Dunham-Bush Central Air Conditioning Products Handbook

(Chiller Applications)

DUNHAM-BUSH

www.dunham-bush.com

As to improvement and innovations for making products better adapted to customers, DB reserves the right to modify the catalogues without prior notice.

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Innovation...Never Ends.

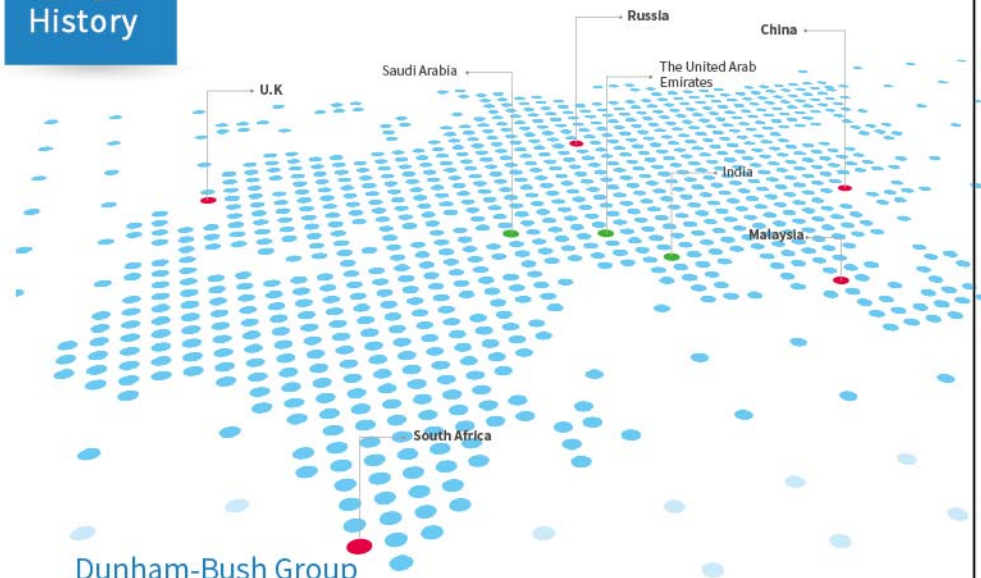
DB

DB
DUNHAM-BUSH

Water Cooled Chilling (Hot) Water Series

Air-cooled cold (hot) water series

DB History



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

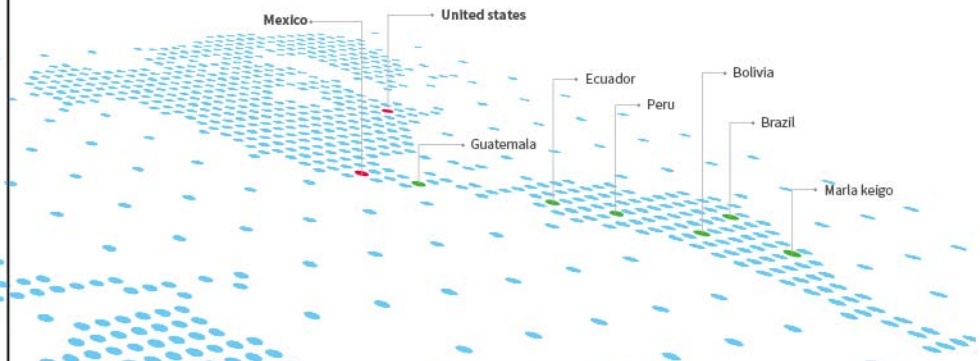
1935 Dunham-Bush opened up R&D and manufacturing center in US

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

WATER-COOLED CHILLER/ HEAT PUMP

Dunham-Bush's centrifugal compressor and water-cooled screw compressor technology was developed at Dunham Bush's Harrisonburg R&D Center in the United States. Since the 1960s, the technology has undergone nearly half a century of continuous innovation and development

Dunham-Bush's centrifugal products cover multiple series such as single-compressor, twin-compressor, two-stage centrifugal oil-free, high-speed direct drive compressor and etc. Water-cooled screw products have multiple series such as vertical hermetic, vertical semi-hermetic, horizontal semi-hermetic, etc. Various starters can be selected such as the star-delta starter, soft starter, VFD starter, medium and high voltage step-down starter, etc. The product is equipped with flooded and falling film evaporators, which are suitable for cooling heat-pump, heat recovery, ice storage and other fields. It is widely used in district cooling and heating, urban complexes, commercial centers, airports, rail transit, stadiums, data centers, process cooling, etc. to meet customer's demand for performance, energy-saving and environmental protection, so as to fully contribute to the construction of green cities.

1Part

DCLCDX

Dual stage centrifugal compression chiller (Heat pump unit)

Energy saving and Environmental friendly | Intelligent control Simple operation | Multiple choice Flexible application | Safe and Reliable | Efficient and Stable

A Product Features

Energy saving and environmentally friendly

- HFC-134a environmentally friendly refrigerant.
- Compliant LEED
- Meet the China (Mainland) energy-saving standard

Intelligent control, simple operation

- Dunham-Bush's third-generation CCS TOUCH control system.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Retain alarm history, easy maintenance.

Multiple options, flexible application

- Dunham-Bush control System (I-VISION) enables remote monitoring, BMS and etc.
- A variety of communication protocols are available, such as Modbus, Bacnet, Profibus, etc.
- Ice storage, and water (ground) source heat pump are optional.

Safe and reliable

- Mandatory oil return to ensure safe operation.
- Semi-hermetic compressor for easy maintenance.
- Closed type motor and refrigerant cooling avoids the risk of oil leakage and refrigerant leakage.
- High-performance gear material and its unique design reduce the stress on a single gear prolongs its service life.
- Multiple protections ensure the safety and stability of the unit.
- The impeller speed is reduced to avoid the problem of surge under low Part load operation

Efficient and stable

- Two-stage compression and high compression ratio ensure more stable operation under extreme conditions and higher compression efficiency.
- Economizer increases the degree of sub-cooling and improve efficiency.
- Built-in oil pump and lubrication system cooling by refrigerant improves the reliability and stability of the compressor.
- 10~100% capacity modulating.

B Air Conditioning Technical Parameters-E Series

Unit model DCLCDX			300E	350E	400E	450E	500E	550E	600E	650E	700E	750E	800E	850E	900E	950E	1000E	1100E
Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989	3164	3340	3516	3867
		Tons	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100
Power		kW	186.4	215.0	250.6	273.4	308.4	339.7	366.5	403.2	430.3	459.6	492.3	522.2	552.6	583.6	611.7	671.6
Cooling COP			5.660	5.726	5.611	5.786	5.700	5.693	5.757	5.667	5.719	5.738	5.714	5.724	5.726	5.723	5.748	5.759
Capacity Range			10%~100%															
Power Supply		V-PH-Hz	380-3-50															
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C															
	Water Flow	m^3/h	181	211	241	271	302	332	362	392	422	453	483	513	543	573	603	664
	Water Pressure Drop	kPa	50.4	49.4	49.3	50.4	51.3	52.1	50.4	47.1	47.9	50.5	49.3	49.6	48.9	49.5	48.7	54.8
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN300	DN350
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C															
	Water Flow	m^3/h	215	250	287	321	358	394	429	466	501	536	573	608	644	680	715	786
	Water Pressure Drop	kPa	44.0	44.4	44.9	44.8	41.4	41.6	41.0	44.2	42.9	43.2	43.7	44.9	46.2	47.4	47.8	47.8
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN300	DN350
Lifting weight		kg	6395	6533	6659	6778	7641	7861	8076	9235	9338	9455	9557	10196	10398	10598	10801	14606
Operating weight		kg	7349	7558	7770	7960	9113	9399	9693	11002	11202	11410	11563	12333	12645	12908	13195	17888
R134a filling volume		kg	368	374	396	408	480	484	490	538	566	597	590	586	638	649	668	901

Note:

1. The data in the table is based on the following working conditions: Air conditioning working conditions: chilled water inlet and outlet temperature 12/7°C, cooling water inlet and outlet temperature 32/37°C; Above passed AHRI certification.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
3. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

Air Conditioning Technical Parameters-E Series

Unit model DCLCDX			1200E	1300E	1400E	1500E	1600E	1700E	1800E	1900E	2000E	2100E	2200E	2300E	2400E	2500E
Cooling Capacity		kW	4219	4571	4922	5274	5626	5977	6329	6680	7032	7384	7735	8087	8438	8790
		Tons	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Power		kW	730.5	789.5	851.6	906.8	979.7	1048.0	1104.0	1165.0	1226.0	1283.0	1346.0	1402.0	1465.0	1521.0
Cooling COP			5.776	5.790	5.780	5.816	5.743	5.701	5.732	5.733	5.733	5.755	5.747	5.768	5.762	5.777
Capacity Range			10%~100%													
Power Supply		V-PH-Hz	380-3-50		10000-3-50											
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C													
	Water Flow	m^3/h	724	784	845	905	966	1026	1086	1146	1207	1267	1327	1388	1448	1508
	Water Pressure Drop	kPa	54.5	54.2	53	54.7	55.4	56.9	57.4	66.4	72.6	70	66	71.4	69.1	65.7
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN450	DN450	DN500
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C													
	Water Flow	m^3/h	857	929	1000	1071	1144	1217	1288	1359	1431	1502	1573	1402	1716	1787
	Water Pressure Drop	kPa	46.3	46.7	53.8	48.7	49.8	50.7	56.5	58.4	58.7	56.2	61.4	57.7	62.5	60.3
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN450	DN450	DN500
Lifting weight		kg	14809	15059	15632	17333	17989	18153	18253	22659	22759	23021	23221	23498	23598	28084
Operating weight		kg	18320	18767	19470	21711	22532	22853	23052	30324	30533	31135	31504	31983	32218	38081
R134a filling volume		kg	964	1014	1066	1100	1139	1178	1218	1716	1716	1752	1789	1789	1847	2029

Note:

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Air Conditioning Technical Parameters-H Series

Unit model DCLCDX			300H	350H	400H	450H	500H	550H	600H	650H	700H	750H	800H	850H
Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989
		Tons	300	350	400	450	500	550	600	650	700	750	800	850
Power		kW	177.8	205.3	231.8	261.2	291.9	322.9	349.5	377.8	404.9	438.5	469.5	497.8
Cooling COP			5.934	5.996	6.066	6.057	6.023	5.990	6.037	6.048	6.078	6.014	5.992	6.004
Capacity Range			10%~100%											
Power Supply		V-PH-Hz	380-3-50											
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow	m^3/h	181	211	241	271	302	332	362	392	422	453	483	513
	Water Pressure Drop	kPa	50.4	49.4	49.3	50.4	51.3	52.1	50.4	47.1	47.9	50.5	49.3	49.6
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C											
	Water Flow	m^3/h	213	249	284	319	355	391	426	461	496	533	569	604
	Water Pressure Drop	kPa	43.4	43.8	44.0	44.3	40.7	41.0	40.4	43.5	42.2	42.6	43.2	44.3
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN250	DN300
Lifting weight		kg	6635	6751	6873	6999	7929	8141	8361	8650	8825	9743	9860	10518
Operating weight		kg	7644	7831	8039	8236	9456	9734	10033	10472	10744	11753	11921	12775
R134a filling volume		kg	423	429	451	463	535	539	545	593	621	652	645	706

Note:

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Air Conditioning Technical Parameters-H Series

Unit model DCLCDX			900H	950H	1000H	1100H	1200H	1300H	1400H	1500H	1600H	1700H	1800H	1900H
Cooling Capacity		kW	3164	3340	3516	3867	4219	4571	4922	5274	5626	5977	6329	6680
		Tons	900	950	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
Power		kW	526.8	552.8	581.2	638.0	694.3	752.2	810.4	864.7	948.8	992.1	1069	1111
Cooling COP			6.006	6.042	6.050	6.063	6.077	6.077	6.074	6.099	5.930	6.025	5.922	5.984
Capacity Range			10%~100%											
Power Supply		V-PH-Hz	380-3-50							10000-3-50				
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow	m^3/h	543	573	603	664	724	784	845	905	966	1026	1086	1146
	Water Pressure Drop	kPa	48.9	49.5	48.7	54.8	54.5	54.2	53	54.7	55.4	56.9	57.4	66.4
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN300	DN300	DN300	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C											
	Water Flow	m^3/h	639	674	710	781	851	922	993	1063	1139	1207	1282	1351
	Water Pressure Drop	kPa	45.6	46.7	47.1	47.1	45.7	46.1	53	48.1	49.4	50	56	57.7
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN300	DN300	DN300	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Lifting weight		kg	10736	10938	11138	14998	15218	15471	15588	17872	18540	18709	18823	23327
Operating weight		kg	13103	13368	13652	18415	18864	19314	19561	22400	23233	23559	23772	31242
R134a filling volume		kg	758	769	788	1036	1099	1149	1201	1250	1289	1328	1368	1966

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Air Conditioning Technical Parameters-H Series

Unit model DCLCDX			2000H	2100H	2200H	2300H	2400H	2500H	2600H	2700H	2800H	2900H	3000H
Cooling Capacity		kW	7032	7384	7735	8087	8438	8790	9142	9493	9845	10196	10548
		Tons	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
Power		kW	1167	1222	1282	1338	1396	1451	1512	1558	1619	1674	1736
Cooling COP			6.026	6.044	6.034	6.046	6.044	6.058	6.047	6.092	6.082	6.092	6.076
Capacity Range			10%~100%										
Power Supply		V-PH-Hz	10000-3-50										
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C										
	Water Flow	m^3/h	1207	1267	1327	1388	1448	1508	1569	1629	1689	1750	1810
	Water Pressure Drop	kPa	72.6	70	66	71.4	69.1	65.7	70.4	69.4	67.5	71.8	70.1
Water Side Pressure Design		MPa	1.0										
Number of Passes			2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500	DN500	DN500	DN500
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C										
	Water Flow	m^3/h	1420	1491	1562	1633	1704	1774	1846	1915	1986	2057	2128
	Water Pressure Drop	kPa	57.9	55.5	60.6	57	61.7	59.5	57.6	55.6	59.6	56.6	60.4
Water Side Pressure Design		MPa	1.0										
Number of Passes			2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500	DN500	DN500	DN500
Lifting weight		kg	23492	23742	23954	24154	24331	29217	29367	29666	29766	30032	30182
Operating weight		kg	31516	32106	32487	32889	33201	39498	39809	40457	40744	41233	41583
R134a filling volume		kg	1966	2002	2039	2039	2097	2379	2379	2448	2492	2492	2568

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Air Conditioning Technical Parameters-P Series

Unit model DCLCDX			300P	350P	400P	450P	500P	550P	600P	650P	700P	750P	800P	850P
Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989
		Tons	300	350	400	450	500	550	600	650	700	750	800	850
Power		kW	173.7	200.4	226.3	254.9	286.1	314.9	342.3	370.0	396.0	429.8	457.6	482.5
Cooling COP			6.074	6.143	6.213	6.206	6.145	6.142	6.164	6.176	6.215	6.135	6.147	6.195
Capacity Range			10%~100%											
Power Supply		V-Ph-Hz	380-3-50											
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow	m^3/h	181	211	241	271	302	332	362	392	422	453	483	513
	Water Pressure Drop	kPa	55.7	54.6	54.5	55.7	56.7	57.6	55.7	52.1	53.0	53.8	54.5	54.8
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C											
	Water Flow	m^3/h	213	248	283	318	354	390	425	460	495	531	567	601
	Water Pressure Drop	kPa	47.4	47.8	48.0	48.4	44.5	44.7	44.2	47.5	46.1	46.6	47.1	48.3
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN250	DN300
Lifting weight		kg	6885	7001	7123	7249	8279	8491	8711	8950	9175	10143	10310	10966
Operating weight		kg	7997	8204	8431	8644	9954	10247	10568	10984	11308	12372	12601	13468
R134a filling volume		kg	522	538	571	590	593	603	620	687	708	736	731	799

Note:
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Air Conditioning Technical Parameters-P Series

Unit model DCLCDX			900P	950P	1000P	1100P	1200P	1300P	1400P	1500P	1600P	1700P	1800P	1900P
Cooling Capacity		kW	3164	3340	3516	3868	4219	4571	4922	5274	5626	5977	6329	6680
		Tons	900	950	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
Power		kW	510.3	539.9	566.7	624.4	679.9	736.5	792.7	846.8	930.2	971.4	1024.0	1106.0
Cooling COP			6.200	6.197	6.204	6.195	6.205	6.206	6.209	6.228	6.048	6.153	6.182	6.038
Capacity Range			10%~100%											
Power Supply		V-Ph-Hz	380-3-50						10000-3-50					
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow	m^3/h	543	573	603	664	724	784	845	905	966	1026	1086	1146
	Water Pressure Drop	kPa	54.1	54.7	53.8	61.0	60.6	60.3	58.9	60.8	61.6	63.2	63.8	71.0
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN300	DN300	DN300	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C											
	Water Flow	m^3/h	636	672	707	778	849	919	990	1060	1136	1204	1274	1349
	Water Pressure Drop	kPa	49.6	51.0	51.5	51.8	50.2	50.6	58.2	52.9	54.3	54.9	61.1	61.4
Water Side Pressure Design		MPa	1.0											
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN300	DN300	DN300	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Lifting weight		kg	11168	11386	11588	15698	15968	16221	16338	18772	19440	19709	19823	24027
Operating weight		kg	13781	14074	14376	19480	20001	20494	20749	23768	24630	25080	25310	31936
R134a filling volume		kg	844	861	887	1170	1231	1304	1352	1406	1454	1501	1550	2135

Note:
1. The data in the table is based on the following working conditions: Air conditioning working conditions: chilled water inlet and outlet temperature 12/7°C, cooling water inlet and outlet temperature 32/37°C; Above passed AHRI certification.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
3. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

Air Conditioning Technical Parameters-P Series

Unit model DCLCDX			2000P	2100P	2200P	2300P	2400P	2500P	2600P	2700P	2800P	2900P	3000P
Cooling Capacity		kW	7032	7384	7735	8087	8438	8790	9142	9493	9845	10196	10548
		Tons	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
Power		kW	1155.0	1209.0	1268.0	1324.0	1382.0	1429.0	1489.0	1544.0	1602.0	1657.0	1717.0
Cooling COP			6.087	6.106	6.100	6.107	6.105	6.149	6.139	6.149	6.145	6.153	6.143
Capacity Range			10%~100%										
Power Supply		V-PH-Hz	10000-3-50										
Chilled Water	Inlet/Outlet water temperature	°C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C										
	Water Flow	m^3/h	1207	1267	1327	1388	1448	1508	1569	1629	1689	1750	1810
	Water Pressure Drop	kPa	77.7	74.9	70.6	76.4	73.9	70.3	75.3	74.2	72.2	76.8	75.0
Water Side Pressure Design		MPa	1.0										
Number of Passes			2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500	DN500	DN500	DN500
Cooling Water	Inlet/Outlet water temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C										
	Water Flow	m^3/h	1418	1489	1560	1631	1701	1771	1842	1912	1983	2054	2125
	Water Pressure Drop	kPa	61.5	59.0	64.4	60.6	65.6	63.2	61.1	59.2	63.4	60.2	64.2
Water Side Pressure Design		MPa	1.0										
Number of Passes			2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500	DN500	DN500	DN500
Lifting weight		kg	24192	24492	24704	24904	25081	30017	30167	30466	30616	30932	31082
Operating weight		kg	32203	32839	33219	33614	33912	40284	40587	41229	41570	42103	42447
R134a filling volume		kg	2135	2180	2226	2226	2285	2594	2594	2671	2722	2722	2799

Note:
1. The data in the table is based on the following working conditions: Air conditioning working conditions: chilled water inlet and outlet temperature 12/7°C, cooling water inlet and outlet temperature 32/37°C; Above passed AHRI certification.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
3. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

Dual Condition Technical Parameters- Ice Storage H Series

Unit model DCLCDX			300 HCS	350 HCS	400 HCS	450 HCS	500 HCS	550 HCS	600 HCS	650 HCS	700 HCS	750 HCS	800 HCS	850 HCS	900 HCS	950 HCS	1000 HCS	1100 HCS
Air Conditioning Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989	3164	3340	3516	3868
		Tons	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100
Ice Storage Condition Cooling Capacity		kW	677.1	790.1	902.4	1015.0	1128.0	1241.0	1354.0	1467.0	1579.0	1692.0	1805.0	1918.0	2031.0	2144.0	2252.0	2477.0
		Tons	193	225	257	289	321	353	385	417	449	481	513	546	578	610	641	704
Power	AC condition	kW	191.4	223.9	252.0	292.7	325.6	356.7	387.5	422.3	455.4	483.3	514.6	547.0	578.8	608.9	641.7	702.6
	Ice storage condition	kW	160.0	189.9	209.8	233.7	260.0	285.0	308.8	337.3	364.9	385.9	410.2	436.1	461.7	484.8	506.9	553.4
AC condition performance			5.512	5.498	5.579	5.405	5.399	5.422	5.444	5.412	5.404	5.456	5.466	5.464	5.467	5.486	5.479	5.505
Ice Storage Performance			4.232	4.161	4.301	4.343	4.338	4.354	4.385	4.349	4.327	4.385	4.400	4.398	4.399	4.422	4.443	4.476
Capacity Range			10%~100%															
Power Supply		V-P-Hz	380-3-50															
AC condition	Inlet/out temperature	°C	Ethylene glycol fluid inlet temperature 12°C, outlet temperature 7°C															
	EG flow rate.	m^3/h	196	228	261	294	326	359	391	424	456	489	522	554	587	620	652	717
	Water Pressure Drop	kPa	61.5	63.6	66.8	69.5	71.7	70.5	66.8	68.6	70.3	71.7	72.6	72.2	73.3	72.5	78.4	79.1
Ice Storage condition	Inlet/out temperature	°C	Ethylene glycol fluid outlet temperature -5.6°C, inlet temperature depends on flow rate															
	EG flow rate.	m^3/h	196	228	261	294	326	359	391	424	456	489	522	554	587	620	652	717
	Water Pressure Drop	kPa	70.7	73.2	76.8	79.9	82.5	81.1	76.9	78.9	80.8	82.5	83.6	83.0	84.3	83.4	90.2	91.0
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN350	DN350	DN350
AC condition	Inlet/out temperature	°C	Cooling Water inlet temperature 32 °C, outlet temperature 37 °C															
	EG flow rate.	m^3/h	215	251	287	326	362	398	434	470	507	543	579	615	651	687	724	790
	Water Pressure Drop	kPa	52.6	53.2	53.5	49.8	50.5	50.7	46.7	53.6	52.3	52.6	49.0	54.5	55.9	52.8	57.9	60.0
Ice Storage condition	Inlet/Outlet water temperature	°C	Cooling water inlet temperature 30°C, outlet temperature depends on flow rate															
	Water Flow	m^3/h	215	251	287	326	362	398	437	470	507	543	579	615	651	687	724	790
	Water Pressure Drop	kPa	53.2	53.8	54.1	50.3	51.1	51.2	47.2	54.2	52.9	53.2	49.5	55.0	56.5	53.4	58.5	60.6
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN350	DN350	DN350
Lifting weight		kg	6951	7073	7199	8179	8391	8611	8950	9890	10043	10210	10968	11086	11288	11591	15598	15818
Operating weight		kg	8125	8349	8560	9815	10106	10423	10984	11974	12233	12464	13470	13670	13947	14379	19314	19739
R134a filling volume		kg	499	529	546	593	603	620	687	708	736	731	799	844	861	887	1,170	1,231

Note:
1. The data in the table is based on the following working conditions: Air conditioning condition: 25% EG inlet and outlet temperature 12/7°C, cooling water inlet and outlet temperature 32/37°C; Ice-storage condition: 25% EG fluid outlet temperature -5.6℃, cooling water inlet temperature 30℃, evaporator side water fouling factor 0.018m².℃/kW, condenser side water fouling factor 0.044m².℃/kW.
2. Above models are the performances of partial available units, Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency; as for specific project selection, please contact Dunham-Bush local office.
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E Dual Condition Technical Parameters- Ice Storage H Series

