Dunham-Bush Centralized Air-conditoning Product Brochure

(Light Commercial)

DUNHAM-BUSH

www.dunham-bush.com.cn

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Supercede: CAT_UP_C-FQ_01C

Innovation...Never Ends.

DB

DUNHAM-BUSH

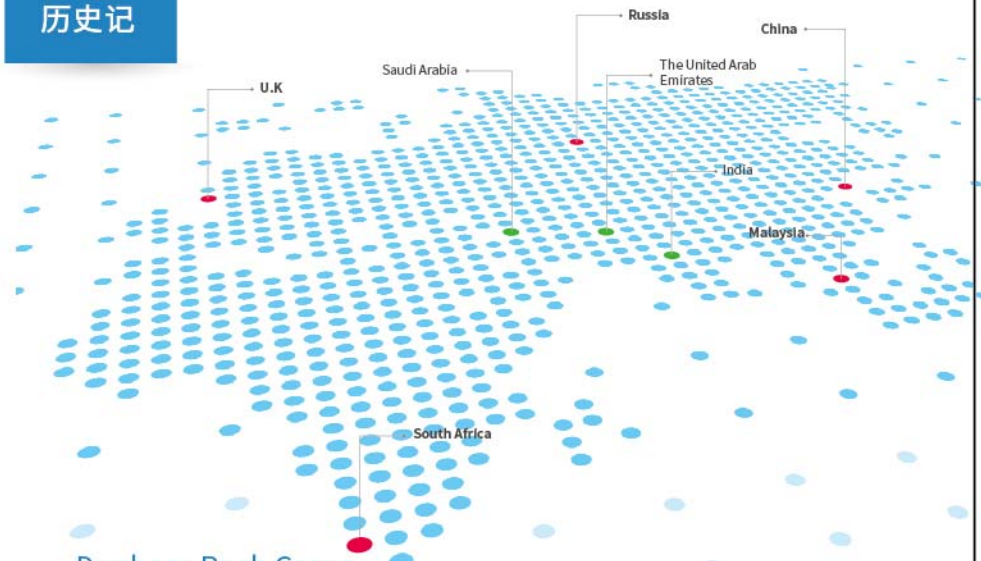
Air Cooled Chiller/Heat Pump Series

Split CCU and VRF

Air Side Air Handing Unit

Cooling Tower and Other Devices

DB
历史记



Dunham-Bush Group

DUNHAM-BUSH SINCE 1894...

Founded in the USA in 1894, Dunham-Bush is one of the oldest global commercial heating and air conditioning unit manufacturers. We are committed towards offering reliable air-conditioning solutions that are an amalgamation of innovative engineering and green technology, to ensure superior quality manufacturing that meets the global market demands for performance, reliability and energy efficiency. Dunham-Bush green heating and cooling systems have been accepted internationally and are found across the globe, in every business landscape. We are known for high quality and product innovation, reliability, and a powerful distribution network. With a legacy of over 100 years, Dunham-Bush products and services are available across the globe. We offer a broad range of sustainable heating, ventilation and air conditioning (HVAC) systems; dehumidifying and air cleaning products; service and parts support; advanced building control solutions. We are global leaders in premium commercial, residential, and industrial heating and air conditioning systems and service market, cultivating strong business relationships.

1894 Dunham-Bush brand established

1904 First Air compressor ran offline

1906 United states R&D center came into use and set to layout worldwide

1924 Produced the first Piston freezer successfully

1930 First air cooled conditioner ran offline in Harrisonburg

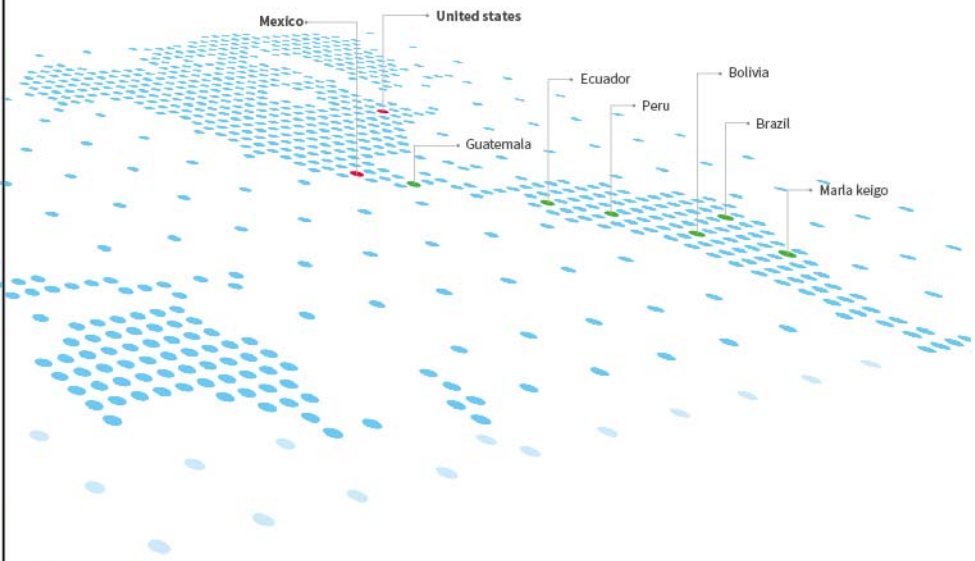
1935 Dunham-Bush opened up R&D and manufacturing center in US

1962 First open type screw compressor applied in refrigeration industry

1965 First open type centrifugal compressor came out

1967 Developed screw compressor and applied to central air conditioning field

1981 First fully hermetic vertical compressor came out in the world



Dunham-Bush China

In 1995, the Dunham Bush Group established a R&D center and manufacturing base in China, which has become one of the largest industrial bases of the Dunham Bush Group in the world. Dunham Bush China adheres to the concept of centering on customer needs and the core idea of technology, quality and service. It provides central air conditioning, industrial refrigeration, heating systems and energy-saving services centered on big data and system integration solutions for China and the Asia-Pacific region. Dunham Bush China will uphold its century-old technology accumulation and manufacturing experience, make continuous efforts on technological innovation and improvement, and commit itself to creating a green, low-carbon and sustainable human settlement environment for the world.

1988 Dunham-Bush Malaysia factory established

1995 Dunham-Bush founded R&D and manufacturing center in China, DB(China) established

2001 Hartford compressors under Dunham-Bush established global R&D center in China

2004 Dunham-Bush magnetic bearing compressor technology was born in US

2009 Dunham-Bush magnetic bearing compressor localized in China

2012 First VFD magnetic bearing centrifugal chiller came into market

2013 UK new R&D center established and put into use

2015 Dunham-Bush self-developed magnetic bearing centrifugal compressor ran offline

2017 Dunham-Bush(US) Miami R&D and manufacturing base established

2018 Self-developed gas-suspension bearing centrifugal chiller published globally

2022 Innovation, never ends

01

AIR-COOLED CHILLER/ HEAT PUMP

The modular air-cooled chiller (heat pump) is one of the most energy-saving and environment friendly equipments for heating and domestic hot water application launched by Dunham-Bush.

The unit is designed and manufactured in accordance with the highest industry standards to ensure its high performance and reliability.
With the characters of impact structure, optimal layout and easier maintenance, this product can meet the comfort air conditioning and hot water demand of many applications, such as villas, office buildings, factories, supermarkets and many other occasions. Low-temperature and ultra-low temperature heat pumps are applicable for more than 95% areas of China, especially for projects such as "coal-to-electricity" and central heating in northern China as well as heating in southern China in winter.

1 Part

ACDS(HP)H

Air-cooled modular chiller (heat pump)

Environment friendly and high efficiency | Stable and reliable | Easy installation | Intelligent control Easy operation | Multiple options

A Product Features

Environment friendly and high efficiency

- The entire series meet the national energy-saving product standards.
- V-type heat exchanger ensures high performance of heat exchange and improves the efficiency.
- World-renowned compressor with high efficiency and guaranteed quality.
- High efficiency shell and tube heat exchanger with internal thread heat exchange tube, improve the efficiency.

Stable and reliable

- The design of multi compressors and systems improves comprehensive energy efficiency.
- The standard configuration of oil tank heating belt can effectively prevent the compressor from liquid hammer.
- The intelligent defrosting function ensures at least 50% of the heating capacity output during the defrosting process.
- Multiple protection and automatic monitoring functions ensure the safety and stability.
- Modular design combination guarantees the units independent operation and as standby units for each other flexibly.
- Automatic shift function can balance the running time of the compressors; Low noise design reduces the operation sound level.

Easy installation

- Compact structure and easy for hoisting, no need large hoisting equipment.
- Small size and light weight are easier for handling.
- Modular combination, easier for transportation, installation and maintenance.
- Flanged water pipeline connection, more convenient and reliable.

Intelligent control and easy operation

- Microcomputer control, optimal UE.
- Intelligent control, real-time monitoring.
- Fast fault detection, alarm output.
- Friendly interface and easy operation.

Multiple options

- Remote control. Such as switching on/off the unit.
- Water piping line protection with water flow switch, etc.
- Protective grille as option to prevent sundries and ensure the unit safety.
- Rubber in shear or spring vibration isolator.
- Heat recovery option (only for 65KW module). RS485 communication interface, DB BOX intelligent terminal, etc.

B Normal Temperature Modular Chiller

Model		ACDSHP65HGKGA	ACDSHP130HGKGA	ACDS65HGKGA	ACDS130HGKGA
Nominal Cooling Capacity	kW	65.0	130.0	66.0	132.0
Nomial Total Power Input Cooling Mode	kW	19.4	38.8	19.5	39.0
Nominal heating	kW	70.0	140.0	-	-
Nomail Total Power Input Heating Mode	kW	19.9	39.8	-	-
Power Supply		380V/3P/50Hz			
Capacity control range	%	0-50-100	0-25-50-75-100	0-50-100	0-25-50-75-100
Refrigerant		R410A			
Compressor					
Type		Hermetic Scroll Compressor			
Power Input Cooling Mode	kW	17.9	35.8	18.0	36.0
Power Input Heating Mode	kW	18.4	36.8	-	-
Quantity	set	2	4	2	4
Startup Current	A/set	135.0			
Water Side Heat Exchanger					
Nominal Flow Rate Cooling Mode	m^3/h	11.2	22.4	11.4	22.7
Nominal Flow Rate Heating Mode	m^3/h	12.0	24.1	-	-
Water Side Pressure Design	Mpa	1.0	1.0	1.0	1.0
Chiller Pressure Drop	kPa	30.0	40.0	30.0	40.0
Inlet/Outlet connection size	IN	2	3	2	3
Air Side Heat Exchanger					
Fan Qty	set	2	4	2	4
Fan Power Input	kW/EA	0.75	0.75	0.75	0.75
General Parameter					
Length	mm	2060	2060	2060	2060
Width	mm	1000	2000	1000	2000
Height	mm	1700	1700	1700	1700
Unit Shipping weight	kg	650	1160	610	1080
Unit Operating weight	kg	700	1260	660	1180

Note:
Nominal cooling performance is under below test condition: water flow rate is $0.172m^3/(h{\cdot}kW)$, CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition, leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is $0.018m^2°C/kW$, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

DB

C Compact Type Modular Chiller

Model		ACDSHP130DHGKGA	ACDS130DHGKGA
Nominal Cooling Capacity	kW	138.0	140.0
Nomial Total Power Input Cooling Mode	kW	41.2	41.2
Nominal heating	kW	142.0	-
Nomail Total Power Input Heating Mode	kW	42.7	-
Power Supply		380V/3P/50Hz	
Capacity control range	%	0-50-100	
Refrigerant		R410A	
Compressor			
Type		Hermetic Scroll Compressor	
Power Input Cooling Mode	kW	36.8	36.8
Power Input Heating Mode	kW	38.3	-
Quantity	set	2	2
Startup Current	A/set	260.0	
Water Side Heat Exchanger			
Nominal Flow Rate Cooling Mode	m^3/h	23.7	24.1
Nominal Flow Rate Heating Mode	m^3/h	24.4	-
Water Side Pressure Design	Mpa	1.0	1.0
Chiller Pressure Drop	kPa	40.0	40.0
Inlet/Outlet connection size	IN	3	3
Air Side Heat Exchanger			
Fan Qty	set	2	2
Fan Power Input	kW/EA	2.2	2.2
General Parameter			
Length	mm	2250	2250
Width	mm	1250	1250
Height	mm	2100	2100
Unit Shipping weight	kg	1050	1000
Unit Operating weight	kg	1150	1100

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition,leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

D Four-Pipe/Total Heat Recovery Modular Chiller

Model			ACDSHP65HG-SQ（四管制）	ACDSHP65HG-MR（全热回收）
Nominal Cooling Capacity	kW		65.0	65.0
Nominal total power input-cooling	kW		19.4	19.4
Nominal COPc Cooling Mode	W/W		3.35	3.35
Nominal heating	kW		70.0	70.0
Nominal total power input-heating	kW		19.9	19.9
Nominal heating COPh	W/W		3.52	3.52
Heating Capacity Under Cooling and Heating Condition	kW		82.9	—
Cooling and synchronous heating power input-heating	kW		17.9	—
Cooling and synchronous heating-cooling capacity	kW		65.0	—
Cooling and synchronous heating power input-cooling	kW		17.9	—
Max. Operating Current	A		60.2	—
Nominal Total Heat Recovery Capacity	kW		—	82.9
Nominal fully heat recovery total power input	kW		—	19.9
Refrigerant			R410A	
Compressor				
Compressor Rated Power Input		Model	Hermetic Scroll Compressor	
		Cooling (kW)	17.9	
		Heating (kW)	18.4	
		Cooling & Heating2 (kW)	17.9	—
		Fully Heat Recovery (kW)	—	18.40
Power Supply			380V/3P/50Hz	
Starting Current per Compressor(A)			135	
Quantity			2	2
Water Side Heat Exchanger				
Chilled Water m^3/h		Heat exchanger type	Brazed Plate Heat Exchanger	Brazed Plate Heat Exchanger
		Cooling	11.2	11.2
		Heating	12.0	12.0
		Cooling & Heating	14.3	—
		Fully Heat Recovery	—	14.3
Water Side Pressure Design	MPa		1.00	1.0
Chiller Pressure Drop	kPa		35.0	30.0
Inlet/Outlet connection size	IN		2	2.0
Air Side Heat Exchanger				
Fan Qty	set		2	2
Fan Power Input	kW/EA		0.75	0.75
General Parameter				
Length	mm		2360	2360
Width	mm		1075	1075
Height	mm		1700	1700
Unit Shipping weight	kg		700	700
Unit Operating weight	kg		750	750

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition,leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Heating & cooling condition: water flow rate is 0.172m^3/(h·kW),hot water is 40/45°C,chilled water is 12/7°C;
Nominal total heat recovery capacity test condition: water flow rate is 0.172m^3/(h·kW),Heat recovery side water in/out temperature 40/45℃， chilled water is 12/7℃;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

E Low Ambient Temperature High Efficiency Air Source Heat Pump

Model			ACDSHP65HLGKG	ACDSHP130HLGKG	ACDSHP150HLGKG
Nominal Cooling Capacity		kW	65.0	130.0	150.0
Nominal power input-cooling		kW	19.9	39.8	44.8
Nominal COPc Cooling Mode		W/W	3.27	3.27	3.35
Rated heating capacity		kW	70.0	140.0	160.0
Rated power input-heating		kW	19.9	39.8	45.0
Rated heating COP		W/W	3.52	3.52	3.56
Nominal heating		kW	43.5	88.0	105.0
Nominal power input-heating		kW	18.0	35.2	40.4
Nominal heating COP		W/W	2.42	2.50	2.60
Low-temperature heating capacity		kW	36.0	72.0	86.0
Low-temperature power input-heating		kW	17.0	33.8	40.0
Low-temperature heating COPdh		W/W	2.12	2.13	2.15
Unit noise level (cooling/heating)		dB(A)	72.0/72.0	76.0/76.0	76.0/76.0
Unit maximum operating current		A	52.8	105.6	116.8
Compressor					
Type			Hermetic Scroll Compressor(EVI Enhanced vapor injection)		
Compressor Rated Power Input	Nominal cooling	kW	18.4	36.8	41.2
	Rated heating	kW	18.4	36.8	41.4
	Nominal heating	kW	16.5	32.2	36.8
	Low-temperature heating	kW	15.5	30.8	36.4
Power Supply			380V/3P/50Hz		
Compressor startup current/EA		A	127.0	127.0	255.5
Quantity			2	4	2
Refrigerant type			R410A		
Throttling style			EEV		
Water Side Heat Exchanger					
Chilled Water	Heat exchanger type		DX Type Shell and Tube Heat Exchanger		
	Nominal cooling	m^3/h	11.2	22.4	25.8
	Nominal heating	m^3/h	11.2	22.4	25.8
Water Side Pressure Design		Mpa	1.00	1.00	1.00
Chiller Pressure Drop		kPa	30.0	40.0	35.0
Inlet/Outlet connection size		IN	2	3	3
Air Side Heat Exchanger					
Type			V Type	V Type	U Type
Fan Qty		set	2	4	2
Fan Power Input		kW/EA	0.75	0.75	1.8
Air Flow		m^3/h	13000*2	13000*4	23500*2
General Parameter					
Length		mm	2060	2060	2340
Width		mm	1000	2000	1180
Height		mm	1700	1700	2300
Unit Shipping weight		kg	650	1160	1070
Unit Operating weight		kg	700	1260	1170

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating capacity is under testing condition: water flow rate is 0.172m^3/(h·kW), leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T25127.1-2020, performance standard: GB 37480-2019 .

F Low Ambient Temperature Super Heating Air Source Heat Pump

Model			ACDSHP75HLGHWKG	ACDSHP150HLGHWKG
Nominal Cooling Capacity		kW	78.0	150.0
Nominal power input-cooling		kW	24.2	44.8
Nominal COPc Cooling Mode		W/W	3.22	3.35
Rated heating capacity		kW	86.0	160.0
Rated power input-heating		kW	23.9	45.0
Rated heating COP		W/W	3.60	3.56
Nominal heating		kW	57.0	105.0
Nominal power input-heating		kW	21.9	40.4
Nominal heating COP		W/W	2.60	2.60
Low-temperature heating capacity		kW	46.5	86.0
Low-temperature power input-heating		kW	21.6	40.0
Low-temperature heating COPdh		W/W	2.15	2.15
Unit noise level (cooling/heating)		dB(A)	72.0/72.0	76.0/76.0
Unit maximum operating current		A	73.5	115.4
Compressor				
Type			Hermetic Scroll Compressor(EVIEnhanced vapor injection)	
Compressor Rated Power Input	Nominal cooling	kW	21.7	41.2
	Rated heating	kW	21.4	41.4
	Nominal heating	kW	19.4	36.8
	Low-temperature heating	kW	19.1	36.4
Power Supply			380V/3P/50Hz	380V/3P/50Hz
Compressor startup current/EA		A	156.5	255.5
Quantity			2	2
Refrigerant type			R410A	R410A
Throttling style			EEV	EEV
Water Side Heat Exchanger				
Chilled Water	Heat exchanger type		DX Type Shell and Tube Heat Exchanger	DX Type Shell and Tube Heat Exchanger
	Nominal cooling	m^3/h	13.4	25.8
	Nominal heating	m^3/h	13.4	25.8
Water Side Pressure Design		Mpa	1.00	1.00
Chiller Pressure Drop		kPa	30.0	35.0
Inlet/Outlet connection size		IN	2	3
Air Side Heat Exchanger				
Type			V Type	U Type
Fan Qty		set	2	2
Fan Power Input		kW/EA	1.25	1.80
Air Flow		m^3/h	16000*2	23500*2
General Parameter				
Length		mm	2340	2340
Width		mm	1100	1180
Height		mm	2180	2300
Unit Shipping weight		kg	850	1070
Unit Operating weight		kg	950	1170

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating capacity is under testing condition: water flow rate is 0.172m^3/(h·kW), leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T25127.1-2020, performance standard: GB 37480-2019 .

1Part

ACDS(HP)GW

Air Cooled Scroll Chiller/Heat Pump

Product Features

Environment friendly and high efficiency

- R410a refrigerant
- V-type heat exchanger ensures high performance of heat exchange and improves the efficiency.
- World-renowned compressor with high efficiency and guaranteed quality.
- High efficiency shell and tube heat exchanger with internal thread heat exchange tube, improve the efficiency.

Safe and Reliable

- The design of multi compressors and systems improves comprehensive energy efficiency.
- The standard configuration of oil tank heating belt can effectively prevent the compressor from liquid hammer.
- The intelligent defrosting function ensures at least 50% of the heating capacity output during the defrosting process.
- Multiple protection and automatic monitoring functions ensure the safety and stability.
- Automatic shift function can balance the running time of the compressors; Low noise design reduces the operation sound level.

Easy installation

- Compact footprint, saving installation space and cost of water system, more convenient for installation and maintenance.
- Victaulic water pipeline connection, more convenient and reliable.

