

CENTRIFUGAL CHILLER



GREE centrifugal chiller integrates the advanced air conditioning technologies with 100% self-owned intellectual property rights. It is exceptionally energy-saving, reliable and adaptive and can be widely applied in large buildings, hospitals, schools, supermarkets and factories or used to reconstruct the current air conditioning system for energy conservation.

Nomenclature

Take the unit CVEH510PEIKIE for example.

C	V	E	H	510	PIE	KIE	-	-	-	-
1	2	3	4	5	6	7	8	9	10	11

1	Product type	C: Centrifugal chillers
2	Compressor type	C: Magnetic bearing
		V: Permanent magnetic variable-frequency
		Omit: Fixed-frequency
3	Function	E: Cooling only
		P: Heat pump
		I: Ice making
		S: Photovoltaic
		T: Data center chillers (with elevated chilled-water temperature)
4	Compressor starting	H: High-voltage direct VFD; Omit: Low-voltage VFD or Fixed-speed
5	Compressor code	/
6	Evaporator code	/
7	Condenser code	/
8	Special functions	R: Partial heat recovery
		Q: Total heat recovery
		Omit: Not available
9	Starter type	D: Diode inverter
		Re: Reactor starter
		S: Soft starter
		Omit: Four-quad inverter for the variable-frequency units, Star-delta start for the 380V fixed-frequency units and direct-on-line start for 6kV/10kV fixed-frequency units
10	Compressor quantity	Default: single
		2: dual
11	Power supply	G: 10kV/11kV
		Omit: 380V

Product Lineup



Fixed-frequency Centrifugal Chiller

CE series 350RT ————— 3000RT
CE-Standard series 550RT ————— 3000RT



CVE Inverter Centrifugal Chiller

CVE-Standard (diode inverter) 250RT ————— 1200RT
CVE-Plus (diode inverter) 250RT ————— 1200RT
CVE-Plus (four-quad inverter) 250RT ————— 1200RT
CVEH-Standard series 900RT ————— 3000RT
CVEH series 900RT ————— 3000RT



CCE Magnetic Bearing Inverter Chiller

CCE series (diode inverter) 100RT ————— 900RT
CCE series (four-quad inverter) 100RT ————— 1300RT



CVS PV Direct-driven Inverter Centrifugal

CVS series 300RT ————— 1000RT



CVT Data Center Chillers

CVT-Standard series 300RT ————— 1200RT
CVT-Plus series 300RT ————— 1200RT
CVTH-Standard series 1000RT ————— 3000RT
CVTH series 1000RT ————— 3000RT

Fixed Frequency Centrifugal Chiller



Features

Refrigerant

The centrifugal chiller adopts high efficiency, zero Ozone Depleting Potential (ODP) refrigerant HFC-134a

Compressor

- The two-stage semi-hermetic centrifugal compressor, with gravity fed oil reservoir on the top to provide lubrication during coast-down in the event of a power failure.
- Variable section diffuser after the impeller, which is designed to adjust the flow passage section, and improve the flow velocity and stability especially under part load condition, extending the chiller’s operating range, reducing noise and vibration of the unit at full load and partial load as well.
- Two compressors are adopted for large cooling capacity, which are with two independent circuits from each other, resulting in high reliability. Compressor refrigerant isolation valve is optional to meet your actual requirement.

Motor

Three-phase asynchronous motor, with IP rating of IP54, insulation class F, which is cooled by injection liquefied refrigerant.

Heat exchanger

- Flooded type or hybrid falling film type evaporator.
 - Both the evaporator and the condenser adopt triple grooves end-tube-support sheet design to ensure the reliability, which are designed for 1.0Mpa working pressure on the water side, and with 1.6Mpa and 2.0Mpa as custom options.
 - High efficient sub-cooler is integrated inside condenser at the bottom, with maximum sub-cooling degree of 5℃ .
- ASME certification is optional. Chiller can be designed, tested and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII-Division 1 or applicable code.
- With sight glass liquid level indicator located on the side of the shell to aid in determining proper refrigerant charge.
 - Aluminium mesh filter located above the tube bundle inside evaporator to prevent liquid refrigerant carryover to the compressor.
 - Condenser tube can be optionally designed by using materials of copper nickel alloy, titanium, stainless steel, which are appropriate for corrosive resistance such as seawater-cooling and similar applications.
 - Evaporator is insulated with 40mm closed cell insulation material.
 - Evaporator/Condenser standard water connections are flange style , grooved for victaulic style pipe couplings are optional available.
 - Marine water box is optional available.

Lubrication system

- Lubrication oil is forced fed to all compressor bearings, gears and rotating surfaces by an oil pump, ensuring adequate lubrication at all times.
- Oil reservoir contain immersion type oil heater, which is thermostatically controlled to remove refrigerant from the oil.
- Oil be filtered with externally mounted 0.5 micron replaceable cartridge oil filter equipped with service valves.
- Oil is cooled by refrigerant cooled oil cooler with factory installed piping, eliminating the requirement for field water piping.

Starter

- The low-voltage unit uses Star-delta Starter, with Solid-state Starter as Optional. The high-voltage unit uses direct-on-line starter.
- After power-off and recovery, it needs 50s to restart, and 70S to be loaded to 80% of full loading of the chiller (total 120s)

Controls

- IP Rating for control cabinet is IP42 as standard, IP54 can be optional available.
- Color Touch Screen (12 ” 1024 x 768) , for direct displaying each operation parameter, real-time monitoring and easy operation.
- More than 30 protection measures, up to latest 15 days of operation curve records and up to 180 days of error events are available for reviewing.
- Modbus communication protocol interface is provided as standard. BacNet communication protocol interface is optional.

Accessories

Rubber isolators are as standard and spring isolators are optional configuration to help eliminate vibration transmission between chiller and installation base.

Specifications

CE series

Model			CE310LG2HG2	CE311LG1HG1	CE320MH4HH2	CE321MH3HH1	CE330MH2JH2	CE331MH1JH1
Cooling capacity	kW		1231	1406	1582	1758	1934	2110
	RT		350	400	450	500	550	600
COP	W/W		6.10	6.09	6.38	6.42	6.54	6.55
IPLV	W/W		6.64	6.63	6.69	6.97	6.91	7.11
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		201.7	230.9	248	273.8	295.7	322.1
RLA	A		344.4	394.2	423.4	467.5	504.8	549.8
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	425	450	550	575	600	625
Oil Charge volume	L		50	50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	53.0	60.6	68.1	75.7	83.3	90.8
		GPM	840.0	960.0	1080.0	1200.0	1320.0	1440.0
	Pressure drop	kPa	67.5	72.5	74.2	74.2	75.9	74.2
		ft.WG	22.1	23.8	24.3	24.3	24.9	24.3
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	66.3	75.8	84.7	94.1	103.2	112.6
		GPM	1051.3	1201.7	1343.3	1491.4	1635.9	1784.9
	Pressure drop	kPa	58.6	58	65	70.1	67.7	67
		ft.WG	19.2	19.0	21.3	23.0	22.2	22.0
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		82	82	82	82	82	82
Dimension (WxDxH)	Outline	mm	3850x1810x2220	3850x1810x2220	4300x1850x2310	4300x1850x2310	4250x1910x2370	4250x1910x2370
	Package	mm	3950x1950x2570	3950x1950x2570	4450x1900x2670	4450x1900x2670	4400x2000x2720	4400x2000x2720
Net/gross/operating weight	kg		6750/7675/7450	7000/7950/7750	7300/8350/8200	7500/8575/8400	7850/8950/8800	8100/9225/9100

Model			CE410PIEKIE	CE411PIDKID	CE420PICKIC	CE421PIBKIB	CE510PIAKIA	CE511QJCMJD
Cooling capacity	kW		2285	2461	2637	2813	2989	3164
	RT		650	700	750	800	850	900
COP	W/W		6.39	6.29	6.35	6.37	6.34	6.52
IPLV	W/W		6.83	7.02	6.95	7.11	7.08	6.97
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		357.7	391.3	415.3	441.6	471.4	485.3
RLA	A		610.6	668	708.9	753.8	804.7	828.5
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	650	850	850	900	900	1000
Oil Charge volume	L		60	60	60	60	80	80
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	98.4	106.0	113.6	121.1	128.7	136.3
		GPM	1560.0	1680.3	1800.8	1919.7	2040.2	2160.6
	Pressure drop	kPa	66.1	66.2	65.9	65.9	65.8	70.9
		ft.WG	21.7	21.7	21.6	21.6	21.6	23.3
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	122.4	132.1	141.3	150.7	160.2	169.0
		GPM	1940.3	2094.1	2239.9	2388.9	2539.5	2679.0
	Pressure drop	kPa	62.3	62.5	62.5	62.1	62.3	70.1
		ft.WG	20.4	20.5	20.5	20.4	20.4	23.0
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250	DN300
Sound pressure level (Max.)	dB(A)		83	83	83	83	84	84
Dimension (WxDxH)	Outline	mm	4550x2010x2390	4550x2010x2390	4550x2010x2390	4550x2010x2390	4550x2010x2390	4980x2210x2610
	Package	mm	4700x2100x2600	4700x2100x2600	4700x2100x2600	4700x2100x2600	4700x2100x2720	5300x2300x2970
Net/gross/operating weight	kg		9600/10100/10700	9850/10350/11150	10100/10600/11400	10350/10850/11700	10800/12950/12150	12000/13500/13550

Model			CE512QJBMJC	CE520QJAMJB	CE521RJAMJA	CE522RJAMJA	CE530RJCMJE	CE611SKMQKM
Cooling capacity	kW		3340	3516	3692	3868	4219	4571
	RT		950	1000	1050	1100	1200	1300
COP	W/W		6.54	6.55	6.60	6.60	6.60	6.43
IPLV	W/W		7.12	6.93	7.07	7.19	7.15	7.16
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		510.7	536.8	559.4	586	639.3	710.9
RLA	A		871.9	916.4	954.9	1000	1091	1214
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1050	1050	1150	1150	1150	1500
Oil charge	L		80	80	80	80	80	100
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	143.8	151.4	159.0	166.5	181.7	196.8
		GPM	2279.5	2400.0	2520.5	2639.4	2880.3	3119.7
	Pressure drop	kPa	70.8	70.9	65.3	70.9	67.5	55.3
		ft.WG	23.2	23.3	21.4	23.3	22.1	18.1
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	178.3	187.7	196.8	206.2	225.0	244.6
		GPM	2826.4	2975.4	3119.7	3268.7	3566.7	3877.4
	Pressure drop	kPa	70	70	64.5	69.9	72.4	47.8
		ft.WG	23.0	23.0	21.2	22.9	23.7	15.7
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		84	84	84	84	84	85
Dimension (WxDxH)	Outline	mm	4980x2210x2610	4980x2210x2610	4980x2310x2710	4980x2310x2710	4980x2310x2710	5250x2530x2880
	Package	mm	5300x2300x2970	5300x2300x2970	5300x2600x3070	5300x2600x3070	5300x2600x3070	5600x2900x3100
Net/gross/operating weight	kg		12250/13800/13850	12500/14050/14100	13156/14850/14950	13429/15150/15200	15096/15900/16950	17000/17500/19350

Model			CE620SKLQKL	CE621TKNRKN-G	CE630TKMRKM-G	CE631TKLRKL-G	CE710TLNRL-LG	CE711TLMRLP-G
Cooling capacity	kW		4922	5274	5626	5977	6329	6680
	RT		1400	1500	1600	1700	1800	1900
COP	W/W		6.38	6.55	6.62	6.65	6.66	6.68
IPLV	W/W		6.95	7.14	7.08	7.24	7.12	7.27
Power supply	V/Ph/Hz		380/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		771.5	805.2	849.8	898.8	950.3	1000
RLA	A		1317	52.2	55.1	58.3	61.6	64.9
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1500	1600	1650	1700	2000	2050
Oil charge	L		100	100	100	100	120	120
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	212.0	227.1	242.3	257.4	272.5	287.7
		GPM	3360.6	3600.0	3841.0	4080.3	4319.7	4560.6
	Pressure drop	kPa	55.2	52.5	52.2	52.8	63.7	62.7
		ft.WG	18.1	17.2	17.1	17.3	20.9	20.6
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN350	DN350	DN350	DN350	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	263.6	282.3	299.8	319.3	337.0	355.6
		GPM	4178.6	4475.0	4752.4	5061.6	5342.1	5637.0
	Pressure drop	kPa	47.8	46.9	46.1	46.4	64.2	63.6
		ft.WG	15.7	15.4	15.1	15.2	21.1	20.9
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN350	DN400	DN400	DN400	DN450	DN450
Sound pressure level (Max.)	dB(A)		85	85	85	85	86	86
Dimension (WxDxH)	Outline	mm	5250x2530x2880	5400x2750x3000	5400x2750x3000	5400x2750x3000	5800x2750x3100	5800x2750x3100
	Package	mm	5600x2900x3100	5700x3150x3200	5700x3150x3200	5700x3150x3200	6200x3000x3350	6200x3000x3350
Net/gross/operating weight	kg		17400/17900/19750	18600/21250/21250	19000/21500/21700	19500/22050/22450	20500/28000/23550	21000/28000/24200

Model		CE720TLRLO-G	CE721ULNSLN-G	CE730ULMSLM-G	CE731ULLSLL-G
Cooling capacity	kW	7032	7384	7735	8087
	RT	2000	2100	2200	2300
COP	W/W	6.66	6.68	6.70	6.71
IPLV	W/W	7.13	7.27	7.17	7.30
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	1056	1105	1155	1205
RLA	A	68.5	71.7	74.9	78.2
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Direct-on-line	Direct-on-line	Direct-on-line
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	2050	2100	2300
Oil charge	L	120	120	120	120
Evaporator	Type		Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	302.8	318.0	348.2
		GPM	4800.0	5041.0	5519.7
	Pressure drop	kPa	63.4	61	61
		ft.WG	20.8	20.0	20.0
	Number of passes	-	2	2	2
	Connection pipe	mm	DN400	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	374.5	393.1	430.3
		GPM	5936.6	6231.4	6821.1
	Pressure drop	kPa	63.2	60.9	60.4
		ft.WG	20.7	20.0	19.8
	Number of passes	-	2	2	2
	Connection pipe	mm	DN450	DN450	DN450
Sound pressure level (Max.)	dB(A)	86	86	86	86
Dimension (WxDxH)	Outline	mm	5800x2750x3100	5800x3000x3300	5800x3000x3300
	Package	mm	6200x3000x3350	6100x3550x3550	6100x3550x3550
Net/gross/operating weight	kg	21500/29000/24700	22500/26800/25900	23000/27400/26600	23500/27700/27100

Model		CE732ULLSLZ-G	CE810WSNUSN-G	CE820WSMUSM-G	CE820WSLUSL-G
Cooling capacity	kW	8438	9142	9845	10550
	RT	2400	2600	2800	3000
COP	W/W	6.69	6.71	6.69	6.71
IPLV	W/W	7.28	7.30	7.11	7.30
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	1261	1362	1472	1572
RLA	A	81.8	88.4	95.5	102.0
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Direct-on-line	Direct-on-line	Direct-on-line
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	2300	2500	2800
Oil charge	L	120	160	160	160
Evaporator	Type		Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	363.4	393.7	423.9
		GPM	5760.6	6241.0	7200.0
	Pressure drop	kPa	65.7	69.3	69.3
		ft.WG	21.5	22.7	22.6
	Number of passes	-	2	2	2
	Connection pipe	mm	DN400	DN500	DN500
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	449.1	486.4	524.0
		GPM	7119.2	7710.4	8306.5
	Pressure drop	kPa	61.6	61.8	59.8
		ft.WG	20.2	20.3	19.6
	Number of passes	-	2	2	2
	Connection pipe	mm	DN450	DN500	DN500
Sound pressure level (Max.)	dB(A)	86	88	88	88
Dimension (WxDxH)	Outline	mm	5800x3000x3300	6400×3370×3750	6400×3370×3750
	Package	mm	6100x3550x3550	6700×4950×4000	6700×4950×4000
Net/gross/operating weight	kg	23700/27700/27300	30000/31000/34500	31000/32000/35600	32000/33000/36700

