Carrier

Turn to the experts

Product Data

AquaForce®
Variable Speed Chillers

140 to 500 Nominal Tons
(490 to 1760 Nominal kW)

greenspeed AQUAEDGE

Model #: 30XVA2506H4016023
Serial #: 0818Q95956

Year: 2018
Size: 250 Tons

30XV140-500
Variable Speed Air-Cooled Liquid Chillers
with Greenspeed® Intelligence

Shipping Weight: 17,217
Operating Weight: 17,614

L: 32’ 10” W: 7’ 4” H: 8’ 3”

Model number nomenclature

30XV A 250 6 H 4 0 16 0 2 3

30XV - 140 6 H - 0 - - - C 3

30XV – AquaForce® Air-Cooled Chiller

Design Series

Nominal Capacity

140	250	400	50A/B*
160	275	40A/B*	
180	300	450	
200	325	45A/B*	
225	350	500	

Voltage

1 – 575-3-60
2 – 380-3-60
5 – 208/230-3-60
6 – 460-3-60
9 – 400-3-50
G – 400-3-60
H – 380-3-50
J – 415-3-50
K – 440-3-50

Product Tier Configuration

S – Standard Tier
M – Mid Tier
H – High Tier

Condenser Options

- – Aluminum Fin/Copper Tube
0 – Copper Fin/Copper Tube
1 – Aluminum Pre-Coat Fin/Copper Tube
2 – Aluminum E-Coat Fin/Copper Tube
3 – Copper E-Coat Fin/Copper Tube
4 – Microchannel
5 – E-Coat Microchannel

Evaporator Options

- – Flooded Evaporator, 2 pass, without Heater
0 – Flooded Evaporator, 2 pass, with Heater
1 – Flooded Evaporator with Heater, one pass
2 – Flooded Evaporator with Heater for Brine Application, 2 pass
3 – Flooded Evaporator, 1 pass with Heater for Process Brine Application
B – Flooded Evaporator, 3 pass, with Heater
C – Flooded Evaporator, with Heater for Brine Application, 3 pass
R – Remote Evaporator, 2 pass (requires processing via ETO)

Variable Speed Condenser Fans and Sound Options

- – Fixed Speed Condenser Fans (Std Tier) / Variable Speed Fans (Mid and High-Tier), Std Sound
0 – Variable Speed Condenser Fans (Std Tier only), Std Sound
1 – Fixed Speed Condenser Fans (Std Tier) / Variable Speed Fans (Mid and High-Tier), Low Sound Kit
2 – Variable Speed Condenser Fans (Std Tier only), Low Sound Kit
3 – Fixed Speed Condenser Fans (Std Tier) / Variable Speed Fans (Mid and High-Tier), Std Sound, Sound Optimization
4 – Variable Speed Condenser Fans (Std Tier only), Std Sound, Sound Optimization
5 – Fixed Speed Condenser Fans (Std Tier) / Variable Speed Fans (Mid and High-Tier), Low Sound Kit, Sound Optimization
6 – Variable Speed Condenser Fans (Std Tier only), Low Sound Kit, Sound Optimization
7 – Variable Speed High Static Fans, Std Sound
8 – Variable Speed High Static Fans, Low Sound Kit

Valve & Insulation Options

- – No Suction Service Valve, Actuated Discharge Valves, No Suction Line Insulation
0 – Suction Service Valve, Actuated Discharge Valves, No Suction Line Insulation
1 – No Suction Service Valve, Manual Discharge Valves (Middle East only), No Suction Line Insulation
2 – Suction Service Valve, Manual Discharge Valves (Middle East only), No Suction Line Insulation
5 – No Suction Service Valve, Actuated Discharge Valves, Suction Line Insulation
6 – Suction Service Valve, Actuated Discharge Valves, Suction Line Insulation
7 – No Suction Service Valve, Manual Discharge Valves (Middle East only), Suction Line Insulation
8 – Suction Service Valve, Manual Discharge Valves (Middle East only), Suction Line Insulation