Intelligent control and easy operation

- Intelligent control and real-time monitoring.
- Friendly interface and easy operation.
- Self diagnosis on alarm makes maintenance easier
- Standard RS485 communication card

Multiple options

- Remote control. Such as switching on/off the unit.
- Water piping line protection with water flow switch, etc.
- Protective grille as option to prevent sundries and ensure the unit safety.
- Rubber in shear or spring vibration isolator.

ACDSGW Single Cooling Technical Parameter Table

Model		ACDS 150GW	ACDS 200GW	ACDS 250GW	ACDS 300GW	ACDS 400GW	ACDS 500GW	ACDS 600GW
Nominal Cooling Capacity	kW	157.0	213.0	265.0	320.0	426.0	530.0	639.0
Nomial Total Power Input Cooling Mode	kW	51.0	66.6	85.5	99.9	133.2	171.0	199.8
Nominal heating	kW	-	-	-	-	-	-	-
Nomail Total Power Input Heating Mode	kW	-	-	-	-	-	-	-
Power Supply		380V/3P/50Hz						
Capacity control range	%	0-50-100	0-50-100	0-25-50-75-100	0-33-66-100	0-25-50-75-100	0-25-50-75-100	0-33-66-100
Refrigerant		R410A						
Compressor								
Type		Hermetic Scroll Compressor						
Power Input Cooling Mode	kW	47.4	61.4	76.7	92.1	122.8	153.4	184.2
Power Input Heating Mode	kW	-	-	-	-	-	-	-
Quantity	set	2	2	4	3	4	8	6
Startup Current	A/台	320.0	413.0	260.0	413.0	413.0	260.0	413
Water Side Heat Exchanger								
Nominal Flow Rate Cooling Mode	m^3/h	27.0	36.6	45.6	55	73.3	91.2	109.9
Nominal Flow Rate Heating Mode	m^3/h	-	-	-	-	-	-	-
Water Side Pressure Design	Mpa	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Chiller Pressure Drop	kpa	45	45	50	50	60	65	65
Inlet/Outlet connection size	in	3	4	5	5	5	5	6
Air Side Heat Exchanger								
Fan Qty	EA	4	4	4	6	8	8	12
Fan Power Input	kW/EA	0.9	1.3	2.2	1.3	1.3	2.2	1.3
General Parameter								
Length	mm	2550	2550	3500	3500	4640	7000	6910
Width	mm	2235	2235	2330	2235	2235	2250	2235
Height	mm	2250	2250	2250	2250	2250	2100	2250
Unit Shipping weight	kg	1815	1900	2000	2680	3300	4000	4500
Unit Operating weight	kg	1915	2000	2200	2830	3450	4400	4700

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition,leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

ACDSHPGW Heat Pump Technical Parameter Table

Model		ACDSHP 150GW	ACDSHP 200GW	ACDSHP 250GW	ACDSHP 300GW
Nominal Cooling Capacity	kW	155.0	210.0	260.0	315.0
Nomial Total Power Input Cooling Mode	kW	51.0	66.6	85.5	99.9
Nominal heating	kW	171.0	230.0	280	345.0
Nomail Total Power Input Heating Mode	kW	50.6	66.2	85.6	99.3
Power Supply		380V/3P/50Hz			
Capacity control range	%	0-50-100	0-50-100	0-25-50-75-100	0-33-66-100
Refrigerant		R410A			
Compressor					
Type		Hermetic Scroll Compressor			
Power Input Cooling Mode	kW	47.4	61.4	76.7	92.1
Power Input Heating Mode	kW	47.0	61.0	76.8	91.5
Quantity	set	2	2	4	3
Startup Current	A/台	320.0	413.0	260.0	413.0
Water Side Heat Exchanger					
Nominal Flow Rate Cooling Mode	m^3/h	26.7	36.1	44.72	54.2
Nominal Flow Rate Heating Mode	m^3/h	29.4	39.6	48.16	59.3
Water Side Pressure Design	Mpa	1.0	1.0	1.0	1.0
Chiller Pressure Drop	kpa	45	45	50	50
Inlet/Outlet connection size	in	3	4	5	5
Air Side Heat Exchanger					
Fan Qty	EA	4	4	4	6
Fan Power Input	kW/台	0.9	1.3	2.2	1.3
General Parameter					
Length	mm	2550	2550	3500	3500
Width	mm	2235	2235	2330	2235
Height	mm	2250	2250	2250	2250
Unit Shipping weight	kg	1815	1900	2000	2680
Unit Operating weight	kg	1915	2000	2200	2830

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition,leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

ACDSHPGW Heat Pump Technical Parameter Table

Model		ACDSHP 400GW	ACDSHP 500GW	ACDSHP 600GW
Nominal Cooling Capacity	kW	420.0	520.0	630.0
Nomial Total Power Input Cooling Mode	kW	133.2	171.0	199.8
Nominal heating	kW	460.0	560.0	690.0
Nomail Total Power Input Heating Mode	kW	132.4	171.2	198.6
Power Supply		380V/3P/50Hz		
Capacity control range	%	0-25-50-75-100	0-25-50-75-100	0-33-66-100
Refrigerant		R410A		
Compressor				
Type		Hermetic Scroll Compressor		
Power Input Cooling Mode	kW	122.8	153.4	184.2
Power Input Heating Mode	kW	122.0	153.6	183.0
Quantity	set	4	8	6
Startup Current	A/台	413.0	260.0	413
Water Side Heat Exchanger				
Nominal Flow Rate Cooling Mode	m^3/h	72.2	89.4	108.3
Nominal Flow Rate Heating Mode	m^3/h	79.1	96.3	118.7
Water Side Pressure Design	Mpa	1.0	1.0	1.0
Chiller Pressure Drop	kpa	60	65	65
Inlet/Outlet connection size	in	5	6	6
Air Side Heat Exchanger				
Fan Qty	EA	8	8	12
Fan Power Input	kW/台	1.3	2.2	1.3
General Parameter				
Length	mm	4640	7000	6910
Width	mm	2235	2250	2235
Height	mm	2250	2100	2250
Unit Shipping weight	kg	3300	4000	4500
Unit Operating weight	kg	3450	4400	4700

Note:
Nominal cooling performance is under below test condition: water flow rate is 0.172m^3/(h·kW), CHW leaving temperature is 7°C, outdoor ambient temperature is 35°C;
Nominal heating performance is under below testing condition,leaving water temperature is 45°C, outdoor DB/WB is 7/6°C;
Fouling factor on evaporator side is 0.018m^2°C/kW, water side design pressure is 1.0 Mpa;
Product standard: GB/T18430.1-2007, performance standard: GB 19577-2015.

02

UNITARY AIR HANDING UNIT SERIES

Advance of Dunham-Bush unitary air handing unit: compact structure, easier installation and maintenance, fully meet comfort demand of variety applications.

Dunham-Bush unitary air handing unit includes MSACC(HP)-GN air cooled duct type air conditioning, DCV-5 PLUS DC inverter VRF, compact structure, optimal layout, easier maintenance and use, applicable for domestic house, such as apartment, villadom, as well as light commercial and industrial building such as office, store, restaurant, plant etc.

2Part

MSACC(HP)-GN

Air Cooled Duct Type Air Conditioning

Wide Application | Applicable Site | Easy Installation Lower Cost | Multiple options

A Product Features

Wide Range

- Only cooling and heat pump
- Wide capacity range, meet the demand of light commercial
- Multiple indoor unit options, such as floor standing, horizontal and free blow type, meet variety ESP and installation demands, modular design, multiple combination.

Easier Maintenance and Lower Cost

- Compact structure, easier installation
- Simple system, lower cost
- Modular combination, independent operating.
- Low noise design, quiet operating
- Indoor unit filter easy replacement, easier maintenance

Applications

- Applicable for plant, restaurant, supermarket, school, office, store, high-end residence.

Multiple options

- Electrical Heater

B Outdoor Unit

Outdoor Unit Model			MSACC25GND	MSACCHP25GND	MSACC35GND	MSACCHP35GND	MSACC45GND	MSACCHP45GND
Nominal Cooling Capacity		kW	26.2		34.6		44.6	
Nominal heating		kW	---	27.5	---	35.6	---	47.2
ODU Power Input Cooling Mode		kW	8.8		11		14.7	
Outdoor unit power input-heating		kW	---	8.4	---	9.9	---	13.4
Compressor type			Hermetic Scroll Compressor					
Power Supply			380V 50Hz 3N~					
Dimension		mm	1500x750x1288		1800x950x1338		1800x950x1384	
Weight		kg	290		320		520	
Refrigerant	Model		R410A					
	Charge Volume	kg	4.5*2		6*2		7.5*2	
Piping	System Connection Method		Welding					
	Liquid LineØ	mm(in)	2*12.7 (1/2)		2*12.7 (1/2)		2*12.7 (1/2)	
	Gas LineØ	mm(in)	2*19.05 (3/4)		2*19.05 (3/4)		2*22 (7/8)	

Outdoor Unit Model			MSACC25GN	MSACCHP25GN	MSACC30GN	MSACCHP30GN	MSACC35GN	MSACCHP35GN
Nominal Cooling Capacity		kW	25		30		35	
Nominal heating		kW	---	26.8	---	31.6	---	35.7
ODU Power Input Cooling Mode		kW	8.7		10.1		12.5	
Outdoor unit power input-heating		kW	---	7.1	---	8.5	---	9.7
Compressor type			Hermetic Scroll Compressor					
Power Supply			380V 50Hz 3N~					
Dimension		mm	1060x1000x930		1120x1000x930		1200x1000x930	
Weight		kg	260		270		290	
Refrigerant	Model		R410A					
	Charge Volume	kg	9		10		12	
Piping	System Connection Method		Welding					
	Liquid LineØ	mm(in)	15.88 (5/8)		15.88 (5/8)		15.88 (5/8)	
	Gas LineØ	mm(in)	28.57 (1-1/8)		28.57 (1-1/8)		28.57 (1-1/8)	

Outdoor Unit Model			MSACC45GN	MSACCHP45GN	MSACC75GN	MSACCHP75GN	MSACC95GN	MSACCHP95GN
Nominal Cooling Capacity		kW	45		75		95	
Nominal heating		kW	---	47.3	---	76	---	94.1
ODU Power Input Cooling Mode		kW	15.2		24.5		32.1	
Outdoor unit power input-heating		kW	---	12.7	---	22.3	---	29.1
Compressor type			Hermetic Scroll Compressor					
Power Supply			380V 50Hz 3N~					
Dimension		mm	1880x1000x930		2250x1250x2100		2250x1250x2100	
Weight		kg	360		600		660	
Refrigerant	Model		R410A					
	Charge Volume	kg	15		25		32	
Piping	System Connection Method		Welding					
	Liquid LineØ	mm(in)	22.22 (7/8)		22.22 (7/8)		28.57 (1-1/8)	
	Gas LineØ	mm(in)	34.92 (1-3/8)		41.27 (1-5/8)		41.27 (1-5/8)	

Note:

1. Cooling condition: ambient DB/WB is 35/24°C, indoor design temperature is DB/WB 27/19°C.
2. Heating condition: ambient DB/WB is 7/6°C, indoor design temperature is DB/WB 20/15°C.
3. The cooling/heating data is based on piping length is 7.5m between ODU and IDU.
4. Belt type supply fan to meet the demand of external pressure; power supply is 380V/3P/50Hz.
5. ODU adopts to welding connection, and charged with refrigerant.
6. The dimension is just for reference, final dimension should be according to production drawing.
7. Standard unit is left hand connection, if need right hand or non-standard external pressure, please consult factory.

Indoor Unit

Model	Indoor Unit	MSHEC25GN	MSHECHP25GN	MSHEC35GN	MSHECHP35GN	MSHEC45GN	MSHECHP45GN
	Outdoor Unit	MSACC25GND	MSACCHP25GND	MSACC35GND	MSACCHP35GND	MSACC45GND	MSACCHP45GND
Nominal Cooling Capacity kW		26.2		34.6		44.6	
Nominal heating kW		–	27.5	–	35.6	–	47.2
Supply Air Flow m^3/h		5000		7000		8200	
ESP Pa		180		180		180	
Motor power kW		1.1		1.5		2.2	
Dimension mm		950x1400x630		950x1700x695		1000x1890x695	
Weight kg		217		272		290	
Drain Pipe Connection Size		R1-1/4					

Model	Indoor Unit	MSHEC50GN	MSHECHP50GN	MSHEC55GN	MSHECHP55GN	MSHEC60GN	MSHECHP60GN
	1# Outdoor Unit	MSACC25GN	MSACCHP25GN	MSACC25GN	MSACCHP25GN	MSACC30GN	MSACCHP30GN
	2#Outdoor Unit	MSACC25GN	MSACCHP25GN	MSACC30GN	MSACCHP30GN	MSACC30GN	MSACCHP30GN
Nominal Cooling Capacity kW		50		55		60	
Nominal heating kW		–	53.6	–	58.4	–	63.2
Supply Air Flow m^3/h		10000		11000		12000	
ESP Pa		180		180		230	
Motor power kW		2.2		3		3	
Dimension mm		1000x2080x790		1000x2170x790		1100x1985x950	
Weight kg		330		360		390	
Drain Pipe Connection Size		R1-1/4					

Model	Indoor Unit	MSHEC70GN	MSHECHP70GN	MSHEC80GN	MSHECHP80GN	MSHEC90GN	MSHECHP90GN
	1# Outdoor Unit	MSACC35GN	MSACCHP35GN	MSACC35GN	MSACCHP35GN	MSACC45GN	MSACCHP45GN
	2#Outdoor Unit	MSACC35GN	MSACCHP35GN	MSACC45GN	MSACCHP45GN	MSACC45GN	MSACCHP45GN
Nominal Cooling Capacity kW		70		80		90	
Nominal heating kW		–	71.4	–	83	–	94.6
Supply Air Flow m^3/h		14000		16000		18000	
ESP Pa		230		230		230	
Motor power kW		4		4		4	
Dimension mm		1100x2170x950		1778x2082x1293		1778x2082x1420	
Weight kg		410		620		650	
Drain Pipe Connection Size		R1-1/4					

Note:
1. Cooling condition: ambient DB/WB is 35/24°C, indoor design temperature is DB/WB 27/19°C.
2. Heating condition: ambient DB/WB is 7/6°C, indoor design temperature is DB/WB 20/15°C.
3. The cooling/heating data is based on piping length is 7.5m between ODU and IDU.
4. Belt type supply fan to meet the demand of external pressure; power supply is 380V/3P/50Hz.
5. ODU adopts to welding connection, and charged with refrigerant.
6. The dimension is just for reference, final dimension should be according to productin drawing.
7. Standard unit is left hand connection, if need right hand or non-standard external pressure, please consult factory.

Indoor Unit

Model	Indoor Unit	MSVEC25GN	MSVECHP25GN	MSVEC35GN	MSVECHP35GN	MSVEC45GN	MSVECHP45GN
	Outdoor Unit	MSACC25GND	MSACCHP25GND	MSACC35GND	MSACCHP35GND	MSACC45GND	MSACCHP45GND
Nominal Cooling Capacity kW		26.2		34.6		44.6	
Nominal heating kW		–	27.5	–	35.6	–	47.2
Supply Air Flow m^3/h		5000		7000		8200	
ESP Pa		180		180		180	
Motor power kW		1.1		1.5		2.2	
Dimension mm		750x1400x1149		750x1700x1250		810x1890x1352	
Weight kg		230		280		300	
Drain Pipe Connection Size		R1-1/4					

Model	Indoor Unit	MSHEC50GN	MSHECHP50GN	MSHEC55GN	MSHECHP55GN	MSHEC60GN	MSHECHP60GN	MSHEC70GN	MSHECHP70GN
	1# Outdoor Unit	MSACC25GN	MSACCHP25GN	MSACC25GN	MSACCHP25GN	MSACC30GN	MSACCHP30GN	MSACC35GN	MSACCHP35GN
	2#Outdoor Unit	MSACC25GN	MSACCHP25GN	MSACC30GN	MSACCHP30GN	MSACC30GN	MSACCHP30GN	MSACC35GN	MSACCHP35GN
Nominal Cooling Capacity kW		50		55		60		70	
Nominal heating kW		–	53.6	–	58.4	–	63.2	–	71.4
Supply Air Flow m^3/h		10000		11000		12000		14000	
ESP Pa		180		180		230		230	
Motor power kW		2.2		3		3		4	
Dimension mm		810x2080x1430		810x2170x1500		930x1985x1779		930x2170x1779	
Weight kg		330		380		420		430	
Drain Pipe Connection Size		R1-1/4							

Note:
1. Cooling condition: ambient DB/WB is 35/24°C, indoor design temperature is DB/WB 27/19°C.
2. Heating condition: ambient DB/WB is 7/6°C, indoor design temperature is DB/WB 20/15°C.
3. The cooling/heating data is based on piping length is 7.5m between ODU and IDU.
4. Belt type supply fan to meet the demand of external pressure;
5、ODU and IDU shall be supplied power separately, supply power will be 380V/50Hz/3P.
6. ODU adopts to welding connection, and charged with refrigerant.
7. The dimension is just for reference, final dimension should be according to productin drawing.
8. Standard unit is left hand connection, if need right hand or non-standard external pressure, please consult factory.

2Part

DCV-E+

DC Variable Frequency Multi-units

Environment friendly and high efficiency

Efficient and stable

Easy Installation

A Product Features

Environment friendly and high efficiency

- EVI compressor with high efficiency heat exchanger, optimal performance
- R410a refrigerant
- Super high efficiency, IPLV up to 10
- High efficiency refrigerant pipe 2-in-1 design, higher heat exchange efficiency
- DC inverter technology, intelligent adjustment of output, more energy saving
- Four side air return condenser design, bigger heat exchange area and better heat exchange performance
- PID temperature control, higher precision

Easy installation

- Compact structure, easier installation
- Outdoor installation
- Quick heating, more comfort
- Night mode for quiet operation, sound pressure level down to 43dB(A)

Efficient and stable

- EEV control, more precision
- Multiple painting to protect the high efficiency fin and ensure high heat exchange performance, longer service life
- Wide operating range, can withstand the terrible climate
- Automatic detection diagnosis function, system stable operation
- Precise six stage oil control technology, compressor operating more stable
- Intelligent three stage standby operation, safe operation
- ODU alternative operation, longer service life
- Power failure memory function, automatic starting up when power on
- Multiple protection, automatic monitoring ensure safe and stable operation

B Enhanced Vapor Injection DC Variable Frequency Outdoor Module Single Unit Specifications

Pictures															
HP		8	10	12	14	16	18	20	22	24	26	28	30	32	
Model		DCV-MTC8 EGD-GP	DCV-MTC10 EGD-GP	DCV-MTC12 EGD-GP	DCV-MTC14 EGD-GP	DCV-MTC16 EGD-GP	DCV-MTC18 EGD-GP	DCV-MTC20 EGD-GP	DCV-MTC22 EGD-GP	DCV-MTC24 EGD-GP	DCV-MTC26 EGD-GP	DCV-MTC28 EGD-GP	DCV-MTC30 EGD-GP	DCV-MTC32 EGD-GP	
Power		Three-phase, 50Hz, 380V													
Rated Cooling Capacity	kW	25.5	28.5	33.5	40	45	50.5	56	61.5	67	73	80	85	90	
Rated Heating Capacity	kW	27.4	31.5	37.5	45	50	56	63	69	75	81.5	88	95	100	
Power Consumption Cooling	kW	5.35	6.7	8.6	10.75	12.8	13.8	15.5	17.6	20.5	22.2	24.5	25.9	27.6	
Power Consumption Heating	kW	5.3	6.65	8.5	10.6	12	13.4	15.2	16.8	19.5	20.2	22.1	24	25.8	
IPLV	W/W	10	9.8	9.6	9.5	9.2	9.1	8.9	8.8	8.5	8.5	8.45	8.4	8.3	
APF	Wh/Wh	5.1	4.85	4.8	4.9	4.85	4.7	4.65	4.6	4.4	4.5	4.4	4.55	4.45	
Noise (A sound pressure level)	dB(A)	≤58		≤60		≤61	62		63		≤63				
Fan Air Volume	m^3/h	10500		11000	13000		16000			25000			24000		
Shell Color		Camel grey													
Dimensions Width* Depth* Height	mm	990*840*1740			1340*840*1740					1990*840*1740					
Net Weight	kg	228	228	230	275	275	285	290	297	388	433	433	480	480	
Refrigerant Type		R410A													
Refrigerant Throttling Method		Electronic expansion valve throttling													
Refrigerant Charge	kg	9	9	11	14	14	15	16	16	16	20	20	23	23	
Compressor Type		Enhanced vapor injection DC variable frequency scroll compressor													
Connecting tube Equivalent length of all tubes <90m Liquid tube	mm	ϕ9.5		ϕ12.7			ϕ15.9				ϕ19.1				
Connecting tube Equivalent length of all tubes <90m Air tube	mm	ϕ19.1	ϕ22.2	ϕ25.4		ϕ28.6					ϕ31.8				
Connecting tube Equivalent length of all tubes ≥90m Liquid tube	mm	ϕ12.7		ϕ15.9			ϕ19.1				ϕ22.2				
Connecting tube Equivalent length of all tubes ≥90m Air tube	mm	ϕ22.2	ϕ25.4	ϕ28.6		ϕ31.8					ϕ38.1				
Connecting tube Connection Method		Welding													
The maximum number of indoor units that can be connected	unit	13	16	19	23	26	29	33	36	39	43	46	50	53	
Operation Range	Cooling	-5℃~55℃								-5℃~55℃					
Operation Range	Heating	-25℃~30℃								-25℃~30℃					

