Tranquility® 16 Compact (TC) Series Submittal Data

Models TCH/V 006 - 060 50Hz - HFC-410A

English Language/S-I Units

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LC406 LC406 Revised: January 24, 2023

CLIMATEMASTER®

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SUBMITTAL DATA - S-I UNITS

Unit Designation: _____

Job Name: _____

Architect: _____

Engineer: _____

Contractor: _____

PERFORMANCE DATA

Cooling Capacity: _____ kW

EER: _____

Heating Capacity: _____ kW

COP: _____

Ambient Air Temp: _____ °C

Entering Water Temp (Clg): _____ °C

Entering Air Temp (Clg): _____ °C

Entering Water Temp (Htg): _____ °C

Entering Air Temp (Htg): _____ °C

Airflow: _____ l/s

Fan Speed or Motor/RPM/Turns: _____

Operating Weight: _____ (kg)

ELECTRICAL DATA

Power Supply: _____ Volts _____ Phase _____ Hz

Minimum Circuit Ampacity: _____

Maximum Overcurrent Protection: _____

Table of Contents

* Document page number is shown next to part number (e.g. LC406 - 3 = page 3). Since not all pages are typically used in the submittals process, the page number in the lower right corner can still be used (page _____of_____).

TC Series Nomenclature

1 2	3	4 5 6	7	8	9	10	11	12	13	14	15
TC	H	036	A	U	F	3	0	A	L	B	S

MODEL TYPE
TC= TRANQUILITY COMPACT (R410A)

CONFIGURATION
H = HORIZONTAL
V = VERTICAL

UNIT SIZE
006 - V
009 - V
012 -V
015 - V
018 - V
024 - V
030 - V, U
036 - V, U
042 - U
048 - U
060 - U

REVISION LEVEL
A = CURRENT REVISION FOR ALL SIZES

VOLTAGE
V = 220 - 240/50/1
U = 380 - 420/50/3

CONTROLS
CE APPROVED
F = CXM2
G = DXM2.5
T = CXM2 w/MPC
U = DXM2.5 w/MPC

CABINET INSULATION

OPTION	RANGE	ULTRA QUIET	1" FILTER RAIL	2" FILTER RAIL	1" FILTER FRAME	2" FILTER FRAME
1	EXTENDED RANGE	NO	YES	NO		
A			NO			YES
J			NO	YES	NO	
K			NO		YES	NO
2		YES	YES	NO		
C			NO			YES
L			NO	YES	NO	
M			NO		YES	NO
3	STANDARD RANGE	NO	YES	NO		
E			NO			YES
N			NO	YES	NO	
P			NO		YES	NO
4		YES	YES	NO		
G			NO			YES
R			NO	YES	NO	
S			NO		YES	NO

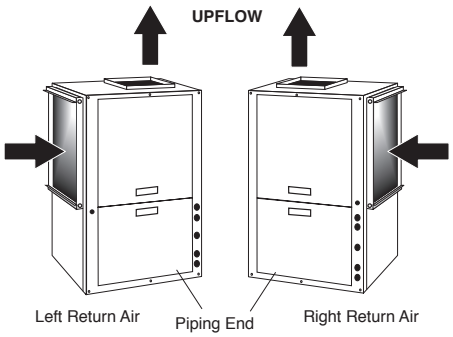
SUPPLY AIR OPTIONS

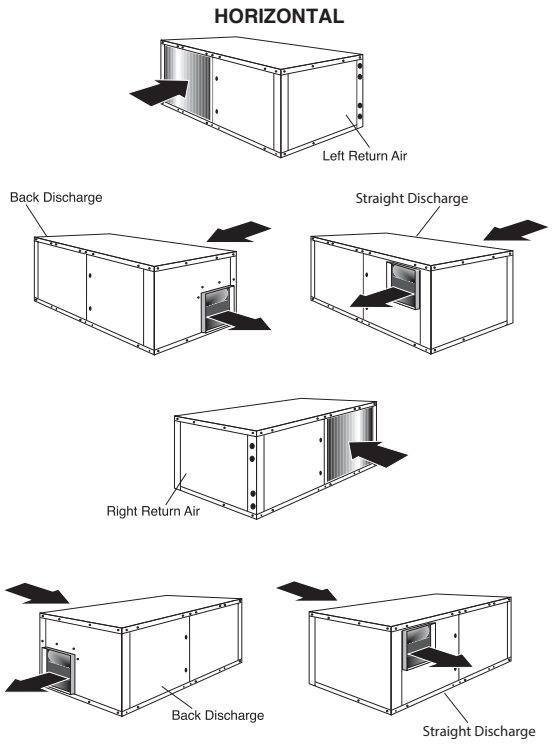
Option	Supply	Configuration	Motor	CE
T	TOP	TCV	PSC	YES
B	BACK	TCH	PSC	YES
S	STRAIGHT	TCH	PSC	YES
V	TOP	TCV	HI-STATIC	YES
Y	BACK	TCH	HI-STATIC	YES
Z	STRAIGHT	TCH	HI-STATIC	YES
1	TOP	TCV	ECM - CT	YES
2	BACK	TCH	ECM - CT	YES
3	STRAIGHT	TCH	ECM - CT	YES

RETURN AIR OPTIONS
P = LEFT RETURN
C = RIGHT RETURN
S = LEFT RETURN S.S. DRAIN PAN
T = RIGHT RETURN S.S. DRAIN PAN
Z = FRONT RETURN S.S. DRAIN PAN , VERTICAL 009-030

HEAT EXCHANGER OPTIONS
A = Copper Water Coil w/E-Coated Air Coil
C = Copper Water Coil w/Non-Coated Air Coil
J = Cupro-Nickel Water Coil w/E-Coated Air Coil
N = Cupro-Nickel Water Coil w/Non-Coated Air Coil

FUTURE USE
0 = NONE





Performance Rating Tables

Tranquility TC Ratings with ECM Motor
ASHRAE/AHRI/ISO 13256-1. Metric (S-I) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 20°C		Cooling 15°C		Heating 10°C		Cooling 25°C		Heating 0°C	
	Capacity kW	EER W/W	Capacity kW	COP W/W	Capacity kW	EER W/W	Capacity kW	COP W/W	Capacity kW	EER W/W	Capacity kW	COP W/W
TC-006	1.38	3.9	1.80	4.4	1.68	6.5	1.47	3.8	1.48	4.6	1.10	3.1
TC-009	2.16	4.2	2.90	4.4	2.55	6.8	2.41	4.0	2.27	4.8	1.88	3.4
TC-012	2.58	3.6	3.47	4.1	3.23	6.0	2.89	3.7	2.82	4.3	2.33	3.2
TC-015	3.56	4.6	4.26	5.3	4.16	7.5	3.50	4.5	3.74	5.3	2.71	3.7
TC-018	4.43	4.5	5.10	5.2	5.22	7.6	4.22	4.6	4.76	5.4	3.36	3.9
TC-024	5.80	4.2	6.74	4.8	6.64	6.8	5.56	4.2	6.07	4.9	4.35	3.5
TC-030	7.32	4.6	8.96	4.8	8.36	7.5	7.33	4.3	7.56	5.2	5.73	3.6
TC-036	8.44	4.1	10.34	4.5	9.42	6.4	8.52	4.0	8.77	4.8	6.81	3.4
TC-042	10.20	4.4	12.98	4.8	11.51	6.9	10.73	4.3	10.63	5.0	8.31	3.7
TC-048	11.89	4.5	13.60	5.0	13.36	7.1	11.58	4.5	12.44	5.1	9.17	3.8
TC-060	15.31	4.7	18.34	4.9	17.15	7.1	15.30	4.4	15.54	5.2	12.11	3.6

Tranquility TC Ratings with PSC Motor
ASHRAE/AHRI/ISO 13256-1. Metric (S-I) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 20°C		Cooling 15°C		Heating 10°C		Cooling 25°C		Heating 0°C	
	Capacity kW	EER W/W	Capacity kW	COP W/W	Capacity kW	EER W/W	Capacity kW	COP W/W	Capacity kW	EER W/W	Capacity kW	COP W/W
TC-006	1.38	3.6	1.80	4.1	1.68	5.9	1.47	3.6	1.48	4.3	1.10	2.9
TC-009	2.16	4.1	2.90	4.3	2.55	6.5	2.41	3.8	2.27	4.6	1.88	3.3
TC-012	2.58	3.5	3.47	4.0	3.23	5.7	2.89	3.5	2.82	4.1	2.33	3.1
TC-015	3.56	4.4	4.26	5.0	4.16	7.0	3.50	4.3	3.74	5.1	2.71	3.5
TC-018	4.43	4.3	5.10	5.0	5.22	7.1	4.22	4.3	4.76	5.2	3.36	3.6
TC-024	5.80	4.0	6.74	4.5	6.64	6.4	5.56	4.0	6.07	4.7	4.35	3.3
TC-030	7.32	4.3	8.96	4.5	8.36	6.8	7.33	4.0	7.56	4.8	5.73	3.3
TC-036	8.44	3.9	10.34	4.3	9.42	6.1	8.52	3.8	8.77	4.6	6.81	3.3
TC-042	10.20	4.1	12.98	4.5	11.51	6.3	10.73	4.0	10.63	4.7	8.31	3.4
TC-048	11.89	4.3	13.60	4.8	13.36	6.7	11.58	4.3	12.44	4.9	9.17	3.6
TC-060	15.31	4.3	18.34	4.6	17.15	6.3	15.30	4.0	15.54	4.8	12.11	3.4

Cooling capacities based upon 27°C DB, 19°C WB entering air temperature.
Heating capacities based upon 20°C DB, 15°C WB entering air temperature.
Ground loop heat pump ratings based on 20% methanol antifreeze solution.
All ratings based upon operation at lower voltage of dual voltage rated models.

Performance Rating Tables

Tranquility TC Ratings ECM

EN 14511-2
Metric (S-1) Units

Cooling Ratings

Model	Water Loop		Control Cabinet		Close Control Rating	
	27/19-30/35		35/24-15/20		24/17-30/35	
	Capacity kW	EER W/W	Capacity kW	EER W/W	Capacity kW	EER W/W
TC-006	1.39	4.0	2.06	8.6	1.29	3.6
TC-009	2.18	4.2	3.02	8.6	1.98	3.8
TC-012	2.60	3.6	3.79	7.1	2.37	3.3
TC-015	3.55	4.5	4.90	9.4	3.32	4.2
TC-018	4.53	4.8	6.21	9.9	4.23	4.5
TC-024	5.80	4.2	7.79	7.9	5.46	4.0
TC-030	7.36	4.7	9.91	8.9	6.89	4.4
TC-036	8.33	4.0	10.92	6.9	7.80	3.8
TC-042	10.23	4.1	13.14	7.1	9.57	3.9
TC-048	11.90	4.2	15.26	7.2	11.27	3.9
TC-060	15.23	4.2	19.73	6.8	14.40	4.0

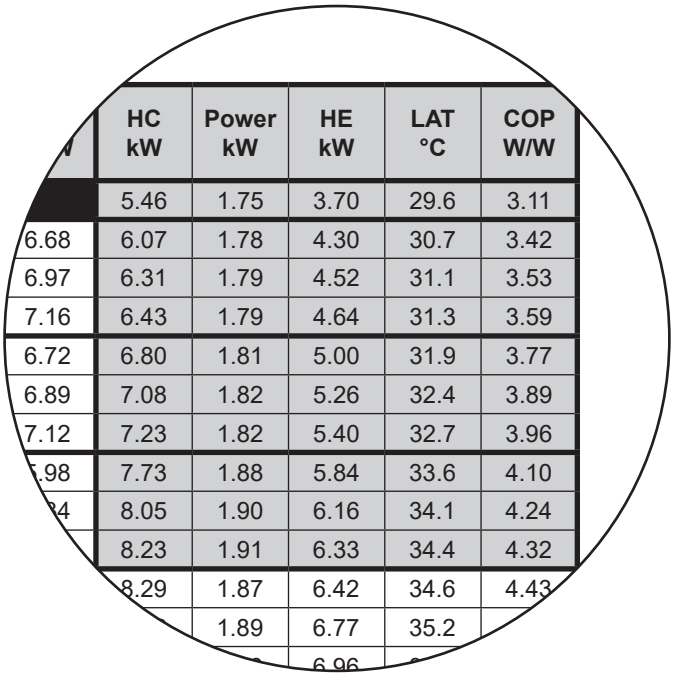
Heating Ratings

Model	Water Loop		Water Rating		Brine Rating	
	20-20		20-15/12		20-0/-3	
	Capacity BTUH	EER BTUH/W	Capacity BTUH	EER BTUH/W	Capacity BTUH	EER BTUH/W
TC-006	1.82	4.5	1.65	4.2	1.11	3.1
TC-009	2.92	4.5	2.67	4.2	1.89	3.4
TC-012	3.44	4.1	3.14	3.9	2.31	3.2
TC-015	4.14	5.0	3.79	4.7	2.63	3.5
TC-018	5.22	5.5	4.77	5.1	3.39	3.9
TC-024	6.84	4.9	6.26	4.6	4.38	3.6
TC-030	9.04	4.9	8.21	4.7	5.71	3.6
TC-036	10.39	4.7	9.45	4.2	6.79	3.4
TC-042	13.06	4.6	11.96	4.3	8.36	3.4
TC-048	13.59	4.7	12.61	4.5	N/A	N/A
TC-060	18.46	4.8	16.96	4.3	12.28	3.3

Heating capacities based upon 20 C DB, 15 C WB entering air temperature.
Heating Water Loop, Comfort Rating water flow derived from corresponding cooling rating.
All other rating water flows-based on delta-T of corresponding rating point.
All ratings based upon operation at lower voltage of dual voltage rated models.

Performance Data – Selection Notes

For operation in the shaded area when water is used in lieu of an antifreeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 5°C when the JW3 jumper is not clipped (see example below). This is due to the potential of the refrigerant temperature being as low as 0°C with 5°C LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for standard range equipment or systems without antifreeze.



	HC kW	Power kW	HE kW	LAT °C	COP W/W
	5.46	1.75	3.70	29.6	3.11
6.68	6.07	1.78	4.30	30.7	3.42
6.97	6.31	1.79	4.52	31.1	3.53
7.16	6.43	1.79	4.64	31.3	3.59
6.72	6.80	1.81	5.00	31.9	3.77
6.89	7.08	1.82	5.26	32.4	3.89
7.12	7.23	1.82	5.40	32.7	3.96
.98	7.73	1.88	5.84	33.6	4.10
24	8.05	1.90	6.16	34.1	4.24
	8.23	1.91	6.33	34.4	4.32
	8.29	1.87	6.42	34.6	4.43
		1.89	6.77	35.2	
			6.96		

Example:

At 10°C EWT (Entering Water Temperature) and 0.28 l/s (minimum flow rate), a TS036 unit has a HE of 5.84 kW. To calculate LWT, rearrange the formula for HE as follows:

HE = TD x Flow x 4.18
where HE = Heat of Extraction (kW); TD = temperature difference (EWT - LWT); and
Flow = Water Flow Rate in l/s

TD = HE / (l/s x 4.18)
TD = 5.84 / (0.28 x 4.18)
TD = 5°C
LWT = EWT - TD
LWT = 10 - 5 = 5°C

In this example, as long as the EWT does not fall below 10°C, the system will operate as designed at 0.28 l/s. For EWTs below 10°C, higher flow rates will be required (open loop systems with EWT below 10°C, for example, require the middle flow rate).

Performance Data – TC H/V 006 Cooling

79 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.04	3.4	OPERATION NOT RECOMMENDED									
	0.06	7.2										
	0.08	11.3										
0	0.04	3.2	1.82	1.22	0.67	0.24	0.26	2.06	26.1	9.5	23.5	9.1
	0.06	6.6	1.87	1.25	0.67	0.21	0.24	2.08	29.7	10.1	26.4	9.7
	0.08	10.5	1.89	1.26	0.67	0.20	0.23	2.09	31.7	10.4	28.0	10.0
5	0.04	2.6	1.75	1.17	0.67	0.27	0.29	2.01	22.4	8.8	20.4	8.4
	0.06	5.5	1.81	1.21	0.67	0.24	0.27	2.05	25.4	9.4	22.9	9.0
	0.08	8.6	1.84	1.23	0.67	0.23	0.26	2.07	27.1	9.7	24.3	9.3
10	0.04	2.5	1.66	1.13	0.68	0.29	0.32	1.95	19.3	8.0	17.6	7.7
	0.06	5.3	1.73	1.16	0.67	0.27	0.30	2.00	21.8	8.6	19.8	8.3
	0.08	8.4	1.76	1.18	0.67	0.26	0.29	2.02	23.2	8.9	21.0	8.6
15	0.04	2.5	1.56	1.08	0.69	0.32	0.35	1.89	16.5	7.2	15.2	7.0
	0.06	5.2	1.64	1.12	0.68	0.30	0.33	1.94	18.6	7.8	17.1	7.5
	0.08	8.2	1.68	1.14	0.68	0.29	0.32	1.97	19.8	8.1	18.1	7.8
20	0.04	2.4	1.45	1.03	0.71	0.35	0.38	1.81	14.0	6.5	13.0	6.2
	0.06	5.1	1.54	1.07	0.70	0.33	0.36	1.87	15.8	7.0	14.6	6.8
	0.08	8.1	1.57	1.09	0.69	0.32	0.35	1.89	16.8	7.3	15.5	7.1
25	0.04	2.4	1.34	0.98	0.73	0.39	0.41	1.73	11.8	5.7	11.0	5.5
	0.06	4.9	1.42	1.02	0.71	0.36	0.39	1.79	13.3	6.3	12.4	6.0
	0.08	7.9	1.46	1.03	0.71	0.35	0.38	1.82	14.2	6.5	13.2	6.3
30	0.04	2.3	1.22	0.92	0.75	0.42	0.45	1.64	9.9	5.0	9.3	4.8
	0.06	4.8	1.30	0.96	0.74	0.40	0.42	1.70	11.2	5.5	10.4	5.3
	0.08	7.7	1.34	0.98	0.73	0.39	0.41	1.73	11.9	5.7	11.1	5.6
35	0.04	2.3	1.10	0.86	0.78	0.46	0.49	1.56	8.2	4.3	7.7	4.2
	0.06	4.7	1.18	0.90	0.76	0.43	0.46	1.61	9.3	4.8	8.7	4.6
	0.08	7.6	1.22	0.92	0.75	0.42	0.45	1.64	9.8	5.0	9.2	4.8
40	0.04	2.2	0.98	0.80	0.81	0.50	0.53	1.48	6.7	3.7	6.3	3.6
	0.06	4.6	1.05	0.84	0.79	0.47	0.50	1.53	7.6	4.1	7.2	3.9
	0.08	7.4	1.09	0.86	0.78	0.46	0.49	1.55	8.1	4.3	7.6	4.1
45	0.04	2.2	0.86	0.73	0.85	0.54	0.57	1.40	5.4	3.1	5.1	3.0
	0.06	4.5	0.93	0.77	0.83	0.52	0.54	1.45	6.1	3.4	5.8	3.3
	0.08	7.3	0.97	0.79	0.82	0.50	0.53	1.47	6.5	3.6	6.2	3.5

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 006 Heating

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Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.04	3.4	OPERATION NOT RECOMMENDED								
	0.06	7.2									
	0.08	11.3	0.94	0.38	0.40	0.56	30.0	2.5	2.2	2.5	2.2
0	0.04	3.2	1.05	0.39	0.41	0.66	31.1	2.7	2.4	2.7	2.3
	0.06	6.6	1.10	0.39	0.42	0.70	31.6	2.8	2.4	2.8	2.4
	0.08	10.5	1.12	0.39	0.42	0.73	31.9	2.9	2.5	2.8	2.5
5	0.04	2.6	1.21	0.40	0.43	0.81	32.9	3.0	2.6	3.0	2.6
	0.06	5.5	1.27	0.41	0.43	0.86	33.5	3.1	2.7	3.1	2.7
	0.08	8.6	1.30	0.41	0.43	0.89	33.8	3.2	2.8	3.2	2.8
10	0.04	2.5	1.38	0.41	0.44	0.96	34.6	3.3	2.9	3.3	2.9
	0.06	5.3	1.44	0.42	0.44	1.02	35.3	3.4	3.0	3.4	3.0
	0.08	8.4	1.48	0.42	0.45	1.06	35.7	3.5	3.1	3.5	3.0
15	0.04	2.5	1.53	0.43	0.45	1.11	36.3	3.6	3.1	3.6	3.1
	0.06	5.2	1.61	0.43	0.46	1.18	37.1	3.7	3.3	3.7	3.2
	0.08	8.2	1.65	0.43	0.46	1.22	37.5	3.8	3.3	3.8	3.3
20	0.04	2.4	1.69	0.44	0.46	1.25	37.9	3.9	3.4	3.8	3.4
	0.06	5.1	1.77	0.44	0.47	1.33	38.8	4.0	3.5	4.0	3.5
	0.08	8.1	1.81	0.44	0.47	1.37	39.2	4.1	3.5	4.1	3.5
25	0.04	2.4	1.83	0.45	0.47	1.39	39.5	4.1	3.6	4.1	3.6
	0.06	4.9	1.92	0.45	0.48	1.47	40.4	4.2	3.7	4.2	3.7
	0.08	7.9	1.96	0.46	0.48	1.51	40.8	4.3	3.8	4.3	3.7
30	0.04	2.3	1.97	0.46	0.48	1.52	40.9	4.3	3.8	4.3	3.7
	0.06	4.8	2.06	0.46	0.49	1.59	41.8	4.4	3.9	4.4	3.9
	0.08	7.7	2.10	0.47	0.49	1.63	42.3	4.5	3.9	4.5	3.9
35	0.04	2.3	OPERATION NOT RECOMMENDED								
	0.06	4.7									
	0.08	7.6									
40	0.04	2.2									
	0.06	4.6									
	0.08	7.4									
45	0.04	2.2									
	0.06	4.5									
	0.08	7.3									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
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Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in heating refers to calculations required to determine if heating water flow is sufficient for non-antifreeze systems.

