Carrier

AQUAFORCE™

30XW
Water-Cooled Liquid Chiller

Cooling capacity: 250~3464kW



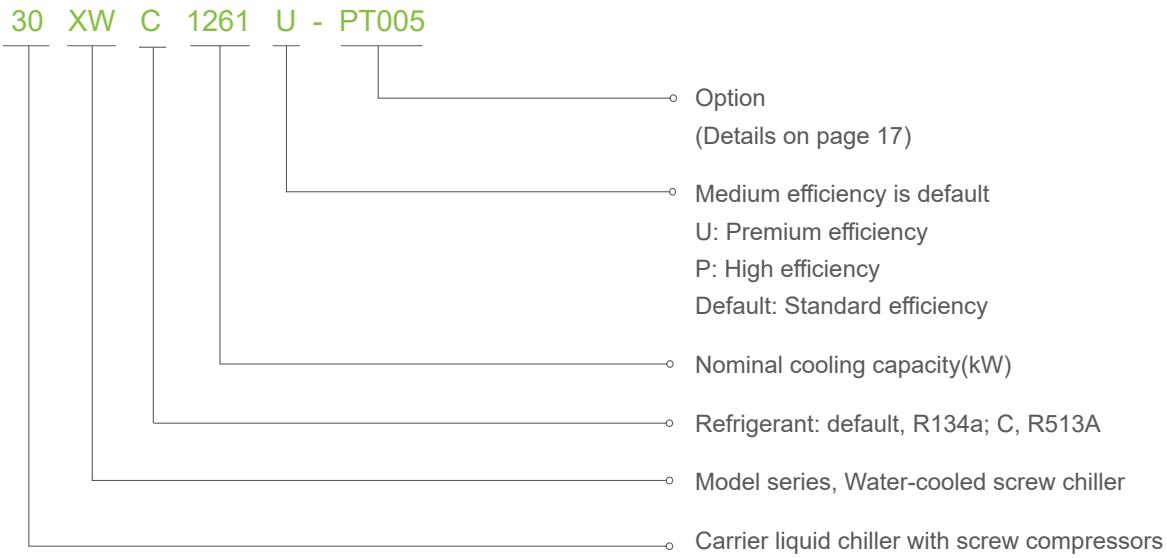


In 1998, Time magazine named Dr. Carrier one of its 20 most influential builders and titans of the 20thcentury.

Carrier is a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies. Supported by the iconic Carrier name, the company's portfolio includes industry-leading brands such as Carrier, Kidde, Edwards, LenelS2 and Automated Logic. Carrier's businesses enable modern life, delivering efficiency, safety, security, comfort, productivity and sustainability across a wide range of residential, commercial and industrial applications.



Nomenclature



Operating Range

Cooling/Heating		
Evaporator	Minimum	Maximum
Entering temperature at start-up	-	35℃
Leaving temperature during operation	3.3℃*	20℃
Entering/leaving temperature difference at full load	2.8℃	11.1℃
Condenser	Minimum	Maximum
Entering temperature at start-up	13℃	-
Leaving temperature during operation	19℃**	42℃***
Entering/leaving temperature difference at full load	2.8℃	11.1℃

Notes:

1.*If the leaving water temperature is below 3.3℃, a frost protection solution must be used, please refer to option 005 and option 006 for application with low evaporator leaving fluid temperature (>-12℃).
2.**If the temperature leaving the condenser is below 19℃, a water flow control valve must be used at the condenser (two or three-way valve), please refer to option 152 to ensure the correct condensing temperature.
3.***Please refer to option 150 for applications with high condenser leaving temperature (up to 63℃), and please refer to option 150E for application with condenser leaving temperature to 50℃. The condenser leaving water maximum temperature of 30XW/-P/-U 1261-1601 is 45℃.
4.Ambient temperature: During storage and transport of the 30XW units the minimum and maximum permissible temperatures are -20℃ and 58℃, these temperatures should be taken into consideration for transport by container.

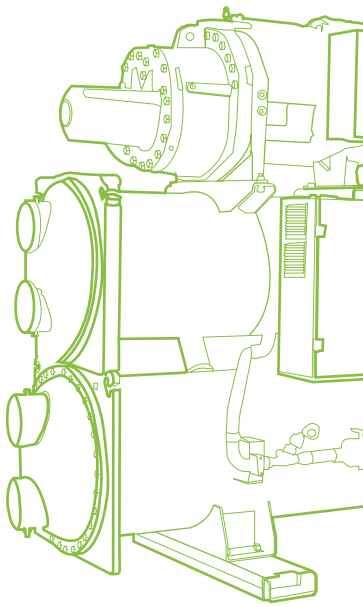
Cooling Capacity

250~3464kW

All data over 200Tons in this catalogue is rated in accordance with AHRI Standard 550/590 and 551/591 as represented in the Packaged Chiller Builder Selection Program (E-Cat)

Features

- The Aquaforce liquid chillers are the premium solution for industrial and commercial applications where installers, consultants and building owners require optimal performances and maximum quality.
- The Aquaforce liquid chillers are designed to meet current and future compactness. They use the most reliable technologies available today:
  - Twin-rotor screw compressors with a variable capacity valve.
  - Environmental stewardship refrigerant R134a, optional for R513A.
  - Carrier® SmartVu™ Control system.
  - Flooded heat exchangers that are mechanically cleanable.
- To meet to various environmental and economic requirements,the 30XW is available in three efficiency classes:
  - Medium-efficiency 30XW units that offerings excellent quality with superior cost advantage, designed to maximize savings, it's the cost-effective choice, suitable for comfort cooling of hotels, office and industrial settings.
  - High-efficiency 30XW-P units that offer an optinized balance of technical and economical aspects, while at the same time boasting superior energy efficiency.
  - Premium-efficiency 30XW-U units that offer unequalled energy efficiency to satisfy the most stringent demands of building owners wanting to reduce operating costs to the minimum.
- The 30XW Aquaforce range is also split into two versions:
  - 30XW for air conditioning and refrigeration applications.
  - 30XW Heating for heating applications.
- These two versions provide the following performances:
  - High heating temperature, allowing the 30XW Heating Aquaforce to supply water with a condenser leaving water temperature of +63°C (option 150A)
  - Low temperature, allowing the 30XW Aquaforce to operate with an evaporator leaving glycol temperature down to -6°C (option 005) or -12°C (option 006).



Premium full load and part load performance

- The exclusive twin-rotor screw compressor specifically designed for high performance which equipped with a high-efficiency motor and a variable capacity valve that permits exact matching of the cooling capacity to the load.
- Flooded multi-pipe evaporator and condenser for increased heat exchange efficiency. The evaporator has a low pressure drop-which results in reduced cost of water pump.
- Electronic expansion device permitting operation at a lower condensing pressure and improved utilization of the evaporator heat exchange surface (superheat control).
- Economizer system with electronic expansion device for increased cooling capacity.







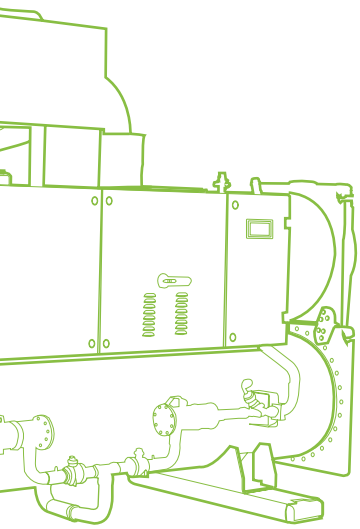
Absolute reliability

- Screw compressors
  - Industrial-type screw compressors with oversized bearings and motor cooled by suction gas.
  - Unique line-design screw rotors and microprocessor-based control to guarantee accurate meshing and enhance service life.
  - Reduced number of moving parts, with compressor rotors directly driven by the motor, to lower the gailure rate and enhance reliability.
  - All compressor components are easily accessible on site minimizing down-time.
  - Protection increased by an electronic board.
- Evaporator
  - Electronic paddle-free flow switch. Auto-setting according to cooler size and fluid type.
- Auto-adaptive control.
  - Control algorithm prevents excessive compressor cycling (Carrier patent).
  - Automatic compressor unloading in case of abnormally high condensing pressure.
  - Control system has comprehensive protection during operation, such as oil temperature control, overvoltage and overcurrent protection, discharge temperature overheat protection, heat exchanger anti-freeze protection etc. in order to ensure chiller long time reliable operation.
- Exceptional endurance tests
  - Partnerships with specialized laboratories and use of limit simulation tools (finite element calculation) for the design of critical components.
  - Transport simulation test in the laboratory on a vibrating table and then on an endurance circuit.