Electrical Options

- – Single Point Power, No Control Transformer, Std
0 – Single Point Power with Disconnect, No Control Transformer, Std SCCR
1 – Dual Point Power, No Control Transformer, Std SCCR
2 – Dual Point Power with Disconnect, No Control Transformer, Std SCCR
3 – Single Point Power, Control Transformer, Std SCCR
4 – Single Point Power with Disconnect, Control Transformer, Std SCCR
5 – Dual Point Power, Control Transformer, Std SCCR
6 – Dual Point Power with Disconnect, Control Transformer, Std SCCR
7 – Single Point Power, No Control Transformer, High SCCR
8 – Single Point Power with Disconnect, No Control Transformer, High SCCR
9 – Dual Point Power, No Control Transformer, High SCCR
B – Dual Point Power with Disconnect, No Control Transformer, High SCCR
C – Single Point Power, Control Transformer, High SCCR
D – Single Point Power with Disconnect, Control Transformer, High SCCR
F – Dual Point Power, Control Transformer, High SCCR
G – Dual Point Power with Disconnect, Control Transformer, High SCCR

Controls Options

C – 7-in. Touch Pilot™, Remote Connectivity
D – 7-in. Touch Pilot, EMM, GFI, Remote Connectivity
F – 7-in. Touch Pilot, BACnet† (MS/TP) Translator, Remote Connectivity
G – 7-in. Touch Pilot, EMM, GFI, BACnet (MS/TP) Translator, Remote Connectivity
H – 7-in. Touch Pilot, LON Translator, Remote Connectivity
J – 7-in. Touch Pilot, EMM, GFI, LON Translator, Remote Connectivity

Packaging Options

L – Coil Face Shipping Protection (CFSP)
0 – CFSP, Coil Trim Panels
1 – CFSP, Coil Trim Panels, Security Grilles
2 – CFSP, Coil Trim Panels, Security Grilles, Hail Guards (End)
3 – Full Hail Guard
9 – CFSP, Coil Trim Panels, Skid + Bag
B – CFSP, Coil Trim Panels, Security Grilles, Skid + Bag
C – CFSP, Coil Trim Panels, Security Grilles, Hail Guards (End), Skid + Bag
D – Full Hail Guard, Skid, Bag

LEGEND

CFSP — Coil Face Shipping Protection
EMM — Energy Management Module
GFI — Ground Fault Interrupter
LON — Local Operating Network
SCCR — Short Circuit Current Rating

*40A, 45A, and 50A are split units that are shipped in two pieces (40A and 40B, 45A and 45B, 50A and 50B). When they arrive at the job-site, they are combined to form the equivalent of 400, 450, or 500 size units.

†BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).