Enhanced Vapor Injection DC Variable Frequency Outdoor 2 Parallel Units Specifications

HP			34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64
Model			DCV-MTC34 EGD-GP	DCV-MTC36 EGD-GP	DCV-MTC38 EGD-GP	DCV-MTC40 EGD-GP	DCV-MTC42 EGD-GP	DCV-MTC44 EGD-GP	DCV-MTC46 EGD-GP	DCV-MTC48 EGD-GP	DCV-MTC50 EGD-GP	DCV-MTC52 EGD-GP	DCV-MTC54 EGD-GP	DCV-MTC56 EGD-GP	DCV-MTC58 EGD-GP	DCV-MTC60 EGD-GP	DCV-MTC62 EGD-GP	DCV-MTC64 EGD-GP
Combination Method	Recommended Combination		16+18	18+18	16+22	18+22	20+22	22+22	22+24	24+24	22+28	24+28	24+30	24+32	26+32	28+32	30+32	32+32
Power			Three-phase,50Hz,380V															
Rated Cooling Capacity		kW	95.5	101	106.5	112	117.5	123	128.5	134	141.5	147	152	157	163	170	175	180
Rated Heating Capacity		kW	106	112	119	125	132	138	144	150	157	163	170	175	181.5	188	195	200
Power Consumption	Cooling	kW	26.6	27.6	30.4	31.4	33.1	35.2	38.1	41	42.1	45	46.4	48.1	49.8	52.1	53.5	55.2
	Heating	kW	25.4	26.8	28.8	30.2	32	33.6	36.3	39	38.9	41.6	43.5	45.3	46	47.9	49.8	51.6
Noise (A sound pressure level)		dB(A)	⩽63						⩽64									
Fan Air Volume		m^3/h	29000	32000	29000	32000			41000	50000	41000	50000	49000				48000	
Shell Color			Camel grey															
Dimensions	Width*Depth*Height	mm	(1340*840*1740)*2						(1340*840*1740)+(1990*840*1740)	(1990*840*1740)*2	(1340*840*1740)+(1990*840*1740)	(1990*840*1740)*2						
Net Weight		kg	560	570	572	582	587	594	685	776	730	821	868	868	913	913	960	960
Refrigerant	Type		R410A															
	Throttling Method		Electronic expansion valve throttling (EEV)															
	Charge	kg	29	30	30	31	32	32	32	32	36	36	39	39	43	43	46	46
Compressor Type			Enhanced vapor injection DC variable frequency scroll compressor															
Connecting tube	Equivalent length of all tubes ⩽90m	Liquid tube mm	ϕ19.05						ϕ19.05									
		Air tube mm	ϕ31.8			ϕ38.1							ϕ41.2					
	Equivalent length of all tubes ⩾90m	Liquid tube mm	ϕ22.2						ϕ22.2									
		Air tube mm	ϕ38.1			ϕ41.2							ϕ44.5					
	Connection Method		Welding															
The maximum number of indoor units that can be connected		unit	56	59	63	64	64	64	64	64	64	64	64	64	64	64	64	64
Operation Range		Cooling	-5℃~55℃						-5℃~55℃									
		Heating	-25℃~30℃						-25℃~30℃									

Enhanced Vapor Injection DC Variable Frequency Outdoor 3 Parallel Units Specifications

HP			66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
Model			DCV-MTC66 EGD-GP	DCV-MTC68 EGD-GP	DCV-MTC70 EGD-GP	DCV-MTC72 EGD-GP	DCV-MTC74 EGD-GP	DCV-MTC76 EGD-GP	DCV-MTC78 EGD-GP	DCV-MTC80 EGD-GP	DCV-MTC82 EGD-GP	DCV-MTC84 EGD-GP	DCV-MTC86 EGD-GP	DCV-MTC88 EGD-GP	DCV-MTC90 EGD-GP	DCV-MTC92 EGD-GP	DCV-MTC94 EGD-GP	DCV-MTC96 EGD-GP
Combination Method	Recommended Combination		22+22 +22	22+22 +24	22+24 +24	22+22 +28	18+28 +28	24+24 +28	22+28 +28	24+28 +28	26+28 +28	28+28 +28	28+28 +30	28+28 +32	26+32 +32	28+32 +32	30+32 +32	32+32 +32
Power			Three-phase，50Hz，380V															
Rated Cooling Capacity		kW	184.5	190	195.5	203	210.5	214	221.5	227	233	240	245	250	253	260	265	270
Rated Heating Capacity		kW	207	213	219	226	232	238	245	251	257.5	264	271	276	281.5	288	295	300
Power Consumption	Cooling	kW	52.8	55.7	58.6	59.7	62.8	65.5	66.6	69.5	71.2	73.5	74.9	76.6	77.4	79.7	81.1	82.8
	Heating	kW	50.4	53.1	55.8	55.7	57.6	61.1	61	63.7	64.4	66.3	68.2	70	71.8	73.7	75.6	77.4
Noise (A sound pressure level)		dB(A)	⩽64															
Fan Air Volume		m^3/h	48000	57000	66000	57000	66000	75000	66000	75000			74000		73000		72000	
Shell Color			Camel grey															
Dimensions	Width*Depth*Height	mm	(1340*840*1740)*3	(1340*840*1740)*2+(1990*840*1740)	(1340*840*1740)+(1990*840*1740)*2	(1340*840*1740)*2+(1990*840*1740)	(1340*840*1740)+(1990*840*1740)*2	(1990*840*1740)*3	(1340*840*1740)+(1990*840*1740)*2	(1990*840*1740)*3	(1990*840*1740)* 3							
Net Weight		kg	891	982	1073	1027	1151	1209	1163	1254	1299	1299	1346	1346	1393	1393	1440	1440
Refrigerant	Type		R410A															
	Throttling Method		Electronic expansion valve throttling															
	Charge	kg	48	48	48	52	55	52	56	56	60	60	63	63	66	66	69	69
Compressor Type			Enhanced vapor injection DC variable frequency scroll compressor															
Connecting tube	Equivalent length of all tubes ⩽90m	Liquid tube mm	ϕ19.05	ϕ22.2							ϕ25.4							
		Air tube mm	ϕ41.2	ϕ44.5							ϕ50.8							
	Equivalent length of all tubes ⩾90m	Liquid tube mm	ϕ22.2	ϕ25.4							ϕ28.6							
		Air tube mm	ϕ44.5	ϕ54.0							ϕ54.0							
	Connection Method		Welding															
The maximum number of indoor units that can be connected		unit	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Operation Range		Cooling	-5℃~55℃								-5℃~55℃							
		Heating	-25℃~30℃								-25℃~30℃							

Enhanced Vapor Injection DC Variable Frequency Outdoor 4 Parallel Units Specifications

HP			98	100	102	104	106	108	110	112
Model			DCV-MTC98 EGD-GP	DCV-MTC100 EGD-GP	DCV-MTC102 EGD-GP	DCV-MTC104 EGD-GP	DCV-MTC106 EGD-GP	DCV-MTC108 EGD-GP	DCV-MTC110 EGD-GP	DCV-MTC112 EGD-GP
Combination Method	Recommended Combination		22+24 +24+28	24+24 +26+26	22+24 +28+28	24+24 +28+28	26+26 +26+28	26+26 +28+28	26+28 +28+28	28*4
Power			Three-phase, 50Hz, 380V							
Rated Cooling Capacity		kW	275.5	280	288.5	294	299	306	313	320
Rated Heating Capacity		kW	307	313	320	326	332.5	339	345.5	352
Power Consumption	Cooling	kW	83.1	85.4	87.1	90	91.1	93.4	95.7	98
	Heating	kW	77.9	79.4	80.5	83.2	82.7	84.6	86.5	88.4
Noise (A sound pressure level)		dB(A)	≤64							
Fan Air Volume		m^3/h	91000	100000	91000	100000				
Shell Color			Camel grey							
Dimensions	Width* Depth* Height	mm	(1340*840 *1740)+ (1990*840 *1740)*3	(1990*840 *1740)*4	(1340*840 *1740)+ (1990*840 *1740)*3	(1990*840*1740)*4				
Net Weight		kg	1506	1642	1551	1642	1732	1732	1732	1732
Refrigerant	Type		R410A							
	Throttling Method		Electronic expansion valve throttling							
	Charge	kg	68	72	72	72	80	80	80	80
Compressor Type			Enhanced vapor injection DC variable frequency scroll compressor							
Connecting tube	Equivalent length of all tubes ≤90m Liquid tube	mm	ϕ25.4							
	Equivalent length of all tubes ≤90m Air tube	mm	ϕ50.8							
	Equivalent length of all tubes ≥90m Liquid tube	mm	ϕ28.6							
	Equivalent length of all tubes ≥90m Air tube	mm	ϕ54.0							
	Connection Method		Welding							
The maximum number of indoor units that can be connected		unit	64	64	64	64	64	64	64	64
Operation Range	Cooling		-5°C~55°C							
	Heating		-25°C~30°C							

Enhanced Vapor Injection DC Variable Frequency Outdoor 4 Parallel Units Specifications

HP			114	116	118	120	122	124	126	128
Model			DCV-MTC114 EGD-GP	DCV-MTC116 EGD-GP	DCV-MTC118 EGD-GP	DCV-MTC120 EGD-GP	DCV-MTC122 EGD-GP	DCV-MTC124 EGD-GP	DCV-MTC126 EGD-GP	DCV-MTC128 EGD-GP
Combination Method	Recommended Combination		28+28 +28+30	28+28 +30+30	28+30 +30+30	30*4	30+30 +30+32	30+30 +32+32	30+32 +32+32	32*4
Power			Three-phase, 50Hz, 380V							
Rated Cooling Capacity		kW	325	330	335	340	345	350	355	360
Rated Heating Capacity		kW	359	366	373	380	385	390	395	400
Power Consumption	Cooling	kW	99.4	100.8	102.2	103.6	105.3	107	108.7	110.4
	Heating	kW	90.3	92.2	94.1	96	97.8	99.6	101.4	103.2
Noise (A sound pressure level)		dB(A)	≤64							
Fan Air Volume		m^3/h	99000	98000	97000	96000				
Shell Color			Camel grey							
Dimensions	Width* Depth* Height	mm	(1990*840*1740)*4							
Net Weight		kg	1779	1826	1873	1920	1920	1920	1920	1920
Refrigerant	Type		R410A							
	Throttling Method		Electronic expansion valve throttling							
	Charge	kg	83	86	89	92	92	92	92	92
Compressor Type			Enhanced vapor injection DC variable frequency scroll compressor							
Connecting tube	Equivalent length of all tubes ≤90m Liquid tube	mm	ϕ25.4							
	Equivalent length of all tubes ≤90m Air tube	mm	ϕ50.8							
	Equivalent length of all tubes ≥90m Liquid tube	mm	ϕ28.6							
	Equivalent length of all tubes ≥90m Air tube	mm	ϕ54.0							
	Connection Method		Welding							
The maximum number of indoor units that can be connected		unit	64	64	64	64	64	64	64	64
Operation Range	Cooling		-5°C~55°C							
	Heating		-25°C~30°C							

DC Variable Frequency Household Series Outdoor Unit Specifications

8~16kW Outdoor unit

Model				DCV-UCA2AGD	DCV-UCA3AGD	DCV-UCA4AGD	DCV-UCA5AGD	DCV-UCA6AGD
Power				Single-phase 220V 50Hz				
Cooling capacity			kW	8.0	10.0	12.0	14.0	16.0
Heating capacity			kW	9.0	11.0	14.0	16.0	18.0
IPLV(C)	Cooling integrated part load value			6.50	6.50	6.30	6.30	6.30
Power Consumption	Cooling/Heating		kW	2.60/2.65	3.00/3.10	3.72/3.52	4.25/4.15	4.75/4.50
Dimensions	Width*Depth*Height		mm	935x702x353	1032x810x445	975x1335x400	975x1335x400	975x1335x400
Noise			dB(A)	54	56	≤56	≤58	≤58
Weight			kg	47	60	89	89	96
Nozzle	Liquid tube		mm	Φ9.52				
	Gas tube	Main tube<30m		Φ15.88				
		Main tube≥30m		Φ19.05				
Refrigerant	Type			R410A				
	Control mode			Electronic expansion valve throttling				
The maximum number of indoor units that can be connected				5	6	6	7	8

12~18kW Outdoor unit

Model				DCV-UCA4EGD	DCV-UCA5EGD	DCV-UCA6EGD	DCV-UCA7EGD
Power				Three-phase, 380V,50Hz			
Cooling capacity			kW	12.0	14.0	16.0	18.0
Heating capacity			kW	14.0	16.0	18.0	20.0
IPLV(C)	Cooling integrated part load value			6.45	6.35	6.30	6.30
Power Consumption	Cooling/Heating		kW	3.72/3.52	4.25/4.15	4.75/4.50	5.30/5.00
Dimensions	Width*Depth*Height		mm	975x1335x400	975x1335x400	975x1335x400	975x1335x400
Noise			dB(A)	≤56	≤58	≤58	≤58
Weight			kg	93	93	100	102
Nozzle	Liquid tube		mm	Φ9.52			
	Gas tube	Main tube<30m		Φ15.88			Φ19.05
		Main tube≥30m		Φ19.05			
Refrigerant	Type			R410A			
	Control mode			Electronic expansion valve throttling			
The maximum number of indoor units that can be connected				6	7	8	9

20~33.5kW Outdoor unit

Model				DCV-UCA8EGD	DCV-UCA9EGD	DCV-UCA10EGD	DCV-UCA12EGD
Power				Three-phase, 380V,50Hz			
Cooling capacity			kW	22.4	26	28	33.5
Heating capacity			kW	24	28.5	31.5	37.5
IPLV(C)	Cooling integrated part load value			6.5	6.15	6.10	6.10
Power Consumption	Cooling/Heating		kW	7.2/6.6	8.3/7.85	9.0/8.5	10.4/9.9
Dimensions	Width*Depth*Height		mm	1015 x 1430 x 450		1120x1549x528	
Noise			dB(A)	≤58	≤60	≤60	≤60
Weight			kg	145	145	176	176
Nozzle	Liquid tube	Main tube<30m		Φ9.52	Φ9.52	Φ12.7	Φ12.7
		Main tube≥30m		Φ9.52	Φ12.7	Φ12.7	Φ12.7
	Gas tube	Main tube<30m		Φ19.05	Φ22.2	Φ28.6	Φ28.6
		Main tube≥30m		Φ22.2	Φ25.4	Φ28.6	Φ28.6
Refrigerant	Type			R410A			
	Control mode			Electronic expansion valve throttling			
The maximum number of indoor units that can be connected				11	12	14	16

Notes:
1. The above-mentioned outdoor unit capability test conditions are: 35℃ DB/24℃ WB for cooling outdoor, 27℃ DB/19℃ WB for cooling indoor; 7℃ DB/6℃ WB for heating outdoor, and 20℃ DB/15℃ WB for heating indoor ;
2. The test conditions of the noise value recorded in the sample are the internal specifications of our company, and the value is the maximum value tested in the semi-anechoic chamber. In addition, the value is generally higher than the sample recorded value under the actual installation conditions, due to the influence of surrounding noise and reflected sound;
3. If the specifications are changed due to product improvement, the parameters on the product nameplate shall prevail.

A variety of indoor units can be selected to meet various commercial and residential demands

As every inch of land is expensive in this commercial era, how to make full use of space resources is a key factor in seizing business opportunities. Dunham-Bush DC inverter intelligent multi-connected central air conditioner has a variety of indoor units for choosing.
Its ultra-thin body, flexible installation and small space occupation can expand the actual available space, help you win in today's fierce business competition.

Model	type	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	10.0	11.2	12.5	14.0	15.0
One side air outlet (embedded)		✿	✿	✿	✿	✿	✿							
Two side air outlet (embedded)					✿	✿	✿	✿	✿	✿	✿	✿	✿	
Surrounding airflow (embedded)			✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	
Thin air duct (with water pump)		✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿
Thin air duct (without water pump)		✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿	✿
High static pressure air duct (ceiling type)							✿	✿	✿	✿	✿	✿	✿	✿
Hanging type		✿	✿	✿	✿	✿	✿							
Seat and hanging dual-use type					✿	✿	✿	✿			✿			

Surrounding airflow (embedded)

360° air supply, comfortable experience

360° air supply design, the airflow is smooth and soft, and it can easily reach all corners of the room, reducing the indoor temperature difference and help balance the room temperature.

Ultra-thin body, saving space

Ultra-thin body design, the thickness of the thinnest indoor unit is only 230mm, occupying a small installation space, saving indoor space, and avoiding the depression caused by the low ceiling.

Standard high-lift condensate pump, flexible and convenient drainage design

The whole series comes standard with a 1200mm high-lift condensate pump, with flexible drainage design and convenient drainage pipe arrangement.

Introduction of outdoor fresh air

A fresh air inlet is reserved on the body of the indoor unit, which can introduce an appropriate amount of outdoor fresh air (about 10% to 15% of the air volume of the indoor unit) to improve indoor air quality.

Surrounding airflow (embedded) indoor unit		DCV-CF 28AGD	DCV-CF 36AGD	DCV-CF 45AGD	DCV-CF 56AGD	DCV-CF 71AGD	DCV-CF 80AGD	DCV-CF 90AGD	DCV-CF 100AGD	DCV-CF 112AGD	DCV-CF 125AGD	DCV-CF 140AGD
Indoor unit power		AC220V/50Hz/1φ										
Rated Cooling Capacity	kW	2.8	3.6	4.5	5.6	7.1	8.0	9.0	10.0	11.2	12.5	14.0
Rated Heating Capacity	kW	3.2	4.0	5.0	6.3	8.0	8.8	10.0	11.0	12.5	14.0	15.0
Rated Power	kW	0.055	0.060			0.120						0.180
Noise	dB(A)	30~36	31~38			34~39		35~41				40~47
Standard airflow rate	m^3/h	750	810			1200		1400				1700
Unit Dimensions	mm	900×833×232						900×833×286				
Panel Dimensions	mm	950×950×80										
Unit Weight	kg	22	24					28.5				
Panel Weight	kg	6.5										
Refrigerant Takeover		Flared joint										
Air Tube	mm	φ9.52	φ12.7			φ15.88						
Liquid Tube	mm	φ6.35				φ9.52						
Drainage Pipe	mm	DN25										

Indoor unit model		DCV-CF 28AGD-E	DCV-CF 36AGD-E	DCV-CF 45AGD-E	DCV-CF 56AGD-E	DCV-CF 71AGD-E	DCV-CF 80AGD-E	DCV-CF 90EGD-E	DCV-CF 100EGD-E	DCV-CF 112EGD-E	DCV-CF 125EGD-E	DCV-CF 140EGD-E
Indoor unit power		AC220V/50Hz/1φ						AC380V/50Hz/3φ				
Rated Cooling Capacity	kW	2.8	3.6	4.5	5.6	7.1	8.0	9.0	10.0	11.2	12.5	14.0
Rated Heating Capacity	kW	4.7	5.5	6.5	7.8	10.0	10.8	13.0	14.0	15.5	17.0	18.0
Auxiliary electric heating	kW	1.5				2.0		3.0				
Rated Power	kW	1.555	1.560			2.120		3.120				3.180
Noise	dB(A)	30~36	31~38			34~39		35~41				40~47
Standard airflow rate	m^3/h	750	810			1200		1400				1700
Unit Dimensions	mm	900×833×232						900×833×286				
Panel Dimensions	mm	950×950×80										
Unit Weight	kg	23	25					30				
Panel Weight	kg	6.5										
Refrigerant Takeover		Flared joint										
Air Tube	mm	φ9.52	φ12.7			φ15.88						
Liquid Tube	mm	φ6.35				φ9.52						
Drainage Pipe	mm	DN25										

Notes:

1. The capability test conditions of each model in the sample are: 35°C DB/24°C WB for cooling outdoor, 27°C DB/19°C WB for cooling indoor; 7°C DB/6°C WB for heating outdoor, and 20°C DB/15°C WB for heating indoor;
2. The operating noise mentioned in the sample is the test value in the semi-anechoic room. Under actual installation conditions, it is generally higher than the recorded value of this sample due to the influence of the surrounding background noise;
3. If the specifications are changed due to product improvement, the parameters on the product nameplate shall prevail.