Performance Data – TC H/V 009 Cooling

121 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.06	5.9	OPERATION NOT RECOMMENDED									
	0.09	14.0										
	0.12	23.8										
0	0.06	4.2	2.70	1.82	0.67	0.34	0.43	3.05	27.0	12.2	21.3	11.8
	0.09	10.5	2.68	1.79	0.67	0.31	0.39	2.99	29.5	12.7	23.3	12.3
	0.12	19.0	2.65	1.77	0.67	0.29	0.38	2.95	30.7	12.8	24.2	12.4
5	0.06	3.4	2.67	1.80	0.68	0.39	0.48	3.06	23.5	11.4	18.8	11.1
	0.09	8.0	2.70	1.82	0.67	0.35	0.44	3.06	26.1	12.0	20.9	11.7
	0.12	13.1	2.70	1.82	0.67	0.35	0.42	3.05	26.3	12.1	21.9	12.0
10	0.06	3.1	2.58	1.76	0.68	0.44	0.53	3.02	20.2	10.4	16.5	10.2
	0.09	7.4	2.65	1.80	0.68	0.40	0.49	3.05	22.6	11.1	18.4	10.9
	0.12	12.3	2.68	1.81	0.68	0.38	0.47	3.06	23.9	11.5	19.4	11.3
15	0.06	2.9	2.45	1.69	0.69	0.49	0.59	2.94	17.2	9.3	14.4	9.3
	0.09	6.8	2.55	1.74	0.68	0.45	0.54	3.00	19.4	10.1	16.1	10.0
	0.12	11.5	2.59	1.77	0.68	0.43	0.52	3.03	20.5	10.5	17.0	10.4
20	0.06	2.6	2.30	1.61	0.70	0.54	0.64	2.84	14.6	8.3	12.4	8.3
	0.09	6.2	2.41	1.67	0.69	0.50	0.60	2.91	16.4	9.0	14.0	9.1
	0.12	10.7	2.47	1.70	0.69	0.48	0.58	2.95	17.4	9.4	14.8	9.5
25	0.06	2.3	2.12	1.51	0.71	0.59	0.70	2.71	12.2	7.2	10.6	7.4
	0.09	5.6	2.24	1.58	0.70	0.56	0.65	2.80	13.8	7.9	12.0	8.1
	0.12	9.9	2.30	1.61	0.70	0.54	0.63	2.84	14.6	8.3	12.7	8.5
30	0.06	2.1	1.93	1.42	0.73	0.65	0.76	2.58	10.1	6.2	9.0	6.5
	0.09	5.0	2.05	1.48	0.72	0.61	0.71	2.67	11.5	6.9	10.2	7.2
	0.12	9.2	2.12	1.51	0.71	0.59	0.69	2.71	12.2	7.2	10.8	7.5
35	0.06	2.0	1.74	1.32	0.76	0.71	0.82	2.45	8.4	5.3	7.6	5.7
	0.09	5.0	1.86	1.38	0.74	0.67	0.77	2.53	9.4	5.9	8.6	6.3
	0.12	9.0	1.92	1.41	0.73	0.65	0.75	2.57	10.0	6.2	9.1	6.6
40	0.06	1.9	1.55	1.23	0.79	0.77	0.88	2.32	6.9	4.5	6.4	4.9
	0.09	4.9	1.66	1.28	0.77	0.73	0.84	2.39	7.7	5.0	7.2	5.4
	0.12	8.7	1.72	1.31	0.76	0.72	0.82	2.43	8.2	5.2	7.7	5.7
45	0.06	1.9	1.37	1.14	0.83	0.84	0.95	2.21	5.6	3.8	5.4	4.2
	0.09	4.9	1.47	1.19	0.81	0.80	0.91	2.27	6.3	4.2	6.0	4.6
	0.12	8.5	1.52	1.21	0.80	0.78	0.88	2.30	6.6	4.4	6.4	4.9

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 009 Heating

121 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.06	5.9	OPERATION NOT RECOMMENDED								
	0.09	14.0									
	0.12	23.8	1.68	0.59	0.61	1.09	31.6	2.8	2.5	2.8	2.5
0	0.06	4.2	1.81	0.61	0.62	1.20	32.4	3.0	2.6	3.0	2.6
	0.09	10.5	1.89	0.62	0.63	1.27	33.0	3.1	2.7	3.1	2.7
	0.12	19.0	1.93	0.62	0.64	1.31	33.3	3.1	2.7	3.1	2.7
5	0.06	3.4	2.04	0.63	0.65	1.41	34.0	3.2	2.8	3.2	2.8
	0.09	8.0	2.13	0.64	0.66	1.49	34.6	3.3	2.9	3.3	2.9
	0.12	13.1	2.18	0.65	0.66	1.53	35.0	3.4	2.9	3.4	2.9
10	0.06	3.1	2.26	0.66	0.67	1.61	35.5	3.5	3.0	3.4	3.0
	0.09	7.4	2.37	0.67	0.68	1.70	36.3	3.6	3.1	3.6	3.1
	0.12	12.3	2.43	0.67	0.69	1.75	36.7	3.6	3.2	3.6	3.1
15	0.06	2.9	2.49	0.68	0.69	1.81	37.1	3.7	3.2	3.7	3.2
	0.09	6.8	2.60	0.69	0.70	1.91	37.9	3.8	3.3	3.8	3.3
	0.12	11.5	2.66	0.70	0.71	1.97	38.3	3.8	3.3	3.8	3.3
20	0.06	2.6	2.70	0.70	0.72	2.00	38.6	3.9	3.4	3.9	3.4
	0.09	6.2	2.83	0.71	0.73	2.12	39.4	4.0	3.5	4.0	3.5
	0.12	10.7	2.90	0.72	0.74	2.17	39.9	4.0	3.5	4.0	3.5
25	0.06	2.3	2.92	0.72	0.74	2.19	40.0	4.0	3.5	4.0	3.5
	0.09	5.6	3.05	0.74	0.76	2.31	40.9	4.1	3.6	4.1	3.6
	0.12	9.9	3.12	0.75	0.76	2.37	41.4	4.2	3.6	4.2	3.6
30	0.06	2.1	3.12	0.75	0.76	2.37	41.4	4.2	3.6	4.2	3.6
	0.09	5.0	3.26	0.77	0.78	2.49	42.4	4.2	3.7	4.2	3.7
	0.12	9.2	3.33	0.78	0.80	2.55	42.9	4.3	3.7	4.3	3.7
35	0.06	2.0	OPERATION NOT RECOMMENDED								
	0.09	5.0									
	0.12	9.0									
40	0.06	1.9									
	0.09	4.9									
	0.12	8.7									
45	0.06	1.9									
	0.09	4.9									
	0.12	8.5									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in heating refers to calculations required to determine if heating water flow is sufficient for non-antifreeze systems.

Performance Data – TC H/V 012 Cooling

144 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.09	24.0	OPERATION NOT RECOMMENDED									
	0.14	45.7										
	0.19	60.8										
0	0.09	19.2	3.50	2.35	0.67	0.48	0.51	3.98	25.1	13.5	23.6	13.0
	0.14	34.0	3.56	2.38	0.67	0.44	0.47	4.00	27.4	14.2	25.7	13.7
	0.19	54.2	3.58	2.40	0.67	0.43	0.46	4.01	28.6	14.6	26.7	14.1
5	0.09	16.6	3.38	2.27	0.67	0.53	0.56	3.91	21.9	12.3	20.7	11.9
	0.14	30.8	3.47	2.32	0.67	0.49	0.52	3.96	24.1	13.1	22.7	12.7
	0.19	47.3	3.51	2.35	0.67	0.47	0.50	3.98	25.2	13.5	23.7	13.1
10	0.09	15.3	3.22	2.18	0.68	0.58	0.61	3.80	18.9	11.1	17.9	10.8
	0.14	28.6	3.33	2.24	0.67	0.54	0.58	3.88	20.9	11.9	19.8	11.5
	0.19	44.2	3.38	2.27	0.67	0.53	0.56	3.91	21.9	12.3	20.7	11.9
15	0.09	13.9	3.03	2.09	0.69	0.64	0.67	3.67	16.2	9.9	15.4	9.6
	0.14	26.5	3.16	2.15	0.68	0.60	0.63	3.76	17.9	10.7	17.0	10.4
	0.19	41.0	3.22	2.18	0.68	0.58	0.61	3.80	18.9	11.1	17.9	10.8
20	0.09	12.6	2.82	1.98	0.70	0.70	0.73	3.52	13.8	8.7	13.2	8.5
	0.14	24.3	2.96	2.05	0.69	0.66	0.69	3.62	15.2	9.4	14.6	9.2
	0.19	37.9	3.02	2.08	0.69	0.64	0.67	3.66	16.1	9.8	15.3	9.5
25	0.09	11.2	2.59	1.87	0.72	0.76	0.79	3.35	11.6	7.6	11.1	7.4
	0.14	22.2	2.73	1.94	0.71	0.72	0.76	3.45	12.8	8.2	12.3	8.0
	0.19	34.7	2.80	1.97	0.70	0.71	0.74	3.50	13.5	8.6	13.0	8.3
30	0.09	10.0	2.34	1.76	0.75	0.83	0.86	3.17	9.6	6.5	9.3	6.3
	0.14	20.1	2.48	1.82	0.74	0.79	0.82	3.27	10.7	7.1	10.3	6.9
	0.19	31.8	2.55	1.86	0.73	0.77	0.80	3.32	11.3	7.4	10.8	7.2
35	0.09	9.5	2.09	1.64	0.79	0.90	0.93	2.98	7.9	5.5	7.7	5.3
	0.14	19.1	2.22	1.70	0.77	0.86	0.89	3.08	8.8	6.0	8.5	5.8
	0.19	30.5	2.29	1.74	0.76	0.84	0.87	3.13	9.3	6.3	9.0	6.1
40	0.09	9.0	1.83	1.52	0.83	0.97	1.00	2.80	6.5	4.6	6.2	4.4
	0.14	18.0	1.96	1.58	0.81	0.93	0.96	2.89	7.2	5.0	6.9	4.9
	0.19	29.3	2.02	1.61	0.80	0.91	0.94	2.94	7.6	5.2	7.3	5.1
45	0.09	8.5	1.57	1.38	0.88	1.04	1.07	2.61	5.2	3.7	5.0	3.6
	0.14	17.0	1.69	1.45	0.86	1.01	1.04	2.69	5.7	4.1	5.5	4.0
	0.19	28.0	1.75	1.48	0.84	0.99	1.02	2.74	6.0	4.3	5.9	4.2

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 012 Heating

144 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.09	24.0	OPERATION NOT RECOMMENDED								
	0.14	45.7									
	0.19	60.8	2.08	0.74	0.77	1.33	32.1	2.8	2.4	2.8	2.4
0	0.09	19.2	2.25	0.77	0.80	1.49	33.1	2.9	2.6	2.9	2.6
	0.14	34.0	2.32	0.78	0.80	1.55	33.6	3.0	2.6	3.0	2.6
	0.19	54.2	2.36	0.78	0.81	1.58	33.8	3.0	2.6	3.0	2.6
5	0.09	16.6	2.51	0.80	0.83	1.71	34.6	3.1	2.7	3.1	2.7
	0.14	30.8	2.58	0.81	0.84	1.78	35.1	3.2	2.8	3.2	2.8
	0.19	47.3	2.63	0.81	0.84	1.81	35.3	3.2	2.8	3.2	2.8
10	0.09	15.3	2.76	0.83	0.85	1.93	36.1	3.3	2.9	3.3	2.9
	0.14	28.6	2.84	0.83	0.86	2.00	36.6	3.4	3.0	3.4	3.0
	0.19	44.2	2.88	0.84	0.87	2.04	36.8	3.4	3.0	3.4	3.0
15	0.09	13.9	3.00	0.85	0.88	2.15	37.5	3.5	3.1	3.5	3.1
	0.14	26.5	3.09	0.86	0.89	2.23	38.0	3.6	3.1	3.6	3.1
	0.19	41.0	3.14	0.87	0.90	2.27	38.3	3.6	3.2	3.6	3.2
20	0.09	12.6	3.24	0.88	0.91	2.36	38.9	3.7	3.2	3.7	3.2
	0.14	24.3	3.34	0.89	0.92	2.45	39.5	3.8	3.3	3.8	3.3
	0.19	37.9	3.40	0.89	0.92	2.50	39.8	3.8	3.3	3.8	3.3
25	0.09	11.2	3.49	0.91	0.93	2.58	40.3	3.8	3.4	3.8	3.4
	0.14	22.2	3.60	0.92	0.95	2.68	41.0	3.9	3.4	3.9	3.4
	0.19	34.7	3.67	0.93	0.96	2.74	41.4	4.0	3.4	3.9	3.4
30	0.09	10.0	3.74	0.94	0.97	2.81	41.9	4.0	3.5	4.0	3.5
	0.14	20.1	3.88	0.96	0.98	2.92	42.6	4.1	3.5	4.1	3.5
	0.19	31.8	3.95	0.97	1.00	2.99	43.1	4.1	3.6	4.1	3.6
35	0.09	9.5	OPERATION NOT RECOMMENDED								
	0.14	19.1									
	0.19	30.5									
40	0.09	9.0									
	0.14	18.0									
	0.19	29.3									
45	0.09	8.5									
	0.14	17.0									
	0.19	28.0									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 015 Cooling

192 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.10	8.6	OPERATION NOT RECOMMENDED									
	0.15	17.6										
	0.21	23.8										
0	0.10	6.6	4.42	3.10	0.70	0.52	0.56	4.94	28.9	16.2	26.7	15.5
	0.15	12.8	4.40	3.05	0.69	0.48	0.52	4.89	31.2	16.8	28.7	16.1
	0.21	22.0	4.37	3.01	0.69	0.46	0.51	4.84	32.1	17.0	29.5	16.3
5	0.10	5.9	4.36	3.11	0.71	0.58	0.62	4.94	25.6	15.0	23.9	14.4
	0.15	12.0	4.41	3.11	0.70	0.53	0.58	4.95	28.2	16.0	26.1	15.3
	0.21	19.1	4.42	3.09	0.70	0.51	0.55	4.93	29.4	16.4	27.2	15.7
10	0.10	5.5	4.23	3.08	0.73	0.65	0.69	4.88	22.3	13.7	20.9	13.2
	0.15	11.1	4.34	3.11	0.72	0.59	0.64	4.93	24.9	14.7	23.2	14.2
	0.21	17.8	4.38	3.12	0.71	0.57	0.61	4.95	26.2	15.2	24.4	14.6
15	0.10	5.0	4.05	3.01	0.74	0.72	0.76	4.76	19.3	12.3	18.2	11.8
	0.15	10.2	4.19	3.06	0.73	0.66	0.70	4.85	21.6	13.4	20.3	12.9
	0.21	16.6	4.25	3.09	0.73	0.64	0.68	4.89	22.8	13.9	21.4	13.4
20	0.10	4.5	3.82	2.91	0.76	0.79	0.83	4.62	16.5	10.9	15.6	10.5
	0.15	9.3	3.99	2.98	0.75	0.74	0.78	4.73	18.5	11.9	17.5	11.5
	0.21	15.3	4.07	3.02	0.74	0.71	0.75	4.78	19.6	12.5	18.5	12.0
25	0.10	4.0	3.58	2.79	0.78	0.87	0.91	4.45	14.1	9.6	13.4	9.3
	0.15	8.4	3.76	2.88	0.77	0.81	0.86	4.57	15.8	10.5	15.0	10.2
	0.21	14.1	3.84	2.92	0.76	0.78	0.83	4.63	16.7	11.0	15.9	10.6
30	0.10	3.6	3.32	2.66	0.80	0.95	0.99	4.27	11.9	8.4	11.4	8.1
	0.15	7.6	3.50	2.75	0.79	0.89	0.94	4.39	13.4	9.2	12.7	8.9
	0.21	12.9	3.59	2.80	0.78	0.87	0.91	4.45	14.2	9.6	13.5	9.3
35	0.10	3.4	3.06	2.52	0.83	1.03	1.08	4.09	10.1	7.3	9.7	7.1
	0.15	7.2	3.23	2.61	0.81	0.98	1.02	4.21	11.3	8.0	10.8	7.7
	0.21	12.4	3.32	2.66	0.80	0.95	0.99	4.27	11.9	8.4	11.4	8.1
40	0.10	3.2	2.80	2.39	0.85	1.12	1.16	3.92	8.6	6.3	8.2	6.1
	0.15	6.9	2.96	2.47	0.84	1.06	1.11	4.02	9.5	6.9	9.1	6.7
	0.21	11.9	3.04	2.52	0.83	1.04	1.08	4.08	10.0	7.2	9.6	7.0
45	0.10	3.0	2.57	2.27	0.89	1.20	1.25	3.77	7.3	5.5	7.0	5.3
	0.15	6.5	2.70	2.34	0.87	1.15	1.19	3.86	8.0	5.9	7.7	5.8
	0.21	11.3	2.78	2.38	0.86	1.12	1.17	3.90	8.4	6.2	8.1	6.0

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 015 Heating

192 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.10	8.6	OPERATION NOT RECOMMENDED								
	0.15	17.6									
	0.21	23.8	2.36	0.80	0.84	1.56	30.2	2.9	2.6	2.9	2.6
0	0.10	6.6	2.58	0.82	0.86	1.76	31.2	3.2	2.8	3.1	2.7
	0.15	12.8	2.69	0.82	0.86	1.86	31.6	3.3	2.8	3.3	2.8
	0.21	22.0	2.74	0.83	0.87	1.92	31.9	3.3	2.9	3.3	2.9
5	0.10	5.9	2.94	0.84	0.88	2.09	32.7	3.5	3.0	3.5	3.0
	0.15	12.0	3.06	0.85	0.89	2.21	33.2	3.6	3.2	3.6	3.1
	0.21	19.1	3.13	0.85	0.89	2.28	33.5	3.7	3.2	3.7	3.2
10	0.10	5.5	3.29	0.86	0.90	2.43	34.2	3.8	3.3	3.8	3.3
	0.15	11.1	3.44	0.87	0.91	2.57	34.9	3.9	3.4	3.9	3.4
	0.21	17.8	3.52	0.88	0.92	2.64	35.2	4.0	3.5	4.0	3.5
15	0.10	5.0	3.65	0.88	0.92	2.76	35.8	4.1	3.6	4.1	3.6
	0.15	10.2	3.81	0.89	0.93	2.92	36.5	4.3	3.7	4.3	3.7
	0.21	16.6	3.90	0.90	0.94	3.00	36.9	4.3	3.8	4.3	3.8
20	0.10	4.5	4.00	0.90	0.94	3.10	37.3	4.4	3.9	4.4	3.8
	0.15	9.3	4.18	0.91	0.95	3.27	38.1	4.6	4.0	4.6	4.0
	0.21	15.3	4.28	0.92	0.96	3.36	38.5	4.7	4.1	4.7	4.1
25	0.10	4.0	4.35	0.92	0.96	3.43	38.8	4.7	4.1	4.7	4.1
	0.15	8.4	4.55	0.93	0.97	3.62	39.7	4.9	4.3	4.9	4.2
	0.21	14.1	4.66	0.94	0.98	3.72	40.1	5.0	4.3	5.0	4.3
30	0.10	3.6	4.69	0.94	0.98	3.75	40.3	5.0	4.4	5.0	4.3
	0.15	7.6	4.90	0.95	0.99	3.95	41.2	5.2	4.5	5.1	4.5
	0.21	12.9	5.02	0.96	1.00	4.06	41.7	5.3	4.6	5.2	4.6
35	0.10	3.4	OPERATION NOT RECOMMENDED								
	0.15	7.2									
	0.21	12.4									
40	0.10	3.2									
	0.15	6.9									
	0.21	11.9									
45	0.10	3.0									
	0.15	6.5									
	0.19	28.0									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 018 Cooling

