380	4323	6591	96	2000	600	210
	80%		40	706	1566	3070	3927	5987				
	60%	中	38	546	1382	2709	3466	5283				
	40%		36	395	1093	2142	2741	4178				
	20%	低	34	219	708	1388	1775	2706				
FSLCH600 -2750/210	100%	高	43	1261	2555	5010	6409	9770	144	2750	600	210
	80%		41	1059	2321	4551	5822	8875				
	60%	中	39	819	2048	4016	5137	7832				
	40%		37	593	1620	3176	4063	6193				
	20%	低	35	328	1049	2057	2631	4011				
FSLCH600 -1250/240	100%	高	40	618	1122	2201	2815	4292	50	1250	600	240
	80%		39	519	1039	2038	2607	3974				
	60%	中	38	402	894	1753	2242	3418				
	40%		37	290	725	1422	1819	2773				
	20%	低	35	161	481	942	1206	1838				
FSLCH600 -2000/240	100%	高	42	1236	2234	4380	5603	8541	100	2000	600	240
	80%		41	1038	2069	4056	5188	7909				
	60%	中	39	803	1779	3488	4462	6801				
	40%		37	581	1443	2830	3620	5518				
	20%	低	35	321	956	1875	2399	3657				
FSLCH600 -2750/240	100%	高	44	1854	3311	6493	8306	12661	150	2750	600	240
	80%		42	1557	3066	6013	7691	11725				
	60%	中	40	1205	2637	5171	6614	10083				
	40%		38	871	2139	4195	5366	8180				
	20%	低	36	482	1418	2780	3556	5421				

四管制 参数详表

型号	风速等级		声压等级 dB(A)	风量 m ³ /h	制冷量W		制热量W		功率 W	长度 mm	高度 mm	宽度 mm
	无极调速	三档调速			16/19/27-19.5°C	7/12/27-19.5°C	50/40/20°C	60/50/21°C				
FSLCH600-1250/180-4	100%	高	38	346	607	1190	952	1451	32	1250	600	180
	80%		37	291	546	1070	856	1305				
	60%	中	36	225	503	987	790	1204				
	40%		34	163	372	730	584	891				
	20%	低	32	90	239	469	375	572				
FSLCH600-2000/180-4	100%	高	40	692	1207	2368	1895	2888	64	2000	600	180
	80%		39	581	1086	2129	1704	2597				
	60%	中	38	450	1001	1964	1572	2396				
	40%		36	325	741	1453	1163	1773				
	20%	低	33	180	476	933	746	1138				
FSLCH600-2750/180-4	100%	高	42	1038	1790	3510	2809	4282	96	2750	600	180
	80%		41	872	1609	3155	2525	3850				
	60%	中	39	675	1485	2911	2330	3551				
	40%		37	488	1099	2154	1724	2628				
	20%	低	34	270	705	1383	1107	1687				
FSLCH600-1250/210-4	100%	高	39	420	667	1308	1081	1648	48	1250	600	210
	80%		38	353	606	1188	982	1497				
	60%	中	37	273	535	1048	866	1321				
	40%		36	198	423	829	685	1045				
	20%	低	34	109	274	537	444	677				
FSLCH600-2000/210-4	100%	高	41	840	1327	2602	2151	3279	96	2000	600	210
	80%		40	706	1206	2364	1954	2979				
	60%	中	38	546	1064	2086	1724	2628				
	40%		36	395	841	1650	1364	2079				
	20%	低	34	219	545	1069	883	1346				
FSLCH600-2750/210-4	100%	高	43	1261	1967	3858	3189	4861	144	2750	600	210
	80%		41	1059	1787	3504	2897	4415				
	60%	中	39	819	1577	3092	2556	3896				
	40%		37	593	1247	2445	2021	3081				
	20%	低	35	328	808	1584	1309	1996				
FSLCH600-1250/240-4	100%	高	40	618	887	1739	1392	2121	50	1250	600	240
	80%		39	519	821	1610	1289	1964				
	60%	中	38	402	706	1385	1108	1689				
	40%		37	290	573	1123	899	1371				
	20%	低	35	161	380	745	596	908				
FSLCH600-2000/240-4	100%	高	42	1236	1765	3460	2769	4221	100	2000	600	240
	80%		41	1038	1634	3204	2564	3909				
	60%	中	39	803	1405	2755	2205	3362				
	40%		37	581	1140	2236	1789	2727				
	20%	低	35	321	756	1482	1186	1808				
FSLCH600-2750/240-4	100%	高	44	1854	2616	5129	4105	6258	150	2750	600	240
	80%		42	1557	2422	4750	3801	5795				
	60%	中	40	1205	2083	4085	3269	4983				
	40%		38	871	1690	3314	2652	4043				
	20%	低	36	482	1120	2196	1758	2680				



02 自然对流型

自然对流型幕墙一体式空调器利用烟囱效应，通过内置换热器加热室内空气，沿幕墙上升，有效阻止冷空气入侵，同时还可防止幕墙玻璃结露，使室内气流组织更合理，舒适性更好。

Natural convection type

For exposed convector of natural convection type, it uses chimney effect and built-in heat exchanger to get indoor air heated up and raised along glass facade so as to prevent intrusion of cold air and eliminate condensation on glass facade to get more rational indoor air distribution and higher comfort level.



冬季温度场对比图

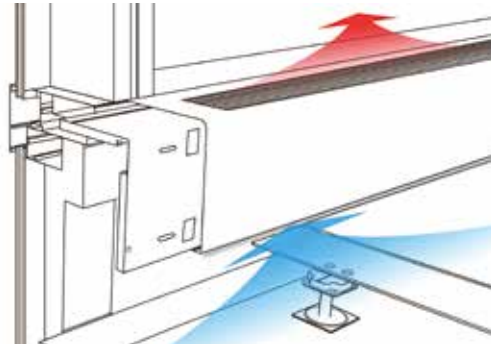


下进上出式空调器

Bottom in, top out air conditioner

进出风方式：下进上出

Bottom in, top out



散热量数据表

Heat loss data sheet

型号	工况散热量W			长度 mm	高度 mm	宽度 mm
	75/50/18°C	80/60/20°C	60/50/20°C			
FSLCXS300 I -1100/200	571	670	411	1100	300	200
FSLCXS300 I -1200/200	631	741	454	1200	300	200
FSLCXS300 I -1300/200	692	811	498	1300	300	200
FSLCXS300 I -1400/200	752	882	541	1400	300	200
FSLCXS300 I -1500/200	812	952	584	1500	300	200
FSLCXS300 I -1600/200	872	1023	628	1600	300	200
FSLCXS300 I -1700/200	932	1093	671	1700	300	200
FSLCXS300 I -1800/200	992	1164	714	1800	300	200
FSLCXS300 I -1900/200	1052	1235	757	1900	300	200
FSLCXS300 I -2000/200	1113	1305	801	2000	300	200
FSLCXS300 II -1100/200	632	742	453	1100	300	200
FSLCXS300 II -1200/200	698	820	501	1200	300	200
FSLCXS300 II -1300/200	765	898	548	1300	300	200
FSLCXS300 II -1400/200	831	977	596	1400	300	200
FSLCXS300 II -1500/200	897	1055	644	1500	300	200
FSLCXS300 II -1600/200	964	1133	691	1600	300	200
FSLCXS300 II -1700/200	1030	1211	739	1700	300	200
FSLCXS300 II -1800/200	1097	1289	787	1800	300	200
FSLCXS300 II -1900/200	1163	1367	834	1900	300	200
FSLCXS300 II -2000/200	1230	1445	882	2000	300	200
FSLCXS400 I -1100/200	689	809	495	1100	400	200
FSLCXS400 I -1200/200	762	895	547	1200	400	200
FSLCXS400 I -1300/200	834	980	599	1300	400	200
FSLCXS400 I -1400/200	907	1065	651	1400	400	200
FSLCXS400 I -1500/200	979	1150	703	1500	400	200
FSLCXS400 I -1600/200	1052	1235	755	1600	400	200