CE-Standard series

Model		CE330MHFJHE	CE331MHGJHF	CE410NHEJHD	CE411NHDJHC	CE420PHGKHE	CE421PHFKHD	CE510PHEKHC
Cooling capacity	kW	1934	2110	2285	2461	2637	2813	2989
	RT	550	600	650	700	750	800	850
COP	W/W	6.10	6.04	6.07	6.13	6.17	6.15	6.27
IPLV	W/W	6.69	6.94	6.55	6.92	6.83	6.94	7.07
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	317.0	349.3	376.5	401.5	427.4	457.4	476.7
RLA	A	541.2	596.3	642.7	685.4	729.6	780.9	813.7
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	450	450	480	480	525	525
Oil charge	L	50	50	60	60	60	60	80
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	83.3	90.8	98.4	106.0	113.6	128.7
		GPM	1320.0	1440.0	1560.0	1680.3	1800.8	2040.2
	Pressure drop	kPa	69.6	72	71.7	73.2	72.4	71.9
		ft.WG	22.8	23.6	23.5	24.0	23.7	23.6
	Number of passes	-	2	2	2	2	2	2
Condenser	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300	DN300
	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	104.2	113.9	123.3	132.6	141.9	151.4
		GPM	1651.8	1805.5	1954.6	2102.0	2249.4	2544.3
	Pressure drop	kPa	61.6	63.6	64.2	66.2	65.6	64.6
		ft.WG	20.2	20.9	21.1	21.7	21.5	21.2
Sound pressure level (Max.)	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300	DN300
Dimension (WxDxH)	Outline	mm	4250x1905x2350	4250x1905x2350	4250x1975x2350	4250x1975x2350	4250x2080x2450	4250x2080x2450
	Package	mm	4400X2000X2720	4400X2000X2720	4400X2000X2650	4400X2000X2650	4400X2200X2700	4400X2200X2700
Net/gross/operating weight	kg	7592/8600/8400	7735/8900/8550	8976/10000/9800	9202/10200/10050	9810/10800/10750	10025/11000/11000	10476/11400/11500

Model		CE511QHFKHB	CE512QHDKHA	CE520QIEMID	CE522QICMIC	CE530RJEMJF	CE611SKPQKP	CE620SKOQKO
Cooling capacity	kW	3164	3340	3516	3868	4219	4571	4922
	RT	900	950	1000	1100	1200	1300	1400
COP	W/W	6.26	6.25	6.16	6.20	6.33	6.28	6.28
IPLV	W/W	6.95	7.05	6.66	6.90	6.86	7.09	6.95
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	505.5	534.4	570.8	623.8	666.5	727.8	783.8
RLA	A	862.9	912.3	974.4	1064.9	1137.9	1242.5	1338.1
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ	Y- Δ
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	650	650	850	900	950	1500
Oil charge	L	80	80	80	80	80	100	100
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Flooded
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	136.3	143.8	151.4	166.5	181.7	196.8
		GPM	2160.6	2279.5	2400.0	2639.4	2880.3	3360.6
	Pressure drop	kPa	72	69.6	74.7	74.1	76.5	73
		ft.WG	23.6	22.8	24.5	24.3	25.1	23.9
	Number of passes	-	2	2	2	2	2	2
Condenser	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300	DN350
	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	169.9	179.4	189.2	208	226.2	245.3
		GPM	2693.3	2843.9	2999.2	3297.2	3585.7	4188.1
	Pressure drop	kPa	63.9	66.4	70.3	69.8	67.8	64.5
		ft.WG	21.0	21.8	23.1	22.9	22.2	21.2
Sound pressure level (Max.)	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300	DN350
Dimension (WxDxH)	Outline	mm	4250x2130x2600	4250x2130x2600	4540x2210x2650	4540x2210x2650	4700x2310x2750	5250x2530x2880
	Package	mm	4400X2250X2800	4400X2250X2800	4400X2400X2900	4700X2400X2900	5000x2600x3100	5400X2700X3100
Net/gross/operating weight	kg	10835/11800/11950	11036/12100/12150	12528/13800/13950	12931/14200/14400	14450//16050	16500/17300/18850	16850/17650/19200

Model		CE621TKRRKR-G	CE630TKQRKQ-G	CE631TKPRKP-G	CE710TLRRLK-G	CE711TLQRLN-G	CE720TLPRLM-G	CE721ULRSLR-G
Cooling capacity	kW	5274	5626	5977	6329	6680	7032	7384
	RT	1500	1600	1700	1800	1900	2000	2100
COP	W/W	6.34	6.37	6.37	6.17	6.15	6.15	6.21
IPLV	W/W	7.17	7.08	7.21	6.77	6.87	6.76	6.94
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	831.9	883.1	938.3	1026	1086	1143	1189
RLA	A	54.0	57.3	60.9	66.5	70.5	74.2	77.1
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1600	1650	1700	2000	2050	2100
Oil charge	L	100	100	100	120	120	120	120
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	227.1	242.3	257.4	272.5	287.7	302.8
		GPM	3600.0	3841.0	4080.3	4319.7	4560.6	4800.0
	Pressure drop	kPa	73.5	73	72.8	79.2	79	79.2
		ft.WG	24.1	23.9	23.9	26.0	25.9	26.0
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN350	DN350	DN350	DN400	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	282.7	301.4	320.2	340.5	359.6	378.5
		GPM	4481.4	4777.8	5075.8	5397.6	5700.4	6000.0
	Pressure drop	kPa	64.1	64.2	63.4	69.7	69.7	69.6
		ft.WG	21.0	21.1	20.8	22.9	22.9	22.8
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN450	DN450	DN450
Sound pressure level (Max.)	dB(A)	85	85	85	86	86	86	86
Dimension (WxDxH)	Outline	mm	5400x2750x3000	5400x2750x3000	5400x2750x3000	5800x2750x3100	5800x2750x3100	5800x3000x3300
	Package	mm	5700X3150X3200	5700X3150X3200	5700X3150X3200	6200X3000X3350	6200X3000X3350	6100x3550x3550
Net/gross/operating weight	kg	17940/20000/20550	18290/20500/20950	18770/21000/21500	20170/22500/23250	20620/23000/23750	21170/23600/24400	22060/26400/25450

Model		CE730ULQSLQ-G	CE731ULPSLP-G	CE732ULTSLT-G	CE810WSRUSR-G	CE820WSQUSQ-G	CE820WSPUSP-G
Cooling capacity	kW	7735	8087	8438	9142	9845	10550
	RT	2200	2300	2400	2600	2800	3000
COP	W/W	6.22	6.24	6.21	6.39	6.35	6.38
IPLV	W/W	6.85	6.97	6.94	6.98	6.77	6.96
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	1244	1296	1359	1431	1550	1653
RLA	A	80.7	84.1	88.2	92.8	100.6	107.2
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line	Direct-on-line
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	2200	2300	2400	2500	2800
Oil charge	L	120	120	120	160	160	160
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	333.1	348.2	363.4	393.7	423.9
		GPM	5280.3	5519.7	5760.6	6241.0	7200.0
	Pressure drop	kPa	79.2	79	79.1	83.1	82.7
		ft.WG	26.0	25.9	25.9	27.3	27.1
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN500	DN500
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	415.7	434.5	453.6	489.5	527.6
		GPM	6589.7	6887.7	7190.5	7759.6	8363.5
	Pressure drop	kPa	69.1	69.3	68.9	73.9	73.6
		ft.WG	22.7	22.7	22.6	24.2	24.1
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN450	DN500	DN500
Sound pressure level (Max.)	dB(A)	86	86	86	88	88	88
Dimension (WxDxH)	Outline	mm	5800x3000x3300	5800x3000x3300	5800x3000x3300	6400x3370x3750	6400x3370x3750
	Package	mm	6100x3550x3550	6100x3550x3550	6100x3550x3550	6700 × 4950 × 4000	6700 × 4950 × 4000
Net/gross/operating weight	kg	22796/27200/26300	22870/27200/26450	23140/27550/26850	29200/30200/33350	30030/31000/34400	30950/32000/35450

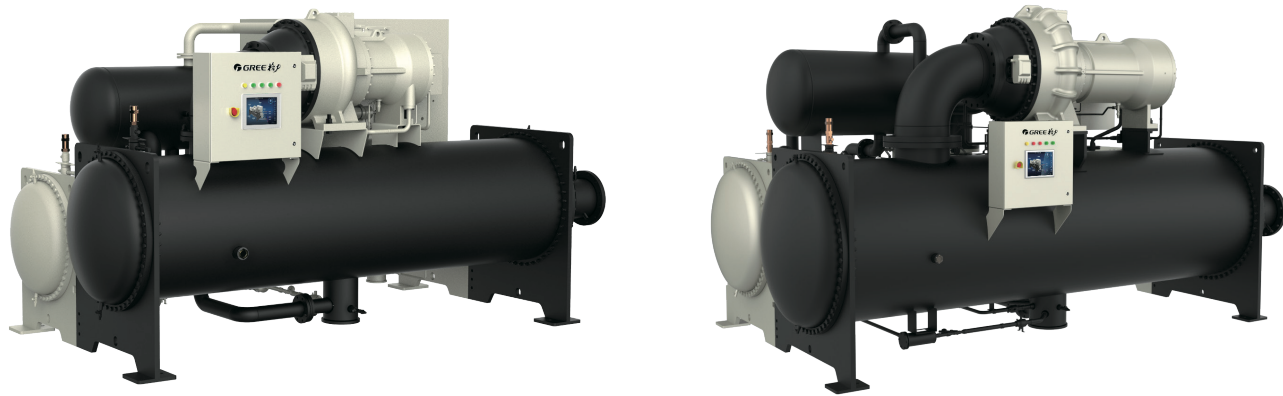
Notes:
1. Working conditions: leaving chilled water temperature: 6.67℃ ; entering cooling water temperature is 29.44℃ .
2. Fouling factors of evaporator and condenser are 0.018 m² · °C /kW and 0.044 m² · °C /kW respectively.
3. Above water flow is designed according to ARI 550/590-2018; IPLV is the test value obtained based on the working conditions specified in ARI 550/590-2018.
4. The unit's performance parameters may be changed without prior notice due to product improvement. For the specific parameters, please refer to product nameplate.

Operation Range

Chilled Water		Cooling Water	
LWT (℃)	Difference between EWT & LWT (℃)	EWT(℃)	Difference between EWT & LWT (℃)
5~15	2.5~8	12~35	3.5~8

LWT： Leaving water temperature
EWT： Entering water temperature
If customer requires higher temperature difference, please consult the manufacturer.

CVE Inverter Centrifugal Chiller



Features

Refrigerant

The centrifugal chillers adopts high efficiency, zero Ozone Depleting Potential (ODP) refrigerant HFC-134a

Compressor

- The two-stage semi-hermetic centrifugal compressor with PMSM (Permanent Magnet Synchronous Motor) for inverter operation and gravity fed oil reservoir on the top to provide lubrication during coast-down in the event of a power failure.
- Variable section diffuser after the impeller, which is designed to adjust the flow passage section, and improve the flow velocity and stability especially under part load condition, extending the chiller's operating range, reducing noise and vibration of the unit at full load and partial load as well.
- Two compressors are adopted for large cooling capacity unit, which is with two independent circuits from each other, results in high reliability;
- Compressor refrigerant isolation valve is optional to meet your actual requirement.

Motor

- The world's first high-power high-speed PMSM (permanent magnetic synchronous motor) specially designed for refrigeration centrifugal compressors.
- High efficiency in all working conditions: Within the unit operating range, motor efficiency is above 96% all the time and 98.2% to the maximum, which greatly improves the operation efficiency of the unit in both full load and partial load.
- 10/11kV high voltage variable frequency direct-drive PMSM: It is the worlds first application for 10/11kV inverter centrifugal chiller, which features the chiller with simple structure, high power density, and high reliability.
- Stable and reliable: Motor insulation class H, adopting spiral refrigerant injection cooling technology to cool down motor stator and rotor, the motor's temperature field is even and the temperature can be controlled at around 40 °C , ensuring its efficient, stable and reliable operation.

Heat exchanger

- Flooded type or hybrid falling film type evaporator
- Both the evaporator and the condenser adopt triple grooves end-tube-support sheet design to ensure the reliability, which are designed for 1.0Mpa working pressure on the water side, and with 1.6Mpa and 2.0Mpa as custom options.
- High efficient sub-cooler is integrated inside condenser at the bottom, with maximum sub-cooling degree of 5°C .
- ASME certification is optional. Chiller can be designed, tested and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII-Division 1 or applicable code.

- With sight glass liquid level indicator located on the side of the shell to aid in determining proper refrigerant charge.
- Aluminium mesh filter be located above the tube bundle inside evaporator to prevent liquid refrigerant carryover to the compressor.
- Condenser tube can be optionally designed by using materials of copper nickel alloy, titanium, stainless steel, which appropriate for corrosive resistance such as seawater-cooling and similar applications.
- Evaporator is insulated with 40mm closed cell insulation material.
- Evaporator/Condenser standard water connections are flange style , grooved for victaulic style pipe couplings are optional available.
- Marine water box is optional available.

Lubrication system

- Install oil-soaked oil pump in the external oil tank
- Equipped with oil heater in lubricating oil tank
- Oil be filtered with externally mounted 0.5 micron replaceable cartridge oil filter equipped with service valves.
- Spray the refrigerant into the oil tank for lubrication oil cooling

Starter

- The chiller uses VFD (Variable Frequency Drive) startup.
- Quick Starting (optional): After power-off and recovery, it needs 80s to restart, and 100s to be loaded to 80% of full loading of the chiller (total 180s).
- Unit-mounted VFD: For low voltage such as 380V inverter unit, the VFD is factory installed onto the unit, which greatly reduces the footprint, and simplify the installation.
- Refrigerant cooled VFD: Excellent cooling effect for ensuring reliable operation.
- Optional low THD of VFD: For occasions that are sensitive to electromagnetic interference such as scientific research institutes, data processing rooms, hospitals, factories and technique process application, the lower THD of VFD is optional available. With PWM controllable rectification technology, the VFD can output smooth sine wave, with THD less than 5% and power factor higher than 0.995.
- The 10/11kV high voltage variable frequency direct-drive centrifugal chiller, with low THD less than 5% and high power factor equal to or higher than 0.96 in all working conditions.

Controls

- IP Rating for control cabinet is IP42 as standard,IP54 can be optional available.
- Color Touch Screen (12 " 1024 x 768) , for direct displaying each operation parameter, real-time monitoring and easy operation.
- More than 30 protection measures, up to latest 15 days of operation curve records and up to 180 days of error events are available for reviewing.
- Modbus communication protocol interface is provided as standard. BacNet communication protocol interface is optional.

Accessories

Rubber isolators are as standard and spring isolators are optional configuration to help eliminate vibration transmission between chiller and installation base.