230 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.11	9.1	OPERATION NOT RECOMMENDED									
	0.16	28.7										
	0.21	53.4										
0	0.11	8.1	5.49	3.87	0.71	0.65	0.70	6.13	28.9	17.7	26.8	16.9
	0.16	21.0	5.51	3.86	0.70	0.59	0.64	6.10	32.1	18.9	29.6	18.0
	0.21	35.0	5.49	3.83	0.70	0.56	0.61	6.05	33.5	19.4	30.8	18.4
5	0.11	6.7	5.38	3.84	0.71	0.72	0.77	6.10	25.4	16.2	23.7	15.5
	0.16	18.5	5.48	3.87	0.71	0.65	0.70	6.13	28.7	17.6	26.6	16.8
	0.21	31.9	5.51	3.87	0.70	0.62	0.67	6.13	30.3	18.3	28.0	17.4
10	0.11	5.6	5.20	3.76	0.72	0.81	0.86	6.01	22.0	14.6	20.7	14.0
	0.16	16.3	5.36	3.83	0.71	0.73	0.78	6.09	25.1	16.1	23.4	15.4
	0.21	28.9	5.43	3.86	0.71	0.69	0.74	6.12	26.7	16.8	24.9	16.1
15	0.11	4.5	4.98	3.66	0.73	0.90	0.95	5.88	18.9	13.0	17.9	12.5
	0.16	14.0	5.18	3.75	0.72	0.82	0.87	6.00	21.7	14.5	20.4	13.9
	0.21	25.9	5.27	3.79	0.72	0.78	0.83	6.05	23.2	15.2	21.7	14.6
20	0.11	3.4	4.72	3.53	0.75	1.00	1.05	5.72	16.1	11.5	15.3	11.1
	0.16	11.8	4.95	3.64	0.74	0.91	0.96	5.86	18.5	12.8	17.5	12.4
	0.21	23.0	5.06	3.69	0.73	0.87	0.92	5.93	19.9	13.6	18.8	13.0
25	0.11	2.3	4.43	3.38	0.76	1.10	1.15	5.53	13.7	10.1	13.1	9.7
	0.16	9.6	4.68	3.51	0.75	1.01	1.06	5.69	15.8	11.3	15.0	10.9
	0.21	20.0	4.80	3.57	0.74	0.97	1.02	5.77	16.9	11.9	16.1	11.5
30	0.11	1.4	4.13	3.23	0.78	1.21	1.26	5.34	11.6	8.7	11.1	8.5
	0.16	7.5	4.38	3.36	0.77	1.12	1.17	5.50	13.3	9.8	12.7	9.5
	0.21	17.2	4.51	3.42	0.76	1.08	1.13	5.58	14.3	10.4	13.6	10.1
35	0.11	1.2	3.81	3.07	0.81	1.33	1.38	5.14	9.8	7.5	9.4	7.3
	0.16	6.9	4.06	3.20	0.79	1.24	1.29	5.30	11.2	8.5	10.8	8.2
	0.21	16.4	4.19	3.26	0.78	1.19	1.24	5.38	12.0	9.0	11.5	8.7
40	0.11	1.1	3.50	2.92	0.83	1.45	1.50	4.94	8.3	6.5	7.9	6.3
	0.16	6.3	3.73	3.03	0.81	1.35	1.41	5.09	9.4	7.3	9.1	7.1
	0.21	15.5	3.86	3.10	0.80	1.31	1.36	5.17	10.1	7.7	9.7	7.5
45	0.11	0.9	3.19	2.77	0.87	1.57	1.62	4.76	6.9	5.5	6.7	5.4
	0.16	5.8	3.41	2.87	0.84	1.48	1.53	4.89	7.9	6.2	7.6	6.0
	0.21	14.6	3.53	2.93	0.83	1.43	1.48	4.96	8.4	6.6	8.1	6.4

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 018 Heating

230 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.11	9.1	OPERATION NOT RECOMMENDED								
	0.16	28.7									
	0.21	53.4	2.94	0.92	0.97	2.02	30.5	3.2	2.8	3.2	2.8
0	0.11	8.1	3.18	0.95	1.00	2.23	31.4	3.4	2.9	3.3	2.9
	0.16	21.0	3.34	0.97	1.01	2.37	31.9	3.5	3.0	3.4	3.0
	0.21	35.0	3.42	0.97	1.02	2.45	32.2	3.5	3.1	3.5	3.1
5	0.11	6.7	3.60	0.99	1.04	2.61	32.9	3.6	3.2	3.6	3.2
	0.16	18.5	3.77	1.00	1.05	2.77	33.5	3.8	3.3	3.8	3.3
	0.21	31.9	3.86	1.00	1.05	2.85	33.8	3.8	3.4	3.8	3.3
10	0.11	5.6	3.99	1.01	1.06	2.98	34.3	3.9	3.4	3.9	3.4
	0.16	16.3	4.17	1.02	1.07	3.15	34.9	4.1	3.6	4.1	3.6
	0.21	28.9	4.27	1.02	1.07	3.24	35.2	4.2	3.6	4.2	3.6
15	0.11	4.5	4.36	1.03	1.08	3.33	35.6	4.2	3.7	4.2	3.7
	0.16	14.0	4.56	1.03	1.08	3.53	36.3	4.4	3.9	4.4	3.8
	0.21	25.9	4.67	1.04	1.08	3.64	36.7	4.5	3.9	4.5	3.9
20	0.11	3.4	4.74	1.04	1.09	3.70	36.9	4.6	4.0	4.5	4.0
	0.16	11.8	4.97	1.04	1.09	3.93	37.8	4.8	4.2	4.7	4.1
	0.21	23.0	5.10	1.05	1.09	4.06	38.2	4.9	4.3	4.9	4.2
25	0.11	2.3	5.13	1.05	1.09	4.08	38.3	4.9	4.3	4.9	4.3
	0.16	9.6	5.41	1.06	1.10	4.36	39.3	5.1	4.5	5.1	4.5
	0.21	20.0	5.57	1.06	1.11	4.51	39.9	5.3	4.6	5.2	4.6
30	0.11	1.4	5.56	1.06	1.11	4.50	39.9	5.2	4.6	5.2	4.5
	0.16	7.5	5.90	1.08	1.12	4.82	41.1	5.5	4.8	5.5	4.8
	0.21	17.2	6.11	1.09	1.14	5.02	41.8	5.6	4.9	5.6	4.9
35	0.11	1.2	OPERATION NOT RECOMMENDED								
	0.16	6.9									
	0.21	16.4									
40	0.11	1.1									
	0.16	6.3									
	0.21	15.5									
45	0.11	0.9									
	0.16	5.8									
	0.21	14.6									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 024 Cooling

274 I/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.17	21.1	OPERATION NOT RECOMMENDED									
	0.26	39.3										
	0.35	55.4										
0	0.17	15.2	7.09	4.81	0.68	0.87	0.93	7.96	28.0	19.1	25.9	18.1
	0.26	29.6	7.24	4.90	0.68	0.80	0.87	8.04	30.8	20.4	28.4	19.4
	0.35	48.0	7.31	4.93	0.68	0.77	0.84	8.08	32.3	21.2	29.7	20.0
5	0.17	15.0	6.87	4.69	0.68	0.96	1.03	7.83	24.4	17.2	22.8	16.4
	0.26	27.3	7.04	4.78	0.68	0.89	0.96	7.93	27.0	18.6	25.1	17.7
	0.35	42.3	7.12	4.83	0.68	0.86	0.92	7.97	28.4	19.3	26.3	18.3
10	0.17	13.8	6.63	4.54	0.69	1.07	1.13	7.70	21.2	15.4	19.9	14.7
	0.26	25.4	6.81	4.65	0.68	0.99	1.05	7.80	23.5	16.7	22.0	15.9
	0.35	39.6	6.90	4.70	0.68	0.95	1.02	7.85	24.8	17.4	23.1	16.6
15	0.17	12.6	6.36	4.39	0.69	1.19	1.26	7.55	18.3	13.7	17.3	13.1
	0.26	23.5	6.56	4.50	0.69	1.10	1.17	7.65	20.3	14.9	19.2	14.3
	0.35	36.9	6.65	4.55	0.68	1.06	1.12	7.71	21.5	15.6	20.2	14.9
20	0.17	11.4	6.06	4.23	0.70	1.32	1.39	7.39	15.6	12.0	14.8	11.5
	0.26	21.5	6.27	4.34	0.69	1.23	1.29	7.50	17.4	13.2	16.5	12.6
	0.35	34.2	6.38	4.40	0.69	1.18	1.25	7.56	18.4	13.8	17.4	13.2
25	0.17	10.3	5.74	4.06	0.71	1.48	1.55	7.22	13.2	10.4	12.6	10.1
	0.26	19.6	5.97	4.18	0.70	1.37	1.44	7.34	14.8	11.5	14.1	11.1
	0.35	31.4	6.07	4.23	0.70	1.32	1.39	7.39	15.7	12.1	14.9	11.6
30	0.17	9.2	5.40	3.90	0.72	1.66	1.73	7.06	11.1	9.0	10.7	8.7
	0.26	17.8	5.63	4.01	0.71	1.54	1.60	7.17	12.5	10.0	12.0	9.6
	0.35	28.9	5.75	4.07	0.71	1.48	1.55	7.23	13.3	10.5	12.7	10.1
35	0.17	8.8	5.03	3.72	0.74	1.85	1.92	6.89	9.3	7.7	8.9	7.4
	0.26	17.2	5.27	3.84	0.73	1.72	1.79	7.00	10.4	8.5	10.0	8.2
	0.35	27.9	5.39	3.89	0.72	1.66	1.73	7.05	11.1	9.0	10.7	8.7
40	0.17	8.5	4.64	3.55	0.76	2.07	2.14	6.72	7.6	6.4	7.4	6.3
	0.26	16.5	4.89	3.66	0.75	1.93	2.00	6.82	8.6	7.2	8.3	7.0
	0.35	26.9	5.02	3.72	0.74	1.86	1.93	6.88	9.2	7.6	8.9	7.4
45	0.17	8.1	4.23	3.36	0.79	2.32	2.39	6.55	6.2	5.3	6.0	5.2
	0.26	15.8	4.49	3.48	0.77	2.17	2.23	6.65	7.1	6.0	6.8	5.8
	0.35	25.8	4.61	3.53	0.77	2.09	2.16	6.70	7.5	6.4	7.3	6.2

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 024 Heating

274 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.17	21.1	OPERATION NOT RECOMMENDED								
	0.26	39.3									
	0.35	55.4	3.66	1.31	1.38	2.35	31.1	2.8	2.4	2.8	2.4
0	0.17	15.2	4.09	1.33	1.40	2.76	32.4	3.1	2.7	3.1	2.7
	0.26	29.6	4.26	1.34	1.40	2.92	32.9	3.2	2.8	3.2	2.8
	0.35	48.0	4.35	1.34	1.41	3.01	33.1	3.2	2.8	3.2	2.8
5	0.17	15.0	4.71	1.36	1.43	3.35	34.2	3.5	3.0	3.4	3.0
	0.26	27.3	4.91	1.37	1.44	3.54	34.8	3.6	3.1	3.6	3.1
	0.35	42.3	5.02	1.38	1.45	3.64	35.1	3.6	3.2	3.6	3.2
10	0.17	13.8	5.31	1.40	1.46	3.91	36.0	3.8	3.3	3.8	3.3
	0.26	25.4	5.53	1.42	1.48	4.12	36.7	3.9	3.4	3.9	3.4
	0.35	39.6	5.65	1.42	1.49	4.23	37.1	4.0	3.5	4.0	3.5
15	0.17	12.6	5.89	1.44	1.51	4.44	37.8	4.1	3.6	4.1	3.6
	0.26	23.5	6.13	1.46	1.53	4.67	38.5	4.2	3.7	4.2	3.7
	0.35	36.9	6.26	1.48	1.54	4.78	38.9	4.2	3.7	4.2	3.7
20	0.17	11.4	6.44	1.49	1.56	4.95	39.4	4.3	3.8	4.3	3.8
	0.26	21.5	6.70	1.52	1.58	5.18	40.2	4.4	3.9	4.4	3.9
	0.35	34.2	6.83	1.53	1.60	5.30	40.6	4.5	3.9	4.5	3.9
25	0.17	10.3	6.97	1.55	1.61	5.42	41.0	4.5	3.9	4.5	3.9
	0.26	19.6	7.24	1.57	1.64	5.66	41.8	4.6	4.0	4.6	4.0
	0.35	31.4	7.37	1.59	1.65	5.78	42.3	4.6	4.1	4.6	4.0
30	0.17	9.2	7.47	1.60	1.66	5.87	42.6	4.7	4.1	4.7	4.1
	0.26	17.8	7.74	1.63	1.70	6.11	43.4	4.7	4.1	4.7	4.1
	0.35	28.9	7.88	1.65	1.72	6.23	43.8	4.8	4.2	4.8	4.2
35	0.17	8.8	OPERATION NOT RECOMMENDED								
	0.26	17.2									
	0.35	27.9									
40	0.17	8.5									
	0.26	16.5									
	0.35	26.9									
45	0.17	8.1									
	0.26	15.8									
	0.35	25.8									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 030 Cooling

343 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.21	11.6	OPERATION NOT RECOMMENDED									
	0.32	21.8										
	0.42	34.6										
0	0.21	9.3	8.72	5.68	0.65	1.04	1.18	9.77	28.5	20.6	25.3	18.9
	0.32	17.9	8.83	5.78	0.65	0.98	1.11	9.81	30.8	21.8	27.2	20.0
	0.42	29.2	8.87	5.82	0.66	0.95	1.08	9.82	31.9	22.4	28.1	20.5
5	0.21	7.6	8.51	5.52	0.65	1.15	1.28	9.66	25.3	18.8	22.7	17.3
	0.32	14.1	8.67	5.64	0.65	1.07	1.20	9.74	27.7	20.1	24.7	18.5
	0.42	22.1	8.75	5.70	0.65	1.03	1.16	9.78	28.9	20.8	25.7	19.1
10	0.21	7.1	8.23	5.34	0.65	1.27	1.40	9.50	22.2	16.9	20.1	15.6
	0.32	13.4	8.44	5.47	0.65	1.18	1.31	9.62	24.5	18.3	22.0	16.9
	0.42	21.0	8.54	5.54	0.65	1.13	1.26	9.67	25.7	19.0	23.0	17.5
15	0.21	6.7	7.91	5.14	0.65	1.41	1.54	9.31	19.2	15.0	17.5	13.9
	0.32	12.6	8.15	5.28	0.65	1.30	1.43	9.45	21.3	16.3	19.4	15.2
	0.42	20.0	8.26	5.36	0.65	1.25	1.38	9.52	22.5	17.1	20.4	15.8
20	0.21	6.3	7.54	4.94	0.65	1.56	1.70	9.11	16.4	13.1	15.1	12.3
	0.32	11.8	7.80	5.08	0.65	1.45	1.58	9.25	18.4	14.4	16.8	13.5
	0.42	18.9	7.93	5.16	0.65	1.39	1.52	9.33	19.4	15.1	17.7	14.1
25	0.21	5.8	7.15	4.73	0.66	1.74	1.88	8.89	14.0	11.4	13.0	10.7
	0.32	11.1	7.42	4.87	0.66	1.62	1.75	9.04	15.7	12.6	14.5	11.8
	0.42	17.9	7.56	4.95	0.65	1.56	1.69	9.12	16.6	13.2	15.3	12.4
30	0.21	5.4	6.74	4.54	0.67	1.95	2.08	8.68	11.8	9.8	11.0	9.3
	0.32	10.4	7.01	4.67	0.67	1.81	1.94	8.82	13.2	10.9	12.3	10.3
	0.42	16.9	7.16	4.74	0.66	1.74	1.87	8.90	14.0	11.5	13.1	10.8
35	0.21	5.3	6.32	4.35	0.69	2.17	2.31	8.49	9.9	8.4	9.3	8.0
	0.32	10.1	6.59	4.47	0.68	2.02	2.15	8.61	11.1	9.3	10.4	8.9
	0.42	16.6	6.74	4.54	0.67	1.95	2.08	8.68	11.8	9.8	11.1	9.3
40	0.21	5.1	5.90	4.18	0.71	2.43	2.56	8.33	8.3	7.2	7.9	6.8
	0.32	9.9	6.17	4.29	0.69	2.26	2.39	8.43	9.3	8.0	8.8	7.6
	0.42	16.2	6.31	4.35	0.69	2.18	2.31	8.49	9.9	8.4	9.3	8.0
45	0.21	5.0	5.50	4.02	0.73	2.71	2.85	8.21	6.9	6.1	6.6	5.8
	0.32	9.6	5.75	4.12	0.72	2.53	2.66	8.28	7.8	6.7	7.4	6.4
	0.42	15.8	5.88	4.17	0.71	2.44	2.57	8.32	8.2	7.1	7.8	6.8

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 030 Heating

343 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.21	11.6	OPERATION NOT RECOMMENDED								
	0.32	21.8									
	0.42	34.6	4.86	1.65	1.78	3.20	31.7	2.9	2.6	2.9	2.6
0	0.21	9.3	5.34	1.70	1.82	3.64	32.9	3.1	2.8	3.1	2.7
	0.32	17.9	5.57	1.72	1.84	3.85	33.4	3.2	2.8	3.2	2.8
	0.42	29.2	5.69	1.73	1.85	3.97	33.8	3.3	2.9	3.3	2.9
5	0.21	7.6	6.12	1.76	1.89	4.36	34.8	3.5	3.0	3.4	3.0
	0.32	14.1	6.40	1.79	1.91	4.61	35.5	3.6	3.1	3.6	3.1
	0.42	22.1	6.55	1.80	1.93	4.75	35.8	3.6	3.2	3.6	3.2
10	0.21	7.1	6.92	1.84	1.96	5.08	36.7	3.8	3.3	3.7	3.3
	0.32	13.4	7.24	1.86	1.99	5.37	37.5	3.9	3.4	3.9	3.4
	0.42	21.0	7.42	1.88	2.00	5.54	37.9	3.9	3.4	3.9	3.4
15	0.21	6.7	7.71	1.91	2.03	5.80	38.6	4.0	3.5	4.0	3.5
	0.32	12.6	8.07	1.94	2.06	6.13	39.5	4.2	3.6	4.1	3.6
	0.42	20.0	8.27	1.96	2.08	6.31	40.0	4.2	3.7	4.2	3.7
20	0.21	6.3	8.49	1.98	2.10	6.50	40.5	4.3	3.7	4.3	3.7
	0.32	11.8	8.88	2.02	2.14	6.86	41.4	4.4	3.8	4.4	3.8
	0.42	18.9	9.10	2.05	2.17	7.05	42.0	4.4	3.9	4.4	3.9
25	0.21	5.8	9.24	2.06	2.18	7.18	42.3	4.5	3.9	4.5	3.9
	0.32	11.1	9.65	2.11	2.23	7.55	43.3	4.6	4.0	4.6	4.0
	0.42	17.9	9.88	2.13	2.25	7.74	43.9	4.6	4.1	4.6	4.0
30	0.21	5.4	9.95	2.14	2.26	7.81	44.0	4.7	4.1	4.6	4.1
	0.32	10.4	10.37	2.19	2.31	8.18	45.0	4.7	4.1	4.7	4.1
	0.42	16.9	10.59	2.22	2.34	8.37	45.6	4.8	4.2	4.8	4.2
35	0.21	5.3	OPERATION NOT RECOMMENDED								
	0.32	10.1									
	0.42	16.6									
40	0.21	5.1									
	0.32	9.9									
	0.42	16.2									
45	0.21	5.0									
	0.32	9.6									
	0.42	15.8									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 036 Cooling