Unit model DCLCDX			1200 HCS	1300 HCS	1400 HCS	1500 HCS	1600 HCS	1700 HCS	1800 HCS	1900 HCS	2000 HCS	2100 HCS	2200 HCS	2300 HCS	2400 HCS	2500 HCS
Air Conditioning Cooling Capacity		kW	4219	4571	4922	5274	5626	5977	6329	6680	7032	7384	7735	8087	8438	8790
		Tons	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Ice Storage Condition Cooling Capacity		kW	2703.0	2928.0	3304.0	3378.0	3603.0	3832.0	4062.0	4283.0	4508.0	4729.0	4959.0	5179.0	5410.0	5630.0
		Tons	769	833	940	961	1025	1090	1155	1218	1282	1345	1410	1473	1539	1601
Power	AC condition	kW	770.2	829.4	911.4	971.6	1056.5	1117.0	1205.1	1277.2	1337.6	1402.2	1462.5	1495.4	1593.6	1624.8
	Ice storage condition	kW	606.9	654.2	743.1	751.0	839.1	873.1	913.0	973.0	1011.9	1058.9	1103.0	1143.8	1201.4	1243.9
AC condition performance			5.478	5.511	5.401	5.428	5.325	5.351	5.252	5.230	5.257	5.266	5.289	5.408	5.295	5.410
Ice Storage Performance			4.454	4.476	4.446	4.498	4.294	4.389	4.449	4.402	4.455	4.466	4.496	4.528	4.503	4.526
Capacity Range			10%~100%													
Power Supply		V-P-Hz	10000-3-50													
AC condition	Inlet/out temperature	℃	Ethylene glycol fluid inlet temperature 12℃, outlet temperature 7℃													
	EG flow rate.	m³/h	783	848	913	978	1044	1109	1174	1239	1304	1370	1435	1500	1565	1630
	Water Pressure Drop	kPa	79.7	78.7	82.0	83.6	86.4	87.7	91.7	89.2	84.9	83.1	90.1	86.2	85.7	84.1
Ice storage condition	Inlet/out temperature	℃	Ethylene glycol fluid outlet temperature -5.6℃, inlet temperature depends on flow rate													
	EG flow rate.	m³/h	783	848	913	978	1044	1109	1174	1239	1304	1370	1435	1500	1565	1630
	Water Pressure Drop	kPa	91.7	90.6	94.3	96.2	99.5	101.0	106.0	103.0	97.7	95.5	93.6	99.2	98.6	96.7
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN500	DN500	DN500	DN500
AC condition	Inlet/out temperature	℃	Cooling Water inlet temperature 32 ℃, outlet temperature 37 ℃													
	EG flow rate.	m³/h	868	933	1013	1085	1158	1230	1302	1376	1447	1520	1592	1664	1736	1809
	Water Pressure Drop	kPa	59.1	58.8	60.9	62.0	63.1	64.0	60.6	61.1	66.8	64.4	61.0	59.4	63.9	62.2
Ice Storage condition	Inlet/Outlet water temperature	℃	Cooling water inlet temperature 30°C, outlet temperature depends on flow rate													
	Water Flow	m³/h	868	933	1013	1085	1158	1230	1302	1376	1447	1520	1592	1664	1736	1809
	Water Pressure Drop	kPa	59.8	59.4	61.5	62.7	63.8	64.7	61.2	61.8	67.5	65.0	78.9	60.0	64.6	62.8
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500
Lifting weight		kg	16121	16338	18703	18441	19573	19823	23392	23604	23804	24131	24331	29217	29366	29616
Operating weight		kg	20305	20749	23621	23552	24866	25310	31307	31797	32166	32799	33201	39498	39824	40422
R134a filling volume		kg	1,304	1,352	1,406	1,454	1,501	1,550	1,966	2,002	2,039	2,097	2,097	2,379	2,448	2,492

Note:
1.The data in the table is based on the following working conditions: air conditioning working condition: 25% EG fluid inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 32/37 ℃; Ice storage condition: 25% EG fluid water outlet temperature -5.6 ℃, cooling water inlet temperature 30 ℃, evaporator fouling factor 0.018m². ℃/kw, condenser side fouling factor is 0.044m². ℃/kw.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
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F Water Source Heat Pump Technical Parameters-H Series

Unit model DCLCDX			300 HHP	350 HHP	400 HHP	450 HHP	500 HHP	550 HHP	600 HHP	650 HHP	700 HHP	750 HHP	800 HHP	850 HHP	900 HHP	950 HHP	1000 HHP	1100 HHP
Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989	3164	3340	3516	3867
		Tons	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100
Heating Capacity		kW	1121	1306	1490	1676	1862	2057	2232	2419	2607	2788	2972	3160	3344	3528	3709	4087
		Tons	319	371	424	477	530	585	635	688	741	793	845	899	951	1003	1055	1162
Power	Cooling	kW	142.1	164.0	185.7	216.6	239.4	261.7	283.9	311.2	334.7	356.5	378.1	401.7	424.0	446.6	472.8	526.5
	Heating	kW	200.0	231.3	262.8	294.6	327.3	368.9	389.7	424.5	469.7	485.5	516.4	550.3	581.7	612.1	642.6	714.0
Cooling COP			7.424	7.506	7.571	7.304	7.343	7.390	7.430	7.345	7.353	7.397	7.440	7.439	7.464	7.479	7.437	7.345
Capacity Range performance			5.606	5.647	5.669	5.690	5.689	5.576	5.728	5.699	5.550	5.743	5.755	5.742	5.749	5.764	5.772	5.724
Heating condition			10%~100%															
Power Supply		V-P-Hz	380-3-50															
Chilled Water	Inlet/Outlet water temperature	℃	Chilled water outlet temperature 7℃, inlet temperature depends on flow rate															
	Water Flow	m³/h	181	212	242	272	302	333	363	393	423	454	484	514	544	574	605	665
	Water Pressure Drop	kPa	41.7	43.2	45.4	47.2	48.8	48	45.4	46.7	47.8	48.8	49.4	49.1	49.9	49.3	51.7	52.2
Hot source water	Inlet/Outlet water temperature	℃	Heat source side inlet water temperature 15℃, outlet temperature depends on flow rate															
	Water Flow	m³/h	109	127	145	163	181	199	217	235	253	272	290	308	326	344	362	398
	Water Pressure Drop	kPa	16.5	17.1	18	18.7	19.3	20.6	18.0	18.5	18.9	19.3	19.6	19.4	19.8	19.5	20.5	20.7
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN350	DN350	DN350
Cooling Water	Inlet/Outlet water temperature	℃	Cooling water inlet temperature 18℃, outlet temperature depends on flow rate															
	Water Flow	m³/h	109	127	145	163	181	199	217	235	253	272	290	308	326	344	362	398
	Water Pressure Drop	kPa	13.8	13.9	14	12.8	13	13.0	11.9	13.8	13.5	13.5	12.5	14.1	14.5	13.6	14.4	15.2
Hot water	Inlet/Outlet water temperature	℃	Hot water outlet temperature 45℃, inlet temperature depends on flow rate															
	Water Flow	m³/h	181	212	242	272	302	333	363	393	423	454	484	514	544	574	605	665
	Water Pressure Drop	kPa	34.5	34.9	35.1	32	32.5	32.6	29.8	34.7	33.7	34.0	31.4	35.3	36.3	34.1	35.9	37.8
Water Side Pressure Design		MPa	1.0															
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN300	DN300	DN300	DN350	DN350	DN350
Lifting weight		kg	6951	7099	7218	8191	8411	8626	9025	9893	10060	10212	10986	11088	11291	11826	14308	15818
Operating weight		kg	8125	8375	8579	9827	10126	10438	11059	11977	12250	12466	13488	13672	13950	14614	18024	19739
R134a filling volume		kg	499	529	546	593	603	620	687	708	736	731	799	844	861	887	1170	1231

Note:
1. The data in the table is based on the following working conditions: cooling condition: cooling water inlet 18℃, water flow rate 0.103m³/(h.kw), chilled water outlet temperature 7℃, water flow rate 0.172 m³/(h.kw); Heating condition: heat source water inlet temperature 15℃, water flow rate 0.103m³/(h.kw), outlet temperature 45℃, water flow rate 0.172 m³/(h.kw), evaporator side water fouling factor 0.018m².℃/kW, condenser side water fouling factor 0.044m².℃/kW.
2. Above models are the performances of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency; as for specific project selection, please contact Dunham-Bush local office.
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Water Source Heat Pump Technical Parameters-H Series

Unit model DCLCDX			1200 HHP	1300 HHP	1400 HHP	1500 HHP	1600 HHP	1700 HHP	1800 HHP	1900 HHP	2000 HHP	2100 HHP	2200 HHP	2300 HHP	2400 HHP	2500 HHP
Cooling Capacity		kW	4219	4571	4922	5274	5626	5977	6329	6680	7032	7384	7735	8087	8438	8790
		Tons	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Heating Capacity		kW	4469	4830	5192	5564	5977	6335	6729	7110	7477	7839	8210	8580	8955	9326
		Tons	1271	1374	1477	1582	1700	1802	1914	2022	2127	2230	2335	2440	2547	2652
Power	Cooling	kW	571.7	617.9	662.5	709.0	776.4	814.7	887.0	935.1	982.9	1,025.7	1,074.0	1,098.3	1,168.1	1,216.3
	Heating	kW	780.7	843.7	900.1	964.8	1065.4	1116.9	1203.3	1278.3	1337.6	1392.4	1456.4	1519.9	1588.0	1652.1
Cooling COP			7.380	7.398	7.429	7.439	7.246	7.336	7.135	7.144	7.154	7.199	7.202	7.363	7.224	7.227
Capacity Range performance			5.724	5.725	5.768	5.767	5.610	5.672	5.592	5.562	5.590	5.630	5.637	5.645	5.639	5.645
Heating condition			10%~100%													
Power Supply		V-P-Hz	10000-3-50													
Chilled Water	Inlet/Outlet water temperature	°C	Chilled water outlet temperature 7°C, inlet temperature depends on flow rate													
	Water Flow	m^3/h	726	786	847	907	968	1028	1089	1149	1210	1270	1330	1391	1451	1512
	Water Pressure Drop	kPa	52.5	51.9	54.1	55.2	57.1	57.9	60.6	58.9	56.1	54.8	59.5	56.9	56.6	55.5
Hot source water	Inlet/Outlet water temperature	°C	Heat source side inlet water temperature 15°C, outlet temperature depends on flow rate													
	Water Flow	m^3/h	435	471	507	543	579	616	652	688	724	761	797	833	869	905
	Water Pressure Drop	kPa	20.9	20.6	21.5	21.9	22.7	23	24	23.4	22.3	21.8	23.6	22.6	22.5	22
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500
Cooling Water	Inlet/Outlet water temperature	°C	Cooling water inlet temperature 18°C, outlet temperature depends on flow rate													
	Water Flow	m^3/h	435	471	507	543	579	616	652	688	724	761	797	833	869	905
	Water Pressure Drop	kPa	14.7	14.8	15.2	15.5	15.8	16	15.1	15.2	16.8	16.1	15.2	14.8	16	15.5
Hot water	Inlet/Outlet water temperature	°C	Hot water outlet temperature 45°C, inlet temperature depends on flow rate													
	Water Flow	m^3/h	726	786	847	907	968	1028	1089	1149	1210	1270	1330	1391	1451	1512
	Water Pressure Drop	kPa	36.7	37.0	37.9	38.7	39.4	40	37.7	38.1	42	40.3	38	36.9	40	38.8
Water Side Pressure Design		MPa	1.0													
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN400	DN400	DN400	DN400	DN450	DN450	DN450	DN450	DN450	DN500	DN500	DN500
Lifting weight		kg	16121	16794	18703	18441	19573	19888	23392	23604	23804	24054	24331	29217	29366	29616
Operating weight		kg	20305	21205	23621	23552	24866	25375	31307	31797	32166	32722	33201	39498	39824	40422
R134a filling volume		kg	1,304	1,352	1,406	1,454	1,501	1,550	1,966	2,002	2,039	2,097	2,097	2,379	2,448	2,492

Note:
1. The data in the table is based on the following working conditions: cooling condition: cooling water inlet 18°C, water flow rate 0.103m^3/(h.kw), chilled water outlet temperature 7°C, water flow rate 0.172 m^3/(h.kw); Heating condition: heat source water inlet temperature 15℃, water flow rate 0.103m^3/(h.kw), outlet temperature 45°C, water flow rate 0.172 m^3/(h.kw), evaporator side water fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
3. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

Ground Source Heat Pump Technical Parameters-H Series

Unit model DCLCDX			300 HHPG	350 HHPG	400 HHPG	450 HHPG	500 HHPG	550 HHPG	600 HHPG	650 HHPG	700 HHPG	750 HHPG	800 HHPG	850 HHPG	900 HHPG
Cooling Capacity		kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637	2813	2989	3164
		Tons	300	350	400	450	500	550	600	650	700	750	800	850	900
Heating Capacity		kW	1091	1271	1456	1637	1812	1992	2172	2354	2537	2713	2892	3075	3255
		Tons	310	361	414	466	515	567	618	670	722	772	823	875	926
Power	Cooling	kW	148.3	171.0	194.7	225.7	250.7	274.1	297.8	325.1	350.5	372.3	395.4	421.2	444.1
	Heating	kW	201.7	233.3	266.8	298.0	330.2	361.9	393.3	428.3	463.1	490.9	521.6	555.9	588.6
Cooling COP			7.114	7.199	7.221	7.009	7.012	7.056	7.083	7.029	7.021	7.083	7.113	7.096	7.125
Heating condition performance			5.408	5.447	5.458	5.494	5.487	5.505	5.522	5.496	5.478	5.527	5.544	5.532	5.530
Capacity Range			10%~100%												
Power Supply		V-P-Hz	380-3-50												
Chilled Water	Inlet/Outlet water temperature	°C	Inlet temperature depends on flow water, outlet temperature 7°C												
	Water Flow	m^3/h	181	212	242	272	302	333	363	393	423	454	484	514	544
	Water Pressure Drop	kPa	41.7	43.2	45.4	47.2	48.8	48.0	45.4	46.7	47.8	48.8	49.4	49.1	49.9
Heat source water	Inlet/Outlet water temperature	°C	Heat source water inlet temperature 10°C, outlet temperature depends on flow rate												
	Water Flow	m^3/h	227	265	302	340	378	416	454	491	529	567	605	643	680
	Water Pressure Drop	kPa	62.8	65.1	68.3	71.1	73.5	72.2	68.4	70.2	71.9	73.5	74.4	73.9	75.1
Water Side Pressure Design		MPa	1.0												
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Cooling Water	Inlet/Outlet water temperature	°C	Cooling water inlet temperature 25°C, water outlet temperature depends on flow rate												
	Water Flow	m^3/h	227	265	302	340	378	416	454	491	529	567	605	643	680
	Water Pressure Drop	kPa	59.8	55.0	55.4	50.5	51.3	51.5	47.0	54.7	53.2	53.6	49.6	55.7	57.3
Hot water	Inlet/Outlet water temperature	°C	Hot water inlet temperature depends on flow rate, outlet temperature 45°C												
	Water Flow	m^3/h	181	212	242	272	302	333	363	393	423	454	484	514	544
	Water Pressure Drop	kPa	34.5	34.9	35.1	32	32.5	32.6	29.8	34.7	33.7	33.9	31.4	35.3	36.3
Water Side Pressure Design		MPa	1.0												
Number of Passes			2	2	2	2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN200	DN200	DN200	DN200	DN250	DN250	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Lifting weight		kg	6951	7099	7218	8191	8411	8626	9025	9893	10060	10212	10986	11088	11291
Operating weight		kg	8125	8375	8579	9827	10126	10438	11059	11977	12250	12466	13488	13672	13950
R134a filling volume		kg	499	529	546	593	603	620	687	708	736	731	799	844	861

Note:
1. The data in the table is based on the following working conditions: cooling condition: cooling water inlet 25°C, water flow rate 0.215m^3/(h.kw), chilled water outlet temperature 7°C, water flow rate 0.172 m^3/(h.kw); Heating condition: heat source inlet temperature 10°C, water flow rate 0.215m^3/(h.kw), outlet temperature 45°C, water flow rate 0.172 m^3/(h.kw), evaporator side water fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
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Ground Source Heat Pump Technical Parameters-H Series

Unit model DCLCDX			950 HHPG	1000 HHPG	1100 HHPG	1200 HHPG	1300 HHPG	1400 HHPG	1500 HHPG	1600 HHPG	1700 HHPG	1800 HHPG
Cooling Capacity		kW	3340	3516	3868	4219	4571	4922	5274	5626	5977	6329
		Tons	950	1000	1100	1200	1300	1400	1500	1600	1700	1800
Heating Capacity		kW	3486	3604	3976	4336	4694	5061	5408	5810	6158	6540
		Tons	991	1025	1131	1233	1335	1439	1538	1652	1751	1860
Power	Cooling	kW	468.8	494.5	549.8	600.0	647.6	696.4	740.9	811.5	855.1	924.6
	Heating	kW	627.7	648.1	719.9	788.8	851.3	918.0	973.5	1074.1	1126.4	1212.5
Cooling COP			7.125	7.110	7.035	7.032	7.058	7.068	7.118	6.933	6.990	6.845
Heating condition performance			5.554	5.561	5.523	5.497	5.514	5.513	5.555	5.409	5.467	5.394
Capacity Range			10%~100%									
Power Supply		V-P-Hz	380-3-50			10000-3-50						
Chilled Water	Inlet/Outlet water temperature	°C	Inlet temperature depends on flow water, outlet temperature 7°C									
	Water Flow	m³/h	575	605	665	726	786	847	907	968	1028	1089
	Water Pressure Drop	kPa	49.3	51.7	52.2	52.5	51.9	54.1	55.2	57.1	57.9	60.6
Hot source water	Inlet/Outlet water temperature	°C	Heat source water inlet temperature 10°C，outlet temperature depends on flow rate									
	Water Flow	m³/h	718	756	832	907	983	1058	1134	1210	1285	1361
	Water Pressure Drop	kPa	74.2	77.8	78.4	79.0	78.0	81.3	83.0	85.8	87.1	91.1
Water Side Pressure Design		MPa	1.0									
Number of Passes			2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Cooling Water	Inlet/Outlet water temperature	°C	Cooling water inlet temperature 25°C, water outlet temperature depends on flow rate									
	Water Flow	m³/h	718	756	832	907	983	1058	1134	1210	1285	1361
	Water Pressure Drop	kPa	53.8	56.7	59.8	57.9	58.4	59.8	61.1	62.2	63.2	59.6
Hot water	Inlet/Outlet water temperature	°C	Hot water inlet temperature depends on flow rate, outlet temperature 45°C									
	Water Flow	m³/h	575	605	665	726	786	847	907	968	1028	1089
	Water Pressure Drop	kPa	34.1	35.9	37.8	36.7	37.0	37.9	38.7	39.4	40	37.7
Water Side Pressure Design		MPa	1.0									
Number of Passes			2	2	2	2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN350	DN350	DN350	DN350	DN350	DN400	DN400	DN400	DN400	DN450
Lifting weight		kg	14898	14308	15818	16121	16794	18703	18441	19573	19888	23392
Operating weight		kg	18098	18024	19739	20305	21205	23621	23552	24866	25375	31307
R134a filling volume		kg	1,123	1,170	1,231	1,304	1,352	1,406	1,454	1,501	1,550	1,966

Note:
1. The data in the table is based on the following working conditions: cooling condition: cooling water inlet 25°C, water flow rate 0.215m³/(h.kw), chilled water outlet temperature 7°C, water flow rate 0.172 m³/(h.kw); Heating condition: heat source inlet temperature 10°C, water flow rate 0.215m³/(h.kw), outlet temperature 45°C, water flow rate 0.172 m³/(h.kw), evaporator side water fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
3. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

Ground Source Heat Pump Technical Parameters-H Series

Unit model DCLCDX			1900 HHPG	2000 HHPG	2100 HHPG	2200 HHPG	2300 HHPG	2400 HHPG	2500 HHPG
Cooling Capacity		kW	6680	7032	7384	7735	8087	8438	8790
		Tons	1900	2000	2100	2200	2300	2400	2500
Heating Capacity		kW	6912	7234	7626	7981	8341	8704	9065
		Tons	1966	2057	2169	2270	2372	2476	2578
Power	Cooling	kW	977.0	1025.2	1073.6	1119.6	1167.0	1220.1	1267.3
	Heating	kW	1289.3	1314.3	1410.7	1469.8	1533.6	1601.5	1665.7
Cooling COP			6.837	6.859	6.878	6.909	6.930	6.916	6.936
Heating condition performance			5.361	5.504	5.406	5.430	5.439	5.435	5.442
Capacity Range			10%~100%						
Power Supply		V-P-Hz	10000-3-50						
Chilled Water	Inlet/Outlet water temperature	°C	Inlet temperature depends on flow water, outlet temperature 7°C						
	Water Flow	m³/h	1149	1210	1270	1331	1391	1452	1512
	Water Pressure Drop	kPa	58.9	56.1	54.8	59.5	56.9	56.6	55.5
Hot source water	Inlet/Outlet water temperature	°C	Heat source water inlet temperature 10°C，outlet temperature depends on flow rate						
	Water Flow	m³/h	1436	1512	1588	1663	1739	1814	1890
	Water Pressure Drop	kPa	88.6	81.5	82.4	89.4	85.6	85.0	83.4
Water Side Pressure Design		MPa	1.0						
Number of Passes			2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN500	DN500	DN500
Cooling Water	Inlet/Outlet water temperature	°C	Cooling water inlet temperature 25°C, water outlet temperature depends on flow rate						
	Water Flow	m³/h	1436	1512	1588	1663	1739	1814	1890
	Water Pressure Drop	kPa	60.1	66.2	63.5	60.0	58.2	63.1	61.2
Hot water	Inlet/Outlet water temperature	°C	Hot water inlet temperature depends on flow rate, outlet temperature 45°C						
	Water Flow	m³/h	1149	1210	1270	1331	1391	1452	1512
	Water Pressure Drop	kPa	38.1	42	40.2	38	36.9	40	38.8
Water Side Pressure Design		MPa	1.0						
Number of Passes			2	2	2	2	2	2	2
Inlet/Outlet Connection Size			DN450	DN450	DN450	DN450	DN500	DN500	DN500
Lifting weight		kg	23604	23804	24131	24331	29217	29366	29616
Operating weight		kg	31797	32166	32799	33210	39498	39824	40422
R134a filling volume		kg	2,002	2,039	2,097	2,097	2,379	2,448	2,492

Note:
1. The data in the table is based on the following working conditions: cooling condition: cooling water inlet 25°C, water flow rate 0.215m³/(h.kw), chilled water outlet temperature 7°C, water flow rate 0.172 m³/(h.kw); Heating condition: heat source inlet temperature 10°C, water flow rate 0.215m³/(h.kw), outlet temperature 45°C, water flow rate 0.172 m³/(h.kw), evaporator side water fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.
2. Above models are the performance of partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs of users based on the user's different requirements for cooling capacity, operating conditions and efficiency. As for specific project selection, please contact Dunham-Bush local office.
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1Part

DCLC(D)M

Magnetic Bearing VFD Centrifugal Chiller (Heat Pump) Unit

A Product Features

Energy saving and environmental friendly

- Adopting HFC-134a environmental friendly refrigerant
- Applicable to the LEED certification.
- Ultra-high efficiency, selections certified by AHRI

Low noise operation

- Magnetic bearing realizes zero friction and silent operation.
- Drive directly and less transmission parts ensure low noise.
- VFD with self-adjustment avoids surge and blockage

Safe and Reliable

- VFD starter reduces starting current.
- Emergency power-off protection design ensures safety.
- Oil-free design makes simple and safe system. Multiple protections ensure the safety and
- stability

Easy maintenance

- Directly drive with few transmission parts.
- No oil circuit, no oil filter, no oil pump, etc.
- Reduce maintenance cost.

Intelligent control and Easy operation

- Dunham-bush 3rd-Generation CCS TOUCH control system.
- Automatic control and real-time monitoring.
- Friendly interface and easy operation. Self diagnosis on alarm makes maintenance easier.

Efficient and Stable

- Magnetic bearing compressor with oil-free operation, improves heat exchange efficiency.
- Drive directly makes high power convert
- efficiency
- VFD with stable operation.
- Two-stage compression extends the operating range.
  EEV throttling makes precise control.

Multiple choices and flexible application

- Dunham-Bush I-VISION control system realizes remote monitoring and BAS, etc.
- Variable BMS communication protocols, such as Modbus, Bacnet, Profibus, etc.
- Flexible application, such as ice storage, heat recovery, etc

B DCLCM Magnetic Bearing Unit (E series)

Unit model			DCLCM 100 CSE	DCLCM 150 DSE	DCLCM 200 FSE	DCLCM 250 CDE	DCLCM 300 DDE	DCLCM 350 DSFSE	DCLCM 400 FDE	DCLCM 450 DTE	DCLCM 500 DDFSE	DCLCM 550 DSFDE	DCLCM 600 FTE
Unit	Capacity	kW	352	527	703	879	1055	1231	1406	1582	1748	1934	2110
		Tons	100	150	200	250	300	350	400	450	500	550	600
	Input power	kW	56.4	89.8	112.2	150.3	177	199	221	262.7	284.1	305.5	327
	Full loading COP	kW/kW	6.24	5.87	6.27	5.85	5.96	6.19	6.36	6.02	6.19	6.33	6.45
	Integrated part load value	NPLV	9.97	10.58	10.7	10.48	10.93	11.01	11.19	11.05	11.12	11.18	11.33
Motor parameter	Operating power supply	V-P-Hz	380-3-50										
	Operating current	A	120	166	208	300	330	371	412	492	532	573	614
	Startup current	A	2	2	2	2	2	2	2	2	2	2	2
Evaporator	Flow	m^3/h	60	90	121	151	181	211	241	271	302	332	362
	Pressure drop	kPa	64	64	64	68	67	67	68	74	75	75	74
Condenser	Flow	m^3/h	71	107	141	178	213	248	282	319	354	388	422
	Pressure drop	kPa	60	61	60	69	65	68	67	78	75	73	72
Weight	Operating weight	kg	1884	2234	2855	3565	4157	4613	5246	6282	7247	7561	7855
	Lifting weight	kg	1590	1880	2277	2900	3375	3732	4184	5020	5557	5734	5903

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 30/35 ℃; Evaporator fouling factor 0.0172m^2.°C/kw, condenser side fouling factor is 0.044m^2.°C/kw;100RT to 200RT units in above table, evaporator and condenser have 3 passes, 250 RT to 600RT units all have 2 passes;
2. 380V-3P-50Hz，380V-3P-60Hz、400V-3P-50Hz、400V-3P-60Hz、460V-3P-60Hz will be available;
3.Units adopt VFD;
4.Due to the continuous research and innovation, please confirm with Dunham-Bush local office for the latest parameters.