Specifications

CVE Standard diode inverter

Model			CVE211GF6EF5D	CVE211GF4EF3D	CVE221GF3EF2D	CVE311HGFGGFD	CVE321KGDHGED
Cooling capacity	kW		879	1055	1231	1406	1582
	RT		250	300	350	400	450
COP	W/W		5.79	5.80	6.00	6.16	6.22
IPLV	W/W		9.48	9.99	10.35	10.49	10.09
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		151.8	181.9	205.1	228.3	254.4
RLA	A		245.4	293.9	331.5	369.0	411.3
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	275	300	350	400
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	37.9	45.4	53.0	60.6	68.1
		GPM	600.0	720.0	840.0	960.0	1080.0
	Pressure drop	kPa	75.6	72.9	68.0	71.2	70.3
		ft.WG	24.8	23.9	22.3	23.4	23.1
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	47.7	57.3	66.5	75.7	85.0
		GPM	756.6	907.7	1053.8	1199.8	1348.1
	Pressure drop	kPa	63.9	62.6	61.8	66.4	65.5
		ft.WG	21.0	20.5	20.3	21.8	21.5
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)		80	80	80	82	82
Dimension (WxDxH)	Outline	mm	3650x1490x1850	3650x1490x1850	3650x1490x1850	3900x1590x2020	3900x1765x2200
	Package	mm	3700x1800x1950	3700x1800x1950	3700x1800x1950	3980x1800x2100	3980x1900x2350
Net/gross/operating weight	kg		5050/5550/5500	5154/5650/5600	5382/5900/5900	5630/6500/6250	6681/7500/7350

Model			CVE321KGCHGCD	CVE411MHFJHED	CVE411MHEJHDD	CVE421NHDJHCD	CVE421NHCJHBD
Cooling capacity	kW		1758	1934	2110	2285	2461
	RT		500	550	600	650	700
COP	W/W		6.16	6.31	6.28	6.35	6.30
IPLV	W/W		10.48	10.37	10.67	10.48	10.70
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		285.4	306.5	335.9	359.9	390.7
RLA	A		461.3	495.4	543.0	581.7	631.5
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	450	450	480	480
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	75.7	83.3	90.8	98.4	106.0
		GPM	1200.0	1320.0	1440.0	1560.0	1680.3
	Pressure drop	kPa	75.7	69.6	62.3	64.3	57.4
		ft.WG	24.8	22.8	20.4	21.1	18.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	94.6	103.7	113.2	122.5	132.1
		GPM	1499.9	1643.9	1794.5	1941.9	2094.1
	Pressure drop	kPa	64.4	61.1	55.2	57.5	57.7
		ft.WG	21.1	20.0	18.1	18.9	18.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		82	84	84	84	84
Dimension (WxDxH)	Outline	mm	3900x1765x2200	4250x1905x2250	4250x1905x2250	4250x1975x2220	4250x1975x2220
	Package	mm	3980x1900x2350	4400x2100x2600	4400x2100x2600	4350x210x2450	4350x210x2450
Net/gross/operating weight	kg		6780/7600/7450	7446/8200/8200	7565/8500/8350	8050/8700/8850	8227/8900/9050

Model			CVE521PHGKHED	CVE521PHFKHDD	CVE521PHEKHCD	CVE531QHDKHBD
Cooling capacity	kW		2637	2813	2989	3164
	RT		750	800	850	900
COP	W/W		6.48	6.48	6.42	6.58
IPLV	W/W		10.57	10.76	10.92	11.05
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		406.9	434.1	465.5	480.9
RLA	A		657.7	701.6	752.4	777.3
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	525	525	525	650
Oil charge	L		25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	113.6	121.1	128.7	136.3
		GPM	1800.8	1919.7	2040.2	2160.6
	Pressure drop	kPa	72.4	72.5	71.9	63.3
		ft.WG	23.7	23.8	23.6	20.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	140.9	150.3	159.9	168.8
		GPM	2233.6	2382.6	2534.7	2675.8
	Pressure drop	kPa	64.9	64.5	64.3	63.1
		ft.WG	21.3	21.2	21.1	20.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4250x2080x2450	4250x2080x2450	4250x2130x2450
	Package	mm	4500x2300x2600	4500x2300x2600	4500x2300x2600	4500x2350x2600
Net/gross/operating weight	kg		8974/10300/9900	9059/9800/10000	9150/10000/10150	9537/10500/10600

Model			CVE621QIEMIDD	CVE621QICMICD	CVE631RIDMIBD
Cooling capacity	kW		3516	3868	4219
	RT		1000	1100	1200
COP	W/W		6.60	6.52	6.62
IPLV	W/W		10.80	11.07	10.87
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50
Power input	kW		532.7	593.2	637.3
RLA	A		861.1	958.8	1030.1
Capacity adjustment range	%		10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	850	900	1100
Oil charge	L		50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	151.4	166.5	181.7
		GPM	2400.0	2639.4	2880.3
	Pressure drop	kPa	74.7	74.1	67.3
		ft.WG	24.5	24.3	22.1
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	187.5	206.5	224.9
		GPM	2972.3	3273.4	3565.1
	Pressure drop	kPa	69.1	69	66.9
		ft.WG	22.7	22.6	21.9
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		85	85	85
Dimension (WxDxH)	Outline	mm	4540x2210x2610	4540x2210x2610	4700x2310x2700
	Package	mm	4800x2400x2900	4800x2400x2900	4800x2400x2900
Net/gross/operating weight	kg		10508/11600/11900	10708/11800/12150	11555/12600/13250

Model			CVE521PHGKHED	CVE521PHFKHDD	CVE521PHEKHCD	CVE531QHDKHBD
Cooling capacity	kW		2637	2813	2989	3164
	RT		750	800	850	900
COP	W/W		6.48	6.48	6.42	6.58
IPLV	W/W		10.57	10.76	10.92	11.05
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		406.9	434.1	465.5	480.9
RLA	A		657.7	701.6	752.4	777.3
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	525	525	525	650
Oil charge	L		25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	113.6	121.1	128.7	136.3
		GPM	1800.8	1919.7	2040.2	2160.6
	Pressure drop	kPa	72.4	72.5	71.9	63.3
		ft.WG	23.7	23.8	23.6	20.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	140.9	150.3	159.9	168.8
		GPM	2233.6	2382.6	2534.7	2675.8
	Pressure drop	kPa	64.9	64.5	64.3	63.1
		ft.WG	21.3	21.2	21.1	20.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4250x2080x2450	4250x2080x2450	4250x2130x2450
	Package	mm	4500x2300x2600	4500x2300x2600	4500x2300x2600	4500x2350x2600
Net/gross/operating weight	kg		8974/10300/9900	9059/9800/10000	9150/10000/10150	9537/10500/10600

Model			CVE621QIEMIDD	CVE621QICMICD	CVE631RIDMIBD
Cooling capacity	kW		3516	3868	4219
	RT		1000	1100	1200
COP	W/W		6.60	6.52	6.62
IPLV	W/W		10.80	11.07	10.87
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50
Power input	kW		532.7	593.2	637.3
RLA	A		861.1	958.8	1030.1
Capacity adjustment range	%		10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	850	900	1100
Oil charge	L		50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	151.4	166.5	181.7
		GPM	2400.0	2639.4	2880.3
	Pressure drop	kPa	74.7	74.1	67.3
		ft.WG	24.5	24.3	22.1
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	187.5	206.5	224.9
		GPM	2972.3	3273.4	3565.1
	Pressure drop	kPa	69.1	69	66.9
		ft.WG	22.7	22.6	21.9
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		85	85	85
Dimension (WxDxH)	Outline	mm	4540x2210x2610	4540x2210x2610	4700x2310x2700
	Package	mm	4800x2400x2900	4800x2400x2900	4800x2400x2900
Net/gross/operating weight	kg		10508/11600/11900	10708/11800/12150	11555/12600/13250

CVE Plus diode inverter

Model			CVE210GF5EF4D	CVE220GF3EF2D	CVE230GF2EF1D	CVE310HG7GG7D	CVE320KG4HG7D
Cooling capacity	kW		879	1055	1231	1406	1582
	RT		250	300	350	400	450
COP	W/W		6.06	6.12	6.25	6.36	6.54
IPLV	W/W		9.85	10.00	10.73	10.90	10.73
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		145.1	172.4	196.9	221.1	241.9
RLA	A		234.4	278.6	318.2	357.4	391.0
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	275	300	350	400
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·℃ /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	37.9	45.4	53.0	60.6	68.1
		GPM	600.0	720.0	840.0	960.0	1080.0
	Pressure drop	kPa	62.6	62.4	68.9	71.7	59.4
		ft.WG	20.5	20.5	22.6	23.5	19.5
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·℃ /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	47.4	56.8	66.1	75.4	84.5
		GPM	751.7	900.7	1047.8	1194.6	1338.9
	Pressure drop	kPa	53.3	54.3	60	57.7	47.1
		ft.WG	17.5	17.8	19.7	18.9	15.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)		80	80	80	82	82
Dimension (WxDxH)	Outline	mm	3650x1490x1850	3650x1490x1850	3650x1490x1850	3900x1590x2020	3900x1765x2200
	Package	mm	3700x1800x1950	3700x1800x1950	3700x1800x1950	3980x1800x2100	3980x1900x2350
Net/gross/operating weight	kg		5155/5650/5600	5382/5880/5850	5485/6000/6000	5770/6650/6400	7009/7850/7700

Model			CVE320KG3HG8D	CVE410MHDJHDD	CVE410MHHJHCD	CVE420NHCJHBD	CVE420NHBJHAD
Cooling capacity	kW		1758	1934	2110	2285	2461
	RT		500	550	600	650	700
COP	W/W		6.44	6.62	6.51	6.63	6.54
IPLV	W/W		10.99	10.84	11.05	10.91	11.10
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		273	292.1	324.1	344.7	376.3
RLA	A		441.2	472.1	523.9	557.2	608.2
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	450	450	480	480
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	75.7	83.3	90.8	98.4	106.0
		GPM	1200.0	1320.0	1440.0	1560.0	1680.3
	Pressure drop	kPa	61.5	47.1	49.2	50.4	51.1
		ft.WG	20.2	15.4	16.1	16.5	16.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	94.0	103.1	112.7	121.8	131.4
		GPM	1490.7	1634.3	1786.5	1930.8	2083.0
	Pressure drop	kPa	49.1	46.7	49.6	50	49.9
		ft.WG	16.1	15.3	16.3	16.4	16.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		82	84	84	84	84
Dimension (WxDxH)	Outline	mm	3900x1765x2200	4250x1905x2250	4250x1905x2250	4250x1975x2220	4250x1975x2220
	Package	mm	3980x1900x2350	4400x2100x2600	4400x2100x2600	4350x210x2450	4350x210x2450
Net/gross/operating weight	kg		7125/7950/7800	7700/8500/8450	7850//8600	8177//9000	8300//9100

Model			CVE510PHEKHCD	CVE510PHDKHBD	CVE520PHCKHAD	CVE520QHCKHBD
Cooling capacity	kW		2637	2813	2989	3164
	RT		750	800	850	900
COP	W/W		6.71	6.63	6.64	6.57
IPLV	W/W		11.10	11.25	11.00	11.13
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		393	424.3	450.1	481.6
RLA	A		635.2	685.8	727.5	778.4
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	550	550	575	650
Oil charge	L		25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	113.6	121.1	128.7	136.3
		GPM	1800.8	1919.7	2040.2	2160.6
	Pressure drop	kPa	56.7	56.9	52.6	44.1
		ft.WG	18.6	18.7	17.3	14.5
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	140.3	149.9	159.2	168.8
		GPM	2224.0	2376.2	2523.6	2675.8
	Pressure drop	kPa	50.9	51	53.7	63.1
		ft.WG	16.7	16.7	17.6	20.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4250x2080x2450	4250x2080x2450	4250x2130x2450
	Package	mm	4500x2300x2600	4500x2300x2600	4500x2300x2600	4500x2350x2600
Net/gross/operating weight	kg		9200//10200	9369//10350	9501//10550	9832//10900

Model			CVE620QICMICD	CVE620QIBMIBD	CVE631RICMIAD
Cooling capacity	kW		3516	3868	4219
	RT		1000	1100	1200
COP	W/W		6.68	6.60	6.72
IPLV	W/W		10.91	11.19	11.03
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50
Power input	kW		526.4	586	627.9
RLA	A		850.7	947.2	1014.9
Capacity adjustment range	%		10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	900	900	1100
Oil charge	L		50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	151.4	166.5	181.7
		GPM	2400.0	2639.4	2880.3
	Pressure drop	kPa	62.7	65.6	61.1
		ft.WG	20.6	21.5	20.0
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	187.2	206.2	224.4
		GPM	2967.5	3268.7	3557.2
	Pressure drop	kPa	57.9	58	57.6
		ft.WG	19.0	19.0	18.9
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		85	85	85
Dimension (WxDxH)	Outline	mm	4540x2210x2610	4540x2210x2610	4700x2310x2700
	Package	mm	4800x2400x2900	4800x2400x2900	4800x2400x2900
Net/gross/operating weight	kg		10708//12150	11091/12150/12500	11985//13700

CVE Plus 4-quadrant Inverter

Model			CVE210GF5EF4	CVE220GF3EF2	CVE230GF2EF1	CVE310HG7GG7	CVE320KG4HG7
Cooling capacity	kW		879	1055	1231	1406	1582
	RT		250	300	350	400	450
COP	W/W		6.06	6.12	6.25	6.36	6.54
IPLV	W/W		9.85	10.00	10.73	10.90	10.73
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		145.1	172.4	196.9	221.1	241.9
RLA	A		222.7	264.6	302.2	339.3	371.3
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	275	300	350	400
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	37.9	45.4	53.0	60.6	68.1
		GPM	600.0	720.0	840.0	960.0	1080.0
	Pressure drop	kPa	62.6	62.4	68.9	71.7	59.4
		ft.WG	20.5	20.5	22.6	23.5	19.5
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	47.4	56.8	66.1	75.4	84.5
		GPM	751.7	900.7	1047.8	1194.6	1338.9
	Pressure drop	kPa	53.3	54.3	60	57.7	47.1
		ft.WG	17.5	17.8	19.7	18.9	15.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)		80	80	80	82	82
Dimension (WxDxH)	Outline	mm	3650x1490x1900	3650x1490x1900	3650x1490x1900	3900x1590x1900	3900x1765x2200
	Package	mm	3700x1800x2000	3700x1800x2000	3700x1800x2000	3980x1800x2100	3980x1900x2350
Net/gross/operating weight	kg		5155/5650/5600	5382/5880/5850	5485/6000/6000	5770/6650/6400	7009/7850/7700

Model			CVE320KG3HG8	CVE410MHDJHD	CVE410MHJHC	CVE420NHCJHB	CVE420NHBJHA
Cooling capacity	kW		1758	1934	2110	2285	2461
	RT		500	550	600	650	700
COP	W/W		6.44	6.62	6.51	6.63	6.54
IPLV	W/W		10.99	10.84	11.05	10.91	11.10
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		273	292.1	324.1	344.7	376.3
RLA	A		419.0	448.3	497.4	529.0	577.5
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	450	450	480	480
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	75.7	83.3	90.8	98.4	106.0
		GPM	1200.0	1320.0	1440.0	1560.0	1680.3
	Pressure drop	kPa	61.5	47.1	49.2	50.4	51.1
		ft.WG	20.2	15.4	16.1	16.5	16.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	94.0	103.1	112.7	121.8	131.4
		GPM	1490.7	1634.3	1786.5	1930.8	2083.0
	Pressure drop	kPa	49.1	46.7	49.6	50	49.9
		ft.WG	16.1	15.3	16.3	16.4	16.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		82	84	84	84	84
Dimension (WxDxH)	Outline	mm	3900x1765x2200	4250x1905x2250	4250x1905x2250	4250x1975x2220	4250x1975x2220
	Package	mm	3980x1900x2350	4350X2050X2450	4350X2050X2450	4350X2100X2450	4350X2100X2450
Net/gross/operating weight	kg		7125/7950/7800	7700/8500/8450	7850/8500/8600	8177/8900/9000	8300/9050/9100

Model			CVE510PHEKHC	CVE510PHDKHB	CVE520PHCKHA	CVE520QHCKHB	CVE530QHAKHA
Cooling capacity	kW		2637	2813	2989	3164	3340
	RT		750	800	850	900	950
COP	W/W		6.71	6.63	6.64	6.57	6.65
IPLV	W/W		11.10	11.25	11.00	11.13	11.27
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		393	424.3	450.1	481.6	502.3
RLA	A		603.2	651.2	690.8	739.1	770.9
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	550	550	575	650	650
Oil charge	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	113.6	121.1	128.7	136.3	143.8
		GPM	1800.8	1919.7	2040.2	2160.6	2279.5
	Pressure drop	kPa	56.7	56.9	52.6	44.1	42.2
		ft.WG	18.6	18.7	17.3	14.5	13.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	140.3	149.9	159.2	168.8	177.9
		GPM	2224.0	2376.2	2523.6	2675.8	2820.1
	Pressure drop	kPa	50.9	51	53.7	63.1	65.4
		ft.WG	16.7	16.7	17.6	20.7	21.5
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4250x2080x2450	4250x2080x2450	4250x2130x2450	4250x2130x2450
	Package	mm	4350X2200X2600	4350X2200X2600	4350X2200X2600	4350X2400X2650	4350X2400X2650
Net/gross/operating weight	kg		9200/10000/10200	9369/10150/10350	9501/10300/10550	9832/10800/10900	9832/10800/11000