412 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.25	22.8	OPERATION NOT RECOMMENDED									
	0.37	42.2										
	0.49	53.3										
0	0.25	20.1	9.92	6.79	0.68	1.33	1.41	11.25	25.5	19.6	24.0	18.7
	0.37	36.2	10.11	6.89	0.68	1.23	1.31	11.35	28.0	21.2	26.3	20.2
	0.49	48.4	10.21	6.94	0.68	1.18	1.26	11.39	29.5	22.0	27.6	21.0
5	0.25	18.3	9.65	6.65	0.69	1.47	1.55	11.12	22.4	17.7	21.2	16.9
	0.37	33.2	9.85	6.76	0.69	1.37	1.45	11.22	24.6	19.1	23.2	18.2
	0.49	45.1	9.95	6.81	0.68	1.32	1.39	11.27	25.8	19.8	24.3	18.9
10	0.25	16.8	9.36	6.51	0.70	1.62	1.70	10.98	19.7	15.8	18.7	15.2
	0.37	30.7	9.57	6.61	0.69	1.51	1.59	11.08	21.6	17.1	20.5	16.4
	0.49	42.7	9.68	6.67	0.69	1.46	1.54	11.13	22.7	17.8	21.5	17.1
15	0.25	15.3	9.03	6.35	0.70	1.80	1.88	10.83	17.2	14.1	16.4	13.6
	0.37	28.2	9.27	6.46	0.70	1.67	1.75	10.94	18.9	15.3	18.0	14.8
	0.49	40.4	9.38	6.52	0.69	1.61	1.69	10.99	19.9	16.0	18.9	15.4
20	0.25	13.8	8.68	6.18	0.71	1.99	2.07	10.67	14.9	12.4	14.3	12.0
	0.37	25.8	8.93	6.30	0.71	1.85	1.93	10.78	16.5	13.6	15.8	13.1
	0.49	38.0	9.05	6.36	0.70	1.79	1.87	10.84	17.3	14.2	16.6	13.7
25	0.25	12.3	8.29	6.01	0.72	2.22	2.30	10.51	12.8	10.9	12.3	10.5
	0.37	23.3	8.56	6.13	0.72	2.06	2.14	10.62	14.2	12.0	13.7	11.6
	0.49	35.7	8.70	6.19	0.71	1.98	2.06	10.68	15.0	12.5	14.4	12.1
30	0.25	10.7	7.86	5.81	0.74	2.48	2.56	10.33	10.8	9.4	10.5	9.1
	0.37	20.8	8.16	5.95	0.73	2.30	2.38	10.45	12.1	10.4	11.7	10.1
	0.49	33.4	8.30	6.01	0.72	2.21	2.29	10.51	12.8	10.9	12.4	10.6
35	0.25	7.8	7.38	5.60	0.76	2.78	2.86	10.16	9.1	8.0	8.8	7.8
	0.37	17.7	7.70	5.75	0.75	2.57	2.65	10.28	10.2	8.9	9.9	8.7
	0.49	31.2	7.86	5.82	0.74	2.47	2.55	10.34	10.8	9.4	10.5	9.1
40	0.25	4.8	6.85	5.36	0.78	3.12	3.20	9.97	7.5	6.7	7.3	6.5
	0.37	14.7	7.20	5.52	0.77	2.89	2.97	10.09	8.5	7.5	8.3	7.3
	0.49	29.1	7.37	5.60	0.76	2.78	2.86	10.15	9.1	8.0	8.8	7.8
45	OPERATION NOT RECOMMENDED											
	0.49	27.2	6.84	5.35	0.78	3.13	3.21	9.97	7.4	6.7	7.3	6.5

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 036 Heating

412 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.25	22.8	OPERATION NOT RECOMMENDED								
	0.37	42.2									
	0.49	53.3	6.25	2.11	2.19	4.14	32.5	3.0	2.6	3.0	2.6
0	0.25	20.1	6.69	2.15	2.23	4.53	33.4	3.1	2.7	3.1	2.7
	0.37	36.2	6.93	2.17	2.25	4.75	33.9	3.2	2.8	3.2	2.8
	0.49	48.4	7.05	2.19	2.26	4.87	34.1	3.2	2.8	3.2	2.8
5	0.25	18.3	7.45	2.22	2.30	5.22	34.9	3.4	2.9	3.3	2.9
	0.37	33.2	7.73	2.25	2.33	5.48	35.5	3.4	3.0	3.4	3.0
	0.49	45.1	7.88	2.26	2.34	5.62	35.8	3.5	3.0	3.5	3.0
10	0.25	16.8	8.23	2.30	2.37	5.93	36.5	3.6	3.1	3.6	3.1
	0.37	30.7	8.55	2.33	2.40	6.22	37.1	3.7	3.2	3.7	3.2
	0.49	42.7	8.73	2.34	2.42	6.38	37.5	3.7	3.3	3.7	3.3
15	0.25	15.3	9.01	2.37	2.45	6.64	38.0	3.8	3.3	3.8	3.3
	0.37	28.2	9.39	2.41	2.48	6.98	38.8	3.9	3.4	3.9	3.4
	0.49	40.4	9.59	2.43	2.50	7.16	39.2	3.9	3.5	3.9	3.4
20	0.25	13.8	9.81	2.45	2.53	7.36	39.6	4.0	3.5	4.0	3.5
	0.37	25.8	10.22	2.49	2.57	7.73	40.5	4.1	3.6	4.1	3.6
	0.49	38.0	10.45	2.52	2.59	7.93	40.9	4.2	3.6	4.1	3.6
25	0.25	12.3	10.61	2.53	2.61	8.08	41.2	4.2	3.7	4.2	3.7
	0.37	23.3	11.07	2.58	2.66	8.49	42.1	4.3	3.7	4.3	3.7
	0.49	35.7	11.31	2.61	2.68	8.70	42.6	4.3	3.8	4.3	3.8
30	0.25	10.7	11.41	2.62	2.69	8.79	42.8	4.4	3.8	4.3	3.8
	0.37	20.8	11.91	2.67	2.75	9.23	43.8	4.5	3.9	4.4	3.9
	0.49	33.4	12.17	2.70	2.78	9.46	44.4	4.5	3.9	4.5	3.9
35	0.25	7.8	OPERATION NOT RECOMMENDED								
	0.37	17.7									
	0.49	31.2									
40	0.25	4.8									
	0.37	14.7									
	0.49	29.1									
45											

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 042 Cooling

480 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.28	16.4	OPERATION NOT RECOMMENDED									
	0.43	29.6										
	0.57	46.4										
0	0.28	13.9	11.79	7.91	0.67	1.54	1.70	13.33	26.2	20.9	23.6	19.2
	0.43	25.4	11.80	7.84	0.66	1.44	1.61	13.25	27.9	21.9	25.0	20.1
	0.57	40.5	11.78	7.78	0.66	1.41	1.57	13.18	28.6	22.3	25.6	20.4
5	0.28	10.4	11.66	7.91	0.68	1.68	1.85	13.34	23.7	19.2	21.5	17.8
	0.43	18.7	11.77	7.91	0.67	1.57	1.74	13.34	25.6	20.5	23.1	18.9
	0.57	29.0	11.80	7.90	0.67	1.52	1.69	13.32	26.5	21.0	23.9	19.4
10	0.28	10.0	11.41	7.83	0.69	1.84	2.01	13.25	21.1	17.4	19.3	16.2
	0.43	17.9	11.61	7.90	0.68	1.72	1.88	13.32	23.1	18.8	21.0	17.4
	0.57	27.8	11.68	7.91	0.68	1.66	1.82	13.34	24.1	19.4	21.8	18.0
15	0.28	9.5	11.06	7.70	0.70	2.04	2.21	13.10	18.5	15.6	17.1	14.6
	0.43	17.1	11.33	7.80	0.69	1.89	2.06	13.22	20.4	17.0	18.8	15.8
	0.57	26.7	11.44	7.85	0.69	1.82	1.99	13.27	21.4	17.6	19.6	16.4
20	0.28	9.0	10.65	7.52	0.71	2.25	2.42	12.90	16.1	13.8	15.0	12.9
	0.43	16.3	10.96	7.65	0.70	2.09	2.26	13.05	17.9	15.1	16.5	14.1
	0.57	25.6	11.11	7.71	0.69	2.01	2.18	13.12	18.8	15.8	17.4	14.8
25	0.28	8.5	10.17	7.30	0.72	2.49	2.66	12.67	13.9	12.1	13.0	11.4
	0.43	15.4	10.52	7.46	0.71	2.32	2.48	12.84	15.5	13.3	14.4	12.5
	0.57	24.5	10.69	7.53	0.70	2.23	2.40	12.92	16.4	13.9	15.2	13.1
30	0.28	8.0	9.66	7.08	0.73	2.76	2.93	12.42	12.0	10.5	11.2	10.0
	0.43	14.7	10.03	7.24	0.72	2.57	2.74	12.60	13.3	11.6	12.5	11.0
	0.57	23.4	10.21	7.32	0.72	2.47	2.64	12.68	14.1	12.2	13.2	11.5
35	0.28	7.9	9.13	6.84	0.75	3.05	3.22	12.18	10.2	9.1	9.7	8.7
	0.43	14.4	9.50	7.00	0.74	2.84	3.01	12.35	11.4	10.1	10.8	9.6
	0.57	23.0	9.69	7.09	0.73	2.74	2.91	12.43	12.1	10.6	11.3	10.1
40	0.28	7.8	8.60	6.61	0.77	3.37	3.54	11.96	8.7	7.9	8.3	7.5
	0.43	14.2	8.96	6.77	0.75	3.15	3.32	12.11	9.7	8.7	9.2	8.3
	0.57	22.7	9.15	6.85	0.75	3.04	3.21	12.19	10.3	9.2	9.7	8.7
45	0.28	7.6	8.07	6.40	0.79	3.71	3.89	11.78	7.4	6.8	7.1	6.5
	0.43	13.9	8.42	6.54	0.78	3.48	3.65	11.90	8.3	7.5	7.9	7.2
	0.57	22.3	8.60	6.61	0.77	3.36	3.53	11.97	8.7	7.9	8.3	7.5

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 042 Heating

480 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.28	16.4	OPERATION NOT RECOMMENDED								
	0.43	29.6									
	0.57	46.4	7.35	2.39	2.56	4.96	32.7	3.1	2.7	3.1	2.7
0	0.28	13.9	7.95	2.44	2.60	5.51	33.7	3.3	2.8	3.2	2.8
	0.43	25.4	8.31	2.47	2.63	5.84	34.3	3.4	2.9	3.4	2.9
	0.57	40.5	8.50	2.48	2.64	6.02	34.7	3.4	3.0	3.4	3.0
5	0.28	10.4	9.01	2.53	2.68	6.48	35.5	3.6	3.1	3.5	3.1
	0.43	18.7	9.43	2.56	2.72	6.86	36.3	3.7	3.2	3.7	3.2
	0.57	29.0	9.66	2.58	2.74	7.07	36.7	3.7	3.3	3.7	3.3
10	0.28	10.0	10.06	2.62	2.78	7.44	37.4	3.8	3.4	3.8	3.3
	0.43	17.9	10.54	2.67	2.83	7.88	38.2	4.0	3.5	3.9	3.4
	0.57	27.8	10.80	2.69	2.85	8.11	38.6	4.0	3.5	4.0	3.5
15	0.28	9.5	11.11	2.72	2.88	8.39	39.2	4.1	3.6	4.1	3.6
	0.43	17.1	11.64	2.78	2.93	8.86	40.1	4.2	3.7	4.2	3.7
	0.57	26.7	11.93	2.81	2.96	9.12	40.6	4.3	3.7	4.2	3.7
20	0.28	9.0	12.14	2.83	2.98	9.31	40.9	4.3	3.8	4.3	3.7
	0.43	16.3	12.71	2.89	3.04	9.82	41.9	4.4	3.8	4.4	3.8
	0.57	25.6	13.01	2.92	3.08	10.09	42.4	4.5	3.9	4.4	3.9
25	0.28	8.5	13.13	2.93	3.09	10.20	42.7	4.5	3.9	4.5	3.9
	0.43	15.4	13.72	3.00	3.15	10.73	43.7	4.6	4.0	4.6	4.0
	0.57	24.5	14.04	3.03	3.19	11.01	44.2	4.6	4.1	4.6	4.0
30	0.28	8.0	14.08	3.03	3.19	11.04	44.3	4.6	4.1	4.6	4.0
	0.43	14.7	14.68	3.10	3.26	11.58	45.3	4.7	4.1	4.7	4.1
	0.57	23.4	14.99	3.13	3.29	11.86	45.9	4.8	4.2	4.8	4.2
35	0.28	7.9	OPERATION NOT RECOMMENDED								
	0.43	14.4									
	0.57	23.0									
40	0.28	7.8									
	0.43	14.2									
	0.57	22.7									
45	0.28	7.6									
	0.43	13.9									
	0.57	22.3									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 048 Cooling

549 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						ECM	PSC		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.38	19.7	OPERATION NOT RECOMMENDED									
	0.57	36.9										
	0.76	59.0										
0	0.38	16.6	13.43	9.25	0.69	1.69	1.81	15.11	27.2	22.0	25.3	20.8
	0.57	31.9	13.33	9.13	0.69	1.60	1.72	14.93	28.5	22.9	26.5	21.6
	0.76	51.9	13.25	9.05	0.68	1.56	1.68	14.81	29.1	23.2	27.0	21.9
5	0.38	13.7	13.39	9.32	0.70	1.85	1.97	15.24	24.7	20.4	23.2	19.4
	0.57	25.4	13.44	9.29	0.69	1.74	1.86	15.18	26.3	21.5	24.6	20.4
	0.76	40.0	13.43	9.26	0.69	1.69	1.81	15.12	27.1	22.0	25.3	20.8
10	0.38	13.1	13.18	9.26	0.70	2.04	2.17	15.22	22.0	18.5	20.8	17.6
	0.57	24.3	13.34	9.31	0.70	1.91	2.04	15.25	23.8	19.8	22.4	18.8
	0.76	38.5	13.39	9.32	0.70	1.85	1.98	15.24	24.6	20.4	23.1	19.3
15	0.38	12.4	12.83	9.13	0.71	2.27	2.39	15.10	19.3	16.5	18.3	15.8
	0.57	23.3	13.07	9.22	0.71	2.12	2.24	15.19	21.1	17.8	19.9	17.0
	0.76	37.1	13.17	9.26	0.70	2.05	2.17	15.22	21.9	18.5	20.7	17.6
20	0.38	11.8	12.37	8.92	0.72	2.52	2.65	14.89	16.7	14.5	15.9	13.9
	0.57	22.2	12.67	9.06	0.71	2.35	2.48	15.03	18.4	15.8	17.5	15.1
	0.76	35.6	12.82	9.12	0.71	2.27	2.40	15.09	19.2	16.4	18.2	15.7
25	0.38	11.1	11.83	8.68	0.73	2.81	2.94	14.64	14.3	12.7	13.7	12.2
	0.57	21.2	12.18	8.84	0.73	2.63	2.75	14.80	15.8	13.8	15.1	13.3
	0.76	34.2	12.34	8.91	0.72	2.54	2.66	14.88	16.6	14.4	15.8	13.9
30	0.38	10.5	11.24	8.41	0.75	3.14	3.27	14.38	12.2	10.9	11.7	10.5
	0.57	20.2	11.61	8.58	0.74	2.93	3.06	14.54	13.5	12.0	12.9	11.5
	0.76	32.8	11.79	8.66	0.73	2.83	2.96	14.63	14.2	12.5	13.6	12.1
35	0.38	10.3	10.62	8.14	0.77	3.51	3.64	14.13	10.3	9.3	10.0	9.0
	0.57	19.8	11.00	8.30	0.76	3.28	3.41	14.28	11.4	10.3	11.0	9.9
	0.76	32.2	11.19	8.39	0.75	3.17	3.29	14.36	12.0	10.8	11.6	10.4
40	0.38	10.1	10.00	7.88	0.79	3.93	4.05	13.92	8.7	8.0	8.4	7.7
	0.57	19.4	10.37	8.03	0.77	3.67	3.80	14.04	9.6	8.8	9.3	8.5
	0.76	31.7	10.56	8.11	0.77	3.55	3.67	14.11	10.1	9.2	9.8	8.9
45	0.38	9.9	9.40	7.65	0.81	4.39	4.52	13.78	7.3	6.8	7.1	6.6
	0.57	19.0	9.74	7.78	0.80	4.11	4.23	13.85	8.1	7.4	7.8	7.2
	0.76	31.1	9.93	7.85	0.79	3.98	4.10	13.90	8.5	7.8	8.3	7.6

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 048 Heating

549 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.38	19.7	OPERATION NOT RECOMMENDED								
	0.57	36.9									
	0.76	59.0	8.28	2.53	2.65	5.75	32.5	3.3	2.9	3.3	2.9
0	0.38	16.6	8.92	2.58	2.70	6.34	33.5	3.5	3.0	3.4	3.0
	0.57	31.9	9.23	2.61	2.73	6.62	33.9	3.5	3.1	3.5	3.1
	0.76	51.9	9.39	2.62	2.74	6.77	34.2	3.6	3.1	3.6	3.1
5	0.38	13.7	9.99	2.67	2.79	7.32	35.1	3.7	3.3	3.7	3.3
	0.57	25.4	10.35	2.70	2.82	7.65	35.6	3.8	3.4	3.8	3.3
	0.76	40.0	10.54	2.72	2.83	7.83	35.9	3.9	3.4	3.9	3.4
10	0.38	13.1	11.07	2.76	2.88	8.31	36.7	4.0	3.5	4.0	3.5
	0.57	24.3	11.47	2.79	2.91	8.68	37.3	4.1	3.6	4.1	3.6
	0.76	38.5	11.69	2.81	2.93	8.87	37.6	4.2	3.6	4.1	3.6
15	0.38	12.4	12.13	2.85	2.97	9.28	38.3	4.3	3.7	4.2	3.7
	0.57	23.3	12.56	2.89	3.00	9.67	39.0	4.3	3.8	4.3	3.8
	0.76	37.1	12.78	2.91	3.02	9.87	39.3	4.4	3.8	4.4	3.8
20	0.38	11.8	13.13	2.94	3.05	10.19	39.8	4.5	3.9	4.5	3.9
	0.57	22.2	13.55	2.97	3.09	10.58	40.5	4.6	4.0	4.5	4.0
	0.76	35.6	13.77	2.99	3.11	10.78	40.8	4.6	4.0	4.6	4.0
25	0.38	11.1	14.02	3.02	3.13	11.01	41.2	4.6	4.1	4.6	4.1
	0.57	21.2	14.42	3.05	3.17	11.36	41.8	4.7	4.1	4.7	4.1
	0.76	34.2	14.60	3.07	3.19	11.54	42.0	4.8	4.2	4.8	4.2
30	0.38	10.5	14.77	3.08	3.20	11.69	42.3	4.8	4.2	4.8	4.2
	0.57	20.2	15.09	3.11	3.23	11.98	42.8	4.8	4.2	4.8	4.2
	0.76	32.8	15.22	3.12	3.24	12.10	43.0	4.9	4.3	4.9	4.3
35	0.38	10.3	OPERATION NOT RECOMMENDED								
	0.57	19.8									
	0.76	32.2									
40	0.38	10.1									
	0.57	19.4									
	0.76	31.7									
45	0.38	9.9									
	0.57	19.0									
	0.76	31.1									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 060 Cooling

686 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			COOLING-EAT 27/19° C									
EWT °C	FLOW l/s	PD kPa	TC kW	SC kW	Sens/Tot Ratio	Power kW		HR kW	ECM		PSC	
						HR kW	EER W/W		EER W/W	SEER W/W	EER W/W	SEER W/W
-5	0.39	30.6	OPERATION NOT RECOMMENDED									
	0.59	59.2										
	0.79	96.2										
0	0.39	25.7	17.14	11.47	0.67	2.27	2.55	19.41	25.8	22.1	22.9	19.9
	0.59	51.5	17.11	11.51	0.67	2.17	2.46	19.28	26.9	22.8	23.8	20.6
	0.79	85.6	17.04	11.51	0.68	2.14	2.42	19.17	27.2	23.0	24.0	20.7
5	0.39	22.9	16.99	11.36	0.67	2.43	2.72	19.42	23.8	20.6	21.3	18.7
	0.59	43.2	17.13	11.45	0.67	2.30	2.58	19.42	25.5	21.8	22.6	19.7
	0.79	69.2	17.15	11.48	0.67	2.24	2.52	19.39	26.1	22.3	23.2	20.1
10	0.39	21.7	16.66	11.21	0.67	2.65	2.94	19.31	21.5	18.8	19.3	17.1
	0.59	41.5	16.94	11.34	0.67	2.47	2.76	19.41	23.4	20.3	20.9	18.4
	0.79	66.9	17.04	11.39	0.67	2.40	2.68	19.43	24.3	20.9	21.7	19.0
15	0.39	20.6	16.19	11.01	0.68	2.91	3.20	19.10	19.0	16.8	17.2	15.5
	0.59	39.7	16.57	11.17	0.67	2.70	2.99	19.27	20.9	18.4	18.9	16.8
	0.79	64.5	16.73	11.24	0.67	2.60	2.89	19.34	21.9	19.1	19.7	17.5
20	0.39	19.5	15.62	10.78	0.69	3.21	3.51	18.83	16.6	14.9	15.2	13.8
	0.59	38.0	16.08	10.97	0.68	2.97	3.26	19.05	18.5	16.4	16.8	15.1
	0.79	62.2	16.28	11.05	0.68	2.86	3.15	19.14	19.4	17.2	17.6	15.8
25	0.39	18.4	14.98	10.52	0.70	3.55	3.85	18.53	14.4	13.0	13.3	12.1
	0.59	36.3	15.48	10.72	0.69	3.29	3.58	18.77	16.1	14.4	14.7	13.4
	0.79	59.8	15.72	10.82	0.69	3.16	3.45	18.88	17.0	15.2	15.5	14.0
30	0.39	17.3	14.29	10.24	0.72	3.93	4.23	18.23	12.4	11.4	11.5	10.6
	0.59	34.7	14.81	10.45	0.71	3.64	3.93	18.46	13.9	12.6	12.8	11.8
	0.79	57.6	15.07	10.56	0.70	3.50	3.79	18.58	14.7	13.3	13.5	12.4
35	0.39	17.0	13.59	9.94	0.73	4.35	4.64	17.94	10.7	9.9	10.0	9.3
	0.59	34.1	14.11	10.16	0.72	4.04	4.33	18.15	11.9	11.0	11.1	10.3
	0.79	56.8	14.38	10.27	0.71	3.88	4.17	18.26	12.6	11.6	11.7	10.8
40	0.39	16.7	12.91	9.64	0.75	4.79	5.09	17.70	9.2	8.6	8.6	8.1
	0.59	33.5	13.41	9.86	0.74	4.46	4.76	17.87	10.2	9.5	9.6	9.0
	0.79	55.9	13.66	9.97	0.73	4.30	4.59	17.97	10.8	10.0	10.1	9.4
45	0.39	16.3	12.27	9.35	0.76	5.28	5.58	17.55	7.9	7.5	7.5	7.1
	0.59	32.9	12.72	9.55	0.75	4.93	5.22	17.65	8.8	8.2	8.3	7.8
	0.79	55.0	12.96	9.66	0.75	4.76	5.05	17.72	9.3	8.7	8.8	8.2