DCLCM Magnetic Bearing Unit (P series)

Unit model			DCLCM 100 CSP	DCLCM 150 DSP	DCLCM 200 FSP	DCLCM 250 CDP	DCLCM 300 DDP	DCLCM 350 DSFSP	DCLCM 400 FDP	DCLCM 450 DTP	DCLCM 500 DDFSP	DCLCM 550 DSFDP	DCLCM 600 FTP
Unit	Capacity	kW	352	527	703	879	1055	1231	1406	1582	1748	1934	2110
		Tons	100	150	200	250	300	350	400	450	500	550	600
	Input power	kW	53.9	86.3	107.4	143	170.1	190.7	213.9	253	274.8	295.2	316.3
	Full loading COP	kW/kW	6.53	6.11	6.55	6.15	6.2	6.46	6.57	6.25	6.4	6.55	6.67
	Integrated part load value	NPLV	10.27	10.99	11.17	10.92	11.35	11.43	11.57	11.36	11.4	11.47	11.63
Motor parameter	Operating power supply	V-P-Hz	380-3-50										
	Operating current	A	115	164	204	292	324	363	407	482	523	562	602
	Startup current	A	2	2	2	2	2	2	2	2	2	2	2
Evaporator	Flow	m³/h	60	90	121	151	181	211	241	271	302	332	362
	Pressure drop	kPa	50	42	45	52	50	60	69	84	86	83	82
Condenser	Flow	m³/h	70	106	140	177	212	246	280	318	352	386	420
	Pressure drop	kPa	50	46	40	56	64	55	63	81	83	80	79
Weight	Operating weight	kg	1936	2851	3444	4625	4827	5610	5718	6659	7352	7666	7960
	Lifting weight	kg	1630	2300	2707	3750	3860	4457	4519	5235	5642	5819	5988

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 30/35℃; Evaporator fouling factor 0.0172m²°C/kw, condenser side fouling factor is 0.044m². °C/kw;100RT to 200RT units in above table, evaporator and condenser have 3 passes, 250 RT to 600RT units all have 2 passes;
2. 380V-3P-50Hz，380V-3P-60Hz、400V-3P-50Hz、400V-3P-60Hz、460V-3P-60Hz will be available;
3.Units adopt VFD;
4.Due to the continuous research and innovation, please confirm with Dunham-Bush local office for the latest parameters.

DCLCM Magnetic Bearing Unit Technical (Module series)

Single module unit model			DCLCM100CS-M	DCLCM125CS-M	DCLCM150DS-M
Unit	Capacity	kW	352	440	527
		Tons	100	125	150
	Input power	kW	56.5	76.8	91.5
	Full loading COP	kW/kW	6.23	5.73	5.76
	Integrated part load value	NPLV	10.13	10.3	10.62
Motor parameter	Operating power supply	V-P-Hz	380-3-50		
	Operating current	A	115	147	163
	Startup current	A	2	2	2
Evaporator	Flow	m³/h	60	76	90
	Pressure drop	kPa	63	67	75
Condenser	Flow	m³/h	71	90	107
	Pressure drop	kPa	70	70	83
Weight	Operating weight	kg	2189	2288	2359
	Lifting weight	kg	1765	1815	1870

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 30/35℃; Evaporator fouling factor 0.0172m². ℃/kw, condenser side fouling factor is 0.044m². ℃/kw; Evaporator and condenser used for models of 100RT-150RT in table are 4 passes.
2. 380V-3P-50Hz，380V-3P-60Hz、400V-3P-50Hz、400V-3P-60Hz、460V-3P-60Hz will be available;
3.Units adopt VFD;
4.Due to the continuous research and innovation, please confirm with Dunham-Bush local office for the latest parameters.

DCLCM Magnetic Bearing Unit (P series)

Unit model			DCLCDM 300P	DCLCDM 350P	DCLCDM 400P	DCLCDM 450P	DCLCDM 500P	DCLCDM 550P	DCLCDM 600P	DCLCDM 650P	DCLCDM 700P	DCLCDMT 750P
Unit	Capacity	kW	1055	1231	1406	1582	1758	1934	2110	2285	2461	2637
		Tons	300	350	400	450	500	550	600	650	700	750
	Input power	kW	161.8	188.7	212.8	247.3	272.5	300.4	322.7	348.2	375.6	393.5
	Full loading COP	kW/kW	6.52	6.52	6.61	6.4	6.45	6.44	6.54	6.56	6.55	6.7
	Integrated part load value	NPLV	9.65	9.82	9.99	10.07	10.21	10.27	10.47	10.53	10.5	10.91
Motor parameter	Operating power supply	V-P-Hz	380-3-50									
	Operating current		262	305	346	402	444	488	525	567	612	642
	Startup current		10	10	10	10	10	10	10	10	10	10
Evaporator	Flow	m³/h	181	211	241	272	302	332	362	392	422	453
	Pressure drop	kPa	87	83	79	76	74	88	62	63	72	50
Condenser	Flow	m³/h	210	245	280	315	350	385	420	455	490	525
	Pressure drop	kPa	70	91	85	81	78	76	64	64	73	53
Weight	Operating weight	kg	6532	6642	6857	8077	8362	8507	9568	9859	9859	15770
	Lifting weight	kg	5400	5450	5550	6490	6690	6790	7700	7850	7850	12480

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 30/35℃; Evaporator fouling factor 0.0172m². °C/kw, condenser side fouling factor is 0.044m². °C/kw;
2、Above units' power supply 380v-3p-50Hz, units adopt VFD;
3、Above models are partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs based on the user's different requirements for cooling capacity, operating conditions and efficiency; as for specific project selection, please contact Dunham-Bush local office;
4. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

DCLCM Magnetic Bearing Unit (P series)

Unit model			DCLCDMT 800P	DCLCDMT 850P	DCLCDMT 900P	DCLCDMT 950P	DCLCDMT 1000P	DCLCDMT 1100P	DCLCDMT 1200P	DCLCDMT 1300P	DCLCDMT 1400P
Unit	Capacity	kW	2813	2989	3164	3340	3516	3868	4219	4571	4922
		Tons	800	850	900	950	1000	1100	1200	1300	1400
	Input power	kW	421.9	446.5	476	502.4	524.2	576.1	631.2	685.4	735.7
	Full loading COP	kW/kW	6.67	6.69	6.65	6.65	6.71	6.71	6.68	6.67	6.69
	Integrated part load value	NPLV	10.88	10.96	10.91	10.95	11.04	11.1	11.1	11.09	11.08
Motor parameter	Operating power supply	V-P-Hz	380-3-50								
	Operating current	A	686	726	774	818	854	940	1026	1116	1198
	Startup current	A	10	10	10	10	10	10	10	10	10
Evaporator	Flow	m^3/h	483	513	543	573	603	664	724	784	845
	Pressure drop	kPa	56	62	69	62	57	59	69	65	65
Condenser	Flow	m^3/h	560	595	630	665	700	770	840	910	980
	Pressure drop	kPa	60	53	59	65	58	59	58	67	66
Weight	Operating weight	kg	15770	16050	16050	16360	16944	19068	19348	19736	20338
	Lifting weight	kg	12480	12680	12680	12880	13280	14720	14920	15120	15520

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7 ℃, cooling water inlet/outlet temperature 30/35℃; Evaporator fouling factor 0.0172m^2. ℃/kw, condenser side fouling factor is 0.044m^2. ℃/kw;
2.Above units' power supply 380v-3p-50Hz, units adopt VFD.
3.Above models are partial available units. Dunham-Bush can provide Users with specific computer selection to satisfy the needs based on the user's different requirements for cooling capacity, operating conditions and efficiency; as for specific project selection, please contact Dunham-Bush local office.
4. Due to the continuous research and innovation, please confirm with Dunham-Bush local Office for the latest parameters.

1Part

WCFX-RH

Ultra-efficient series water-cooled fully hermetic screw chiller

Energy saving and Environmental friendly | Intelligent control Easy operation | Optional functions | Safe and Reliable | Efficient and Stable

Product Features

Energy saving and Environmentally friendly

- Adopting HFC-134a environmental friendly refrigerant.
- Applicable to the LEED certification.
- Ultra-high efficiency, selections certified by AHRI.

Intelligent control and Easy operation

- Intelligent control and real-time monitoring.
- Friendly interface and easy operation.
- Self diagnosis on alarm makes maintenance easier
- Optional for remote monitoring and group control;
- Standard RS485 communication card, and variable BAS communication protocols to choose from, such as Modbus, Bacnet, Profibus, etc.

Optional functions

- Partial heat recovery
- Fully heat recovery

Safe and Reliable

- Optimized oil management system separates oil from refrigerant effectively.
- Patent hermetically sealed twin-screw compressor offers free maintenance, and avoids leakage of oil& refrigerant.
  Multiple protections and automatic monitoring ensures the safety and stability.

Efficient and Stable

- Flooded evaporator design improves heat exchange efficiency.
- EEV throttling ensures precise control.
- Economizer increases cooling capacity and improves system performance.
- Vertical compressor reduces the spindle load and prolongs its service life.
- Asymmetric linear rotor design offers efficiency improvement.

WCFXR-H Series Single Compressor Unit

Unit model WCFX		10 SRH	12 SRH	15 SRH	19 SRH	20 SRH	23 SRH	24 SRH	27 SRH	30 SRH	36 SRH	41 SRH	46 SRH
Cooling Capacity	kW	206.3	256.9	311.2	388.8	481.0	542.9	584.0	644.4	735.7	850.0	976.5	1139.2
	RT	59	73	88	110	137	154	166	183	209	241	277	324
	10^4kcal/h	17.7	22.1	26.8	33.4	41.3	46.7	50.2	55.4	63.2	73.1	83.9	97.9
COP		5.65	5.67	5.66	5.81	5.80	6.11	6.08	6.15	6.15	6.06	6.07	6.06
Capacity Range		25-100% stepless modulating											
Power Supply		380V/3P/50HZ											
Compressor													
Quantity		1	1	1	1	1	1	1	1	1	1	1	1
Total Power Input	kW	36.5	45.3	55.0	66.9	82.9	88.9	96.1	104.7	119.6	140.3	161.0	188.0
Rated Current	A	66	82	101	117	144	154	168	182	208	245	282	295
Unit Maximum Startup Current	A	206	286	311	355	355	355	461	461	493	494	570	761
Evaporator													
Chilled water flow rate	m^3/h	35.4	44.1	53.4	66.7	82.6	93.2	100.2	110.6	126.3	145.9	167.6	195.5
Water pressure drop	kPa	25.4	27.1	25.6	59.7	63.0	66.0	63.3	67.9	66.2	64.5	62.3	59.6
Inlet/Outlet connection size	DN	100	125	125	125	125	125	150	150	150	150	200	200
Condenser													
Cooling water flow rate	m^3/h	42.0	52.3	63.4	78.9	97.7	109.4	117.8	129.7	148.1	171.5	197.0	229.8
Water pressure drop	kPa	20.5	20.9	20.4	38.4	39.5	43.6	41.2	42.9	42.9	34.3	36.7	36.5
Inlet/Outlet connection size	DN	100	100	125	125	150	150	150	150	200	200	200	200
General Parameter													
Unit Dimension	Length mm	3200	3200	3280	3860	3900	3900	3940	3920	3990	3890	3890	3930
	Width mm	1130	1140	1180	1190	1230	1230	1380	1380	1365	1800	1800	1800
	Height mm	1800	1830	1980	2200	2260	2260	2310	2310	2380	2180	2250	2320
Unit Shipping weight	kg	1860	1950	2180	2570	2780	2870	3010	3110	3370	4580	5120	5540
Unit Operating weight	kg	1980	2090	2350	2750	3000	3100	3270	3390	3700	4990	5600	6070
R134a filling volume	kg	100	120	130	140	150	160	170	180	200	240	260	300

Note:

1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m². °C/kw, condenser side fouling factor is 0.044m². °C/kw under standard 2 passes heat exchanger.

2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.

3.Above selection is just for reference, with different combination, chiller will same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.

4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation

5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

WCFXR-H Series Dual-compressor Unit

Unit model WCFX		38 TRH	40 TRH	46 TRH	50 TRH	54 TRH	57 TRH	60 TRH	66 TRH	73 TRH	75 TRH	81 TRH	87 TRH	90 TRH
Cooling Capacity	kW	790.2	978.2	1100.9	1212.8	1317.0	1399.4	1486.2	1593.4	1724.4	1845.6	1970.9	2134.2	2293.2
	RT	224	278	313	345	374	398	422	453	490	524	560	606	651
	10^4kcal/h	67.9	84.1	94.6	104.3	113.2	120.3	127.8	137.0	148.2	158.7	169.4	183.5	197.1
COP		6.08	6.08	6.14	6.42	6.44	6.41	6.37	6.31	6.34	6.34	6.35	6.38	6.36
Capacity Range		12.5-100% stepless modulating												
Power Supply		380V/3P/50HZ												
Compressor														
Quantity		2	2	2	2	2	2	2	2	2	2	2	2	2
Total Power Input	kW	130.0	161.0	179.2	188.8	204.5	218.4	233.4	252.6	272.1	291.0	310.5	334.6	360.7
Rated Current	A	227	281	310	327	355	380	407	440	474	509	544	554	567
Unit Maximum Startup Current	A	559	559	559	665	718	759	791	858	858	934	1007	1198	1267
Evaporator														
Chilled water flow rate	m^3/h	135.6	167.9	188.9	208.1	226.0	240.2	255.1	273.4	295.9	316.7	338.2	366.3	393.5
Water pressure drop	kPa	60.7	62.5	67.0	67.5	70.8	67.0	66.2	66.3	68.0	68.5	66.6	68.3	68.2
Inlet/Outlet connection size	DN	150	200	200	200	200	250	250	250	250	250	250	250	250
Condenser														
Cooling water flow rate	m^3/h	159.4	197.3	221.7	242.7	263.5	280.2	297.8	319.7	345.7	370.0	395.1	427.5	459.6
Water pressure drop	kPa	37.9	38.2	45.7	45.1	45.4	44.6	44.1	42.6	42.9	43.0	43.1	42.9	41.6
Inlet/Outlet connection size	DN	200	200	200	200	200	250	250	250	250	250	250	250	250
General Parameter														
Unit Dimension	Length mm	4020	3900	4140	4140	4150	4270	4260	4430	4430	4430	4430	4430	4430
	Width mm	1370	1440	1440	1440	1520	1520	1570	2270	2270	2270	2270	2270	2270
	Height mm	2380	2430	2480	2480	2480	2530	2530	2400	2460	2500	2540	2680	2680
Unit Shipping weight	kg	4330	4640	4980	5160	5480	5770	5990	7370	8030	8290	8640	9190	9280
Unit Operating weight	kg	4690	5090	5580	5720	6090	6410	6700	8140	8870	9210	9610	10280	10410
R134a filling volume	kg	200	260	310	310	310	370	380	380	410	410	450	520	520

Note:

1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m². °C/kw, condenser side fouling factor is 0.044m². °C/kw under standard 2 passes heat exchanger.

2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.

3.Above selection is just for reference, with different combination, chiller with same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.

4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation

5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

1Part

WCFX-R

Water cooled screw chiller

A Product Features

Energy saving and Environmentally friendly

- Adopting HFC-134a environmental friendly refrigerant.
- Applicable to the LEED certification.
- Ultra-high efficiency, selections certified by AHRI.

Intelligent control and Easy operation

- Intelligent control and real-time monitoring.
- Friendly interface and easy operation.
- Self diagnosis on alarm makes maintenance easier
- Optional for remote monitoring and group control;
- Standard RS485 communication card, and variable BAS communication protocols to choose from, such as Modbus, Bacnet, Profibus, etc.

Optional functions

- Partial heat recovery
- Fully heat recovery

Safe and Reliable

- Optimized oil management system separates oil from refrigerant effectively.
- Patent hermetically sealed twin-screw compressor offers free maintenance, and avoids leakage of oil& refrigerant.
  Multiple protections and automatic monitoring ensures the safety and stability.

Efficient and Stable

- Flooded evaporator design improves heat exchange efficiency.
- EEV throttling ensures precise control.
- Economizer increases cooling capacity and improves system performance.
- Vertical compressor reduces the spindle load and prolongs its service life.
- Asymmetric linear rotor design offers efficiency improvement.

B WCFXR-S Series Single Compressor Unit

Unit model WCFX		10 SRS	12 SRS	15 SRS	19 SRS	20 SRS	23 SRS	24 SRS	27 SRS	30 SRS	36 SRS	41 SRS	46 SRS
Cooling Capacity	kW	204.1	254.5	307.8	379.3	470.8	528.1	564.9	626.9	721.0	820.0	942.2	1098.5
	RT	58	72	87	108	134	150	160	178	205	233	268	312
	10^4kcal/h	17.5	21.9	26.5	32.6	40.5	45.4	48.6	53.9	62.0	70.5	81.0	94.4
COP		5.36	5.38	5.41	5.51	5.50	5.71	5.73	5.72	5.80	5.70	5.71	5.70
Capacity Range		25-100% stepless modulating											
Power Supply		380V/3P/50HZ											
Compressor													
Quantity		1	1	1	1	1	1	1	1	1	1	1	1
Total power input	kW	38.1	47.3	56.9	68.9	85.6	92.5	98.6	109.6	124.4	143.9	165.0	192.6
Rated Current	A	68	86	104	120	149	159	172	190	216	250	288	303
Maximum startup current	A	206	283	311	355	355	355	461	461	493	494	570	761
Evaporator													
Chilled water flow rate	m^3/h	35.0	43.7	52.8	65.1	80.8	90.6	96.9	107.6	123.7	140.7	161.7	188.5
Water pressure drop	kPa	34.4	34.9	37.4	44.2	48.9	40.9	42.2	42.8	43.7	76.1	77.5	79.8
Inlet/Outlet connection size	DN	100	100	125	125	125	150	150	150	150	150	150	200
Condenser													
Chilled water flow rate	m^3/h	41.9	52.3	63.2	77.6	96.4	107.5	114.9	127.5	146.4	166.9	191.7	223.6
Water pressure drop	kPa	29.0	30.2	29.3	39.9	52.7	49.3	39.0	46.9	50.9	64.3	65.4	65.9
Inlet/Outlet connection size	DN	100	125	125	125	125	125	150	150	150	200	200	200
General Parameter													
Unit Size	Length mm	3250	3290	3290	3305	3305	3320	3355	3380	3390	4000	4000	4015
	Width mm	1150	1135	1160	1295	1300	1265	1270	1280	1380	1805	1805	1805
	Height mm	1800	1800	1930	2200	2250	2310	2310	2380	2380	2180	2180	2190
Unit Shipping weight	kg	1820	1900	2090	2420	2520	2700	2750	2900	3060	4350	4820	5000
Unit Operating weight	kg	1920	2030	2240	2570	2690	2900	2980	3150	3330	4680	5200	5410
R134a filling volume	kg	90	100	120	120	120	140	140	170	180	240	240	270

Note:

1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m². °C/kw, condenser side fouling factor is 0.044m². °C/kw under standard 2 passes heat exchanger.

2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.

3.Above selection is just for reference, with different combination, chiller with same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.

4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation

5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

WCFXR-S Series Dual-compressor Unit

Unit model WCFX		38 TRS	40 TRS	46 TRS	50 TRS	54 TRS	57 TRS	60 TRS	66 TRS	73 TRS	75 TRS	81 TRS	87 TRS	90 TRS
Cooling Capacity	kW	762.5	943.5	1069.5	1171.8	1274.4	1354.7	1437.9	1522.7	1657.0	1773.4	1892.8	2049.5	2204.4
	RT	217	268	304	333	362	385	408	433	471	504	538	582	626
	10^4kcal/h	65.5	81.1	91.9	100.7	109.6	116.5	123.6	130.9	142.4	152.4	162.7	176.2	189.5
COP		5.72	5.71	5.85	5.87	5.94	5.91	5.93	5.81	5.85	5.85	5.85	5.88	5.87
Capacity Range		12.5-100% stepless modulating												
Power Supply		380V/3P/50Hz												
Compressor														
Quantity		2	2	2	2	2	2	2	2	2	2	2	2	2
Total power input	kW	133.4	165.3	182.9	199.7	214.6	229.1	242.5	262.1	283.3	303.2	323.4	348.8	375.5
Rated Current	A	232	288	316	345	372	398	421	456	493	529	565	577	590
Maximum startup current	A	559	559	559	665	718	759	791	858	858	934	1007	1198	1267
Evaporator														
Chilled water flow rate	m^3/h	130.9	161.9	183.5	201.1	218.7	232.5	246.8	261.3	284.4	304.3	324.8	351.7	378.3
Water pressure drop	kPa	75.4	83.2	83.4	81.6	81.2	81.0	80.2	71.7	75.6	75.4	75.5	75.3	71.6
Inlet/Outlet connection size	DN	150	150	200	200	200	200	200	250	250	250	250	250	250
Condenser														
Chilled water flow rate	m^3/h	155.1	192.0	216.9	237.5	257.9	274.3	291.0	309.1	336.0	359.6	383.8	415.3	446.8
Water pressure drop	kPa	61.4	63.3	67.5	75.6	66.4	65.9	66.4	50.5	52.5	53.0	53.3	53.6	51.2
Inlet/Outlet connection size	DN	150	200	200	200	200	200	200	250	250	250	250	250	250
General Parameter														
Unit Size	Length mm	3950	4000	4015	4015	3895	3895	3895	4430	4430	4430	4430	4430	4430
	Width mm	1365	1365	1410	1410	1435	1435	1435	2265	2265	2265	2265	2265	2265
	Height mm	2310	2380	2430	2430	2480	2480	2480	2450	2450	2450	2450	2460	2530
Unit Shipping weight	kg	4160	4400	4610	4730	5060	5240	5400	7020	7480	7780	8020	8220	8520
Unit Operating weight	kg	4450	4560	5010	5150	5560	5760	5940	7670	8180	8540	8810	9070	9460
R134a filling volume	kg	170	220	260	260	280	290	290	370	380	380	390	400	430

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m². °C/kw, condenser side fouling factor is 0.044m². °C/kw under standard 2 passes heat exchanger.
2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.
3.Above selection is just for reference, with different combination, chiller with same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.
4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation
5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

WCFXR-E Series Single Compressor Unit

Unit model WCFX		10 SRE	12 SRE	15 SRE	18 SRE	20 SRE	23 SRE	24 SRE	27 SRE	30 SRE	36 SRE	41 SRE	46 SRE
Cooling Capacity	kW	196.2	241.9	306.3	360.0	457.3	517.1	544.9	613.3	705.5	793.0	910.1	1060.0
	RT	56	69	87	102	130	147	155	174	200	225	259	301
	10^4kcal/h	16.9	20.8	26.3	30.9	39.3	44.5	46.8	52.7	60.6	68.2	78.2	91.1
COP		4.73	4.72	5.13	5.05	5.11	5.27	5.16	5.31	5.32	5.15	5.17	5.10
Capacity Range		25-100% stepless modulating											
Power Supply		380V/3P/50HZ											
Compressor													
Quantity		1	1	1	1	1	1	1	1	1	1	1	1
Total power input	kW	41.5	51.3	59.7	71.3	89.5	98.2	105.6	115.6	132.5	154.1	176.1	207.9
Rated Current	A	74	92	108	129	155	169	184	200	229	266	305	327
Maximum startup current	A	206	283	311	355	355	355	461	461	493	494	570	761
Evaporator													
Chilled water flow rate	m^3/h	33.7	41.5	52.6	61.8	78.5	88.7	93.5	105.3	121.1	136.1	156.2	181.9
Water pressure drop	kPa	28.5	30.6	62.5	86.2	87.1	85.2	87.0	84.9	86.2	39.6	43.0	43.4
Inlet/Outlet connection size	DN	100	100	100	100	125	125	125	125	150	150	150	200
Condenser													
Chilled water flow rate	m^3/h	41.2	50.8	63.4	74.7	94.7	106.6	112.7	126.2	145.1	164.0	188.1	219.6
Water pressure drop	kPa	52.4	54.6	56.9	77.7	81.2	76.8	77.3	78.3	80.6	55.6	55.1	56.1
Inlet/Outlet connection size	DN	80	80	100	100	125	125	125	125	150	150	150	200
General Parameter													
Unit Size	Length mm	2585	2585	3250	3250	3290	3290	3205	3205	3355	3960	3970	4015
	Width mm	1130	1130	1130	1130	1190	1190	1215	1215	1265	1805	1805	1805
	Height mm	1800	1800	1920	1920	2210	2210	2260	2260	2310	2180	2180	2170
Unit Shipping weight	kg	1770	1800	2020	2290	2430	2510	2610	2770	2900	4070	4240	4440
Unit Operating weight	kg	1850	1890	2120	2380	2540	2630	2740	2920	3060	4320	4500	4750
R134a filling volume	kg	70	70	90	90	120	120	120	140	150	220	230	270

Note:
1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m². °C/kw, condenser side fouling factor is 0.044m². °C/kw under standard 2 passes heat exchanger.
2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.
3.Above selection is just for reference, with different combination, chiller with same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.
4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation
5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

DB

WCFXR-E Series Dual-compressor Unit

Unit model WCFX		38 TRE	40 TRE	46 TRE	50 TRE	54 TRE	57 TRE	60 TRE	66 TRE	73 TRE	75 TRE	81 TRE	87 TRE	90 TRE
Cooling Capacity	kW	736.0	910.0	1032.1	1136.5	1233.7	1312.1	1406.1	1464.2	1604.6	1717.5	1834.3	1984.8	2136.2
	RT	209	259	293	323	350	373	399	416	456	488	521	564	607
	10^4kcal/h	63.3	78.2	88.7	97.7	106.1	112.8	120.9	125.9	137.9	147.6	157.7	170.6	183.6
COP		5.09	5.07	5.16	5.24	5.25	5.23	5.37	5.22	5.31	5.31	5.31	5.28	5.29
Capacity Range		12.5-100% stepless modulating												
Power Supply		380V/3P/50HZ												
Compressor														
Quantity		2	2	2	2	2	2	2	2	2	2	2	2	2
Total power input	kW	144.7	179.6	199.9	216.7	234.9	250.8	261.7	280.7	302.2	323.5	345.3	375.8	403.7
Rated Current	A	250	310	342	372	404	432	452	484	522	560	599	619	634
Maximum startup current	A	559	559	559	665	718	759	791	858	858	934	1007	1198	1267
Evaporator														
Chilled water flow rate	m^3/h	126.3	156.2	177.1	195.0	211.7	225.2	241.3	251.3	275.4	294.7	314.8	340.6	366.6
Water pressure drop	kPa	41.2	43.0	44.1	43.0	43.3	42.3	48.2	53.4	50.2	48.8	47.7	49.3	46.6
Inlet/Outlet connection size	DN	150	150	200	200	200	200	200	200	200	200	250	250	250
Condenser														
Chilled water flow rate	m^3/h	152.5	188.7	213.3	234.3	254.3	270.7	288.8	302.1	330.2	353.4	377.4	408.8	439.8
Water pressure drop	kPa	56.3	57.7	57.1	58.6	58.8	58.3	55.1	61.8	59.0	59.6	60.4	60.6	56.6
Inlet/Outlet connection size	DN	150	150	200	200	200	200	200	200	200	200	250	250	250
General Parameter														
Unit Size	Length mm	3960	3970	4015	4015	4025	4025	4125	4430	4430	4430	4430	4430	4430
	Width mm	1285	1380	1410	1410	1405	1405	1435	2265	2265	2265	2265	2265	2265
	Height mm	2380	2380	2430	2430	2480	2480	2480	2400	2390	2390	2440	2440	2550
Unit Shipping weight	kg	4220	4430	4650	4620	4840	5080	5360	6380	6710	6930	7340	7520	7720
Unit Operating weight	kg	4470	4720	4990	4930	5180	5470	5770	6820	7190	7450	7890	8140	8230
R134a filling volume	kg	220	220	270	270	270	280	310	320	360	360	470	470	490

Note:

1.The data in the table is based on the following working conditions: chilling water inlet/out temperature 12/7°C, cooling water inlet/outlet temperature 30/35°C; Evaporator fouling factor 0.018m^2. °C/kw, condenser side fouling factor is 0.044m^2. °C/kw under standard 2 passes heat exchanger.