Thin air duct (with water pump)

Ultra-thin body, saving space

The ultra-thin body design takes up little indoor space, and the installation is not limited by the height of the ceiling, saving you indoor space to the greatest extent and improving the aesthetics of the decoration.

Aerofoil blade centrifugal rotor, quiet operation

The large-diameter centrifugal wind wheel and the new volute air duct system design of aviation airfoil blades are selected, and the unique vibration isolation measures of the fan make the operating noise of this series air duct fans as low as 24 DB, allowing users to enjoy quiet comfort and sleep soundly.

The thickness and width of the unit is uniform, and the installation is more coordinated

Hidden embedded design, from Type 22 to Type 71, the whole series adopts uniform thickness and depth. When multiple units are installed in the same room, it looks both beautiful and harmonious.

Standard return air box, condensate pump

The factory comes as standard with a return air box to ensure good return airflow.

Ducted air supply Indoor unit model		DCV-DM 22AGD	DCV-DM 28AGD	DCV-DM 36AGD	DCV-DM 45AGD	DCV-DM 56AGD	DCV-DM 71AGD	DCV-DM 80AGD	DCV-DM 90AGD	DCV-DM 100AGD	DCV-DM 112AGD	DCV-DM 125AGD	DCV-DM 140AGD	DCV-DM 150AGD
Indoor unit power		AC 220V/50Hz/1φ												
Rated Cooling Capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	10.0	11.2	12.5	14.0	15.0
Rated Heating Capacity	kW	2.5	3.2	4.0	5.0	6.3	8.0	9.0	10.0	11.0	12.5	14.0	16.0	17.0
Rated Power	kW	0.05		0.07	0.075	0.10	0.11	0.13			0.24			
Noise	dB(A)	24~29		25~32	32~37	28~38	30~39	29~39			36~43			
Standard airflow rate	m^3/h	450		550	620	800	1000	1050			1800			
Maximum static pressure	Pa	30/50*												
Dimensions	mm	814×467×210				1010×467×210	1214×467×210	1209×680×260		1445×680×260				
Air supply size	mm	503×150				705×150	905×150	920×197		1156×197				
Air return size	mm	611×200				811×200	1011×200	920×207		1156×207				
Refrigerant Takeover		Flared joint												
Air Tube	mm	φ9.52		φ12.7			φ15.88							
Liquid Tube	mm	φ6.35					φ9.52							
Drainage Pipe	mm	DN25												
Net Weight (Gross Weight)	kg	16		16.5		21	25.5	35		45				

With electric auxiliary heating Indoor unit model		DCV-DM 22AGD-E	DCV-DM 28AGD-E	DCV-DM 36AGD-E	DCV-DM 45AGD-E	DCV-DM 56AGD-E	DCV-DM 71AGD-E	DCV-DM 80AGD-E	DCV-DM 90AGD-E	DCV-DM 100AGD-E	DCV-DM 112AGD-E	DCV-DM 125AGD-E	DCV-DM 140AGD-E	DCV-DM 150AGD-E
Indoor unit power		AC 220V/50Hz/1φ												
Rated Cooling Capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	10.0	11.2	12.5	14.0	15.0
Rated Heating Capacity	kW	3.25	3.95	4.75	5.75	7.5	9.5	11.1	12.1	13.1	14.6	16.1	18.1	19.1
Auxiliary electric heating	kW	0.75				1.2	1.5		2.1					
Rated Power	kW	0.8		0.82	0.825	1.3	1.61	2.23			2.34			
Noise	dB(A)	24~29		25~32	32~37	28~38	30~39	29~39			36~43			
Standard airflow rate	m^3/h	450		550	620	800	1000	1050			1800			
Maximum static pressure	Pa	30/50*												
Dimensions	mm	814×467×210				1010×467×210	1214×467×210	1209×680×260		1445×680×260				
Air supply size	mm	503×150				705×150	905×150	920×197		1156×197				
Air return size	mm	611×200				811×200	1011×200	920×207		1156×207				
Refrigerant Takeover		Flared joint												
Air Tube	mm	φ9.52		φ12.7			φ15.88							
Liquid Tube	mm	φ6.35					φ9.52							
Drainage Pipe	mm	DN25												
Net Weight (Gross Weight)	kg	16.5		17		21.5	26	36		46				

Notes:

1. The capability test conditions of each model in the sample are: 35°C DB/24°C WB for cooling outdoor, 27°C DB/19°C WB for cooling indoor; 7°C DB/6°C WB for heating outdoor, and 20°C DB/15°C WB for heating indoor;
2. The airflow rate in the sample is tested under 30Pa static pressure. Under actual installation conditions, the airflow rate varies depending on the air outlet. Please refer to the technical manual or instruction manual for details;
3. The operating noise mentioned in the sample is the test value in the semi-anechoic room. Under actual installation conditions, it is generally higher than the recorded value of this sample due to the influence of the surrounding background noise;
4. If the specifications are changed due to product improvement, the parameters on the product nameplate shall prevail.
5. The static pressure of conventional products is 30Pa.

03

AIRSIDE PRODUCTS

Dunham-Bush airside products, including centralized air conditioning unit, air handling unit and fan coil unit, can fully meet the temperature, humidity, air purification, and air quality improvement demands in various occasions based on optimal design and production experience.

Dunham-Bush airside products have the characteristics of exquisite appearance, compact structure, easier installation and maintenance, high rigidity of the whole mechanical structure, and low air leakage rate. It is widely used in the applications of electric power, chemical industry, machinery, electronics, pharmaceuticals and other industrial fields; airports, subways, stadiums, theaters, museums, hotels, office buildings, commercial real estate, etc. Centralized air-conditioning units have more than 30 functional segments as option such as filtration, cooling, heating, humidification, noise reduction, and heat recovery according to user requirements.

3Part

DMA

Central Station air handling unit

Modular design | Professional selection | High performance design | Multi-function options (partial) | Intelligent control (optional)

A Product Features

Modular design

- Generalization and standardization of parts.
- The unit can be flexibly assembled and combined, which is convenient for transportation and installation.

Professional selection

- Independent DMA selection software helps efficient and accurate selection.
- Freely select functional segments and combine them at will.

Multi-function options (partial)

- Multi-stage filtration function.
- Humidification section (electrode, dry steam, dehumidification mode, high pressure spray, etc.)
- Electric heating.
- Electronic purification.
- Activated carbon filtration.
- Photocatalyst purification.
- Ozone generator .
- Heat recovery.

High performance design

- There are more than 30 functional segments to meet the needs of various occasions.
- Double-layer color steel plate material (outer galvanized color steel) is fireproof and anti-corrosive.
- Polyurethane foam insulation has less mass and good insulation performance.
- PE and PVC double seal ensures low air leakage rate.
- Specially designed "dry water tray" ensures smooth drainage of the unit.
- Anti-cold bridge design avoids condensation.

Intelligent control (optional)

- Supply/return air temperature control.
- Humidity control.
- Antifreeze control.
- Filter anti blockage monitoring.
- Linkage control of fresh air valve and fan.
- Indoor and outdoor temperature difference compensation control.
- Building automatic control, etc.

B Unit Cooling and Heating Parameters Sheet

Model	Air volume (m³/h)	Air conditioning cooling condition											
		4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water resistance (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0506	2436	11.5	9.5	0.55	2.4	15.9	11.7	0.76	4.5	17.8	12.6	0.86	3.3
0508	3564	19.1	14.8	0.92	7.2	25.4	18.0	1.22	12.6	28.4	19.4	1.36	9.0
0608	4574	24.3	19.0	1.16	6.9	32.6	23.1	1.56	12.6	36.4	24.9	1.75	9.6
0610	6010	34.4	25.8	1.65	14.7	45.0	31.2	2.16	25.7	50.1	33.7	2.40	19.2
0710	7346	42.5	31.8	2.04	16.5	55.0	38.1	2.64	26.0	61.3	41.1	2.94	19.8
0810	8683	49.9	37.4	2.39	15.9	64.9	45.0	3.11	26.3	72.4	48.6	3.47	20.7
0812	10762	64.7	47.6	3.10	28.1	83.0	56.8	3.98	46.1	92.3	61.5	4.43	35.6
0814	12841	79.7	57.8	3.82	45.2	101.2	68.8	4.85	72.7	112.3	74.3	5.38	55.3
1012	13920	83.3	61.4	3.99	28.4	106.8	73.3	5.12	45.2	118.9	79.3	5.70	36.2
1212	17197	102.3	75.6	4.91	27.8	131.9	90.4	6.32	46.1	146.9	98.0	7.04	37.7
1214	20553	126.5	92.0	6.06	44.6	161.2	109.7	7.73	72.7	179.2	118.6	8.58	58.6
1216	23909	151.9	109.2	7.28	67.6	185.3	126.8	8.88	56.5	206.5	137.3	9.90	48.5
1218	27265	164.7	120.9	7.89	38.0	202.3	140.7	9.70	35.9	237.9	157.3	11.40	65.8
1220	30621	188.9	137.4	9.05	51.5	231.4	159.8	11.09	47.9	258.7	173.3	12.40	36.8
1224	37333	208.2	158.8	9.98	20.4	290.0	198.2	13.89	77.8	323.1	214.3	15.48	59.2
1622	46699	251.3	194.7	12.10	14.1	355.6	244.9	17.04	56.2	397.5	265.1	19.05	43.1
1624	51342	283.6	216.8	13.59	18.0	395.8	271.2	18.96	71.2	441.8	293.5	21.16	54.4
1824	58410	323.2	246.8	15.49	19.2	450.8	308.6	21.60	74.5	503.0	334.0	24.10	56.8
2024	65489	362.6	276.8	17.37	20.1	505.8	346.1	24.23	76.9	564.3	375.1	27.04	58.9
2226	79111	448.1	338.8	21.47	25.8	582.0	406.4	23.23	63.1*	688.3	455.5	32.98	74.2
2428	94011	542.3	406.1	25.98	32.3	699.5	485.8	27.93	78.4*	784.9	527.1	31.33	60.4*

Note:
Air conditioning condition: fresh air, dry bulb temperature is 27°C, and wet bulb temperature is 19.5°C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).

C Unit Cooling and Heating Parameters Sheet

Fresh Air Cooling Condition													
Model	Air volume (m³/h)	4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0506	2436	30.7	13.5	1.47	13.5	40.0	17.1	1.92	22.5	44.0	18.7	2.20	16.2
0508	3564	48.8	21.1	2.35	36.2	61.6	26.1	2.95	57.4	67.4	28.5	3.24	40.4
0608	4574	62.3	26.9	2.99	35.0	79.0	33.5	3.79	58.0	86.6	36.6	4.15	42.8
0610	6010	85.6	36.8	4.11	70.3	103.4	43.9	4.96	54.7	113.8	48.2	5.46	44.6
0710	7346	98.0	42.5	4.70	29.0	126.4	53.6	6.06	58.3	139.2	59.0	6.67	49.1
0810	8683	115.8	50.2	5.55	31.1	149.4	63.4	7.17	61.6	164.7	69.7	7.89	52.9
0812	10762	149.4	64.4	7.16	53.5	181.3	77.2	8.69	49.2	200.0	84.8	9.58	37.4
0814	12841	160.1	70.5	7.67	20.7	221.1	93.8	10.60	75.1	243.2	102.9	11.65	56.2
1012	13920	192.0	82.9	9.20	56.5	233.3	99.2	11.18	54.4	257.6	109.1	12.35	41.3
1212	17197	237.2	102.2	11.37	60.1	288.2	122.6	13.81	59.2	318.3	134.8	15.25	44.9
1214	20553	254.3	112.1	12.19	25.8	330.1	142.1	15.82	37.1	388.0	164.2	18.59	67.3
1216	23909	308.2	134.5	14.77	37.7	391.7	168.3	18.77	51.5	430.9	183.7	20.64	46.4
1218	27265	362.3	157.2	17.36	51.8	454.8	195.0	21.79	69.1	498.1	211.9	23.87	60.1
1220	30621	416.4	180.0	19.95	68.8	517.9	221.2	24.81	89.7	563.7	240.2	27.01	75.1
1224	37333	497.7	216.1	19.87	71.2*	598.3	256.5	22.24	68.2*	672.7	286.6	26.86	84.6*
1622	46699	640.1	276.0	30.67	75.7	742.6	320.1	35.58	75.7	845.6	360.1	40.51	75.7
1624	51342	677.1	294.1	27.03	61.9*	788.0	340.0	31.46	61.6*	902.4	384.3	36.02	61.9*
1824	58410	771.5	335.4	30.80	65.8*	895.2	387.4	35.74	64.6*	1025.6	437.4	40.94	65.8*
2024	65489	866.1	376.1	34.57	69.1*	1005.3	434.3	40.13	67.0*	1151.3	490.9	45.96	69.1*
2226	79111	1063.7	460.9	42.46	88.5*	1230.1	531.4	49.11	86.1*	1401.4	597.1	55.94	88.5*
2428	94011	1217.0	530.6	41.64	75.4*	1470.6	634.4	54.43	73.0*	1666.1	710.3	59.57	75.4*

Note:
1. Fresh air condition: fresh air, dry bulb temperature is 35°C, and wet bulb temperature is 28 °C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).
2. For fresh air conditions, if users need to select 6R and 8R coils, DMA1214~DMA2428 units may be made into 2R+4R and 4R+4R coils according to the requirements of water resistance and water flow velocity.
3.2R+4R and 4R+4R coils are two independent coils, which are arranged side by side along the air supply direction. When selecting 6R coil, the air supply first passes through 2R coil and then 4R coil. The air outlet temperature parameter of the former coil is the fresh air temperature parameter of the latter coil.

D Unit Cooling and Heating Parameters Sheet

Air conditioning heating condition							
Model	Air volume (m³/h)	2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0506	2436	15.0	0.37	1.2	24.5	0.60	2.1
0508	3564	23.4	0.57	3.3	37.2	0.91	5.4
0608	4574	30.1	0.74	3.3	47.7	1.16	5.1
0610	6010	41.0	1.00	6.6	64.0	1.56	9.9
0710	7346	50.1	1.22	6.9	78.5	1.91	11.1
0810	8683	59.2	1.44	7.5	92.6	2.25	10.8
0812	10762	75.1	1.82	12.3	116.4	2.83	18.0
0814	12841	90.9	2.21	18.6	140.1	3.40	27.8
1012	13920	97.4	2.37	13.2	151.0	3.67	18.6
1212	17197	120.3	2.93	13.5	186.3	4.52	18.0
1214	20553	146.0	3.54	20.7	224.6	5.45	27.5
1216	23909	171.6	4.17	29.3	263.0	6.39	40.1
1218	27265	197.4	4.79	39.8	301.5	7.32	55.3
1220	30621	223.1	5.42	52.7	340.0	8.25	73.9
1224	37333	274.7	6.67	84.3	411.5	9.99	48.8
1622	46699	336.8	8.18	63.7	507.2	12.31	37.1
1624	51342	356.5	8.66	13.5	559.9	13.59	47.0
1824	58410	406.2	9.87	13.8	637.7	15.48	47.9
2024	65489	456.1	11.07	14.1	715.7	17.37	48.5
2226	79111	555.4	13.48	17.7	868.1	21.07	60.7
2428	94011	664.6	16.13	21.9	1035.3	25.13	74.5

Note:
air conditioning condition: fresh air dry bulb temperature is 15 °C, hot water inlet/outlet temperature is 60°C/50°C.

Unit Cooling and Heating Parameters Sheet

Model	Air volume (m³/h)	Fresh Air Heating Condition					
		2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0506	2436	23.4	0.57	2.7	37.0	0.90	4.5
0508	3564	36.0	0.87	6.6	55.6	1.35	10.8
0608	4574	46.2	1.13	7.2	71.3	1.73	10.2
0610	6010	62.3	1.52	13.8	95.1	2.31	19.8
0710	7346	76.2	1.85	14.7	116.5	2.83	21.6
0810	8683	90.0	2.19	15.3	137.5	3.34	21.3
0812	10762	113.4	2.75	25.2	172.1	4.19	35.3
0814	12841	136.9	3.33	38.0	206.8	5.02	54.1
1012	13920	147.3	3.58	26.9	223.3	5.42	36.2
1212	17197	182.0	4.42	28.1	275.6	6.69	35.3
1214	20553	218.4	5.30	41.6	330.0	8.01	53.3
1216	23909	257.6	6.26	59.8	382.2	9.28	33.2
1218	27265	282.6	6.86	14.1	436.5	10.60	44.9
1220	30621	320.3	7.78	18.6	492.4	11.95	59.2
1224	37333	396.1	9.62	29.6	588.9	14.29	25.2
1622	46699	486.5	11.81	22.2	748.1	18.16	73.3
1624	51342	538.1	13.06	27.5	803.5	19.50	22.5
1824	58410	613.3	14.89	28.4	915.2	22.20	23.7
2024	65489	688.5	16.71	29.3	1027.0	24.93	24.6
2226	79111	836.8	20.31	36.8	1246.9	30.26	30.8
2428	94011	1000.1	24.28	45.2	1488.1	36.11	37.7

Note:
Fresh air condition: fresh air, dry bulb temperature is -4℃. The water inlet temperature is 60℃， Outlet water temperature 50℃。

Product Features

Modular design

- Spare parts universalization and standardization
- Flexible combination, easier delivery and installation

Professional selection

- Independent R&D selection software, assistance the precision selection
- Flexible section options

Intelligent control (optional)

- Supply / return air temperature control
- Humidity control
- Anti-freezing control
- Filter alarm
- Fresh air damper interlocked with supply fan
- Outdoor temperature difference make up control
- BMS and group control

Multiple functions (partial)

- Multiple class filtration
- Humidifer(electrode, dry steam, wet film, high pressure spray, etc.)
- Electrical heater
- Electronic purification
- Activated carbon filtration
- Photocatalyst purification
- Ozonator
- Heat recovery

High efficiency design

- New labyrinth structure generation, prevent cold bridge, super low air leakage rate, high strength, superior hydrating performance, plane inner surface
- AHRI certificate
- More than 30 functional sections, fully meet variety demands
- PE insulation, less mass and better insulation performance
- High efficiency heat exchange coil
- Specifically designed "tilt-type dry reinforced water drain pan", by which can drain condensing water out quickly.

B Unit Cooling and Heating Parameters Sheet

Air conditioning cooling condition													
Model	Air volume (m^3/h)	4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water resistance (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	8.4	6.9	0.41	1.8	11.9	8.7	0.57	3.6	13.3	9.5	0.65	2.7
0506	2436	12.1	9.4	0.59	3.9	16.5	11.7	0.79	7.2	18.6	12.8	0.89	5.4
0508	3564	19.6	14.5	0.95	10.8	25.9	17.8	1.24	18.9	29	18.5	1.39	13.8
0608	4574	25	18.4	1.2	12.6	32.7	22.7	1.57	20.1	36.8	24.8	1.77	15
0610	6010	34.7	25	1.67	25.8	44.7	30.6	2.14	40.4	50.2	33.4	2.41	29.9
0710	7346	42.5	31.8	2.04	16.5	55.0	38.1	2.64	26.0	61.3	41.1	2.94	19.8
0810	8683	49.9	37.4	2.39	15.9	64.9	45.0	3.11	26.3	72.4	48.6	3.47	20.7
0812	10762	64.7	47.6	3.10	28.1	83.0	56.8	3.98	46.1	92.3	61.5	4.43	35.6
0814	12841	79.7	57.8	3.82	45.2	101.2	68.8	4.85	72.7	112.3	74.3	5.38	55.3
1012	13920	83.3	61.4	3.99	28.4	106.8	73.3	5.12	45.2	118.9	79.3	5.70	36.2
1112	15563	93.8	68.9	4.50	29.0	120.2	82.3	5.76	47.0	133.7	89.0	6.41	37.7
1212	17197	102.3	75.6	4.91	27.8	131.9	90.4	6.32	46.1	146.9	98.0	7.04	37.7
1114	18751	116.3	84.4	5.58	46.7	147.6	100.5	7.08	74.5	164.0	108.4	7.86	59.5
1214	20553	126.5	92.0	6.06	44.6	161.2	109.7	7.73	72.7	179.2	118.6	8.58	58.6
1018	22077	134.2	98.2	6.43	36.8	164.6	114.4	7.89	34.1	193.4	127.8	9.27	64
1216	23909	151.9	109.2	7.28	67.6	185.3	126.8	8.88	56.5	206.5	137.3	9.90	48.5
1316	26196	165.1	118.6	7.91	72.4	200.8	137.8	9.61	52.4	224.6	149.4	10.77	43.7
1218	27265	164.7	120.9	7.89	38.0	202.3	140.7	9.70	35.9	237.9	157.3	11.40	65.8
1219	28938	177.7	129.5	8.52	45.2	217.8	150.5	10.44	42.2	254.8	167.9	12.21	77.2
1220	30621	188.9	137.4	9.05	51.5	231.4	159.8	11.09	47.9	258.7	173.3	12.40	36.8
1320	33552	205.1	149.5	9.82	47.0	251.8	174.2	12.07	40.4	282.0	189.1	13.51	31.1
1518	35056	210.5	154.4	10.09	35.9	258.9	180.4	12.41	32.0	305.3	202.2	14.63	63.7
1224	37333	208.2	158.8	9.98	20.4	290.0	198.2	13.89	77.8	323.1	214.3	15.48	59.2
1520	39373	241.2	175.6	11.56	48.8	296.0	204.5	14.19	43.1	331.4	221.9	15.87	33.2
1423	42452	231.7	178.1	11.11	15.0	325.6	223.4	15.60	61.3	363.7	241.8	17.44	46.7
1621	44382	235.4	183.4	11.29	12.3	335.5	231.4	16.08	49.4	375.4	251.0	17.99	38.0
1622	46699	251.3	194.7	12.10	14.1	355.6	244.9	17.04	56.2	397.5	265.1	19.05	43.1
1624	51342	283.6	216.8	13.59	18.0	395.8	271.2	18.96	71.2	441.8	293.5	21.16	54.4
1724	54876	303.4	231.8	14.54	18.6	423.3	289.9	20.28	73.0	472.4	313.7	22.63	55.6
1824	58410	323.2	246.8	15.49	19.2	450.8	308.6	21.60	74.5	503.0	334.0	24.10	56.8
2024	65489	362.6	276.8	17.37	20.1	505.8	346.1	24.23	76.9	564.3	375.1	27.04	58.9
2027	74349	425.0	319.7	20.35	27.5	566.4	389.9	24.68	84*	649.1	429.6	31.09	79.9
2226	79111	448.1	338.8	21.47	25.8	582.0	406.4	23.23	63.1*	688.3	455.5	32.98	74.2
2327	86398	494.0	371.6	23.66	29.0	658.8	453.3	28.69	87*	754.8	499.2	36.17	82.8
2428	94011	542.3	406.1	25.98	32.3	699.5	485.8	27.93	78.4*	784.9	527.1	31.33	60.4*
2432	108396	646.5	476.4	30.90	46.6	799.3	557.1	29.50	92.6	920.9	615.5	36.80	86*

Note:
Air conditioning condition: fresh air, dry bulb temperature is 27°C, and wet bulb temperature is 19.5°C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).