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Performance Data – TC H/V 060 Heating

686 l/S Nominal Airflow

Performance capacities shown in kW

WATER / BRINE			Heating - EAT 20 °C								
EWT °C	FLOW l/s	PD kPa	HC kW	Power kW		HE kW	LAT C	ECM		PSC	
				ECM	PSC			COP W/W	SCOP W/W	COP W/W	SCOP W/W
-5	0.39	30.6	OPERATION NOT RECOMMENDED								
	0.59	59.2									
	0.79	96.2	10.83	3.42	3.70	7.41	33.1	3.2	2.8	3.2	2.8
0	0.39	25.7	11.59	3.48	3.75	8.11	34.0	3.3	2.9	3.3	2.9
	0.59	51.5	12.09	3.51	3.79	8.57	34.6	3.4	3.0	3.4	3.0
	0.79	85.6	12.36	3.53	3.81	8.82	34.9	3.5	3.1	3.5	3.0
5	0.39	22.9	13.00	3.58	3.86	9.41	35.7	3.6	3.2	3.6	3.1
	0.59	43.2	13.57	3.63	3.90	9.94	36.4	3.7	3.3	3.7	3.3
	0.79	69.2	13.89	3.66	3.93	10.23	36.8	3.8	3.3	3.8	3.3
10	0.39	21.7	14.40	3.70	3.97	10.70	37.4	3.9	3.4	3.9	3.4
	0.59	41.5	15.05	3.75	4.03	11.29	38.2	4.0	3.5	4.0	3.5
	0.79	66.9	15.40	3.78	4.06	11.62	38.6	4.1	3.6	4.1	3.5
15	0.39	20.6	15.79	3.82	4.09	11.97	39.1	4.1	3.6	4.1	3.6
	0.59	39.7	16.51	3.88	4.15	12.62	39.9	4.3	3.7	4.2	3.7
	0.79	64.5	16.89	3.91	4.19	12.98	40.4	4.3	3.8	4.3	3.8
20	0.39	19.5	17.16	3.94	4.21	13.22	40.7	4.4	3.8	4.3	3.8
	0.59	38.0	17.94	4.01	4.28	13.93	41.7	4.5	3.9	4.5	3.9
	0.79	62.2	18.35	4.05	4.32	14.31	42.2	4.5	4.0	4.5	4.0
25	0.39	18.4	18.51	4.06	4.33	14.44	42.3	4.6	4.0	4.5	4.0
	0.59	36.3	19.34	4.14	4.41	15.20	43.4	4.7	4.1	4.7	4.1
	0.79	59.8	19.78	4.18	4.45	15.59	43.9	4.7	4.1	4.7	4.1
30	0.39	17.3	19.82	4.19	4.45	15.64	43.9	4.7	4.1	4.7	4.1
	0.59	34.7	20.69	4.27	4.54	16.42	45.0	4.8	4.2	4.8	4.2
	0.79	57.6	21.15	4.32	4.59	16.84	45.5	4.9	4.3	4.9	4.3
35	0.39	17.0	OPERATION NOT RECOMMENDED								
	0.59	34.1									
	0.79	56.8									
40	0.39	16.7									
	0.59	33.5									
	0.79	55.9									
45	0.39	16.3									
	0.59	32.9									
	0.79	55.0									

Interpolation is permissible; extrapolation is not.
All entering air conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
AHRI/ISO certified conditions are 27°C DB and 19°C WB in cooling and 20°C DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance data is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 4°C EWT is based upon a 20% methanol antifreeze solution.
Operation below 16°C EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
Gray shaded area in cooling refers to not recommended continuous operation below 10°C water

Airflow Correction Table

Entering Air Correction Tables

Cooling Corrections										
Ent Air WB °C	Total Clg Cap	Sens Clg Cap Multipliers - En tering DB °C							Power	Heat of Rej.
		20	21	24	27	29	32	35		
10	0.7800	0.9778	*	*	*	*	*	*	0.9972	0.8243
13	0.8327	0.8966	1.0556	*	*	*	*	*	0.9980	0.8667
16	0.8954	0.7505	0.9184	1.1056	*	*	*	*	0.9988	0.9169
18	0.9681		0.6778	0.8992	1.1213	1.3439	*	*	0.9997	0.9747
19	1.0000		0.5507	0.7782	1.0000	1.2161	1.4266	*	1.0000	1.0000
21	1.0508			0.6408	0.8856	1.1082	1.3087	1.4870	1.0005	1.0403
24	1.1435				0.6085	0.8566	1.0663	1.2376	1.0014	1.1135

* Sensible capacity equals total capacity.
AHRI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 27.0°C DB/ 19.0°C WB, and Heating - 20.0°C DB/ 15.0°C WB entering air temperature.

Heating Corrections			
Ent Air DB °C	Htg Cap	Power	Heat of Ext
7	1.0507	0.7802	1.1314
10	1.0327	0.8227	1.0953
13	1.0195	0.8683	1.0646
16	1.0102	0.9168	1.0380
18	1.0033	0.9680	1.0139
20	1.0000	1.0000	1.0000
21	0.9979	1.0218	0.9908
24	0.9928	1.0781	0.9673
27	0.9866	1.1367	0.9419

Airflow Correction Table

Airflow	Heating			Cooling				
% of Rated	Htg Cap	Power	Heat of Ext	Total Cap	Sens Cap	S/T	Power	Heat of Rej
75	0.9764	1.1134	0.9368	0.9605	0.8837	0.9200	0.9606	0.9605
81	0.9829	1.0789	0.9551	0.9730	0.9130	0.9384	0.9691	0.9722
88	0.9889	1.0484	0.9717	0.9837	0.9393	0.9548	0.9784	0.9826
94	0.9947	1.0222	0.9867	0.9927	0.9668	0.9739	0.9887	0.9919
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
106	1.0050	0.9820	1.0116	1.0055	1.0434	1.0377	1.0122	1.0069
113	1.0096	0.9681	1.0216	1.0093	1.1016	1.0915	1.0253	1.0126
119	1.0138	0.9583	1.0299	1.0113	1.1790	1.1658	1.0394	1.0171
125	1.0177	0.9527	1.0365	1.0116	1.2798	1.2652	1.0544	1.0204

Antifreeze Correction Table

EWT	Antifreeze Type	Antifreeze %	Cooling			Heating		WPD
			Total Cap	Sensible Cap	Watts	Total Cap	Watts	
90	Water	0%	1	1	1	1	1	1
	Ethanol	5%	0.998	0.998	1.002	0.996	0.999	1.025
		10%	0.996	0.996	1.003	0.991	0.997	1.048
		15%	0.994	0.994	1.005	0.987	0.996	1.098
		20%	0.991	0.991	1.006	0.982	0.994	1.142
		25%	0.986	0.986	1.009	0.972	0.991	1.207
		30%	0.981	0.981	1.012	0.962	0.988	1.265
		35%	0.977	0.977	1.015	0.953	0.985	1.312
		40%	0.972	0.972	1.018	0.943	0.982	1.37
		45%	0.966	0.966	1.023	0.931	0.978	1.431
		50%	0.959	0.959	1.027	0.918	0.974	1.494
	Ethylene Glycol	5%	0.998	0.998	1.002	0.996	0.999	1.021
		10%	0.996	0.996	1.003	0.991	0.997	1.04
		15%	0.994	0.994	1.004	0.987	0.996	1.079
		20%	0.991	0.991	1.005	0.982	0.995	1.114
		25%	0.988	0.988	1.008	0.976	0.993	1.146
		30%	0.985	0.985	1.01	0.969	0.99	1.175
		35%	0.982	0.982	1.012	0.963	0.988	1.208
		40%	0.979	0.979	1.014	0.956	0.986	1.243
		45%	0.976	0.976	1.016	0.95	0.984	1.278
		50%	0.972	0.972	1.018	0.943	0.982	1.314
	Methanol	5%	0.997	0.997	1.002	0.993	0.998	1.039
		10%	0.993	0.993	1.004	0.986	0.996	1.075
		15%	0.99	0.99	1.007	0.979	0.994	1.116
		20%	0.986	0.986	1.009	0.972	0.991	1.154
		25%	0.982	0.982	1.012	0.964	0.989	1.189
		30%	0.978	0.978	1.014	0.955	0.986	1.221
		35%	0.974	0.974	1.017	0.947	0.984	1.267
		40%	0.97	0.97	1.02	0.939	0.981	1.31
		45%	0.966	0.966	1.023	0.93	0.978	1.353
		50%	0.961	0.961	1.026	0.92	0.975	1.398
	Propylene Glycol	5%	0.995	0.995	1.003	0.99	0.997	1.065
		10%	0.99	0.99	1.006	0.98	0.994	1.119
		15%	0.986	0.986	1.009	0.971	0.991	1.152
		20%	0.981	0.981	1.012	0.962	0.988	1.182
		25%	0.978	0.978	1.014	0.956	0.986	1.227
		30%	0.975	0.975	1.016	0.95	0.984	1.267
		35%	0.972	0.972	1.018	0.944	0.982	1.312
		40%	0.969	0.969	1.02	0.938	0.98	1.356
		45%	0.965	0.965	1.023	0.929	0.977	1.402
		50%	0.96	0.96	1.026	0.919	0.974	1.45

Antifreeze Correction Table

EWT	Antifreeze Type	Antifreeze %	Cooling			Heating		WPD
			Total Cap	Sensible Cap	Watts	Total Cap	Watts	
30	Water	0%	1	1	1	1	1	1
	Ethanol	5%	0.991	0.991	1.006	0.981	0.994	1.14
		10%	0.981	0.981	1.012	0.961	0.988	1.242
		15%	0.973	0.973	1.018	0.944	0.983	1.295
		20%	0.964	0.964	1.024	0.927	0.977	1.343
		25%	0.959	0.959	1.028	0.917	0.974	1.363
		30%	0.954	0.954	1.031	0.907	0.97	1.383
		35%	0.949	0.949	1.035	0.897	0.967	1.468
		40%	0.944	0.944	1.038	0.887	0.964	1.523
		45%	0.94	0.94	1.041	0.88	0.962	1.58
		50%	0.936	0.936	1.043	0.872	0.959	1.639
	Ethylene Glycol	5%	0.997	0.997	1.002	0.993	0.998	1.04
		10%	0.993	0.993	1.004	0.986	0.996	1.075
		15%	0.99	0.99	1.006	0.98	0.994	1.122
		20%	0.987	0.987	1.008	0.973	0.992	1.163
		25%	0.983	0.983	1.011	0.966	0.99	1.195
		30%	0.979	0.979	1.013	0.958	0.987	1.225
		35%	0.976	0.976	1.016	0.951	0.985	1.279
		40%	0.972	0.972	1.018	0.943	0.982	1.324
		45%	0.969	0.969	1.021	0.937	0.98	1.371
		50%	0.966	0.966	1.023	0.93	0.978	1.419
	Methanol	5%	0.995	0.995	1.004	0.989	0.997	1.069
		10%	0.989	0.989	1.007	0.978	0.993	1.127
		15%	0.984	0.984	1.011	0.968	0.99	1.164
		20%	0.979	0.979	1.014	0.957	0.986	1.197
		25%	0.975	0.975	1.017	0.949	0.984	1.216
		30%	0.971	0.971	1.019	0.941	0.981	1.235
		35%	0.967	0.967	1.022	0.933	0.979	1.286
		40%	0.963	0.963	1.025	0.924	0.976	1.323
		45%	0.959	0.959	1.028	0.917	0.974	1.36
		50%	0.955	0.955	1.03	0.91	0.971	1.399
	Propylene Glycol	5%	0.995	0.995	1.004	0.989	0.997	1.071
		10%	0.989	0.989	1.007	0.978	0.993	1.13
		15%	0.985	0.985	1.01	0.968	0.99	1.206
		20%	0.98	0.98	1.013	0.958	0.987	1.27
		25%	0.974	0.974	1.017	0.947	0.983	1.359
		30%	0.968	0.968	1.021	0.935	0.979	1.433
		35%	0.963	0.963	1.025	0.924	0.976	1.522
		40%	0.957	0.957	1.029	0.913	0.972	1.614
		45%	0.949	0.949	1.034	0.898	0.967	1.712
		50%	0.941	0.941	1.039	0.882	0.962	1.816

Blower Performance Data – PSC

Airflow in l/s with wet coil and clean air filter

Model	Fan Speed	Rated Airflow (l/s)	Min Airflow (l/s)	Airflow (l/s) at External Static Pressure (Pa.)										
				0	25	50	75	100	125	150	175	200	225	250
TCH/V 006	HI	79	54		112	105	98	83	65					
	MED				94	87	76	68						
	LOW				76	68	58							
TCH/V 009	HI	121	85		145	134	124	113	99					
	MED				138	127	113	102	92					
	LOW				120	114	106	92						
TCH/V 012	HI	144	108		170	162	155	144	137	116				
	MED				151	144	137	130	123					
	LOW				130	126	116	112						
TCH/V 015	HI	192	140		269	255	248	230	195	163				
	MED			248	241	234	223	212	184					
	LOW			219	212	205	198	184	163					
TCH/V 018	HI	230	167		269	255	248	230	195					
	MED			248	241	234	223	212	184					
	LOW			219	212	205	198	184						
TCH/V 024	HI	274	241					343	319	298	264			
	MED			346	340	329	316	302	285	264				
	LOW			281	274	268	261	250						
TCH/V 030	HI	343	285				398	377	353	326	288			
	MED			429	412	394	374	357	333	305				
	LOW			384	367	353	336	319	298					
TCH/V 036	HI	412	350	532	518	501	480	462	424	389				
	MED			424	399	396	392	385	364					
	LOW			354	350									
TCH/V 042	HI	480	406	563	542	521	497	470	443	408				
	MED			511	494	477	460	436	408	384				
	LOW													
TCH/V 048	HI	549	484			679	655	617	576	511				
	MED			665	652	638	607	587	549	484				
	LOW			607	593	580	566	539	497					
TCH/V 060	HI	686	603	793	789	778	750	729	711	694	665	633		
	MED			725	722	704	686	669	648	630	605			
	LOW			655	651	640	630	612						

Black areas denote ESP where operation is not recommended.
Units factory shipped on medium speed. Other speeds require field selection.
All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 220V for 220-240V units.
Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Blower Performance Data – PSC High Static Unit

Model	Fan Speed	Rated Airflow (l/s)	Min Airflow (l/s)	Airflow (l/s) at External Static Pressure (Pa.)										
				0	25	50	75	100	125	150	175	200	225	250
TCH/V 015	HI	192	140			276	269	258	244	230	188			
	MED			265	255	248	237	234	223	212	173			
	LOW			237	226	219	212	205	202	188				
TCH/V 018	HI	230	167			276	269	258	244	230	188			
	MED			265	255	248	237	234	223	212	173			
	LOW			237	226	219	212	205	202	188				
TCH/V 024	HI	274	241						353	326	288			
	MED							357	333	305	257			
	LOW					353	336	319	298	271	244			
TCH/V 030	HI	343	285						398	357	316			
	MED							388	353	319				
	LOW			360	353	340	329	312	288					
TCH/V 036	HI	412	350					536	515	490	452	410		
	MED			476	469	462	455	441	431	403	375			
	LOW			361	354	350								
TCH/V 042	HI	480	406	0	0	532	521	504	497	473	425			
	MED			477	470	463	453	446	429	405	370			
	LOW													
TCH/V 048	HI	549	484					707	689	672	645	614	569	518
	MED			703	700	683	665	648	628	611	587	556	511	
	LOW			635	631	621	611	593	573	549	518			
TCH/V 060	HI	686	603	849	846	839	828	814	793	778	754	729	701	669
	MED			764	761	757	736	722	715	701	683	665	527	619
	LOW			683	679	676	669	665	655	648	637	619		

Black areas denote ESP where operation is not recommended.
Units factory shipped on medium speed. Other speeds require field selection.
All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 220V for 220-240V units.
Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Blower Performance Data – ECM

Airflow in l/s with wet coil and clean air filter

Model	Fan Speed	Rated Airflow (l/s)	Min Airflow (l/s)		External Static Pressure (Pa.)										
					0	25	50	75	100	125	150	175	200	225	250
TCH/V 006	4	79	53	Airflow (l/s)		128	119	111	101	94	88	82			
				Speed (RPM)		1236	1312	1401	1499	1600	1695	1785			
				Power (W)		37	40	42	45	49	52	56			
	3			Airflow (l/s)		117	108	99	92	85	79	74			
				Speed (RPM)		1205	1287	1389	1490	1588	1684	1770			
				Power (W)		33	35	38	41	44	47	51			
	2			Airflow (l/s)		111	99	90	82	74	67	61	58		
				Speed (RPM)		1156	1207	1321	1428	1534	1623	1709	1802		
				Power (W)		29	30	33	36	39	41	44	48		
	1			Airflow (l/s)		91	80	70	60	53					
				Speed (RPM)		992	1112	1237	1351	1454					
				Power (W)		20	22	24	27	29					
TCH/V 009	4	121	87	Airflow (l/s)		185	178	171	165	157					
				Speed (RPM)		1581	1644	1706	1767	1820					
				Power (W)		79	83	86	90	91					
	3			Airflow (l/s)		170	163	156	149	142					
				Speed (RPM)		1487	1550	1614	1678	1768					
				Power (W)		65	68	71	74	79					
	2			Airflow (l/s)		153	145	139	131	122	115				
				Speed (RPM)		1369	1438	1516	1603	1695	1774				
				Power (W)		51	54	57	61	64	68				
	1			Airflow (l/s)		127	118	107	97	89					
				Speed (RPM)		1195	1276	1385	1476	1563					
				Power (W)		34	36	40	42	44					
TCH/V 012	4	144	104	Airflow (l/s)		202	196	190	184	179	174				
				Speed (RPM)		1588	1627	1672	1718	1764	1811				
				Power (W)		109	112	115	118	121	124				
	3			Airflow (l/s)		182	175	169	162	156	150	144			
				Speed (RPM)		1469	1514	1561	1608	1659	1711	1778			
				Power (W)		84	87	89	92	95	98	102			
	2			Airflow (l/s)		165	158	151	145	138	131	125	118	110	
				Speed (RPM)		1364	1413	1467	1522	1582	1644	1707	1767	1819	
				Power (W)		67	69	72	74	77	80	84	87	89	
	1			Airflow (l/s)		142	134	126	118	110					
				Speed (RPM)		1205	1264	1328	1393	1469					
				Power (W)		46	49	51	53	56					

Black areas denote ESP where operation is not recommended.
Units factory shipped on speeds 2 and 1 for sizes 06-12; 3 and 2 for sizes 15-60. Other speeds require field selection.
All airflow is rated and shown above at the lower voltage.
Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Blower Performance Data – ECM