Model			CVE532QIGMIE	CVE620QICMIC	CVE620QIBMIB	CVE630RJCMJF
Cooling capacity	kW		3340	3516	3868	4219
	RT		950	1000	1100	1200
COP	W/W		6.67	6.68	6.60	6.75
IPLV	W/W		10.36	10.91	11.19	11.06
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		500.8	526.4	586	625.1
RLA	A		768.6	807.9	899.4	959.4
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	900	900	900	1100
Oil charge	L		25	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	143.8	151.4	166.5	181.7
		GPM	2279.5	2400.0	2639.4	2880.3
	Pressure drop	kPa	56.2	62.7	65.6	67.1
		ft.WG	18.4	20.6	21.5	22.0
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	177.9	187.2	206.2	224.3
		GPM	2820.1	2967.5	3268.7	3555.6
	Pressure drop	kPa	67.2	57.9	58	72.9
		ft.WG	22.0	19.0	19.0	23.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		84	85	85	85
Dimension (WxDxH)	Outline	mm	4600x2210x2500	4540x2210x2530	4540x2210x2530	5100x2310x2950
	Package	mm	4800X2350X2700	4650X2350X2750	4650X2350X2750	5200X2450X3150
Net/gross/operating weight	kg		10330/12000/11700	10708/12300/12150	11091/12300/12500	12300/14500/14000

CVEH Standard series

Model			CVEH610QHDKB-G	CVEH610QHBKA-G	CVEH620QIEMID-G	CVEH620QIBMIB-G	CVEH630RIDMIC-G
Cooling capacity	kW		3164	3340	3516	3868	4219
	RT		900	950	1000	1100	1200
COP	W/W		6.45	6.42	6.45	6.43	6.50
IPLV	W/W		10.65	10.83	10.50	10.85	10.51
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		490.6	520.3	545.1	601.5	649.1
RLA	A		29.5	31.3	32.8	36.2	39.0
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	650	650	900	900	1000
Oil charge	L		50	50	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·℃ /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	136.3	143.8	151.4	166.5	181.7
		GPM	2160.6	2279.5	2400.0	2639.4	2880.3
	Pressure drop	kPa	63.3	52.9	74.0	73.7	67.3
		ft.WG	20.8	17.4	24.3	24.2	22.1
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·℃ /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	169.2	178.8	188	206.9	225.4
		GPM	2682.2	2834.3	2980.2	3279.8	3573.1
	Pressure drop	kPa	63.4	66	68.9	68.2	67.7
		ft.WG	20.8	21.6	22.6	22.4	22.2
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)		85	85	85	85	85
Dimension (WxDxH)	Outline	mm	4250x2130x2450	4250x2130x2450	4550x2210x2610	4550x2210x2610	4700x2310x2650
	Package	mm	4350X2400X2650	4350X2400X2650	4600x2300x2750	4600x2300x2750	4800x2350x2800
Net/gross/operating weight	kg		9637/10400/10700	9787/10750/10850	10510/11900/11950	10730/11900/12150	11970/12500/13550

Model			CVEH710SJOQJN-G	CVEH720TJRRJP-G	CVEH720TJQRJO-G	CVEH730TJPRJN-G
Cooling capacity	kW		4922	5274	5626	5977
	RT		1400	1500	1600	1700
COP	W/W		6.50	6.51	6.44	6.54
IPLV	W/W		10.88	10.69	10.86	10.22
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		757.3	810.1	873.5	913.9
RLA	A		45.5	48.7	52.5	55.0
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	1600	1700	1750	1800
Oil charge	L		50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	212.0	227.1	242.3	257.4
		GPM	3360.6	3600.0	3841.0	4080.3
	Pressure drop	kPa	78.5	78.8	78.2	78.9
		ft.WG	25.7	25.8	25.6	25.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN350	DN350	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	263	281.7	300.9	319.1
		GPM	4169.1	4465.5	4769.9	5058.4
	Pressure drop	kPa	78.2	77.4	78.3	77.6
		ft.WG	25.6	25.4	25.7	25.5
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN350	DN400	DN400	DN400
Sound pressure level (Max.)	dB(A)		86	86	86	86
Dimension (WxDxH)	Outline	mm	5050x2530x3100	5150x2750x3150	5150x2750x3150	5150x2750x3150
	Package	mm	5200x2700x3300	5250x3150x3300	5250x3150x3300	5250x3150x3300
Net/gross/operating weight	kg		16100/16600/18500	16790/17300/19450	17140/17640/19850	17590/18100/20350

Model		CVEH810TKORKM-G	CVEH810TKNRKL-G	CVEH820TKMRKK-G	CVEH820UKRSKQ-G	CVEH830UKQSKP-G
Cooling capacity	kW	6329	6680	7032	7384	7735
	RT	1800	1900	2000	2100	2200
COP	W/W	6.57	6.50	6.56	6.49	6.62
IPLV	W/W	10.42	10.56	10.43	10.56	10.46
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	963.3	1028	1072	1138	1168
RLA	A	57.9	61.8	64.5	68.4	70.2
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	1900	2000	2050	2100
Oil charge	L	50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	272.5	287.7	302.8	333.1
		GPM	4319.7	4560.6	4800.0	5280.3
	Pressure drop	kPa	73.8	72.8	73.8	72.9
		ft.WG	24.2	23.9	24.2	23.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	337.6	356.9	375.2	394.6
		GPM	5351.7	5657.6	5947.7	6255.2
	Pressure drop	kPa	63.5	63.5	63.5	63.7
		ft.WG	20.8	20.8	20.8	20.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN450	DN450
Sound pressure level (Max.)	dB(A)	87	87	87	87	87
Dimension (WxDxH)	Outline	mm	5400x2750x3150	5400x2750x3150	5400x2750x3150	5300x3000x3250
	Package	mm	5500x3000x3300	5500x3000x3300	5500x3000x3300	5400x3350x3400
Net/gross/operating weight	kg	18740/19240/21650	19390/19900/22400	19890/20400/22950	21000/21500/24300	21500/22000/24900

Model		CVEH830UKPSKO-G	CVEH840UKOSKN-G	CVEH910WLRULQ-G	CVEH920WLQULP-G	CVEH920WLPULO-G
Cooling capacity	kW	8087	8438	9142	9845	10550
	RT	2300	2400	2600	2800	3000
COP	W/W	6.55	6.55	6.60	6.64	6.58
IPLV	W/W	10.57	10.65	10.90	10.85	11.05
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	1235	1288	1385	1483	1603
RLA	A	74.3	77.5	83.3	89.2	96.4
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	2300	2300	2800	3000
Oil charge	L	50	50	60	60	60
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	348.2	363.4	393.7	423.9
		GPM	5519.7	5760.6	6241.0	7200.0
	Pressure drop	kPa	72.9	73.1	78.7	78.7
		ft.WG	23.9	24.0	25.8	25.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN500	DN500
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	431.6	450.4	487.4	524.5
		GPM	6841.7	7139.8	7726.3	8314.4
	Pressure drop	kPa	63	62.8	68.6	68.7
		ft.WG	20.7	20.6	22.5	23.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN500	DN500
Sound pressure level (Max.)	dB(A)	87	87	89	89	89
Dimension (WxDxH)	Outline	mm	5300x3000x3250	5300x3000x3250	6000x3370x3750	6000x3370x3750
	Package	mm	5400x3350x3400	5400x3350x3400	6100x3550x4000	6100x3550x4000
Net/gross/operating weight	kg	22000/22500/25500	22300/22800/25750	26900/27400/31150	27600/28100/31950	28300/28800/32750

CVEH series

Model		CVEH610QJCMJD-G	CVEH610QJBMJC-G	CVEH620QJAMJB-G	CVEH620RJAMJA-G	CVEH630RJEMJF-G
Cooling capacity	kW	3164	3340	3516	3868	4219
	RT	900	950	1000	1100	1200
COP	W/W	6.82	6.76	6.85	6.78	6.89
IPLV	W/W	11.25	11.40	11.14	11.41	11.29
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	464	494.1	513.3	570.4	612.4
RLA	A	27.9	29.7	30.9	34.3	36.8
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	1000	1050	1050	1200
Oil charge	L	50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	136.3	143.8	151.4	166.5
		GPM	2160.6	2279.5	2400.0	2639.4
	Pressure drop	kPa	70.9	70.9	70.8	71.3
		ft.WG	23.3	23.3	23.2	23.4
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	168	177.5	186.6	205.5
		GPM	2663.1	2813.7	2958.0	3257.6
	Pressure drop	kPa	69.4	69.5	69.3	69.5
		ft.WG	22.8	22.8	22.7	22.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)	85	85	85	85	85
Dimension (WxDxH)	Outline	mm	4980X2210X2500	4980X2210X2500	4980X2210X2500	5100X2310X2650
	Package	mm	5100x2300x2700	5100x2300x2700	5100x2300x2700	5250x2350x2800
Net/gross/operating weight	kg	10730/11900/12250	10860/12000/12450	11010/12400/12600	12000/12500/13750	12113/14200/13900

Model		CVEH720SKLQKL-G	CVEH720TKNRKN-G	CVEH721TKMRKM-G	CVEH731TKLRKL-G
Cooling capacity	kW	4922	5274	5626	5977
	RT	1400	1500	1600	1700
COP	W/W	6.90	6.81	6.90	6.82
IPLV	W/W	11.34	11.54	11.23	11.00
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	713.4	774.5	815.3	876.4
RLA	A	42.9	46.6	49.0	52.7
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	1600	1700	1750
Oil charge	L	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	212.0	227.1	242.3
		GPM	3360.6	3600.0	3841.0
	Pressure drop	kPa	53.0	51.0	50.5
		ft.WG	17.4	16.7	16.6
	Number of passes	-	2	2	2
	Connection pipe	mm	DN350	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	261	280.1	298.2
		GPM	4137.4	4440.2	4727.1
	Pressure drop	kPa	46.1	43.9	43.9
		ft.WG	15.1	14.4	14.4
	Number of passes	-	2	2	2
	Connection pipe	mm	DN350	DN400	DN400
Sound pressure level (Max.)	dB(A)	85	85	85	85
Dimension (WxDxH)	Outline	mm	5250X2530X3105	5400X2750X3150	5400X2750X3150
	Package	mm	5400x2700x3300	5500x3150x3370	5500x3000x3300
Net/gross/operating weight	kg	16500/17000/18900	17500/18000/20200	18000/18700/20750	18500/19000/21300

Model			CVEH810TLNRLL-G	CVEH810TLMRLP-G	CVEH820TLLRLO-G	CVEH820ULNSLN-G	CVEH830ULMSLM-G
Cooling capacity	kW		6329	6680	7032	7384	7735
	RT		1800	1900	2000	2100	2200
COP	W/W		6.97	6.83	7.02	6.90	6.96
IPLV	W/W		11.36	11.49	11.47	11.60	11.41
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		908	978.1	1002	1070	1111
RLA	A		54.6	58.8	60.3	64.4	66.8
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1900	2000	2050	2100	2200
Oil charge	L		50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	272.5	287.7	302.8	318.0	333.1
		GPM	4319.7	4560.6	4800.0	5041.0	5280.3
	Pressure drop	kPa	62.8	62.0	62.8	60.4	60.1
		ft.WG	20.6	20.3	20.6	19.8	19.7
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	335.1	354.6	372	391.4	409.6
		GPM	5312.0	5621.1	5897.0	6204.5	6493.0
	Pressure drop	kPa	63.5	63.3	62.4	60.4	60
		ft.WG	20.8	20.8	20.5	19.8	19.7
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN450	DN450	DN450
Sound pressure level (Max.)	dB(A)		85	85	85	85	85
Dimension (WxDxH)	Outline	mm	5800x2750x3150	5800x2750x3150	5800x2750x3150	5800x3000x3300	5800x3000x3300
	Package	mm	6000x3000x3300	6000x3000x3300	6000x3000x3300	6000x3350x3450	6000x3350x3450
Net/gross/operating weight	kg		20000/20500/22900	21000/21500/24100	21500/22000/24650	22000/22500/25350	22500/23000/25950

Model			CVEH830ULLSLL-G	CVEH840ULZSLZ-G	CVEH910WSNUSN-G	CVEH920WSMUSM-G	CVEH920WSLUSL-G
Cooling capacity	kW		8087	8438	9142	9845	10550
	RT		2300	2400	2600	2800	3000
COP	W/W		6.84	6.86	6.93	7.02	6.85
IPLV	W/W		11.51	11.55	12.28	11.97	12.14
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		1182	1230	1319	1402	1540
RLA	A		71.1	74.0	79.3	84.3	92.6
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	2300	2300	2800	2900	3000
Oil charge	L		50	50	50	60	60
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	348.2	363.4	393.7	423.9	454.2
		GPM	5519.7	5760.6	6241.0	6719.7	7200.0
	Pressure drop	kPa	60.4	74.5	64.2	63.8	63.5
		ft.WG	19.8	24.4	21.1	20.9	20.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN500	DN500	DN500
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	429.2	447.7	484.4	520.8	559.7
		GPM	6803.7	7097.0	7678.7	8255.7	8872.4
	Pressure drop	kPa	59.6	63.8	59.9	57.1	55.4
		ft.WG	19.5	20.9	19.6	18.7	18.2
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN500	DN500	DN500
Sound pressure level (Max.)	dB(A)		85	85	89	89	89
Dimension (WxDxH)	Outline	mm	5800x3000x3300	5800x3000x3300	6400x3370x3750	6400x3370x3750	6400x3370x3750
	Package	mm	6000x3350x3450	6000x3350x3450	6500x3500x3950	6500x3500x3950	6500x3500x3950
Net/gross/operating weight	kg		23000/23500/26550	23600/24100/27150	28000/28500/32400	29000/29500/33500	30000/33000/34600

Notes:
1. Working conditions: leaving chilled water temperature: 6.67℃ ; entering cooling water temperature is 29.44℃ .
2. Fouling factors of evaporator and condenser are 0.018 m² · °C /kW and 0.044 m² · °C /kW respectively.
3. Above water flow is designed according to ARI 550/590-2018; IPLV is the test value obtained based on the working conditions specified in ARI 550/590-2018.
4. The unit's performance parameters may be changed without prior notice due to product improvement. For the specific parameters, please refer to product nameplate.

Operation Range

Chilled Water		Cooling Water	
LWT (°C)	Difference between EWT & LWT (°C)	EWT(°C)	Difference between EWT & LWT (°C)
5~15	2.5~8	12~35	3.5~8

LWT： Leaving water temperature
EWT： Entering water temperature
If customer requires higher temperature difference, please consult the manufacturer.

CCE Magnetic Bearing Inverter Chillers



Features

Refrigerant

The centrifugal chillers adopts high efficiency, zero Ozone Depleting Potential (ODP) refrigerant HFC-134a

Compressor

- Two-stage centrifugal compressor with PMSM variable frequency direct-drive magnetic bearing motor.
- Compressor refrigerant isolation valve is optional to meet your actual requirement.

Motor

The compressor motor adopts magnetic bearing so that rotor need no lubricating oil during the operation, which results in a oil-free system and improved heat exchange efficiency due to no oil and its contamination buildup on heat transfer surfaces.

Heat exchanger

- Hybrid flooded-falling film type evaporator
 - Both the evaporator and the condenser adopt triple grooves end-tube-support sheet design, to ensure the reliability, which are designed for 1.0Mpa working pressure on the water side, and with 1.6Mpa and 2.0Mpa as custom options.
 - High efficient sub-cooler is integrated inside condenser at the bottom, with maximum sub-cooling degree of 5℃ .
 - ASME certification is optional. Chiller can be designed, tested and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII-Division 1 or applicable code.
 - With sight glass liquid level indicator located on the side of the shell to aid in determining proper refrigerant charge.
 - Condenser tube can be optionally designed using materials of copper nickel alloy, titanium, stainless steel, which appropriate for corrosive resistance such as seawater-cooling and similar applications.
 - Evaporator is insulated with 40mm closed cell insulation material.
 - Evaporator/Condenser standard water connections are flange style, grooved for victaulic style pipe couplings are optional available.
- Marine water box is optional available.

Starter

- The chiller uses VFD (Variable Frequency Drive) starter.
- Quick Starting (optional): After power -off and recovery, it needs 80s to restart, and 100s to be loaded to 80% of full loading of the chiller (total 180s)
- Unit-mounted VFD: For low voltage such as 380V inverter unit, the VFD is factory installed onto the unit, which greatly reduces the footprint, and simplify the installation.
- Refrigerant cooled VFD: Excellent cooling effect to ensure the reliable operation.
- Optional low THD of VFD: For occasions that are sensitive to electromagnetic interference such as scientific research institutes, data processing rooms, hospitals, factories and technique process application, the low THD of VFD is optional available. With PWM controllable rectification technology, the VFD can output smooth sine wave, with THD less than 5% and power factor higher than 0.995.