C Unit Cooling and Heating Parameters Sheet

Fresh air cooling condition													
Model	Air volume (m^3/h)	4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water resistance (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	24.7	10.6	1.2	26.7	30.7	13	1.5	18.6	34	14.4	1.6	13.5
0506	2436	32.1	13.8	1.54	20.7	41.2	17.5	1.98	34.7	45.5	19.3	2.18	24.6
0508	3564	49.9	21.3	2.4	52.7	62.6	26.5	3	85.8	68.7	29.1	3.3	60.7
0608	4574	63.3	27	3.04	61.6	79.3	33.6	3.8	92.1	87.4	37	4.19	67
0610	6010	81.6	34.9	3.91	41.9	104.1	44.1	4.99	84.6	115	48.7	5.51	67.6
0710	7346	98.0	42.5	4.70	29.0	126.4	53.6	6.06	58.3	139.2	59.0	6.67	49.1
0810	8683	115.8	50.2	5.55	31.1	149.4	63.4	7.17	61.6	164.7	69.7	7.89	52.9
0812	10762	149.4	64.4	7.16	53.5	181.3	77.2	8.69	49.2	200.0	84.8	9.58	37.4
0814	12841	160.1	70.5	7.67	20.7	221.1	93.8	10.60	75.1	243.2	102.9	11.65	56.2
1012	13920	192.0	82.9	9.20	56.5	233.3	99.2	11.18	54.4	257.6	109.1	12.35	41.3
1112	15563	216.8	93.4	10.39	60.1	262.8	111.8	12.59	58.3	289.8	122.8	13.88	44.0
1212	17197	237.2	102.2	11.37	60.1	288.2	122.6	13.81	59.2	318.3	134.8	15.25	44.9
1114	18751	242.6	106.3	11.63	27.2	322.9	137.2	15.47	89.1	355.1	15029.0	17.01	66.7
1214	20553	254.3	112.1	12.19	25.8	330.1	142.1	15.82	37.1	388.0	164.2	18.59	67.3
1018	22077	295.3	128.2	14.15	48.2	368.7	158.7	17.68	65.5	403.6	172.3	19.34	60.7
1216	23909	308.2	134.5	14.77	37.7	391.7	168.3	18.77	51.5	430.9	183.7	20.64	46.4
1316	26196	335.0	146.4	16.05	28.4	426.4	183.1	20.42	46.7	469.3	201.1	22.49	50.9
1218	27265	362.3	157.2	17.36	51.8	454.8	195.0	21.79	69.1	498.1	211.9	23.87	60.1
1219	28938	391.9	169.6	18.77	60.7	486.0	209.1	23.29	78.1	530.5	226.7	25.42	65.5
1220	30621	416.4	180.0	19.95	68.8	517.9	221.2	24.81	89.7	563.7	240.2	27.01	75.1
1320	33552	451.8	195.6	21.64	52.7	559.0	240.7	26.78	80.5	614.2	262.1	29.41	83.7
1518	35056	462.7	201.2	22.18	43.4	580.0	250.5	27.80	64.6	638.3	727.3	30.60	64.3
1224	37333	497.7	216.1	19.87	71.2*	598.3	256.5	22.24	68.2*	672.7	286.6	26.86	84.6*
1520	39373	531.6	230.1	25.47	57.7	657.9	283.1	31.53	83.4	704.6	301.9	33.76	57.7
1423	42452	587.1	252.8	28.14	79.6	679.5	293.5	32.55	82.8	768.7	328.6	37.10	79.6
1621	44382	603.0	260.8	28.89	67.0	699.2	303.0	33.48	66.1	800.0	341.8	38.33	67.0
1622	46699	640.1	276.0	30.67	75.7	742.6	320.1	35.58	75.7	845.6	360.1	40.51	75.7
1624	51342	677.1	294.1	27.03	61.9*	788.0	340.0	31.46	61.6*	902.4	384.3	36.02	61.9*
1724	54876	744.3	321.9	32.42	78.7*	860.7	371.9	37.50	78.4*	981.0	419.4	42.74	78.7*
1824	58410	771.5	335.4	30.80	65.8*	895.2	387.4	35.74	64.6*	1025.6	437.4	40.94	65.8*
2024	65489	866.1	376.1	34.57	69.1*	1005.3	434.3	40.13	67.0*	1151.3	490.9	45.96	69.1*
2027	74349	994.0	431.3	38.26	86.1*	1146.1	497.2	44.11	85.2*	1304.6	558.8	50.23	86.1*
2226	79111	1063.7	460.9	42.46	88.5*	1230.1	531.4	49.11	86.1*	1401.4	597.1	55.94	88.5*
2327	86398	1146.4	497.5	42.98	84.9*	1316.7	572.3	49.36	82.5*	1537.6	647.1	56.52	84.9*
2428	94011	1217.0	530.6	41.64	75.4*	1470.6	634.4	54.43	73.0*	1666.1	710.3	59.57	75.4*
2432	108396	1403.5	611.8	44.82	90*	1618.9	703.8	51.72	88.5*	1830.2	787.8	58.46	90*

Note:
Fresh air condition: fresh air, dry bulb temperature is 35°C, and wet bulb temperature is 28 °C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).

D Unit Cooling and Heating Parameters Sheet

Model	Air volume (m^3/h)	Air conditioning heating condition					
		2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	11.4	0.28	2.4	18.2	0.5	3.6
0506	2436	15.2	0.38	4.5	24.2	0.59	6.6
0508	3564	23.1	0.57	11.1	36.3	0.89	16.2
0608	4574	29.1	0.71	12.9	45.9	1.12	17.4
0610	6010	39	0.95	24.9	61.2	1.49	33.2
0710	7346	50.1	1.22	6.9	78.5	1.91	11.1
0810	8683	59.2	1.44	7.5	92.6	2.25	10.8
0812	10762	75.1	1.82	12.3	116.4	2.83	18.0
0814	12841	90.9	2.21	18.6	140.1	3.40	27.8
1012	13920	97.4	2.37	13.2	151.0	3.67	18.6
1112	15563	108.9	2.65	13.5	168.7	4.10	18.3
1212	17197	120.3	2.93	13.5	186.3	4.52	18.0
1114	18751	132.7	3.23	20.4	204.6	4.97	28.4
1214	20553	146.0	3.54	20.7	224.6	5.45	27.5
1018	22077	159.8	3.89	38.6	244.3	5.94	57.4
1216	23909	171.6	4.17	29.3	263.0	6.39	40.1
1316	26196	184.9	4.49	26.7	285.4	6.94	43.7
1218	27265	197.4	4.79	39.8	301.5	7.32	55.3
1219	28938	210.2	5.11	46.1	320.7	7.78	64.3
1220	30621	223.1	5.42	52.7	340.0	8.25	73.9
1320	33552	240.4	5.84	48.5	368.8	8.96	80.8
1518	35056	250.2	6.08	37.7	384.1	9.33	58.0
1224	37333	274.7	6.67	84.3	411.5	9.99	48.8
1520	39373	282.8	6.87	50.0	433.2	10.51	77.5
1423	42452	307.0	7.45	71.2	462.1	11.22	41.6
1621	44382	319.2	7.76	56.2	480.9	11.67	32.9
1622	46699	336.8	8.18	63.7	507.2	12.31	37.1
1624	51342	356.5	8.66	13.5	559.9	13.59	47.0
1724	54876	381.4	9.26	13.5	598.8	14.54	47.3
1824	58410	406.2	9.87	13.8	637.7	15.48	47.9
2024	65489	456.1	11.07	14.1	715.7	17.37	48.5
2027	74349	523.1	12.69	19.2	816.5	19.81	66.4
2226	79111	555.4	13.48	17.7	868.1	21.07	60.7
2327	86398	608.8	14.78	19.8	949.8	23.05	67.3
2428	94011	664.6	16.13	21.9	1035.3	25.13	74.5
2432	108396	773.8	18.78	30.8	1165.8	28.30	25.8

Note:
Air conditioning condition: fresh air, dry bulb temperature is 15°C, hot water inlet/outlet temperature is 60°C/50°C.

E Unit Cooling and Heating Parameters Sheet

Model	Air volume (m^3/h)	Fresh air heating condition					
		2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	17.4	0.43	5.1	27.3	0.67	7.2
0506	2436	23.1	0.57	9.3	36	0.88	13.2
0508	3564	34.7	0.84	22.5	53.7	1.31	31.4
0608	4574	43.7	1.06	26.1	67.9	1.65	34.1
0610	6010	58.3	1.42	49.7	90.2	2.19	64.9
0710	7346	76.2	1.85	14.7	116.5	2.83	21.6
0810	8683	90.0	2.19	15.3	137.5	3.34	21.3
0812	10762	113.4	2.75	25.2	172.1	4.19	35.3
0814	12841	136.9	3.33	38.0	206.8	5.02	54.1
1012	13920	147.3	3.58	26.9	223.3	5.42	36.2
1112	15563	164.7	4.00	27.5	249.5	6.06	35.9
1212	17197	182.0	4.42	28.1	275.6	6.69	35.3
1114	18751	200.0	4.86	41.9	301.9	7.33	55.3
1214	20553	218.4	5.30	41.6	330.0	8.01	53.3
1018	22077	239.3	5.81	77.8	354.6	8.61	43.7
1216	23909	257.6	6.26	59.8	382.2	9.28	33.2
1316	26196	277.8	6.74	53.9	414.0	10.05	30.8
1218	27265	282.6	6.86	14.1	436.5	10.60	44.9
1219	28938	303.0	7.35	16.5	465.9	11.31	52.4
1220	30621	320.3	7.78	18.6	492.4	11.95	59.2
1320	33552	346.7	8.42	16.5	535.2	12.99	55.9
1518	35056	360.2	8.75	13.2	557.9	13.54	43.4
1224	37333	396.1	9.62	29.6	588.9	14.29	25.2
1520	39373	408.0	9.92	17.1	629.2	15.28	57.1
1423	42452	443.8	10.77	24.3	681.1	16.54	81.9
1621	44382	460.8	11.18	19.5	709.7	17.23	64.9
1622	46699	486.5	11.81	22.2	748.1	18.16	73.3
1624	51342	538.1	13.06	27.5	803.5	19.50	22.5
1724	54876	575.7	13.98	28.1	859.3	20.86	23.1
1824	58410	613.3	14.89	28.4	915.2	22.20	23.7
2024	65489	688.5	16.71	29.3	1027.0	24.93	24.6
2027	74349	787.9	19.12	39.8	1173.2	28.48	32.6
2226	79111	836.8	20.31	36.8	1246.9	30.26	30.8
2327	86398	916.9	22.26	41.0	1364.8	33.13	34.1
2428	94011	1000.1	24.28	45.2	1488.1	36.11	37.7
2432	108396	1161.1	28.18	63.4	1726.1	41.88	51.8

Note:
Fresh air condition: fresh air, dry bulb temperature is -4°C; hot water inlet/outlet temperature is 60°C/50°C.

3Part

CAHU

Clean Type Combined Air Handling Unit

Modular design | Professional selection | High efficiency design | Multiple functions (partial) | Intelligent control (optional)

A Product Features

Modular design

- Spare parts universalization and standardization
- Flexible combination, easier delivery and installation

Professional selection

- Independent R&D selection software, assistance the precision selection
- Flexible section options

Intelligent control (optional)

- Supply / return air temperature control
- Humidity control
- Anti-freezing control
- Filter alarm
- Fresh air damper interlocked with supply fan
- Outdoor temperature difference make up control
- BMS and group control

Multiple functions (partial)

- Multiple class filtration
- Humidifer(electrode, dry steam, wet film, high pressure spray, etc.)
- Electrical heater
- Electronic purification
- Activated carbon filtration
- Photocatalyst purification
- Ozonator
- Heat recovery

High efficiency design

- New labyrinth structure generation, prevent cold bridge, super low air leakage rate, high strength, superior hydrating performance, plane inner surface
- AHRI certificate
- More than 30 functional sections, fully meet variety demands
- PE insulation, less mass and better insulation performance
- High efficiency heat exchange coil
- Stainless steel water pan, not easy to rust, quick drain out
  Hydrophilic aluminum foil, not easy to accumulate dust

B Cooling and Heating Parameters Sheet of Chillers

Model	Air volume (m^3/h)	Air conditioning cooling condition											
		4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	7.8	6.9	0.38	1.2	11.2	8.6	0.43	2.4	12.6	9.5	0.60	1.5
0506	2436	11.5	9.5	0.55	2.4	15.9	11.7	0.76	4.5	17.8	12.6	0.86	3.3
0508	3564	19.1	14.8	0.92	7.2	25.4	18.0	1.22	12.6	28.4	19.4	1.36	9.0
0608	4574	24.3	19.0	1.16	6.9	32.6	23.1	1.56	12.6	36.4	24.9	1.75	9.6
0610	6010	34.4	25.8	1.65	14.7	45.0	31.2	2.16	25.7	50.1	33.7	2.40	19.2
0710	7346	42.5	31.8	2.04	16.5	55.0	38.1	2.64	26.0	61.3	41.1	2.94	19.8
0810	8683	49.9	37.4	2.39	15.9	64.9	45.0	3.11	26.3	72.4	48.6	3.47	20.7
0812	10762	64.7	47.6	3.10	28.1	83.0	56.8	3.98	46.1	92.3	61.5	4.43	35.6
0814	12841	79.7	57.8	3.82	45.2	101.2	68.8	4.85	72.7	112.3	74.3	5.38	55.3
1012	13920	83.3	61.4	3.99	28.4	106.8	73.3	5.12	45.2	118.9	79.3	5.70	36.2
1112	15563	93.8	68.9	4.50	29.0	120.2	82.3	5.76	47.0	133.7	89.0	6.41	37.7
1212	17197	102.3	75.6	4.91	27.8	131.9	90.4	6.32	46.1	146.9	98.0	7.04	37.7
1114	18751	116.3	84.4	5.58	46.7	147.6	100.5	7.08	74.5	164.0	108.4	7.86	59.5
1214	20553	126.5	92.0	6.06	44.6	161.2	109.7	7.73	72.7	179.2	118.6	8.58	58.6
1018	22077	134.2	98.2	6.43	36.8	164.6	114.4	7.89	34.1	193.4	127.8	9.27	64
1216	23909	151.9	109.2	7.28	67.6	185.3	126.8	8.88	56.5	206.5	137.3	9.90	48.5
1316	26196	165.1	118.6	7.91	72.4	200.8	137.8	9.61	52.4	224.6	149.4	10.77	43.7
1218	27265	164.7	120.9	7.89	38.0	202.3	140.7	9.70	35.9	237.9	157.3	11.40	65.8
1219	28938	177.7	129.5	8.52	45.2	217.8	150.5	10.44	42.2	254.8	167.9	12.21	77.2
1220	30621	188.9	137.4	9.05	51.5	231.4	159.8	11.09	47.9	258.7	173.3	12.40	36.8
1320	33552	205.1	149.5	9.82	47.0	251.8	174.2	12.07	40.4	282.0	189.1	13.51	31.1
1518	35056	210.5	154.4	10.09	35.9	258.9	180.4	12.41	32.0	305.3	202.2	14.63	63.7
1224	37333	208.2	158.8	9.98	20.4	290.0	198.2	13.89	77.8	323.1	214.3	15.48	59.2
1520	39373	241.2	175.6	11.56	48.8	296.0	204.5	14.19	43.1	331.4	221.9	15.87	33.2
1423	42452	231.7	178.1	11.11	15.0	325.6	223.4	15.60	61.3	363.7	241.8	17.44	46.7
1621	44382	235.4	183.4	11.29	12.3	335.5	231.4	16.08	49.4	375.4	251.0	17.99	38.0
1622	46699	251.3	194.7	12.10	14.1	355.6	244.9	17.04	56.2	397.5	265.1	19.05	43.1
1624	51342	283.6	216.8	13.59	18.0	395.8	271.2	18.96	71.2	441.8	293.5	21.16	54.4
1724	54876	303.4	231.8	14.54	18.6	423.3	289.9	20.28	73.0	472.4	313.7	22.63	55.6
1824	58410	323.2	246.8	15.49	19.2	450.8	308.6	21.60	74.5	503.0	334.0	24.10	56.8
2024	65489	362.6	276.8	17.37	20.1	505.8	346.1	24.23	76.9	564.3	375.1	27.04	58.9
2027	74349	425.0	319.7	20.35	27.5	566.4	389.9	24.68	84*	649.1	429.6	31.09	79.9
2226	79111	448.1	338.8	21.47	25.8	582.0	406.4	23.23	63.1*	688.3	455.5	32.98	74.2
2426	86398	494.0	371.6	23.66	29.0	658.8	453.3	28.69	87*	754.8	499.2	36.17	82.8

Note:
Air conditioning condition: fresh air, dry bulb temperature is 27°C, and wet bulb temperature is 19.5°C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).