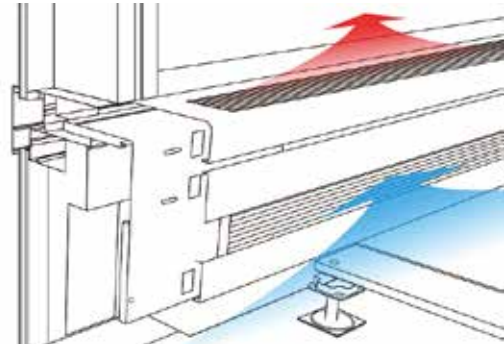
型号	工况散热量W			长度 mm	高度 mm	宽度 mm
	75/50/18°C	80/60/20°C	60/50/20°C			
FSLCXS400 I -1700/200	1124	1321	807	1700	400	200
FSLCXS400 I -1800/200	1197	1406	859	1800	400	200
FSLCXS400 I -1900/200	1269	1491	911	1900	400	200
FSLCXS400 I -2000/200	1342	1576	963	2000	400	200
FSLCXS400 II -1100/200	841	986	605	1100	400	200
FSLCXS400 II -1200/200	929	1090	669	1200	400	200
FSLCXS400 II -1300/200	1018	1194	732	1300	400	200
FSLCXS400 II -1400/200	1106	1298	796	1400	400	200
FSLCXS400 II -1500/200	1195	1401	860	1500	400	200
FSLCXS400 II -1600/200	1283	1505	923	1600	400	200
FSLCXS400 II -1700/200	1372	1609	987	1700	400	200
FSLCXS400 II -1800/200	1460	1713	1051	1800	400	200
FSLCXS400 II -1900/200	1549	1817	1114	1900	400	200
FSLCXS400 II -2000/200	1637	1920	1178	2000	400	200
FSLCXS600 I -1100/240	1101	1296	788	1100	600	240
FSLCXS600 I -1200/240	1217	1432	871	1200	600	240
FSLCXS600 I -1300/240	1333	1568	954	1300	600	240
FSLCXS600 I -1400/240	1449	1705	1037	1400	600	240
FSLCXS600 I -1500/240	1565	1841	1119	1500	600	240
FSLCXS600 I -1600/240	1681	1978	1202	1600	600	240
FSLCXS600 I -1700/240	1797	2114	1285	1700	600	240
FSLCXS600 I -1800/240	1913	2250	1368	1800	600	240
FSLCXS600 I -1900/240	2029	2387	1451	1900	600	240
FSLCXS600 I -2000/240	2145	2523	1534	2000	600	240
FSLCXS600 II -1100/240	1162	1367	833	1100	600	240
FSLCXS600 II -1200/240	1285	1511	920	1200	600	240
FSLCXS600 II -1300/240	1407	1655	1008	1300	600	240
FSLCXS600 II -1400/240	1530	1799	1095	1400	600	240
FSLCXS600 II -1500/240	1652	1942	1183	1500	600	240
FSLCXS600 II -1600/240	1774	2086	1271	1600	600	240
FSLCXS600 II -1700/240	1897	2230	1358	1700	600	240
FSLCXS600 II -1800/240	2019	2374	1446	1800	600	240
FSLCXS600 II -1900/240	2141	2518	1534	1900	600	240
FSLCXS600 II -2000/240	2264	2662	1621	2000	600	240

前进上出式空调器

Forward air in and up air conditioner

进出风方式：前进上出

Forward air in and up

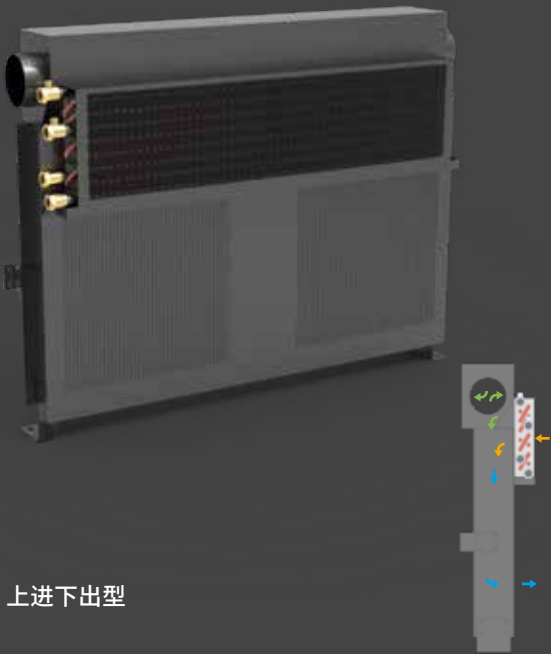


散热量数据表

Heat loss data sheet

型号	工况散热量W			长度 mm	高度 mm	宽度 mm
	75/50/18°C	80/60/20°C	60/50/20°C			
FSLCQS300 I -1100/200	544	638	392	1100	300	200
FSLCQS300 I -1200/200	601	705	433	1200	300	200
FSLCQS300 I -1300/200	659	773	474	1300	300	200
FSLCQS300 I -1400/200	716	840	515	1400	300	200
FSLCQS300 I -1500/200	773	907	556	1500	300	200
FSLCQS300 I -1600/200	830	974	598	1600	300	200
FSLCQS300 I -1700/200	888	1041	639	1700	300	200
FSLCQS300 I -1800/200	945	1109	680	1800	300	200
FSLCQS300 I -1900/200	1002	1176	721	1900	300	200
FSLCQS300 I -2000/200	1060	1243	762	2000	300	200
FSLCQS300 II -1100/200	601	707	431	1100	300	200
FSLCQS300 II -1200/200	665	781	477	1200	300	200
FSLCQS300 II -1300/200	728	856	522	1300	300	200
FSLCQS300 II -1400/200	791	930	567	1400	300	200
FSLCQS300 II -1500/200	855	1004	613	1500	300	200
FSLCQS300 II -1600/200	918	1079	658	1600	300	200
FSLCQS300 II -1700/200	981	1153	704	1700	300	200
FSLCQS300 II -1800/200	1045	1228	749	1800	300	200
FSLCQS300 II -1900/200	1108	1302	794	1900	300	200
FSLCQS300 II -2000/200	1171	1376	840	2000	300	200
FSLCQS400 I -1100/200	656	771	471	1100	400	200
FSLCQS400 I -1200/200	725	852	521	1200	400	200
FSLCQS400 I -1300/200	795	933	570	1300	400	200
FSLCQS400 I -1400/200	864	1014	620	1400	400	200
FSLCQS400 I -1500/200	933	1095	670	1500	400	200
FSLCQS400 I -1600/200	1002	1177	719	1600	400	200