Controls

- IP Rating for control cabinet is IP42 as standard, IP54 can be optional available.
- Color Touch Screen (12" 1024 x 768), for direct displaying each operation parameter, real-time monitoring and easy operation.
- More than 30 protection measures, up to latest 15 days of operation curve records and up to 180 days of error events is available for reviewing.
- Modbus communication protocol interface is provided as standard. BacNet communication protocol interface is optional.

Accessories

Rubber isolators are as standard and spring isolators are optional configuration to help eliminate vibration transmission between chiller and installation base.

Specifications

CCE diode inverter

Model			CCE210FE5EE5D	CCE220FE4EE4D	CCE220FE3EE3D	CCE230FE2EE2D	CCE231GE2FE2D
Cooling capacity	kW		352	457	527	633	703
	RT		100	130	150	180	200
COP	W/W		5.69	6.00	5.89	6.07	5.95
IPLV	W/W		9.65	9.63	9.99	9.62	9.86
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		61.8	76.2	89.5	104.3	118.2
RLA	A		100	123	145	169	191
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	170	200	200	220	220
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	15.1	19.7	22.7	27.3	30.3
		GPM	240.0	312.0	360.0	432.0	480.0
	Pressure drop	kPa	34.9	38.2	38.4	40.3	39.9
		ft.WG	11.4	12.5	12.6	13.2	13.1
	Number of passes	-	2	2	2	2	2
Condenser	Connection pipe	mm	DN150	DN150	DN150	DN150	DN150
	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	19.1	24.7	28.6	34.1	38.0
		GPM	303.4	391.4	452.9	541.0	602.9
	Pressure drop	kPa	32.2	31.8	31.8	31.2	31.5
		ft.WG	10.6	10.4	10.4	10.2	10.3
Sound pressure level (Max.)	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN150	DN150
Sound pressure level (Max.)		dB(A)	78	78	78	78	78
Dimension (WxDxH)	Outline	mm	3350x1140x1900	3350x1140x1900	3350x1140x1900	3350x1140x1900	3350x1180x1900
	Package	mm	3500x1300x2150	3500x1300x2150	3500x1300x2150	3500x1300x2150	3500x1300x2300
Net/gross/operating weight		kg	2695/3200/3000	3329/3900/3650	3500/4100/3850	3700/4300/4050	3888/4600/4250

Model			CCE240GE1FE1D	CCE310HG4GG4D	CCE310HG3GG3D	CCE311HG2GG2D	CCE320HG1GG1D	CCE410MH4HH2D
Cooling capacity	kW		791	879	967	1055	1231	1406
	RT		225	250	275	300	350	400
COP	W/W		5.93	6.23	6.12	6.27	6.24	6.48
IPLV	W/W		9.83	9.44	9.66	10.13	10.11	10.93
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		133.4	141.1	158.0	168.2	197.2	217.0
RLA	A		216	228	255	272	319	351
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	250	275	275	300	350
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	34.1	37.9	41.6	45.4	53.0	60.6
		GPM	540.1	600.0	660.1	720.0	840.0	960.0
	Pressure drop	kPa	38.3	61.3	58.3	61.7	60.6	52.2
		ft.WG	12.6	20.1	19.1	20.2	19.9	17.1
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN150	DN200	DN200	DN200	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	42.8	47.2	52.1	56.6	66.1	75.2
		GPM	678.6	748.7	825.7	897.7	1048.0	1191.6
	Pressure drop	kPa	31.2	53.5	52	53.5	53.6	49.7
		ft.WG	10.2	17.5	17.1	17.5	17.6	16.3
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN150	DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)		78	79	79	79	79	80
Dimension (WxDxH)	Outline	mm	3350x1180x1900	3770x1590x1950	3770x1590x1950	3770x1590x1950	3770x1590x1950	4300x1850x2190
	Package	mm	3500x1300x2250	3850x2000x2100	3850x2000x2100	3850x2000x2100	3850x2000x2100	4500x2100x2450
Net/gross/operating weight	kg		4505/5000/4900	4833/5750/5250	4941/5616/5400	5008/5900/5450	5146/6050/5600	6335/7300/6950

Model			CCE420MH3HH1D	CCE420MH1HH1D	CCE510MH2JH2D	CCE510MH1JH1D	CCE520PIEK1D
Cooling capacity	kW		1582	1758	1934	2110	2285
	RT		450	500	550	600	650
COP	W/W		6.37	6.26	6.44	6.36	6.42
IPLV	W/W		10.48	10.74	10.51	10.75	10.57
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		248.4	280.8	300.3	331.7	356.0
RLA	A		402	454	485	536	575
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	400	450	450	480
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	68.1	75.7	83.3	90.8	98.4
		GPM	1080.0	1200.0	1320.0	1440.0	1560.0
	Pressure drop	kPa	52.8	48.1	52.7	66.3	43.8
		ft.WG	17.3	15.8	17.3	21.7	14.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	84.8	94.4	103.4	113.0	122.3
		GPM	1343.6	1496.4	1639.1	1791.3	1938.7
	Pressure drop	kPa	47.3	57	49.8	49.8	45
		ft.WG	15.5	18.7	16.3	16.3	14.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		80	80	82	82	82
Dimension (WxDxH)	Outline	mm	4300x1850x2190	4300x1850x2190	4200x1910x2220	4200x1910x2220	4550x2010x2400
	Package	mm	4500x2100x2700	4500x2100x2700	4500x2200x2750	4500x2200x2750	4700x2150x2600
Net/gross/operating weight	kg		6410/7550/7100	6400/7550/7100	7604/8650/8350	7720/8750/8450	8754/9700/9800

Model			CCE520PIDKIDD	CCE610PICKICD	CCE610PIBKIBD	CCE620QICMICD	CCE620QIBMIBD
Cooling capacity	kW		2461	2637	2813	2989	3164
	RT		700	750	800	850	900
COP	W/W		6.33	6.48	6.46	6.61	6.54
IPLV	W/W		10.76	10.55	10.73	10.91	11.05
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		388.8	406.9	435.4	452.1	483.9
RLA	A		628	658	704	731	782
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	480	525	525	700	700
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	106.0	113.6	121.1	128.7	136.3
		GPM	1680.3	1800.8	1919.7	2040.2	2160.6
	Pressure drop	kPa	43.7	43.7	43.8	44.2	44.4
		ft.WG	14.3	14.3	14.4	14.5	14.6
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	132.0	140.9	150.4	159.3	168.9
		GPM	2092.5	2233.6	2384.1	2525.2	2677.4
	Pressure drop	kPa	45	44.4	49.9	48.4	48.6
		ft.WG	14.8	14.6	16.4	15.9	15.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN300	DN300
Sound pressure level (Max.)	dB(A)		82	83	83	83	83
Dimension (WxDxH)	Outline	mm	4550x2010x2400	4550x2010x2400	4550x2010x2400	4550x2210x2450	4550x2210x2450
	Package	mm	4700x2150x2600	4700x2100x2670	4700x2100x2670	4650x2300x2870	4650x2300x2870
Net/gross/operating weight	kg		8863/10100/9900	9164/10450/10050	9284/10650/10200	10250/12550/11400	10533/12400/11700

CCE four-quad inverter

Model			CCE210FE5EE5	CCE220FE4EE4	CCE220FE3EE3	CCE230FE2EE2	CCE231GE2FE2
Cooling capacity	kW		352	457	527	633	703
	RT		100	130	150	180	200
COP	W/W		5.69	6.00	5.89	6.07	5.95
IPLV	W/W		9.65	9.63	9.99	9.62	9.86
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		61.8	76.2	89.5	104.3	118.2
RLA	A		95	117	137	160	181
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	170	200	200	220	220
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	15.1	19.7	22.7	27.3	30.3
		GPM	240.0	312.0	360.0	432.0	480.0
	Pressure drop	kPa	34.9	38.2	38.4	40.3	39.9
		ft.WG	11.4	12.5	12.6	13.2	13.1
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN150	DN150
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	19.1	24.7	28.6	34.1	38.0
		GPM	303.4	391.4	452.9	541.0	602.9
	Pressure drop	kPa	32.2	31.8	31.8	31.2	31.5
		ft.WG	10.6	10.4	10.4	10.2	10.3
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN150	DN150
Sound pressure level (Max.)	dB(A)		78	78	78	78	78
Dimension (WxDxH)	Outline	mm	3350x1140x1900	3350x1140x1900	3350x1140x1900	3350x1140x1900	3350x1180x1900
	Package	mm	3500x1300x2150	3500x1300x2150	3500x1300x2150	3500x1300x2150	3500x1300x2150
Net/gross/operating weight	kg		2695/3250/3000	3329/3900/3650	3500/4100/3850	3700/4300/4050	3888/4400/4250

Model			CCE240GE1FE1	CCE310HG4GG4	CCE310HG3GG3	CCE311HG2GG2	CCE320HG1GG1	CCE410MH4HH2
Cooling capacity	kW		791	879	967	1055	1231	1406
	RT		225	250	275	300	350	400
COP	W/W		5.93	6.23	6.12	6.27	6.24	6.48
IPLV	W/W		9.83	9.44	9.66	10.13	10.11	10.93
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		133.4	141.1	158.0	168.2	197.2	217.0
RLA	A		205	217	242	258	303	333
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	250	275	275	300	350
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	34.1	37.9	41.6	45.4	53.0	60.6
		GPM	540.1	600.0	660.1	720.0	840.0	960.0
	Pressure drop	kPa	38.3	61.3	58.3	61.7	60.6	52.2
		ft.WG	12.6	20.1	19.1	20.2	19.9	17.1
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN150	DN200	DN200	DN200	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	42.8	47.2	52.1	56.6	66.1	75.2
		GPM	678.6	748.7	825.7	897.7	1048.0	1191.6
	Pressure drop	kPa	31.2	53.5	52	53.5	53.6	49.7
		ft.WG	10.2	17.5	17.1	17.5	17.6	16.3
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN150	DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)		dB(A)	78	79	79	79	79	80
Dimension (WxDxH)	Outline	mm	3350x1180x1900	3770x1590x1950	3770x1590x1950	3770x1590x1950	3770x1590x1950	4300x1850x2190
	Package	mm	3500x1300x2150	3850x2000x2100	3850x2000x2100	3850x2000x2100	3850x2000x2100	4500x2100x2450
Net/gross/operating weight		kg	4505/5000/4900	4833/5750/5250	4941/5616/5400	5008/5900/5450	5146/6050/5600	6335/7550/6950

Model			CCE420MH3HH1	CCE420MH1HH1	CCE510MH2JH2	CCE510MH1JH1	CCE520PIEKIE
Cooling capacity	kW		1582	1758	1934	2110	2285
	RT		450	500	550	600	650
COP	W/W		6.37	6.26	6.44	6.36	6.42
IPLV	W/W		10.48	10.74	10.51	10.75	10.57
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		248.4	280.8	300.3	331.7	356.0
RLA	A		381	431	461	509	546
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	400	450	450	480
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	68.1	75.7	83.3	90.8	98.4
		GPM	1080.0	1200.0	1320.0	1440.0	1560.0
	Pressure drop	kPa	52.8	48.1	52.7	66.3	43.8
		ft.WG	17.3	15.8	17.3	21.7	14.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	84.8	94.4	103.4	113.0	122.3
		GPM	1343.6	1496.4	1639.1	1791.3	1938.7
	Pressure drop	kPa	47.3	57	49.8	49.8	45
		ft.WG	15.5	18.7	16.3	16.3	14.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)		dB(A)	80	80	82	82	82
Dimension (WxDxH)	Outline	mm	4300x1850x2190	4300x1850x2190	4200x1910x2220	4200x1910x2220	4550x2010x2400
	Package	mm	4500x2100x2700	4500x2100x2700	4500x2200x2750	4500x2200x2750	4700x2150x2600
Net/gross/operating weight		kg	6410/7550/7100	6400/7550/7100	7604/8650/8350	7720/8750/8450	8754/9500/9800

Model		CCE520PIDKID	CCE610PICKIC	CCE610PIBKIB	CCE620QICMIC	CCE620QIBMIB
Cooling capacity	kW	2461	2637	2813	2989	3164
	RT	700	750	800	850	900
COP	W/W	6.33	6.48	6.46	6.61	6.54
IPLV	W/W	10.76	10.55	10.73	10.91	11.05
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	388.8	406.9	435.4	452.1	483.9
RLA	A	597	624	668	694	743
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	480	525	700	700
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	106.0	113.6	121.1	136.3
		GPM	1680.3	1800.8	1919.7	2160.6
	Pressure drop	kPa	43.7	43.7	43.8	44.2
		ft.WG	14.3	14.3	14.4	14.5
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	132.0	140.9	150.4	168.9
		GPM	2092.5	2233.6	2384.1	2677.4
	Pressure drop	kPa	45	44.4	49.9	48.4
		ft.WG	14.8	14.6	16.4	15.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN300
Sound pressure level (Max.)	dB(A)	82	83	83	83	83
Dimension (WxDxH)	Outline	mm	4550x2010x2400	4550x2010x2400	4550x2010x2400	4550x2210x2450
	Package	mm	4700x2150x2600	4700x2100x2670	4700x2100x2670	4650x2300x2870
Net/gross/operating weight	kg	8863/9900/9900	9164/10250/10050	9284/10350/10200	10250/12550/11400	10533/12400/11700

Model		CCE710QJBMJC	CCE710QJAMJB	CCE711QJZMJA	CCE720SKNQKN	CCE720SKMQKM
Cooling capacity	kW	3340	3516	3868	4219	4571
	RT	950	1000	1100	1200	1300
COP	W/W	6.84	6.84	6.87	6.82	6.72
IPLV	W/W	11.14	11.30	11.80	11.18	11.40
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	488.3	514.0	563.0	618.7	680.2
RLA	A	749	789	864	950	1044
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start	Variable frequency start	Variable frequency start	Variable frequency start
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	900	920	920	1350
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	143.8	151.4	166.5	196.8
		GPM	2279.5	2400.0	2639.4	3119.7
	Pressure drop	kPa	66.1	66.1	66.7	66.2
		ft.WG	21.7	21.7	21.9	21.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	177.3	186.6	205.2	243.1
		GPM	2810.6	2958.0	3252.8	3853.6
	Pressure drop	kPa	56	56.2	56.1	57
		ft.WG	18.4	18.4	18.4	18.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN350
Sound pressure level (Max.)	dB(A)	84	84	84	84	84
Dimension (WxDxH)	Outline	mm	4950x2210x2760	4950x2210x2760	4950x2210x2760	5250x2530x2950
	Package	mm	5300x2600x3070	5300x2600x3070	5300x2600x3070	5650x3200x3470
Net/gross/operating weight	kg	10717/13100/12100	10900/13220/12300	10921/13220/12350	15903/17900/20750	16180/18400/21100

Notes:

1. Working conditions: leaving chilled water temperature: 6.67℃ ; entering cooling water temperature is 29.44℃ .

2. Fouling factors of evaporator and condenser are 0.018 m² · °C /kW and 0.044 m² · °C /kW respectively.

3. Above water flow is designed according to ARI 550/590-2018; IPLV is the test value obtained based on the working conditions specified in ARI 550/590-2018.

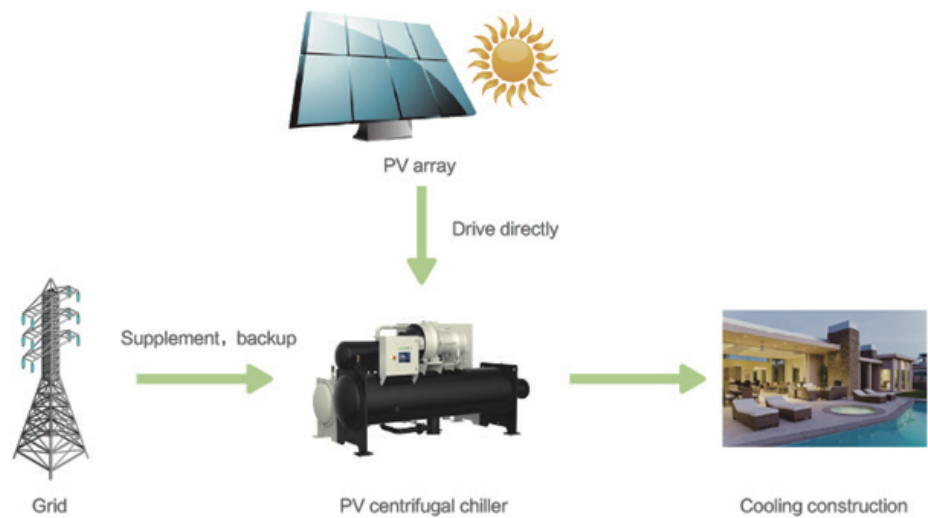
4. The unit's performance parameters may be changed without prior notice due to product improvement. For the specific parameters, please refer to product nameplate.