Quality Assurance

ISO 9001:2015-certified processes

30XV 200T-250T, FLOODED EVAPORATOR — ENGLISH

UNIT 30XV WITH FLOODED EVAPORATOR	200			225			250		
TIER (MODEL NO. POS. 10)	S	M	H	S	M	H	S	M	H
OPERATING WEIGHT (lb) (Note 3)									
Al-Cu Condenser Coil	13,012	14,260	15,200	13,910	14,965	16,013	16,191	17,514	18,712
Cu-Cu Condenser Coil	14,433	15,947	17,167	15,316	16,681	18,179	17,878	19,482	20,961
MCHX Condenser Coil	12,317	13,413	14,202	13,185	14,108	14,975	15,415	16,566	17,614
SHIPPING WEIGHT (lb) (Note 4)									
Al-Cu Condenser Coil	12,785	14,004	14,943	13,627	14,667	15,715	15,893	17,117	18,316
Cu-Cu Condenser Coil	14,207	15,690	16,911	15,033	16,383	17,881	17,580	19,085	20,565
MCHX Condenser Coil	12,090	13,157	13,946	12,902	13,810	14,677	15,117	16,170	17,217
REFRIGERANT TYPE (Standard Evaporator)	R-134a EXV Controlled System								
Refrigerant Charge (lb) Ckt A/ Ckt B (RTPF)	195/205	213/223	231/241	253/187	276/210	294/228	238/248	266/276	284/294
Refrigerant Charge (lb) Ckt A/ Ckt B (MCHX)	130/140	135/145	140/150	175/135	185/145	190/150	160/170	175/185	180/190
REFRIGERANT TYPE (Brine Evaporator)	R-134a EXV Controlled System								
Refrigerant Charge (lb) Ckt A/ Ckt B (RTPF)	215/225	233/243	251/261	273/207	296/230	314/248	258/268	276/286	294/304
Refrigerant Charge (lb) Ckt A/ Ckt B (MCHX)	150/160	155/165	160/170	195/155	205/165	210/170	180/190	185/195	190/200
REFRIGERANT TYPE (Process Brine Evaporator)									
Refrigerant Charge (lb) Ckt A/ Ckt B (RTPF)	—	315/325	—	—	—	—	—	355/365	—
Refrigerant Charge (lb) Ckt A/ Ckt B (MCHX)	—	225/235	—	—	—	—	—	250/260	—
COMPRESSOR	Semi-Hermetic Twin Rotary Screw								
Quantity	2	2	2	2	2	2	2	2	2
Full Load Capacity Split Ckt A / Ckt B (Note 5)	50/50	50/50	50/50	60/40	60/40	60/40	50/50	50/50	50/50
Minimum Capacity (%) (Note 6)	<15	<15	<15	<15	<15	<15	<15	<15	<15
EVAPORATOR									
Net Fluid Volume (gal.)	27	31	31	34	36	36	36	48	48
Maximum Refrigerant Pressure (psig)	220	220	220	220	220	220	220	220	220
Maximum Water-Side Pressure (psig)	300	300	300	300	300	300	300	300	300
WATER CONNECTIONS (Note 7)									
Drain (NPT, in.)	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Standard (2-Pass), Inlet and Outlet, Victaulic (in.)	5	6	6	6	6	6	6	8	8
1 Pass, Inlet and Outlet, Victaulic (in.)	5	8	8	8	8	8	8	8	8
3 Pass, Inlet and Outlet, Victaulic (in.)	5	5	5	6	6	6	6	8	8
CONDENSER FANS (Note 8)	Shrouded Axial Type, Vertical Discharge								
Maximum Fan Speed (rpm)	1140	1140	1140	1140	1140	1140	1140	1140	1140
No. Fans (Ckt A/ Ckt B)	5/5	6/6	7/7	6/4	7/5	8/6	6/6	7/7	8/8
CONDENSER COILS									
No. Coils (Ckt A/ Ckt B)	5/5	6/6	7/7	6/4	7/5	8/6	6/6	7/7	8/8

LEGEND

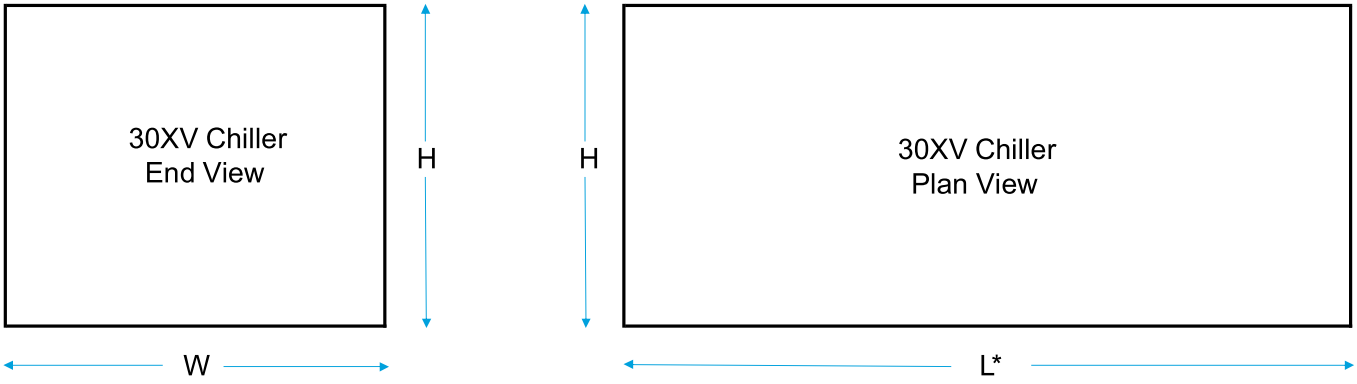
Cu — Copper
Al — Aluminum
EXV — Electronic Expansion Valve
MCHX — Microchannel Heat Exchanger
RTPF — Round Tube/Plate Fin