C Cooling and Heating Parameters Sheet of Chillers

Model	Air volume (m³/h)	Fresh air cooling condition											
		4 rows				6 rows				8 rows			
		Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Total cooling capacity (kW)	Sensible cooling capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	21.7	9.7	1.1	6.9	29.2	12.5	1.4	11.7	32.3	13.7	1.6	8.4
0506	2436	30.7	13.5	1.47	13.5	40.0	17.1	1.92	22.5	44.0	18.7	2.20	16.2
0508	3564	48.8	21.1	2.35	36.2	61.6	26.1	2.95	57.4	67.4	28.5	3.24	40.4
0608	4574	62.3	26.9	2.99	35.0	79.0	33.5	3.79	58.0	86.6	36.6	4.15	42.8
0610	6010	85.6	36.8	4.11	70.3	103.4	43.9	4.96	54.7	113.8	48.2	5.46	44.6
0710	7346	98.0	42.5	4.70	29.0	126.4	53.6	6.06	58.3	139.2	59.0	6.67	49.1
0810	8683	115.8	50.2	5.55	31.1	149.4	63.4	7.17	61.6	164.7	69.7	7.89	52.9
0812	10762	149.4	64.4	7.16	53.5	181.3	77.2	8.69	49.2	200.0	84.8	9.58	37.4
0814	12841	160.1	70.5	7.67	20.7	221.1	93.8	10.60	75.1	243.2	102.9	11.65	56.2
1012	13920	192.0	82.9	9.20	56.5	233.3	99.2	11.18	54.4	257.6	109.1	12.35	41.3
1112	15563	216.8	93.4	10.39	60.1	262.8	111.8	12.59	58.3	289.8	122.8	13.88	44.0
1212	17197	237.2	102.2	11.37	60.1	288.2	122.6	13.81	59.2	318.3	134.8	15.25	44.9
1114	18751	242.6	106.3	11.63	27.2	322.9	137.2	15.47	89.1	355.1	15029.0	17.01	66.7
1214	20553	254.3	112.1	12.19	25.8	330.1	142.1	15.82	37.1	388.0	164.2	18.59	67.3
1018	22077	295.3	128.2	14.15	48.2	368.7	158.7	17.68	65.5	403.6	172.3	19.34	60.7
1216	23909	308.2	134.5	14.77	37.7	391.7	168.3	18.77	51.5	430.9	183.7	20.64	46.4
1316	26196	335.0	146.4	16.05	28.4	426.4	183.1	20.42	46.7	469.3	201.1	22.49	50.9
1218	27265	362.3	157.2	17.36	51.8	454.8	195.0	21.79	69.1	498.1	211.9	23.87	60.1
1219	28938	391.9	169.6	18.77	60.7	486.0	209.1	23.29	78.1	530.5	226.7	25.42	65.5
1220	30621	416.4	180.0	19.95	68.8	517.9	221.2	24.81	89.7	563.7	240.2	27.01	75.1
1320	33552	451.8	195.6	21.64	52.7	559.0	240.7	26.78	80.5	614.2	262.1	29.41	83.7
1518	35056	462.7	201.2	22.18	43.4	580.0	250.5	27.80	64.6	638.3	727.3	30.60	64.3
1224	37333	497.7	216.1	19.87	71.2*	598.3	256.5	22.24	68.2*	672.7	286.6	26.86	84.6*
1520	39373	531.6	230.1	25.47	57.7	657.9	283.1	31.53	83.4	704.6	301.9	33.76	57.7
1423	42452	587.1	252.8	28.14	79.6	679.5	293.5	32.55	82.8	768.7	328.6	37.10	79.6
1621	44382	603.0	260.8	28.89	67.0	699.2	303.0	33.48	66.1	800.0	341.8	38.33	67.0
1622	46699	640.1	276.0	30.67	75.7	742.6	320.1	35.58	75.7	845.6	360.1	40.51	75.7
1624	51342	677.1	294.1	27.03	61.9*	788.0	340.0	31.46	61.6*	902.4	384.3	36.02	61.9*
1724	54876	744.3	321.9	32.42	78.7*	860.7	371.9	37.50	78.4*	981.0	419.4	42.74	78.7*
1824	58410	771.5	335.4	30.80	65.8*	895.2	387.4	35.74	64.6*	1025.6	437.4	40.94	65.8*
2024	65489	866.1	376.1	34.57	69.1*	1005.3	434.3	40.13	67.0*	1151.3	490.9	45.96	69.1*
2027	74349	994.0	431.3	38.26	86.1*	1146.1	497.2	44.11	85.2*	1304.6	558.8	50.23	86.1*
2226	79111	1063.7	460.9	42.46	88.5*	1230.1	531.4	49.11	86.1*	1401.4	597.1	55.94	88.5*
2426	86398	1146.4	497.5	42.98	84.9*	1316.7	572.3	49.36	82.5*	1537.6	647.1	56.52	84.9*

Note:
Fresh air condition: fresh air, dry bulb temperature is 35°C, and wet bulb temperature is 28 °C. The water inlet temperature is 7 °C, and the water temperature rises by 5 °C. (* means to control the water pressure drop, and the water temperature rise exceeds 5 °C).

D Cooling and Heating Parameter Sheet of Chillers

Model	Air volume (m³/h)	Air conditioning heating condition					
		2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	10.8	0.3	0.6	18.2	0.5	1.2
0506	2436	15.0	0.37	1.2	24.5	0.60	2.1
0508	3564	23.4	0.57	3.3	37.2	0.91	5.4
0608	4574	30.1	0.74	3.3	47.7	1.16	5.1
0610	6010	41.0	1.00	6.6	64.0	1.56	9.9
0710	7346	50.1	1.22	6.9	78.5	1.91	11.1
0810	8683	59.2	1.44	7.5	92.6	2.25	10.8
0812	10762	75.1	1.82	12.3	116.4	2.83	18.0
0814	12841	90.9	2.21	18.6	140.1	3.40	27.8
1012	13920	97.4	2.37	13.2	151.0	3.67	18.6
1112	15563	108.9	2.65	13.5	168.7	4.10	18.3
1212	17197	120.3	2.93	13.5	186.3	4.52	18.0
1114	18751	132.7	3.23	20.4	204.6	4.97	28.4
1214	20553	146.0	3.54	20.7	224.6	5.45	27.5
1018	22077	159.8	3.89	38.6	244.3	5.94	57.4
1216	23909	171.6	4.17	29.3	263.0	6.39	40.1
1316	26196	184.9	4.49	26.7	285.4	6.94	43.7
1218	27265	197.4	4.79	39.8	301.5	7.32	55.3
1219	28938	210.2	5.11	46.1	320.7	7.78	64.3
1220	30621	223.1	5.42	52.7	340.0	8.25	73.9
1320	33552	240.4	5.84	48.5	368.8	8.96	80.8
1518	35056	250.2	6.08	37.7	384.1	9.33	58.0
1224	37333	274.7	6.67	84.3	411.5	9.99	48.8
1520	39373	282.8	6.87	50.0	433.2	10.51	77.5
1423	42452	307.0	7.45	71.2	462.1	11.22	41.6
1621	44382	319.2	7.76	56.2	480.9	11.67	32.9
1622	46699	336.8	8.18	63.7	507.2	12.31	37.1
1624	51342	356.5	8.66	13.5	559.9	13.59	47.0
1724	54876	381.4	9.26	13.5	598.8	14.54	47.3
1824	58410	406.2	9.87	13.8	637.7	15.48	47.9
2024	65489	456.1	11.07	14.1	715.7	17.37	48.5
2027	74349	523.1	12.69	19.2	816.5	19.81	66.4
2226	79111	555.4	13.48	17.7	868.1	21.07	60.7
2426	86398	608.8	14.78	19.8	949.8	23.05	67.3

Note:
Air conditioning condition: Fresh air, dry bulb temperature is 15°C; hot water inlet/outlet temperature is 60 °C/50 °C.

Cooling and Heating Parameter Sheet of Chillers

Model	Air volume (m^3/h)	Fresh air heating condition					
		2 rows			4 rows		
		Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)	Heating capacity (kW)	Water Flow (l/s)	Water pressure drop (kPa)
0505	1881	17.3	0.4	1.5	27.7	0.7	2.4
0506	2436	23.4	0.57	2.7	37.0	0.90	4.5
0508	3564	36.0	0.87	6.6	55.6	1.35	10.8
0608	4574	46.2	1.13	7.2	71.3	1.73	10.2
0610	6010	62.3	1.52	13.8	95.1	2.31	19.8
0710	7346	76.2	1.85	14.7	116.5	2.83	21.6
0810	8683	90.0	2.19	15.3	137.5	3.34	21.3
0812	10762	113.4	2.75	25.2	172.1	4.19	35.3
0814	12841	136.9	3.33	38.0	206.8	5.02	54.1
1012	13920	147.3	3.58	26.9	223.3	5.42	36.2
1112	15563	164.7	4.00	27.5	249.5	6.06	35.9
1212	17197	182.0	4.42	28.1	275.6	6.69	35.3
1114	18751	200.0	4.86	41.9	301.9	7.33	55.3
1214	20553	218.4	5.30	41.6	330.0	8.01	53.3
1018	22077	239.3	5.81	77.8	354.6	8.61	43.7
1216	23909	257.6	6.26	59.8	382.2	9.28	33.2
1316	26196	277.8	6.74	53.9	414.0	10.05	30.8
1218	27265	282.6	6.86	14.1	436.5	10.60	44.9
1219	28938	303.0	7.35	16.5	465.9	11.31	52.4
1220	30621	320.3	7.78	18.6	492.4	11.95	59.2
1320	33552	346.7	8.42	16.5	535.2	12.99	55.9
1518	35056	360.2	8.75	13.2	557.9	13.54	43.4
1224	37333	396.1	9.62	29.6	588.9	14.29	25.2
1520	39373	408.0	9.92	17.1	629.2	15.28	57.1
1423	42452	443.8	10.77	24.3	681.1	16.54	81.9
1621	44382	460.8	11.18	19.5	709.7	17.23	64.9
1622	46699	486.5	11.81	22.2	748.1	18.16	73.3
1624	51342	538.1	13.06	27.5	803.5	19.50	22.5
1724	54876	575.7	13.98	28.1	859.3	20.86	23.1
1824	58410	613.3	14.89	28.4	915.2	22.20	23.7
2024	65489	688.5	16.71	29.3	1027.0	24.93	24.6
2027	74349	787.9	19.12	39.8	1173.2	28.48	32.6
2226	79111	836.8	20.31	36.8	1246.9	30.26	30.8
2426	86398	916.9	22.26	41.0	1364.8	33.13	34.1

Note:
Fresh air condition: Fresh air, dry bulb temperature is -4°C; hot water inlet/outlet temperature is 60°C/50°C.

3Part

DKFP

Cabinet type air handling unit

Wide application range | Optional accessories | Stable and reliable

Product Features

Wide application range

- The air volume range is 1500~15000m^3/h.
- A variety of structural types are available: L vertical series (double skin), D thin ceiling series (double skin), C ultra-thin ceiling series (single skin).
- Belt drive is available for a variety of static pressure options to meet air supply requirements of various distance.

Optional configurations

- Wet film humidifiers of different thicknesses are available.
- A variety of automatic controls are available: VFD, antifreeze, filter blockage alarm, etc. Different levels of filter configuration are available.
- Remote jet application configuration.
-

Stable and reliable

- High-efficiency multi-blade centrifugal fan with stable performance and low noise.
- The corrugated hydrophilic aluminum foil heat exchanger has high heat exchange efficiency, and is not easy to get wet or accumulate dust.
- The water condensation pan is integrally stamped and formed at one time, without joints and dripping leakage.
- Thermal insulation design to prevent condensation.
- Double-layer color steel plate material (outer layer galvanized color steel) is fireproof and anti-corrosive.
- Polyurethane foam insulation has less quality and good insulation performance.
- High-efficiency filtration provides clean air.

KFPC Ultra-thin Ceiling Suspended Unit Technical Parameters Sheet

Fresh air condition:

Cooling conditions: inlet air 35°C (dry bulb), 28°C (wet bulb); chilled water inlet: 7°C, temperature rise 5°C
Heating conditions: inlet air 7°C (dry bulb); hot water inlet: 60°C

No.	Model	Rated air volume m³/h	Coil Row Qty	External static pressure Pa			Fresh air condition				Unit gross weight kg	Unit dimensions mm Length x Width x Height
				1st grade =130	2nd grade =180	3rd grade =230	Cooling Capacity kW	Heating Capacity kW	Water Flow (l/s)	Water pressure drop kPa		
				Motor power kW								
1	1.5	1500	4	0.25	0.37	0.37	19.8	17.4	1.0	28.1	83	910×695×440
			6	0.37	0.37	0.55	25.5	21.3	1.2	59.2	87	
2	02	2000	4	0.37	0.55	0.55	28.3	24.3	1.4	57.1	91	910×840×440
			6	0.37	0.55	0.55	33.3	28.0	1.6	38.6	96	
3	2.5	2500	4	0.37	0.55	0.55	33.6	29.2	1.6	32.9	112	950×905×510
			6	0.55	0.55	0.75	42.3	35.4	2.0	45.8	119	
4	03	3000	4	0.55	0.55	0.55	42.5	36.8	2.0	38.0	120	950×950×510
			6	0.55	0.55	0.75	51.4	42.7	2.5	58.0	128	
5	04B	4000	4	0.75	0.75	0.75	55.6	47.3	2.7	69.7	161	950×1200×510
			6	0.75	0.75	1.1	68.2	56.8	3.3	52.7	171	
6	05B	5000	4	1.1	1.1	1.1	67.2	58.1	3.2	42.5	187	950×1400×510
			6	1.1	1.1	1.5	82.9	70.0	4.0	34.7	199	
7	06B	6000	4	1.1	1.1	1.5	82.3	70.3	3.9	66.7	209	950×1610×560
			6	1.1	1.5	1.5	101.3	84.6	4.9	53.5	224	
8	07B	7000	4	1.5	1.5	1.5	97.7	83.2	4.7	65.8	219	950×1610×620
			6	1.5	1.5	2.2	119.6	99.7	5.7	54.2	236	
9	08B	8000	4	1.5	1.5	2.2	115.5	98.2	5.5	91.8	231	950×1700×620
			6	1.5	2.2	2.2	135.2	112.7	6.5	69.3	250	
10	09B	9000	4	1.5	2.2	2.2	126.5	112.4	6.1	75.7	243	980×1890×620
			6	2.2	2.2	2.2	157.9	136.5	7.6	67.6	259	
11	10B	10000	4	1.5	2.2	2.2	142	125.4	6.8	98.0	275	980×2080×690
			6	2.2	2.2	2.2	172.3	147.8	8.3	82.8	293	
12	12B	12000	4	2.2	3	3	169.1	149.4	8.1	116.9	310	980×2170×690
			6	3	3	3	205.7	176.4	9.9	100.7	331	
13	13.5B	13500	4	2.2	3	3	176.9	169.0	8.5	25.5	334	1050×1985×870
			6	3	3	3	238.3	205.4	11.4	89.4	358	
14	15B	15000	4	3	3	4	200.4	189.0	9.6	32.9	346	1050×2170×870
			6	3	4	4	266.7	228.8	12.8	113.6	373	

Note:
1. The temperature of the entering and leaving water under heating conditions is 60/50°C.
2. Specifications are subject to change due to product improvement without prior notice.

KFPC Ultra-thin Ceiling Suspended Unit Technical Parameters Sheet

AC condition:

Cooling conditions: inlet air 27°C (dry bulb), 19.5°C (wet bulb); chilled water inlet: 7°C, temperature rise 5°C
Heating conditions: inlet air 15°C (dry bulb); hot water inlet: 60°C

No.	Model	Rated air volume m³/h	Coil Row Qty	External static pressure Pa			AC condition:				Unit gross weight kg	Unit dimensions mm Length x Width x Height
				1st grade =130	2nd grade =180	3rd grade =230	Cooling Capacity kW	Heating Capacity kW	Water Flow (l/s)	Water pressure drop kPa		
				Motor power kW								
1	1.5	1500	4	0.25	0.37	0.37	9.2	15.1	0.4	58.9	83	910×695×440
			6	0.37	0.37	0.55	11.0	18.6	0.5	30.2	87	
2	02	2000	4	0.37	0.55	0.55	11.5	21.1	0.6	12.3	91	910×840×440
			6	0.37	0.55	0.55	14.8	24.6	0.7	26.1	96	
3	2.5	2500	4	0.55	0.55	0.55	14.4	25.7	0.7	15.7	112	950×905×510
			6	0.55	0.55	0.75	18.9	31.0	0.9	9.9	119	
4	03	3000	4	0.55	0.55	0.55	17.6	30.0	0.8	18.9	120	950×950×510
			6	0.55	0.55	0.75	22.9	36.5	1.1	41.0	128	
5	04B	4000	4	0.75	0.75	0.75	24.9	40.2	1.2	70.3	161	950×1200×510
			6	0.75	0.75	1.1	30.7	48.3	1.5	57.7	171	
6	05B	5000	4	1.1	1.1	1.1	30.6	49.8	1.5	63.4	187	950×1400×510
			6	1.1	1.1	1.5	37.8	60.0	1.8	45.2	199	
7	06B	6000	4	1.1	1.1	1.5	35.9	64.8	1.7	15.8	209	950×1610×560
			6	1.1	1.5	1.5	45.3	75.3	2.2	32.3	224	
8	07B	7000	4	1.5	1.5	1.5	45.4	73.9	2.2	48.2	219	950×1610×620
			6	1.5	1.5	2.2	53.5	87.3	2.6	31.4	236	
9	08B	8000	4	1.5	1.5	2.2	48.3	86.4	2.3	20.0	231	950×1700×620
			6	1.5	2.2	2.2	60.7	100.3	2.9	40.7	250	
10	09B	9000	4	2.2	2.2	2.2	51.0	93.3	2.5	16.5	243	980×1890×620
			6	2.2	2.2	2.2	65.3	112.5	3.1	14.1	259	
11	10B	10000	4	1.5	2.2	2.2	60.2	110.2	2.9	21.8	275	980×2080×690
			6	2.2	2.2	2.2	78.3	131.0	3.8	46.3	293	
12	12B	12000	4	2.2	3	3	74.7	136.7	3.6	27.8	310	980×2170×690
			6	3	3	3	93.7	156.5	4.5	55.3	331	
13	13.5	13500	4	2.2	3	3	86.8	150.2	4.2	55.9	334	1050×1985×870
			6	3	3	3	105.3	174.4	5.1	42.8	358	
14	15B	15000	4	3	3	4	97.2	173.2	4.7	50.5	346	1050×2170×870
			6	3	4	4	116.4	191.2	5.6	93.6	373	

Note:
1. The temperature of the entering and leaving water under heating conditions is 60/50°C.
2. Specifications are subject to change due to product improvement without prior notice.

D DKFPD Ceiling and DKFPL Vertical Unit Technical Parameters Sheet

Fresh air condition:

Cooling conditions: inlet air 35°C (dry bulb), 28°C (wet bulb); chilled water inlet: 7°C, temperature rise 5°C
Heating conditions: inlet air 7°C (dry bulb); hot water inlet: 60°C

No.	Model	Rated air volume m³/h	Coil Row Qty	External tic pressure Pa								Fresh air condition				Unit gross weight kg		Unit dimensions Length x Width x Height mm	
				1st grade =130	2nd grade =180	3rd grade =230	4th grade =280	5th grade =330	6th grade =380	7th grade =430	8th grade =480	Cooling Capacity KW	Heating Capacity kW	Water Flow (l/s)	Water pressure drop kPa	DKFPD	DKFPL	DKFPD	DKFPL
				Motor power kW															
1	1.5	1500	4	0.25	0.37	0.37	0.55	/	/	/	/	19.8	17.4	1.0	28.1	97	106	910×695×530	750×695×982
			6	0.37	0.37	0.55	/	/	/	/	/	25.5	21.3	1.2	59.2	101	111		
2	02	2000	4	0.37	0.55	0.55	0.55	0.55	0.75	0.75	/	28.3	24.3	1.4	57.1	107	115	910×840×530	750×840×982
			6	0.37	0.55	0.55	0.55	0.75	0.75	/	/	33.3	28	1.6	38.6	112	121		
3	2.5	2500	4	0.37	0.55	0.55	0.55	0.75	0.75	0.75	1.1	33.6	29.2	1.6	32.9	130	137	950×905×600	750×905×1067
			6	0.55	0.55	0.75	0.75	0.75	0.75	1.1	1.1	42.3	35.4	2.0	45.8	136	144		
4	03	3000	4	0.55	0.55	0.55	0.75	0.75	0.75	1.1	1.1	42.5	36.8	2.0	38	138	147	950×950×600	750×950×1149
			6	0.55	0.55	0.75	0.75	0.75	1.1	1.1	1.1	51.4	42.7	2.5	58	146	155		
5	04B	4000	4	0.75	0.75	0.75	1.1	1.1	1.1	1.1	1.5	55.6	47.3	2.7	69.7	185	192	950×1235×600	750×1235×1149
			6	0.75	0.75	1.1	1.1	1.1	1.5	1.5	1.5	68.2	56.8	3.3	52.7	196	204		
6	05B	5000	4	1.1	1.1	1.1	1.5	1.5	1.5	1.5	2.2	67.2	58.1	3.2	42.5	205	211	950×1400×600	750×1400×1149
			6	1.1	1.1	1.5	1.5	1.5	1.5	2.2	2.2	82.9	70	4.0	34.7	217	224		
7	06B	6000	4	1.1	1.1	1.5	1.5	1.5	2.2	2.2	2.2	82.3	70.3	3.9	66.7	227	232	950×1610×600	750×1610×1149
			6	1.1	1.5	1.5	1.5	2.2	2.2	2.2	2.2	101.3	84.6	4.9	53.5	241	247		
8	07B	7000	4	1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2	97.7	83.2	4.7	65.8	238	244	950×1610×665	750×1610×1250
			6	1.5	1.5	2.2	2.2	2.2	2.2	2.2	3	119.6	99.7	5.7	54.2	255	262		
9	08B	8000	4	1.5	1.5	2.2	2.2	2.2	2.2	2.2	3	115.5	98.2	5.5	91.8	253	256	950×1700×665	750×1700×1310
			6	1.5	2.2	2.2	2.2	2.2	3	3	3	135.2	112.7	6.5	69.3	272	276		
10	09B	9000	4	1.5	2.2	2.2	2.2	3	3	3	3	126.5	112.4	6.1	75.7	268	277	1000×1890×665	810×1890×1352
			6	2.2	2.2	2.2	3	3	3	3	3	157.9	136.5	7.6	67.6	284	296		
11	10B	10000	4	1.5	2.2	2.2	2.2	3	3	3	3	142	125.4	6.8	98	302	310	1000×2080×760	810×2080×1430
			6	2.2	2.2	2.2	3	3	3	3	4	172.3	147.8	8.3	82.8	320	329		
12	12B	12000	4	2.2	3	3	3	3	4	4	4	169.1	149.4	8.1	116.9	339	349	1000×2170×760	810×2170×1500
			6	3	3	3	3	4	4	4	4	205.7	176.4	9.9	100.7	360	371		
13	13.5B	13500	4	2.2	3	3	3	3	4	4	4	176.9	169	8.5	25.5	367	385	1100×1985×920	930×1985×1779
			6	3	3	3	4	4	4	4	5.5	238.3	205.4	11.4	89.4	391	411		
14	15B	15000	4	3	3	4	4	4	4	5.5	5.5	200.4	189	9.6	32.9	381	399	1100×2170×920	930×2170×1779
			6	3	4	4	4	4	5.5	5.5	5.5	266.7	228.8	12.8	113.6	408	428		

Note:
1. The temperature of the entering and leaving water under heating conditions is 60/50°C.
2. Specifications are subject to change due to product improvement without prior notice.