Environmental care

- R134a refrigerant
  - R134a refrigerant with zero ODP (ozone depletion potential) and R513A with low GWP (global warming potential) offering to reduce carbon emissions.
- Leak-tight refrigerant circuit
  - Reduction of leaks as no capillary tubes and are connections are used.
  - Verication of pressure transducers and temperature sensors without trans ferring refrigerant charge.
  - Discharge line shut-off valve and liquid line service valve for simplied maintenance.

Easy and fast installation



- Compact design
  - The 30XW units are designed to offer the most compact dimensions on the market.
  - With a width of approximately 1 m up to 1500 kW the units can pass through standard door openings and only require minimum oor space in the plant room.
- Simplied electrical connections
  - Main circuit breaker with high trip capacity.
  - Transformer to supply the integrated control circuit (400/24 V).
- Simplied hydronic connections
  - Victaulic connections on the evaporator and condenser.
  - Practical reference marks for entering and leaving water connections.
  - Possibility to reverse the heat exchanger water inlet and outlet at the factory.
- Fast commissioning
  - Systematic factory operation test before shipment.
  - Quick-test function for step-by-step verication of the instruments, expansion devices and compressors.

Smart Control

- New innovative Carrier® SmartVu™ control system combines intelligence with operating simplicity which providing more comfortable operation experience. The control constantly monitors all machine parameters and precisely manages the operation of compressors, electronic expansion devices and of the evaporator water pump for optimum energy efficiency.
- Ease-of-use
  - An intuitive and user-friendly interface, the concise and clear information is available in local languages.
  - Complete menu which can customized for different users (end user, service personnel or Carrier engineers).
  - Graphically dynamic display of the operation parameters in real time.
  - Up to 10 languages for choice.
  - The DCT (Data Collection Tool) records the alarms history and automatically pushed alarm mail to simplify and facilitate service operations.
- Energy management
  - Internal time schedule clock: controls chiller on/off times and operation at a second set-point.
  - Set-point reset based on the return water temperature.
  - Carrier Smart Service (optional) provides value added customer service which enhanced data management and analysis will help achieve continuous optimization of the chiller and system operation.



Carrier® SmartVu™ Control System - Intelligent Colored Touch Screen

- 30XW chiller employs Carrier's most advanced Carrier® SmartVu™ controller that delivers distinct capabilities of controlling and monitoring the chiller operations.
- Equipped with a high-resolution colorful 7 inch touch screen (10 inch as optional), Carrier® SmartVu™ controller offers more user-friendly interface with intuitive graphical operational data in real time, adapts precisely the chiller capacity to building load and provides comprehensive protection.

Reliable Start - up and Operation

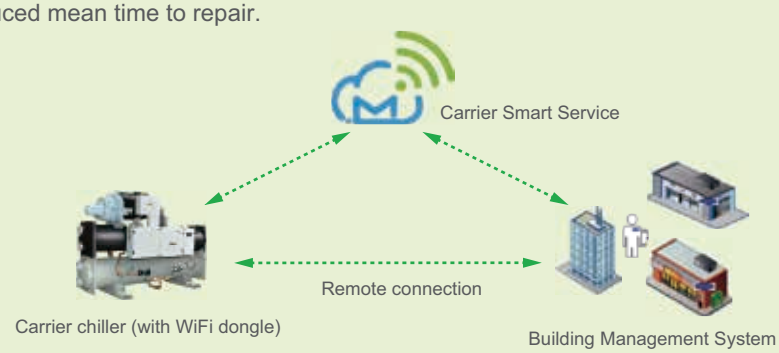
- Carrier® SmartVu™ controller offers password protection to avoid any unauthorized operation.
- When chiller starts, the controller will activate pre-start process to check parameters such as pressure, temperature, motor status, water flow etc.
- In addition to the function of monitoring the main operational parameters, trending function provide the visual dynamic parameter curves. The intelligent and dynamic algorithm ensures optimal, effective and reliable chiller operation.
- The control system provides following comprehensive protection, which guarantees steady chiller operation:
  - Overcurrent.
  - Discharge temperature overheat.
  - Motor temperature overheat.
  - Evaporator and condenser anti-freeze.
  - Low discharge superheat.

Effective Failure Diagnostic

- Carrier® SmartVu™ control system has more than 100 failure diagnostic function. Users can easily access chiller operation parameters via touch screen. If control system detects failure the alarm will be initiated and related code will be recorded in alarm menu. The alarm records, up to 50, can be automatically saved by control system. Carrier service technician can read and delete alarm records by Carrier service/PCDCT tools.
- The control system can automatically send out email alarm to customer or service technician.

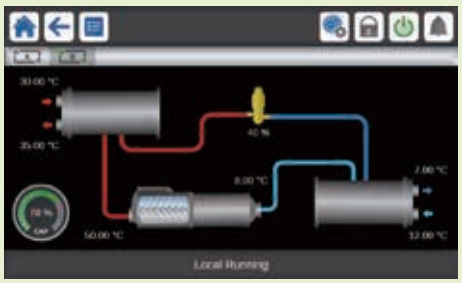
Intelligent Remote Connection and Control

- Carrier® SmartVu™ control panel supports CCN, BACnet IP, Modbus TCP/IP and Modubs RTU protocols, with which chiller can seamlessly connect with the Building Automation System or the i-Vu™/WebCTRL control network. Moreover, LonWorks, J-Bus and BACnet MSTP is also supported with optional gateway.
- An industrial Internet intelligent protocol module WIFI dongle housed in electrical cabinet has the function of conversion and transmission of data and can connect the field chiller controllers through the wireless network. Chiller operational data can be transmitted to the remote server (Smart Service by Carrier) via wireless network, 4G, etc., so as to monitor chiller data and fault alarm.
- Carrier Smart Service (optional) based on “Big Data Processing” provides value added customer service such as online data management and analysis, daily and key performance reports, prognostics and preventative maintenance and graphic data trend. The enhanced data management and analysis will help achieve continuous optimization of the chiller and system operation.
- Carrier Smart Service changes how equipment is serviced and maintained. Carrier service technicians now utilize mobile devices with remote access to put real-time chiller data and service history in the palm of their hands. With advance notification of problems, technicians arrive at the jobsite more informed, which leads to faster problem resolution and reduced mean time to repair.