NOTES:

1. Overall length, width, and height of the 30XV chiller may be obtained on the first page of the Dimensions section of this publication (see page 39).
2. More precise dimensions are available in the Chiller Submittal Drawing Manager.
3. Unit operating weight includes the base unit plus coil trim panels, but no other options or accessories are included. Selected options and accessories will slightly alter the unit weight. See pages 16-25 for the mounting weight detail. The weight shown is consistent with units employing the standard (2-pass) evaporator.
4. Unit shipping weight includes the base unit plus coil trim panels, but no other options or accessories are included. The shipping weight is equal to the operating weight (indicated above) minus the weight of the water in the evaporator. The weight shown is consistent with units employing the standard (2-pass) evaporator.
5. The capacity split is indicative of both compressors operating at a full load condition. The actual capacity split at most operating conditions will not match these values.
6. The minimum capacity is less than 15% for units sized at full capacity. Please use the chiller selection program to determine actual minimum capacity values.
7. Water connection sizes reflect the standard design, not evaporator for brine application or evaporator for process brine application. For those sizes, see the certified prints.
8. Standard-tier models without the variable speed condenser fan option have a maximum speed of 840 rpm.

Dimensions

CHILLER LAYOUT DIMENSIONS — ENGLISH



30XV CHILLER SIZE	140			160			180			200		
TIER (MODEL NO. POS. 10)	S	M	H	S	M	H	S	M	H	S	M	H
L (Length) (in.)*	206	206	253	206	253	300	206	253	300	253	300	347
W (width) (in.)*	88	88	88	88	88	88	88	88	88	88	88	88
H (Height) (in.)*	99	99	99	99	99	99	99	99	99	99	99	99

30XV CHILLER SIZE	225			250			275			300		
TIER (MODEL NO. POS. 10)	S	M	H	S	M	H	S	M	H	S	M	H
L (Length) (in.)*	253	300	347	300	347	394	300	347	394	347	394	441
W (width) (in.)*	88	88	88	88	88	88	88	88	88	88	88	88
H (Height) (in.)*	99	99	99	99	99	99	99	99	99	99	99	99

30XV CHILLER SIZE	325			350			400			450		
TIER (MODEL NO. POS. 10)	S	M	H	S	M	H	S	M	H	S	M	H
L (Length) (in.)*	394	441	488	406	453	500	453	500	547	500	547	594
W (width) (in.)*	88	88	88	88	88	88	88	88	88	88	88	88
H (Height) (in.)*	99	99	99	99	99	99	99	99	99	99	99	99

30XV CHILLER SIZE	500	
TIER (MODEL NO. POS. 10)	S	M
L (Length) (in.)*	547	594
W (width) (in.)*	88	88
H (Height) (in.)*	99	99

* The chiller length shown in the chart below does not include a free cooling section. When free cooling is employed, the additional length can be evaluated with the information presented in the Physical Data portion of this publication.

NOTES:

1. The dimensions presented here are intended to determine the suitability of a given chiller for a given space. Detailed dimensions, including chilled-water piping locations/details, contact surface locations, electrical connection locations as well as other relevant data are presented in the Chiller Submittal Drawing Manager, or may be obtained by contacting your Carrier sales representative.
2. When determining the suitability of a given chiller for a space, do not forget to consider the availability of adequate airflow to that location. Airflow guidelines and clearances are presented in the Application Section of this publication.
3. 2-Piece Shipment Modules (40A/B, 45A/B and 50A/B) are not shown in the chart because they combine to become the lengths shown in the chart for 30XV400, 30XV450 and 30XV500 respectively. This relationship is described in the Physical Data section of this publication.

