CLIMATEMASTER®

A NIBE GROUP MEMBER

COMMERCIAL
TRANQUILITY® (SWT)
LARGE WATER-TO-WATER SERIES

PRODUCT CATALOG

Part#: LC3069 | Revised: March 9, 2026

Models: SWT 20-80
60Hz - R-454B

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THE TRANQUILITY (SWT) LARGE WATER-TO-WATER SERIES

The Tranquility (SWT) Large Water-to-Water Series offers high efficiency and high capacity with advanced features, quiet operation and application flexibility in a compact footprint. As ClimateMaster's largest water-to-water unit, the Tranquility SWT Series can be used for radiant floor heating, snow/ice melt, chilled or hot water for fan coils, industrial process control, potable hot water generation (requires field supplied secondary heat exchanger), hot/chilled water for make-up air, and many other types of HVAC and industrial applications that require cost effective heated or chilled water.

The Tranquility (SWT) Large Water-to-Water Series has class-leading efficiencies, and also uses R-454B low Global Warming Potential (GWP) refrigerant, making it an extremely environmentally-friendly product solution for chilled or hot-water generation. The unit is eligible for additional LEED® (Leadership in Energy and Environmental Design) points due to its innovative and environmentally-conscious design.

Available in 20- to 80-ton capacities (70.3 kW and 281.4 kW), the SWT Series provides high capacity in a narrow footprint, which saves mechanical room space and fits through doorways for retrofit applications. The Tranquility SWT has an extended range refrigerant circuit (refrigerant and water circuit insulation is standard), capable of ground-loop (geothermal) applications as well as water-loop (boiler-tower) applications. Microprocessor controls, galvanized-steel cabinet, polyester powder-coat paint and EEV refrigerant-metering device are just some of the features of the flexible Tranquility SWT. The uniquely designed brazed-plate heat exchangers (BPHE) are designed for many years of reliable operation.

ClimateMaster's compressor isolation mounting system and heavy-gauge steel cabinet helps make the Tranquility SWT one of the quietest water-to-water units on the market. Scroll compressors operate quietly, and provide part-load operation for capacity control. Options such as compressor sound blankets, 65 kA SCCR rating, and pressure relief valves allow customized design solutions. For ease of installation and service, access to the refrigeration service and electrical control panel is located at the front of the unit, allowing units to be installed side-by-side for large capacity applications.

The Tranquility (SWT) Large Water-to-Water heat pumps are designed to meet the challenges of today’s HVAC demands with a high-efficiency, high-value solution.

Features, Options, and Accessories

FEATURES

- Size 20 (20 tons, 70.3 kW) through 80 (80 tons, 281.4 kW)
- High efficiencies across a wide range of operation
- High-efficiency scroll compressors provide part-load operation significantly lowering annual operating costs
- Reversible operation for heating and cooling.
- Refrigerant Detection System (RDS)
- Exclusive single-side service access (front of unit) allows multiple units to be installed side-by-side for large capacity installations
- Heavy-gauge galvanized-steel construction
- Insulated compressor compartment
- Small footprint
- Electronic expansion valves (EEV) for precise refrigeration control
- OptiCORE Communicating Controls:
  - Multiple communication pathways for unit access and diagnosis:
    - Gig-E Ethernet Port
    - BACnet IP or MSTP, or Modbus communications
  - Provides real-time unit operating conditions
  - Reduces startup, commissioning, and service time by providing key system temperatures electronically
  - Captures operating conditions in the event of a safety shutdown
  - Precise compressor staging
  - Integrated 4.3" touch screen mounted to the front control panel access door.
- Extended range insulation for geothermal applications
- Comprehensive safeties to protect the unit heat exchangers and compressors.

OPTIONS

- Compressor sound blankets
- 65 kA SCCR Rating
- Refrigeration pressure relief valves

ACCESSORIES

- Braided-hose kits in various lengths with optional water valve, PT plugs, blowdown valve, and strainer
- Externally mounted "Y" strainers
- Grooved-to-MPT adapter available for transitioning to a hose kit or other piping arrangements.

Reference Calculations

Heating	Cooling
$LWT = EWT - \frac{HE}{GPM \times Constant}$	$LWT = EWT + \frac{HR}{GPM \times Constant}$
$LAT = EAT + \frac{HC}{CFM \times 1.08}$	$LAT\ (DB) = EAT\ (DB) - \frac{SC}{CFM \times 1.08}$
	$LC = TC - SC$
	$S/T = \frac{SC}{TC}$

Constant = 500 for water, 485 for antifreeze

Conversion Table - to convert inch-pound (English) to S-I (Metric)

Airflow	Water Flow	External Static Pressure	Water Pressure Drop
Airflow (L/s) = CFM x 0.472	Water Flow (L/s) = GPM x 0.0631	ESP (Pa) = ESP (in of wg) x 249	PD (kPa) = PD (ft of hd) x 2.99