2.The data in table is based on 2 passes heat exchanger with right side connection, number of passes or connection direction changes will cause dimensions' variation, please consult Dunham-Bush local office.

3.Above selection is just for reference, with different combination, chiller with same capacity may have several models, for specific project's pc selection , please consult Dunham-Bush local office.

4.Water quality need to be assured not cause corrosion or block, etc, for bad water quality which can't meet GB standards, recommending to change heat exchanger and water treatment in order to assure unit's long and stable operation

5.Standard heat exchanger water side pressure is 1.0MPa, in addition 1.6MPa and 2.0MPa is optional for user.

1Part

WCFX-V

Variable speed water-cooled screw chiller

Energy saving and Environmental friendly | Efficient and Stable | Safe and Reliable | Intelligent control Easy operation

Product Features

Energy saving and environmentally friendly

- Adopting HFC-134a environmental friendly refrigerant.
- Applicable to the LEED certification.
- Ultra-high efficiency, selections certified by AHRI.

Efficient and stable

- VFD realizes excellent performance under partial load.
- VFD adjustment ensures stable operation and extends the operating range.
- Flooded evaporator with ultra-efficient tubes improves heat exchange efficiency.
- EEV throttling ensures precise control.
- Economizer increases cooling capacity and improves system performance.
- Vertical compressor reduces the spindle load and prolongs its service life.
- Asymmetric linear rotor design offers efficiency improvement.

Intelligent control, simple operation

- Intelligent control and real-time monitoring.
- Friendly interface and easy operation.
- Self diagnosis on alarm makes maintenance easier.
- Optional for remote monitoring and group control;
- Standard RS485 communication card, and variable BAS communication protocols to choose from, such as Modbus, Bacnet, Profibus, etc.

Safe and reliable

- Optimized oil management system separates oil from refrigerant effectively.
- Patent hermetically sealed twin-screw compressor offers free maintenance, and avoids the leakage of oil& refrigerant.
- VFD starter reduces starting current
- Multiple protections and automatic monitoring ensures the safety and stability.

Ultra Efficient WCFX-V Falling Film Series Standard Unit

Unit model WCFX		19S RVH	20S RVH	23SR VEH	27SR VEH	30SR VEH	36SR VEH	41SR VEH	46SR VEH	40TR VH	46TR VEH	50TR VEH	54TR VEH	57TR VEH	60TR VEH	73TR VEH	75TR VEH	81TR VEH	87TR VEH	90TR VEH
Cooling Capacity	kW	472.7	597.9	630.1	747.5	842.9	1007.4	1148.5	1414.0	1253.7	1321.1	1444.3	1567.5	1667.6	1770.5	2106.7	2256.2	2405.7	2615.8	2825.8
	RT	134	170	179	212	239	286	326	402	356	375	410	445	474	503	599	641	683	743	803
	10^4kcal/h	40.6	51.4	54.2	64.3	72.5	86.6	98.7	121.6	107.8	113.6	124.2	134.7	143.4	152.2	181.1	193.9	206.8	224.9	242.9
IPLV(AHRI)		10.39	10.66	10.45	10.46	10.47	10.54	10.56	10.48	10.11	10.05	10.29	10.09	10.11	10.09	10.36	9.15	10.43	10.15	10.41
COP		5.80	6.02	6.03	6.03	6.03	6.03	6.02	6.31	6.31	6.31	6.31	6.31	6.31	6.32	6.31	6.31	6.31	6.31	6.31
Capacity Range		20-100% Stepless modulating								10-100% Stepless modulating										
Power Supply		380V/3P/50Hz																		
Compressor																				
compressor quantity		1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
Total power input	kW	81.5	99.3	104.5	124.0	139.8	167.1	190.8	224.1	198.8	209.4	228.9	248.4	264.3	280.1	334.1	357.8	381.6	414.9	448.2
Rated Current	A	137.7	169.4	182.3	218.3	250.3	290.3	333.1	400.4	169.3	182.9	183.9	219.2	219.0	249.8	289.0	289.0	332.5	333.8	399.0
Evaporator																				
Chilled water flow rate	m^3/h	81.1	102.6	108.1	128.3	144.6	172.9	197.1	242.7	215.2	226.7	247.9	269.0	286.2	303.8	361.5	387.2	412.8	448.9	485.0
Water pressure drop	kPa	69.2	72.4	73.4	71.1	71.6	71.3	70.2	74.4	65.2	66.1	67.9	67.4	66.8	66.1	70.2	69.2	69.2	71.6	73.4
Water Side Pressure Design	MPa	1.0																		
Inlet/Outlet connection size	in	5	5	6	6	6	8	8	8	8	8	8	8	8	8	10	10	10	10	10
Condenser																				
Cooling water flow rate	m^3/h	96.0	120.7	127.2	150.9	170.2	203.4	231.9	283.7	251.5	265.0	289.8	314.5	334.5	355.1	422.7	452.7	482.7	524.8	567.0
Water pressure drop	kPa	57.8	44.8	45.7	45.2	44.9	45.7	45.8	48.8	42.8	45.1	45.1	44.7	44.5	44.3	45.6	45.7	45.7	47.3	48.4
Water Side Pressure Design	MPa	1.0																		
Inlet/Outlet connection size	in	5	6	6	6	6	8	8	8	8	8	8	8	8	8	10	10	10	10	10
General Parameter																				
Length	mm	4160	4180	4020	4040	4060	4270	4270	4330	4140	4140	4150	4150	4010	4040	4210	4210	4230	4080	4080
Width	mm	1270	1370	1350	1370	1400	1750	1750	1800	1540	1590	1630	1630	1690	1730	2400	2400	2370	2480	2480
Height	mm	2260	2330	2330	2380	2380	2220	2260	2270	2480	2480	2530	2530	2530	2580	2600	2600	2700	2700	2700
Unit Shipping weight	kg	2930	3200	3290	3550	3810	4760	5160	5670	5640	5790	6540	6540	7070	7530	8840	9520	9830	10660	10970
Unit Operating weight	kg	3150	3490	3610	3920	4230	5240	5710	6300	6230	6410	7310	7310	7890	8420	9830	10610	11020	11940	12330
R134a filling volume	kg	140	185	195	235	255	280	300	315	310	320	340	340	345	390	470	470	480	540	590

Note:
1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, water side pressure 1.0Mpa, chilled water inlet/outlet T 12/7 °C, cooling water inlet/outlet T 30/35℃, evaporator water side fouling factor 0.018m^2. °C/kW, condenser side water fouling factor 0.044m^2. °C/kW.
2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.
3.IPLV value is based on AHRI standard condition.

High Efficient WCFX-V Falling Film Series Unit

Unit model WCFX		19S RVS	20S RVS	23SR VES	24SR VS	27SR VES	30S RVS	30SR VES	36S RVS	36SR VES	41S RVS	41SR VES	46SR VS	46SR VES
Cooling Capacity	kW	457.4	574.8	612.3	687.1	727.0	777.1	836.9	920.5	968.0	1040.3	1105.2	1221.4	1329.9
	RT	130	163	174	195	207	221	238	261	275	296	314	347	378
	10^4kcal/h	39.3	49.4	52.6	59.1	62.5	66.8	71.9	79.1	83.2	89.4	95.0	105.0	114.3
IPLV(AHRI)		10.05	10.26	10.09	10.36	10.11	10.43	10.34	10.37	10.10	10.38	10.08	10.67	9.79
COP		5.50	5.61	5.67	5.66	5.68	5.68	5.80	5.61	5.61	5.61	5.61	5.76	5.81
Capacity Range		20-100% Stepless modulating												
Power Supply		380V/3P/50Hz												
Compressor														
Quantity		1	1	1	1	1	1	1	1	1	1	1	1	1
Total power input	kW	83.2	102.5	108.0	121.4	128.0	136.8	144.3	164.1	172.6	185.4	197.0	212.0	229.1
Rated Current	A	137.8	171.9	185.3	206.7	221.9	236.9	254.2	274.6	295.3	316.7	338.2	379.8	407.0
Evaporator														
Chilled water flow rate	m^3/h	78.5	98.6	105.0	117.9	124.7	133.4	143.6	158.0	166.1	178.5	189.7	209.6	228.2
Water pressure drop	kPa	80.3	80.3	77.7	77.4	80.7	80.3	81.6	83.8	86.8	82.6	81.4	75.3	87.4
Water Side Pressure Design	MPa	1.0												
Inlet/Outlet connection size	in	5	5	6	6	6	6	6	6	8	8	8	8	8
Condenser														
Cooling water flow rate	m^3/h	93.6	117.3	124.7	143.6	148.0	158.3	169.9	187.8	197.5	212.3	225.5	248.2	270.0
Water pressure drop	kPa	56.9	76.7	78.0	77.4	78.0	74.6	74.6	79.2	81.9	78.2	80.3	74.0	85.5
Water Side Pressure Design	MPa	1.0												
Inlet/Outlet connection size	in	5	6	6	6	6	6	6	6	8	8	8	8	8
General Parameter														
Length	mm	4020	4160	4170	4170	4180	4180	4060	4260	4260	4270	4270	4320	4320
Width	mm	1270	1270	1320	1320	1370	1370	1370	1750	1750	1750	1750	1750	1750
Height	mm	2200	2260	2310	2310	2310	2310	2380	2180	2180	2190	2190	2210	2210
Unit Shipping weight	kg	2870	2920	3100	3170	3260	3320	3540	4300	4390	4620	4720	5250	5310
Unit Operating weight	kg	3070	3140	3360	3440	3550	3620	3880	4650	4760	5030	5160	5740	5800
R134a filling volume	kg	135	145	175	170	200	200	240	235	255	260	275	290	290

Note:
1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, water side pressure 1.0Mpa, chilled water inlet/outlet T 12/7 °C, cooling water inlet/outlet T 30/35℃, evaporator water side fouling factor 0.018m^2. °C/kW, condenser side water fouling factor 0.044m^2. °C/kW.
2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.
3.IPLV value is based on AHRI standard condition.

C High Efficient WCFX-V Falling Film Series Unit

Unit model WCFX		38T RVS	40T RVS	46TR VES	50TR VES	54TR VES	57TR VES	60TR VES	73TR VES	75TR VES	81TR VES	87TR VES	90TR VES
Cooling Capacity	kW	955.6	1159.8	1256.9	1375.7	1489.7	1587.5	1688.5	1985.0	2125.7	2266.3	2464.2	2662.1
	RT	271	329	357	391	423	451	480	564	604	644	700	756
	10^4kcal/h	82.1	99.7	108.0	118.3	128.1	136.5	145.1	170.6	182.7	194.8	211.8	228.8
IPLV(AHRI)		9.51	9.44	9.51	9.78	9.47	9.61	9.67	9.79	8.66	9.73	9.60	9.72
COP		5.70	5.66	5.82	5.83	5.82	5.83	5.85	5.81	5.81	5.81	5.81	5.81
Capacity Range		10-100% Stepless modulating											
Power Supply		380V/3P/50Hz											
Compressor													
Quantity		2	2	2	2	2	2	2	2	2	2	2	2
Total power input	kW	167.7	204.9	216.0	236.0	256.0	272.3	288.6	341.7	365.9	390.1	424.1	458.2
Rated Current	A	138.8	172.0	186.4	187.4	223.1	222.9	254.1	293.9	293.5	337.5	339.3	405.4
Evaporator													
Chilled water flow rate	m^3/h	164.0	199.0	215.7	236.1	255.7	272.4	289.8	340.7	364.8	388.9	422.9	456.8
Water pressure drop	kPa	77.2	80.3	82.4	83.0	81.5	79.4	80.3	83.7	83.0	83.0	86.8	88.4
Water Side Pressure Design	MPa	1.0											
Inlet/Outlet connection size	in	8	8	8	8	8	8	8	10	10	10	10	10
Condenser													
Cooling water flow rate	m^3/h	194.5	236.3	255.1	279.1	302.3	322.1	342.4	402.9	431.5	460.0	500.2	540.4
Water pressure drop	kPa	73.0	74.2	79.6	80.5	77.7	78.4	77.7	81.8	79.2	79.0	83.6	84.0
Water Side Pressure Design	MPa	1.0											
Inlet/Outlet connection size	in	8	8	8	8	8	8	8	10	10	10	10	10
General Parameter													
Length	mm	4230	4120	4110	4130	4140	4070	4070	4260	4260	4220	4220	4240
Width	mm	1370	1460	1490	1550	1590	1590	1590	2330	2330	2350	2350	2310
Height	mm	2380	2430	2450	2480	2480	2530	2530	2550	2550	2600	2600	2680
Unit Shipping weight	kg	4700	5030	5340	5640	5880	6220	6570	8020	8710	9080	9480	9770
Unit Operating weight	kg	5070	5490	5820	6170	6470	6840	7240	8770	9550	9980	10470	10840
R134a filling volume	kg	245	275	295	320	325	340	340	365	425	440	435	460

Note:
1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, water side pressure 1.0Mpa, chilled water inlet/outlet T 12/7 °C, cooling water inlet/outlet T 30/35℃, evaporator water side fouling factor 0.018m². °C/kW, condenser side water fouling factor 0.044m². °C/kW.
2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.
3.IPLV value is based on AHRI standard condition.

D High Efficient WCFX-V Falling Film Series Unit Dual Condition Technical

Unit model WCFX		19SR DVS	20SR DVS	23SR DVES	24SR DVS	27SR DVES	30SR DVS	30SR DVES	36SR DVS	36SR DVES	41SR DVS	41SR DVES	46SR DVS	46SR DVES
Air Conditioning Cooling Capacity	kW	453.4	569.8	607.7	681.1	721.5	770.2	830.4	912.2	960.6	1031.0	1096.8	1210.5	1319.5
	RT	129	162	173	193	205	219	236	259	273	293	312	344	375
	10^4kcal/h	39.0	49.0	52.2	58.5	62.0	66.2	71.4	78.4	82.6	88.6	94.3	104.1	113.4
Ice Storage Condition Cooling Capacity	kW	274.5	345.2	394.8	412.1	467.2	465.6	536.4	550.5	618.2	621.5	703.1	729.6	846.4
	RT	78	98	112	117	133	132	152	156	176	177	200	207	240
	10^4kcal/h	23.6	29.7	33.9	35.4	40.2	40.0	46.1	47.3	53.1	53.4	60.4	62.7	72.8
IPLV (AHRI)		9.93	10.15	9.98	10.24	10.07	10.30	10.29	10.29	10.04	10.30	9.98	10.59	9.70
COP		5.45	5.56	5.62	5.61	5.63	5.62	5.75	5.56	5.56	5.56	5.56	5.71	5.76
Capacity Range		20-100% Stepless modulating												
Power Supply		380V/3P/50Hz												
Compressor														
Quantity		1	1	1	1	1	1	1	1	1	1	1	1	1
Air conditioning power input	kW	83.2	102.5	108.1	121.5	128.1	136.9	144.5	164.1	172.6	185.4	197.1	212.0	229.2
Ice storage condition power input	kW	81.9	100.6	109.8	119.2	129.7	134.4	145.8	156.7	168.0	177.1	191.6	202.4	222.5
Air conditioning rated current	A	138	172	185	207	222	237	255	275	295	317	338	380	407
Unit maximum startup current	A	136	169	188	203	225	233	257	264	288	304	330	365	396
Evaporator														
Chilled water flow rate	m^3/h	84.1	105.7	112.7	126.3	133.8	142.8	154.0	169.2	178.2	191.2	203.4	244.5	244.8
Water pressure drop	kPa	108.0	108.0	105.6	104.4	108.7	108.3	110.2	113.1	116.3	111.4	109.6	101.5	117.9
Water Side Pressure Design	MPa	1.0												
Inlet/Outlet connection size	in	5	5	6	6	6	6	6	6	8	8	8	8	8
Condenser														
Cooling water flow rate	m^3/h	92.9	116.4	123.9	139.0	147.1	157.1	168.8	186.4	196.2	210.6	224.1	246.3	268.2
Water pressure drop	kPa	56.2	75.7	77.1	75.1	77.2	74.7	74.7	76.8	81.0	77.2	79.4	73.0	84.5
Water Side Pressure Design	MPa	1.0												
Inlet/Outlet connection size	in	5	6	6	6	6	6	6	6	8	8	8	8	8
General Parameter														
Length	mm	4020	4160	4170	4170	4180	4180	4060	4260	4260	4270	4270	4320	4320
Width	mm	1270	1270	1320	1320	1370	1370	1370	1750	1750	1750	1750	1750	1750
Height	mm	2200	2260	2310	2310	2310	2310	2380	2180	2180	2190	2190	2210	2210
Unit Shipping weight	kg	2870	2920	3100	3170	3260	3320	3540	4300	4390	4620	4720	5310	5310
Unit Operating weight	kg	3070	3140	3360	3440	3550	3620	3880	4650	4760	5030	5160	5800	5800
R134a filling volume	kg	135	145	175	170	200	200	240	235	255	260	275	290	290

Note:
1.The data in the table is based on the following conditions: under standard air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m². °C/kW, condenser side water fouling factor 0.044m². °C/kW.
2.Water side design pressure 1.0Mpa, heat exchanger is 2 passes, if non-standard, please contact DB local office.
3.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.
4.IPLV value is based on AHRI standard condition.

DB

High Efficient WCFX-V Falling Film Series Unit Dual Condition Technical

Unit model WCFX		38TR DVS	40TR DVS	46TR DVES	50TR DVES	54TR DVES	57TR DVES	60TR DVES	73TR DVES	75TR DVES	81TR DVES	87TR DVES	90TR DVES
Air Conditioning Cooling Capacity	kW	947.4	1149.8	1247.7	1365.5	1478.3	1575.4	1675.8	1969.3	2109.3	2248.5	2444.9	2640.8
	RT	269	327	354	388	420	448	476	559	599	639	695	750
	10^4kcal/h	81.4	98.8	107.3	117.4	127.1	135.4	144.1	169.3	181.3	193.3	210.2	227.0
Ice Storage Condition Cooling Capacity	kW	574.0	696.6	811.4	886.5	958.3	1019.1	1082.1	1267.1	1353.9	1441.3	1568.0	1693.5
	RT	163	198	231	252	272	290	307	360	385	409	445	481
	10^4kcal/h	49.3	59.9	69.7	76.2	82.4	87.6	93.0	108.9	116.4	123.9	134.8	145.6
IPLV (AHRI)		9.47	9.40	9.44	9.70	9.38	9.52	9.60	9.69	8.66	9.65	9.51	9.73
COP		5.65	5.61	5.77	5.78	5.77	5.78	5.80	5.76	5.76	5.76	5.76	5.76
Capacity Range		10-100% Stepless modulating											
Power Supply		380V/3P/50Hz											
Compressor													
Quantity		2	2	2	2	2	2	2	2	2	2	2	2
Air conditioning power input	kW	167.7	205.0	216.2	236.2	256.4	272.6	288.9	341.8	366.0	390.3	424.3	458.4
Ice storage condition power input	kW	164.5	201.1	219.2	239.0	259.0	275.5	291.8	333.1	356.4	379.4	411.9	445.1
Air conditioning rated current	A	139	172	187	188	223	223	254	294	294	338	339	405
Unit maximum startup current	A	136	169	189	190	226	225	257	287	287	329	330	395
Evaporator													
Chilled water flow rate	m^3/h	175.8	213.3	231.4	253.3	274.2	292.2	310.9	365.3	391.2	417.1	453.5	489.9
Water pressure drop	kPa	103.9	108.0	110.2	111.8	110.2	108.0	108.1	113.2	111.8	112.7	116.3	119.5
Water Side Pressure Design	MPa	1.0											
Inlet/Outlet connection size	in	8	8	8	8	8	8	8	10	10	10	10	10
Condenser													
Cooling water flow rate	m^3/h	193.1	234.6	253.5	277.4	300.4	320.0	340.2	400.2	428.7	456.9	496.9	536.7
Water pressure drop	kPa	72.1	73.6	78.8	79.6	77.7	77.6	77.2	80.8	78.4	78.6	82.6	83.0
Water Side Pressure Design	MPa	1.0											
Inlet/Outlet connection size	in	8	8	8	8	8	8	8	10	10	10	10	10
General Parameter													
Length	mm	4230	4120	4110	4130	4140	4070	4070	4260	4260	4220	4220	4240
Width	mm	1370	1460	1490	1550	1590	1590	1590	2330	2330	2350	2350	2310
Height	mm	2380	2430	2450	2480	2480	2530	2530	2550	2550	2600	2600	2680
Unit Shipping weight	kg	4700	5030	5340	5640	5880	6220	6570	8020	8710	9080	9480	9770
Unit Operating weight	kg	5070	5490	5820	6170	6470	6840	7240	8770	9550	9980	10470	10840
R134a filling volume	kg	245	275	295	320	325	340	340	365	425	440	435	460

Note:

1.The data in the table is based on the following conditions: under standard air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m². °C/kW, condenser side water fouling factor 0.044m². °C/kW.

2.Water side design pressure 1.0Mpa, heat exchanger is 2 passes, if non-standard, please contact DB local office.

3.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

4.IPLV value is based on AHRI standard condition.

1Part

WCFX-RD

Ice Storage Exclusive Air Conditioner

Energy saving and Environmental friendly | Intelligent control Easy operation | Optional functions | Safe and Reliable | Efficient and Stable

Product Features

Energy saving and environmentally friendly

- Save operating cost
- Reduce equipments' volume
- Increase safety of the system

Intelligent control, simple operation

- Intelligent control and real-time monitoring.
- Friendly interface and easy operation.
- Self diagnosis on alarm makes maintenance easier.
- Optional for remote monitoring and group control;
- Standard RS485 communication card, and variable BAS communication protocols to choose from, such as Modbus, Bacnet, Profibus, etc.

Optional functions

- Partial heat recovery
- Fully heat recovery

Safe and reliable

- Optimized oil management system separates oil from refrigerant effectively.
- Patent hermetically sealed twin-screw compressor offers free maintenance, and avoids the leakage of oil& refrigerant.
- VFD starter reduces starting current
- Multiple protections and automatic monitoring ensures the safety and stability.

Efficient and Stable

- Falling film evaporator design improves heat exchange efficiency.
- EEV throttling ensures precise control.
- Economizer increases cooling capacity and improves system performance.
- Vertical compressor reduces the spindle load and prolongs its service life.
- Asymmetric linear rotor design offers efficiency improvement.