Main Page

- Control system main page operation and primary parameters monitored:
  - Main page button
  - Menu page button
  - Log in/Language button
  - Start-up/Stop page button
  - Alarm menu button
  - Setting point
  - Chiller load percentage
  - Condensing water pump status
  - Chilled water pump status
  - Condenser water inlet/outlet temperature
  - Evaporator water inlet/outlet temperature



- Customer can easily read following primary information of chiller, components status and access to other interfaces from this page:
  - Temperature/Pressure page
  - Input/Output parameter page
  - Water system parameter page
  - Operation time
  - Mode



Performance data 30XW-U

Model			30XW-U																		
			0312U	0352U	0452U	0532U	0552U	0612U	0652U	0702U	0802U	0862U	0912U	1002U	1052U	1152U	1261U	1351U	1401U	1501U	1601U	1762U
Capacity		kW	304.2	367	447.3	536.6	572.3	639.8	674.4	729.8	785.0	852.2	897.2	973.9	1075.0	1151.0	1247.0	1338.0	1427.0	1492.0	1588.0	1768.0
		USRT	86	104	127	153	163	182	192	208	223	242	255	277	306	327	355	380	406	424	452	503
COP		kW/kW	5.80	5.81	5.81	6.20	6.20	6.20	6.19	6.19	6.18	6.19	6.20	6.23	6.20	6.23	6.44	6.44	6.46	6.42	6.47	6.42
Evaporator	Flow rate	L/s	13.1	15.8	19.2	23.1	24.6	27.5	29.0	31.3	33.7	36.6	38.5	41.8	46.2	49.4	53.6	57.5	61.3	64.1	68.2	75.9
	Water Pressure drop	kPa	24.8	32.9	29.5	31.5	34.2	50.5	51.1	33.4	37.8	44.0	40.7	63.9	79.7	61.9	34.9	40.5	46.2	50.6	55.7	50.0
	Water connection	DN	125	125	125	150	150	200	200	200	200	200	200	200	200	200	200	200	200	200	200	250
Condenser	Flow rate	L/s	16.5	20.0	24.3	28.9	30.8	34.5	36.3	39.3	42.3	45.9	48.3	52.4	57.9	62.0	66.8	71.7	76.4	80.0	85.1	94.8
	Water Pressure drop	kPa	26.4	35.8	58.9	50.3	58.6	44.0	58.7	46.3	42.7	39.3	34.9	34.5	44.3	48.3	44.0	49.5	52.8	61.5	68.6	50.4
	Water connection	DN	125	125	125	150	150	200	200	200	200	200	200	200	200	200	200	200	200	200	200	250
Compressor	Circuit A	No.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Circuit B	No.	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	1
	Min. capacity	%	15	15	15	15	15	15	15	15	15	15	15	8	8	8	20	20	20	20	15	8
Motor	Power	V-Ph-Hz	400-3-50																			
	Input power	kW	52.4	63.2	77.0	86.6	92.3	103.2	109.0	117.9	127.0	137.6	144.8	156.3	173.4	184.7	193.7	207.8	220.7	232.5	245.4	275.5
Refrigerant Charge			HFC-134a																			
	Circuit A	kg	90	90	100	135	135	176	176	200	200	233	245	115	115	130	365	365	365	365	365	250
	Circuit B	kg	-	-	-	-	-	-	-	-	-	-	-	125	125	140	-	-	-	-	-	250
Shipping weight*		kg	2559	2559	3066	3137	3177	4032	3734	4131	4894	4868	4923	5998	6180	6479	8055	8055	8107	8158	8269	10348
Operation weight		kg	2411	2411	2926	2994	3025	3999	3812	4155	5048	5054	5104	6069	6246	6684	8471	8471	8522	8574	8685	10948
Dimension	Length	mm	2766	2766	2766	3088	3088	3107	3110	3307	3375	3375	3375	4730	4730	4730	4524	4524	4524	4524	4524	4849
	Width	mm	970	970	970	1008	1086	1135	1135	1135	1260	1260	1260	1070	1070	1070	1491	1491	1491	1491	1491	2160
	Height	mm	1619	1619	1713	1761	1761	1970	2015	1970	2141	2141	2141	1967	1967	2015	2630	2630	2630	2630	2630	1586

Operation condition : Evaporator chilled water outlet temperature 6.67℃, chilled water inlet temperature 12.22℃, fouling factor=0.0176m^2K/kW
Condenser cooling water inlet water temperature 29.44℃, cooling water outlet temperature 34.61℃, fouling factor=0.044m^2K/kW
Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier
*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

Performance data 30XW-P

Model			30XW-P																				
			0312P	0352P	0452P	0532P	0552P	0612P	0652P	0702P	0802P	0852P	0912P	1002P	1052P	1152P	1261P	1351P	1401P	1501P	1601P	1712P	1762P
Capacity		kW	297.5	366.1	448.4	535.6	571.2	639.7	676.4	729.0	784.4	851.6	896.9	972.2	1074.0	1145.0	1246.0	1338.0	1408.0	1487.0	1588.0	1745.0	1764.0
		USRT	85	104	128	152	162	182	192	207	223	242	255	276	305	326	354	380	400	423	452	496	502
COP		kW/kW	5.59	5.65	5.72	5.99	6.01	6.00	6.12	6.05	6.05	5.89	6.00	6.04	6.03	6.02	6.28	6.33	6.31	6.32	6.36	6.15	6.31
Evaporator	Flow rate	L/s	12.8	15.7	19.3	23.0	24.5	27.5	29.1	31.3	33.7	36.6	38.5	41.8	46.1	49.2	53.5	57.5	60.5	63.9	68.2	75.0	75.8
	Water Pressure drop	kPa	24.8	32.5	29.8	24.5	26.1	39.5	39.2	24.7	28.1	33.4	61.3	49.8	72.2	46.6	49.3	56.3	59.3	64.2	67.7	74.3	49.4
	Water connection	DN	125	125	125	150	150	200	200	200	200	200	200	200	200	200	200	200	200	200	200	250	250
Condenser	Flow rate	L/s	16.3	20.0	24.4	29.0	30.9	34.6	36.5	39.4	42.4	46.2	48.5	52.6	58.1	62.0	67.0	71.9	75.7	79.9	85.3	94.1	94.8
	Water Pressure drop	kPa	53.1	68.9	41.9	39.2	43.5	34.6	40.6	34.5	39.4	47.2	34.8	27.0	34.1	36.8	43.9	49.4	51.7	60.0	68.4	61.1	41.0
	Water connection	DN	125	125	125	150	150	200	200	200	200	200	200	200	200	200	200	200	200	200	200	250	250
Compressor	Circuit A	No.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Circuit B	No.	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	1	1
	Min. capacity	%	15	15	15	15	15	15	15	15	15	15	15	8	8	8	20	20	20	20	15	8	8
Motor	Power	V-Ph-Hz	400-3-50																				
	Input power	kW	53.2	64.8	78.4	89.4	95.0	106.7	110.5	120.5	129.7	144.5	149.5	161.0	178.0	190.2	198.4	211.5	223.0	235.1	249.8	283.6	279.6
Refrigerant Charge			HFC-134a																				
	Circuit A	kg	78	78	100	135	135	176	176	200	200	200	233	115	115	130	365	365	365	365	365	187.5	250
	Circuit B	kg	-	-	-	-	-	-	-	-	-	-	-	125	125	140	-	-	-	-	-	187.5	250
Shipping weight*		kg	2301	2336	2866	3137	3177	4032	4012	4131	4149	4179	4260	5998	6067	6479	8114	8114	8165	8243	8333	9043	10348
Operation weight		kg	2083	2118	2600	2994	3025	3999	3979	4155	4173	4204	4299	6069	6112	6684	8230	8230	8280	8355	8443	9368	10948
Dimension	Length	mm	2740	2740	2763	3055	3055	3101	3080	3286	3286	3286	3142	4695	4695	4694	4515	4515	4515	4515	4515	4783	4809
	Width	mm	960	960	970	1008	1008	1135	1135	1135	1135	1135	1070	1070	1070	1070	1541	1541	1541	1541	1541	1985	2160
	Height	mm	1568	1568	1696	1743	1743	1950	1950	1949	1949	1949	2062	1947	1947	1998	2614	2614	2614	2614	2614	1520	1586

Operation condition : Evaporator chilled water outlet temperature 6.67℃, chilled water inlet temperature 12.22℃, fouling factor=0.0176m^2K/kW
Condenser cooling water inlet water temperature 29.44℃, cooling water outlet temperature 34.61℃, fouling factor=0.044m^2K/kW
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*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