Legend and Glossary of Abbreviations

Abbreviations	Descriptions
Btuh	Btu (British Thermal Unit) per hour
BMS	Building Management System
CDT	Compressor discharge temperature, °F
CFM	Airflow, cubic feet per minute
COP	Coefficient of performance = Btuh output/Btuh input
CT EC	Electronically commutated constant torque blower motor
CV EC	Electronically commutated constant volume blower motor
DB	Dry bulb temperature, °F
DT or Delta T	Temperature Differential
EAT	Entering air temperature , °F
EER	Energy efficient ratio = Btuh output/Watt input
ESP	External static pressure, inches w.g.
EWT	Entering water temperature , °F
FPT	Female pipe thread
GPM	Water flow in U.S., gallons per minute
HC	Air heating capacity, Btuh
HE	Total heat of extraction, Btuh
HGRH	Hot Gas Reheat
HR	Total heat of rejection, Btuh

Abbreviations	Descriptions
HWG	Hot water generator (desuperheater) capacity, MBtuh
kW	Total power unit input, kilowatts
LAT	Leaving air temperature, °F
LC	Latent cooling capacity, Btuh
LOC	Loss of charge
LWT	Leaving water temperature, °F
LLWT	Load Leaving Water Temperature, °F
MBtuh	1,000 Btu per hour
MPT	Male pipe thread
MWV	Motorized water valve
PSC	Permanent split capacitor
RDS	Refrigerant Detection System
SC	Sensible cooling capacity, Btuh
SLWT	Source Leaving Water Temperature , °F
S/T	Sensible to total cooling ratio
TC	Total cooling capacity, Btuh
VFD	Variable frequency drive
WB	Wet bulb temperature, °F
WPD	Waterside pressure drop, psi or feet of head
WSE	Waterside economizer

USE THE FOLLOWING SELECTION STEPS

1. Determine the actual heating and/or cooling loads at the applicable source (building loop) water temperature/flow rate and load water temperature/flow rate. The source heat exchanger is the condenser in cooling/evaporator in heating; the load heat exchanger is the evaporator in cooling/condenser in heating.
2. Obtain the following design parameters: Entering source/load water temperature, source/load water flow rate in GPM and water flow pressure drop. Water flow rate is generally between 2.25 and 3.00 GPM/ton for closed loop (boiler/tower and geothermal) systems, and between 1.5 and 2.0 GPM/ton for open loop (well water) systems. Unit water pressure drop should be kept as close as possible to each other to make water balancing easier. Go to the appropriate tables and find the proper indicated water flow and water temperature.
3. Determine application requirements. Water-to-water applications are almost always designed for a particular installation, which will change how the data tables are used for unit selection. For example, a water-to-water unit used for radiant floor heating on a geothermal closed loop is significantly different in unit selection from a water-to-water unit on a boiler/tower application used for generating chilled water for fan coil units. It is especially important to note that the load water flow rate must be maintained above minimum flow rates as shown in the data tables for proper refrigerant circuit operation and unit longevity. For example, most radiant floor applications require buffer (storage) tanks because the flow rate through the floor is usually lower than the minimum flow rate for the water-to-water unit. Therefore, selection of the heat pump is dependent upon maintaining a certain tank temperature and unit load flow rate. There would be a pump between the heat pump and the buffer tank, and a pump(s) between the buffer tank and radiant floor to maintain design flow rate on both sides.
4. Enter tables at the design source water temperature and flow rate. Choose the appropriate load water temperature and flow rate. Read the total heating or cooling capacities.

   NOTE: interpolation is permissible; extrapolation is not.
5. If the units selected are not within 10% of the load calculations, then review what effect changing the GPM and water temperature would have on the capacities. If the desired capacity cannot be achieved, select the next larger or smaller unit and repeat the procedure.

EXAMPLE EQUIPMENT SELECTION FOR HEATING

Step 1: Load Determination

Assume we have determined that the application will be heating only for a small commercial warehouse (radiant floor), and that the appropriate heating load at design conditions is as follows:

Total heating ..... 540,000 Btuh

Step 2: Design Conditions

Entering source temperature 40°F (geothermal closed loop):

Source flow rate ..... 113 GPM

Entering load temperature ..... 100°F

Load flow rate ..... 113 GPM

Steps 3, 4 and 5: HP Selection

We enter the tables at design source water temperature and flow rate, and select the appropriate load water temperature and flow rate. A SWT50 at design conditions supplies 540,700 Btuh, which meets the design heating load requirement:

Model Nomenclature

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
S	W	T	3	0	A	H	1	0	S	1	0	0	0	S

PRODUCT LINE
S = Standard R-454B

SOURCE
W = Water

APPLICATION
T = Heat Pump

TONNAGE
20 = 20 Ton
30 = 30 Ton[1]
50 = 50 Ton
65 = 65 Ton
80 = 80 Ton

REVISION LEVEL
A = Current
B = Current (30 Ton)