Airflow in l/s with wet coil and clean air filter

Model	Fan Speed	Rated Airflow (l/s)	Min Airflow (l/s)		External Static Pressure (Pa.)										
					0	25	50	75	100	125	150	175	200	225	250
TCH/V 015	5	192	142	Airflow (l/s)		297	281	275	254	241	228				
				Speed (RPM)		918	942	974	1066	1114	1159				
				Power (W)		105	107	110	120	125	130				
	4			Airflow (l/s)		274	260	248	229	216	199	176			
				Speed (RPM)		862	884	953	1025	1074	1134	1202			
				Power (W)		87	89	95	102	106	112	118			
	3			Airflow (l/s)		250	240	220	205	188	164	146			
				Speed (RPM)		805	831	930	984	1043	1119	1173			
				Power (W)		72	74	81	86	91	97	101			
	2			Airflow (l/s)		237	227	205	190	165	146				
				Speed (RPM)		770	814	904	961	1030	1100				
				Power (W)		63	67	73	78	84	88				
	1			Airflow (l/s)		221	205	186	168	142					
				Speed (RPM)		725	803	875	940	1022					
				Power (W)		54	59	64	68	74					
TCH/V 018	5	230	178	Airflow (l/s)		322	309	303	282	267					
				Speed (RPM)		1016	1034	1070	1160	1209					
				Power (W)		110	112	116	125	129					
	4			Airflow (l/s)		302	291	283	259	247	232				
				Speed (RPM)		969	989	1043	1130	1174	1211				
				Power (W)		95	96	101	109	113	116				
	3			Airflow (l/s)		291	281	266	247	234	219				
				Speed (RPM)		937	969	1031	1101	1148	1193				
				Power (W)		86	88	94	100	104	108				
	2			Airflow (l/s)		264	253	231	217	201	181				
				Speed (RPM)		860	899	995	1046	1098	1158				
				Power (W)		66	70	76	80	84	88				
	1			Airflow (l/s)		243	229	208	192						
				Speed (RPM)		801	867	949	1003						
				Power (W)		54	58	64	67						
TCH/V 024	5	274	234	Airflow (l/s)		413	394	377	363	348	328	301	278		
				Speed (RPM)		840	894	932	977	1024	1082	1156	1207		
				Power (W)		139	147	153	159	166	175	185	193		
	4			Airflow (l/s)		378	362	346	330	312	286	259	246		
				Speed (RPM)		808	850	893	938	992	1068	1129	1161		
				Power (W)		117	123	128	134	141	151	159	163		
	3			Airflow (l/s)		351	334	318	302	277	246				
				Speed (RPM)		767	808	854	903	977	1052				
				Power (W)		99	104	109	115	123	132				
	2			Airflow (l/s)		335	316	297	275	239					
				Speed (RPM)		717	764	819	884	975					
				Power (W)		83	88	94	101	110					
	1			Airflow (l/s)		307	288	269	237						
				Speed (RPM)		693	740	796	881						
				Power (W)		71	76	81	89						
TCH/V 030	5	343	295	Airflow (l/s)		481	471	457	444	432	419	407			
				Speed (RPM)		934	979	1028	1073	1110	1144	1182			
				Power (W)		195	204	213	221	228	235	243			
	4			Airflow (l/s)		443	429	414	401	388	373	357			
				Speed (RPM)		868	914	964	1004	1048	1092	1145			
				Power (W)		155	163	171	177	184	191	199			
	3			Airflow (l/s)		405	390	375	356	345	328	303			
				Speed (RPM)		806	859	909	953	1006	1061	1132			
				Power (W)		124	131	138	144	151	159	168			
	2			Airflow (l/s)		357	340	325	310						
				Speed (RPM)		748	806	855	909						
				Power (W)		96	103	109	115						
	1			Airflow (l/s)		341	323	306							
				Speed (RPM)		710	768	822							
				Power (W)		80	86	92							

Black areas denote ESP where operation is not recommended.
Units factory shipped on speeds 2 and 1 for sizes 06-12; 3 and 2 for sizes 15-60. Other speeds require field selection.
All airflow is rated and shown above at the lower voltage.
Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Blower Performance Data – ECM

Airflow in l/s with wet coil and clean air filter

Model	Fan Speed	Rated Airflow (l/s)	Min Airflow (l/s)		External Static Pressure (Pa.)										
					0	25	50	75	100	125	150	175	200	225	250
TCH/V 036	5	412	340	Airflow (l/s)		574	561	546	533	518	503				
				Speed (RPM)		939	983	1033	1079	1122	1169				
				Power (W)		269	280	292	303	314	325				
	4			Airflow (l/s)		527	513	498	484	468	450	433			
				Speed (RPM)		877	926	979	1025	1071	1119	1167			
				Power (W)		213	224	234	244	254	264	274			
	3			Airflow (l/s)		484	468	452	435	416	399	379	354		
				Speed (RPM)		824	879	932	981	1035	1082	1137	1197		
				Power (W)		167	177	187	196	205	213	222	233		
	2			Airflow (l/s)		442	424	407	386	367	347				
				Speed (RPM)		766	828	884	942	995	1051				
				Power (W)		132	141	149	158	166	175				
	1			Airflow (l/s)		399	379	357							
				Speed (RPM)		704	769	834							
				Power (W)		99	107	116							
TCH/V 042	5	480	411	Airflow (l/s)		615	604	588	574	560					
				Speed (RPM)		1025	1063	1109	1161	1205					
				Power (W)		272	280	289	301	312					
	4			Airflow (l/s)		572	559	545	531	518	506				
				Speed (RPM)		977	1019	1072	1120	1161	1201				
				Power (W)		228	236	245	255	263	270				
	3			Airflow (l/s)		534	521	506	491	478	465				
				Speed (RPM)		938	985	1039	1088	1130	1172				
				Power (W)		197	204	213	221	228	235				
	2			Airflow (l/s)		481	465	450	436	421					
				Speed (RPM)		854	911	965	1011	1057					
				Power (W)		152	159	166	172	178					
	1			Airflow (l/s)		421									
				Speed (RPM)		790									
				Power (W)		120									
TCH/V 048	5	549	472	Airflow (l/s)		768	745	722	698	674	653	628	599	577	
				Speed (RPM)		887	924	963	1006	1046	1081	1124	1167	1201	
				Power (W)		322	333	345	358	370	380	394	407	418	
	4			Airflow (l/s)		711	684	659	634	610	583	552	530	508	484
				Speed (RPM)		832	877	921	965	1006	1051	1098	1130	1166	1200
				Power (W)		266	278	289	300	311	323	336	344	354	364
	3			Airflow (l/s)		656	627	601	575	549	519	494			
				Speed (RPM)		788	835	882	926	972	1019	1057			
				Power (W)		223	233	244	254	264	275	283			
	2			Airflow (l/s)		594	566	539	510	476					
				Speed (RPM)		738	787	835	883	934					
				Power (W)		182	192	201	210	220					
	1			Airflow (l/s)		538	508	478							
				Speed (RPM)		689	744	793							
				Power (W)		152	161	169							
TCH/V 060	5	686	600	Airflow (l/s)		886	860	828	811	786	759	745	715	693	669
				Speed (RPM)		815	850	898	921	971	1010	1028	1083	1119	1215
				Power (W)		412	427	448	458	480	496	505	526	541	559
	4			Airflow (l/s)		831	812	781	762	735	711	692	664	639	
				Speed (RPM)		790	816	873	893	945	985	1003	1060	1102	
				Power (W)		353	363	390	393	418	436	440	465	481	
	3			Airflow (l/s)		800	774	740	721	693	668	648	617		
				Speed (RPM)		744	780	841	863	913	955	979	1038		
				Power (W)		302	315	335	344	364	375	387	408		
	2			Airflow (l/s)		753	724	693	669	647	617				
				Speed (RPM)		715	757	815	847	883	933				
				Power (W)		263	276	293	304	315	330				
	1			Airflow (l/s)		711	680	652	622						
				Speed (RPM)		686	732	789	828						
				Power (W)		230	242	257	268						

Black areas denote ESP where operation is not recommended.
Units factory shipped on speeds 2 and 1 for sizes 06-12; 3 and 2 for sizes 15-60. Other speeds require field selection.
All airflow is rated and shown above at the lower voltage.
Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Physical Data

TC Series	006	009	012	015	018	024	030	036	042	048	060
Compressor (1 Each)		Rotary				Scroll					
Factory Charge HFC-410A - kg	0.54	0.52	0.65	0.99	1.22	1.13	1.36	1.42	1.98	2.10	2.32
ECM Fan Motor & Blower											
Fan Motor (Watts)	186			249		373				746	
Blower Wheel Size (Dia x W) mm	127 x 127		152 x 127	229 x 178				229 x 203		254 x 254	305 x 254
PSC Fan Motor & Blower											
Fan Motor Type/Speeds	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3
Fan Motor (Watts)	19	75		53		149	249	249			
Blower Wheel Size (Dia x W) mm	127 x 127		152 x 127	229 x 178			229 x 178	229 x 203		254 x 254	305 x 254
Water Connection Size											
FPT	1/2"					3/4"				1"	
Coax Volume (liters)	0.29	0.37	0.50	0.68	0.79	0.68	1.13		1.83	1.54	2.32
Vertical											
Air Coil Dimensions (H x W) mm	254 x 381 3Row			508 x 438 3Row				610 x 553 3Row		610 x 718 3Row	
Filter Standard - 25.4mm Throwaway mm	254 x 457			508 x 508				610 x 610		457 x 610 356 x 610	
Weight - Operating kg	47	48	52	70	72	86	90	92	99	120	126
Weight - Packaged kg	51	52	56	72	74	88	92	95	102	123	130
Horizontal											
Air Coil Dimensions (H x W) mm	254 x 381 3Row			406 x 559 3Row				508 x 635 3Row			
Filter Standard - 25.4mm Throwaway mm	254 x 457			406 x 635		457 x 635		356 x 508 (2)		356 x 508 508 x 610	
Weight - Operating kg	47	48	52	70	72	79	83	92	99	120	126
Weight - Packaged kg	51	52	56	72	74	81	85	95	102	123	130

Notes:
All units have dual isolation compressor mounts for quiet operation, thermal expansion valves for refrigerant metering, and 22.2mm & 28.6mm electrical knockouts to accommodate field wiring.
FPT - Female Pipe Thread
Condensate Drain Connection is rubber coupling that couples to 3/4" schedule 40/80 PVC.

Unit Maximum Water Working Pressure	
Options	Max Pressure kPa
Base Unit	3447

TC – Horizontal – Dimensional Data

Horizontal Model		Overall Cabinet		
		A Width	B Length	C Height
006 - 012	cm	48.5	86.6	28.2
015 - 018	cm	51.1	109.5	43.2
024 - 030	cm	51.1	109.5	46.5
036 - 042	cm	51.1	119.6	53.3
048 - 060	cm	61.2	137.4	53.3

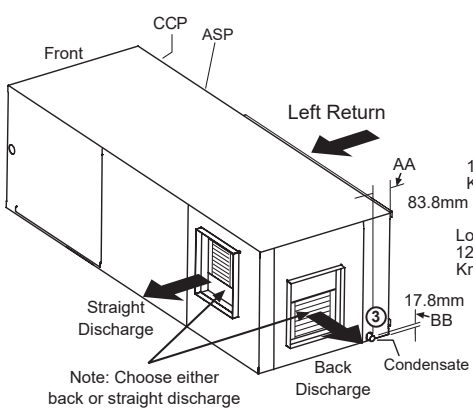
Horizontal Model		Electrical Knockouts	
		J 22.2mm	K 28.6mm
		Low Voltage	Power Supply
006 - 012	cm	13.0	5.4
015 - 018	cm	23.2	15.6
024 - 030	cm	28.2	20.6
036 - 060	cm	33.3	25.7

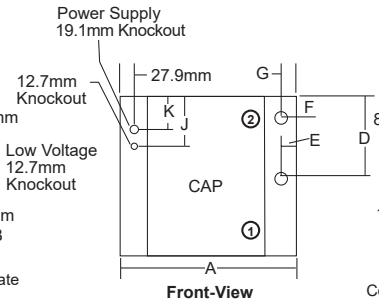
Horizontal Model		Water Connections						
		①		②		③		Loop In/Out FPT
		Loop In D	Loop In E	Loop Out F	Loop Out G	Condensate AA	Condensate BB	
006 - 012	cm	14.2	2.7	4.1	2.7	8.4	1.8	1/2”
015	cm	38.4	3.4	8.1	3.5	8.4	1.8	1/2”
018	cm	38.4	3.4	10.4	3.5	8.4	1.8	1/2”
024	cm	41.7	3.4	11.3	3.5	8.4	1.8	3/4”
030	cm	41.7	3.4	7.8	3.5	8.4	1.8	3/4”
036	cm	48.5	3.4	13.4	3.5	8.4	1.8	3/4”
042	cm	48.5	3.4	11.3	3.5	8.4	1.8	3/4”
048	cm	48.5	3.4	11.1	3.5	8.4	1.8	1”
060	cm	48.5	3.4	9.7	3.5	8.4	1.8	1”

Horizontal Model		Discharge Connection Duct Flange Installed (+/- 2.5mm)					Return Connection Using Return Air Opening			
		L	M Supply Height	N Supply Width	O	P	Q Return Width	R Return Height	S	T
006 - 012	cm	1.9	22.7	17.0	15.2	3.3	41.0	25.0	2.7	1.5
015 - 018	cm	6.6	33.8	25.1	10.5	3.3	58.4	38.1	2.8	2.5
024 - 030	cm	6.6	33.8	25.1	10.5	3.3	58.4	41.4	2.8	2.5
036 - 042	cm	6.3	40.9	27.9	7.7	6.4	65.8	48.3	2.8	2.5
048	cm	9.5	41.0	34.8	10.3	3.2	91.2	48.3	2.8	2.5
060	cm	4.4	46.0	34.8	10.3	3.2	91.2	48.3	2.8	2.5

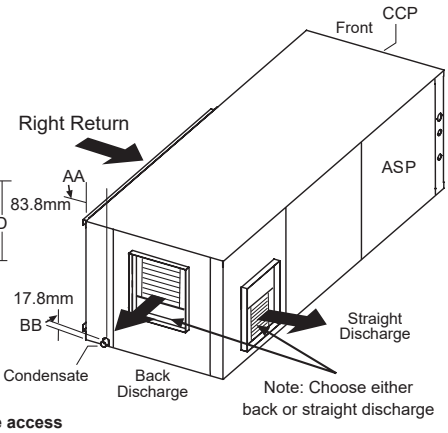
TC – Horizontal – Dimensional Data

LEFT RETURN

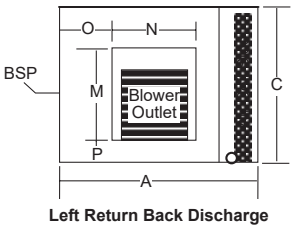




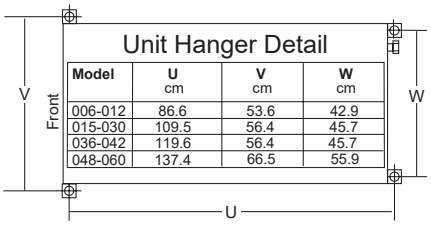
RIGHT RETURN

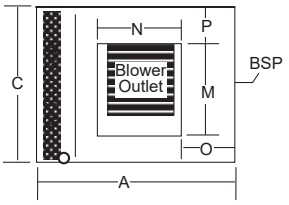


Note: Blower service panel requires 61cm service access

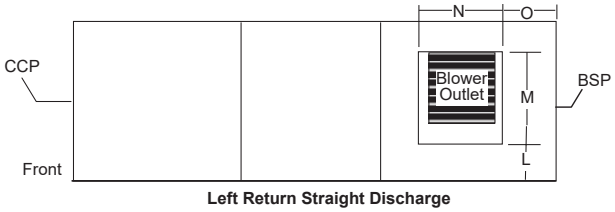


Left Return Back Discharge



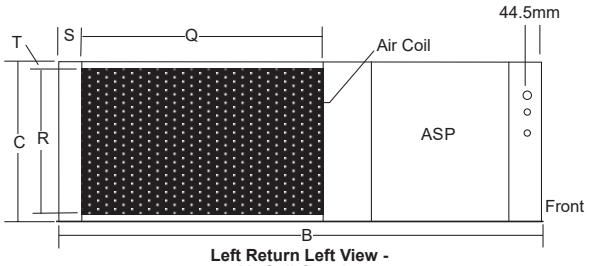


Right Return Back Discharge

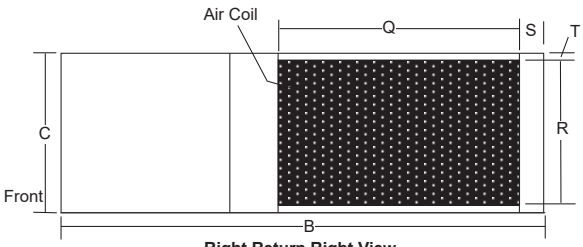


Left Return Straight Discharge

Right Return Straight Discharge



Left Return Left View - Air Coil Opening



Right Return Right View - Air Coil Opening

Notes:

1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Units are shipped with an air filter supported by a set of filter rails. These rails are not suitable for supporting duct work. If a return air duct is to be connected to the unit, these rails should be removed and replaced with the ClimateMaster AFF Series accessory filter frame or some other air filter support system.
3. Discharge flange and hanger brackets are factory installed.
4. Condensate fitting on Polymer drain pan is rubber coupling that couples to ¾" schedule 40/80 PVC, S.S. drain pan is 3/4" MPT.
5. Blower service panel requires 61cm service access.
6. Blower service access is through back panel on straight discharge units or through panel opposite air coil on back discharge units

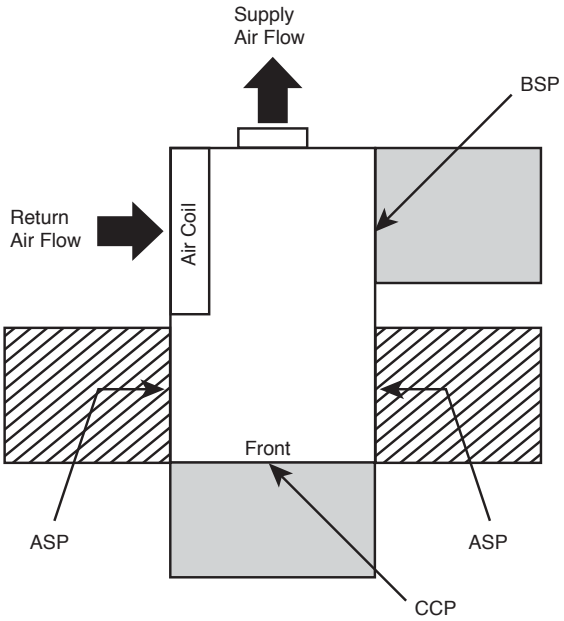
Legend:

CCP = Control/Compressor Access Panel
BSP = Blower Service Panel
*ASP = Additional Service Panel (not required)
FPT = Female Pipe Thread

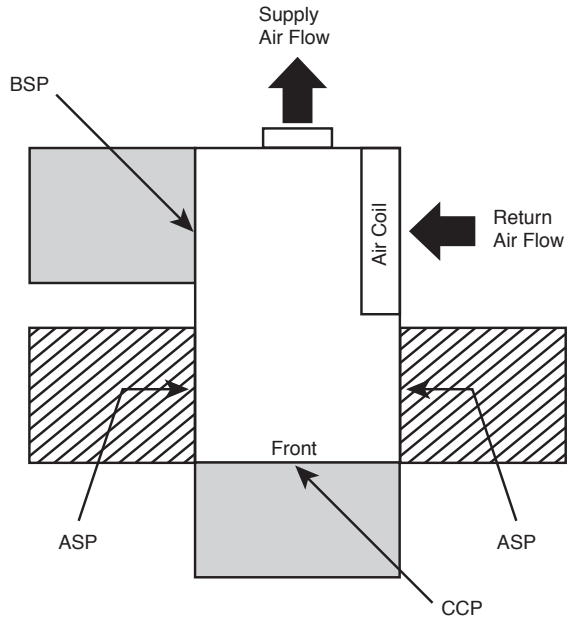
Note:
*ASP are removable panels that provide additional access to the units interior. Clear access to ASP panels is not required and they are not to be used in place of the mandatory CCP and BSP panels.

TC – Horizontal Service Access

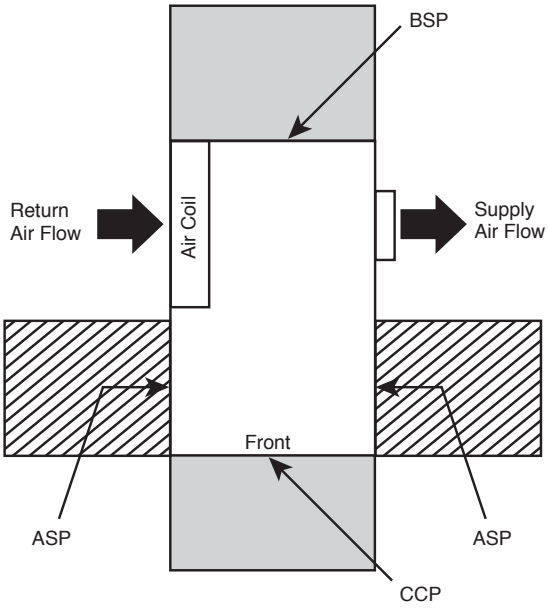
Left Return Back Discharge



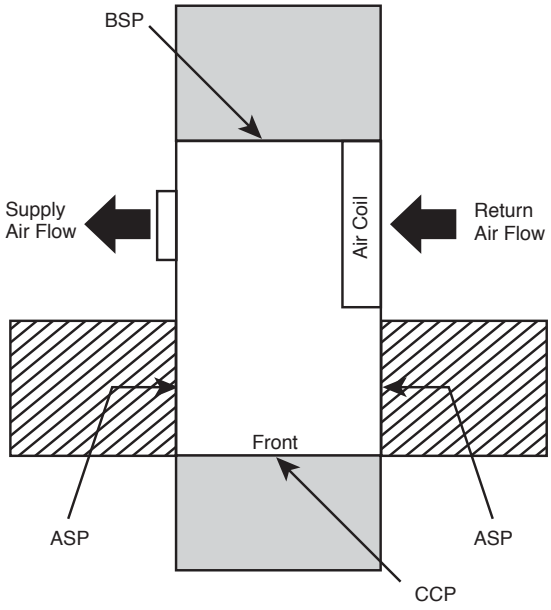
Right Return Back Discharge



Left Return Straight Discharge



Right Return Straight Discharge



= mandatory 61 cm service access

= (optional) additional 61 cm service access

Notes:

1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. CCP and BSP requires 61 cm service access.
3. Blower service access is through back panel on straight discharge units or through panel opposite air coil on back discharge units.
4. ASP are removable panels that provide additional access to the units interior. Clear access to ASP panels is not required and they are not to be used in place of the mandatory CCP and BSP panels.