Performance data 30XW

Model			30XW													
			0262	0312	0352	0412	0422	0452	0502	0552	0622	0652	0702	0812	0852	0902	0922
Capacity		kW	249.4	303.5	366.8	424.1	452.5	468.8	520.2	540.0	620.7	662.2	715.1	784.4	825.8	851.8	890.1
		USRT	71	86	104	121	129	133	148	154	177	188	203	223	235	242	253
COP		kW/kW	5.29	5.31	5.31	5.31	5.29	5.45	5.30	5.61	5.62	5.51	5.62	5.62	5.52	5.83	5.66
Evaporator	Flow rate	L/s	10.71	13.04	15.76	18.21	19.44	20.13	22.34	23.19	26.66	28.44	30.72	33.69	35.47	36.58	38.23
	Water Pressure drop	kPa	16.3	22.7	29.4	34.4	36.6	27.6	34.5	36.0	33.9	33.6	38.2	39.8	48.1	54.1	62.0
	Water connection	DN	125	125	125	125	125	125	125	125	150	150	150	200	150	150	200
Condenser	Flow rate	L/s	13.75	16.72	20.21	23.37	24.95	25.72	28.67	29.50	33.91	36.28	39.06	42.85	45.23	46.28	48.58
	Water Pressure drop	kPa	33.3	44.8	57.1	36.5	37.8	37.9	46.5	47.6	48.4	53.9	56.5	31.0	37.4	43.1	51.9
	Water connection	DN	125	125	125	125	125	125	125	125	150	150	150	200	200	200	200
Compressor	Circuit A	No.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Circuit B	No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Min. capacity	%	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Motor	Power	V-Ph-Hz	400-3-50														
	Input power	kW	47.2	57.1	69.1	79.9	85.5	86.0	98.1	96.2	110.5	120.2	127.2	139.6	149.6	146.0	157.3
Refrigerant Charge			HFC-134a														
	Circuit A	kg	78	78	78	100	85	100	100	110	150	150	140	160	150	150	176
	Circuit B	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shipping weight*		kg	2220	2281	2316	2692	2707	2846	2883	2934	3637	3620	3647	3774	3808	3827	4012
Operation weight		kg	2002	2063	2098	2518	2518	2580	2617	2684	3509	3486	3509	3688	3711	3923	3979
Dimension	Length	mm	2742	2742	2742	2746	2746	2746	2746	2763	3084	3056	3084	2780	2780	3080	3080
	Width	mm	960	960	960	970	970	970	970	970	1119	1119	1119	1085	1085	1135	1135
	Height	mm	1568	1568	1568	1694	1694	1693	1693	1693	1873	1849	1873	1950	1900	1900	1950

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Condenser cooling water inlet water temperature 29.44℃, cooling water outlet temperature 34.61℃, fouling factor=0.044m^2K/kW
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*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

Performance data 30XW

Model			30XW																
			1002	1052	1152	1261	1351	1401	1501	1601	1712	1762	2052	2302	2602	2902	3052	3302	3452
Capacity		kW	1002.0	1074.0	1134.0	1257.0	1326.0	1433.0	1497.0	1588.0	1707.0	1744.0	2035.0	2286.0	2592.0	2884.0	3044.0	3321.0	3464.0
		USRT	285	306	323	357	377	407	426	451	485	496	579	650	737	820	866	944	985
COP		kW/kW	5.60	5.63	5.64	5.87	5.87	5.93	5.93	5.90	5.74	5.83	5.85	5.84	5.86	5.89	5.85	5.86	5.85
Evaporator	Flow rate	L/s	43.06	46.14	48.72	54.01	56.95	61.53	64.31	68.20	73.33	74.91	87.42	98.17	111.30	123.90	130.70	142.60	148.80
	Water Pressure drop	kPa	55.7	67.8	54.2	36.8	39.4	52.3	51.5	58.1	80.5	61.2	68.4	67.0	66.6	71.9	79.5	82.6	85.1
	Water connection	DN	150	150	200	200	200	200	200	200	200	200	200	200	300	300	300	300	300
Condenser	Flow rate	L/s	54.78	58.65	61.93	68.25	71.97	77.64	81.15	86.13	92.97	94.74	110.50	124.20	140.80	156.50	165.30	180.30	188.10
	Water Pressure drop	kPa	34.0	44.2	41.7	39.2	41.1	58.2	53.4	63.9	63.2	60.0	59.6	52.7	60.6	52.6	59.0	62.8	67.5
	Water connection	DN	200	200	200	200	200	200	200	200	200	200	250	250	300	300	300	300	300
Compressor	Circuit A	No.	1	1	1	1	1	1	1	1	1	1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
	Circuit B	No.	1	1	1	-	-	-	-	-	1	1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
	Min. capacity	%	8	8	8	20	20	20	20	15	15	8	4	4	4	4	4	4	4
Motor	Power	V-Ph-Hz	400-3-50																
	Input power	kW	178.8	190.7	201.1	214.0	225.8	241.6	252.5	269.1	297.2	299.2	348.1	391.3	442.6	489.6	519.9	567.2	592.0
Refrigerant Charge			HFC-134a																
	Circuit A	kg	85	85	100	300	300	340	350	360	140	140	85/85	100/100	130/130	130/130	130/130	140/140	140/140
	Circuit B	kg	95	95	110	-	-	-	-	-	160	160	95/95	110/110	140/140	140/140	140/140	160/160	160/160
Shipping weight*		kg	5334	5349	5571	7312	7358	7704	7736	7831	9073	8994	10886	11454	14338	15494	15454	18667	18695
Operation weight		kg	5255	5259	5553	7296	7341	7717	7781	7883	8953	8934	10870	11648	14842	16140	16100	18729	18757
Dimension	Length	mm	4029	4029	4008	4088	4088	4488	4488	4488	4761	4787	4593	4602	5321	5359	5358	5422	5422
	Width	mm	1050	1050	1050	1526	1526	1526	1526	1524	1338	1258	2570	2570	2846	2932	2932	3066	3066
	Height	mm	1845	1845	1896	2563	2563	2563	2563	2563	2307	2307	1846	1896	2064	2064	2064	2307	2307

Operation condition : Evaporator chilled water outlet temperature 6.67℃, chilled water inlet temperature 12.22℃, fouling factor=0.0176m^2K/kW
Condenser cooling water inlet water temperature 29.44℃, cooling water outlet temperature 34.61℃, fouling factor=0.044m^2K/kW
Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier local agencies.
*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

Electrical parameters 30XW-U (including option 81)

High efficiency units 30XW-U		0312U	0352U	0452U	0532U	0552U	0612U	0652U	0702U	0802U	0862U	0912U	1002U	1052U	1152U	1261U	1351U	1401U	1501U	1601U	1762U
Power circuit																					
Rated Voltage	V-ph -Hz	400-3-50																			
Voltage Range	V	360-440																			
Control circuit		24 V per internal transformateur																			
Nominal start-up current*																					
Circuit A	A	233	303	414	414	414	587	587	587	587	587	587	414	414	414	812	812	812	812	812	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	414	414	414	-	-	-	-	-	587
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	784	815	846	-	-	-	-	-	842
Maximum start-up current **																					
Circuit A	A	221	288	393	428	428	558	558	558	558	558	558	428	428	428	771	771	771	771	771	558
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	428	428	428	-	-	-	-	-	558
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	596	624	624	-	-	-	-	-	937
Cosine Phi																					
Nominal ***		0.86	0.86	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.91	0.91	0.91	0.91	0.91	0.88
Maximum †		0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.91
Maximum power draw ††																					
Circuit A	kW	71	86	100	116	116	146	146	146	156	182	227	100	116	116	261	275	262	323	340	227
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	100	100	116	-	-	-	-	-	182
Option 81	kW	-	-	-	-	-	-	-	-	-	-	-	199	216	302	-	-	-	-	-	449
Norminal power draw																					
Circuit A	kW	53	64	78	88	93	104	110	119	128	139	146	78	93	93	196	210	219	233	247	142
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	78	81	93	-	-	-	-	-	134
Option 81	kW	-	-	-	-	-	-	-	-	-	-	-	156	174	186	-	-	-	-	-	276
Nomina current draw ***																					
Circuit A	A	89	107	127	143	151	171	180	195	210	225	237	127	151	151	311	333	347	370	392	233
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	127	131	151	-	-	-	-	-	220
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	253	282	302	-	-	-	-	-	453
Maximum current draw (Un) ††																					
Circuit A	A	121	146	168	196	196	246	246	246	264	304	379	168	196	196	432	455	434	535	563	379
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	168	168	196	-	-	-	-	-	304
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	336	364	392	-	-	-	-	-	683
Maximum current draw (Un -10%) †																					
Circuit A	A	133	161	185	216	216	334	334	334	366	412	402	185	216	216	500	500	502	619	619	402
Circuit B	A	–	–	–	-	–	–	–	-	-	-	–	185	185	216	–	–	–	–	–	412
Option 81	A	–	–	–	-	–	–	–	-	-	-	–	370	401	432	–	–	–	–	–	782

* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)
Values obtained at operating condition: evaporator temperature entry/leave water = 12 ℃/7 ℃, condenser temperature entry/leavewater = 30 ℃/35 ℃

** Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)
Values obtained at operation with maximum unit power input

*** Values obtained at operating condition: evaporator temperature entry/leave water = 12 ℃/7 ℃, condenser temperature entry/leavewater = 30 ℃/35 ℃

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input
Values given on the name plate

Electrical parameters 30XW-P (including option 081)

High efficiency units 30XW-P		0312P	0352P	0452P	0532P	0552P	0612P	0652P	0702P	0802P	0852P	0912P	1002P	1052P	1152P	1261P	1351P	1401P	1501P	1601P	1712P	1762P
Power circuit																						
Rated Voltage	V-ph-Hz	400-3-50																				
Voltage Range	V	360-440																				
Control circuit		24 V per internal transformateur																				
Nominal start-up current*																						
Circuit A	A	233	303	414	450	450	587	587	587	587	587	587	450	450	450	812	812	812	812	812	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	450	450	450	-	-	-	-	-	587	587
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	594	612	612	-	-	-	-	-	819	819
Maximum start-up current **																						
Circuit A	A	233	303	414	450	450	587	587	587	587	587	587	450	450	450	812	812	812	812	812	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	450	450	450	-	-	-	-	-	587	587
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	667	692	692	-	-	-	-	-	938	938
Cosine Phi																						
Nominal ***		0.86	0.86	0.86	0.87	0.87	0.89	0.89	0.89	0.89	0.90	0.90	0.86	0.87	0.87	0.91	0.91	0.91	0.91	0.91	0.90	0.90
Maximum †		0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.91	0.92	0.92	0.89	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Maximum power draw ††																						
Circuit A	kW	94	104	134	151	151	184	184	184	200	223	242	134	151	151	275	275	276	340	340	223	223
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	134	134	151	-	-	-	-	-	223	223
Option 081	kW	-	-	-	-	-	-	-	-	-	-	-	268	285	302	-	-	-	-	-	446	446
Nominal current draw ***																						
Circuit A	A	97	116	144	162	162	193	193	193	214	232	266	144	162	162	317	339	354	376	398	232	266
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	144	144	162	-	-	-	-	-	232	232
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	288	306	324	-	-	-	-	-	464	498
Maximum current draw (Un) ††																						
Circuit A	A	121	146	168	196	196	246	246	246	270	304	379	168	196	196	432	432	434	535	535	304	379
Circuit B	A	-	-	-	-	-	-	-	-	-		-	168	168	196	-	-	-	-	-	304	304
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	336	364	392	-	-	-	-	-	608	683
Maximum current draw (Un -10%) †																						
Circuit A	A	133	161	185	216	216	271	271	271	297	334	402	185	216	216	475	475	477	588	588	334	402
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	185	185	216	-	-	-	-	-	334	334
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	370	401	432	-	-	-	-	-	668	736

* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)
Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C
** Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)
Values obtained at operation with maximum unit power input
*** Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C
† Values obtained at operation with maximum unit power input
†† Values obtained at operation with maximum unit power input
Values given on the name plate

Electrical parameters 30XW (including option 081)

Medium efficiency units 30XW		0262	0312	0352	0412	0422	0452	0552	0622	0652	0702	0812	0852	0902	0922
Power circuit															
Rated Voltage	V-ph -Hz	400-3-50													
Voltage Range	V	360-440													
Control circuit		24 V per internal transformateur													
Nominal start-up current*															
Circuit A	A	233	233	303	414	414	414	450	587	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum start-up current **															
Circuit A	A	233	233	303	414	414	414	450	587	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cosine Phi															
Nominal ***		0.86	0.86	0.86	0.86	0.86	0.86	0.87	0.88	0.88	0.89	0.90	0.90	0.90	0.90
Maximum †		0.89	0.89	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.92	0.92	0.92	0.92
Maximum power draw ††															
Circuit A	kW	80	94	104	134	134	134	151	184	184	200	223	223	223	242
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nominal current draw ***															
Circuit A	A	81	97	116	144	144	144	162	193	193	214	232	232	232	266
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum current draw (Un) ††															
Circuit A	A	107	121	146	168	168	168	196	246	246	270	304	304	304	379
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum current draw (Un -10%) †															
Circuit A	A	118	133	161	185	185	185	216	271	271	297	334	334	334	402
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 081	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)
Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C

** Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)
Values obtained at operation with maximum unit power input

*** Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input
Values given on the name plate

Electrical parameters 30XW (including option 081)

Standard efficiency units 30XW		1002	1052	1152	1261	1351	1401	1501	1601	1712	1762
Power circuit											
Rated Voltage	V-ph-Hz	400-3-50									
Voltage Range	V	360-440									
Control circuit		24 V per internal transformateur									
Nominal start-up current*											
Circuit A	A	450	450	414	812	812	812	812	812	587	587
Circuit B	A	450	450	414	-	-	-	-	-	587	587
Option 081	A	612	612	576	-	-	-	-	-	819	853
Maximum start-up current **											
Circuit A	A	450	450	414	812	812	812	812	812	587	587
Circuit B	A	450	450	414	-	-	-	-	-	587	587
Option 081	A	692	692	656	-	-	-	-	-	938	966
Cosine Phi											
Nominal ***		0.87	0.87	0.87	0.91	0.91	0.91	0.91	0.91	0.90	0.90
Maximum †		0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Maximum power draw ††											
Circuit A	kW	151	151	151	275	276	340	340	340	223	242
Circuit B	kW	134	151	151	-	-	-	-	-	223	223
Option 081	kW	285	302	302	-	-	-	-	-	446	465
Nominal current draw ***											
Circuit A	A	162	162	162	343	362	387	404	433	232	266
Circuit B	A	144	162	162	-	-	-	-	-	232	232
Option 081	A	306	324	324	-	-	-	-	-	464	498
Maximum current draw (Un) ††											
Circuit A	A	196	196	196	432	434	535	535	535	304	379
Circuit B	A	168	196	196	-	-	-	-	-	304	304
Option 081	A	364	392	392	-	-	-	-	-	608	683
Maximum current draw (Un -10%) †											
Circuit A	A	216	216	216	475	477	588	588	588	334	402
Circuit B	A	185	216	216	-	-	-	-	-	334	334
Option 081	A	401	432	432	-	-	-	-	-	668	736

* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)
Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C
** Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)
Values obtained at operation with maximum unit power input
*** Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C
† Values obtained at operation with maximum unit power input
†† Values obtained at operation with maximum unit power input
Values given on the name plate

Electrical parameters 30XW (including option 081)