WCFXR-HD Series Dual Condition Unit

Unit model		10S RHD	12S RHD	15S RHD	19S RHD	20S RHD	23S RHD	24S RHD	27S RHD	30S RHD	36S RHD	41S RHD	46S RHD
Air Conditioning Cooling Capacity	kW	204.1	254.3	308.0	384.9	476.1	538.3	578.0	638.7	729.3	844.0	969.6	1131.0
	RT	58	72	88	109	135	153	164	182	207	240	276	322
Ice Storage Condition Cooling Capacity	kW	128.2	159.4	193.5	232.8	288.1	349.7	349.5	413.6	470.9	541.3	619.8	722.9
	RT	36	45	55	66	82	99	99	118	134	154	176	206
Compressor Quantity	pcs	1	1	1	1	1	1	1	1	1	1	1	1
Air conditioning power input	kW	36.6	45.4	55.1	67.0	82.9	89.0	96.2	104.8	119.7	140.4	161.1	188.1
Ice storage condition power input	kW	36.5	45.2	54.9	65.9	81.6	90.5	94.6	106.2	120.9	137.7	157.2	183.4
Air conditioning rated current	A	69	87	105	115	142	155	171	185	212	241	279	327
Ice storage condition rated current	A	69	87	105	113	140	157	169	187	214	237	273	319
Maximum startup current	A	206	283	311	355	355	355	461	461	493	638	844	1006
Chilled water flow rate	m^3/h	38	47	57	71	88	100	107	119	135	157	180	210
Evaporator water pressure drop	kPa	24	25	27	63	68	69	68	70	68	76	77	77
Cooling water flow rate	m^3/h	42	52	63	78	97	109	117	129	147	171	196	228
Condenser water pressure drop	kPa	23	23	22	45	48	52	50	51	51	65	68	69
Unit Shipping weight	kg	1770	1835	2050	2430	2660	2750	2885	2985	3260	4450	4960	4810
Unit Operating weight	kg	1980	2080	2370	2780	3085	3190	3400	3525	3900	5285	5955	5930
R134a filling volume	kg	75	90	100	120	140	160	170	180	200	260	290	370

Note:
1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXR-HD Series Dual Condition Unit

Unit model		38T RHD	40T RHD	46T RHD	50T RHD	54T RHD	57T RHD	60T RHD	66T RHD	73T RHD	75T RHD	81T RHD	87T RHD	90T RHD
Air Conditioning Cooling Capacity	kW	783.1	969.3	1093.1	1204.1	1307.7	1389.6	1475.8	1581.3	1713.0	1833.5	1957.9	2120.0	2278.3
	RT	223	276	311	342	372	395	420	450	487	521	557	603	648
Ice Storage Condition Cooling Capacity	kW	473.3	586.2	709.5	780.2	846.1	897.1	951.6	949.4	1098.4	1173.4	1251.0	1354.4	1455.4
	RT	135	167	202	222	241	255	271	270	312	334	356	385	414
Compressor Quantity	pcs	2	2	2	2	2	2	2	2	2	2	2	2	2
Air conditioning power input	kW	130.1	161.1	179.4	189.0	204.8	218.6	233.6	252.6	272.2	291.1	310.7	334.8	360.8
Ice storage condition power input	kW	128.1	158.4	182.5	192.1	207.6	221.2	236.2	234.9	267.2	285.3	303.9	327.5	353.4
Air conditioning rated current	A	230	285	309	338	369	397	423	456	482	519	556	603	647
Ice storage condition rated current	A	227	281	314	343	374	401	428	427	474	509	545	591	635
Maximum startup current	A	470	498	509	615	646	679	705	866	879	1086	1122	1285	1330
Chilled water flow rate	m^3/h	145	180	203	223	243	258	274	293	318	340	363	393	423
Evaporator water pressure drop	kPa	68	72	87	85	87	88	87	89	90	89	88	89	85
Cooling water flow rate	m^3/h	158	196	220	241	262	279	296	318	344	368	393	425	457
Condenser water pressure drop	kPa	63	66	71	70	71	70	70	69	70	70	71	70	67
Unit Shipping weight	kg	4200	4475	4855	5050	5365	5630	5835	5950	7870	8190	8600	8925	9095
Unit Operating weight	kg	4910	5335	5880	6195	6590	6950	7240	7640	9710	10200	10730	11280	11620
R134a filling volume	kg	230	260	290	310	350	380	400	440	480	500	550	640	670

Note:
1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXR-SD Series Dual Condition Unit

Unit model		10S RSD	12S RSD	15S RSD	19S RSD	20S RSD	23S RSD	24S RSD	27S RSD	30S RSD	36S RSD	41S RSD	46S RSD
Air Conditioning Cooling Capacity	kW	201.8	251.8	304.5	374.5	464.8	522.3	558.0	620.2	713.2	812.4	933.5	1088.3
	RT	57	72	87	106	132	149	159	176	203	231	265	309
Ice Storage Condition Cooling Capacity	kW	126.9	157.9	191.5	227.7	283.4	340.2	338.7	402.5	461.6	523.1	599.0	698.1
	RT	36	45	54	65	81	97	96	114	131	149	170	198
Compressor Quantity	pcs	1	1	1	1	1	1	1	1	1	1	1	1
Air conditioning power input	kW	38.2	47.3	56.9	68.9	85.6	92.6	98.6	109.7	124.5	143.9	165.1	192.7
Ice storage condition power input	kW	37.9	47.0	56.5	67.2	82.9	92.8	96.1	109.8	124.2	139.9	159.6	186.2
Air conditioning rated current	A	70	88	106	118	148	160	175	191	220	247	286	334
Ice storage condition rated current	A	70	88	106	115	144	161	171	191	220	241	277	324
Maximum startup current	A	206	283	311	355	355	355	461	461	493	638	844	1006
Chilled water flow rate	m^3/h	37	47	57	70	86	97	104	115	132	151	173	202
Water pressure drop	kPa	32	33	36	50	55	42	41	42	43	83	85	86
Cooling water flow rate	m^3/h	42	52	63	77	95	107	114	126	145	166	190	222
Water pressure drop	kPa	32	32	32	44	59	57	45	54	57	77	79	80
Unit Shipping weight	kg	1720	1840	2000	2300	2450	2560	2680	2785	2980	4150	4610	4450
Unit Operating weight	kg	1850	2010	2190	2495	2665	2800	2970	3075	3290	4520	5065	4945
R134a filling volume	kg	80	90	100	110	140	150	160	180	200	250	280	350

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.

2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXR-SD Series Dual Condition Unit

Unit model		38T RSD	40T RSD	46T RSD	50T RSD	54T RSD	57T RSD	60T RSD	66T RSD	73T RSD	75T RSD	81T RSD	87T RSD	90T RSD
Air Conditioning Cooling Capacity	kW	754.4	933.6	1059.8	1161.2	1263	1342.6	1424.9	1507.6	1642.8	1758.2	1876.2	2031.7	2185.5
	RT	215	265	301	330	359	382	405	429	467	500	533	578	621
Ice Storage Condition Cooling Capacity	kW	458.2	567.1	689.7	754.6	819	868.7	921	909.5	1057	1129.2	1203.1	1302.8	1400.9
	RT	130	161	196	215	233	247	262	259	301	321	342	370	398
Compressor Quantity	pcs	2	2	2	2	2	2	2	2	2	2	2	2	2
Air conditioning power input	kW	133.5	165.3	183	199.9	214.8	229.4	242.7	262.1	283.4	303.3	323.5	348.9	375.6
Ice storage condition power input	kW	130.5	161.6	184.5	200.7	215.9	230	243.4	241.2	276.1	294.8	314	338.3	364.9
Air conditioning rated current	A	233	289	318	350	379	407	434	462	491	529	566	614	659
Ice storage condition rated current	A	229	283	320	351	380	408	435	429	480	515	551	597	642
Maximum startup current	A	472	500	514	621	650	683	710	869	884	1090	1127	1290	1335
Chilled water flow rate	m^3/h	140	173	197	215	234	249	264	280	305	326	348	377	405
Water pressure drop	kPa	93	98	105	87	88	87	87	88	103	102	103	104	98
Cooling water flow rate	m^3/h	154	190	215	236	256	272	289	307	334	357	381	412	444
Water pressure drop	kPa	72	77	81	90	79	80	80	73	77	78	78	79	75
Unit Shipping weight	kg	3960	4250	4400	4600	4950	5150	5300	5390	7150	7520	7690	8300	8400
Unit Operating weight	kg	4300	4680	4860	5090	5500	5730	5920	6120	7930	8370	8580	9350	9500
R134a filling volume	kg	230	260	290	310	350	380	400	440	480	520	550	630	660

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.

2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXR-ED Series Dual Condition Unit

Unit model		10S RED	12S RED	15S RED	18S RED	20S RED	23S RED	24S RED	27S RED	30S RED	36S RED	41S RED	46S RED
Air Conditioning Cooling Capacity	kW	193.3	238.4	302.6	355.5	451.1	510.9	537.3	606.1	697.1	781.7	897.4	1044.8
	RT	55	68	86	101	128	145	153	172	198	222	255	297
Ice Storage Condition Cooling Capacity	kW	122.1	150.3	190.9	224.1	276.4	334.2	329.1	395.2	453.5	507.6	580.2	675.6
	RT	35	43	54	64	79	95	94	112	129	144	165	192
Compressor Quantity	pcs	1	1	1	1	1	1	1	1	1	1	1	1
Air conditioning power input	kW	41.5	51.3	59.8	71.4	89.4	98.4	105.6	115.6	132.5	154.0	175.9	207.7
Ice storage condition power input	kW	40.0	49.6	58.8	69.6	86.0	97.8	101.5	114.8	130.8	146.2	166.5	196.1
Air conditioning rated current	A	76	94	109	130	151	165	181	197	227	263	303	355
Ice storage condition rated current	A	73	92	107	127	146	164	175	196	224	251	288	337
Maximum startup current	A	206	283	311	412	355	355	461	461	493	638	844	1006
Chilled water flow rate	m^3/h	36	44	56	66	84	95	100	112	129	145	167	194
Water pressure drop	kPa	26	27	62	82	90	89	90	88	88	45	48	50
Cooling water flow rate	m^3/h	41	50	63	74	94	106	111	125	144	162	186	217
Water pressure drop	kPa	54	54	63	83	92	89	87	90	91	56	56	57
Unit Shipping weight	kg	1685	1720	2000	2100	2410	2490	2670	2750	2900	3830	4240	4300
Unit Operating weight	kg	1760	1810	2100	2200	2560	2640	2830	2940	3120	4120	4500	4620
R134a filling volume	kg	70	85	100	110	140	150	160	175	185	225	250	310

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.

2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXR-ED Series Dual Condition Unit

Unit model		38T RED	40T RED	46T RED	50T RED	54T RED	57T RED	60T RED	66T RED	73T RED	75T RED	81T RED	87T RED	90T RED
Air Conditioning Cooling Capacity	kW	724.3	895.6	1018.1	1120.9	1216.9	1293.8	1387.4	1441.5	1583.5	1694.8	1809.2	1958.4	2108.2
	RT	206	255	289	319	346	368	394	410	450	482	514	557	599
Ice Storage Condition Cooling Capacity	kW	444.4	550.1	665.6	732.1	793.8	842.0	900.8	882.7	1026.8	1096.6	1168.9	1264.8	1361.1
	RT	126	156	189	208	226	239	256	251	292	312	332	360	387
Compressor Quantity	pcs	2	2	2	2	2	2	2	2	2	2	2	2	2
Air conditioning power input	kW	144.6	179.5	200.0	216.8	235.0	250.8	262.3	280.3	302.0	323.6	345.6	375.6	403.7
Ice storage condition power input	kW	138.2	170.9	197.0	213.6	230.6	245.4	258.3	247.8	287.6	307.9	327.9	356.5	384.0
Air conditioning rated current	A	248	309	341	373	407	438	458	487	521	561	601	651	697
Ice storage condition rated current	A	238	295	337	368	400	430	451	436	498	536	573	621	666
Maximum startup current	A	479	509	526	632	665	698	722	881	899	1105	1144	1194	1355
Chilled water flow rate	m^3/h	134	166	189	208	226	240	257	267	294	314	336	363	391
Water pressure drop	kPa	45	47	51	49	49	49	58	61	59	58	56	58	55
Cooling water flow rate	m^3/h	151	186	211	232	251	268	286	298	327	350	373	404	435
Water pressure drop	kPa	55	58	58	59	59	60	59	62	62	62	63	62	60
Unit Shipping weight	kg	3890	4110	4340	4490	4770	4950	5160	4900	6465	6650	7190	7520	7690
Unit Operating weight	kg	4150	4420	4610	4870	5200	5380	5650	5390	7030	7250	7880	8260	8330
R134a filling volume	kg	220	250	285	335	345	365	405	435	445	470	520	565	580

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.

2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

1Part

WCFXHP-R

Water cooled screw heat-pump unit

A Product Features

Efficient and stable

- Falling film evaporator ensures high heat exchange efficiency.
- Electronic throttling ensures precise control.
- Economizer auxiliary system improves efficiency.
- Efficient built-in oil separator improves the efficiency of heat exchanger.
- The vertical design of the compressor reduces the spindle load and prolongs the service life.
- Asymmetric linear rotor design improves efficiency.

Safe and reliable

- Efficient built-in oil separator ensures smooth oil return.
- Hermetic twin-screw compressor is maintenance-free.
- The compressor is fully sealed to avoid oil and refrigerant leakage
- Multiple protections and automatic monitoring ensures the safety and stability.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).
- Standard RS485 interface, Multiple communication protocol options, such as Modbus, Bacnet, Profibus, etc.

Wide range of applications (optional)

- Heat recovery, hot water temperature up to 55°C.
- Ice storage, ethylene glycol lowest to -6°C.
- Water (ground) source heat pump, cooling & heating, domestic hot water.

B WCFXHP-R Water Source Heat Pump Technical

Unit Model WCFXHP		10SRS	12SRS	15SRS	19SRS	20SRS	23SRS	24SRS	27SRS	30SRS	36SRS	41SRS	46SRS
Cooling Capacity	kW	210.2	263.0	318.1	400.3	497.6	543.0	596.5	644.7	741.7	849.0	974.4	1135.3
	RT	60	75	90	114	142	154	170	183	211	241	277	323
Heating Capacity	kW	243.5	303.4	367.3	434.3	540.6	630.9	643.3	748.6	857.6	970.8	1116.4	1302.6
	RT	69	86	104	124	154	179	183	213	244	276	318	370
Compressor													
Quantity		1	1	1	1	1	1	1	1	1	1	1	1
Cooling condition input power	kW	31.8	39.5	47.4	58.3	72.2	76.0	83.4	91.1	103.5	120.4	138.7	161.8
Heating condition input power	kW	52.9	64.8	78.4	90.6	112.1	126.2	129.5	150.0	168.4	191.4	218.3	254.7
Cooling condition rated current	A	64	79	95	111	137	142	158	169	195	229	266	254
Heating condition rated current	A	95	116	141	159	197	219	227	260	293	335	384	400
Unit maximum startup current	A	283	352	412	461	493	493	596	596	730	761	883	1018
Evaporator													
Chilled Water	Inlet/Outlet water temperature °C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow m^3/h	36	45	55	69	85	93	102	111	127	146	167	195
	Water Pressure Drop kPa	35	35	38	49	55	43	47	45	47	82	83	86
Heat source water	Inlet/Outlet water temperature °C	Hot source water inlet temperature 15°C, outlet temperature depends on flow rate											
	Water Flow m^3/h	19	24	29	36	45	49	53	58	66	76	87	102
	Water Pressure Drop kPa	13	13	14	16	19	16	16	17	17	29	30	31
Condenser													
Cooling Water	Inlet/Outlet water temperature °C	Cooling Water inlet temperature18 °C, outlet temperature 29°C											
	Water Flow m^3/h	19	24	29	36	45	49	53	58	66	76	87	102
	Water Pressure Drop kPa	7	8	8	11	14	13	10	12	13	17	17	17
Hot water	Inlet/Outlet water temperature °C	Hot water outlet T 45°C, inlet water T depends on flow rate											
	Water Flow m^3/h	36	45	55	69	85	93	102	111	127	146	167	195
	Water Pressure Drop kPa	25	26	25	33	45	43	34	41	46	55	57	58
General Parameter													
Unit Shipping weight	kg	1820	1900	2090	2420	2520	2700	2750	2900	3060	4350	4820	5000
Operating weight	kg	1920	2030	2240	2570	2690	2900	2980	3150	3330	4680	5200	5410
R134a filling volume	kg	90	100	120	120	120	140	140	170	180	240	240	270

Note:
1.Power supply 380V/3P/50Hz.
2. Above data is based on corresponding inlet& outlet water T, flow rate and 2 passes condition, water side design pressure 1.0Mpa, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
3.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

B WCFXHP-R Water Source Heat Pump Technical

Unit model WCFXHP		38TRS	40TRS	46TRS	50TRS	54TRS	57TRS	60TRS	66TRS	73TRS	75TRS	81TRS	87TRS	90TRS
Cooling Capacity	kW	805.3	996.5	1095.6	1202.7	1307.9	1389.4	1476.2	1622.7	1712.4	1834.1	1957.2	2119.0	2279.7
	RT	229	283	312	342	372	395	420	462	487	522	557	603	648
Heating Capacity	kW	865.1	1074.8	1270.1	1392.6	1509.0	1601.6	1700.4	1831.8	1950.8	2090.3	2231.9	2415.9	2598.2
	RT	246	306	361	396	429	456	484	521	555	595	635	687	739
Compressor														
Quantity		2	2	2	2	2	2	2	2	2	2	2	2	2
Cooling condition input power	kW	112.2	139.1	150.5	164.5	177.4	189.8	201.4	223.7	237.2	254.3	271.8	293.0	315.9
Heating condition input power	kW	175.3	217.3	251.3	273.4	293.6	312.1	329.2	355.4	377.1	402.1	427.9	461.3	497.4
Cooling condition rated current	A	215	266	283	308	332	357	381	425	451	487	523	508	496
Heating condition rated current	A	308	382	437	474	509	543	574	622	661	707	754	765	782
Unit maximum startup current	A	615	684	710	812	849	982	1017	1073	1092	1215	1261	1388	1409
Evaporator														
Chilled Water	Inlet/Outlet water temperature °C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C												
	Water Flow m^3/h	138	171	188	206	224	238	253	278	294	315	336	364	391
	Water Pressure Drop kPa	84	93	88	86	86	86	85	81	81	81	81	81	77
Heat source water	Inlet/Outlet water temperature °C	Hot source water inlet temperature 15°C, outlet temperature depends on flow rate												
	Water Flow m^3/h	72	89	98	107	117	124	132	145	153	164	175	189	204
	Water Pressure Drop kPa	27	31	32	32	31	31	31	26	29	29	29	29	28
Condenser														
Cooling Water	Inlet/Outlet water temperature °C	Cooling Water inlet temperature18 °C, outlet temperature 29°C												
	Water Flow m^3/h	72	89	98	107	117	124	132	145	153	164	175	189	204
	Water Pressure Drop kPa	17	17	17	19	17	17	17	14	14	14	14	14	13
Hot water	Inlet/Outlet water temperature °C	Hot water outlet T 45°C, inlet water T depends on flow rate												
	Water Flow m^3/h	138	171	188	206	224	238	253	278	294	315	336	364	391
	Water Pressure Drop kPa	50	53	60	67	59	58	58	42	45	46	47	48	46
General Parameter														
Unit Shipping weight	kg	4160	4400	4610	4730	5060	5240	5400	7020	7480	7780	8020	8220	8520
Operating weight	kg	4450	4560	5010	5150	5560	5760	5940	7670	8180	8540	8810	9070	9460
R134a filling volume	kg	170	220	260	260	280	290	290	370	380	380	390	400	430

Note:

1.Power supply 380V/3P/50Hz.

2. Above data is based on corresponding inlet& outlet water T, flow rate and 2 passes condition, water side design pressure 1.0Mpa, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.

3.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

C WCFXHP-R Ground Source Heat Pump Units

Unit model WCFXHP		10SRSG	12SRSG	15SRSG	19SRSG	20SRSG	23SRSG	24SRSG	27SRSG	30SRSG	36SRSG	41SRSG	46SRSG
Cooling Capacity	kW	209.2	261.4	316.1	396.1	492.0	540.0	590.0	641.0	737.5	842.8	967.5	1127.4
	RT	59	74	90	113	140	154	168	182	210	240	275	321
Heating Capacity	kW	238.9	297.4	359.4	425.9	529.3	621.2	628.7	736.2	843.5	953.4	1094.6	1277.0
	RT	68	85	102	121	151	177	179	209	240	271	311	363
Compressor													
Quantity		1	1	1	1	1	1	1	1	1	1	1	1
Cooling condition input power	kW	33.0	41.0	49.1	60.4	75.0	80.0	85.9	95.0	107.8	125.4	144.3	168.4
Heating condition input power	kW	52.5	64.4	77.7	89.9	111.4	126.5	127.9	149.2	167.3	190.0	216.8	253.0
Cooling condition rated current	A	65	81	97	114	141	148	161	175	200	235	273	265
Heating condition rated current	A	94	116	139	158	196	219	224	258	291	333	381	398
Unit maximum startup current	A	283	352	412	461	493	493	596	596	730	761	883	1018
Evaporator													
Chilled Water	Inlet/Outlet water temperature °C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C											
	Water Flow m^3/h	36	45	54	68	84	93	101	110	127	145	166	193
	Water Pressure Drop kPa	35	35	38	49	54	43	46	45	46	82	83	85
Heat source water	Inlet/Outlet water temperature °C	Hot source water inlet temperature 10°C, outlet temperature depends on flow rate											
	Water Flow m^3/h	42	52	63	79	98	107	117	127	146	167	192	224
	Water Pressure Drop kPa	55	57	60	68	79	69	67	71	74	122	128	134
Condenser													
Cooling Water	Inlet/Outlet water temperature °C	Cooling Water inlet temperature25 °C, outlet temperature 30°C											
	Water Flow m^3/h	42	52	63	79	98	107	117	127	146	167	192	224
	Water Pressure Drop kPa	30	31	30	42	56	50	41	48	52	66	67	68
Hot water	Inlet/Outlet water temperature °C	Hot water outlet T 45°C, inlet water T depends on flow rate											
	Water Flow m^3/h	36	45	54	68	84	93	101	110	127	145	166	193
	Water Pressure Drop kPa	24	25	25	32	44	42	32	40	44	53	56	57
General Parameter													
Unit Shipping weight	kg	1820	1900	2090	2420	2520	2700	2750	2900	3060	4350	4820	5000
Operating weight	kg	1920	2030	2240	2570	2690	2900	2980	3150	3330	4680	5200	5410
R134a filling volume	kg	90	100	120	120	120	140	140	170	180	240	240	270

Note:

1. Above data is based on corresponding inlet& outlet water T, flow rate and 2 passes condition, water side design pressure 1.0Mpa, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.

2.Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

WCFXHP-R Ground Source Heat Pump Units

Unit model WCFXHP		38TRSG	40TRSG	46TRSG	50TRSG	54TRSG	57TRSG	60TRSG	66TRSG	73TRSG	75TRSG	81TRSG	87TRSG	90TRSG
Cooling Capacity	kW	796.4	985.2	1090.3	1196.1	1300.8	1382.3	1468.3	1603.2	1701.0	1821.1	1943.3	2104.0	2264.1
	RT	227	280	310	340	370	393	418	456	484	518	553	598	644
Heating Capacity	kW	847.5	1050.3	1247.8	1365.4	1481.7	1573.8	1669.4	1794.3	1915.1	2050.4	2188.1	2368.6	2548.8
	RT	241	299	355	388	421	448	475	510	545	583	622	674	725
Compressor														
Quantity		2	2	2	2	2	2	2	2	2	2	2	2	2
Cooling condition input power	kW	116.7	144.7	157.1	171.8	185.1	198.0	209.9	231.4	246.7	264.5	282.6	305.0	328.1
Heating condition input power	kW	174.3	216.2	249.5	271.5	291.8	310.3	327.1	350.6	374.6	399.8	425.5	459.3	494.3
Cooling condition rated current	A	221	274	292	318	342	368	392	434	464	500	537	525	516
Heating condition rated current	A	307	380	433	471	506	539	570	614	656	702	749	762	777
Unit maximum startup current	A	615	685	710	813	850	983	1017	1071	1092	1216	1261	1389	1409
Evaporator														
Chilled Water	Inlet/Outlet water temperature °C	Chilling Water inlet temperature 12 °C, outlet temperature 7 °C												
	Water Flow m^3/h	137	169	187	205	223	237	252	275	292	313	333	361	389
	Water Pressure Drop kPa	83	92	88	86	86	86	85	80	81	81	81	81	77
Heat source water	Inlet/Outlet water temperature °C	Hot source water inlet temperature 10°C, outlet temperature depends on flow rate												
	Water Flow m^3/h	158	195	216	236	257	273	290	317	337	361	385	416	448
	Water Pressure Drop kPa	114	128	138	133	134	132	130	109	121	122	124	125	118
Condenser														
Cooling Water	Inlet/Outlet water temperature °C	Cooling Water inlet temperature25 °C, outlet temperature 30°C												
	Water Flow m^3/h	158	195	216	236	257	273	290	317	337	361	385	416	448
	Water Pressure Drop kPa	65	67	69	77	68	67	68	54	54	55	55	55	53
Hot water	Inlet/Outlet water temperature °C	Hot water outlet T 45°C, inlet water T depends on flow rate												
	Water Flow m^3/h	137	169	187	205	223	237	252	275	292	313	334	361	389
	Water Pressure Drop kPa	49	51	58	65	57	56	57	40	44	45	46	46	44
General Parameter														
Unit Shipping weight	kg	4160	4400	4610	4730	5060	5240	5400	7020	7480	7780	8020	8220	8520
Operating weight	kg	4450	4560	5010	5150	5560	5760	5940	7670	8180	8540	8810	9070	9460
R134a filling volume	kg	170	220	260	260	280	290	290	370	380	380	390	400	430

Note:

1. Above data is based on corresponding inlet& outlet water T, flow rate and 2 passes condition, water side design pressure 1.0Mpa, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
2. Above selection is just for reference, based on different combination of heat exchangers, same capacity unit may have several models, for computer selection of specific project, please contact DB local office.