Electrical data (cont)

SINGLE POINT POWER, HIGH TIER, VARIABLE SPEED FANS (SEE NOTE 1)

UNIT 30XV	UNIT VOLTAGE				NUMBER OF COND FANS	STANDARD CONDENSER FANS			HIGH STATIC CONDENSER FANS			CONTROL CIRCUIT	
	V(3 Ph)	Hz	Supplied Min	Supplied Max		MCA	MOCP	REC FUSE SIZE	MCA	MOCP	REC FUSE SIZE	Voltage 1 PH, 60 Hz	MCA and MOCP
140	208/230	60	187	253	10	584.1	700	700	584.1	700	700	115	60
	380	60	342	418	10	319.5	400	350	319.5	400	350	115	60
	400	60	360	440	10	305.3	400	350	305.3	400	350	115	60
	460	60	414	506	10	252.9	300	300	263.9	350	300	115	60
	575	60	518	633	10	211.9	250	250	211.9	250	250	115	60
	380	50	342	418	10	327.6	400	400	327.3	400	400	115	60
	400	50	360	440	10	313.3	400	350	313.0	400	350	115	60
	415	50	374	457	10	302.0	400	350	300.8	400	350	115	60
	440	50	396	484	10	285.0	350	350	283.2	350	350	115	60
160	208/230	60	187	253	12	675.4	800	800	675.4	800	800	115	60
	380	60	342	418	12	370.8	450	450	370.8	450	450	115	60
	400	60	360	440	12	351.4	450	400	351.4	450	400	115	60
	460	60	414	506	12	291.9	350	350	305.1	400	350	115	60
	575	60	518	633	12	245.3	300	300	245.3	300	300	115	60
	380	50	342	418	12	379.1	500	450	378.7	500	450	115	60
	400	50	360	440	12	361.9	450	400	361.6	450	400	115	60
	415	50	374	457	12	350.2	450	400	349.0	450	400	115	60
	440	50	396	484	12	330.3	400	400	328.5	400	400	115	60
180	208/230	60	187	253	12	882.4	1200	1000	882.4	1200	1000	115	60
	380	60	342	418	12	483.3	600	600	483.3	600	600	115	60
	400	60	360	440	12	396.4	500	450	396.4	500	450	115	60
	460	60	414	506	12	330.1	450	400	343.3	450	400	115	60
	575	60	518	633	12	274.5	350	300	274.5	350	300	115	60
	380	50	342	418	12	493.8	600	600	493.5	600	600	115	60
	400	50	360	440	12	469.9	600	600	469.6	600	600	115	60
	415	50	374	457	12	453.7	600	500	453.7	600	500	115	60
	440	50	396	484	12	429.3	500	500	429.9	500	500	115	60
200	208/230	60	187	253	14	836.2	1000	1000	836.2	1000	1000	115	60
	380	60	342	418	14	458.1	600	500	458.1	600	500	115	60
	400	60	360	440	14	435.9	500	500	435.9	500	500	115	60
	460	60	414	506	14	362.2	450	400	377.6	500	450	115	60
	575	60	518	633	14	302.6	400	350	302.6	400	350	115	60
	380	50	342	418	14	468.9	600	600	468.5	600	600	115	60
	400	50	360	440	14	446.6	600	500	446.3	600	500	115	60
	415	50	374	457	14	432.2	500	500	432.2	500	500	115	60
	440	50	396	484	14	407.1	500	450	407.8	500	450	115	60
225	380	60	342	418	14	510.6	700	600	510.6	700	600	115	60
	400	60	360	440	14	486.9	600	600	486.9	600	600	115	60
	460	60	414	506	14	406.5	500	500	421.9	600	500	115	60
	575	60	518	633	14	338.4	450	400	338.4	450	400	115	60
	380	50	342	418	14	521.7	700	600	521.2	700	600	115	60
	400	50	360	440	14	496.6	700	600	496.3	700	600	115	60
	415	50	374	457	14	480.7	600	600	480.7	600	600	115	60
	440	50	396	484	14	452.8	600	600	453.5	600	600	115	60
250	380	60	342	418	16	579.1	700	700	579.1	700	700	115	60
	400	60	360	440	16	551.8	700	700	551.8	700	700	115	60
	460	60	414	506	16	460.6	600	600	478.2	600	600	115	60
	575	60	518	633	16	383.2	500	450	383.2	500	450	115	60
	380	50	342	418	16	592.4	800	700	591.9	800	700	115	60
	400	50	360	440	16	565.0	700	700	564.6	700	700	115	60
	415	50	374	457	16	545.6	700	600	545.7	700	600	115	60
	440	50	396	484	16	515.3	600	600	516.1	700	600	115	60