Medium efficiency units 30XW		2052	2302	2602	2902	3052	3302	3452
Power circuit								
Rated Voltage	V-ph-Hz	400-3-50						
Voltage Range	V	360-440						
Control circuit		24 V per internal transformateur						
Nominal start-up current*								
Module1 Circuit A	A	414	414	587	587	587	587	587
Module1 Circuit B	A	414	414	414	587	587	587	587
Module1 Option 081	A	576	576	749	780	801	819	819
Module2 Circuit A	A	414	414	587	587	587	587	587
Module2 Circuit B	A	414	414	414	587	587	587	587
Module2 Option 081	A	576	576	749	780	801	819	819
Maximum start-up current **								
Module1 Circuit A	A	414	414	587	587	587	587	587
Module1 Circuit B	A	414	414	414	587	587	587	587
Module1 Option 081	A	656	656	829	882	904	938	938
Module2 Circuit A	A	414	414	587	587	587	587	587
Module2 Circuit B	A	414	414	414	587	587	587	587
Module2 Option 081	A	656	656	829	882	904	938	938
Cosine Phi								
Nominal ***		0.87	0.87	0.88	0.88	0.88	0.90	0.90
Maximum †		0.90	0.90	0.90	0.90	0.90	0.92	0.92
Maximum power draw ††								
Module1 Circuit A	kW	151	151	184	184	200	223	223
Module1 Circuit B	kW	134	151	151	184	184	202	223
Module1 Option 081	kW	285	302	335	368	384	425	446
Module2 Circuit A	kW	151	151	184	184	200	223	223
Module2 Circuit B	kW	134	151	151	184	184	202	223
Module2 Option 081	kW	285	302	335	368	384	425	446
Nominal current draw ***								
Module1 Circuit A	A	162	162	193	193	214	232	232
Module1 Circuit B	A	144	162	162	193	193	214	232
Module1 Option 081	A	306	324	355	386	407	446	464
Module2 Circuit A	A	162	162	193	193	214	232	232
Module2 Circuit B	A	144	162	162	193	193	214	232
Module2 Option 081	A	306	324	355	386	407	446	464
Maximum current draw (Un) ††								
Module1 Circuit A	A	196	196	246	246	270	304	304
Module1 Circuit B	A	168	196	196	246	246	270	304
Module1 Option 081	A	364	392	442	492	516	574	608
Module2 Circuit A	A	196	196	246	246	270	304	304
Module2 Circuit B	A	168	196	196	246	246	270	304
Module2 Option 081	A	364	392	442	492	516	574	608
Maximum current draw (Un -10%) †								
Module1 Circuit A	A	216	216	271	271	297	334	334
Module1 Circuit B	A	185	216	216	271	271	297	334
Module1 Option 081	A	401	432	487	542	568	631	668
Module2 Circuit A	A	216	216	271	271	297	334	334
Module2 Circuit B	A	185	216	216	271	271	297	334
Module2 Option 081	A	401	432	487	542	568	631	668

* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)
Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C

** Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)
Values obtained at operation with maximum unit power input

*** Values obtained at operating condition: evaporator temperature entry/leave water = 12 °C/7 °C, condenser temperature entry/leavewater = 30 °C/35 °C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input
Values given on the name plate

Options & accessories

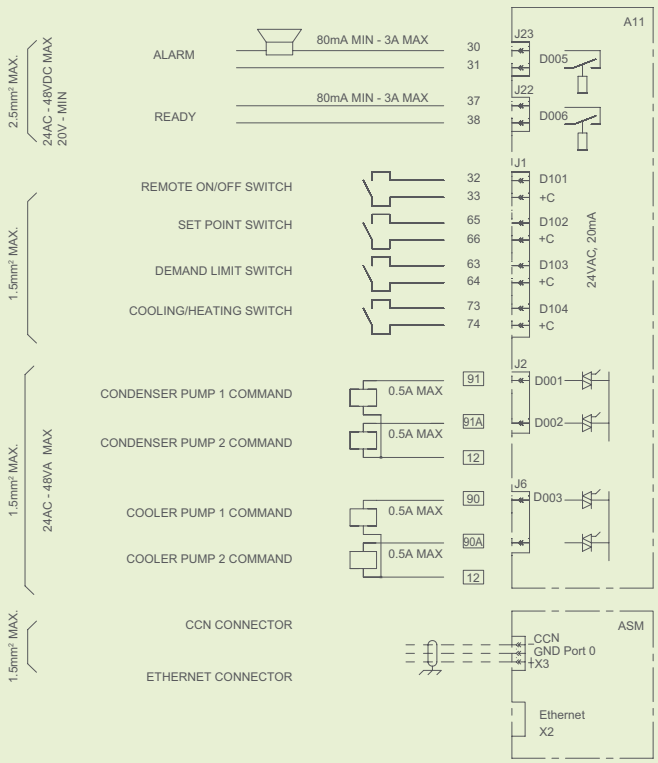
Options	NO	Description	Advantages	Use
Medium Brine	005	Brine application down to -6°C leaving fluid temperature	Covers specific application such as ice storage and industrial processes	30XW0262-3452
Low Brine	006	Brine application down to -12°C leaving fluid temperature - Use of air-cooled unit compressors - Increase size of electrical componts according to compressor motor electrical characteristics	Covers specific application such as ice storage and industrial processes	30XW1152/0552P/ 1002P
Single power connection	081	- Use of air-cooled unit compressors	Quick and easy installation	30XW1002-3452, 30XW-P/-U:1002-1762 Each module of duplex with PT081
Closed Y-delta start	091	- Increase size of electrical componts according to compressor motor electrical characteristics	Low the inrush current	30XW0652P/0702P/ 0802P/0912P
Evaporator & Condenser water pressue 1.6MPa	104	Reinforced evaporator & condenser for extension of the maximum water-side service pressure to 1.6MPa	Covers applications with a high water column(high buildings)	30XW0262-3452, 30XW-P/-U:0312-1762
Evaporator & Condenser water pressue 2.1MPa	104A16	Reinforced evaporator & condenser for extension of the maximum water-side service pressure to 2.1MPa	Covers applications with a high water column(high buildings)	30XW0262-3452, 30XW-P/-U:0312-1762
Evaporator with reversed water connection	107E	Evaporator with reversed water inlet/outlet	Simplification of the water piping	30XW0262-3452, 30XW-P/-U:0312-1762
Condenser with reversed water connection	107C	Condenser with reversed water inlet/outlet	Simplification of the water piping	30XW0262-3452, 30XW-P/-U:0312-1762
CCN to J bus gateway	148B	Two way protocol converter board between CCN and J-Bus for easy connection to BMS. Consist of: - Electronic board mounted in the unit electrical cabinet - Automatic configuration at start up	Easy connection by communication bus to a building management system	30XW0262-3452 30XW-P/-U:0312-1762
CCN to BACNet MSTP Gateway	148C	"Two way protocol converter board between CCN and BACNet MSTP for easy connection to BMS. Consist of: - Electronic board mounted in the unit electrical cabinet - Automatic configuration at start up"	Easy connection by communication bus to a building management system	30XW0262-3452, 30XW-P/-U:0312-1762
CCN to Lon work gateway	148D	Two way protocol converter board between CCN and Lon work for easy connection to BMS. Consist of: - Electronic board mounted in the unit electrical cabinet - Automatic configuration at start up	Easy connection by communication bus to a building management system	30XW0262-3452, 30XW-P/-U:0312-1762
High condensing temperature unit (up to 60-65℃ leaving condenser water temperature)	150	Increased condenser leaving water temperature up to 60-65℃ . - Use of air-cooled unit compressors - Increase size of electrical componts according to compressor motor electrical characteristics"	Allows applications with high condensing temperature(for heat reclaim or dry cooler applications)	30XW0262-3452*, 30XW0532P-1712P*, 30XW0312U-1152U
Heat pump （Max condenser leaving temp 60-65℃)	150A	Heat pump control logic to control condenser LWT - Use of air-cooled unit compressors - Increase size of electrical componts according to compressor motor electrical characteristics - Heat pump control logic - Condenser insulation	Allows heating applications with max condenser leaving temp 60-65℃	30XW0262-3452*, 30XW0532P-1712P*, 30XW0312U-1152U
Condenser maxium leaving temperature 50℃	150E	Increase condenser LWT to 50℃	Allows application with high condensing temperature	30XW0262-3452, 30XW-P/-U:0312-1762
Heat pump （Max condenser leaving temp 50℃）	150D	Heat pump control logic to control condenser LWT - Condenser insulation - Heat pump Control logic	Allows heating applications with max condenser leaving temp 50℃	30XW0262-3452, 30XW-P/-U:0312-1762
Condenser water valve control (0-10V signal)	152	Output signal (0-10V) to control the condenser water inlet valve Consist of: - One 8DO+4AI/2AO Board - Connector for 3 way valve Note: Power supply for water valve is not included	Used for applications with cold water at the condenser inlet (well water). In this case the valve controls the water entering temperature to maintain an acceptable condensing pressure	30XW0262-3452, 30XW-P/-U:0312-1762
Energy management module	156	Remote control module. Additional contacts for an extension of the unit control functions (without communication bus) Consist of: - Electrinoc board mounted in the unit electrical cabniet	Easy connection by wired connection to a building management system	30XW0262-3452, 30XW-P/-U:0312-1762
Touch screen Interface	158B	10 inch TouchScreen Interface	Easy operation	30XW0262-3452, 30XW-P/-U:0312-1762
Evaporator flanged connections	314E	Victaulic to Flange water connections	Easy installation	30XW0262-3452, 30XW-P/-U:0312-1762
Condenser flanged connections	314C	Victaulic to Flange water connections	Easy installation	30XW0262-3452, 30XW-P/-U:0312-1762
Nitrogen charge	320	Unit nitrogen factory charged.	Less weight. No refrigerant charged	30XW0262-3452, 30XW-P/-U:0312-1762
Discharge shut off valve	321	Allows referigerant to be stored inside the chiller during servicing	Reducing refrigerant loss and eliminating time-consuming transfer procedures	30XW0262-3452, 30XW-P/-U:0312-1762
Australia code	312A	Meets Australia government pressure vessel code AS 1210 and AS 4343	Meets Australia government pressure vessel code AS 1210 and AS 4343	30XW0262-3452, 30XW0532P-1712P
Multi-piece shipment	051	"Side-by-side" Units only. Unit shipped in two parts bolted together, flanges on piping connections, no refrigerant charge (Nitrogen holding charge)	Easy installation	30XW1712P/1762P/ 1762U