Operation Range

Chilled Water		Cooling Water	
LWT (°C)	Difference between EWT & LWT (°C)	EWT(°C)	Difference between EWT & LWT (°C)
5~15	2.5~8	12~35	3.5~8

LWT：Leaving water temperature
EWT：Entering water temperature
If customer requires higher temperature difference, please consult the manufacturer.

CVS PV Direct-driven Inverter Centrifugal Chiller



Gree PV direct-driven inverter centrifugal chiller system is with multiple operational functions, which includes PV power generation, VFD centrifugal chiller operation, energy storage and distribution management. There are five working modes which consists of some fixed combination of those functions.

Equipped with the self-developed rapid commutation technology, the system can achieve real-time power distribution switch in 10ms, ensuring high efficiency and stable operation.

With G-IEMS system for intelligent monitoring and management of energy, it offers an optional energy storage system, which helps to achieve maximum economic benefits with its power distribution function based on peak and off-peak times for electricity.

Five operation modes

1. Pure power generation mode

When the chiller system is not needed to work, the power generated by the PV power generation system is sent to the grid or charged into the energy storage system. In this case, the system equals to a distributed type PV power station.

2. PV air conditioning and system power generation mode

When the power generated by the PV power generation system is greater than the power consumed by the chiller system, power supply to the chiller system takes priority and the excess PV power will be sent to the grid or the energy storage system.

3. PV air conditioning mode

When the power generated by the PV power generation system is equal to the power consumed by the chiller system, power from the PV power generation system is all supplied to the chiller system. In this case, the system is self-sufficient in power, requiring no electricity from the outside.

4. PV air conditioning and power consumption mode

When the power generated by the PV power generation system is less than the power consumed by the chiller system, power from the PV power generation system is not sufficient for the chiller system. In this case, the system requires electricity from the grid or the energy storage system as a supplement.

5. Pure air conditioning mode

When the PV power generation system is not working, the chiller system will draw power from the grid to maintain operation. In this case, the system equals to an conventional inverter chiller system.

Specifications

Refrigerant

The centrifugal chillers adopts high efficiency, zero Ozone Depleting Potential (ODP) refrigerant HFC-134a.

Compressor

- The two-stage semi-hermetic centrifugal compressor with PMSM (Permanent Magnet Synchronous Motor) for inverter operation and gravity fed oil reservoir on the top to provide lubrication during coast-down in the event of a power failure.
- Variable section diffuser after the impeller, which is designed to adjust the flow passage section, and improve the flow velocity and stability especially under part load condition, extending the chiller's operating range, reducing noise and vibration of the unit at full load and partial load as well.
- Two compressors are adopted for large cooling capacity unit, which is with two independent circuits from each other, results in high reliability; Compressor refrigerant isolation valve is optional to meet your actual requirement.

Motor

- The world's first high-power high-speed PMSM (permanent magnetic synchronous motor) specially designed for refrigeration centrifugal compressors.
- High efficiency in all working conditions: Within the unit operating range, motor efficiency is above 96% all the time and 98.2% to the maximum, which greatly improves the operation efficiency of the unit in both full load and partial load.
- Stable and reliable: Motor insulation class H, with adopting spiral refrigerant injection cooling technology to cool down motor stator and rotor, the motor's temperature field is even and the temperature can be controlled at around 40°C , ensuring its efficient, stable and reliable operation.

Heat exchanger

- Flooded type or hybrid falling film type Evaporator
- Both the evaporator and the condenser adopt triple grooves end-tube-support sheet design, to ensure the reliability, which are designed for 1.0Mpa working pressure on the water side, and with 1.6Mpa and 2.0Mpa as custom options.
- High efficient sub-cooler is integrated inside condenser at the bottom, with maximum sub-cooling degree of 5°C . ASME certification is optional.Chiller can be designed, tested and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII-Division 1 or applicable code.
- With sight glass liquid level indicator located on the side of the shell to aid in determining proper refrigerant charge.
- Aluminium mesh filter be located above the tube bundle inside evaporator to prevent liquid refrigerant carryover to the compressor.
- Condenser tube can be optionally designed by using materials of copper nickel alloy, titanium, stainless steel, which appropriate for corrosive resistance such as seawater-cooling and similar applications.
- Evaporator is insulated with 40mm closed cell insulation material.
- Evaporator/Condenser standard water connections are flange style , grooved for victaulic style pipe couplings are optional available.
- Marine water box is optional available.

Lubrication system

- Install oil-soaked oil pump in the external oil tank
- Equipped with oil heater in lubricating oil tank
- Oil be filtered with externally mounted 0.5 micron replaceable cartridge oil filter equipped with service valves.
- Spray the refrigerant into the oil tank for lubrication oil cooling

Starter

- The chiller uses VFD (Variable Frequency Drive) startup.
- Quick Starting (optional): After power-off and recovery, it needs 80s to restart, and 100s to be loaded to 80% of full loading of the chiller (total 180s)
- Unit-mounted VFD: the VFD is factory installed onto the unit, which greatly reduces the footprint, and simplify the installation.
- Refrigerant cooled VFD: Excellent cooling effect and ensure the reliable operation.
- Low THD of VFD: With PWM controllable rectification technology, the VFD can output smooth sine wave, with THD less than 5% and power factor higher than 0.995.

Controls

- IP Rating for control cabinet is IP42 as standard, IP54 can be optional available.
- Color Touch Screen (12 " 1024 x 768) ,for direct displaying each operation parameter, real-time monitoring and easy operation.
- More than 30 protection measures, up to latest 15 days of operation curve records and up to 180 days of error events is available for reviewing.
- Modbus communication protocol interface is provided as standard. BacNet communication protocol interface is optional.

Accessories

Rubber isolators are as standard and spring isolators are optional configuration to help eliminate vibration transmission between chiller and installation base.

Specifications

Model			CVS210GF5EF4	CVS220GF3EF2	CVS230GF2EF1	CVS310HG7GG7	CVS320KG4HG7	CVS320KG3HG8
Cooling capacity		kW	879	1055	1231	1406	1582	1758
		RT	250	300	350	400	450	500
COP		W/W	6.06	6.12	6.25	6.36	6.54	6.44
IPLV		W/W	10.39	10.00	10.73	10.90	10.73	10.99
Power supply		V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input		kW	145.1	172.4	196.9	221.1	241.9	273
RLA		A	222.6	264.5	302.2	339.4	371.3	418.9
Capacity adjustment range		%	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start					
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	250	275	300	350	400	400
Oil charge		L	25	25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	37.9	45.4	53.0	60.6	68.1	75.7
		GPM	600.0	720.0	840.0	960.0	1080.0	1200.0
	Pressure drop	kPa	62.6	62.4	68.9	71.7	59.4	61.5
		ft.WG	20.5	20.5	22.6	23.5	19.5	20.2
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN150	DN200	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	47.4	56.8	66.1	75.4	84.5	94.0
		GPM	751.7	900.7	1047.8	1194.6	1338.9	1490.7
	Pressure drop	kPa	53.3	54.3	53.6	57.7	47.1	49.1
		ft.WG	17.5	17.8	17.6	18.9	15.4	16.1
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN200	DN250	DN250
Sound pressure level (Max.)		dB(A)	80	80	80	82	82	
Dimension (WxDxH)	Outline	mm	3650x1490x1900	3650x1490x1900	3650x1490x1900	3900x1635x1900	3900x1765x2200	3900x1765x2200
Net/gross/operating weight		kg	5155/-/5600	5382/-/5850	5485/-/6000	5770/-/6400	7009/-/7700	7125/-/7800

Model			CVS410MHDJHD	CVS410MHJHJC	CVS420NHCJHB	CVS420NHBJHA	CVS510PHEKHC	CVS510PHDKHB
Cooling capacity		kW	1934	2110	2285	2461	2637	2813
		RT	550	600	650	700	750	800
COP		W/W	6.62	6.51	6.63	6.54	6.71	6.63
IPLV		W/W	10.84	11.05	10.91	11.10	11.10	11.25
Power supply		V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input		kW	292.1	324.1	344.7	376.3	393	424.3
RLA		A	448.3	497.3	529.0	577.6	603.1	651.1
Capacity adjustment range		%	10~100	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start					
	Quantity		1	1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	450	450	480	480	550	550
Oil charge		L	25	25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	83.3	90.8	98.4	106.0	113.6	121.1
		GPM	1320.0	1440.0	1560.0	1680.3	1800.8	1919.7
	Pressure drop	kPa	47.1	49.2	50.4	51.1	56.7	56.9
		ft.WG	15.4	16.1	16.5	16.8	18.6	18.7
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	103.1	112.7	121.8	131.4	140.3	149.9
		GPM	1634.3	1786.5	1930.8	2083.0	2224.0	2376.2
	Pressure drop	kPa	46.7	49.6	50	49.9	50.9	51
		ft.WG	15.3	16.3	16.4	16.4	16.7	16.7
	Number of passes	-	2	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300	DN300
Sound pressure level (Max.)		dB(A)	84	84	84	84	84	
Dimension (WxDxH)	Outline	mm	4250x1905x2250	4250x1905x2250	4250x1975x2220	4250x1975x2220	4250x2080x2450	4250x2080x2450
Net/gross/operating weight		kg	7700/-/8450	7850/-/8600	8177/-/9000	8300/-/9100	9200/-/10200	9369/-/10350

Model			CVS520PHCKHA	CVS610QJCMJD	CVS610QJBMJC	CVS620QJAMJB	CVS620QJZMJA
Cooling capacity	kW		2989	3164	3340	3516	3868
	RT		850	900	950	1000	1100
COP	W/W		6.64	6.62	6.56	6.69	6.60
IPLV	W/W		11.00	10.89	11.03	10.85	11.1
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		450.1	478	509.2	525.6	586
RLA	A		690.8	733.6	781.5	806.7	899.3
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	575	700	700	700	700
Oil charge	L		25	50	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C / kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	128.7	136.3	143.8	151.4	166.5
		GPM	2040.2	2160.6	2279.5	2400.0	2639.4
	Pressure drop	kPa	52.6	75.1	75.1	75	78.9
		ft.WG	17.3	24.6	24.6	24.6	25.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C / kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	159.2	168.7	178.2	187.1	206.2
		GPM	2523.6	2674.2	2824.8	2965.9	3268.7
	Pressure drop	kPa	53.7	69.9	70	69.7	69.9
		ft.WG	17.6	22.9	23.0	22.9	22.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Sound pressure level (Max.)		dB(A)	84	85	85	85	85
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4980x2210x2500	4980x2210x2500	4980x2210x2500	4980x2210x2500
Net/gross/operating weight		kg	9501/-/10500	10880/-/12100	11000/-/12200	11149/-/12400	11285/-/12500

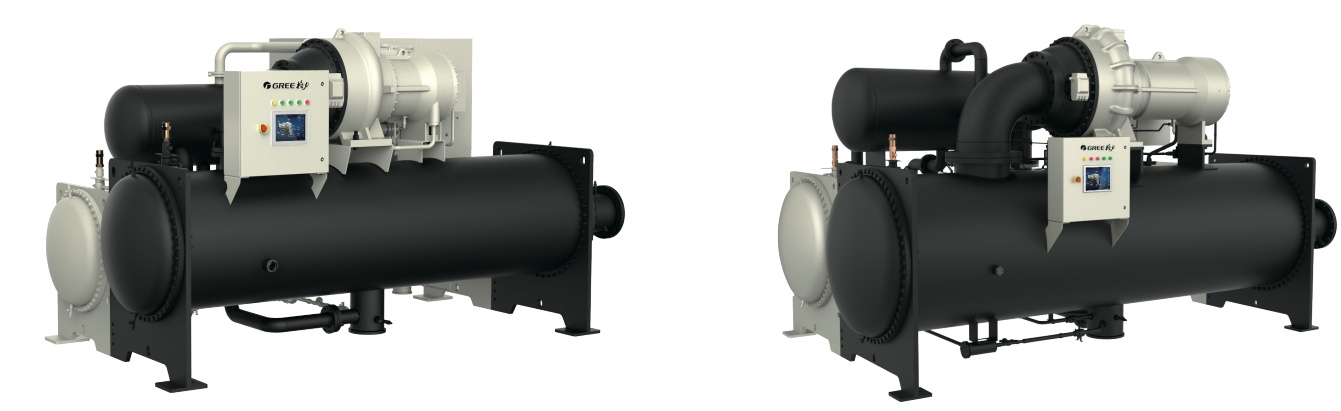
Notes:
1. Working conditions: leaving chilled water temperature: 6.67℃ ; entering cooling water temperature is 29.44℃ .
2. Fouling factors of evaporator and condenser are 0.018 m² · °C /kW and 0.044 m² · °C /kW respectively.
3. Above water flow is designed according to ARI 550/590-2018; IPLV is the test value obtained based on the working conditions specified in ARI 550/590-2018.
4. The unit's performance parameters may be changed without prior notice due to product improvement. For the specific parameters, please refer to product nameplate.

Operation Range

Chilled Water		Cooling Water	
LWT (°C)	Difference between EWT & LWT (°C)	EWT(°C)	Difference between EWT & LWT (°C)
5~15	2.5~8	12~35	3.5~8

LWT : Leaving water temperature
EWT : Entering water temperature
If customer requires higher temperature difference, please consult the manufacturer.

CVT Data Center Chillers(with Elevated Chilled-water Temperature)



The Gree CVT series high-efficiency Inverter centrifugal chiller is a new generation of elevated chilled-water temperature chiller. Design for the leaving chilled water temperature of 12℃ to 20 ℃ . It is exceptionally energy-saving, reliable and adaptive and can be widely applied in large-scale data center, large building, hospitals, schools, supermarkets and factories or used to reconstruct the current air conditioning system for energy conservation.
The following areas are particularly applicable:
(1) Low humidity areas in the northwest, especially places that need to control the air temperature without dehumidification.
(2) Any applications that need to use chilled water at 12 to 20 ℃ .

Features

Refrigerant

The centrifugal chillers adopts high efficiency, zero Ozone Depleting Potential (ODP) refrigerant HFC-134a

Compressor

- The two-stage semi-hermetic centrifugal compressor with PMSM (Permanent Magnet Synchronous Motor) for inverter operation and gravity fed oil reservoir on the top to provide lubrication during coast-down in the event of a power failure.
 - Variable section diffuser after the impeller, which is designed to adjust the flow passage section, and improve the flow velocity and stability especially under part load condition, extending the chiller ’ s operating range, reducing noise and vibration of the unit at full load and partial load as well.
 - Two compressors are adopted for large cooling capacity unit, which is with two independent circuits from each other, resulting in high reliability;
- Compressor refrigerant isolation valve is optional to meet your actual requirement.

Motor

- The world's first high-power high-speed PMSM (permanent magnetic synchronous motor) specially designed for refrigeration centrifugal compressors.
- High efficiency in all working conditions: Within the unit operating range, motor efficiency is above 96% all the time and 98.2% to the maximum, which greatly improves the operation efficiency of the unit in both full load and partial load.
- 10/11kV high voltage variable frequency direct-drive PMSM: It is the world's first application for 10/11kV inverter centrifugal chiller, which features the chiller with simple structure, high power density, and high reliability.
- Stable and reliable: Motor insulation class H, adopting spiral refrigerant injection cooling technology to cool down motor stator and rotor, the motor's temperature field is even and the temperature can be controlled at around 40℃ , ensuring its efficient, stable and reliable operation.