Legend:

CCP = Control/Compressor Access Panel
BSP = Blower Service Panel
ASP = Additional Service Panel (not required)

TC – Vertical Upflow – Dimensional Data

Vertical Upflow Model		Overall Cabinet		
		A Width	B Depth	C Height
006 - 012	cm	48.5	48.5	55.9
024 - 030	cm	54.6	54.6	101.6
015 - 042	cm	54.6	66.0	114.3
048 - 060	cm	61.0	82.6	116.8

Vertical Model		Electrical Knockouts	
		K 22.2mm	L 28.6mm
		Low Voltage	Power Supply
006 - 012	cm	14.9	22.5
015 - 060	cm	18.1	25.7

Vertical Upflow Model		Water Connections - Standard Units						
		①		②		③		Loop In/ Out FPT
		Loop In D	Loop In E	Loop Out F	Loop Out G	Condensate H	Condensate I	
006 - 012	cm	3.8	3.8	24.1	3.8	29.7	3.6	1/2”
015	cm	4.8	3.6	35.1	3.6	50.0	3.6	1/2”
018	cm	4.8	3.6	35.1	3.6	50.0	3.6	1/2”
024	cm	4.8	3.6	35.1	3.6	50.0	3.6	3/4”
030	cm	4.8	3.6	38.6	3.6	50.0	3.6	3/4”
036	cm	4.8	3.6	38.6	3.6	52.3	3.6	3/4”
042	cm	4.8	3.6	42.0	3.6	52.3	3.6	3/4”
048	cm	4.8	3.6	42.9	3.6	54.9	3.6	1”
060	cm	4.8	3.6	44.2	3.6	54.9	3.6	1”

Notes:

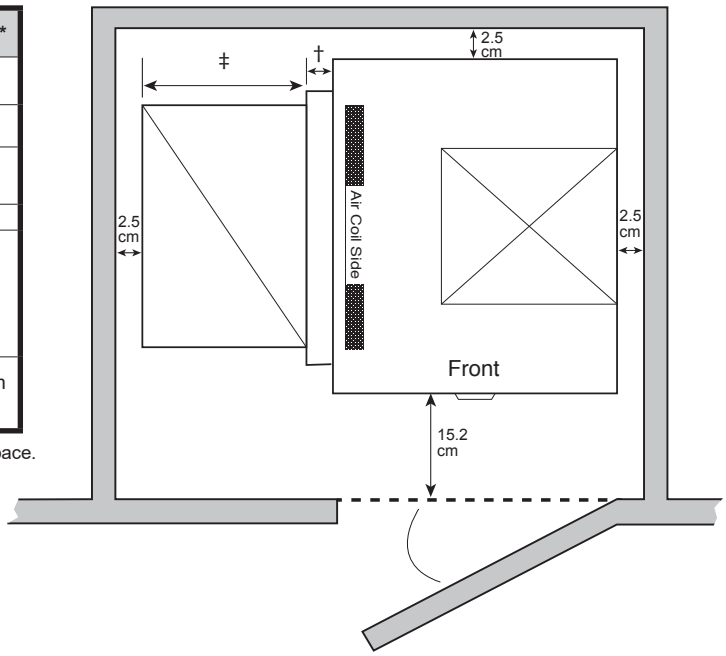
1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Front & Side access is preferred for service access. However, all components may be serviced from the front access panel if side access is not available. (Except on TCV 015-030 with front return) Units with front return require left side access for the fan.
3. Discharge flange is field installed.
4. Condensate fitting on Polymer drain pan is rubber coupling that couples to ¾” schedule 40/80 PVC, S.S. drain pan is 3/4” MPT.
5. Units are shipped with an air filter supported by a set of filter rails. These rails are not suitable for supporting duct work. If a return air duct is to be connected to the unit, these rails should be removed and replaced with the ClimateMaster AFF Series accessory filter frame or some other air filter support system.

Legend:

CCP = Control/Compressor Access Panel
BSP = Blower Service Panel
ASP = Alternative Service Panel
FPT = Female Pipe Thread

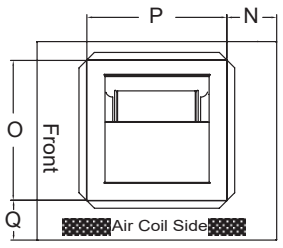
Recommended Minimum Installation Clearances for Vertical Units*	
2.5 cm	Back of unit
	Side opposite return air
15.2 cm	Front if hard piped
Return Air Side	
2.5 cm	Ducted return - ‡ Add for duct width - † Add 5.0 cm for 2.5 cm filter frame/rail or 7.6 cm for 5.0 cm filter frame/rail
	Free (open) return - calculate required dimension for a maximum velocity of 3.0 m/s

*Field installed accessories (hoses, air cleaners, etc.) may require additional space. Top supply air is shown, the same clearances apply to bottom supply air units.

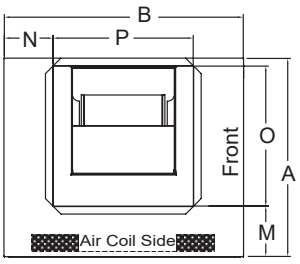


TC – Vertical Upflow – Dimensional Data

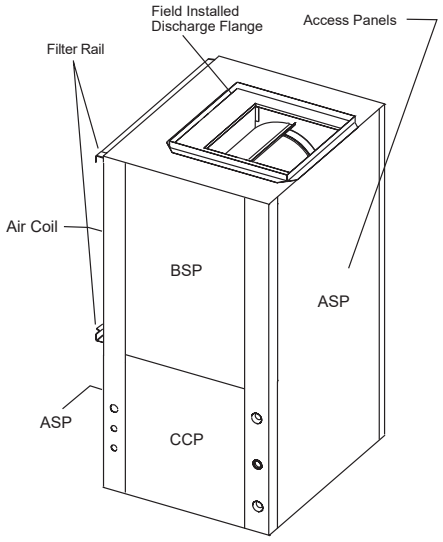
Vertical Model		Discharge Connection Duct Flange Installed (+/- 2.5mm)					Return Connection Using Return Air Opening			
		M	N	O Supply Width	P Supply Depth	Q	R	S Return Depth	T Return Height	U
006 - 012	cm	22.7	12.9	22.9	22.9	14.0	5.3	41.1	25.1	1.9
015 - 030	cm	16.1	9.5	35.6	35.6	13.6	5.8	46.5	53.1	1.9
036 - 042	cm	16.1	9.5	35.6	35.6	13.1	5.8	57.9	60.7	1.9
048 - 060	cm	17.4	18.4	40.6	45.7	13.1	5.8	74.4	57.0	1.9



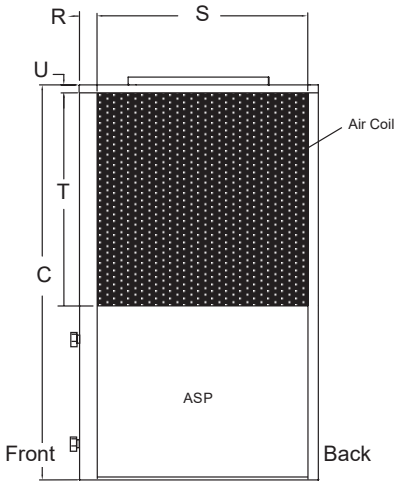
Top View-Right Return



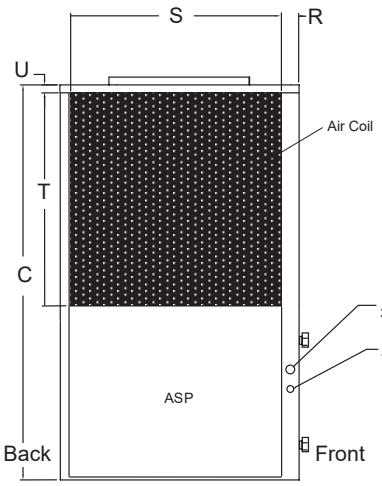
Top View-Left Return



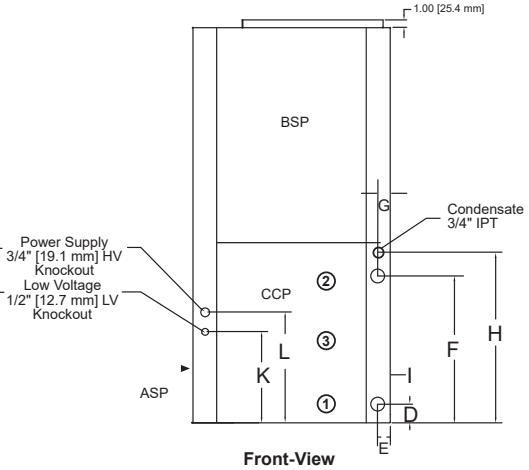
Isometric View



Right Return Right View - Air Coil Opening



Left Return Left View - Air Coil Opening



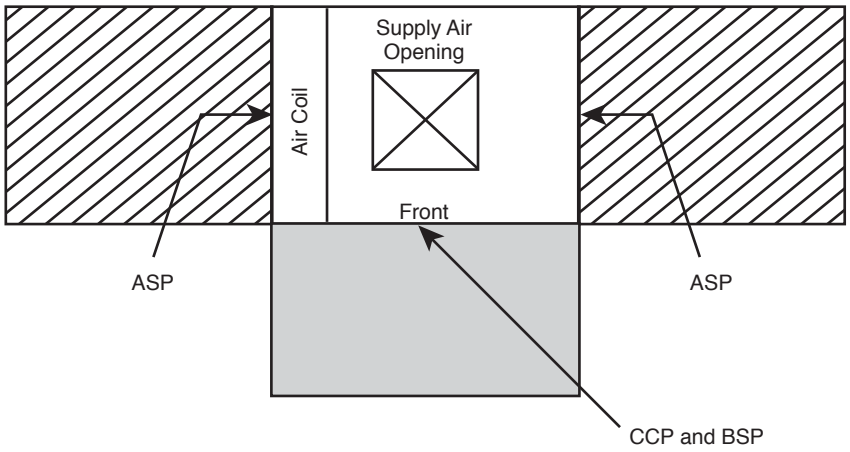
Front-View

Units shipped with filter rails. These rails should be removed for return duct connection.
See Aff---- for accessory air filter frame with duct collar.

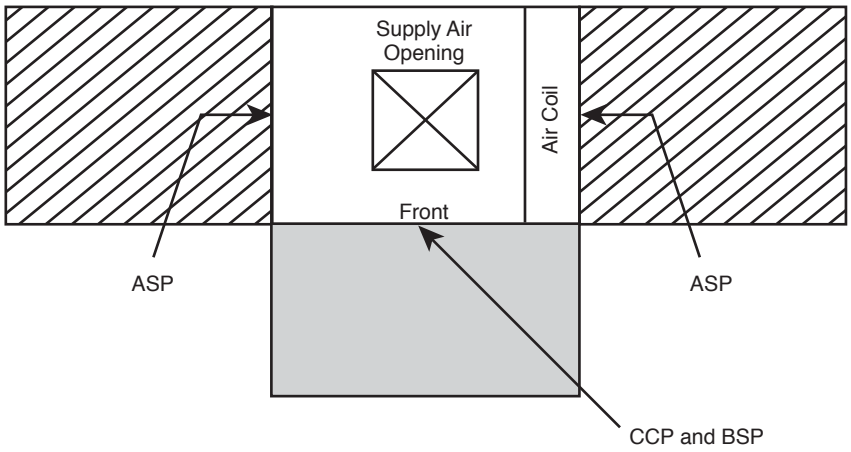
TC – Vertical Service Access

Vertical Units

Left Return



Right Return



Notes:

1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Front & Side access is preferred for service access. However, all components may be serviced from the front access panel if side access is not available.
3. ASP are removable panels that provide additional access to the units interior. Clear access to ASP panels is not required and they are not to be used in place of the mandatory CCP and BSP panels.
4. Top supply air is shown, the same clearances apply to bottom supply air units.
5. Front return units (not shown) require front access for controls/compressor and left side access for blower.

= mandatory 61 cm service access

= (optional) additional 61 cm service access

Legend:

CCP = Control/Compressor Access Panel
BSP = Blower Service Panel
ASP = Additional Service Panel (not required)

Corner Weights for TCH Series Units

Model		Total	Left-Front*	Right-Front*	Left-Back*	Right-Back*
TCH006	kg	47	17	11	11	9
TCH009	kg	48	17	11	10	9
TCH012	kg	52	19	12	12	10
TCH015	kg	69	24	16	15	14
TCH018	kg	72	25	17	16	14
TCH024	kg	79	28	18	18	15
TCH030	kg	83	30	19	18	15
TCH036	kg	92	34	21	20	17
TCH042	kg	99	37	23	22	18
TCH048	kg	119	44	27	26	21
TCH060	kg	126	47	29	28	23

*Front is control box end.

Electrical Data

TCH/V Standard Unit

TC Model	Voltage Code	Rated Voltage	Voltage Min/Max	Compressor			Fan Motor FLA	Total Unit FLA	Min Circuit Amp	Max Fuse
				QTY	RLA	LRA				
006	V	220/240/50/1	209/252	1	2.8	15.0	0.4	3.2	3.9	15
009	V	220/240/50/1	209/252	1	3.1	18.8	0.7	3.8	4.6	15
012	V	220/240/50/1	209/252	1	4.0	21.0	0.7	4.7	5.7	15
015	V	220/240/50/1	209/252	1	4.7	23.0	0.9	5.6	6.7	15
018	V	220/240/50/1	209/252	1	5.9	24.0	0.9	6.8	8.2	15
024	V	220/240/50/1	209/252	1	9.0	52.0	1.3	10.3	12.6	20
030	V	220/240/50/1	209/252	1	11.2	60.0	2.7	13.9	16.7	25
	U	380/420/50/3	361/436	1	3.9	28.0	1.7	5.6	6.6	15
036	V	220/240/50/1	209/252	1	13.5	67.0	2.0	15.5	18.9	30
	U	380/420/50/3	361/436	1	5.4	38.0	1.2	6.6	8.0	15
042	U	380/420/50/3	361/436	1	6.0	46.0	1.7	7.7	9.2	15
048	U	380/420/50/3	361/436	1	6.1	43.0	1.8	7.9	9.4	15
060	U	380/420/50/3	361/436	1	7.8	51.5	2.5	10.3	12.3	20

All fuses Class RK-5

TCH/V High Static Unit

TC Model	Voltage Code	Rated Voltage	Voltage Min/Max	Compressor			Fan Motor FLA	Total Unit FLA	Min Circuit Amp	Max Fuse
				QTY	RLA	LRA				
015	V	220/240/50/1	209/252	1	4.7	23.0	0.9	5.6	6.7	15
018	V	220/240/50/1	209/252	1	5.9	24.0	1.3	7.2	8.7	15
024	V	220/240/50/1	209/252	1	9	52.0	2.7	11.7	14.0	20
030	V	220/240/50/1	209/252	1	11.2	60.0	2.7	13.9	16.7	25
	U	380/420/50/3	361/436	1	3.9	28.0	1.7	5.6	6.6	15
036	V	220/240/50/1	209/252	1	13.5	67.0	2.7	16.2	19.6	30
	U	380/420/50/3	361/436	1	5.4	38.0	1.7	7.1	8.5	15
042	U	380/420/50/3	361/436	1	6	46.0	1.7	7.7	9.2	15
048	U	380/420/50/3	361/436	1	6.1	43.0	2.5	8.6	10.1	15
060	U	380/420/50/3	361/436	1	7.8	51.5	2.6	10.4	12.4	20

All fuses Class RK-5

TCH/V ECM Motor Unit

TC Model	Voltage Code	Rated Voltage	"Voltage Min/Max"	Compressor			Fan Motor FLA	Total Unit FLA	Min Circuit Amp	Max Fuse
				Qty	RLA	LRA				
006	V	220-240/50/1	206.8 / 254.4	1	2.14	15.0	2.30	4.4	5.0	15
009	V	220-240/50/1	206.8 / 254.4	1	3.10	18.8	2.30	5.4	6.2	15
012	V	220-240/50/1	206.8 / 254.4	1	4.05	21.0	2.30	6.4	7.4	15
015	V	220-240/50/1	206.8 / 254.4	1	4.70	23.0	2.60	7.3	8.5	15
018	V	220-240/50/1	206.8 / 254.4	1	5.90	24.0	2.60	8.5	10.0	15
024	V	220-240/50/1	206.8 / 254.4	1	9.00	52.0	4.60	13.6	15.9	20
030	V	220-240/50/1	206.8 / 254.4	1	11.20	60.0	4.60	15.8	18.6	25
	U	380-420/50/3	357.2 / 445.2	1	3.90	28.0	1.10	5.0	6.0	15
036	V	220-240/50/1	206.8 / 254.4	1	13.50	67.0	4.60	18.1	21.5	30
	U	380-420/50/3	357.2 / 445.2	1	5.40	38.0	1.10	6.5	7.9	15
042	U	380-420/50/3	357.2 / 445.2	1	6.00	46.0	1.10	7.1	8.6	15
048	U	380-420/50/3	357.2 / 445.2	1	6.10	43.0	2.10	8.2	9.7	15
060	U	380-420/50/3	357.2 / 445.2	1	7.80	51.5	2.10	9.9	11.9	15

All fuses Class RK-5

TC Series Wiring Diagram Matrix

All current diagrams can be located online at climatemaster.com. Click 'Commercial Professional'.

1. Click 'Products' in the main navigation
2. Select 'Small Packaged Units'
3. Select the TR product series
4. Click the Wire Diagrams tab in the middle of the page
5. Select your voltage and controls

Unit Controller	Fan Motor	220-240/50/1	380-420/50/3
		006-036	030-060
CXM2	PSC	96B0514N41	96B0514N51
	CT ECM	96B0514N42	96B0514N52
DXM2.5	PSC	96B0480N12	96B0480N22
	CT ECM	96B0228N93	96B0230N64
Auxiliary WD for MPC Controls		96B0147N14	

Tranquility® (TC) Series 50 Hz
Engineering Specifications – Page 1

General:

Furnish and install ClimateMaster "Tranquility® 16" (Tranquility® Compact) Water Source Heat Pumps, as indicated on the plans. Equipment shall be completely assembled, piped and internally wired. Capacities and characteristics as listed in the schedule and the specifications that follow.

Units shall be supplied completely factory built capable of operating over an entering water temperature range from -5° to 45°C as standard. Equivalent units from other manufacturers may be proposed provided approval to bid is given 10 days prior to bid closing. All equipment listed in this section must be rated in accordance with International Standards Organization (ISO) 13256-1 and EN14511-2. The units shall have CE labels.

All units shall pass a factory acceptance test. The quality control system shall automatically perform the factory acceptance test via computer. A detailed report card from the factory acceptance test shall ship with each unit. Note: If unit fails the factory acceptance test it shall not be allowed to ship. Unit serial number will be recorded by factory acceptance test and furnished on report card for ease of unit warranty status.

Basic Construction:

Horizontal Units shall have one of the following air flow arrangements: Left Inlet/Straight (Right) Discharge; Right Inlet/Straight (Left) Discharge; Left Inlet/Back Discharge; or Right Inlet/Back Discharge as shown on the plans. Units must have the ability to be field convertible from straight to back or back to straight discharge with no additional parts or unit structure modification. Horizontal units will have factory installed hanger brackets with rubber isolation grommets packaged separately.

Vertical Units shall have one of the following air flow arrangements: Left Return/Top Discharge, Right Return/Top Discharge, as shown on the plans.

If units with these arrangements are not used, the contractor is responsible for any extra costs incurred by other trades. All units (horizontal and vertical) must have a minimum of three access panels for serviceability of compressor compartment. **Units having only one access panel to compressor/heat exchangers/expansion device/refrigerant piping shall not be acceptable.**

All interior surfaces shall be lined with 12.7mm thick, 24 kg/m3 acoustic type glass fiber insulation. Insulation placement shall be designed in a manner that will eliminate any exposed edges to prevent the introduction of glass fibers into the air stream.

The heat pumps shall be fabricated from heavy gauge galvanized steel.

Standard cabinet panel insulation must meet NFPA 90A requirements, air erosion and mold growth limits of UL-181, stringent fungal resistance test per ASTM-C1071 and ASTM G21, and shall meet zero level bacteria growth per ASTM G22. **Unit insulation must meet these stringent requirements or unit(s) will not be accepted.**

All horizontal units to have factory installed 25.4mm discharge air duct collars, 25.4mm filter rails with 25.4mm filters factory installed, and factory installed unit-mounting brackets. Vertical units to have field installed discharge air duct collar, shipped loose and 25.4mm filter rails with 25.4mm filters factory installed. If units with these factory installed provisions are not used, the contractor is responsible for any extra costs to field install these provisions, and/or the extra costs for his sub-contractor to install these provisions.