LEGEND

MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
VFD — Variable Frequency Drive

NOTES:

1. MCA and MOCP values shown are inclusive of control power transformer loads. Chillers are occasionally selected without a control power transformer. In such cases, be sure to use the Carrier chiller selection software to obtain the proper values of electrical data (those that will appear on the chiller nameplate). In some cases, the MOCP value may be lower when a control power transformer is not incorporated into the unit selection.
2. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
3. Evaporator heater (where applicable) is wired into the control circuit so it is always operable as long as the control power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required. For MCA between 381-760 amps, 6 conductors are required. For MCA between 761-1140 amps, 9 conductors are required. For MCA between 1141-1520 amps, 12 conductors are required. Calculation of conductors required is based on 75°C copper wire.
5. Based on the operational characteristics of a VFD, the "inrush" current normally associated with a chiller is limited and will be lower than the MCA rating of the chiller.
6. Wiring for main field supply must be rated 75°C minimum. Use copper for all units. Refer to Power Entry Options table.
7. On 60 Hz units, some electrical values will be lower when a chiller is selected without a control power transformer. Refer to the chiller selection program.

OPERATING LIMITS TABLES — STANDARD (2-PASS) EVAPORATOR

OPERATING TEMPERATURE LIMITS APPLICABLE TO ALL SIZES

OPERATING TEMPERATURE	MIN/MAX (°F)	MIN/MAX (°C)
Entering Water Temperature	45/70	7.2/21.1
Leaving Water Temperature	40/60	4.4/15.6
Entering Glycol Temperature	35/70	1.7/21.1
Leaving Glycol Temperature	30/70	–1.1/21.1
Ambient Temperature (without wind baffle)	32/125.6†	0/52.0†
Ambient Temperature (with wind baffle*)	–20/125.6†	–28.9/52.0†

*To run the unit with ambient temperatures as low as –20°F (–29°C), standard tier units also require the use of variable speed condenser fans.

†To run the unit with ambient temperatures as high as 125.6°F (52°C) standard tier units also require the use of variable speed condenser fans.

NOTE: Standard tier units, without the addition of variable speed condenser fans, have a maximum ambient temperature of 105°F (40.6°C).

MIN/MAX WATER FLOW — STANDARD (2-PASS) EVAPORATOR*

30XV	TIER	MINIMUM FLOW RATE		MAXIMUM FLOW RATE	
		(gpm)	(L/s)	(gpm)	(L/s)
140	S	155	9.8	682	43.0
	M/H	170	10.7	682	43.0
160	S	170	10.7	773	48.8
	M/H	195	12.3	773	48.8
180	S	195	12.3	816	51.5
	M/H	210	13.3	816	51.5
200	S	210	13.3	946	59.7
	M/H	229	14.4	946	29.8
225	S	257	16.2	1066	67.3
	M/H	272	17.2	1066	67.3
250	S	272	17.2	1234	77.9
	M/H	300	18.9	1234	77.9
275	S	300	18.9	1310	82.7
	M/H	319	20.1	1310	82.7
300	S	319	20.1	1397	88.2
	M/H	340	21.5	1397	88.2
325	S	340	21.5	1517	95.7
	M/H	365	23.0	1517	95.7
350	S	402	25.4	1661	104.8
	M/H	436	27.5	1661	104.8
400	S	436	27.5	1899	119.8
	M/H	455	28.7	1899	119.8
450	S	455	28.7	2136	134.8
	M/H	541	34.1	2136	134.8
500	S	541	34.1	2373	149.7
	M	541	34.1	2373	149.7

*Data do not reflect evaporator for brine application or evaporator for process brine application. For these values, please contact application engineering.