1Part

WCDSX-D

Water Cooled Semi-hermetic Screw Refrigerating Unit

Efficient and Stable | Wide range of applications | Optional functions | Intelligent control Simple operation | Safe and Reliable

Product Features

Efficient and stable

- The unit is with compact size and compact installation footprint, and transportation is convenient.
- The complete machine has been matched with refrigerant and lubricating oil before leaving the factory.
- The user only needs to connect the water pipe and the main power supply at the site.
- Optional flooded evaporator

Wide Application Range

- Food, chemical industry, electronics, pharmacy and so on venues where need such low temperature.

Optional function

- Other refrigerants, like R404a, etc
- Water flow switch
- Spring isolator or rubber pad isolator

Intelligent control, simple operation

- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Retain alarm history, easy maintenance.
- Optional for remote monitoring and group control;

Safe and Reliable

- Optimized oil management system separates oil from refrigerant effectively.
- Multiple protections and automatic monitoring ensures the safety and stability.
- Medium-pressure cavity spray design ensures that the motor does not overheat.
- Semi-hermetic compressor ensures easy maintenance.

WCDSX-D Series Units (R22)

Unit model WCDSX-D		025S	055S	065S	070S	090S	110S	125S	150S	165S	230S
Nominal Cooling Capacity	RT	28	46	60	75	89	104	125	147	165	228
	kW	100	163	212	263	313	366	440	517	580	803
	10^4Kcal/h	8.6	14.1	18.2	22.6	27	31.5	37.8	44.4	49.9	69.1
Input power	kW	48.6	77.2	95.8	117.4	142.9	162.4	198.6	225	250.9	347.7
COP		2.05	2.12	2.21	2.24	2.19	2.25	2.21	2.3	2.31	2.31
Refrigerant		R22									
Voltage		380V/3P/50Hz									
Compressor											
Compressor quantity	Set	1									
Capacity control		25%~100% stepless modulating									
Rated Current	A	86	132	164	201	243	278	351	390	435	658
Single compressor maximum operating current	A	119	189	221	329	371	402	458	546	655	970
Locked-rotor current	A	485	857	1038	1325	1443	1591	2064	2466	2982	4956
Evaporator											
Type		Shell&tube type									
Cooling medium flow rate	m^3/h	20	33	43	53	63	74	89	104	117	161
cooling medium resistance	MPa	<0.1									
Water Side Pressure Design	MPa	1.0									
Inlet/Outlet connection size	in	3	4	4	4	5	5	5	6	6	8
Condenser											
Type		Shell&tube type									
Cooling water flow rate	kW	26	42	53	66	79	91	110	128	143	198
Cooling water resistance	MPa	<0.1									
Water Side Pressure Design	MPa	1.0									
Inlet/Outlet connection size	in	3	4	4	4	5	5	6	6	6	8
General Parameter											
Unit Shipping weight	kg	1420	2110	2670	2900	3740	4260	5100	5500	7040	8600
Unit Operating weight	kg	1630	2430	3100	3440	4440	4970	5020	6480	8210	9900

Note:
1.EG water fluid volume concentration 40%, outlet T -15°C, inlet and out T difference 5°C, cooling water inlet T 30°C, inlet and out T difference 5°C.
2.Evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.
3.If cooling medium using other kind, please contact Factory and make special note in the order.
4.If using other refrigerant, please contact Factory and make special note in the order.
5.Above selection is just for reference, for specific project parameters, please contact DB local office.

WCDSX-D Series Units (R22)

Unit model WCDSX-D		125T	140T	180T	215T
Nominal Cooling Capacity	RT	120	150	178	208
	kW	424	526	627	732
	10^4Kcal/h	36.4	45.3	53.9	63.0
Input power	kW	191.6	234.7	285.8	324.7
COP		2.21	2.24	2.19	2.25
Refrigerant		R22			
Voltage		380V/3P/50Hz			
Compressor					
Compressor quantity	Set	2			
Capacity control		12.5%~100% stepless modulating			
Rated Current	A	329	402	486	555
Single compressor maximum operating current	A	221	329	371	402
Locked-rotor current	A	1038	1325	1443	1591
Evaporator					
Type		Shell&tube type			
Cooling medium flow rate	m^3/h	85	106	126	147
cooling medium resistance	MPa	<0.1			
Water Side Pressure Design	MPa	1.0			
Inlet/Outlet connection size	in	5	6	6	8
Condenser					
Type		Shell&tube type			
Cooling water flow rate	kW	106	131	157	182
Cooling water resistance	MPa	<0.1			
Water Side Pressure Design	MPa	1.0			
Inlet/Outlet connection size	in	6	6	6	8
General Parameter					
Unit Shipping weight	kg	5350	5800	7440	8510
Unit Operating weight	kg	6220	6780	8610	9920

Note:
1.EG water fluid volume concentration 40%, outlet T -15°C, inlet and out T difference 5°C, cooling water inlet T 30°C, inlet and out T difference 5°C.
2.Evaporator water side fouling factor 0.018m².°C/kW, condenser side water fouling factor 0.044m².°C/kW.
3.If cooling medium using other kind, please contact Factory and make special note in the order.
4.If using other refrigerant, please contact Factory and make special note in the order.
5.Above selection is just for reference, for specific project parameters, please contact DB local office.

DB

D WCDSX-SD Series Units (R404A)

Unit model WCDSX-SD		025S	055S	065S	070S	090S	110S	125S	150S	165S	230S
Nominal Cooling Capacity	RT	30	48	63	77	92	107	130	154	169	255
	kW	106	169	221	272	323	376	456	541	593	898
	10^4Kcal/h	9.1	14.5	19.0	23.4	27.8	32.3	39.2	46.5	51.0	77.2
Input power	kW	57.2	90.6	117.0	143.6	171.8	195.2	238.1	286.8	312.8	473.6
COP		1.84	1.86	1.89	1.89	1.88	1.92	1.91	1.89	1.90	1.90
Refrigerant		R404A									
Voltage		380V/3P/50Hz									
Compressor											
Compressor quantity	Set	1									
Capacity control		25%~100% stepless modulating									
Rated Current		99	153	198	243	287	327	413	485	530	802
Single compressor maximum operating current		119	189	221	329	371	402	458	546	655	970
Locked-rotor current		485	857	1038	1325	1443	1591	2064	2466	2982	4956
Evaporator											
Type		Shell&tube type									
Cooling medium flow rate	m^3/h	22	34	45	55	65	76	92	109	119	180
cooling medium resistance	MPa	<0.1									
Water Side Pressure Design	MPa	1.0									
Inlet/Outlet connection size		3	4	4	4	5	5	5	6	6	8
Condenser											
Type		Shell&tube type									
Cooling water flow rate	kW	28	45	59	72	86	99	120	143	156	236
Cooling water resistance	MPa	<0.1									
Water Side Pressure Design	MPa	1.0									
Inlet/Outlet connection size		3	4	4	4	5	5	6	6	6	8
General Parameter											
Unit Shipping weight	kg	1480	2190	2630	3280	3800	4260	5110	5930	6120	9030
Unit Operating weight	kg	1690	2500	3060	3820	4500	4980	6090	6910	7120	10700

Note:
1.EG water fluid volume concentration 40%, outlet T -15°C, inlet and out T difference 5°C, cooling water inlet T 30°C, inlet and out T difference 5°C.
2.Evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
3.If cooling medium using other kind, please contact Factory and make special note in the order.
4.If using other refrigerant, please contact Factory and make special note in the order.
5.Above selection is just for reference, for specific project parameters, please contact DB local office.

E WCDSX-DS Series Units (R404A)

Unit model WCDSX-DS		125T	140T	180T	215T
Nominal Cooling Capacity	RT	125	155	184	214
	kW	441	543	646	751
	10^4Kcal/h	37.9	46.7	55.5	64.6
Input power	kW	234.0	287.3	343.6	390.4
COP		1.89	1.89	1.88	1.92
Refrigerant		R404A			
Voltage		380V/3P/50Hz			
Compressor					
Compressor quantity	Set	2			
Capacity control		12.5%~100% stepless modulating			
Rated Current		396	486	574	655
Single compressor maximum operating current		221	329	371	402
Locked-rotor current		1038	1325	1443	1591
Evaporator					
Type		Shell&tube type			
Cooling medium flow rate	m^3/h	89	109	130	151
cooling medium resistance	MPa	<0.1			
Water Side Pressure Design	MPa	1.0			
Inlet/Outlet connection size		5	6	6	8
Condenser					
Type		Shell&tube type			
Cooling water flow rate	kW	117	143	171	197
Cooling water resistance	MPa	<0.1			
Water Side Pressure Design	MPa	1.0			
Inlet/Outlet connection size		6	6	6	8
General Parameter					
Unit Shipping weight	kg	5465	6290	7690	8370
Unit Operating weight	kg	6340	7270	8870	9780

Note:
1.EG water fluid volume concentration 40%, outlet T -15°C, inlet and out T difference 5°C, cooling water inlet T 30°C, inlet and out T difference 5°C.
2.Evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.
3.If cooling medium using other kind, please contact Factory and make special note in the order.
4.If using other refrigerant, please contact Factory and make special note in the order.
5.Above selection is just for reference, for specific project parameters, please contact DB local office.

1Part

WCHX

Semi-hermetic screw water-cooled chiller

A Product Features

Easy installation

- The unit is with compact size and compact installation footprint, and transportation is convenient.
- The complete machine has been matched with refrigerant and lubricating oil before leaving the factory.
- The user only needs to connect the water pipe and the main power supply at the site.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).

Optional functions

- Water flow switch.
- Rubber vibration isolator
- Clamps and flanges are optional for water pipe connection.

Efficient and stable

- High-efficiency semi-hermetic twin-screw compressor ensures stablility and safety and reliability.
- High-efficiency heat exchange tube strengthens heat exchange and improves efficiency
- High-precision throttling device ensures efficient operation of the system.
- Efficient built-in oil separator improves the efficiency of the heat exchanger.

Safe and reliable

- Efficient built-in oil separator ensures smooth oil return.
- Multiple protections and automatic monitoring ensures the safety and stability of the unit.
- Medium-pressure cavity spray design ensures that the motor does not overheat.
- Semi-hermetic compressor ensures easy maintenance.

B WCHX Standard Units

Unit model WCHX			90SR	110SR	150SR	180SR	200SR	230SR
Cooling Capacity		kW	314.3	413.2	518.0	614.9	703.9	768.8
		RT	89.4	117.5	147.3	174.8	200.1	218.6
Capacity Range			25-100% Stepless modulating					
Power Supply			380V/3P/50Hz					
Compressor	Quantity		1	1	1	1	1	1
	Total power input	kW	62.0	78.7	98.3	114.5	130.6	142.7
	Rated Current	A	118	134	165	196	224	255
	Maximum startup current	A	216	250	268	330	442	453
Evaporator	Chilled water flow rate	m^3/h	53.9	70.9	88.9	105.5	120.8	131.9
	Water pressure drop	kPa	41	40	38	37	39	36
	Inlet/Outlet connection size	DN	100	125	125	150	150	150
Condenser	Cooling water flow rate	m^3/h	65.2	85.2	106.7	126.3	144.5	157.9
	Water pressure drop	kPa	93	86	85	84	84	45
	Inlet/Outlet connection size	DN	100	125	125	150	150	150
General Parameter	Length	mm	3150	3200	3070	3100	3150	3910
	Width	mm	980	1030	1030	1090	1090	1250
	Height	mm	1820	1910	2070	2190	2230	2170
	Unit Shipping weight	kg	2225	2498	2898	3235	3453	3890
	Unit Operating weight	kg	2370	2690	3130	3530	3790	4320
	R134a filling volume	kg	95	105	140	155	165	220

Note:

1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, chilled water inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.

2.The length in table is based on 2 passes heat exchanger and right connection, Units' dimension may change after passes or connection direction alters, please consult DB local office.

3.The data can be updated without prior notice, if any discrepancies compared with nameplate, please refer parameters in nameplate.

B WCHX Standard Units

Unit model WCHX			260SR	300SR	350SR	380SR	420SR	450SR
Cooling Capacity		kW	878.6	1025.0	1299.2	1364.0	1492.9	1567.3
		RT	249.8	291.4	369.4	387.8	424.5	445.6
Capacity Range			25-100% Stepless modulating					
Power Supply			380V/3P/50Hz					
Compressor	Quantity		1	1	1	1	1	1
	Total power input	kW	164.5	191.9	243.4	252.9	279.7	290.6
	Rated Current	A	294	344	418	454	481	520
	Maximum startup current	A	542	688	963	963	999	999
Evaporator	Chilled water flow rate	m^3/h	150.8	175.9	223	234.1	256.2	269
	Water pressure drop	kPa	37	37	34	37	34	37
	Inlet/Outlet connection size	DN	150	150	200	200	200	200
Condenser	Cooling water flow rate	m^3/h	180.6	210.7	267.1	280	307	321.7
	Water pressure drop	kPa	45	46	42	46	42	45
	Inlet/Outlet connection size	DN	150	150	200	200	200	200
General Parameter	Length	mm	3950	3950	4160	4160	4010	4010
	Width	mm	1280	1280	1430	1430	1430	1430
	Height	mm	2210	2270	2470	2470	2590	2590
	Unit Shipping weight	kg	4360	4530	5760	5860	6230	6360
	Unit Operating weight	kg	4880	5100	6460	6590	7060	7220
	R134a filling volume	kg	270	280	330	340	360	370

Note:

1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, chilled water inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.

2.The length in table is based on 2 passes heat exchanger and right connection, Units' dimension may change after passes or connection direction alters, please consult DB local office.

3.The data can be updated without prior notice, if any discrepancies compared with nameplate, please refer parameters in nameplate.

C WCHX Series Dual Condition Unit

Unit model WCHX				90SRD	110SRD	150SRD	180SRD	200SRD	230SRD
Air Conditioning Cooling Capacity			kW	310.6	408.8	512.4	608.1	696.1	758.7
			RT	88.3	116.2	145.7	172.9	197.9	215.7
Ice Storage Condition Cooling Capacity			kW	196.2	266.5	334.4	395.5	451.5	490.8
			RT	55.8	75.8	95.1	112.5	128.4	139.6
Capacity Range				25-100% Stepless modulating					
Power Supply				380V/3P/50Hz					
Compressor	Quantity			1	1	1	1	1	1
	AC condition	Input power	kW	62.0	78.8	98.4	114.6	130.7	142.8
		Rated Current	A	118	134	165	196	225	255
	Ice storage condition	Input power	kW	60.6	78.2	98.0	113.9	129.6	137.0
		Rated Current	A	115	133	164	195	223	245
	Maximum startup current		A	216	250	268	330	442	453
Evaporator	Chilled water flow rate		m^3/h	57.6	75.8	95	112.8	129.1	140.7
	Water pressure drop		kPa	55	53	50	50	53	49
	Inlet/Outlet connection size		DN	100	125	125	150	150	150
Condenser	Cooling water flow rate		m^3/h	64.5	84.4	105.8	125.2	143.2	156.1
	Water pressure drop		kPa	91	84	83	82	82	44
	Inlet/Outlet connection size		DN	100	125	125	150	150	150
General Parameter	Length		mm	3150	3200	3070	3100	3150	3910
	Width		mm	980	1030	1030	1090	1090	1250
	Height		mm	1820	1910	2070	2190	2230	2170
	Unit Shipping weight		kg	2225	2498	2898	3235	3453	3890
	Unit Operating weight		kg	2370	2690	3130	3530	3790	4320
	R134a filling volume		kg	95	105	140	155	165	220

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7°C, cooling water inlet/outlet T 30/35°C; under ice storage condition, 25% EG outlet T -5.6°C, cooling water inlet T 30°C, evaporator water side fouling factor 0.018m^2.°C/kW, condenser side water fouling factor 0.044m^2.°C/kW.

2.The length in table is based on 2 passes heat exchanger, units' dimension may change for non-standard vessels, please consult DB local office.

3.The data can be updated without prior notice, if any discrepancies compared with nameplate, please refer parameters in nameplate.

WCHX Series Dual Condition Unit

Unit model WCHX				260SRD	300SRD	350SRD	380SRD	420SRD	450SRD
Air Conditioning Cooling Capacity			kW	866.8	1011.6	1280.2	1345.9	1471	1546.9
			RT	246.5	287.6	364.0	382.7	418.3	439.8
Ice Storage Condition Cooling Capacity			kW	558.6	651.6	778.2	866.9	894.2	996.9
			RT	158.8	185.3	221.3	246.5	254.3	283.5
Capacity Range				25-100% Stepless modulating					
Power Supply				380V/3P/50Hz					
Compressor	Quantity			1	1	1	1	1	1
	AC condition	Input power	kW	164.6	191.9	243.2	253.2	279.4	290.7
		Rated Current	A	294	344	418	454	480	520
	Ice storage condition	Input power	kW	157.4	183.1	229.1	241.6	263.3	277.5
		Rated Current	A	282	330	397	435	456	499
	Maximum startup current		A	542	688	963	963	999	999
Evaporator	Chilled water flow rate		m^3/h	160.8	187.7	237.5	249.7	272.9	286.9
	Water pressure drop		kPa	50	49	45	49	45	50
	Inlet/Outlet connection size		DN	150	150	200	200	200	200
Condenser	Cooling water flow rate		m^3/h	178.6	208.4	263.8	276.9	303.1	318.2
	Water pressure drop		kPa	45	45	41	45	41	45
	Inlet/Outlet connection size		DN	150	150	200	200	200	200
General Parameter	Length		mm	3950	3950	4160	4160	4010	4010
	Width		mm	1280	1280	1430	1430	1430	1430
	Height		mm	2210	2270	2470	2470	2590	2590
	Unit Shipping weight		kg	4360	4530	5760	5860	6230	6360
	Unit Operating weight		kg	4880	5100	6460	6590	7060	7220
	R134a filling volume		kg	270	280	330	340	360	370

Note:

1.The data in the table is based on the following conditions: under air conditioning condition, 25% EG fluid inlet/outlet T 12/7℃, cooling water inlet/outlet T 30/35℃; under ice storage condition, 25% EG outlet T -5.6℃, cooling water inlet T 30℃, evaporator water side fouling factor 0.018m^2.℃/kW, condenser side water fouling factor 0.044m^2.℃/kW.

2.The length in table is based on 2 passes heat exchanger, units' dimension may change for non-standard vessels, please consult DB local office.

3.The data can be updated without prior notice, if any discrepancies compared with nameplate, please refer parameters in nameplate.

1Part

WCHXHP

High Temperature Heat Pump Unit

Efficient and Stable | Simple maintenance | Optional functions | Intelligent control Easy operation | Energy saving and Environmental friendly

Product Features

Efficient and Stable

- Preferred selection of heat-pump type high efficienct compressor, to ensure extra-high efficiency under arbitrary load.
- Preferred selection of fifth generation of high efficient heat exchange tubes, heat transfer efficiency can be increased by more than 10%.
- High precision throttling device, to ensure system efficiently operate and high efficient oil separator, to promote efficiency of heat exchanger.
- Can make 70-120 ℃ high temperature hot water or steam.

Easy installation

- The unit is with compact size and compact installation footprint, and transportation is convenient.
- The complete machine has been matched with refrigerant and lubricating oil before leaving the factory.
- The user only needs to connect the water pipe and the main power supply at the site.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).

Optional functions

- Water flow switch.
- Rubber vibration isolator
- Clamps and flanges are optional for water pipe connection.

Energy saving and Environmental friendly

- Energy saving and environmental protection Replacing boiler, realizing zero carbon emissions,
- No pollution, low operating cost
- Semi-hermetic compressor, maintenance ease
- 1/3 to 1/2 cost saving compared with traditional boilers

B High Temperature Heat Pump

Unit model WCHXHP			425R	1065R	1700R	2130R	2710R	3400R
Nominal heating	Heating capacity	kW	423.2	1065.3	1700.6	2130.6	2710.8	3401.2
Compressor	Power Supply		380V/3P/50Hz					
	Capacity control range		25-100% Stepless modulating			12.5-100% Stepless modulating		
	Quantity		1	1	1	2	2	2
	Refrigerant		R134a					
Evaporator	Type		Shell& tube heat exchanger					
	Water Flow	m^3/h	54.4	139.3	222.9	278.6	356.6	445.8
	Pressure drop	kPa	<100kPa					
	Inlet/Outlet connection	DN	100	150	200	250	250	250
Condenser	Type		Shell& tube heat exchanger					
	Water Flow	m^3/h	74.5	187.4	299.2	374.9	476.9	598.4
	Pressure drop	kPa	<100kPa					
	Inlet/Outlet connection	DN	125	150	200	250	250	300
General Parameter	Length	mm	3350	3820	3820	4960	4980	4980
	Width	mm	1490	1850	1850	1920	2070	2100
	Height	mm	1900	2410	2410	2450	2450	2450
	Unit Shipping weight	kg	2750	4600	5300	7830	8600	9295
	Unit Operating weight	kg	3190	5090	5920	9130	10610	11820

Note:

1.Above selection data of heating capacity is based on User heat source side inlet water 35°C and making 75°C hot water.

2.Standard high temperature heat pump water outlet T range: 15~40°C; User water outlet T range: 65~85°C, if heat source side or User side T beyond this range, please consult DB local office.

3.Due to technical innovation, units' performance, outline dimension, weight may have deviations, which subject to actual design.

4.Above models are standard, if has special design requirement on performance, please contact DB local office.

C Superhigh Temperature Heat Pump

Unit model WCHXHP			170F	450F	690F	900F	1155F	1380F
Nominal heating	Heating capacity	kW	167.5	449.3	691	898.6	1155.2	1382
Compressor	Power Supply		380V/3P/50Hz					
	Capacity control range		25-100% Stepless modulating			12.5-100% Stepless modulating		
	Quantity		1	1	1	2	2	2
	Refrigerant		R245fa					
Evaporator	Type		Shell& tube heat exchanger					
	Water Flow	m^3/h	20.6	55.9	86.1	111.8	143.9	172.3
	Pressure drop	kPa	<100kPa					
	Inlet/Outlet connection	DN	80	125	150	150	200	200
Condenser	Type		Shell& tube heat exchanger					
	Water Flow	m^3/h	30.0	80.4	123.6	160.7	206.6	247.2
	Pressure drop	kPa	<100kPa					
	Inlet/Outlet connection	DN	80	125	150	150	200	200
General Parameter	Length	mm	3350	3820	3820	4960	4980	4980
	Width	mm	1490	1675	1675	1700	1900	1900
	Height	mm	1900	2300	2300	2400	2450	2450
	Unit Shipping weight	kg	2450	2750	3260	5270	6300	7150
	Unit Operating weight	kg	2665	3190	3900	6110	7160	8350

Note:

1.Above selection data of heating capacity is based on User heat source side inlet water 65℃ and making 110°C hot water.

2.Standard high temperature heat pump heat source water outlet T range: 40~80°C; User water outlet T range: 80~120°C, if heat source side or User side T beyond this range, please consult DB local office.

3.Unit does not include flash tank skid

4.Due to technical innovation, units' performance, outline dimension, weight may have deviations, which subject to actual design.

5.Above models are standard, if has special design requirement on performance, please contact DB local office.

1Part

WCFX-I

Central Integrated Refrigeration Station

A Product Features

Energy saving and environmentally friendly

- Adopting HFC-134a environmental friendly refrigerant.
- Applicable to the LEED certification.
- Ultra-high efficiency, selections certified by AHRI.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).

Optional features

- Unit optional low temperature, normal temperature, high temperature type
- Cooling water pump
- Chilled water pump
- Water treatment
- Valves, etc

Efficient and stable

- Falling film evaporator ensures high heat exchange efficiency.
- Electronic throttling ensures precise control.
- Economizer auxiliary system improves efficiency.
- Efficient built-in oil separator improves the efficiency of heat exchanger.