Options & accessories

Medium low noise	257M	Provide 1 to 3 dBA sound attenuation vs std to meet low noise application * Innovative sound muffler used	Lower operating sound levels	30XW0412-3452, 30XW-P/-U:0452-1601
Low noise	257H	Provide 3 to 6 dBA sound attenuation vs std to meet low noise application * Innovative sound treatment package (lagging etc.) used	Lower operating sound levels	30XW0262-3452, 30XW-P/-U:0312-1762
Super low noise	258A	Provide 6 to 8 dBA sound attenuation vs std to meet super low noise application * Sound enclosure used * Waterproof, rust prevention features	Lower operating sound levels with waterproof	30XW0262-3452, 30XW-P/-U:0312-1762
Super low noise	258C	Provide 8 to 10 dBA sound attenuation vs std to meet super low noise application * Sound enclosure used * Waterproof, rust prevention features	Lower operating sound levels	30XW0262-3452, 30XW-P/-U:0312-1762
Soft starter	025	Provide unit soft staring, uninterupted changeover without current peak that would stress power supply * Using a soft starter instead of Wye-Delta starter	Lower peak start-up current	30XW0262-3452, 30XW-P/-U:0312-1762
IP44 Enclosure	020	IP44 Enclosure(Control box & Terminal box)	Higher water & rust protection level for control box & terminal box	30XW0262-3452, 30XW-P/-U:0312-1762
Condenser CuNi tubes	841C	90/10 CuNi tubes used on condenser	Suitable for river water and sewage water	30XW0262-3452, 30XW-P:0312-1762, 30XW-U:0532-1152
Evaporator CuNi tubes	841E	90/10 CuNi tubes used on evaporator	Suitable for river water and sewage water	30XW0262-3452, 30XW-P:0312-1762, 30XW-U:0532-1152
Hot gas Bypass	866	Hot gas bypass mininum load down to 10%	Extend capacity operating range to match mininum load requirement	30XW/-U/-P: 1261-1601 30XW-U: 0312-0912
Terminal box condensation free	322	Recommended for tropical environments (hot and humid). Consist of: -Slope bottom of terminal box. -A water drain tube from the bottom of terminal box. -Thermal insulation on the surface of terminal box.	Avoid the condensation appearing on the surface of terminal box and accumulating internally. Also prevent condensation dropping on the control box where bellow the terminal box.	30XW0262-3452, 30XW-P/-U:0312-1762

Notes:
1.Medium brine option 005 is not compatible with options of 150/150A/312A, and low Brine option 006 is not compatible with options of 150/150A/150D/257M/312A .
2. Australia code option 312A is not compatible with options of 005/006/104/104A16/150/150A/841E/841C.
3.*150 & 150A options are not compatible with models of 30XW0912P/1002P/0622/0812/0922/1762,30XW1261-1601, 30XW0312P-0652P/1261P-1601P and 257M option.
4. IP44 enclosure 020 option is not compatible with options of 025/258/322.
5. 30XW/-U/-P 1261-1601 are standard equipped with closed Y-delta start and not compatible with options of 841C/841E.
6. Condenser water valve control option 152 is not include 3 way valve and power supply for water valve.

Wiring Diagram



Recommendations on heat exchange fluids

Filters are required to be installed in water entering side, and water quality analysis periodically implement.

Water quality should be maintained within the limits indicated in below table.

Water Characteristics	Quality Limitation
NH_3	<2 ppm
NH^{4+}	<2 ppm
Cl_2	<1 ppm
Cl-	< 300 ppm
H_2S	<0.05 ppm
$SO4^{2-}$	< 70 ppm
CO_2	<5 ppm
Fe^{2+}/Fe^{3+}	<0.2 ppm
O_2	< 5 ppm

Water Characteristics	Quality Limitation
NO_3	<100 ppm
Si	< 0.1 ppm
Al	<0.2 ppm
Mn	<0.1 ppm
Hardness	71.2<…<151.3mg/l $CaCO_3$
Resistance	>3000ohm.cm
Conductivity	200<…<600µS/cm
Ph	7.5<…<9

System minimum water volume

Whichever the system, the water loop minimum capacity is given by the formula:

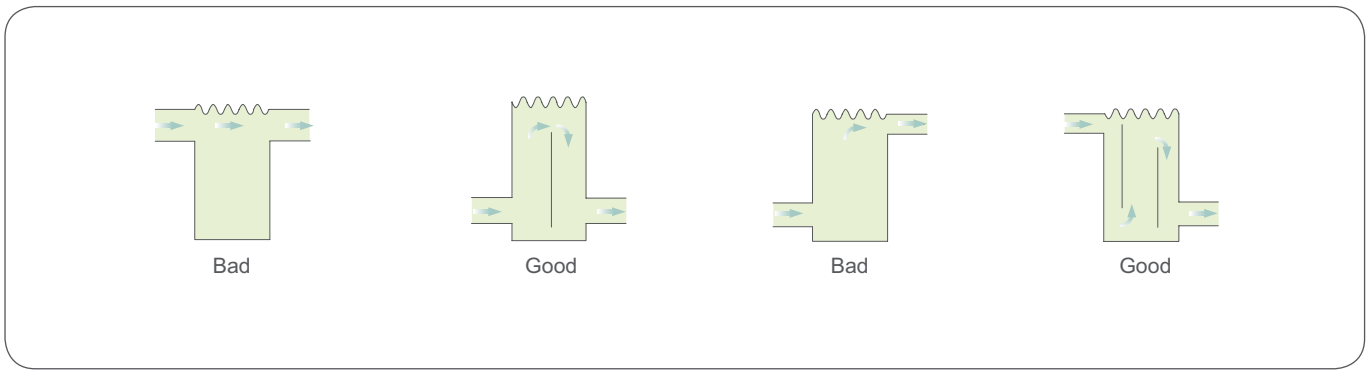
Capacity = Cap(kW) x N Liters

Where Cap is the nominal system cooling capacity (kW) at the nominal operating conditions of the installation.

This volume is necessary for stable operation and accurate temperature control.

Application	N
Normal air conditioning	3.5
Process type cooling	6.5

It is often necessary to add a buffer water tank to the circuit in order to achieve the required volume. The tank must itself be internally baffled in order to ensure proper mixing of the liquid (water or brine). Refer to the examples below.



Guide Specifications

General description

Factory assembled single piece water-cooled liquid chiller. Contained within the unit shall be all factory wiring, piping, controls, refrigerant charge R134a/R513A, refrigeration circuits set, screw compressors, electronic expansion valves and equipment required prior to field start-up.