All units must have an insulated panel separating the fan compartment from the compressor compartment. Units with the compressor in the air stream are not acceptable. Units shall have factory installed 25.4mm wide filter rails for filter removal from either side. Units shall have a 25.4mm thick throwaway type glass fiber filter. The contractor shall purchase one spare set of filters and replace factory shipped filters on completion of start-up. Filters shall be standard sizes. If units utilize non-standard filter sizes then the contractor shall provide 12 spare filters for each unit.

Tranquility® (TC) Series 50 Hz
Engineering Specifications – Page 2

Cabinets shall have separate holes and knockouts for entrance of line voltage and low voltage control wiring. All factory-installed wiring passing through factory knockouts and openings shall be protected from sheet metal edges at openings by plastic ferrules. Supply and return water connections shall be copper FPT fittings. All water connections and electrical knockouts must be in the compressor compartment corner post as to not interfere with the serviceability of unit. Contractor shall be responsible for any extra costs involved in the installation of units that do not have this feature. Contractor must ensure that units can be easily removed for servicing and coordinate locations of electrical conduit and lights with the electrical contractor.

Units shall have an Ingress Protection Rating of IP25

Option: Contractor shall install 50.8mm filter frame with removable access door and 50.8mm Glass Fiber throwaway filters on all units.

Option: UltraQuiet package shall consist of discharge muffler (except sizes 006—012); and sound attenuating material applied to the fan housing.

Option: The unit will be supplied with cupro nickel coaxial water to refrigerant heat exchanger.

Option: The unit shall be supplied with extended range insulation option, which adds closed cell insulation to internal water lines, and provides insulation on suction side refrigeration tubing including refrigerant to water heat exchanger.

Fan and Motor Assembly:

Blower shall have inlet rings to allow removal of wheel and motor from one side without removing housing. Units shall have a direct-drive centrifugal fan. The fan motor shall be 3-speed, permanently lubricated, PSC type, with internal thermal overload protection. Units supplied without permanently lubricated motors must provide external oilers for easy service. The fan motor on small and medium size units (009-042) shall be isolated from the fan housing by a torsionally flexible motor mounting system with rubber type grommets to inhibit vibration induced high noise levels associated with “hard wire belly band” motor mounting. The fan motor on larger units (048 & 060) shall be isolated with flexible rubber type isolation grommets only. The fan and motor assembly must be capable of overcoming the external static pressures as shown on the schedule. Airflow/Static pressure rating of the unit shall be based on a dry coil and a clean filter in place.

Option: High static motors

Option: ECM motors

Refrigerant Circuit:

All units shall contain an EarthPure® (HFC-410A) sealed refrigerant circuit including a high efficiency scroll or rotary compressor designed for heat pump operation, a thermostatic expansion valve for refrigerant metering, an enhanced corrugated aluminum lanced fin and rifled copper tube refrigerant to air heat exchanger, reversing valve, coaxial (tube in tube) refrigerant to water heat exchanger, and safety controls including a high pressure switch, low pressure (loss of charge) switch, water coil low temperature sensor, and air coil low temperature sensor. Access fittings shall be factory installed on high and low pressure refrigerant lines to facilitate field service. Activation of any safety device shall prevent compressor operation via a microprocessor lockout circuit. The lockout circuit shall be reset at the thermostat or at the contractor supplied disconnect switch. **Units that cannot be reset at the thermostat shall not be acceptable.**

The compressor shall have a dual level vibration isolation system. The compressor will be mounted on vibration isolation grommets or springs to a large heavy gauge compressor mounting plate, which is then isolated from the cabinet base with rubber grommets for maximized vibration attenuation. Compressor shall have thermal overload protection. Compressor shall be located in an insulated compartment away from air stream to minimize sound transmission.

Tranquility® (TC) Series 50 Hz
Engineering Specifications – Page 3

Refrigerant to air heat exchangers shall utilize enhanced corrugated lanced aluminum fins and rifled copper tube construction rated to withstand 4309 kPa refrigerant working pressure. Refrigerant to water heat exchangers shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 4309 kPa working refrigerant pressure. The refrigerant to water heat exchanger shall be "electro-coated" with a low cure cathodic epoxy material a minimum of 0.4 mils thick (0.4 – 1.5 mils range) on all surfaces. The black colored coating shall provide a minimum of 1000 hours salt spray protection per ASTM B117-97 on all external steel and copper tubing. The material shall be formulated without the inclusion of any heavy metals and shall exhibit a pencil hardness of 2H (ASTM D3363-92A), crosshatch adhesion of 4B-5B (ASTM D3359-95), and impact resistance of 184 kg-cm direct (ASTM D2794-93).

Refrigerant metering shall be accomplished by thermostatic expansion valve only. Expansion valves shall be dual port balanced types with external equalizer for optimum refrigerant metering. Units shall be designed and tested for operating ranges of entering water temperatures from 20° to 120°F (-6.7° to 43.3°C). Reversing valve shall be four-way solenoid activated refrigerant valve, which shall default to heating mode should the solenoid fail to function. If the reversing valve solenoid defaults to cooling mode, an additional low temperature thermostat must be provided to prevent over-cooling an already cold room.

Drain Pan:

The drain pan shall be constructed of a polymer material that inhibits corrosion. If galvanized steel drain pan is used, it must meet the stringent 1,000 hour salt spray test per ASTM B117. Drain pan shall be fully insulated. Drain outlet shall be located at pan as to allow unobstructed drainage of condensate. Drain outlet shall be connected from pan directly to a rubber coupling. **No hidden internal tubing extensions from pan outlet extending to unit casing (that can create drainage problems) will be accepted.** The unit as standard will be supplied with solid-state electronic condensate overflow protection. **Mechanical float switches will NOT be accepted**

Electrical:

A control box shall be located within the unit compressor compartment and shall contain a 50VA transformer, 24 volt activated, 2 or 3 pole compressor contactor, terminal block for thermostat wiring and solid-state controller for complete unit operation. The control box on sizes 015 through 060 shall have a door to protect the internal components. The entire control box shall be capable of rotating out of the unit to allow access to the components behind the control box. Reversing valve and fan motor wiring shall be routed through this electronic controller. Units shall be name-plated for use with time delay fuses or HACR circuit breakers. Unit controls shall be 24 Volt and provide heating or cooling as required by the remote thermostat/ sensor.

Enhanced Solid State Control System (CXM2):

Units shall have a solid-state control system. Units utilizing electro-mechanical control shall not be acceptable. The control system microprocessor board shall be specifically designed to protect against building electrical system noise contamination, EMI, and RFI interference. The control system shall interface with a heat pump type thermostat. The control system shall have the following features:

a. Anti-short cycle time delay on compressor operation.
b. Random start on power up mode.
c. Low voltage protection.
d. High voltage protection.
e. Unit shutdown on high or low refrigerant pressures.
f. Unit shutdown on low water temperature.
g. Condensate overflow electronic protection.
h. Option to reset unit at thermostat or disconnect.
i. Automatic intelligent reset. Unit shall automatically reset the unit 5 minutes after trip if the fault has cleared. If a fault occurs 3 times sequentially without thermostat meeting temperature, then lockout requiring manual reset will occur.
j. Ability to defeat time delays for servicing.

Tranquility® (TC) Series 50 Hz
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k. The low-pressure switch shall not be monitored for the first 120 seconds after a compressor start command to prevent nuisance safety trips.
l. 24V output to cycle a motorized water valve or other device with compressor contactor.
m. Unit Performance Sentinel (UPS). The UPS warns when the heat pump is running inefficiently.
n. Water coil low temperature sensing (selectable for water or anti-freeze).
o. Air coil low temperature sensing.
p. Minimized reversing valve operation (Unit control logic shall only switch the reversing valve when cooling is demanded for the first time. The reversing valve shall be held in this position until the first call for heating, ensuring quiet operation and increased valve life).
q. Emergency shutdown contacts.
r. Entering and leaving water temperature sensing.
s. Leaving air temperature sensing.
t. Compressor discharge temperature sensing.

NOTE: Units not providing the 8 safety protections of anti-short cycle, low voltage, high voltage, high refrigerant pressure, low pressure (loss of charge), air coil low temperature cut-out, water coil low temperature cut-out, and condensate overflow protections will not be accepted.

When CXM2 is connected to AWC99U01 thermostat or handheld service tool, the installer/service technician can; check DIP switch S2 settings; run operation modes manually; check all physical inputs from thermostat and refrigerant pressure switches status, (Y1, Y2, W, O, G, H, ESD, NSB, OR, HP switch, and LOC switch); current or at time of fault the following temperatures - water coil (LT1), air coil (LT2), compressor discharge, leaving air, leaving water, entering water and control voltage; record last five faults, list possible reasons, and clear faults. When the AWC99U01 communicating thermostat is used this same functionality can be viewed and adjusted remotely in the web portal or mobile app. **Systems not providing remote access, diagnosis, and adjustment functionality will not be accepted.**

Option: Enhanced Solid State Control System (DXM2.5)

This control system is a communicating controller.
Control shall have the above-mentioned features of the CXM2 control system along with the following expanded features:

a. Removable thermostat connector.
b. Night setback control.
c. Random start on return from night setback.
d. Override temperature control with 2-hour timer for room occupant to override setback temperature at the thermostat.
e. Dry contact night setback output for digital night setback thermostats.
f. Ability to work with heat pump or heat/cool (Y, W) type thermostats.
g. Ability to work with heat pump thermostats using O or B reversing valve control.
h. Boilerless system heat control at low loop water temperature.
i. Ability to allow up to 3 units to be controlled by one thermostat.
j. Relay to operate an external damper.
k. Relay to start system pump.
l. 75 VA control transformer. Control transformer shall have load side short circuit and overload protection via a built-in circuit breaker.

NOTE: Units not providing the 8 safety protections of anti-short cycle, low voltage, high voltage, high refrigerant pressure, low pressure (loss of charge), air coil low temperature cut-out, water coil low temperature cut-out, and condensate overflow protection for both drain pans will not be accepted.

When DXM2.5 is connected to AWC99U01 communicating thermostat or handheld service tool, the installer/service technician can; check and set CFM; check DIP switch S1, S2, and S3 settings; run operation modes manually; check all physical inputs from thermostat and refrigerant pressure switches status, (Y1, Y2, W, O, G, H, ESD, NSB, OR, HP switch, and LOC switch);

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current or at time of fault the following temperatures - water coil (LT1), air coil (LT2), compressor discharge, leaving air, leaving water, entering water and control voltage; record last five faults, list possible reasons, and clear faults. When the AWC99U01 communicating thermostat is used this same functionality can be viewed and adjusted remotely with the only portal or mobile app. **Systems not providing remote access, diagnosis, and adjustment functionality will not be accepted.**

Remote Service Sentinel (CXM2/DXM2.5):

Solid state control system shall communicate with thermostat to display (at the thermostat) the unit status, fault status, and specific fault condition, as well as retrieve previously stored fault that caused unit shutdown. The Remote Service Sentinel allows building maintenance personnel or service personnel to diagnose unit from the wall thermostat. The control board shall provide a signal to the thermostat fault light, indicating a lockout. Upon cycling the G (fan) input 3 times within a 60 second time period, the fault light shall display the specific code as indicated by a sequence of flashes. A detailed flashing code shall be provided at the thermostat LED to display unit status and specific fault status such as over/under voltage fault, high pressure fault, low pressure fault, low water temperature fault, condensate overflow fault, etc. **Units that do not provide this remote service sentinel shall not be acceptable.**

Option: MPC (Multiple Protocol Control) Interface System

Units shall have all the features listed above (either CXM2 or DXM2.5) and the control board will be supplied with a Multiple Protocol interface board. Available protocols are BACnet MS/TP, Modbus, or Johnson Controls N2. The choice of protocol shall be field selectable/changeable via the use of a simple selector switch. Protocol selection shall not require any additional programming or special external hardware or software tools. This will permit all units to be daisy chain connected by a 2-wire twisted pair shielded cable. The following points must be available at a central or remote computer location:

a. Space temperature
b. Leaving water temperature
c. Discharge air temperature
d. Command of space temperature setpoint
e. Cooling status
f. Heating status
g. Low temperature sensor alarm
h. Low pressure sensor alarm
i. High pressure switch alarm
j. Condensate overflow alarm
k. Hi/low voltage alarm
l. Fan “ON/AUTO” position of space thermostat as specified above
m. Unoccupied/occupied command
n. Cooling command
o. Heating command
p. Fan “ON/AUTO” command
q. Fault reset command
r. Itemized fault code revealing reason for specific shutdown fault (any one of 7)

This option also provides the upgraded 75VA control transformer with load side short circuit and overload protection via a built in circuit breaker.

Warranty:

Climate Master shall warranty equipment for a period of 12 months from start up or 18 months from shipment (whichever occurs first).

Tranquility® (TC) Series 50 Hz
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Option: Extended 4-year compressor warranty covers compressor for a total of 5 years.

Option: Two-Year Extended Warranty provides coverage for a period of 30 months from date of shipment or 24 months from the date of start-up (whichever occurs first).

FIELD INSTALLED OPTIONS

Hose Kits:
All units shall be connected with hoses. The hoses shall be 2 feet 61cm long, braided stainless steel; fire rated hoses complete with adapters. Only fire rated hoses will be accepted.

Valves:
The following valves are available and will be shipped loose:

a. Ball valve; bronze material, standard port full flow design, FPT connections.
b. Ball valve with memory stop and PT port.
c. “Y” strainer with blowdown valve; bronze material, FPT connections.
d. Motorized water valve; slow acting, 24v, FPT connections.

Hose Kit Assemblies:
The following assemblies ship with the valves already assembled to the hose described:

a. Supply and return hoses having ball valve with PT port.
b. Supply hose having ball valve with PT port; return hose having automatic flow regulator valve with PT ports, and ball valve.
c. Supply hose having “Y” strainer with blowdown valve, and ball valve with PT port; return hose having automatic flow regulator with PT ports, and ball valve.
d. Supply hose having “Y” strainer with blowdown valve, and ball valve with PT port; return hose having ball valve with PT port.

Thermostats:
The thermostat shall be a ClimateMaster mechanical or electronic type thermostat as selected below with the described features:

a. Thermostat (Communicating) (AWC99U01)

An electronic communicating web-enabled touchscreen thermostat shall be provided. The thermostat shall offer three stages of heating and two stages of cooling with precise temperature control and have a four-wire connection to the unit. The thermostat shall be capable of manual or automatic change-over operation and shall operate in standard or programmable mode. An integrated humidity control feature shall be included to control a humidifier and/or a dehumidifier. The thermostat shall include a utility demand reduction feature to be initiated by an independent time program or an external input.

The thermostat shall provide access to via the web portal or mobile application to include temperature adjustment, schedule adjustment including occupied/unoccupied, entering water temperature, leaving water temperature, water coil temperature, air coil temperature, leaving air temperature, and compressor discharge temperature. A graphical system layout to be provided with real-time operating mode information of the temperature sensors for easy diagnostics.

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The thermostat shall display system faults with probable cause and troubleshooting guidance. The system shall provide in clear language last five faults, time of faults, operating temps at time of fault, and possible reasons for the fault. The thermostat shall provide access for immediate manual control of all outputs via the web portal/mobile application for rapid troubleshooting.

b. Single-Stage Digital Auto or Manual Changeover (ATA11U01)

Thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system switch and fan ON-AUTO switch. Thermostat shall have an LCD display with temperature and setpoint(s) in ºF or ºC. The Thermostat shall provide permanent memory of setpoint(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall provide temperature display offset for custom applications.

c. Multi-stage Manual Changeover Programmable 5/2 Day (ATP21W02)

Thermostat shall be 5 day/2 day programmable (with up to 4 setpoints per day), multi-stage (2H/1C), manual changeover with HEAT-OFF-COOL-EM HEAT system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, setpoint(s), mode, and status indication. The temperature indication shall be selectable for ºF or ºC. The thermostat shall provide permanent memory of setpoint(s) without batteries. Thermostat shall provide convenient override feature to temporarily change setpoint.

d. Multi-stage Automatic or Manual Changeover Programmable 7 Day (ATP32U03C)

Thermostat shall be 7 day programmable (with up to 4 setpoints per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. Thermostat shall have a blue backlit dot matrix LCD display with temperature, setpoints, mode, and status indication. The temperature indication shall be selectable for ºF or ºC. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM2 or DXM2.5 controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of setpoints without batteries. Thermostat shall provide heating setpoint range limit, cooling setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

e. Multistage Automatic or Manual Changeover Programmable 7 Day with Humidity Control (ATP32U04C)

Thermostat shall be 7 day programmable (with up to 4 setpoints per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. Separate dehumidification and humidification setpoints shall be configurable for discreet outputs to a dehumidification option and/or an external humidifier. Installer configuration mode shall allow thermostat dehumidification mode to operate with ClimaDry® II reheat or with ECM fan dehumidification mode via settings changes. Thermostat shall have a blue backlit dot matrix LCD display with temperature, relative humidity, setpoints, mode, and status indication. The temperature indication shall be selectable for ºF or ºC. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM2 or DXM2.5 controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of setpoints without batteries. Thermostat shall provide heating setpoint range limit, cooling setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

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f. CM100 - Multi-stage Automatic or Manual Changeover digital thermostat (ATA32V01)

Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. Thermostat shall have a green backlit LED display with temperature, setpoints, mode, and status indication via a green (cooling) or red(heating) LED. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12 or 24 hour clock. The thermostat shall provide permanent memory of setpoints without batteries. Thermostat shall provide heating setpoint range limit, cooling setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring. Thermostat navigation shall be accomplished via four buttons (Mode/fan/down/up) with menu-driven selections for ease of use and programming.

g. CM300 – Multi-stage, Automatic or Manual Changeover, 7-day Programmable with Wi-Fi and Humidity Control (AVB32V02C)

Residential version shall be 7 day programmable with up to 4 setpoints per day. Commercial version shall be 7 day programmable with 4 occupied/unoccupied periods per day with up to 4-hour override. Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings, Wi-Fi, pre-occupancy purge fan option, night time control of display backlight, bi-color LED indicates a heating or cooling demand, keypad lock, title 24 compliant, openADR2.0b certified with Skyport web portal. Compatible with condensate overflow warning systems – lockout compressor with message on.

h. CM500 – Color Touchscreen Display, Multi-stage, Automatic or Manual Changeover, 7-day Programmable with Wi-Fi and Humidity Control (AVB32V03C)

Thermostat shall have color resistive touchscreen display with space temperature, relative humidity, setpoints, mode, status indication and local weather (if connected to Wi-Fi). Residential version shall be 7 day programmable with up to 4 setpoints per day. Commercial version shall be 7 day programmable with 4 occupied/unoccupied periods per day with up to 4-hour override. Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings, Wi-Fi, pre-occupancy purge fan option, customizable screen saver and background displays, indicator on display indicates a heating or cooling demand, set-point lock, title 24 compliant, openADR2.0b certified with Skyport web portal. Compatible with condensate overflow warning systems – lockout compressor with message on the display. Capable of being monitored by 3rd party software. Compatible with AST014 Wi-Fi remote sensor. Configurator mobile app or web portal for easy setup. Separate dehumidification and humidification setpoints shall be configurable for discreet outputs to a dehumidification option and/or an external humidifier. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12- or 24-hour clock. The thermostat shall provide permanent memory of setpoints without batteries. Thermostat shall provide heating setpoint range limit, cooling setpoint range limit, temperature display offset, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide access to a web portal and mobile app for installer setup for configuring options. Thermostat shall have menu-driven selections for ease of use and programming.

DDC Sensors:

ClimateMaster wall mounted DDC sensor to monitor room temperature and interfaces with optional interface system described above. Several types as described below:

a. Sensor only with no display.
b. Sensor with setpoint adjustment and override.
c. Sensor with setpoint adjustment and override, LCD display, status/fault indication.

Notes:

Revision History

Date:	Item:	Action:
01/24/23	All	Transitioned from CXM to CXM2 and DXM2 to DXM2.5 controls
07/08/21	All	Introduced Polymer Drain Pans. Discontinued Painted Galvanized Pans.Increased the height of vertical sizes 015 and 018
09/13/19	Multiple Pages	Changed diagrams, added tables, and updated text for DXM2 and ECM
04/02/18	Unit photos	Changed unit photos from black to steel color
03/01/18	All	Add SEER and SCOP plus miscellaneous edits
04/14/16	Engineering Specifications	Updated run test text
08/14/15	Engineering Specifications	Removed AHRI Text
08/03/15	Electrical Data - High Static Blower table	Updated
07/24/15	Wiring Diagram Matrix	Updated
04/08/15	Entire Document	Misc. Edits, Clearances
09/20/11	Size 024	Added “U” Voltage
08/09/11	Unit Maximum Working Water Pressure	Updated to Reflect New Safeties
09/28/10	Physical Data Table	Added Coax Volume Information
08/23/10	Size 006 and 012	Added
08/09/10	Entire Document	Removed I-P Units Miscellaneous Edits to Engineering Specifications
11/04/09	TC 009 Information	Added
05/05/09	Dimensional Data Tables	Condensate Column Added to Water Connections Table, Rows Consolidated in Cabinet, Knockout and Discharge Tables
10/16/08	Created	