型号	工况散热量W			长度 mm	高度 mm	宽度 mm
	75/50/18°C	80/60/20°C	60/50/20°C			
FSLCQS400 I -1700/200	1071	1258	769	1700	400	200
FSLCQS400 I -1800/200	1140	1339	818	1800	400	200
FSLCQS400 I -1900/200	1209	1420	868	1900	400	200
FSLCQS400 I -2000/200	1278	1501	918	2000	400	200
FSLCQS400 II -1100/200	801	939	576	1100	400	200
FSLCQS400 II -1200/200	885	1038	637	1200	400	200
FSLCQS400 II -1300/200	969	1137	697	1300	400	200
FSLCQS400 II -1400/200	1053	1236	758	1400	400	200
FSLCQS400 II -1500/200	1138	1335	819	1500	400	200
FSLCQS400 II -1600/200	1222	1434	879	1600	400	200
FSLCQS400 II -1700/200	1306	1532	940	1700	400	200
FSLCQS400 II -1800/200	1391	1631	1001	1800	400	200
FSLCQS400 II -1900/200	1475	1730	1061	1900	400	200
FSLCQS400 II -2000/200	1559	1829	1122	2000	400	200
FSLCQS600 I -1100/240	1049	1234	750	1100	600	240
FSLCQS600 I -1200/240	1159	1364	829	1200	600	240
FSLCQS600 I -1300/240	1270	1494	908	1300	600	240
FSLCQS600 I -1400/240	1380	1624	987	1400	600	240
FSLCQS600 I -1500/240	1490	1754	1066	1500	600	240
FSLCQS600 I -1600/240	1601	1883	1145	1600	600	240
FSLCQS600 I -1700/240	1711	2013	1224	1700	600	240
FSLCQS600 I -1800/240	1822	2143	1303	1800	600	240
FSLCQS600 I -1900/240	1932	2273	1382	1900	600	240
FSLCQS600 I -2000/240	2042	2403	1461	2000	600	240
FSLCQS600 II -1100/240	1107	1302	793	1100	600	240
FSLCQS600 II -1200/240	1224	1439	876	1200	600	240
FSLCQS600 II -1300/240	1340	1576	960	1300	600	240
FSLCQS600 II -1400/240	1457	1713	1043	1400	600	240
FSLCQS600 II -1500/240	1573	1850	1127	1500	600	240
FSLCQS600 II -1600/240	1690	1987	1210	1600	600	240
FSLCQS600 II -1700/240	1806	2124	1294	1700	600	240
FSLCQS600 II -1800/240	1923	2261	1377	1800	600	240
FSLCQS600 II -1900/240	2039	2398	1461	1900	600	240
FSLCQS600 II -2000/240	2156	2535	1544	2000	600	240



上进下出型



下进上出型

03 幕墙型诱导器

幕墙型诱导器，安装在幕墙窗台下的空间内，一次风通过风管由喷嘴喷出，诱导二次风经换热器加热 / 冷却混合后送入室内，在幕墙附近形成保护区域，降低室内冷热损失，达到节能、舒适、美观的效果。

幕墙型诱导器产品型号释义

FTLZLMH/X-L/W(-n)

FTLZL —— 佛瑞德产品名称缩写

M —— 幕墙型

H —— 机体高度 mm

X —— 喷嘴型号

L —— 机体长度

W —— 机体宽度

(-n) —— n 为 n 管制产品，无此项为两管制

Sill induction units

The curtain wall type inducer is installed in the space under the window sill of the curtain wall. The primary air passes through the air pipe and is ejected by the nozzle. The secondary air is induced to be heated/cooled by the water-side heat exchanger and then sent into the room.

Curtain wall type inducer product model definition

product name abbreviation

The curtain wall type

The body height

SPJT

The body length

The body width

n is the controlled product of n. If there is no such product, there are two controlled products

FTLZLM720/X-L/270 性能参数表

L _N	喷嘴类型	一次风量 噪音值 压降				供冷工况两管制和四管制系统						供热工况两管制系统			供热工况四管制系统				
		V _{Pr} L/S	V _{Pr} m ³ /h	L _{WA} dB(A)	ΔP _t Pa	V _L m/s	Δt _L °C	一次风冷量W	水侧冷量W	总冷量W	Δt _w 水侧°C	ΔP _w 水侧kPa	Q _s =Q _{ges} W	Δt _w 水侧°C	ΔP _w 水侧kPa	Q _s =Q _{ges} W	Δt _w 水侧°C	ΔP _w 水侧kPa	
900	A	3	11	<20	51	0.07	2.9	45	176	222	1.4		365	6.3		211	3.7		
		7	25	25	156	0.12	2.7	84	273	357	2.1	3.1	554	9.5	0.3	330	5.7	0.3	
		11	40	35	319	0.17	2.4	125	345	469	2.7		670	11.8		415	7.2		
		10	36	<20	83	0.14	3.2	121	272	393	2.1		554	9.5		330	5.7		
	B	14	51	30	187	0.2	2.9	176	352	528	2.8	3.1	696	12.1	0.3	423	7.3	0.3	
		20	72	38	331	0.27	2.6	241	404	645	3.2		794	13.7		491	8.4		
		12	43	<20	41	0.14	3.3	145	209	354	1.6		432	7.4		253	4.3		
		23	83	30	159	0.28	2.8	284	308	593	2.4	3.1	616	10.7	0.3	371	6.4	0.3	
1200	A	32	115	37	281	0.37	2.5	386	326	712	2.6		654	11.2		395	6.8		
		5	18	<20	43	0.07	3.1	60	218	278	1.7		449	7.7		264	4.5		
		8	29	23	140	0.13	2.8	104	342	446	2.7	3.8	680	11.8	0.3	413	7.1	0.3	
		12	43	31	248	0.17	2.6	145	413	558	3.2		810	13.9		502	8.6		
	B	12	43	<20	65	0.14	3.4	145	326	471	2.5		653	11.2		395	6.8		
		17	62	26	146	0.2	3.1	214	424	638	3.3	3.8	825	14.2	0.3	512	8.9	0.4	
		25	90	35	280	0.28	2.8	301	499	801	3.9		958	16.5		607	10.4		
		14	51	<20	35	0.15	3.6	173	260	432	2		521	9.1		311	5.4		
C	30	108	28	137	0.29	3	362	386	748	3	3.8	762	13.1	0.3	468	8.1	0.4		
	40	144	35	240	0.39	2.7	482	416	898	3.3		815	14		505	8.7			
	1500	A	5	18	<20	39	0.08	3.3	75	258	328	2		525	9.1		310	5.4	
			11	40	22	131	0.14	2.9	133	408	540	3.2	4.5	800	13.8	0.3	495	8.5	0.4
15			54	30	243	0.19	2.7	181	497	678	3.9		954	16.4		604	10.4		
14			51	<20	65	0.15	3.5	176	395	571	3.1		773	13.4		475	8.2		
B		22	79	25	137	0.21	3.2	265	502	768	3.9	4.5	963	16.6	0.3	611	10.5	0.4	
		30	108	33	253	0.29	2.9	362	585	947	4.6		1100	18.9		713	12.3		
		20	72	<20	40	0.17	3.7	241	331	572	2.6		662	11.4		410	6.9		
		39	130	29	153	0.33	3.1	477	476	953	3.7	4.5	913	15.8	0.3	573	9.9	0.4	
C	50	180	35	237	0.42	2.8	603	500	1103	3.9		959	16.5		608	10.5			