Heat exchanger

- Flooded type or hybrid flooded-falling film type Evaporator
- Both the evaporator and the condenser adopt triple grooves end-tube-support sheet design, to ensure the reliability, which are designed for 1.0Mpa working pressure on the water side, and with 1.6Mpa and 2.0Mpa as custom options.
- High efficient sub-cooler is integrated inside condenser at the bottom, with maximum sub-cooling degree of 5℃ .
- ASME certification is optional. Chiller can be designed, tested and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII-Division 1 or applicable code.
- With sight glass liquid level indicator located on the side of the shell to aid in determining proper refrigerant charge.
- Aluminium mesh filter be located above the tube bundle inside evaporator to prevent liquid refrigerant carryover to the compressor.
- Condenser tube can be optionally designed using materials of copper nickel alloy, titanium, stainless steel, which are appropriate for corrosive resistance such as seawater-cooling and similar applications.
- Evaporator is insulated with 40mm closed cell insulation material.
- Evaporator/Condenser standard water connections are flange style, grooved for victaulic style pipe couplings are optional available.
- Marine water box is optional available.

Lubrication system

- Install oil-soaked oil pump in the external oil tank
- Equipped with oil heater in lubricating oil tank
- Oil be filtered with externally mounted 0.5 micron replaceable cartridge oil filter equipped with service valves.
- Spray the refrigerant into the oil tank for lubrication oil cooling

Starter

- The chiller uses VFD (Variable Frequency Drive) VSD.
- Quick Starting (optional): After power-off and recovery, it needs 80s to restart, and 100s to be loaded to 80% of full loading of the chiller (total 180s)
- Unit-mounted VFD: For low voltage such as 380V inverter unit, the VFD is factory installed onto the unit, which greatly reduces the footprint, and simplify the installation.
- Refrigerant cooled VFD: Excellent cooling effect to ensure the reliable operation.
- Optional low THD of VFD: For occasions that are sensitive to electromagnetic interference such as scientific research institutes, data processing rooms, hospitals, factories and technique process application, the low THD of VFD is optional available. With PWM controllable rectification technology, the VFD can output smooth sine wave, with THD less than 5% and power factor higher than 0.995.
- The 10/11kV high voltage variable frequency direct-drive centrifugal chiller, with low THD less than 5% and high power factor equal to or higher than 0.96 in all working conditions.

Controls

- IP Rating for control cabinet is IP42 as standard,IP54 can be optional available.
- Color Touch Screen (12 " 1024 x 768) , for direct displaying each operation parameter, real-time monitoring and easy operation.
- More than 30 protection measures, up to latest 15 days of operation curve records and up to 180 days of error events are available for reviewing.
- Modbus communication protocol interface is provided as standard. BacNet communication protocol interface is optional.

Accessories

Rubber isolators are as standard and spring isolators are optional configuration to help eliminate vibration transmission between chiller and installation base.

Specifications

CVT Standard Series

Model			CVT221GF4EF3D	CVT231GF3EF2D	CVT241GF1EF1D	CVT311KG5HGED	CVT311KG4HGCD
Cooling capacity	kW		1055	1231	1406	1582	1758
	RT		300	350	400	450	500
COP	W/W		8.15	8.14	8.54	8.31	8.26
NPLV	W/W		20.08	20.04	20.53	19.79	20.15
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		129.4	151.2	164.7	190.4	212.8
RLA	A		209.2	244.4	266.2	307.8	344.0
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	275	300	350	350	400
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	42.2	49.2	56.2	63.3	70.3
		GPM	669.0	779.9	890.9	1003.4	1114.4
	Pressure drop	kPa	59.3	65.7	73.4	53.2	57.6
		ft.WG	19.5	21.5	24.1	17.4	18.9
	Number of passes	-	2	2	2	2	2
Connection pipe	mm		DN150	DN150	DN200	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	54.8	64.0	72.8	82.1	91.3
		GPM	868.7	1014.4	1153.4	1301.3	1447.0
	Pressure drop	kPa	58.1	66.5	63.2	49.7	49.3
		ft.WG	19.1	21.8	20.7	16.3	16.2
	Number of passes	-	2	2	2	2	2
Connection pipe	mm		DN200	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)		80	80	80	80	82
Dimension (WxDxH)	Outline	mm	3650x1490x1850	3650x1490x1850	3900x1590x1845	3900x1590x1845	3900x1765x2200
Net/gross/operating weight		kg	5382/-/9850	5355/-/5850	5935/-/6550	5935/-/6550	6656/-/7300

3900x1590x2200 6656/-/7300

Model			CVT321MHFJHED	CVT321MHEJHDD	CVT411NHDJHCD	CVT411NHCJHBD	CVT421PHFKHDD
Cooling capacity	kW		1934	2110	2285	2461	2637
	RT		550	600	650	700	750
COP	W/W		8.32	8.33	8.34	8.30	8.42
NPLV	W/W		19.58	20.08	19.68	20.02	19.93
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		232.4	253.3	274	296.5	313.2
RLA	A		375.6	409.4	442.9	479.3	506.2
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	400	400	450	450	480
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	77.4	84.4	91.4	98.4	105.5
		GPM	1226.9	1337.9	1448.9	1559.8	1672.4
	Pressure drop	kPa	57.4	51.4	53.0	47.3	53.4
		ft.WG	18.8	16.9	17.4	15.5	17.5
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	100.3	109.4	118.5	127.7	136.6
		GPM	1590.0	1734.2	1878.5	2024.3	2165.4
	Pressure drop	kPa	57.5	51.9	54.2	54.4	54.3
		ft.WG	18.9	17.0	17.8	17.8	17.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)	dB(A)		82	82	84	84	84
Dimension (WxDxH)	Outline	mm	3900x1765x2200	3900x1765x2200	4250x1905x2250	4250x1905x2250	4250x1975x2220
Net/gross/operating weight	kg		6726/-/7400	6912/-/7600	7470/-/8250	7670/-/8450	7760/-/8550

Model			CVT421PHEKHCD	CVT421PHDKHBD	CVT511QHDKHBD	CVT521QH-BKHAD
Cooling capacity	kW		2813	2989	3164	3340
	RT		800	850	900	950
COP	W/W		8.36	8.20	8.49	8.46
NPLV	W/W		20.12	20.28	30.12	20.07
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		336.5	364.5	372.7	394.8
RLA	A		543.9	589.2	602.4	638.1
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	480	525	550	575
Oil charge volume	L		25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	112.5	119.6	126.6	133.6
		GPM	1783.4	1895.9	2006.9	2117.8
	Pressure drop	kPa	53.3	52.2	52.2	43.6
		ft.WG	17.5	17.1	17.1	14.3
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN250	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	145.9	155.3	163.8	197.0
		GPM	2312.8	2461.8	2596.6	3122.9
	Pressure drop	kPa	54.5	54.4	59.8	62.2
		ft.WG	17.9	17.8	19.6	20.4
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN250	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x1975x2220	4250x2080x2450	4250x2080x2450	4250x2080x2450
Net/gross/operating weight	kg		7930/-/8750	8864/-/9850	8953/-/9900	8996/-/10000

Model		CVT521QIEMIDD	CVT611QICMICD	CVT611RIDMIBD	CVT621RICMIBD
Cooling capacity	kW	3516	3868	4219	4571
	RT	1000	1100	1200	1300
COP	W/W	8.49	8.46	8.55	8.50
NPLV	W/W	20.48	19.97	20.75	20.59
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	414.1	457.2	493.5	537.7
RLA	A	669.3	739.0	797.7	869.1
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start		
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	575	900	1100
Oil charge volume	L	25	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	140.6	154.7	182.8
		GPM	2228.8	2452.3	2897.8
	Pressure drop	kPa	61.6	61.1	55.5
		ft.WG	20.2	20.0	19.0
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	182.0	200.3	218.3
		GPM	2885.1	3175.2	3460.5
	Pressure drop	kPa	65.6	65.3	63.6
		ft.WG	21.5	21.4	20.9
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN300	DN350
Sound pressure level (Max.)		dB(A)	84	85	85
Dimension (WxDxH)	Outline	mm	4250x2080x2450	4540x2210x2610	4700x2310x2700
Net/gross/operating weight		kg	9121/-/10100	10060/-/11500	10455/-/11900
					11540/-/13250

CVT Plus Diode Inverter

Model		CVT220GF3EF2D	CVT230GF2EF1D	CVT240HG7GG7D	CVT310KG4HG7D	CVT310KG3HG8D
Cooling capacity	kW	1055	1231	1406	1582	1758
	RT	300	350	400	450	500
COP	W/W	8.66	8.68	8.60	8.80	8.69
NPLV	W/W	21.35	21.36	21.23	21.27	21.55
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	121.8	141.9	163.5	179.8	202.3
RLA	A	196.9	229.4	264.3	290.6	327.0
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	275	300	350	400
Oil charge volume	L	25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	42.2	49.2	56.2	63.3
		GPM	669.0	779.9	890.9	1003.4
	Pressure drop	kPa	50.8	56.1	58.4	48.3
		ft.WG	16.7	18.4	19.2	15.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	54.6	63.6	72.7	81.6
		GPM	865.7	1008.2	1152.4	1293.5
	Pressure drop	kPa	50.5	56.1	54.3	44.4
		ft.WG	16.6	18.4	17.8	14.6
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN250
Sound pressure level (Max.)		dB(A)	80	80	80	82
Dimension (WxDxH)	Outline	mm	3650x1490x1850	3650x1490x1850	3900x1590x1845	3900x1765x2200
Net/gross/operating weight		kg	5382/-/9850	5485/-/6000	6085/-/6700	6994/-/7650
						7110/-/7800

Model			CVT320MHDJHDD	CVT320MHHJHCD	CVT410NHCJHBD	CVT410NHBJHAD	CVT420PHEKHCD
Cooling capacity	kW		1934	2110	2285	2461	2637
	RT		550	600	650	700	750
COP	W/W		8.88	8.76	8.92	8.83	8.96
NPLV	W/W		20.98	21.33	21.12	21.33	21.21
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		217.8	240.8	256.2	278.7	294.3
RLA	A		352.0	389.2	414.1	450.5	475.7
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	450	450	450	480	550
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	77.4	84.4	91.4	98.4	105.5
		GPM	1226.9	1337.9	1448.9	1559.8	1672.4
	Pressure drop	kPa	38.8	40.6	41.6	42.2	46.7
		ft.WG	12.7	13.3	13.6	13.8	15.3
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	99.7	108.9	117.7	126.9	135.8
		GPM	1580.4	1726.3	1865.8	2011.6	2152.7
	Pressure drop	kPa	43.9	46.6	47	46.9	48
		ft.WG	14.4	15.3	15.4	15.4	15.7
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300
Sound pressure level (Max.)	dB(A)		82	82	82	84	84
Dimension (WxDxH)	Outline	mm	4250x1905x2270	4250x1905x2270	4250x1905x2270	4250x1975x2220	4250x2080x2525
Net/gross/operating weight	kg		7145/-/7900	7295/-/8050	7315/-/8100	8100/-/8900	8450/-/9450

Model			CVT420PHDKHBD	CVT430PHCKHAD	CVT510QHCKHBD	CVT510QHAKHAD	CVT520QICMICD
Cooling capacity	kW		2813	2989	3164	3340	3516
	RT		800	850	900	950	1000
COP	W/W		8.88	8.84	9.03	8.97	9.01
NPLV	W/W		21.40	21.31	21.43	21.6	21.82
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		316.8	338.1	350.4	372.4	390.2
RLA	A		512.1	546.5	566.4	601.9	630.7
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	550	575	650	650	900
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	112.5	119.6	126.6	133.6	140.6
		GPM	1783.4	1895.9	2006.9	2117.8	2228.8
	Pressure drop	kPa	47.0	43.4	36.4	34.8	51.7
		ft.WG	15.4	14.2	11.9	11.4	17.0
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	144.9	154.1	162.8	171.9	180.9
		GPM	2297.0	2442.8	2580.7	2725.0	2867.6
	Pressure drop	kPa	48.1	50.6	59.2	61.5	54.5
		ft.WG	15.8	16.6	19.4	20.2	17.9
	Number of passes	-	2	2	2	2	2
	Connection plpe	mm	DN300	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2525	4250x2080x2525	4250x2130x2450	4250x2130x2450	4540x2210x2710
Net/gross/operating weight	kg		8619/-/9600	8821/-/9850	9452/-/10500	9552/-/10700	10145/-/11550

Model		CVT610QIBMIBD	CVT610RICMIAD	CVT620RIBMIAD	CVT621RJBMJED
Cooling capacity	kW	3868	4219	4571	4922
	RT	1100	1200	1300	1400
COP	W/W	9.11	9.02	8.91	9.10
NPLV	W/W	21.55	21.82	21.52	22.08
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	424.5	467.8	513	540.9
RLA	A	686.1	756.1	829.2	874.3
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start		
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	900	1100	1100
Oil charge volume	L	25	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	154.7	168.8	196.9
		GPM	2452.3	2675.8	3121.3
	Pressure drop	kPa	54.1	50.4	51.1
		ft.WG	17.7	16.5	21.0
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	198.8	217.1	235.4
		GPM	3151.4	3441.5	3731.6
	Pressure drop	kPa	54.4	54.3	62.7
		ft.WG	17.8	17.8	20.6
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN350	DN350
Sound pressure level (Max.)		dB(A)	84	85	85
Dimension (WxDxH)	Outline	mm	4540x2210x2710	4700x2310x2700	5100x2310x2950
Net/gross/operating weight		kg	10528/-/11950	11335/-/13050	12000/-/13700

CVT Plus 4-quadrant Inverter

Model		CVT220GF3EF2	CVT230GF2EF1	CVT240HG7GG7	CVT310KG4HG7	CVT310KG3HG8
Cooling capacity	kW	1055	1231	1406	1582	1758
	RT	300	350	400	450	500
COP	W/W	8.66	8.68	8.60	8.80	8.69
NPLV	W/W	21.35	21.36	21.23	21.27	21.55
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	121.8	141.9	163.5	179.8	202.3
RLA	A	186.9	217.8	250.9	275.9	310.5
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	275	300	350	400
Oil charge volume	L	25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	42.2	49.2	56.2	63.3
		GPM	669.0	779.9	890.9	1114.4
	Pressure drop	kPa	50.8	56.1	58.4	48.3
		ft.WG	16.7	18.4	19.2	15.8
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN150	DN150	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	54.6	63.6	72.7	81.6
		GPM	865.7	1008.2	1152.4	1293.5
	Pressure drop	kPa	50.5	56.1	54.3	44.4
		ft.WG	16.6	18.4	17.8	14.6
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN250
Sound pressure level (Max.)		dB(A)	80	80	80	82
Dimension (WxDxH)	Outline	mm	3650x1490x1850	3650x1490x1850	3900x1590x1845	3900x1765x2200
Net/gross/operating weight		kg	5382/-/9850	5485/-/6000	6085/-/6700	6994/-/7650

Model			CVT320MHDJHD	CVT320MHHJHC	CVT410NHCJHB	CVT410NHBJHA	CVT420PHEKHC
Cooling capacity	kW		1934	2110	2285	2461	2637
	RT		550	600	650	700	750
COP	W/W		8.88	8.76	8.92	8.83	8.96
NPLV	W/W		20.98	21.33	21.12	21.33	21.21
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		217.8	240.8	256.2	278.7	294.3
RLA	A		334.3	369.6	393.2	427.7	451.7
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	450	450	450	480	550
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m²·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	77.4	84.4	91.4	98.4	105.5
		GPM	1226.9	1337.9	1448.9	1559.8	1672.4
	Pressure drop	kPa	38.8	40.6	41.6	42.2	46.7
		ft.WG	12.7	13.3	13.6	13.8	15.3
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m²·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	99.7	108.9	117.7	126.9	135.8
		GPM	1580.4	1726.3	1865.8	2011.6	2152.7
	Pressure drop	kPa	43.9	46.6	47	46.9	48
		ft.WG	14.4	15.3	15.4	15.4	15.7
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN300
Sound pressure level (Max.)		dB(A)	82	82	82	84	84
Dimension (WxDxH)	Outline	mm	4250x1905x2270	4250x1905x2270	4250x1905x2270	4250x1975x2220	4250x2080x2525
Net/gross/operating weight		kg	7145/-/7900	7295/-/8050	7315/-/8100	8100/-/8900	8450/-/9450