Convenient installation

- Compact modular design, convenient carrying and knocking down, save installation costs of 30% - 40%
- Only need to connect pipe and main power at site, save installation time
- Based on BIM system, saving installation footprint of 30%

B Central Integrated Refrigeration Station Typical Unit Model Technical

Model	Refrigeration unit parameter				Chilled water hydraulic module				Cooling water hydraulic module				Cooling Tower		General Parameter				
	Cooling Capacity		Compressor Input power	Flow rate	Pump lifting head	Piping dimension	Qty	Motor Power	Flow rate	Piping dimension	Qty	Motor Power	Fan Power	Fan qty	Length	Width	Height	Unit Shipping weight	Unit Operating weight
	Ton	kW	kW	m^3/h	m	DN	-	kW	m^3/h	DN	-	kW	kW	-	mm	mm	mm	kg	kg
WCFX19SRH-I	108	381.4	70.8	65.6	30	125	2	11	84.3	125	2	5.5	3	1	7200	3200	4150	8300	9500
WCFX20SRH-I	134	471.9	87.7	81.2	30	125	2	11	104.2	150	2	11	5.5	1	7200	3200	4150	8500	9800
WCFX23SRH-I	153	537.6	94.5	92.5	30	125	2	15	118.8	150	2	11	5.5	1	10200	3200	4150	8800	10200
WCFX24SRH-I	163	572.9	101.6	98.5	30	150	2	15	126.6	150	2	11	5.5	1	10200	3200	4150	8800	10200
WCFX27SRH-I	181	637.7	111.2	109.7	30	150	2	19	140.9	150	2	11	5.5	1	10500	3200	4150	9000	10500
WCFX30SRH-I	207	728.2	126.9	125.3	30	150	2	22	160.9	200	2	11	4	2	10800	3200	4150	10000	12900
WCFX36SRH-I	239	839.9	148.5	144.5	30	150	2	22	185.5	200	2	15	4	2	10800	3400	4150	12500	15500
WCFX41SRH-I	275	965.5	170.1	166.1	30	200	2	22	213.3	200	2	18.5	4	2	12600	3400	4150	14000	17000
WCFX46SRH-I	320	1126.3	198.5	193.7	30	200	2	30	248.8	200	2	22	4	2	12600	3400	4150	14500	17500
WCFX38TRH-I	220	775.1	137.6	133.3	30	150	2	22	171.2	200	2	11	4	2	11800	3400	4150	15500	18300
WCFX40TRH-I	273	959.5	170.5	165.0	30	200	2	22	212.0	200	2	18.5	4	2	13800	3400	4150	16800	21500
WCFX46TRH-I	310	1091	190.5	187.7	30	200	2	30	241.0	200	2	22	4	2	14100	3400	4150	17300	23000
WCFX50TRH-I	342	1201.5	200.5	206.7	30	200	2	30	265.4	200	2	22	4	2	14100	3400	4150	17800	23500
WCFX54TRH-I	371	1304.6	217	224.4	30	200	2	30	288.2	200	2	22	4	3	14300	3400	4150	18500	24500
WCFX19SRS-I	106	372.3	72.92	64.0	30	125	2	11	82.2	125	2	5.5	3	1	6800	3200	4150	8100	9300
WCFX20SRS-I	131	462.2	90.3	79.5	30	125	2	11	102.1	125	2	11	5.5	1	6800	3200	4150	8300	9600
WCFX23SRS-I	149	522.9	98	89.9	30	150	2	15	115.5	125	2	15	5.5	1	9600	3200	4150	8600	10000
WCFX24SRS-I	158	554.5	104	95.4	30	150	2	15	122.5	150	2	11	5.5	1	9600	3200	4150	8600	10000
WCFX27SRS-I	176	620.4	116.3	106.7	30	150	2	19	137.0	150	2	11	5.5	1	9800	3200	4150	8800	10400
WCFX30SRS-I	203	713.8	131.6	122.8	30	150	2	22	157.7	150	2	15	4	2	10400	3200	4150	9600	12500
WCFX36SRS-I	230	810.3	152.2	139.4	30	150	2	22	179.0	200	2	15	4	2	10400	3400	4150	12000	15000
WCFX41SRS-I	265	931.1	174.4	160.1	30	150	2	22	205.7	200	2	18.5	4	2	12200	3400	4150	13500	16800
WCFX46SRS-I	309	1085.94	203.56	186.8	30	200	2	30	239.9	200	2	22	4	2	12200	3400	4150	14100	17200
WCFX38TRS-I	213	748.4	140.9	128.7	30	150	2	22	165.3	150	2	18.5	4	2	11500	3400	4150	15200	18000
WCFX40TRS-I	263	925.6	174.9	159.2	30	150	2	22	204.5	200	2	18.5	4	2	13500	3400	4150	16400	21000
WCFX46TRS-I	301	1059.7	194.5	182.3	30	150	2	30	234.1	200	2	22	4	2	13600	3400	4150	17000	22500
WCFX50TRS-I	330	1160.8	211.7	199.7	30	200	2	30	256.4	200	2	22	4	2	13600	3400	4150	17400	23200
WCFX54TRS-I	359	1262	227.9	217.1	30	200	2	30	278.8	200	2	22	4	3	13900	3400	4150	18200	24200

Note:
1.The data in the table is based on the following conditions: under standard 2 passes heat exchanger, chilled water inlet/outlet T 12/7 ℃, cooling water inlet/outlet T 32/37℃, evaporator water side fouling factor 0.018m².℃/kW, condenser side water fouling factor 0.044m².℃/kW, Dry/Wet bulb T outdoor is 35/28°C.
2.The length in table is based on 2 passes heat exchanger, Units' dimension may change after passes or connection direction alters, please consult DB local office.
3.Standard heat exchanger design pressure is 1.0 Mpa, 1.6Mpa and 2.0Mpa is optional
4.Chilled water pump and cooling water pump are in one use and one standby.
5.Above selection is just for reference, based on different combination of heat exchangers, Unit with same capacity may have several models, for specific selection of screw and centrifugal chiller, please contact DB local office.

02

AIR-COOLED CHILLED (HEAT PUMP) WATER SERIES

Dunham-Bushv developed the world's first vertical fully hermetic screw compressor in the 1980s, and then creatively applied the vertical fully hermetic screw compressor to air-cooled products, creating the new application of Dunham-Bush air-cooled vertical fully hermetic screw unit.

After more than 20 years of continuous innovation and improvement, Dunham Bush now has the most efficient, stable and reliable air-cooled screw unit and the widest range of cooling capacity in this industry. Now, Dunham-Bush air-cooled screw products have different options such as single cooling, heat pump, heat recovery, etc., high efficiency, super high efficiency, etc., as well as frequency conversion, natural cooling, falling film evaporative condenser, etc.

2Part

ACX(HP)-HR

Air-cooled hermetic screw chiller (heat pump) unit

A Product Features

Energy saving and environmentally friendly

- Adopting HFC-134a environmentally friendly refrigerant
- Ultra-high energy efficiency, reaching the national energy-saving standard certification level.

Efficient and stable

- Flooded evaporator ensures high heat exchange efficiency.
- Electronic throttling ensures precise control.
- Efficient built-in oil separator improves the efficiency of heat exchanger.
- The vertical design of the compressor reduces the spindle load and prolongs the service life.
- Asymmetric linear rotor design improves efficiency.

Easy to install and simple to maintain

- Simple design of pipeline makes installation easy.
- The system is simple and easy to maintain.
- Outdoor installation, compact footprint.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).
- Standard RS485 interface, a variety of communication protocols to be optional, such as Modbus, Bacnet, Profibus, etc.

Safe and reliable

- Efficient built-in oil separator ensures smooth oil return.
- Fully hermetic twin-screw compressoris maintenance-free.
- The compressor is fully sealed to avoid oil and refrigerant leakage
- Multiple protections and automatic monitoring ensures the safety and stability of the unit.
- Noise reduction design ensures low operating noise.

B ACX-HR High Efficient Series Single Cooling Technical

Unit Model ACX-HR		95	110	135	160	200	225	250	270	310S	310	340	360	400	450
Cooling Capacity	kW	362	446	516	622	698	828	929	980	1080	1138	1244	1297	1396	1656
	RT	102.9	126.8	146.7	176.9	198.5	235.4	264.1	278.6	307.1	323.6	353.7	368.8	396.9	470.9
	10^4kcal/h	31.1	38.4	44.4	53.5	60.0	71.2	79.9	84.3	92.9	97.9	107.0	111.5	120.1	142.4
Rated total power input	kW	106.0	130.6	150.4	181.3	203.0	241.0	269.7	286.8	313.5	331.7	358.2	376.4	406.0	482.0
Rated total current input	A	205.8	255.5	291.8	353.1	397.4	467.1	524.3	560.2	609.2	644.9	693.5	731.4	794.8	934.3
Power Supply		380V/3P/50Hz													
Compressor															
Quantity		1	1	1	1	1	1	1	1	1	2	2	2	2	2
Compressor Rated Power	A	174.3	211.4	247.7	296.4	328.1	397.8	442.4	465.7	514.7	544.1	592.7	618.0	656.2	795.7
Single compressor startup current	A	461	493	493	596	730	761	883	1018	1018	493/596	596/596	596/730	730/730	761/761
Flooded evaporator															
Water flow	m^3/h	62.3	76.7	88.8	107.0	120.1	142.4	159.8	168.6	185.8	195.7	214.0	223.1	240.1	284.8
Standard water flow pressure drop	kPa	38	85	86	91	88	90	86	83	84	92	93	93	88	90
Water Side Pressure Design	MPa	1.0													
Connection size	in	4	5	5	6	6	6	8	8	8	8	8	8	6/6	6/6
Condenser															
Fan qty		5	7	7	9	11	11	13	15	15	16	16	18	22	22
Fan motor power	kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter															
Length	mm	3560	4710	4710	5860	7210	7210	8360	9510	9510	10360	10360	11510	14420	14420
Width	mm	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2560	2560	2560	2400	2400
Unit Shipping weight	kg	3580	4240	4380	5040	5440	6550	7150	7850	8160	9080	9530	10080	10880	13100
Unit Operating weight	kg	3800	4410	4570	5240	5640	6770	7400	8140	8460	9380	9830	10480	11280	13540

Note:
1.Above data is based on: Ambient temperature 35°C, chilled water inlet/outlet T 12/7°C.
2. Flooded evaporator fouling factor is $0.018m^2$. °C/kw
3.ACX400HR、ACX450HR is comprised with 2 modular units, each module need to be power supplied individually.

ACXHP-HR High Efficient Series Heat Pump Technical

Unit Model ACXHP-HR		95	110	135	160	200	225	250	270	310S	310	340	360	400	450
Cooling Capacity	kW	358	440	510	615	690	820	908	970	1068	1125	1230	1292	1380	1640
	RT	101.8	125.1	145.0	174.9	196.2	233.2	258.2	275.8	303.7	319.9	349.7	367.4	392.4	466.3
	10^4kcal/h	30.8	37.8	43.9	52.9	59.3	70.5	78.1	83.4	91.8	96.8	105.8	111.1	118.7	141.0
Cooling rated total power input	kW	105.0	128.9	149.1	179.8	201.3	239.4	264.6	284.1	311.0	328.9	355.2	375.1	402.6	478.8
Rated total input current when cooling	A	204.0	252.4	289.4	350.3	394.3	464.2	515.0	553.0	604.6	639.7	688.0	729.0	788.6	928.4
Heating Capacity	kW	358	440	510	615	690	820	908	970	1068	1125	1230	1292	1380	1640
	RT	101.8	125.1	145.0	174.9	196.2	233.2	258.2	275.8	303.7	319.9	349.7	367.4	392.4	466.3
	10^4kcal/h	30.8	37.8	43.9	52.9	59.3	70.5	78.1	83.4	91.8	96.8	105.8	111.1	118.7	141.0
Heating rated total power input	kW	99.5	121.4	132.4	160.6	180.2	213.7	236.2	255.1	277.5	293.0	316.8	336.4	360.4	427.4
Rated total input current when heating	A	193.9	238.6	258.8	315.1	355.6	417.0	462.8	499.8	543.2	573.9	617.5	658.0	711.1	834.1
Power Supply		380V/3P/50Hz													
Compressor															
Quantity		1	1	1	1	1	1	1	1	1	2	2	2	2	2
Compressor Rated Power A	Cooling	172.5	208.3	245.3	293.6	325.0	394.9	433.1	464.8	510.1	538.9	587.2	615.6	650.0	789.8
	Heating	162.4	194.5	214.7	258.4	286.3	347.7	380.9	411.6	448.7	473.1	516.7	544.6	572.5	695.5
Single compressor startup current	A	461	493	493	596	730	761	883	1018	1018	493/596	596/596	596/730	730/730	761/761
Flooded evaporator															
Water flow	m^3/h	61.6	75.7	87.7	105.8	118.7	141.0	156.2	166.8	183.7	193.5	211.6	222.2	237.4	282.1
Standard water flow pressure drop	kPa	37	84	85	90	87	89	85	86	83	91	92	93	87	89
Water Side Pressure Design	MPa								1.0						
Connection size	inch	4	5	5	6	6	6	8	8	8	8	8	8	6/6	6/6
Anti-freezing electric heater power	kW	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.0	2.0	2.0	2.0	2.0	2.4	2.4
Condenser															
Fan qty		5	7	7	9	11	11	13	15	15	16	16	18	22	22
Fan motor power	kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter															
Length	mm	3560	4710	4710	5860	7210	7210	8360	9510	9510	10360	10360	11510	14420	14420
Width	mm	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2560	2560	2560	2400	2400
Unit Shipping weight	kg	4180	4930	5070	5580	6380	7310	8110	9020	9160	10380	10580	11380	12760	14620
Unit Operating weight	kg	4300	5100	5260	5780	6580	7530	8360	9310	9460	10680	10880	11780	13160	15060

Note:

1.Above data is based on: cooling mode, ambient temperature 35°C, chilled water inlet/outlet T 12/7°C; heating mode, ambient db/wb temperature 7/6°C, unit water outlet T 45°C.

2. Flooded evaporator fouling factor is 0.018m^2. °C/kw

3.ACX400HR、ACX450HR is comprised with 2 modular units, each module need to be power supplied individually.

2Part

ACDX(HP)-R

Air Cooled Screw Chiller (Heat pump) Unit

Energy-saving and environmentally friendly

Efficient and stable

Intelligent control Simple operation

Simple maintenance

Product Features

Energy saving and environmentally friendly

- Adopting HFC-134a environmentally friendly refrigerant
- Ultra-high energy efficiency, reaching the national energy-saving standard certification level.
- V type heat exchanger, powerful heat exchanger, improve efficiency
- Unique economizer loop, improve efficiency
- Asymmetric linear rotor design effectively improve energy efficiency

Efficient and stable

- Electronic throttling ensures precise control.
- Efficient built-in oil separator improves the efficiency of heat exchanger.
- Vertical fully hermetic compressor, leakage protection, free maintenance, long service life
- Intelligent defrosting, reliable operation
- Multiple protection, automatic monitoring, to ensure safety and stability of the unit
- Noise reduction design, low noise operation

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Remote monitoring, building joint control, group control (optional).
- Standard RS485 interface, a variety of communication protocols to be optional, such as Modbus, Bacnet, Profibus, etc.

Easy to install and simple to maintain

- Simple design of pipeline makes installation easy.
- The system is simple and easy to maintain.
- Outdoor installation, compact footprint.

DB

ACDXHP-R Series Heat Pump Technical

Unit Model ACDXHP-R		75	100	110	125	150	175	310	330	350
Cooling Capacity	kW	283	334	380	464	561	635	1123	1196	1270
	RT	80.5	95.0	108.0	131.9	159.5	180.6	319.3	340.1	349.7
	10^4Kcal/h	24.3	28.7	32.7	39.9	48.2	54.6	96.6	102.9	105.8
Cooling rated total power input	kW	87.2	103.0	117.4	142.9	173.0	195.7	345.7	368.7	391.4
Heating capacity	kW	290	353	399	472	568	644	1127	1212	1288
	RT	82.5	100.4	113.5	134.2	161.5	183.1	320.5	344.6	366.2
	10^4Kcal/h	24.9	30.4	34.3	40.6	48.8	55.4	96.9	104.2	108.4
Heating rated total power input	kW	81.2	103.0	117.4	134.6	159.0	189.3	313.6	348.3	378.6
Compressor										
Quantity		1	1	1	1	1	1	2	2	2
Rated Current	Cooling A	140	169	187	234	281	323	570	604	646
	Heating A	129	169	187	219	255	311	511	566	622
Compressor startup current	A	412	461	461	493	596	730	596/596	596/730	730/730
Water Side Heat Exchanger										
chilled water flow rate	m^3/h	48.7	57.4	65.4	79.8	96.5	109.2	193.2	205.7	218.4
hot water flow rate	m^3/h	49.9	60.7	68.6	81.2	97.7	110.8	193.8	208.5	221.5
Water pressure drop	kPa	61	62	62	62	75	74	71	74	77
Connection size	in	4	5	5	5	6	6	8	8	8
Anti-freezing electric heater power	kW	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3
Air side heat exchanger										
Fan Qty		5	5	7	7	9	9	16	18	18
Fan motor power	kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter										
Length	mm	3560	3560	4710	4710	5860	5860	10360	11510	11510
Width	mm	2235	2235	2235	2235	2235	2235	2235	2235	2235
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400
Unit Shipping weight	kg	3450	3750	4200	4450	4900	5350	9250	9800	10050
Operating weight	kg	3600	3930	4430	4750	5120	5610	9740	10270	10490

Note:
1.Above data is based on: cooling mode, ambient temperature 35°C, chilled water outlet temperature 7°C; heating mode, ambient db/wb bulb temperature 7/6°C, unit inlet/outlet temperature 40/ 45°C.
2.Shell&tube heat exchanger water side fouling factor 0.018 m^2. °C/kW.

Product Features

Efficient and stable

- V-type heat exchanger, robust heat exchange improving efficiency.
- Unique economizer circuits, improving energy efficiency effectively.
- Asymmetric linear rotor design, improving efficiency

Safe and reliable

- Electronic throttling, precise control.
- Efficient built-in oil separator improves the efficiency of the heat exchanger.
- Vertical fully hermetic compressor is leak-proof, maintenance-free and with long service life.
- Intelligent defrost and reliable operation.
- Multiple protections and automatic monitoring ensures the safety and stability of the unit.
- Noise reduction design ensures low operating noise.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface, simple operation.
- Fault memory function, easy maintenance.
- Remote monitoring, building management system control, group control (optional).
- Standard RS485 or RS232 interface, a variety of communication protocols can be available, such as Modbus, Bacnet, Profibus, etc

Easy installation and simple maintenance

- Simple design of pipeline, easy installation.
- Simple system design and easy maintenance.
- Outdoor installation , compact footprint.

B ACDXHP-R-QR Series 4-pipe Unit

ACDXHP-R-QR			75	100	110	125	150	175	90T	100T	125T	150T	165T	185T	210T	230T	250T	270T	290T	310T	330T	350T
Cooling	Cooling Capacity	kW	279	329	374	457	552	625	321	365	432	530	572	645	743	812	887	963	1023	1106	1178	1250
	Compressor Rated Power	kW	75.4	91.1	100.8	126.2	151.7	174.1	92.3	102.8	121.2	147.5	160.9	177.9	205.7	227.1	244.9	267.3	282.0	307.4	325.8	348.3
Heating	Heating capacity	kW	286	348	393	465	559	634	336	379	450	547	590	662	759	837	896	975	1037	1110	1194	1268
	Compressor Rated Power	kW	69.5	91.1	100.8	118	137.8	167.2	89.3	100.5	117.3	143.6	156.2	172.1	198.3	219.8	233.1	254.2	267.4	290.6	310.8	334.4
Cooling and Heating synchronously	Cooling Capacity	kW	279	329	374	457	552	625	321	365	432	530	572	645	743	812	887	963	1023	1106	1178	1250
	Heating capacity	kW	354.4	420.1	474.8	583.2	703.7	799.1	413.3	467.8	553.2	677.5	732.9	822.9	948.7	1039.1	1131.9	1230.3	1305.0	1413.4	1503.8	1598.3
	Compressor Rated Power	kW	75.4	91.1	100.8	126.2	151.7	174.1	92.3	102.8	121.2	147.5	160.9	177.9	205.7	227.1	244.9	267.3	282.0	307.4	325.8	348.3
Compressor																						
Quantity		Qty	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Rated Current	Cooling	A	138	167	185	232	278	319	169	189	222	271	295	326	377	417	449	490	517	564	598	639
	Heating	A	128	167	185	217	253	307	164	184	215	264	287	316	364	403	428	466	491	533	570	614
Startup Current		A	412	461	461	493	596	730	283/283	352/352	352/352	412/477	477/477	477/477	461/493	493/493	493/493	493/596	493/596	596/596	596/730	730/730
Water Side Heat Exchanger																						
Evaporator side water flow rate		m^3/h	48.0	56.6	64.3	78.6	94.9	107.5	55.2	62.8	74.3	91.2	98.4	110.9	127.8	139.7	152.6	165.6	176.0	190.2	202.6	215.0
Heat recovery side water flow rate		m^3/h	61.0	72.3	81.7	100.3	121.0	137.4	71.1	80.5	95.2	116.5	126.1	141.5	163.2	178.7	194.7	211.6	224.5	243.1	258.7	274.9
Evaporator water pressure drop		Kpa	61	62	62	62	75	74	62	62	62	73	75	74	65	68	62	60	62	71	74	77
Fully heat recovery water pressure drop		Kpa	62	62	65	73	63	68	62	63	75	77	65	70	61	62	73	75	77	65	67	68
Evaporator connection size		in	4	5	5	5	6	6	5	5	5	6	6	6	6	8	8	8	8	8	8	8
Fully heat recovery connection size		in	5	5	5	6	6	8	5	5	6	6	6	8	8	8	6/6	6/6	6/6	6/6	6/6	6/6
Air side heat exchanger																						
Fan Qty		set	5	5	7	7	9	9	6	6	6	8	8	10	12	12	14	14	16	16	18	18
Fan motor power		kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	1.3	1.3/2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter																						
Length		mm	5860	5860	5860	5860	5860	5860	6100	6100	6100	6100	6100	7400	8600	8600	9210	9210	10360	10360	11510	11510
Width		mm	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235
Height		mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Unit Shipping weight		kg	4700	5300	5600	6080	7400	7800	5880	5960	6300	7900	8100	9100	9990	10150	11550	11700	12200	12800	13000	13200
Operating weight		kg	4880	5520	5830	6330	7800	8010	6100	6180	6550	8300	8510	9400	10350	10510	11980	12150	12650	13350	13700	14050

Note:
1.Above data is based on: cooling mode, ambient temperature 35°C, chilled water inlet/outlet temperature 12/7°C,heating mode, ambient db/wb bulb temperature 7/6°C, hot water inlet/outlet temperature 40/ 45°C, when running cooling and heating synchronously, chilled water inlet/outlet temperature 12/7°C, hot water inlet/outlet temperature 40/ 45°C.
2.Shell&tube heat exchanger water side fouling factor 0.018 m^2. °C/kW.
3.Ambient temperature range for cooling and cooling&heating synchronously mode is -10 to 45°C, Ambient temperature range for single heating mode is -10 to 35°C
4.Unit' s shipping weight is theoretical reference value, actual weight please refer actual weighing.

C ACDXHP-R Heat-Pump Heat Recovery Unit

ACDXHP-R-SP/SR/MR			75	100	110	125	150	175	210T	230T	250T	270T	290T	310T	330T	350T
Cooling Capacity		kW	279	329	374	457	552	625	743	812	887	963	1023	1106	1178	1250
Cooling-compressor rated power		kW	75.4	91.1	100.8	126.2	151.7	174.1	205.7	227.1	244.9	267.3	282	307.4	325.8	348.3
Heating capacity		kW	286	348	393	465	559	634	759	837	896	975	1037	1110	1194	1268
Cooling-compressor rated power		kW	69.5	91.1	100.8	118	137.8	167.2	198.3	219.8	233.1	254.2	267.4	290.6	310.8	334.4
Partial Heat Recovery	Recovery Capacity	kW	53.2	63.0	71.2	87.5	105.6	119.9	142.3	155.9	169.8	184.5	195.8	212.0	225.6	239.7
	Flow rate	m^3/h	4.6	5.4	6.1	7.5	9.1	10.3	12.2	13.4	14.6	15.9	16.8	18.2	19.4	20.6
Fully Heat Recovery	Recovery Capacity	kW	354.4	420.1	474.8	583.2	703.7	799.1	948.7	1039.1	1131.9	1230.3	1305.0	1413.4	1503.8	1598.3
	Flow rate	m^3/h	61.0	72.3	81.7	100.3	121.0	137.4	163.2	178.7	194.7	211.6	224.5	243.1	258.7	274.9
Compressor																
Quantity		Qty	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Rated Current	Cooling	A	138	167	185	232	278	319	377	417	449	490	517	564	598	639
	Heating	A	128	167	185	217	253	307	364	403	428	466	491	533	570	614
Startup Current		A	412	461	461	493	596	730	461/493	493/493	493/493	493/596	493/596	596/596	596/730	730/730
Water Side Heat Exchanger																
chilled water flow rate		m^3/h	48.0	56.6	64.3	78.6	94.9	107.5	127.8	139.7	152.6	165.6	176.0	190.2	202.6	215.0
hot water flow rate		m^3/h	49.2	59.9	67.6	80.0	96.1	109.0	130.5	144.0	154.1	167.7	178.4	190.9	205.4	218.1
Evaporator side water flow rate		Kpa	61	62	62	62	75	74	65	68	62	60	62	71	74	77
Fully heat recovery water pressure drop		Kpa	62	62	65	73	63	68	61	62	73	75	77	65	67	68
Evaporator connection size		in	4	5	5	5	6	6	6	8	8	8	8	8	8	8
Fully heat recovery connection size		in	5	5	5	6	6	8	8	8	6/6	6/6	6/6	6/6	6/6	6/6
Evaporator side water flow rate																
Fan Qty		set	5	5	7	7	9	9	12	12	14	14	16	16	18	18
Fan motor power		kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter																
Partial recovery unit's shipping weight		kg	3550	3850	4300	4550	5000	5450	7990	8150	8500	8850	9150	9450	10000	10410
Partial recovery unit's operating weight		kg	3730	4060	4530	4880	5250	5750	8290	8510	8930	9300	9600	10000	10540	10930
Fully recovery unit's shipping weight		kg	4750	5350	5650	6130	7450	7650	10090	10250	11650	11800	12300	12900	13100	13300
Fully recovery unit's operating weight		kg	4930	5570	5880	6380	7850	8060	10440	10610	12080	12250	12750	13450	13800	14150

Note:
1.Above data is based on: cooling mode, ambient temperature 35°C, chilled water inlet/outlet temperature 12/7°C;heating mode, ambient db/wb bulb temperature 7/6°C, hot water inlet/outlet temperature 40/ 45°C,
2.Shell&tube heat exchanger water side fouling factor 0.018 m^2.°C/kW.
3.Partial heat recovery, unit inlet/outlet temperature 40/ 45°C, maximum water outlet temperature can reach 55°C, Under cooling circulation, using heat recovery function will not affect cooling performance; while under heating circulation, heating capacity will decrease when using heat recovery function.
4.Fully heat recovery, unit inlet/outlet temperature 40/ 45°C, maximum water outlet temperature can reach 55°C
5.Cooling and heat recovery ambient temperature range 21~45°C, Ambient temperature under heating mode is -10 to 21°C.
6.Unit' s shipping weight is theoretical reference value, actual weight please refer actual weighing.