符号定义

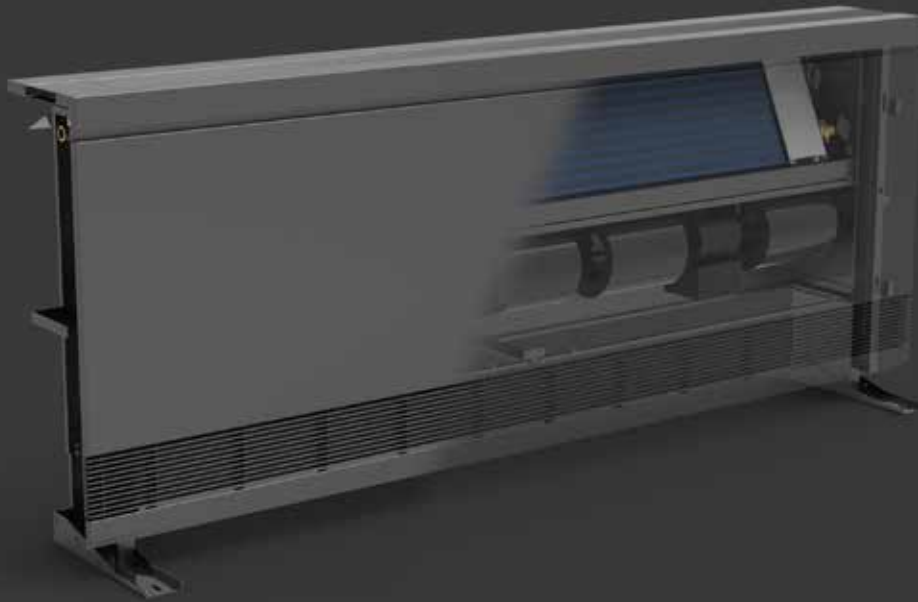
t_R 室内温度;
 Δt_w 进回水温差;
 t_{Pr} 一次风进风温度;
 Q_s 水侧供热量;
 Q_{ges} 总供热量差;
 V_{wk} 水流量;
 t_{wwk} 进水温度;
 t_{wrk} 回水温度;
 ΔP_t 风侧压降;
 ΔP_w 水侧压降;
 L_N 机组名义长度;
 V_{pr} 单位面积空气流量;
 Δt_{rwv} 室内温度与供水平均温度温差;
 Δt_L 室内温度与标准处温差;
 V_L 一次风平均流速; Δt_w 进回水温差;

参考值（供冷工况）

t_R=26°C
 t_{wwk}=t_{Pr}=16°C
 V_{wk}=110 L/h
 Δt_{Pr}=t_{Pr}-t_R=-10°C
 Δt_{rwv}=t_{wwk}-t_R=-10°C

参考值（供热工况）

t_R=22°C
 t_{Pr}=22°C
 t_{wvt}=50°C
 V_{wvt}=50 L/h
 Δt_{rwv}=t_{wvt}-t_R=28°C



04 高静压型 ❄️☀️

高静压幕墙一体式空调器安装在高层框架结构幕墙建筑窗台下方，消除玻璃外围护结构冷热损失，在围护结构附近形成均匀的温度场和合理的气流组织。

高效离心风机，工作效率高，噪声低。

出风风压大，送风距离远。

风量三档调节，节省电量消耗。

铜管铝翅片换热器，换热效率高。

High static pressure type

High static pressure curtain wall integral air conditioner is installed under the windowsill of high-rise frame structure curtain wall building to eliminate the heat loss of the outside glass maintenance structure and form a uniform temperature field and reasonable air distribution near the enclosure structure.

High efficiency centrifugal fan, high working efficiency, low noise.

The wind out of the wind pressure is large, the air supply distance is far.

Air volume is adjusted in three levels to save power consumption.

Copper tube aluminum fin heat exchanger has high heat transfer efficiency.

两管制

参数详表

型号	风速等级	风量 m ³ /h	声压等级 dB(A)	制冷量 W	制热量 W	长度 mm	高度 mm	宽度 mm	功率 W
FSLCHG680-1150/280	高	340	40	2162	3459	1150	680	280	43
	中	255	37	1939	2975				
	低	191	32	1652	2491				
FSLCHG680-1300/280	高	510	42	2986	4658	1300	680	280	58
	中	387	39	2687	4379				
	低	294	34	2299	4006				
FSLCHG680-1400/280	高	680	44	3702	5923	1400	680	280	71
	中	520	41	3321	5153				
	低	397	36	2843	4265				
FSLCHG680-1550/280	高	850	46	4805	7448	1550	680	280	86
	中	634	43	4262	6405				
	低	473	38	3589	5362				
FSLCHG680-1700/280	高	1020	47	5593	8781	1700	680	280	107
	中	789	45	5045	7639				
	低	610	40	4329	6322				
FSLCHG680-1850/280	高	1360	48	7485	11153	1850	680	280	155
	中	1055	46	6759	9703				
	低	818	41	5808	8030				
FSLCHG680-2100/280	高	1700	50	9438	14157	2100	680	280	173
	中	1378	48	8909	12317				
	低	1117	43	7654	10193				
FSLCHG680-2250/280	高	2040	52	11235	17190	2250	680	280	211
	中	1595	50	10168	15986				
	低	1247	45	8786	15127				
FSLCHG680-2500/280	高	2380	54	13097	19384	2500	680	280	253
	中	1796	52	11918	17058				
	低	1355	47	9823	14150				