E DKFPD Ceiling and DKFPL Vertical Unit Technical Parameters Sheet

AC condition:

Cooling conditions: inlet air 27°C (dry bulb), 19.5°C (wet bulb); chilled water inlet: 7°C, temperature rise 5°C
Heating conditions: inlet air 15°C (dry bulb); hot water inlet: 60°C

No.	Model	Rated air volume m³/h	Coil Row Qty	External static pressure Pa								AC condition:				Unit gross weight kg		Unit dimensions Length x Width x Height mm	
				1st grade =130	2nd grade =180	3rd grade =230	4th grade =280	5th grade =330	6th grade =380	7th grade =430	8th grade =480	Cooling Capacity KW	Heating Capacity kW	Water Flow (l/s)	Water pressure drop kPa	DKFPD	DKFPL	DKFPD	DKFPL
				Motor power kW															
1	1.5	1500	4	0.25	0.37	0.37	0.55	/	/	/	/	9.2	15.1	0.4	58.9	97	106	910×695×530	750×695×982
			6	0.37	0.37	0.55	/	/	/	/	/	11	18.6	0.5	30.2	101	111		
2	02	2000	4	0.37	0.55	0.55	0.55	0.55	0.75	0.75	/	11.5	21.1	0.6	12.3	107	115	910×840×530	750×840×982
			6	0.37	0.55	0.55	0.55	0.75	0.75	/	/	14.8	24.6	0.7	26.1	112	121		
3	2.5	2500	4	0.37	0.55	0.55	0.55	0.75	0.75	0.75	1.1	14.4	25.7	0.7	15.7	130	137	950×905×600	750×905×1067
			6	0.55	0.55	0.75	0.75	0.75	0.75	1.1	1.1	18.9	31	0.9	9.9	136	144		
4	03	3000	4	0.55	0.55	0.55	0.75	0.75	0.75	1.1	1.1	17.6	30	0.8	18.9	138	147	950×950×600	750×950×1149
			6	0.55	0.55	0.75	0.75	0.75	1.1	1.1	1.1	22.9	36.5	1.1	41	146	155		
5	04B	4000	4	0.75	0.75	0.75	1.1	1.1	1.1	1.1	1.5	24.9	40.2	1.2	70.3	185	192	950×1235×600	750×1235×1149
			6	0.75	0.75	1.1	1.1	1.1	1.5	1.5	1.5	30.7	48.3	1.5	57.7	196	204		
6	05B	5000	4	1.1	1.1	1.1	1.5	1.5	1.5	1.5	2.2	30.6	49.8	1.5	63.4	205	211	950×1400×600	750×1400×1149
			6	1.1	1.1	1.5	1.5	1.5	1.5	2.2	2.2	37.8	60	1.8	45.2	217	224		
7	06B	6000	4	1.1	1.1	1.5	1.5	1.5	2.2	2.2	2.2	35.9	64.8	1.7	15.8	227	232	950×1610×600	750×1610×1149
			6	1.1	1.5	1.5	1.5	2.2	2.2	2.2	2.2	45.3	75.3	2.2	32.3	241	247		
8	07B	7000	4	1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2	45.4	73.9	2.2	48.2	238	244	950×1610×665	750×1610×1250
			6	1.5	1.5	2.2	2.2	2.2	2.2	2.2	3	53.5	87.3	2.6	31.4	255	262		
9	08B	8000	4	1.5	1.5	2.2	2.2	2.2	2.2	2.2	3	48.3	86.4	2.3	20	253	256	950×1700×665	750×1700×1310
			6	1.5	2.2	2.2	2.2	2.2	3	3	3	60.7	100.3	2.9	40.7	272	276		
10	09B	9000	4	1.5	2.2	2.2	2.2	3	3	3	3	51	93.3	2.5	16.5	268	277	1000×1890×665	810×1890×1352
			6	2.2	2.2	2.2	3	3	3	3	3	65.3	112.5	3.1	14.1	284	296		
11	10B	10000	4	1.5	2.2	2.2	2.2	3	3	3	3	60.2	110.2	2.9	21.8	302	310	1000×2080×760	810×2080×1430
			6	2.2	2.2	2.2	3	3	3	3	4	78.3	131	3.8	46.3	320	329		
12	12B	12000	4	2.2	3	3	3	3	4	4	4	74.7	136.7	3.6	27.8	339	349	1000×2170×760	810×2170×1500
			6	3	3	3	3	4	4	4	4	93.7	156.5	4.5	55.3	360	371		
13	13.5B	13500	4	2.2	3	3	3	3	4	4	4	86.8	150.2	4.2	55.9	367	385	1100×1985×920	930×1985×1779
			6	3	3	3	4	4	4	4	5.5	105.3	174.4	5.1	42.8	391	411		
14	15B	15000	4	3	3	4	4	4	4	5.5	5.5	97.2	173.2	4.7	50.5	381	399	1100×2170×920	930×2170×1779
			6	3	4	4	4	4	5.5	5.5	5.5	116.4	191.2	5.6	93.6	408	428		

Note:
1. The temperature of the entering and leaving water under heating conditions is 60/50°C.
2. Specifications are subject to change due to product improvement without prior notice.

F Technical Parameters Sheet for DKFPDH Ceiling Wet Film Humidification and DKFPLH Vertical Wet Film Humidification Unit

No.	Model	Rated air volume m^3/h	Coil Row Qty	Humidification amount kg/h			Unit gross weight kg		Unit dimensions Length x Width x Height mm	
				H1=50mm	H2=100mm	H3=150mm	DKFPDH	DKFPLH	DKFPDH	DKFPLH
1	1.5	1500	4	4.6	8.3	11.3	112	118	1110×695×530	750×695×982
			6				116	123		
2	02	2000	4	6.1	11.0	15.0	127	130	1110×840×530	750×840×982
			6				132	136		
3	2.5	2500	4	7.6	13.5	18.0	150	152	1150×905×600	750×905×1067
			6				156	159		
4	03	3000	4	9.2	16.0	22.0	158	162	1150×950×600	750×950×1149
			6				166	170		
5	04B	4000	4	12.5	22.0	30.0	215	217	1150×1235×600	750×1235×1149
			6				226	229		
6	05B	5000	4	15.0	27.0	37.0	235	236	1150×1400×600	750×1400×1149
			6				247	249		
7	06B	6000	4	18.3	32.0	44.0	257	257	1150×1610×600	750×1610×1149
			6				271	272		
8	07B	7000	4	20.8	38.0	52.0	268	269	1150×1610×665	750×1610×1250
			6				285	287		
9	08B	8000	4	24.2	44.0	60.0	288	286	1150×1700×665	750×1700×1310
			6				307	306		
10	09B	9000	4	26.6	49.0	67.0	308	312	1200×1890×665	810×1890×1352
			6				324	331		
11	10B	10000	4	30.0	54.0	74.0	347	350	1200×2080×760	810×2080×1430
			6				365	369		
12	12B	12000	4	36.0	64.8	88.8	384	389	1200×2170×760	810×2170×1500
			6				405	411		
13	13.5B	13500	4	41.2	72.9	99.9	412	425	1300×1985×920	930×1985×1779
			6				436	451		
14	15B	15000	4	45.8	81.0	111.0	426	439	1300×2170×920	930×2170×1779
			6				453	468		

Note:
1. H1, H2 and H3 refer to humidifier thickness.
2. The humidification efficiency of 50mm, 100mm and 150mm wet film humidifiers is 40%, 60% and 75%, and the corresponding wind resistance is 27, 44 and 68pa respectively.
3. The above humidification conditions are: dry bulb temperature is 30 °C, and relative humidity is 10%.
4. The performance parameters such as cooling capacity, heating capacity, water flow, water pressure drop and motor power of DKFPDH and DKFPLH units are the same as those of DKFPDH and DKFPLH units without humidifier under the same working conditions.
5. The static pressure value of DKFPDH and DKFPLH units is the static pressure value of DKFPDH and DKFPLH units without humidifier minus the wind resistance value corresponding to the humidifier of corresponding thickness.

3Part

CR
Fan coil

Wide Operating range | Various options | Sealed and leak-proof | Stable and reliable | Multiple accessories

A Product Features

Wide Operating range
- Standard working condition air volume 360~3300m^3/h, wide selection scope.

Various options
- Multiple selection and functions.
- Easy installation, saving installation space and engineering cost.

Sealed and leak-proof
- The water condensation pan is integrally stamped and formed at one time, without joints and dripping leakage.
- Thermal insulation design to prevent condensation.

Stable and reliable
- Mechanical balanced multi-blade centrifugal fan.
- Low noise, high efficiency and light weight.
- The corrugated hydrophilic aluminum fin heat exchanger has high efficiency, and self-clean function.

Multiple accessories
- Thermostat
- Filter
- Electric two-way valve
- Vibration isolator joint
- Extended Drain Pan
- UV germicidal lamp

B Technical Parameters Sheet of CR Standard Series Fan Coil Unit - 2-row coils

Performance \ Model			02	03	04	05	06	07	08
Air volume m^3/h		High speed mode	340	510	680	850	1020	1190	1360
		Medium speed mode	270	406	518	661	770	893	1016
		Low speed mode	176	261	348	447	509	595	687
Total heating and cooling capacity (W)		High speed mode	1890	2930	3610	4500	5400	6300	7200
Sensible heating/ cooling capacity (W)		High speed mode	1350	2070	2590	3220	3870	4520	5160
FCEER (W/W)	12Pa	High speed mode	51	55	54	54	51	49	49
	30Pa	High speed mode	45	47	47	49	47	46	43
	50Pa	High speed mode	38	42	41	43	44	43	40
	70Pa	High speed mode	36	38	37	39	39	37	35
Heating capacity (W)	(60°C water entering)	High speed mode	3243	4922	6159	7537	8635	10337	12017
	(45°C water entering)	High speed mode	1988	3013	3774	4610	5286	6328	7358
FCCOP (W/W) 60° Water entering	12Pa	High speed mode	88	94	95	94	88	84	86
	30Pa	High speed mode	77	80	84	86	82	79	74
	50Pa	High speed mode	66	72	73	71	75	73	71
	70Pa	High speed mode	61	64	66	68	66	64	61
Noise value dB(A)	12Pa	High speed mode	32.6	36.2	38.3	40.0	44.2	44.7	44.5
		Medium speed mode	26.5	29.7	30.5	34.9	37.5	32.8	37.4
		Low speed mode	20.7	23.8	24.6	29.7	29.9	25.0	29.1
	30Pa	High speed mode	36	39	41	42.6	46	47.5	46
		Medium speed mode	32.4	35.8	35.9	37.6	39.7	37.3	38.8
		Low speed mode	28.2	29.3	29.3	30.6	32.8	27.4	31.7
	50Pa	High speed mode	38.7	43.0	44.0	46.0	48.0	49.0	49.0
		Medium speed mode	34.0	36.9	38.5	40.6	42.6	43.5	38.6
		Low speed mode	26.3	31.5	31.3	33.9	37.3	36.8	30.5
	70Pa	High speed mode	41.4	44.8	45.0	49.6	53.0	54.1	49.5
		Medium speed mode	37.2	39.5	40.9	47.9	51.5	51.3	47.2
		Low speed mode	30.1	28.8	34.0	44.1	49.1	47.3	43.2
Water Flow (l/min)			5.4	9.0	10.8	12.6	14.4	18.0	21.6
Pressure drop (kPa)			10.7	27.4	19.7	30.0	40.0	38.0	34.4
Fan qty			1	2	2	2	2	2	4
Motor Qty			1	1	1	1	1	1	2
220V/1PH/50Hz Total input power(W)	12Pa		36	48	60	74	93	112	128
	30Pa		41	57	70	81	101	121	150
	50Pa		48	64	81	97	110	131	158
	70Pa		52	72	90	104	126	150	184
Unit gross weight (kg)	Vertical concealed		14.7	18	20	21.6	23	26.4	32.6
	Horizontal without return plenum box		10.2	12.7	14.2	15.3	16.2	18.5	23.5
	Horizontal with return plenum box		13.2	16.1	18.0	19.4	20.5	23.4	29.1

Note:
1. The high speed air volume is the value when the external static pressure is the corresponding pressure.
2. The cooling capacity is based on the inlet air dry bulb temperature of 27°C, the wet bulb temperature of 19.5°C, the chilled water entering temperature of 7°C, the temperature rise of 5°C, and air volume at high speed mode;
3. The heating capacity is based on the fresh air dry bulb temperature of 21°C, the hot water entering temperature of 60°C or 45°C, and the water flow and air volume are the same as those for cooling;
4. The total cooling load, sensible cooling load and total heating load under other air volumes can be obtained according to the curve;
5. The noise value is the test value of the unit without the return air box under the condition of anechoic chamber;
6. The motor power will be slightly different due to different motor manufacturers; please refer to the data on the nameplate;

C Technical Parameters Sheet of CR Standard Series Fan Coil Unit - 3-row coils

Performance \ Model			02	03	04	05	06	07	08	10	12	14
Air volume m^3/h		High speed mode	340	510	680	850	1020	1190	1360	1700	2040	2380
		Medium speed mode	260	383	501	623	765	893	1006	1260	1513	1739
		Low speed mode	170	256	339	417	515	595	675	810	988	1190
Cooling capacity (W)	Total heating and cooling capacity (W)	High speed mode	2300	3280	4170	5280	6100	7060	8330	9650	11510	13230
		Medium speed mode	1850	2640	3320	4150	5005	5731	6694	7964	9461	10861
		Low speed mode	1320	1540	2430	3058	3718	4334	4934	5720	6890	8203
	Sensible heating/ cooling capacity (W)	High speed mode	1580	2290	2930	3710	4290	4990	5840	6850	8170	9400
		Medium speed mode	1276	1815	2300	2880	3476	3990	4622	5566	6608	7584
		Low speed mode	880	1298	1660	2079	2530	2948	3353	3916	4760	5631
FCEER (W/W)	12Pa	High speed mode	59	61	63	62	56	55	56	55	54	49
	30Pa	High speed mode	51	53	55	58	52	52	49	51	49	46
	50Pa	High speed mode	45	48	47	48	48	48	47	44	43	41
	70Pa	High speed mode	41	43	43	46	43	43	41	40	38	\
Water Flow (l/min)		High speed mode	7.2	9.2	12.6	14.9	17.3	19.8	23.7	27.6	31.7	37.5
Pressure drop (kPa)		High speed mode	22	22	20	30	40	27	40	39	40	49
Heating capacity (W)	(60°C water entering)	High speed mode	3590	5100	6820	8300	9540	11340	13300	15610	18200	20860
	(45°C water entering)	High speed mode	2200	3120	4170	5110	5840	6950	8160	9570	11270	12800
FCCOP (W/W) 60° water entering	12Pa	High speed mode	93	99	104	101	91	90	93	94	90	82
	30Pa	High speed mode	82	84	89	93	84	84	81	84	80	75
	50Pa	High speed mode	72	76	78	79	78	78	77	72	70	67
	70Pa	High speed mode	65	68	70	73	69	69	65	66	61	\
Noise value dB(A)	12Pa	High speed mode	32.6	36.2	38.3	40.0	44.2	44.7	44.5	46.6	49.0	50.0
		Medium speed mode	26.5	29.7	30.5	34.9	37.5	32.8	37.4	39.4	43.4	45.2
		Low speed mode	20.7	23.8	24.6	29.7	29.9	25.0	29.1	30.6	33.6	35.0
	30Pa	High speed mode	36	39	41	42.6	46	47.5	46	49	49.5	52.5
		Medium speed mode	32.4	35.8	35.9	37.6	39.7	37.3	38.8	40.2	40.8	49.0
		Low speed mode	28.2	29.3	29.3	30.6	32.8	27.4	31.7	31.4	30.5	43.1
	50Pa	High speed mode	38.7	43.0	44.0	46.0	48.3	49.0	49.0	50.5	51.0	52.0
		Medium speed mode	34.0	36.9	38.5	40.6	42.6	43.5	38.6	45.5	45.1	49.4
		Low speed mode	26.3	31.5	31.3	33.9	37.3	36.8	30.5	36.2	36.8	44.5
	70Pa	High speed mode	41.4	44.8	45.0	49.6	53.0	54.1	49.5	52.5	53.0	\
		Medium speed mode	37.2	39.5	40.9	47.9	51.5	51.3	47.2	49.5	48.3	\
		Low speed mode	30.1	28.8	34.0	44.1	49.1	47.3	43.2	45.1	40.9	\
Fan qty			1	2	2	2	2	2	4	4	4	4
Motor Qty			1	1	1	1	1	1	2	2	2	2
Input power (W)	12Pa	High speed mode	36	48	60	74	93	112	128	147	183	221
	30Pa	High speed mode	41	57	70	81	101	121	150	169	206	245
	50Pa	High speed mode	48	64	81	97	110	131	158	199	242	279
	70Pa	High speed mode	52	72	90	104	126	150	184	220	282	\
Unit gross weight (kg)	Vertical concealed		15.8	22.8	24.5	26	27.8	30	37.5	39	42.3	47
	Horizontal without return plenum box		11.3	13.2	14.8	16.1	17.1	19.4	24.6	26.8	29.5	32.3
	Horizontal with return plenum box		14.3	16.6	18.6	20.2	21.4	24.3	30.2	32.6	36.1	39.6

Note:
1. The high speed air volume is the value when the external static pressure is the corresponding pressure.
2. The cooling capacity is based on the inlet air dry bulb temperature of 27°C, the wet bulb temperature of 19.5°C, the chilled water entering temperature of 7°C, the temperature rise of 5°C, and air volume at high speed mode;
3. The heating capacity is based on the fresh air dry bulb temperature of 21°C, the hot water entering temperature of 60°C or 45°C, and the water flow and air volume are the same as those for cooling;
4. The total cooling load, sensible cooling load and total heating load under other air volumes can be obtained according to the curve;
5. The noise value is the test value of the unit without the return air box under the condition of anechoic chamber;
6. The motor power will be slightly different due to different motor manufacturers; please refer to the data on the nameplate;

Technical Parameters Sheet of CR Standard Series Fan Coil Unit - 4 coils 3+1 row coil

Performance \ Model			02	03	04	05	06
Airvolume m³/h		High speed mode	340	510	680	850	1020
		Medium speed mode	255	372	501	625	766
		Low speed mode	173	240	329	412	501
Cooling capacity (W)	Total heating and cooling capacity	High speed mode	2300	3280	4170	5280	6090
		Medium speed mode	1850	2640	3320	4150	5005
		Low speed mode	1320	1540	2430	3058	3718
	Sensible heating/ cooling capacity	High speed mode	1580	2290	2930	3710	4330
		Medium speed mode	1276	1815	2300	2880	3476
		Low speed mode	880	1298	1660	2079	2530
FCEER (W/W)	12Pa	High speed mode	56	61	59	62	53
	30Pa	High speed mode	47	50	51	54	48
	50Pa	High speed mode	43	46	42	48	44
Water Flow (l/min)		High speed mode	7.2	9.2	12.6	14.9	17.3
Pressure drop (kPa)		High speed mode	22	22	20	30	40
Heating capacity (W)	(60°C water entering)	High speed mode	2030	2710	3494	4277	5488
	(45°C water entering)	High speed mode	1290	1725	2233	2726	3488
FCCOP (W/W) 60° Water entering	12Pa	High speed mode	52	53	55	53	51
	30Pa	High speed mode	43	43	46	45	46
	50Pa	High speed mode	39	40	38	40	42
Noise value dB(A)	12Pa	High speed mode	36.5	38.7	40.2	42	45
		Medium speed mode	30	31.5	34.2	34.5	39.1
		Low speed mode	23	24	27	27	27.2
	30Pa	High speed mode	39.3	42	42.8	44.9	46.5
		Medium speed mode	32	33	34.6	37	41
		Low speed mode	26	26	26.8	29	33
	50Pa	High speed mode	41.2	43.5	45.8	46.8	48
		Medium speed mode	34	37.3	40.5	42	45
		Low speed mode	27.8	30	33	35.6	40.8
Fan qty			1	2	2	2	2
Motor Qty			1	1	1	1	1
Input power (W)	12Pa	High speed mode	36	49	60	74	93
	30Pa	High speed mode	43	57	70	84	105
	50Pa	High speed mode	48	64	81	97	114
Unit gross weight (kg)	Horizontal without return plenum box		12.1	14.7	16.6	17.1	18.2
	Horizontal with return plenum box		15.1	18.1	20.4	21.2	22.5