DB

ACDX-R Series Single Cooling Heat Recovery Unit

ACDX-R-SP/SR		75	100	110	125	150	175	210T	230T	250T	270T	290T	310T	330T	350T
Cooling Capacity	kW	288	339	386	471	570	644	765	837	914	993	1055	1139	1214	1288
Compressor Rated Power	kW	76.8	92.7	102.8	128.5	154.4	177.3	209.4	231.2	249.4	272.2	287.1	313.0	331.7	354.6
Partial Heat Recovery	Recovery Capacity kW	54.7	64.8	73.3	89.9	108.7	123.2	146.2	160.2	174.5	189.8	201.3	217.8	231.9	246.4
	Flow rate m^3/h	4.7	5.6	6.3	7.7	9.3	10.6	12.6	13.8	15.0	16.3	17.3	18.7	19.9	21.2
Fully Heat Recovery	Recovery Capacity kW	364.8	431.7	488.8	599.5	724.4	821.3	974.4	1068.2	1163.4	1265.2	1342.1	1452.0	1545.7	1642.6
	Flow rate m^3/h	62.7	74.3	84.1	103.1	124.6	141.3	167.6	183.7	200.1	217.6	230.8	249.7	265.9	282.5
Compressor															
Quantity	Qty	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Rated Current	A	141	170	189	236	283	325	384	424	458	499	527	574	609	651
Startup Current	A	412	461	461	493	596	730	461/493	493/493	493/493	493/596	493/596	596/596	596/730	730/730
Water Side Heat Exchanger															
chilled water flow rate	m^3/h	49.5	58.3	66.4	81.0	98.0	110.8	131.6	144.0	157.2	170.8	181.5	195.9	208.8	221.5
Evaporator water pressure drop	Kpa	61	62	62	62	75	74	65	68	62	60	62	71	74	77
Fully heat recovery water pressure drop	Kpa	62	62	65	73	63	68	61	62	73	75	77	65	67	68
Evaporator connection size	in	4	5	5	5	6	6	6	8	8	8	8	8	8	8
Fully heat recovery connection size	in	5	5	5	6	6	8	8	8	6/6	6/6	6/6	6/6	6/6	6/6
Air side heat exchanger															
Fan Qty	set	5	5	7	7	9	9	12	12	14	14	16	16	18	18
Fan motor power	kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter															
Partial recovery unit's shipping weight	kg	3450	3750	4200	4450	4900	5350	7890	8050	8300	8650	8950	9250	9800	10210
Partial recovery unit's operating weight	kg	3630	3960	4380	4780	5150	5650	8190	8410	8730	9100	9400	9800	10340	10730
Fully recovery unit's shipping weight	kg	4650	5250	5550	6030	7350	7550	9890	10050	11450	11600	12100	12700	12900	13100
Fully recovery unit's operating weight	kg	4830	5470	5780	6280	7750	7960	10240	10410	11880	12050	12550	13250	13600	13950

Note:
1.Above data is based on: cooling mode, ambient temperature 35°C, chilled water inlet/outlet temperature 12/7°C;
2.Shell&tube heat exchanger water side fouling factor 0.018 m^2. °C/kW.
3.Partial heat recovery, unit inlet/outlet temperature 40/ 45°C, maximum water outlet temperature can reach 55°C, using partial heat recovery will not affect units' performance
4.Fully heat recovery, unit inlet/outlet temperature 40/ 45°C, maximum water outlet temperature can reach 55°C
5.Cooling and heat recovery ambient temperature range 21~45°C
Unit' s shipping weight is theoretical reference value, actual weight please refer actual weighing.

2Part

AVX-R

Variable frequency screw air-cooled chiller

Energy-saving and environmentally friendly | Efficient and stable | Simple maintenance | Intelligent control Simple operation | Safe and reliable | Optional functions

Water-cooled cold (hot) water system

Air-cooled cold (hot) water series

Product Features

Environmentally friendly

- Energy saving and environmentally friendly
- Adopting HFC-134a environmentally friendly refrigerant;
- Ultra-high efficiency, national energy-saving level

Efficient and stable

- Variable frequency drive realizes higher efficiency, especially partial load.
- Precise control ensures stable operation.
- Frequency conversion adjustment broadens the capacity adjustment range.
- Flooded evaporator with ultra-efficient heat exchange tube enhances heat exchange.
- Electronic throttling ensures precise control.
- The vertical design of the compressor reduces the spindle load and prolongs the service life.
- Asymmetric linear rotor design improves efficiency.

Easy to install and simple to maintain

- Simple design of pipeline makes installation easy.
- The system is simple and easy to maintain.
- Outdoor installation, compact footprint.

Intelligent control, simple operation

- Microcomputer control, intelligent experience.
- Automatic control, real-time monitoring.
- Friendly interface, simple operation.
- Fault memory function, easy maintenance

Safe and reliable

- Efficient built-in oil separator ensures smooth oil return.
- Fully enclosed twin-screw compressoris maintenance-free.
- The compressor is fully sealed to avoid oil and refrigerant leakage
- Variable frequency drive, low starting current.
- Multiple protections and automatic monitoring ensures the safety and stability of the unit.
- Noise reduction design ensures low operating noise.

Multiple choices and flexible application

- Remote monitoring, building joint control and group control.
- Standard RS485 interface, a variety of communication protocols can be selected, such as Modbus, Bacnet, Profibus, etc.
- Heat pump, heat recovery, free cooling, VFD fan and other options can be available.

Parameters Table

Unit Model AVX-R		120	145	170	185	210	235	255	280	300	315	340
Cooling Capacity	kW	437	522	630	687	759	854	925	1001	1071	1144	1236
	RT	124.2	148.3	179.1	195.4	215.9	242.8	262.9	284.7	304.6	325.4	351.3
	10^4Kcal/h	37.6	44.8	54.2	59.1	65.3	73.4	79.5	86.1	92.1	98.4	106.3
Compressor Input power	kW	112	136	164	181	197	222	241	263	279	299	320
Power Supply		380V/3P/50Hz										
Compressor												
Quantity	台	1	1	1	1	1	1	1	1	1	1	1
Rated Current	A	214.6	249.0	300.6	331.6	362.0	408.3	442.3	482.5	512.0	548.0	587.0
Flooded Evaporator												
Water flow	m^3/h	75.2	89.7	108.3	118.2	130.6	146.9	159.1	172.2	184.2	196.8	212.5
Water Pressure Drop	kPa	66	71	77	76	75	74	75	78	79	80	80
Water Side Pressure Design	MPa	1.0										
Connection size	in	5	5	6	6	6	6	8	8	8	8	8
Condenser												
Fan Qty	set	7	7	9	9	11	11	13	13	15	15	17
Fan motor power	kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter												
Length	mm	5060	5060	6210	6210	7560	7560	8710	8710	9860	9860	11010
Width	mm	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235	2235
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Unit Shipping weight	kg	4300	4400	5225	5435	5800	6650	7325	7350	8225	8250	9140
Unit Operating weight	kg	4460	4560	5425	5635	6000	6870	7575	7600	8525	8550	9490

Note:
1.Above data is based on: Ambient temperature 35°C, chilled water inlet/outlet T 12/7°C.
2.Evaporator water side fouling factor 0.018 m^2. °C/kW.
3.Unit's frame width 2235mm, including hoisting plate, width will be 2290mm
4.Fan motor power value in table is under fixed frequency, if adopting VFD fan, please consult DB local office.

2Part

AESX-R

Falling film evaporative cooling screw chiller

Energy-saving and environmentally friendly | High-end configuration Leading technology | Simple maintenance | Intelligent control Simple operation | Noise and vibration reduction Quiet operation

Product Features

Energy saving and environmentally friendly

- Adopting R134a environmentally friendly refrigerant
- Compared with the water-cooled chiller + cooling tower solution, it saves nearly 55% of water.
- The unit has outstanding energy efficiency, with COP as high as 5.20, far exceeding the air-cooled screw unit, and exceeding the national standard first-class energy efficiency by nearly 53%.

Top-end configuration, leading technology

- High-efficiency horizontal semi-hermetic twin-screw compressor ensures reliable operation.
- Optimum tooth ratio, asymmetric tooth shape, short contact line and less leakage.
- High-precision thrust and radial bearings, stable and durable.
- The best oil circuit design ensures reliable bearing lubrication.
- NTC winding resistance temperature is detected in real time to ensure motor safety.
- Multi-channel motor cooling ensures safe operation.
- Single compressor realizes 25% - 100% stepless capacity regulation.
- High-efficiency falling film differential row flat tube evaporative condenser with excellent performance
- There is no welding spot or welding sealing on the surface.
- Adopting 304 stainless steel seamless tube, which is anti-corrosion.
- Continuous water film full coverage, no dry spots, not easy to scale
- Differential row design of tubes is easy for maintenance and repair.
  More than 20 years of service life.

Easy installation and maintenance

- Integrated design, outdoor installation, saving floor area.
- No independent plant room or cooling tower configuration are required, which reduced the engineering difficulty.
- Automatic operation, which will be effected less by the environment,ensures low failure rate.
- No special person is required to be on duty , which reduces the operation cost.
- Easy maintenance and easy operation, low maintenance cost.

Intelligent control, simple operation

- Industrial class PLC microcomputer control.
- Automatic control, real-time monitoring.
- Fault memory is conducive to maintenance.
- Remote monitoring, building joint control, group control (optional).
- Standard RS485 or RS232 interface, a variety of communication protocols to choose from, such as Modbus, Bacnet, Profibus, etc.

Noise reduction and anti-vibration, silent operation

- The compressor is equipped with a sound insulation room as standard to block noise transmission.
- The sound insulation room is designed in sandwich structure to absorb noise.
- Compressor has double vibration absorption effect to reduce vibration noise.
- High-efficiency axial flow fan with low-power and large air volume reduces noise.
- Compared with regular air-cooled screw unit, the noise of this unit is reduced by 6 ~ 8dB(A), reducing noise pollution.

Single Cooling Technical (R134a)

Unit Model AESX*R		090	115	130	145	170	190	210	230	245	260	275	290	315	340	360
Cooling Capacity	kW	321	407	460	507	600	675	728	814	867	920	967	1014	1107	1200	1275
	RT	91	116	131	144	171	191	207	231	247	262	275	288	315	341	362
Compressor Power	kW	57.0	72.2	79.5	89.6	109.0	122.0	131.2	144.4	153.2	162.0	170.6	179.2	198.6	218.0	231.0
Compressor																
Type		Horizontal semi-hermetic dual screw compressor														
compressor quantity		1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
Compressor Rated Power	A	108	132	145	164	200	228	241	265	277	290	309	329	364	400	428
Compressor startup current		286	346	346	442	482	531	286/346	346/346	346/346	346/346	346/442	442/442	442/482	482/482	482/531
Shell And Tube Heat Exchanger																
Water flow	m^3/h	55	70	79	87	103	116	125	140	149	158	166	174	190	206	219
Water pressure drop	kPa	45	81	82	82	86	87	87	87	88	89	89	90	91	92	93
Connection size	in	4	5	5	5	6	6	6	6	6	8	8	8	8	8	8
Condenser																
Type		Tube to Plate Falling film evaporative condenser														
Fan Qty	set	4	4	6	6	6	8	8	8	10	12	12	12	12	14	14
Fan motor power	kW/EA	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Spraying circulative water flow rate	m^3/h	72	72	108	108	108	144	72/72	72/72	72/108	108/108	108/108	108/108	108/108	108/108	108/144
Spraying pump power	kW/EA	4.0	4.0	5.5	5.5	5.5	7.5	4.0/4.0	4.0/4.0	4.0/5.5	5.5/5.5	5.5/5.5	5.5/5.5	5.5/5.5	5.5/5.5	5.5/7.5
Spraying pump quantity	set	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
Water consumption	l/h	465	590	667	735	870	976	1056	1180	1257	1334	1402	1470	1605	1740	1846
General Parameter																
Length	mm	4230	4230	4940	4940	5500	6310	8250	8250	8850	9860	9860	9860	10450	11000	11800
Width	mm	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
Height	mm	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950	2950
Unit Shipping weight	kg	5500	5800	6200	6600	7500	8800	11000	11600	12000	12400	12800	13200	14100	15000	16300
Unit Operating weight	kg	6330	6660	7080	7800	8750	10070	12700	13330	13750	14170	14890	15610	16550	17480	19320

Note:

1.Above data is based on: cooling mode, ambient db/wb temperature 35/24°C, chilled water inlet/outlet temperature 12/7°C, feed cooling water temperature 32°C ,

2.Shell&tube heat exchanger water side fouling factor 0.018 m^2. °C/kW.

3.When wet bulb temperature 26°C, cooling correction factor 0.987, compressor power correction factor 1.022; when wet bulb temperature 28°C, cooling correction factor 0.974, compressor power correction factor 1.045.

2Part

ACDSX-RFC

Free Cooling Air Cooled Screw Chiller

Energy-saving and environmentally friendly | Efficient and stable | Easy installation Simple maintenance | Intelligent control Simple operation | Noise andvibration reduction Quiet operation | Wide application range

Water-cooled cold (hot) water system

Air-cooled cold (hot) water series

Product Features

Energy saving and environmentally friendly

- Adopting R134a environmentally friendly refrigerant.
- Part load performance is excellent, and the whole series reaches the national energy-saving level.
- Save energy consumption by more than 90% in transition season and winter.

Efficient and stable

- V-type heat exchanger, fluorine side and water side integrated design
- Dry heat exchanger, high efficiency internal thread heat exchange tube with low water resistance, not easy to be dirty and blocked.
- Accurate control ensures stable operation.
- Electronic throttling realizes precise control.
- Double shell design of rotor cavity reduces noise and vibration.

Easy installation and maintenance

- Integrated design, outdoor installation, saving floor area.
- No independent plant room is required, which reduced the engineering difficulty.
- Automatic operation, which will be effected less by the environment, ensures low failure rate.
- No special person is required to be on duty , which reduces the operation cost.
- Simple maintenance and easy operation, low maintenance cost

Intelligent control, simple operation

- Industrial class PLC microcomputer control.
- Automatic control, real-time monitoring.
- Friendly interface and simple operation.
- Fault memory is conducive to maintenance.

Safe and reliable

- Low noise, high efficiency semi-closed screw compressor ensures reliable operation.
- High-efficiency horizontal semi-hermetic twin-screw compressor ensures reliable operation.
- Optimum tooth ratio, asymmetric tooth shape, short contact line and less leakage.
- High-precision thrust and radial bearings, stable and durable.
- The best oil circuit design ensures reliable bearing lubrication.
- NTC winding resistance temperature is detected in real time to ensure motor safety.
- Multi-channel motor cooling ensures safe operation.
- Multiple protections and automatic monitoring ensures the safety and stability of the unit.

Multiple choices and flexible application

- Remote monitoring, building joint control and group control.
- Standard RS485 or RS232 interface, a variety of communication protocols can be selected, such as Modbus, Bacnet, Profibus, etc
- Compressor sound insulation room, compressor frequency conversion, full fan frequency conversion, etc are optional.

Anti-freezing Type Technical (R134a)

Unit Model ACDSX-R-FC			075	100	110	125	150	175	200	220	250	260	300	310	330	350	400	440
Nominal condition	Cooling Capacity	kW	263	322	377	462	550	630	715	783	861	924	1012	1118	1180	1255	1430	1566
	Compressor Power	kW	68.8	86.6	99.3	125.6	148.2	168.2	191.6	212.3	233.2	251.2	273.8	305.6	322.3	341.2	383.2	424.6
IDC condition	Cooling Capacity	kW	284	347	408	500	595	682	773	846	934	996	1094	1209	1276	1357	1546	1693
	Compressor Power	kW	70.2	88.3	102.3	129.4	152.1	173.6	196.5	218.4	239.0	257.2	281.3	316.3	331.6	350.1	393.0	436.8
Free cooling	Ambient Temeprature	°C	2.2	1.8	2.5	1.8	2.5	1.8	2.6	1.8	2.6	1.8	2.5	1.6	2.6	1.8	2.6	1.8
	Cooling Capacity	kW	284	347	408	500	595	682	773	846	934	996	1094	1209	1276	1357	1546	1693
	Power input	kW	13.2	13.2	17.6	17.6	22.0	26.4	30.8	30.8	35.2	35.2	39.6	39.6	44.0	48.4	61.6	61.6
Compressor																		
compressor quantity			1	1	1	1	1	1	2	2	2	2	2	2	2	2	4	4
Nominal condition rated current		A	126	159	182	230	272	309	352	390	428	461	502	561	591	626	703	779
IDC condition rated current		A	129	162	188	237	279	319	361	401	439	472	516	580	609	642	721	802
compressor startup current		A	286	346	346	442	482	531	346/346	346/442	442/442	442/442	442/482	482/482	482/531	531/531	346/346/346/346	346/346/442/442
Chilled water circuit																		
Evaporator type			Shell&tube type															
Water flow		m^3/h	51	62	73	90	107	123	139	152	168	179	197	218	230	244	278	305
Water pressure drop		kPa	133	134	134	134	147	146	135	138	140	135	136	141	146	148	135	138
Connection size		in	4	5	5	5	6	6	6	6	6	6	8	8	8	8	6/6	6/6
Fan																		
Fan Qty		set	6	6	8	8	10	12	14	14	16	16	18	18	20	22	28	28
Fan motor power		kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter																		
Length		mm	3670	3670	4737	4737	5807	6874	7941	7941	9008	9008	10075	10075	11142	12209	15882	15882
Width		mm	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
Height		mm	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640
Unit Shipping weight		kg	3820	4170	4850	5000	5850	6500	8600	8900	9650	9850	10900	11350	12160	13400	17200	17800
Unit Operating weight		kg	4150	4500	5250	5450	6260	7000	9160	9480	10300	10500	11720	12140	13230	14500	18320	18960

Note:

1.Design cooling medium is 30% concentrition EG fluid, meeting lowest ambient temperature -15°C antifreezing requirement, if need performance under other conditions, please contact DB local office.

2.Nominal condition: Ambient temperature is 35°C, cooling medium inlet/out temperature is 12/7°C, IDC condition: cooling medium inlet/out temperature is 15/10°C, free cooling: cooling medium inlet/out temperature is 15/10°C;

3. Shell and tube heat exchanger water side fouling factor is 0.018m^2. °C/kw;

4.Water flow rate and pressure drop value is based on cooling medium inlet/outlet temperature 15/10°C.

5.ACDSX400R-FC/ACDSX440R-FC is comprised with 2 modular units, Section transportation and splice at site，each module need to be power supplied individually;

6.Dunham-Bush reserves rights to update design parameters without extra notification.

Non-Anti-freezing Type Technical (R134a)

Unit Model ACDSX*R-FCNG			075	100	110	125	150	175	200	220	250	260	300	310	330	350	400	440
Nominal condition	Cooling Capacity	kW	265	324	380	468	556	635	722	791	868	930	1021	1126	1192	1265	1444	1582
	Compressor Power	kW	69.2	86.8	99.6	126.8	150.2	169.5	192.6	214.8	234.6	252.6	277.9	307.2	325.1	343.1	385.1	429.6
IDC condition	Cooling Capacity	kW	287	350	414	510	602	690	782	856	940	1012	1115	1221	1288	1370	1564	1712
	Compressor Power	kW	71.0	88.9	103.0	131.0	153.6	174.5	199.1	221.0	240.6	260.3	288.3	319.2	333.6	352.8	398.2	442.0
Free cooling	Ambient Temeprature	°C	-0.8	-1.2	-0.5	-1.2	-0.5	-1.2	-0.4	-1.2	-0.4	-1.2	-0.5	-1.4	-0.4	-1.2	-0.4	-1.2
	Cooling Capacity	kW	287	350	414	510	602	690	782	856	940	1000	1115	1221	1288	1370	1564	1712
	Power input	kW	13.2	13.2	17.6	17.6	22.0	26.4	30.8	30.8	35.2	35.2	39.6	39.6	44.0	48.4	61.6	61.6
Compressor																		
compressor quantity			1	1	1	1	1	1	2	2	2	2	2	2	2	2	4	4
Nominal condition rated current		A	127	159	183	233	276	311	353	394	430	464	510	564	597	630	707	788
IDC condition rated current		A	130	163	189	240	282	320	365	406	442	478	529	586	612	647	731	811
compressor startup current		A	286	346	346	442	482	531	346/346	346/442	442/442	442/442	442/482	482/482	482/531	531/531	346/346/346/346	346/346/442/442
Chilled water circuit																		
Evaporator type			Shell&tube type															
Water flow		m^3/h	49	60	71	88	104	119	135	147	162	174	192	210	222	236	269	294
Water pressure drop		kPa	132	132	133	133	145	144	134	136	138	132	132	140	144	146	134	136
Connection size		in	4	5	5	5	6	6	6	6	6	6	8	8	8	8	6	6
Fan																		
Fan Qty		set	6	6	8	8	10	12	14	14	16	16	18	18	20	22	28	28
Fan motor power		kW/EA	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General Parameter																		
Length		mm	4737	4737	4737	4737	5807	6874	7941	7941	9008	9008	10075	10075	11142	12209	15882	15882
Width		mm	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
Height		mm	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640	2640
Unit Shipping weight		kg	4320	4775	5050	5250	6000	7150	9250	9900	10700	11300	12200	12850	13900	14600	18500	19800
Unit Operating weight		kg	4740	5200	5550	5770	6550	7780	9970	10650	11600	12200	13280	13950	15100	15900	19940	21300

Note:

1.Nominal condition: Ambient temperature is 35°C, cooling medium inlet/out temperature is 12/7°C, IDC condition: cooling medium inlet/out temperature is 15/10°C, free cooling: cooling medium inlet/out temperature is 15/10°C;

2.Free cooling inner circulation: Design cooling medium is 30% concentration EG fluid, meeting lowest ambient temperature -15°C antifreezing requirement, free-cooling input power excludes power of cooling fluid pump, if need performance under other conditions, please contact DB local office,

3.Shell and tube heat exchanger water side fouling factor is 0.018m^2. °C/kw;

4.Water flow rate and pressure drop value is based on chilled water inlet/outlet temperature 15/10°C.

5.ACDSX400R-FC/ACDSX440R-FC is comprised with 2 modular units, Section transportation and splice at site，each module need to be power supplied individually;

6.Dunham-Bush reserves rights to update design parameters without extra notification.

2Part

ACTSXHP-R

Non-reversible Defrosting Low-temperature Strong-heating Air Source Heat Pump Unit

Energy-saving and environmentally friendly | Efficient and stable | Intelligent control Simple operation | Easy installation Simple maintenance

A Product Features

Efficient and environmentally friendly

- HFC - 134 - a whole series of used refrigerants
- Dual screw compressor, self-owned brand, genuine secondary compression, strong gas supplement to increase enthalpy
- V type heat exchanger, powerful heat exchanger, to improve efficiency more than 30% energy saving compared with conventional air source heat pump

Intelligent control, simple operation

- Based on Siemens hardware platform
- Using 7 "LCD touch screen in Chinese
- Water and Freon system and electrical parameters can be displayed More than 30 items of control and protection function.
- Time switcher function, realize the computer room unattended.
- Customize for function extension programming based on User demands.
- Standard with RS485 interface, using open Modbus communication protocol, easy to be compatible with building automation system

Efficient and stable

- Patented non-reversible defrosting technology, small water temperature fluctuations, uninterrupted heating, all to ensure user' s comfort of indoor temperature, defrosting heat recovery design, dissipative heating for defrosting can be recycled by adjacent coils, reduce defrosting heat loss, improve system' s heating capacity and efficiency; operate more stable under higher pressure ratio.
- Designed specially for cold region, minimum -35°C ambient temperature can run heating stably, the highest water temperature as high as 70 °C, perfect solution to replace boiler.
- Self-developed pressure horizontal shell tube condenser, special antifreezing structure design.
- High precision electronic expansion valve throttling control, precise refrigerant flow control
- Efficient economizer configuration, effectively improve unit' s performance

Easy to install and simple to maintain

- Simple design of pipeline makes installation easy.
- The system is simple and easy to maintain.
- Outdoor installation, compact footprint.

B Unit Technical Parameter

Unit Model ACTSXHP-R			ACTSXHP235R	ACTSXHP275R	ACTSXHP345R
Heating condition	Heating capacity	kW	390	456	560
	Power input	kW	106	124	152
Low temperature nominal heating	Heating capacity	kW	235	275	345
	Power input	kW	81	98	118
Single unit dual-stage screw compressor					
Operating current A	Heating condition		157	180	227
	Low temperature nominal heating		119	141	176
Compressor startup current		A/set	558	875	875
Flooded shell&tube condenser					
Heating condition water flow rate		m^3/h	67.1	78.4	96.3
Low temperature nominal hot water flow rate		m^3/h	40.4	47.3	59.3
Water side pressure drop		kPa	40	42	45
Connection size		in	4	5	5
Finned coil evaporator					
Fan quantity			6	8	8
Fan motor power		kW/set	2.2	2.2	2.2
General Parameter					
Length		mm	5000	5700	5700
Width		mm	2235	2235	2235
Height		mm	2400	2400	2400
Unit Shipping weight		kg	5800	6300	6500
Unit Operating weight		kg	6000	6600	6800

Note:
1.Above data is based on: heating condition, ambient db/wb temperature 7/6°C, water inlet/outlet temperature 40/45°C, low-temperature nominal heating condition: ambient db/wb temperature -12/-14°C, outlet water temperature 41°C.
2.Water side fouling factor 0.018 m^2. °C/Kw.