注：以上为我公司冷暖两用型常规产品，其他特殊型号的具体参数可咨询公司专业技术人员；同时，我公司可根据客户的特殊需求，提供专业设计和定制服务，满足您的各项需求。

1. 制冷工况：进风干球温度：27/19.5℃；冷冻水供回水温度：7/12℃。
2. 制热工况：进风干球温度：21℃；热水供水温度：60℃，水量与制冷工况相同。

四管制

参数详表

型号	风速等级	风量 m ³ /h	声压等级 dB(A)	制冷量 W	制热量 W	长度 mm	高度 mm	宽度 mm	功率 W
FSLCHG680-1150/280-4	高	340	40	2292	1626	1150	680	280	43
	中	255	37	2056	1398				
	低	191	32	1751	1171				
FSLCHG680-1300/280-4	高	510	42	3165	2189	1300	680	280	58
	中	387	39	2849	2058				
	低	294	34	2437	1883				
FSLCHG680-1400/280-4	高	680	44	3924	2784	1400	680	280	71
	中	520	41	3520	2422				
	低	397	36	3014	2004				
FSLCHG680-1550/280-4	高	850	46	4997	3500	1550	680	280	86
	中	634	43	4433	3010				
	低	473	38	3733	2520				
FSLCHG680-1700/280-4	高	1020	47	5817	4127	1700	680	280	107
	中	789	45	5247	3591				
	低	610	40	4502	2971				
FSLCHG680-1850/280-4	高	1360	48	7822	5242	1850	680	280	155
	中	1055	46	7063	4560				
	低	818	41	6070	3774				
FSLCHG680-2100/280-4	高	1700	50	9674	6654	2100	680	280	173
	中	1378	48	9132	5789				
	低	1117	43	7846	4791				
FSLCHG680-2250/280-4	高	2040	52	11460	8079	2250	680	280	211
	中	1595	50	10371	7514				
	低	1247	45	8961	7110				
FSLCHG680-2500/280-4	高	2380	54	13359	9110	2500	680	280	253
	中	1796	52	12157	8017				
	低	1355	47	10019	6650				

注：以上为我公司冷暖两用型常规产品，其他特殊型号的具体参数可咨询公司专业技术人员；

同时，我公司可根据客户的特殊需求，提供专业设计和定制服务，满足您的各项需求。

1. 制冷工况：进风干湿球温度：27/19.5℃；冷冻水供回水温度：7/12℃。

2. 制热工况：进风干湿球温度：21℃；热水供水温度：60℃，水量与制冷工况相同。

05 电加热

电热幕墙一体式空调器安装高层框架结构幕墙建筑窗台下方，消除玻璃外围护结构热损失，在围护结构附近形成均匀的温度场和合理的气流组织，区域环境舒适度高。

采用洁净能源电作为热源，节省水系统投资和安装空间，系统简单，维护方便。

优质 PTC 陶瓷加热元件，结合波纹铝条，热阻小、换热效率高。

表面抗氧化处理技术，防垢防锈性好，使用寿命长。

陶瓷发热元件具有温度调节功能，自动恒温。

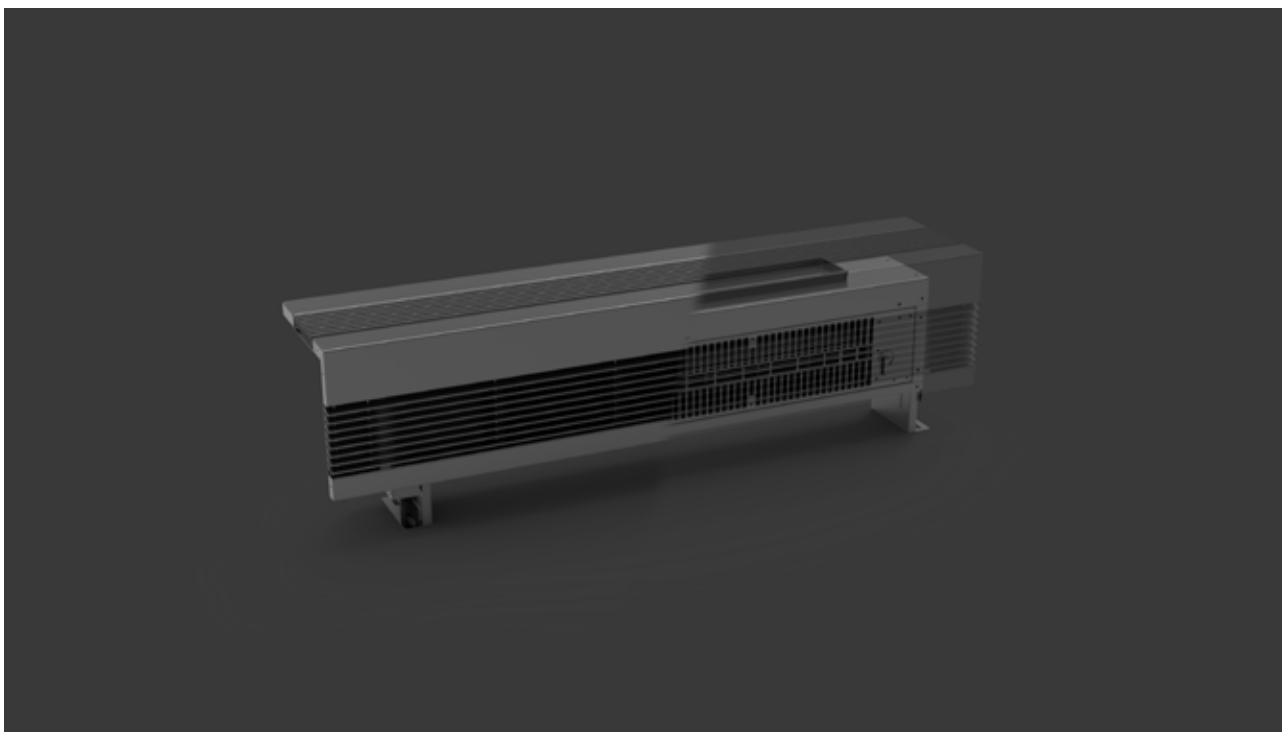
不存在加热元件过热发红、甚至烧坏的风险，省电安全。

The electric heating type

The electric heating type wall integral type air conditioner is installed under the windowsill of the high-rise frame structure curtain wall building, which can eliminate the heat loss of the glass peripheral protection structure, form the uniform temperature field and reasonable air distribution near the enclosure structure, and make the regional environment comfortable.

Using clean energy electricity as heat source, saving water system investment and installation space, simple system, easy maintenance. High quality PTC ceramic heating element, combined with corrugated aluminum strip, low thermal resistance, high heat transfer efficiency.

Surface anti-oxidation treatment technology, good anti-scaling and anti-rust, long service life. Ceramic heating elements with temperature regulation function, automatic constant temperature. There is no risk of heating element overheating red, or even burn out, power saving safety.



型号	风量m ³ /h	强制对流			
		散热量 W	宽度mm	高度mm	长度mm
FSLCQSE450-1500/180	600	2400	180	450	1500
FSLCQSE450-1000/180	300	1350	180	450	1000
FSLCQSE330-1500/170	450	960	170	330	1500
FSLCQSE330-800/170	220	520	170	330	800



PRESENTATION OF CASES 案例介绍

北京·三星总部大厦 Beijing Samsung HQ Building

设计公司: 世源科技工程有限公司、三友综合建筑事务所 (韩)、SMDP(美)等三家公司

所用产品: 幕墙一体式空调器

建筑奖项: LEED 认证级

项目简介: 北京三星总部大厦位于北京 CBD 核心区 Z2b 地块, 紧邻北京 CBD 中央公园。北京三星总部大厦是三星集团旗下三星生命保险公司和三星物产公司投资, 总投资 43 亿元, 为 260 米超高层建筑, 总建筑面积 167515 平方米, 地上 57 层, 地下 6 层, 由中建 1 局建设发展有限公司负责施工。北京三星总部大厦, 为世界 500 强三星品牌中国总部, 意在为世界 500 强和未来的世界 500 强企业打造国际化总部写字楼。

Design company: S.Y. Technology, Engineering & Construction Co., Ltd, SAMOO Architects & Engineers (South Korea), and SMDP (USA)

Product used: Glass Facade Integrated Surround-Line Convectector

Architecture award: LEED certification grade

Project overview: Beijing Samsung HQ Building is located at Z2b plot, CBD core area, Beijing and is next to Beijing CBD Central Park. Beijing Samsung HQ Building is invested by Samsung Life Insurance Company and Samsung Products Company subordinate to Samsung Group, with total investment of RMB 4.3 billion Yuan. It is a 260m high-rise building with total building area of 167,515m², including aboveground 57 floors and underground 6 floors. Beijing Samsung HQ Building, as the headquarters of Samsung - one of the world top 500 enterprises in China, aims at the construction of international HQ office building for the current and future world top 500 enterprises.