Note:
1. The high speed air volume is the value when the external static pressure is the corresponding pressure.
2. The cooling capacity is based on the inlet air dry bulb temperature of 27°C, the wet bulb temperature of 19.5°C, the chilled water entering temperature of 7°C, the temperature rise of 5°C, and air volume at high speed mode;
3. The heating capacity is based on the fresh air dry bulb temperature of 21°C, the hot water entering temperature of 60°C or 50°C or 45°C/40°C;
4. The total cooling load, sensible cooling load and total heating load under other air volumes can be obtained according to the curve;
5. The noise value is the test value of the unit without the return air box under the condition of anechoic chamber;
6. The motor power will be slightly different due to different motor manufacturers; please refer to the data on the nameplate;

Technical Parameters Sheet of CR Standard Series Fan Coil Unit - 4 coils 3+1 row coil

Performance \ Model			07	08	10	12	14
Airvolume m³/h		High speed mode	1190	1360	1700	2040	2380
		Medium speed mode	900	1011	1228	1525	1809
		Low speed mode	595	674	823	1052	1242
Cooling capacity (W)	Total heating and cooling capacity	High speed mode	7060	8330	9650	11510	13230
		Medium speed mode	5731	6694	7810	9461	10861
		Low speed mode	4334	4934	5720	6890	8203
	Sensible heating/ cooling capacity	High speed mode	4990	5840	6850	8170	9400
		Medium speed mode	3990	4622	5450	6608	7584
		Low speed mode	2948	3353	3916	4760	5631
FCEER (W/W)	12Pa	High speed mode	53	52	54	52	49
	30Pa	High speed mode	48	46	48	47	44
	50Pa	High speed mode	44	44	42	41	39
Water Flow (l/min)		High speed mode	19.8	23.7	27.6	31.7	37.5
Pressure drop (kPa)		High speed mode	27	40	39	40	49
Heating capacity (W)	(60°C water entering)	High speed mode	5785	6815	7989	9628	10962
	(45°C water entering)	High speed mode	3683	4335	5089	6119	6958
FCCOP (W/W) 60° Water entering	12Pa	High speed mode	48	47	48	46	44
	30Pa	High speed mode	43	41	42	42	39
	50Pa	High speed mode	39	38	36	35	34
Noise value dB(A)	12Pa	High speed mode	46	46	48	50	52
		Medium speed mode	37	37.2	35	35.3	35.3
		Low speed mode	27.8	27	25.5	25.3	28
	30Pa	High speed mode	48	48	50	51	53.5
		Medium speed mode	42.5	41.5	37.5	42.2	49.6
		Low speed mode	32.4	32.8	28.5	33	45
	50Pa	High speed mode	49.3	50	51.8	51.4	53
		Medium speed mode	45.5	43.5	46	47.5	50.5
		Low speed mode	39.5	35.5	40.5	43	47.4
Fan qty			2	4	4	4	4
Motor Qty			1	2	2	2	2
Input power (W)	12Pa	High speed mode	112	130	147	183	221
	30Pa	High speed mode	121	151	169	206	245
	50Pa	High speed mode	131	169	204	243	291
Unit gross weight (kg)	Horizontal without return plenum box		20.5	25.9	28.2	31.1	34.1
	Horizontal with return plenum box		25.4	31.5	34.0	37.7	41.4

Note:
1. The high speed air volume is the value when the external static pressure is the corresponding pressure.
2. The cooling capacity is based on the inlet air dry bulb temperature of 27°C, the wet bulb temperature of 19.5°C, the chilled water entering temperature of 7°C, the temperature rise of 5°C, and air volume at high speed mode;
3. The heating capacity is based on the fresh air dry bulb temperature of 21°C, the hot water entering temperature of 60°C or 50°C or 45°C/40°C;
4. The total cooling load, sensible cooling load and total heating load under other air volumes can be obtained according to the curve;
5. The noise value is the test value of the unit without the return air box under the condition of anechoic chamber;
6. The motor power will be slightly different due to different motor manufacturers; please refer to the data on the nameplate;

04

AIR-CONDITIONING AUXILIARY EQUIPMENT

Dunham-Bush Group started to produce cooling towers in the 1960s. Following the Dunham-Bush global development plan, the Malaysian factory started to produce cooling towers for the Asia-Pacific region in 1992. In 2007, Dunham-Bush transferred technology to the Yantai factory and started the production and sales in China.

Dunham-Bush has a wide range of cooling towers, including cross-flow, counter-flow, open and closed type cooling towers and etc. suitable for various applications. The cooling towers are developed with advanced structural design, optimized shape, compact frame, optimized air volume and water volume matching, sufficient heat exchange, and high thermal efficiency. Due to international advanced design, the cooling tower appearance is exquisite and coordinated with the building, which covers small floor space and easy for movement and placement.

The Dunham-Bush cross-flow cooling tower is specially designed for modularization, single module air inlet on both sides, keeps the same air inlet area when combined together, and power consumption of the motor will remain unchanged. Modular combination ensures convenient adjustment, economical operation, easy installation and convenient maintenance.

HBS

Square Mixed Flow Ultra-low Noise Closed Cooling Tower

Intelligent design | Easy maintenance | Quiet operation | Multiple accessories

A Product Features

Intelligent designed

- Square cross-flow design, compact and light; closed system, water and energy saving.
- Heat exchangers are arranged in staggered structure to improve heat exchange efficiency and ensure heat rejection rate.
- The heat exchanger is non-equal tube groups and following with the water temperature gradient design, improved the heat exchange efficiency.
- High-efficiency corrosion and flame-retardant packing are adopted with low floating water rate, low wind resistance, and better hydrophilicity.
- High-performance motor with IP55 protection level and F-class insulation level.
- High and low temperature resistant improved performance vinyl chloride resin, high flame retardant performance.
- Unique water distribution design ensures uniform water distribution and apron.

Ease of installation and maintenance

- Modular design ensures free combination, flexible installation and easy usage.
- The heat exchanger and packing are easy to disassemble and maintain.
- Closed system design prevents impurities from entering the system for easy maintenance.

Quiet operation

- Closed system design ensures low operating noise.
- The transmission is precisely adjusted to improve stability and reliability, and the noise is greatly reduced.
- The fan blade has undergone a strict balance test to improve stability and reduce noise.

Multiple optional configuration

- Noise reduced diversion duct
- Control system as per customer demand
- Vibration isolator
- Electric heater control assembly integrated at the bottom of drain pan
- Heating system by using internal circulation

B HBS series selection specifications

Model	Cooling water (m^3/h)	Unit dimensions (mm)			Axial Fan			Spray water volume (m^3/h)	Power (KW)	Weight (kg)		Pipe diameter		
		L	W	H	Model diameter	(m^3/h)	Power kW			Shipping	Operation	Inlet and outlet connection	Water supplement	Drainage
HBS-20	20	1400	2000	2200	900	19400	1.50	30	0.75	1080	2210	DN50	DN25	DN40
HBS-30	30	1400	2000	2400	900	29100	2.20	30	0.75	1190	2320	DN65	DN25	DN40
HBS-40	40	1600	2400	2600	1000	38800	3.00	45	1.1	1540	3090	DN80	DN25	DN40
HBS-50	50	1600	2400	2800	1100	48500	3.00	45	1.1	1650	3210	DN100	DN25	DN40
HBS-60	60	1800	2600	3000	1200	58100	4.00	45	1.1	1930	3830	DN100	DN25	DN40
HBS-70	70	2000	2800	3000	1300	67800	4.00	60	1.5	2120	4400	DN100	DN25	DN40
HBS-80	80	2200	2800	3200	1300	77500	5.50	60	1.5	2320	4820	DN125	DN25	DN40
HBS-100	100	3000	2600	3200	1100*2	48500*2	3*2	84	2.2	2960	6130	DN125	DN32	DN50
HBS-125	125	3400	2800	3200	1200*2	60500*2	4*2	100	2.2	3370	7240	DN150	DN32	DN50
HBS-150	150	3800	2900	3200	1300*2	72600*2	4*2	120	3	3800	8280	DN150	DN32	DN50
HBS-200	200	5200	2900	3200	1200*3	64600*3	4*3	150	3	4970	11100	DN125*2	DN40	DN50
HBS-250	250	6600	2900	3200	1300*3	80700*3	5.5*3	180	4	5860	13630	DN150*2	DN40	DN50

Notes:
1. The above data is based on the following working conditions: Under the standard configuration and standard design conditions, the inlet/outlet water temperature is 37°C/32°C, and the outdoor wet bulb temperature is 28°C.
2. For technical parameters of non-standard working conditions, please contact Dunham-Bush local offices.
3. The design pressure for standard products is 0.5MPa, and the pressure can be adjusted for special use.
4. H is the height from the platform to the foundation, excluding the air duct.

4Part

SQH(C)

Square Cross-flow (counter-flow) Ultra-low Noise Cooling Tower

Intelligent design | Easy maintenance | Quiet operation

A Product Features

Intelligent design

- Hot-dip galvanized steel structure design, high strength, firm and stable
- The shell is made of special material, which is corrosion-resistant, anti-aging and durable
- Low noise axial fan with high efficiency and stability
- The transmission mechanism adopts maintenance-free bearings and oil-free
- High-efficiency motor, IP55 protection class, F-class insulation class

Ease of Installation and Maintenance

- Modular design ensures free combination, flexible installation and easy usage
- The packing is easy to disassemble and maintain
- Unique water distribution design ensures uniform water distribution

Quiet Operation

- Adopt new high-efficiency burr-type sound-absorbing carbon to effectively reduce noise
- Accurate adjustment of low transmission, stable and reliable, and greatly reduced noise
- The fan blade has undergone a strict balance test to improve stability and reduce noise

B SQH Series Square Cross-flow FRP Cooling Tower Specifications

Model	Cooling water volume m³/h	Motor Power (kW)	Fan diameter (mm)	Length (mm)	Width (mm)	Height (mm)	Dead weight (Kg)	Operation weight (Kg)	Noise dB (A)
SQH100S	100	3	1760	2060	3800	3350	1155	2355	62.4
SQH125S	125	4	1760	2060	4200	3350	1254	2787	62.6
SQH150S	150	4	2160	2460	4200	3350	1452	3152	62.8
SQH175S	175	5.5	2160	2460	4600	3350	1672	3602	63.1
SQH200S	200	5.5	2360	2860	4600	3350	1859	4129	63.7
SQH225S	225	7.5	2360	2860	5000	3350	2277	4677	64.3
SQH250S	250	7.5	2920	3260	5000	4000	2530	5570	64.8
SQH300S	300	7.5	2920	3260	5400	4000	2838	5938	65.6
SQH330S	330	11	3340	3660	5400	4000	3179	6669	65.4
SQH370S	370	11	3340	3660	5800	4500	3707	7712	65.7
SQH400S	400	11	3744	4060	5800	4500	4202	8482	66.3
SQH450S	450	15	3744	4060	6200	4500	4433	9333	66.4
SQH500S	500	15	4120	4460	6600	5000	4895	10085	66.7
SQH600S	600	18.5	4120	4460	7000	5000	5467	10817	67.4
SQH700S	700	22	4120	4860	7400	5000	5841	12471	68.6

C SQC Series Square Counter-flow FRP Cooling Tower Specifications

Model	t=28°C Cooling water volume (m³/h)		Dimensions (mm)		Air volume (m³/h)	Fan diameter (mm)	Motor Power (kW)	Weight (t)		Noise dB(A)
	Δt=5°C	Δt8°C	Total height H	Width B				Dead weight	Operation weight	
SQC100S	100	74.4	4670	2600	62000	1800	3.0	2.16	3.18	64
SQC150S	150	109.8	4670	3000	84000	2400	4.0	2.91	4.23	65.5
SQC200S	200	148.9	4960	3600	115000	2800	5.5	3.55	5.40	67
SQC300S	300	224.9	5690	4300	158600	3400	7.5	5.04	7.72	67
SQC400S	400	299.9	6040	4800	213000	3800	11	6.10	9.52	67.5
SQC500S	500	374.9	6700	5300	265000	3800	15	7.58	11.78	67.5
SQC600S	600	448.5	6980	6000	317500	4200	15	9.68	14.95	67.5
SQC750S	750	561.7	7290	6800	400000	4200	22	12.41	19.12	68
SQC900S	900	673.4	7900	7300	490000	4700	30	14.36	22.19	68.8
SQC1050S	1050	786.5	8100	7800	556000	4700	30	17.22	26.22	69.6

Note:
The noise value in the table is the standard point noise. If a muffler is added, the noise value is 3~5dB (A) lower than the value in the table.

4Part

DBTCS

Heat exchange tube automatic cleaning system

Good design | Easy maintenance | Quiet operation | Multiple accessories

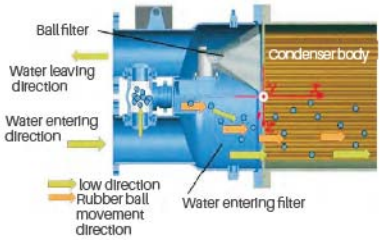
Dunham-Bush automatic cleaning equipment

Dunham-Bush is specialized in providing automatic on-line cleaning solutions for chillers with reduced heat exchange efficiency and increased energy consumption due to scaling of chillers. Only by installing a rubber ball automatic cleaning device between the water inlet and outlet pipe of the chiller, and the cleaning frequency and times are controlled online by the microcomputer to effectively prevent the formation of dirt on the inner wall of the heat exchange pipe of the chiller and improve the refrigeration efficiency of the chiller.

Schematic diagram of automatic cleaning process

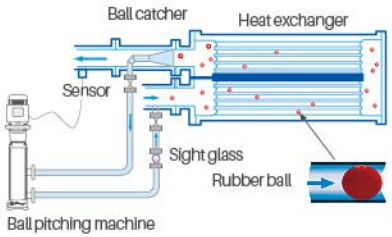
DBTCS-WB Schematic diagram of automatic cleaning process

The condenser of the chiller has a rubber ball cleaning function, which can fully ensure the cleanliness of the condenser during the operation of the chiller, greatly reduce the condensation saturation temperature of the refrigerant and improve the operation COP of the chiller.



The front-end head pipe box and the chiller unit are provided together by the factory. The ball recovery and sending device is installed between the inlet and outlet pipes, and the control valve machine with the ball recovery and sending function sends the rubber ball into the condenser. The rubber ball wipes off the dirt on the inner wall of the heat exchange pipe by the water pressure difference. Then the rubber ball enters the second process. After cleaning the heat exchange pipe, it is captured by the ball recovery device and collected into the ball recovery and sending control valve to form a cleaning cycle. The cleaning frequency and times are set by microcomputer control program to realize the automatic online cleaning function.

Split ducted unit DBTCS-F



System Components

1. Ball pitching machine: The cleaning ball is sent into the cooling water inlet pipe, and the cleaning ball enters the heat exchange pipe due to water pressure difference.
2. Ball catcher: The built-in filter separates the cleaning ball from the water, and recovers the cleaning ball by water flow.
3. Microcomputer programmable control panel: The cleaning frequency and time can be flexibly set according to the water quality.

Why automatic cleaning of heat exchanger is needed?

As we all know, central air conditioning is the largest energy consuming equipment in public buildings and has great potential in energy conservation. Scientific research shows that the dust, microorganism and other impurities in the air entering the cooling water system for circulation through the cooling tower, will lead to scaling, corrosion, microbial reproduction and other problems in the condenser, thus directly reducing the heat exchange efficiency and cooling capacity of the condenser and greatly increasing the power consumption.

·Dust and microorganism entering the cooling water system and producing dirt → ·Increase of fouling thermal resistance at water side of condenser → ·Refrigerant condensation temperature rises → ·Condenser heat exchange end difference increases → ·Cooling efficiency of water chiller decreases → ·Increase in operating cost of water chiller

Effect of fouling on energy efficiency

Influence of fouling thermal conductivity on energy consumption

Relationship between fouling and energy consumption of chillers

	Composition	Thermal conductivity W(m k)
Scale	Carbonate scale Silicate scale Phosphate scale	0.4-0.7、0.2-0.5、0.6-0.8
Biological sludge	Biological thin layer (about 90% moisture)	0.08-0.1
Corrosives	Fe_2O_3、Fe_3O_4	3-7、1.2
Base metal	Carbon steel, copper	40-70、370-420

Fouling coefficient		Fouling thickness		Energy consumption increase(%)
h.ft2. F/Btu	㎡.°C/kW	Inch	mm	
0.00025	0.044	1/320"	0.1	3.1%
0.00050	0.088	1/160"	0.2	6.2%
0.00100	0.176	1/80"	0.4	12.4%
0.00200	0.352	1/40"	0.8	24.8%

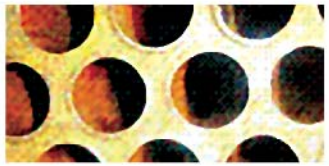
The data comes from the 2000 Manual of American Society of Heating , Refrigerating and Air-conditioning Engineers.

Solution to fouling of heat exchanger

Traditional solution: chemical water treatment + periodic manual mechanical brushing

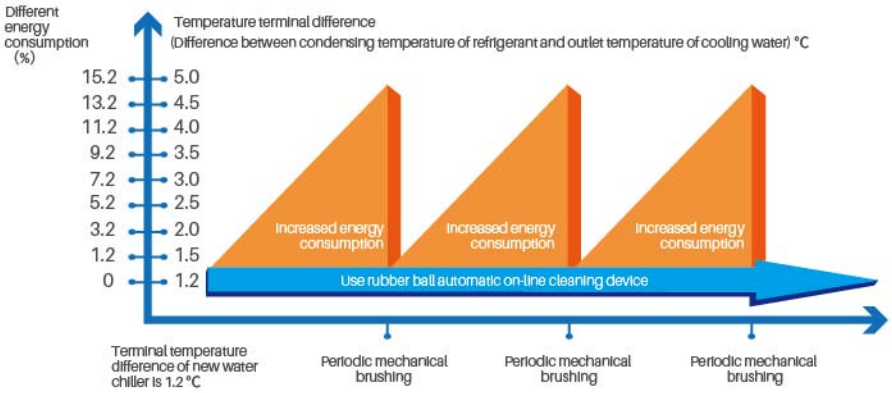
·Can not completely solve the fouling and slime deposition
·Unable to completely prevent the production of bacteria, algae and rust
·Need to shutdown the machine periodically for mechanical brushing
·After brushing, the fouling quickly deposits again, and the efficiency becomes poor.
·The average temperature difference increases by 2-3 degrees, increasing the operating cost by 6%-12%.

Automatic cleaning solution



·Cleaning at any time without shutdown
·Real time monitoring of remote monitoring system
·Automatic cleaning of soft dirt without disassembly.
·Physical cleaning reduces the use of chemicals.
·The average temperature terminal difference is less than 1.5 degrees, saving 5%-15% of the operating cost.

Chiller Energy Consumption Curve



Product Standards and Energy Saving Basis

1. Product standard: JB/T11133-2011 "Water-cooled chiller shell-and-tube condenser rubber ball automatic online cleaning device".
2. Article 8.6.4 of GB50736-2012 "Design Code for Heating Ventilation and Air Conditioning of Civil Buildings": For chillers with water-cooled shell-and-tube condensers, automatic online cleaning devices should be installed.
3. Article 6.2.15 of JGJ176-2009 "Technical Code for the Retrofitting of Public Building on Energy Efficiency": For water-cooled chillers or heat pump units, descaling technology with real-time online cleaning function should be used.
4. Article 4.3 of the 1997 Guidelines E of the American Society of Heating Refrigerating and Air Conditioning Engineers(ARI) pointed out that the fouling thermal resistance on the water side of the heat exchanger has a significant impact on the performance of air conditioning and refrigeration equipment. The condensing temperature is 1 °C higher, and the chiller performance is reduced by about 4 %.

Benefit analysis of energy saving

- The condenser heat exchange tube is kept clean without manual cleaning, so that it is always in the state of maximum heat exchange efficiency.
- Automatic online cleaning does not affect the normal operation of the chiller.
- Reduce power consumption by 5-15%.
- Eliminate the root cause of corrosion and prolong the service life of the condenser heat exchange tube.
- Reduce the loss of the compressor of the chilled water main engine, prolong its service life and reduce the maintenance cost.
- Reduce the use of chemicals, which reduces environmental pollution.
- No waste water discharge and low operating cost.

Some application cases

Shanghai Renji Hospital

Nanning East Railway Station

Buji East Railway Station