Model			CVT420PHDKHB	CVT430PHCKHA	CVT510QHCKHB	CVT510QHAKHA	CVT520QICMIC
Cooling capacity	kW		2813	2989	3164	3340	3516
	RT		800	850	900	950	1000
COP	W/W		8.88	8.84	9.03	8.97	9.01
NPLV	W/W		21.40	21.31	21.43	21.6	21.82
Power supply	V/Ph/Hz		380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW		316.8	338.1	350.4	372.4	390.2
RLA	A		486.2	518.9	537.8	571.5	598.9
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	550	575	650	650	900
Oil charge volume	L		25	25	25	25	25
Evaporator	Type		Falling film	Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	112.5	119.6	126.6	133.6	140.6
		GPM	1783.4	1895.9	2006.9	2117.8	2228.8
	Pressure drop	kPa	47.0	43.4	36.4	34.8	51.7
		ft.WG	15.4	14.2	11.9	11.4	17.0
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	144.9	154.1	162.8	171.9	180.9
		GPM	2297.0	2442.8	2580.7	2725.0	2867.6
	Pressure drop	kPa	48.1	50.6	59.2	61.5	54.5
		ft.WG	15.8	16.6	19.4	20.2	17.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300	DN300
Sound pressure level (Max.)	dB(A)		84	84	84	84	84
Dimension (WxDxH)	Outline	mm	4250x2080x2525	4250x2080x2525	4250x2130x2450	4250x2130x2450	4540x2210x2710
Net/gross/operating weight	kg		8619/-/9600	8821/-/9850	9452/-/10500	9552/-/10700	10145/-/11550

Model		CVT610QIBMIB	CVT610RICMIA	CVT620RIBMIA	CVT621RJBMJE
Cooling capacity	kW	3868	4219	4571	4922
	RT	1100	1200	1300	1400
COP	W/W	9.11	9.02	8.91	9.10
NPLV	W/W	21.55	21.82	21.52	22.08
Power supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50
Power input	kW	424.5	467.8	513	540.9
RLA	A	651.5	717.9	787.3	830.1
Capacity adjustment range	%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start		
	Quantity		1	1	1
Refrigerant	Type	-	R134a	R134a	R134a
	Charge volume	kg	900	1100	1100
Oil charge volume	L	25	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018
	Water flow volume	L/s	154.7	168.8	196.9
		GPM	2452.3	2675.8	3121.3
	Pressure drop	kPa	54.1	50.4	51.1
		ft.WG	17.7	16.5	21.0
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044
	Water flow volume	L/s	198.8	217.1	235.4
		GPM	3151.4	3441.5	3731.6
	Pressure drop	kPa	54.4	54.3	62.7
		ft.WG	17.8	17.8	20.6
	Number of passes	-	2	2	2
	Connection pipe	mm	DN300	DN350	DN350
Sound pressure level (Max.)	dB(A)	84	85	85	85
Dimension (WxDxH)	Outline	mm	4540x2210x2710	4700x2310x2700	5100x2310x2950
Net/gross/operating weight	kg	10528/-/11950	11335/-/13050	12000/-/13700	12200/-/13900

CVTH Standard Series

Model		CVTH620QIEMID-G	CVTH620QIBMIB-G	CVTH630RIDMIC-G	CVTH630RIKMIA-G	CVTH631RICMIA-G
Cooling capacity	kW	3516	3868	4219	4571	4922
	RT	1000	1100	1200	1300	1400
COP	W/W	8.87	8.88	8.92	8.76	8.81
NPLV	W/W	20.89	21.50	21.11	21.15	21.20
Power supply	V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW	396.4	435.5	473	521.8	558.7
RLA	A	23.8	26.2	28.4	31.4	33.6
Capacity adjustment range	%	10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	800	850	950	1000
Oil charge volume	L	50	50	50	50	50
Evaporator	Type		Falling film	Falling film	Falling film	Falling film
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	140.6	154.7	168.8	196.9
		GPM	2228.8	2452.3	2675.8	3121.3
	Pressure drop	kPa	61.1	60.8	55.5	60.6
		ft.WG	20.0	19.9	18.2	19.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN150	DN200	DN200	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	181.2	199.3	217.3	235.9
		GPM	2872.4	3159.3	3444.6	3739.5
	Pressure drop	kPa	64.5	63.8	63.4	62.6
		ft.WG	21.2	20.9	20.8	20.5
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN200	DN200	DN200	DN250
Sound pressure level (Max.)	dB(A)	85	85	85	85	85
Dimension (WxDxH)	Outline	mm	4550x2210x2610	4550x2210x2610	4700x2310x2650	4700x2310x2650
Net/gross/operating weight	kg	10463/-/11750	10563/-/11950	11965/-/13500	11970/-/13550	12270/-/13850

Model			CVTH710TJRRJP-G	CVTH720TJQRJO-G	CVTH720TJPRJN-G	CVTH730TKORKM-G	CVTH730TKNRKL-G
Cooling capacity	kW		5274	5626	5977	6329	6680
	RT		1500	1600	1700	1800	1900
COP	W/W		8.87	8.90	8.84	8.83	8.77
NPLV	W/W		20.98	20.70	20.91	20.63	20.80
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		594.6	632.1	676.2	716.7	761.7
RLA	A		35.8	38.0	40.7	43.1	45.8
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1500	1600	1600	1700	1900
Oil charge volume	L		50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	211.0	225.0	239.1	253.2	267.2
		GPM	3344.8	3566.7	3790.2	4013.7	4235.7
	Pressure drop	kPa	58.1	57.7	57.6	60.9	60.1
		ft.WG	19.1	18.9	18.9	20.0	19.7
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	271.8	289.8	308.1	326.3	344.7
		GPM	4308.6	4593.9	4884.0	5172.5	5464.2
	Pressure drop	kPa	53.4	53.3	53.3	55.9	55.8
		ft.WG	17.5	17.5	17.5	18.3	18.3
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN250	DN250	DN250	DN250	DN250
Sound pressure level (Max.)		dB(A)	86	86	86	86	86
Dimension (WxDxH)	Outline	mm	5050x2530x3100	5150x2750x3150	5150x2750x3150	5400x2750x3150	5400x2750x3150
Net/gross/operating weight		kg	14863/17150	16243/-/18700	16265/-/18750	16370/-/19050	19690/-/22700

Model			CVTH730TKMRKK-G	CVTH810UKRSKQ-G	CVTH820UKQSKP-G	CVTH820UKPSKO-G
Cooling capacity		kW	7032	7384	7735	8087
		RT	2000	2100	2200	2300
COP		W/W	8.63	8.72	8.81	8.75
NPLV		W/W	20.93	20.68	20.62	20.76
Power supply		V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input		kW	814.8	846.7	878	924.2
RLA		A	49.0	50.9	52.8	55.6
Capacity adjustment range		%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	2000	2050	2100	2200
Oil charge volume		L	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	281.3	295.4	309.4	323.5
		GPM	4459.2	4682.7	4904.6	5128.1
	Pressure drop	kPa	60.9	60.1	60.3	60.2
		ft.WG	20.0	19.7	19.8	19.7
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	363.4	381.2	398.9	417.3
		GPM	5760.6	6042.8	6323.4	6615.1
	Pressure drop	kPa	56.1	56.1	55.8	56
		ft.WG	18.4	18.4	18.3	18.4
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN300	DN300
Sound pressure level (Max.)		dB(A)	87	87	87	87
Dimension (WxDxH)	Outline	mm	5400x2750x3150	5400x2750x3150	5300x3000x3250	5300x3000x3250
Net/gross/operating weight		kg	19490/-/22450	19850/-/22900	20457/-/23750	20707/-/24100

Model			CVTH830UKOSKN-G	CVTH831WLRULQ-G	CVTH840WLQULP-G	CVTH840WLPULO-G
Cooling capacity	kW		8438	9142	9845	10550
	RT		2400	2600	2800	3000
COP	W/W		8.74	8.89	8.85	8.64
NPLV	W/W		20.74	21.19	21.10	21.28
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		965.5	1028	1112	1221
RLA	A		58.1	61.8	66.9	73.4
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	2300	2800	2900	3000
Oil charge volume	L		50	50	50	60
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	337.5	365.7	393.8	422.0
		GPM	5350.1	5797.1	6242.5	6689.6
	Pressure drop	kPa	60.3	65.0	65.0	65
		ft.WG	19.8	21.3	21.3	21.3
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	435.5	471	507.5	545.1
		GPM	6903.6	7466.3	8044.9	8641.0
	Pressure drop	kPa	55.9	60.4	60.6	60.7
		ft.WG	18.3	19.8	19.9	19.9
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN300	DN300	DN350	DN350
Sound pressure level (Max.)	dB(A)		87	87	87	89
Dimension (WxDxH)	Outline	mm	5300x3000x3250	6000x3370x3570	6000x3370x3570	6000x3370x3570
Net/gross/operating weight	kg		21057/-/24550	26463/-/30700	26963/-/31300	28000/-/32450

CVTH Series

Model			CVTH610QJAMJB-G	CVTH610RJAMJA-G	CVTH620RJEMJF-G	CVTH620RJDMJE-G	CVTH630RJCMJE-G
Cooling capacity	kW		3516	3868	4219	4571	4922
	RT		1000	1100	1200	1300	1400
COP	W/W		9.28	9.20	9.26	9.17	9.21
NPLV	W/W		22.13	22.42	21.95	22.22	22.27
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		378.9	420.4	455.6	498.5	534.5
RLA	A		22.8	25.3	27.4	30.0	32.1
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1050	1150	1200	1300	1600
Oil charge volume	L		50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	140.6	154.7	168.8	182.8	196.9
		GPM	2228.8	2452.3	2675.8	2897.8	3121.3
	Pressure drop	kPa	58.4	58.8	68.6	68.8	66.7
		ft.WG	19.2	19.3	22.5	22.6	21.9
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN350	DN350	DN350	DN350
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	180.4	198.6	216.5	234.8	252.7
		GPM	2859.7	3148.2	3432.0	3722.1	4005.8
	Pressure drop	kPa	65.4	65.5	68.8	67.9	77.4
		ft.WG	21.5	21.5	22.6	22.3	25.4
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN300	DN350	DN350	DN350	DN350
Sound pressure level (Max.)	dB(A)		85	85	85	85	85
Dimension (WxDxH)	Outline	mm	4980x2210x2710	5100x2310x2860	5100x2310x2860	5100x2310x2860	5250x2530x2820
Net/gross/operating weight	kg		10982/-/12550	11972/-/13750	11713/-/13500	11983/-/13900	16300/-/18700

Model			CVTH710TKNRKN-G	CVTH720TKMRKM-G	CVTH720TKLRKL-G	CVTH730TLNRLL-G	CVTH730TLMRLP-G
Cooling capacity	kW		5274	5626	5977	6329	6680
	RT		1500	1600	1700	1800	1900
COP	W/W		8.96	9.17	8.97	9.29	9.21
NPLV	W/W		22.11	21.87	22.02	21.78	22.00
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		588.6	613.5	666.4	681.3	725.3
RLA	A		35.4	36.9	40.1	41.0	43.6
Capacity adjustment range	%		10~100	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start				
	Quantity		1	1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a	R134a
	Charge volume	kg	1700	1750	1800	1900	2000
Oil charge volume	L		50	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018	0.018
	Water flow volume	L/s	211.0	225.0	239.1	253.2	267.2
		GPM	3344.8	3566.7	3790.2	4013.7	4235.7
	Pressure drop	kPa	42.1	41.7	60.7	51.8	51.2
		ft.WG	13.8	13.7	19.9	17.0	16.8
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN350	DN350	DN350	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044	0.044
	Water flow volume	L/s	271.5	289	307.7	324.7	343
		GPM	4303.8	4581.2	4877.7	5147.2	5437.3
	Pressure drop	kPa	41.6	41.5	59.5	60.1	59.7
		ft.WG	13.6	13.6	19.5	19.7	19.6
	Number of passes	-	2	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN450	DN450
Sound pressure level (Max.)		dB(A)	85	85	85	85	85
Dimension (WxDxH)	Outline	mm	5400x2750x3150	5400x2750x3150	5400x2750x3150	5800x2750x3150	5800x2750x3150
Net/gross/operating weight		kg	17400/-/20100	17900/-/20650	18400/-/21200	19937/-/22850	20937/-/24050

Model			CVTH730TLLRLO-G	CVTH810ULNSLN-G	CVTH820ULMSLM-G	CVTH820ULLSLL-G
Cooling capacity		kW	7032	7384	7735	8087
		RT	2000	2100	2200	2300
COP		W/W	9.06	9.19	9.31	9.24
NPLV		W/W	22.14	21.96	21.93	22.07
Power supply		V/Ph/Hz	10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input		kW	776.2	803.4	830.9	875.2
RLA		A	46.7	48.3	50.0	52.6
Capacity adjustment range		%	10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	2050	2100	2200	2300
Oil charge volume		L	50	50	50	50
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	281.3	295.4	309.4	323.5
		GPM	4459.2	4682.7	4904.6	5128.1
	Pressure drop	kPa	51.8	49.8	49.6	49.9
		ft.WG	17.0	16.3	16.3	16.4
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN400	DN400	DN400	DN400
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	361.6	379.2	396.7	415.1
		GPM	5732.1	6011.1	6288.5	6580.2
	Pressure drop	kPa	59.4	57.2	56.7	56.3
		ft.WG	19.5	18.8	18.6	18.5
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN450	DN450	DN450	DN450
Sound pressure level (Max.)		dB(A)	85	85	85	85
Dimension (WxDxH)	Outline	mm	5800x2750x3150	5800x3000x3300	5800x3000x3300	5800x3000x3300
Net/gross/operating weight		kg	21400/-/24550	21900/-/25250	22400/-/25850	22900/-/26450

Model			CVTH830ULLSLZ-G	CVTH831WSNUSN-G	CVTH840WSMUSM-G	CVTH840WSLUSL-G
Cooling capacity	kW		8438	9142	9845	10550
	RT		2400	2600	2800	3000
COP	W/W		9.21	9.24	9.25	8.96
NPLV	W/W		21.98	22.20	22.22	22.42
Power supply	V/Ph/Hz		10000/3/50	10000/3/50	10000/3/50	10000/3/50
Power input	kW		916.2	989.4	1064	1177
RLA	A		55.1	59.5	64.0	70.8
Capacity adjustment range	%		10~100	10~100	10~100	10~100
Compressor	Type	-	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Starting mode	-	Variable frequency start			
	Quantity		1	1	1	1
Refrigerant	Type	-	R134a	R134a	R134a	R134a
	Charge volume	kg	2300	2800	2900	3000
Oil charge volume	L		50	50	50	60
Evaporator	Type		Flooded	Flooded	Flooded	Flooded
	Fouling factor	m ² ·°C /kW	0.018	0.018	0.018	0.018
	Water flow volume	L/s	337.5	365.7	393.8	422.0
		GPM	5350.1	5797.1	6242.5	6689.6
	Pressure drop	kPa	53.7	52.9	52.6	52.4
		ft.WG	17.6	17.4	17.3	17.2
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN400	DN500	DN500	DN500
Condenser	Type	-	Shell and Tube	Shell and Tube	Shell and Tube	Shell and Tube
	Fouling factor	m ² ·°C /kW	0.044	0.044	0.044	0.044
	Water flow volume	L/s	433.2	469.2	505.2	543
		GPM	6867.1	7437.8	8008.5	8607.7
	Pressure drop	kPa	60.3	56.7	54.2	52.5
		ft.WG	19.8	18.6	17.8	17.2
	Number of passes	-	2	2	2	2
	Connection pipe	mm	DN450	DN500	DN500	DN500
Sound pressure level (Max.)		dB(A)	85	85	85	89
Dimension (WxDxH)	Outline	mm	5800x3000x3300	6400x3370x3575	6400x3370x3575	6400x3370x3575
Net/gross/operating weight		kg	23500/-/27050	26900/-/31250	27700/-/32200	29500/-/34100

Notes:
1. Working conditions: leaving chilled water temperature: 21/15℃ ; entering cooling water temperature is 29.44/34.61℃ .
2. Fouling factors of evaporator and condenser are 0.018 m² · °C /kW and 0.044 m² · °C /kW respectively.
3. NPLV is the test value obtained based on the working conditions specified in ARI 550/590-2018.
4. The unit's performance parameters may be changed without prior notice due to product improvement. For the specific parameters, please refer to product nameplate.

Operation Range

Chilled Water		Cooling Water	
LWT (°C)	Difference between EWT & LWT (°C)	EWT(°C)	Difference between EWT & LWT (°C)
7~20	2.5~8	20~35	3.5~8

LWT : Leaving water temperature
EWT : Entering water temperature
If customer requires higher temperature difference, please consult the manufacturer.