北京·华都中心

Beijing Huadu Center

设计公司：中国建筑设计研究院、KPF（美）、TAAJ（日本）建筑设计事务所、ACPV（意大利）室内设计事务所、结构顾问来自香港柏诚、幕墙设计顾问来自菲律宾的 ALT

所用产品：幕墙一体式空调器

建筑奖项：LEED 认证级、鲁班奖

项目简介：北京华都中心位于北京市朝阳区燕莎商圈核心区域，新源南路8号。北京华都中心由泰鸿集团改造开发，总投资15亿元，总建筑面积229000平方米，由3栋10-24层核心筒结构综合楼（高度60-120m）和5层裙房组成，均设3层地下室。北京华都中心定位高档酒店、办公及商业为主的综合体。

Design company: China Architecture Design & Research Group, KPF (USA), TAAJ (Japan) Architectural Design Office, ACPV (Italy) Interior Design Firm; structure consultant comes from WSP, Hong Kong; curtain wall design consultant comes from ALT, Philippines

Product used: Glass Facade Integrated Surround-Line Convector

Architecture award: LEED certification grade、Luban prize

Project overview: Beijing Huadu Center is located at No. 8 South Xinyuan Road, core area of Yansha business area, Chaoyang District, Beijing City. Beijing Huadu Center is reconstructed and developed by Great Ocean Group with total investment of RMB 1.5 billion Yuan and total building area of 229,000m². It includes three core tube structured comprehensive buildings (10~24 floors, 60~120m high) and skirt building (5 floors), both of which includes basement (three floors). Beijing Huadu Center positions at an aggregate focusing on luxury hotel, office and commerce.



上海·平安大厦

Ping an building, Shanghai

设计公司:

所用产品: 幕墙一体式空调器

项目简介: 中国平安金融大厦项目位于即浦东大道、银城北路、东园路围合地块,中国平安金融大厦毗邻中银大厦、交银大厦。中国平安金融大厦总投资 27 亿元人民币,中国平安金融大厦项目用地 2.7 万平方米,中国平安金融大厦总建筑面积 16.5 万平方米,中国平安金融大厦地上 38 层,中国平安金融大厦地下 3 层,中国平安金融大厦建筑高度 170 米(穹顶制高点 203 米)。

Design company:

Product used: Glass Facade Integrated Surround-Line Convector

Project overview: China ping an financial building project is located in pudong avenue, yincheng north road, dongyuan road enclosed plot, China ping an financial building adjacent to bank of China building, bank of communications building. China's ping an financial building, with a total investment of 2.7 billion yuan, China's ping an financial building 27000 square meters of land, China's ping an financial building, a total construction area of 165000 square meters, 38 layer on the ground, China's ping an financial building China's ping an financial building 3 floor underground, China's ping an financial building, building height 170 meters (dome commanding elevation 203 meters).



北京·六里屯俊豪中央公园

Beijing Liulitun Smart Hero Central Park

设计公司：北京 MAD 建筑事务所

所用产品：幕墙一体式空调器

建筑奖项：LEED 认证级、中国写字楼白金 5 星认证、中国当代十大建筑、中国城市地标、D21 中国建筑设计奖、中国地产金砖奖、未来城市地标奖

项目简介：北京六里屯俊豪中央公园位于北京市朝阳区公园南门、棕榈泉西侧，毗邻世界第二大城市公园朝阳公园，辐射第三使馆区涉外区、燕莎商场时尚圈、国贸商务办公领地。北京六里屯俊豪中央公园由香港俊豪集团投资，总投资 6.8 亿元，总建筑面积 220000 平方米。北京六里屯俊豪中央公园包括甲级 5A 写字楼、临街商业、地下商业、住宅、企业独栋、精品办公及配套七部分，满足周边轨道交通商业片区、居住片区、公园休闲各种人群的需求，集办公、购物、餐饮、休闲、住宅、展示、文化功能于一体，是致敬中国时代的地标建筑。

Design company: Beijing MAD Architectural Firm

Product used: Glass Facade Integrated Surround-Line Convector

Architecture award: LEED certification grade, China office building platinum five-star certification, top ten modern buildings of China, China urban landmark, D21 China architectural design prize, China real estate gold brick award, and future urban landmark prize

Project overview: Beijing Liulitun Smart Hero Central Park is located at south entrance of Beijing Chaoyang park and in the west of Palm Spring. It borders the world's second largest urban park - Chaoyang Park and radiates the third embassy area, Yansha fashion field and international trade business office area. Beijing Liulitun Smart-Hero Central Park is invested by Hong Kong Smart Hero Group with total investment of RMB 0.68 billion Yuan and total building area of 220,000m². Beijing Liulitun Smart Hero Central Park includes 7 parts, i.e. class-A 5A office building, frontage commerce, underground commerce, residential building, single enterprise building, boutique office and supporting facilities to meet the demand of various kinds of person in surrounding rail traffic commercial area, residential area and park leisure area. It integrates office, shopping, catering, leisure, residence, exhibition and culture, which is a landmark building to salute the China times.



北京·长安街 88 号人保大厦 PICC Building at No. 88 Chang'an Street, Beijing

设计公司：北京市建筑设计研究院有限公司

所用产品：幕墙一体式空调器

项目简介：中国人保大厦位于北京西长安街 88 号。中国人保大厦是中国人民保险集团和旗下公司以股权收购的方式购置了原首都时代广场（北京西长安街 88 号大楼），写字楼面积近 6 万平方米，该广场将作为人保集团新的总部办公大楼。

Design company: China Academy of Building Research Architectural Design Institute

Product used: Glass Facade Integrated Surround-Line Convector

Project overview: Beijing Great Wall Finance Center is located at plots E-16, E-20 and E-21, Lize Financial Business District, Fengtai District, Beijing City. Beijing Great Wall Finance Center is invested by Great Wall Guofu Real Estate (Beijing) Co., Ltd. with total investment of RMB 0.8 billion Yuan. It includes three 5A office buildings (18~33 floors, about 154m high) with total building area of 224,402m². Beijing Great Wall Finance Center is a service sector expanding and opening-up pilot project demonstration park in Beijing and is an important emerging financial function area.