Quality assurance

1. Unit construction shall comply with standard including the following:
   A. Chiller performance shall be rated in accordance with the latest edition of AHRI Standard 550/590 (I-P), AHRI Standard 551/591 (SI)and GB/T 18430.1.
   B. Cooler and condenser refrigerant side shall include nameplate certifying compliance with NB/T 47012, pressure ves sels for refrigerant equipment.
   C. Chiller shall be designed and constructed to TSG 21-2016 requirements.
2. Unit shall be designed, manufactured and tested in a facility with a quality management system certified ISO 9001 and environmental management system ISO 14001.
3. Unit shall be run tested at the factory.
4. Unit components shall be capable of withstanding 60°C (66°C for PT150A) storage without damage, failure, refriger ant loss, or safety risks.

Product features

1. Compressors:
   A. Unit shall have semi-hermetic twin-screw compressors with internal relief valve and check valve to avoid reverse rotation on shut down.
   B. Each compressor shall be equipped with a discharge shut-off valve (option).
   C. The discharge shall also be equipped with a muffler to reduce discharge gas pulsations.
   D. Capacity control shall be provided by a variable control slide valve capable of reducing compressor capacity down to 15% of full load. Compressor shall start in unloaded condition.
   E. Motor shall be cooled by suction gas and protected by internal winding temperature sensors. Compressor bearings shall be designed for minimum 73000 hours at maximum operating conditions.
   F. Lubrication oil system shall include pre-filter and external filter capable of filtration to 5 microns.

2. Evaporator:
   A. Unit shall be equipped with a single evaporator.
   B. Evaporator shall be manufactured, tested and stamped in accordance with the GB150-1999.
   C. The maximum refrigerant-side working pressure will be 1500kPa (1750kPa for PT150A), and the maximum waterside pressure will be 1000kPa (1600kPa, 2100kPa as an option).
   D. The evaporator shall be mechanically cleanable, shell-and-tube type with removable heads. Tubes shall be internally and externally grooved, seamless-copper, and shall be rolled into tube sheets. Shell shall be insulated with 19mm closed-cell foam with a maximum K factor of 0.28. Evaporator thermal insulation shall be factory fitted.
   E. The evaporator shall have a drain and vent in each head.
   F. The evaporator shall incorporate an active refrigerant level control system to ensure optimum heat transfer performance under all load conditions.
   G. Design shall incorporate either 1 or 2 independent refrigerant circuits.
   H. Chiller shall have only one water inlet & outlet connection with victaulic couplings to avoid vibrations transmission and accept small misalignment (water connection kit on demand).
   I. Evaporator shall be fitted with electronic auto setting water flow switch. Paddle switches or differential pressure switches shall not be acceptable.

3. **Condenser:**
   A. Unit shall be equipped with a single condenser.
   B. Condenser shall be manufactured, tested and stamped in accordance with the GB150-1999.
   C. The maximum refrigerant-side working pressure will be 1500kPa (2350kPa for PT150A), and the maximum waterside pressure will be 1000kPa (1600kPa, 2100kPa as an option).
   D. The condenser shall be mechanically cleanable shell-and-tube type with removable heads.
   E. Tubes shall be internally and externally grooved, seamless-copper, and shall be rolled into tube sheets.
   F. Design shall incorporate either 1 or 2 independent refrigerant circuits and the oil separator.
   G. The condenser shall have a drain and vent in each head.
   H. Chiller shall have only one water inlet & outlet connection with victaulic couplings to avoid vibrations transmission and

accept small misalignment (water connection kit on demand).

4. **Refrigeration circuits:**
   A. Refrigerant circuit components shall include, compressor, oil separator, high and low side pressure relief devices, compressor discharge (option) and liquid line shutoff valves, refrigerant economizer, filter driers, moisture indicating sight glasses, long stroke electronic expansion device, and complete operating charge of both refrigerant HFC-134a and compressor oil.
   B. To facilitate service and maintenance and avoid refrigerant charge transfers, it must be possible to isolate the following components and systems independently: filter driers, oil filters, expansion devices and compressor (with service valves option).

5. **Controls:**
   A. Unit controls shall include as a minimum: microprocessor with non-volatile memory, picture guided unit/operator interface, the LOCAL/OFF/REMOTE/CCN selector and a touch-screen display with with multiple language capability.
   B. Pressure sensors shall be installed to measure suction, discharge, and oil pressure.
   C. Thermistors shall be installed to measure cooler entering and leaving water temperatures (on cooler and condenser side).
   D. Unit shall be capable of performing the following functions:
      - Automatic change-over and cycling of compressors to equalize running hours and number of starts.
      - EXV control, based on throttling optimizes evaporator charging, ensuring condenser superheat and sub-cooling.
      - Capacity control based on leaving chilled fluid temperature with return fluid temperature sensing.
      - Limit the chilled fluid temperature pull-down rate at start-up to an adjustable range of 0.1°C to 1.1°C per minute to prevent excessive demand spikes at start-up.
      - Enable reset of leaving chilled water temperature according to the return water temperature or by means of a 0-10V signal.
      - Provide a dual set point for the leaving chilled water temperature activated by a remote contact closure signal or by the built in time clock.
      - Enable a 2-level demand limit control (between 0 and 100%) or a maximum current drawn limit activated by a remote contact closure or by the built in time clock.
      - Control evaporator water pump and the condenser pump.
      - Allow two time scheduling programs to enable unit start-up control, demand limit and set-point changes.
      - Enable lead lag control of two chillers running in series or parallel.

6. **Diagnostics:**
   A. Display module shall be capable of displaying set points, system status including temperatures, pressures, current for each compressor, run time and percent loading.
   B. The control system shall allow a quick test of all machine elements to verify the correct operation of every switch, circuit breaker, contactor etc. before the chiller is started.

7. **Safeties:**
   A. Unit shall be equipped with all necessary components, and in conjunction with the control system shall provide the unit with protection against the following:
      - Reverse rotation.
      - Low chilled water temperature.
      - Low oil pressure (per compressor).
      - Current imbalance.
      - Compressor thermal overload.
      - Automatic compressor unloading in case of excessive condensing temperature.
      - High pressure.
      - Electrical overload.
      - Loss of phase.
   B. Control shall provide separate general alert (minor incident) and alarm (circuit down) remote indication.

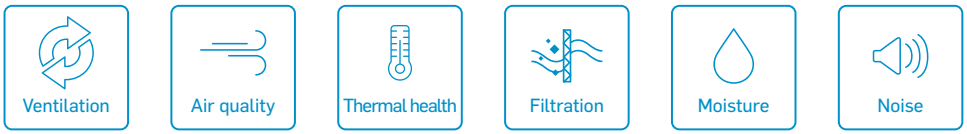
8. **Operating characteristics:**
   A. Unit shall be capable of starting with 13°C entering water temperature to the condenser.
   B. Unit shall be capable of starting with 35°C entering water temperature to the evaoprator.

9. **Electrical characteristics:**
   A. Unit shall operate on 3-phase power supply without neutral.
   B. Control voltage shall be supplied by a factory-installed transformer.
   C. Unit shall be supplied with factory-installed electrical disconnect/isolator switch integrating main fuses.
   D. Unit shall have a factory installed star/delta starter as standard to limit electrical inrush current.

HEALTHY**BUILDINGS**

As the inventors of modern air conditioning and a world leader in HVAC, refrigeration, and fire and security, solutions, Carrier has a legacy of creating safe and comfortable buildings. Our Healthy Buildings Program builds on that legacy through in-depth expertise and a holistic suite of healthy building technologies and services .to address the immediate pandemic concerns and long into the future.

6 of 9 foundations of healthy building are related closely to air conditioning system.



Primary support for the study came from Carrier.
MacNaughton P, Allen J, Satish U, Laurent J, Flanigan S, Vallarino J, Coull B, Spengler. 2016. The Impact of Working in a Green Certified Building on Cognitive Function and Health. Building and Environment DOI: 10.1016/j.buildenv.2016.11.041

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