北京·国贸三期 B

Beijing International Trade Phase III B

设计公司：SOM 建筑设计事物所

所用产品：幕墙一体式空调器

建筑奖项：LEED 认证金级

项目简介：位于东三环与建国门外大街立交桥的西北角，地处北京商务中心区的核心区域，总投资 47 亿元，2017 年建成，高 330 米，80 层，由国贸中心和郭氏兄弟集团联合投资建设。其与国贸一期、国贸二期一起构成 110 万平方米的建筑群，是今日全球最大的国际贸易中心。

Design Company: Skidmore, Owings & Merrill LLP, SOM

Products used: Glass Facade Integrated Surround-Line Convectore

Architectural award: LEED certified gold grade

Project introduction: Located in the northwest corner of the east 3rd ring road and Jianguomen waidajie overpass, it is located in the core region of Beijing central business district with a total investment of 4.7 billion yuan. It was completed in 2017 with a height of 330 meters and 80 stories. It is jointly invested and constructed by ITC and Kwok Brothers Group. Together with the first and second phases of international trade, it forms a 1.1 million square meter architectural complex and is the largest international trade center in the world today.

CONTROL SYSTEM OF INTELLIGENT INTERNET OF THINGS 智能物联控制系统

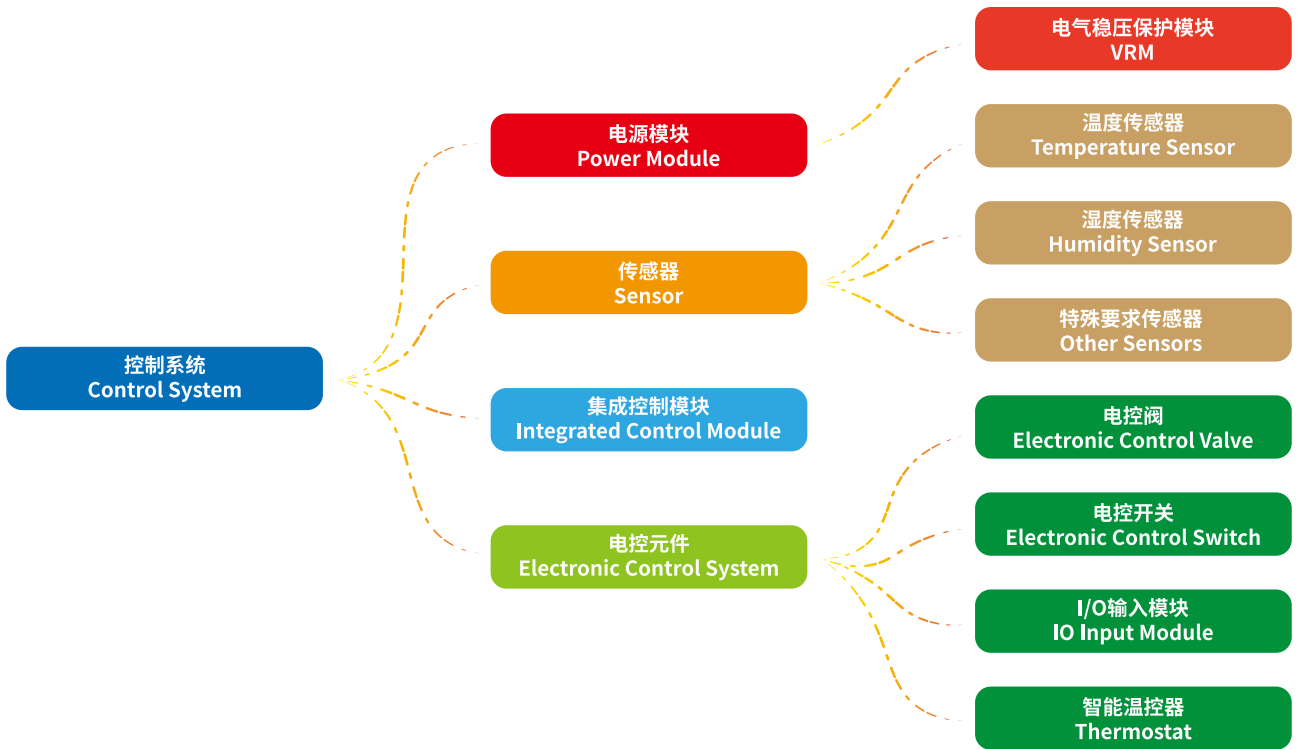
01

控制系统解决方案

佛瑞德控制系统严格按照 BAS 系统相关技术要求设计。系统自身具备稳定可靠的控制保护功能，整体实现一拖多机的集联集控，同时应用层中与其他平台进行数据交换。

SOLUTION FOR CONTROL SYSTEM

Freedom control system is designed in strict accordance with relevant technical requirement for BAS system. This system itself has stable and reliable control protection functions, realizes a concentrated linkage and control on many units in overall and can make data exchange between application layer and other platform.



电气控制系统控制结构

控制系统由电源模块、控制集成板、传感器、电控元件组成。

Control structure of electrical control system

The control system is composed of power module, integrated control module, sensor and electronic control system.

02

佛瑞德楼宇控制（BA）系统

- a 佛瑞德 BA 控制系统支持 BACnet 通信控制协议。系统植入性强，可便捷的与各类主要通信网络（以太网、ARCNET、LONTALK）兼容。具有良好的伸缩性和扩展性。系统内部组网可以不受设备接入点数量的制约。
- b 佛瑞德 BA 控制系统兼容 ZIGBEE 协议通信，物理通信符合 IEEE 802.15.4 技术规范。系统可以设备与设备点对点自行组网通信，也可以配合具有 ZIGBEE 功能的传感器，控制模块进行组网通信、信息共享，实现对于周边环境、个性化功能的设定与控制。相比传统设备减少了配线压力，系统的稳定性大幅度提高，能耗与成本都有明显的降低。
- c 佛瑞德 BA 控制系统集成了传统通信模块，支持 GPRS、WIFI 等系统通信方式。二氧化碳、PM2.5、PM10、温湿度传感采用集成模块化设计、具备分布式检测控制能力。
- d 佛瑞德 BA 控制系统可以集成 MODBUS、CAN、CANBUS 总线等工业集成控制。在工业控制中可以和现有的系统完美融合与扩展。

Freedom BA control system

Freedom control system is designed in strict accordance with relevant technical requirement for BAS system. This system itself has stable and reliable control protection functions, realizes a concentrated linkage and control on many units in overall and can make data exchange between application layer and other platform.

Freedom BA control system is compatible with ZIGBEE protocol communication, and physical communication conforms to IEEE802.15.4 technical specification. The system can realize point-to-point self-networking communication between equipment and equipment, and also can cooperate with a sensor with ZIGBEE function and realize networking communication and information sharing by the control module, so as to realize the setting and control of surroundings and personalized functions. Compared with traditional equipment, the wiring pressure has been reduced, the stability of the system has been greatly improved, and the energy consumption and cost have been significantly reduced.

Freedom BA control system integrates traditional communication module, supporting GPRS, WIFI and other system communication mode. The integrated modular design with distributed detection and control capabilities is adopted for the sensing of CO2, PM2.5, PM10, temperature and humidity.

Freedom BA control system can integrate industrial integration control such as MODBUS, CAN and CANBUS bus. It can perfectly integrate and expand with existing systems in industrial control.

COMPANY QUALIFICATIONS 公司资质



国内领先的定制化 暖通空调设备集成商

佛瑞德（郑州）工业股份有限公司是国家高新技术企业，中国著名建筑定制化暖通空调设备集成服务商，研发、设计、制造、安装可与建筑完美融合的暖通空调末端产品。

迄今为止，佛瑞德已为众多代表中国建筑行业最高水准的城市地标型建筑，提供过全方位建筑融合式空调末端产品定制服务。

作为具有 20 余年研发、设计、生产、创新经验的暖通空调全流程集成服务商，佛瑞德擅长解决各类空调末端与建筑空间的协调配合难题，可实现产品设计、制造、工程技术指导分析、以及与施工配合的全方位高质量产品服务，创建超出客户预期的高舒适度宜人环境。

National leading customized HVAC equipment integrator

Freedom (Zhengzhou) Industrial Co., Ltd. is a national high-tech enterprise, China's famous building customized HVAC equipment integration service provider, it researches and develops, designs, manufactures and installs HVAC terminal products that can be perfectly integrated with buildings.

Up to now, Freedom has provided a full range of architectural fusion air-conditioning terminal products with bespoke design for many urban landmark buildings that represent the highest level of China's construction industry.

As a HVAC integrated service provider for whole process with more than 20 years of researching and development, design, production and innovation experience, Freedom is good at solving various types of problems of coordination and cooperation between air conditioning terminals and architectural space, which can realize product design, manufacturing, engineering and technical guidance analysis, and all-round high-quality product service matched with construction, and create a highly comfortable and pleasant environment beyond the customer's expectations.



国家 高新技术企业

National hi-tech enterprise



国家 许可机电安装资质

National authorized qualification of machinery & electrical equipment installation



高水平专业 协作团队

High-level professional cooperative team

暖通设计 / 产品造型设计 /
产品结构 设计 / 现场服务设计 / 智能控制设计

HVAC design / Product modeling design / Product structure design /
Site service design / Intelligent control design



完善的售后服务 和跟踪体系

Perfect after-sales service and follow-up system

专业的售后服务团队 / 全局售后服务和跟踪体系

Professional after-sales service team
All-round after-sales service and follow-up system



国际 先进设备

佛瑞德精选国际先进的生产设备，选用通快 T-RUMPF、阿玛达 AMADA、爱克 Accurpress、依路达等行业内知名设备供应商产品进行生产制造。

先进制造设备：

- 德国通快
- 美国爱克
- 日本阿玛达

智能化软件驱动

- 德国通快
- 美国爱克
- 日本阿玛达

专业实验室

- 焓差实验室
- 半消音实验室



项目 遍及国内百余座城市

北上广深等地设有分公司及办事处
项目遍及国内主要城市地标性建筑



出口认证及 海外市场

佛瑞德拥有 CE、ETL 等国际认证，产品远销欧美市场。
CE 认证标识和证书 / ETL 标识

International advanced equipment

Freedom selects international advanced production equipment of brands such as TRUMPF, AMADA, Accurpress and Eurotec and other industrial famous equipment suppliers.

Advanced manufacture equipment

- Germany TRUMPF
- America Accurpress
- Japan AMADA

Advanced manufacture equipment

- Germany TRUMPF
- America Accurpress
- Japan AMADA

Professional laboratory

- Enthalpy difference laboratory
- Semi-anechoic laboratory

With projects all over more than hundred cities in China

Having branches and offices in Beijing, Shanghai, Guangzhou, Shenzhen and other cities.

With projects of landmarks in major cities in China.

Export certification and overseas market

Freedom has CE and ETL and other international certificates, with products sold to markets in Europe and America.

CE certification identification and certificate / ETL identification.

国际先进设备

01 先进制造设备



Amada 激光切割机



Amada 数控冲床



德国通快



爱克折弯机



德国通快



德国通快



英国依路达喷涂线

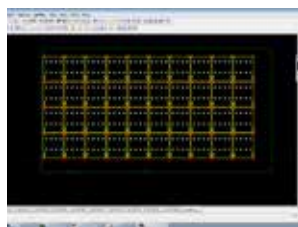


英国依路达喷涂线

02 智能化软件驱动



Amada 智能加工系统



Amada 智能加工系统

03 专业实验室



半消音实验室



焓差实验室

出口认证及海外市场



EMC certificate



LVD certificate



CE 认证



ETL 认证



合作设计院



艾麦欧建筑设计公司



B+H建筑设计事务所
(贝加艾奇)



MAD建筑事务所



哈尔滨工业大学
建筑设计研究院



WSP科进



巴马丹拿建筑设计咨询(上海)
有限公司



北京市建筑设计研究院
有限公司



同济建筑设计TJAD
同济大学建筑设计研究院



华东建筑设计研究总院



中国建筑设计研究院



中元国际工程设计研究院



上海现代建筑设计(集团)
有限公司



北京世纪千府国际工程
设计有限公司



清华大学建筑设计
研究院



中国建筑东北设计研究院
有限公司



悉地国际CCDI

CUSTOMIZED DESIGN SERVICE 定制设计服务



01 定制设计服务简介

针对每款建筑设计方案的不同，我们定制设计出与其相配合的暖通末端产品。

Brief introduction on customized design service

We will customize and design HVAC endproduct matching with the difference in each architectural design scheme.

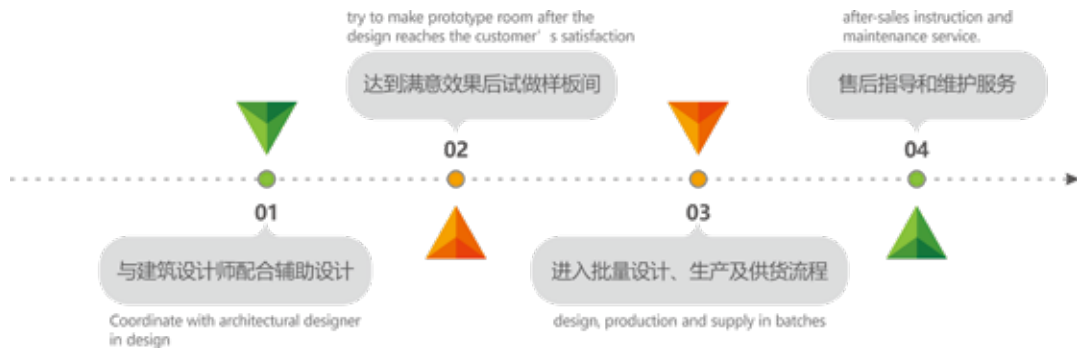
02 定制设计服务优势



- 末端设备不再千篇一律。您的设计就是与众不同。
End equipment will not be all the same any more.
Your design is different.
- 全方位解决您的设计痛点，一切皆有可能。
We aim to solve your design difficulties in overall.
Everything is possible.

Advantage in customized design service

03 定制设计服务流程



Process flow of customized design service

艺术与技术

—— 在此完美融合 ——

Art And Technology
perfect integration here

”

CONTACT US

联系我们

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