VOLTAGE - PHASE - FREQUENCY
H = 208/230-3-60
F = 460-3-60
N = 575-3-60

CONTROL OPTIONS
1 = Single Module Control

SPECIAL
S = Standard

FUTURE USE
0 = None

REFRIGERANT DETECTION SENSOR
0 = None
P = Pressure Relief Valves (PRVs)

COMPRESSOR SOUND BLANKETS
0 = No
1 = Yes

HYDRONIC OPTIONS
1 = Headerless w/ Isolation Valves

COMPRESSOR
S = Standard

SCCR
0 = 5 kAIC
1 = 65 kAIC

1. 30 Ton configurations must select Revision B

Rated in Accordance with ASHRAE/AHRI/ISO 13256-2 English (I-P) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling		Heating		Cooling		Heating		Cooling		Heating	
	Indoor 53.6°F Outdoor 86°F		Indoor 104°F Outdoor 68°F		Indoor 53.6°F Outdoor 59°F		Indoor 104°F Outdoor 50°F		Indoor 53.6°F Outdoor 77°F		Indoor 104°F Outdoor 32°F	
	Capacity kbtu/h	EER btu/h/W	Capacity kbtu/h	COP	Capacity btu/h	EER btu/h/W	Capacity btu/h	COP	Capacity btu/h	EER btu/h/W	Capacity btu/h	COP
SWT20	247,000	14.5	346,000	4.8	279,000	22.9	274,000	3.9	259,000	16.9	212,000	3.1
SWT30	371,000	14.7	518,000	4.8	415,000	22.5	411,000	3.9	388,000	17.0	310,000	3.0
SWT50	563,000	14.8	789,000	4.9	624,000	21.9	626,000	4.1	584,000	16.9	478,000	3.2
SWT65	731,000	14.8	1,033,000	5.0	820,000	22.5	806,000	4.1	763,000	17.0	630,000	3.3
SWT80	917,000	14.6	1,303,000	4.9	1,028,000	21.9	1,018,000	4.0	958,000	16.8	797,000	3.3

Rated in Accordance with ASHRAE/AHRI/ISO 13256-2 English (S-I) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling		Heating		Cooling		Heating		Cooling		Heating	
	Indoor 12°C Outdoor 30°C		Indoor 40°C Outdoor 20°C		Indoor 12°C Outdoor 15°C		Indoor 40°C Outdoor 10°C		Indoor 12°C Outdoor 25°C		Indoor 40°C Outdoor 0°C	
	Capacity kW	EER W/W	Capacity kW	COP	Capacity kW	EER W/W	Capacity kW	COP	Capacity kW	EER W/W	Capacity kW	COP
SWT20	72.4	4.2	101.4	4.8	81.8	6.7	80.3	3.9	75.9	4.9	62.1	3.1
SWT30	108.7	4.3	151.8	4.8	121.6	6.6	120.5	3.9	113.7	5.0	90.9	3.0
SWT50	165.0	4.3	231.2	4.9	182.9	6.4	183.5	4.1	171.2	4.9	140.1	3.2
SWT65	214.2	4.3	302.7	5.0	240.3	6.6	236.2	4.1	223.6	5.0	184.6	3.3
SWT80	268.7	4.3	381.9	4.9	301.3	6.4	298.3	4.0	280.8	4.9	233.6	3.3

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 30 GPM							SLWT °F	Flow 45 GPM							SLWT °F	Flow 60 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	30	1.2	2.8	30									170.1	11.9	210.7	22.0	13.9	2.9	6.6	73.8	175.4	11.9	216.1	23.8	14.3	4.9	11.3	74.1
		1.2	2.8	40	189.6	12.1	231.0	26.7	15.2	1.4	3.2	75.1	201.2	12.2	243.0	30.6	16.0	2.8	6.5	75.9	208.8	12.3	250.7	32.6	16.5	4.8	11.1	76.4
		1.2	2.8	50	221.6	12.4	263.8	34.4	17.4	1.3	3.0	77.3	237.5	12.5	280.1	38.9	18.5	2.8	6.4	78.4	247.4	12.5	290.2	41.3	19.2	4.7	10.9	79.0
		1.2	2.8	60	259.3	12.7	302.6	42.8	19.9	1.2	2.8	79.9	281.3	12.8	325.0	47.5	21.3	2.6	6.0	81.4	292.7	12.9	336.7	50.3	22.1	4.4	10.2	82.2
		1.2	2.8	70	296.3	12.9	340.3	50.2	22.3	1.2	2.8	82.4	324.3	13.0	368.7	55.6	24.2	2.5	5.9	84.3	339.3	13.1	383.8	58.7	25.2	4.4	10.1	85.4
		1.2	2.8	80	335.0	13.1	379.8	57.6	24.8	1.2	2.7	85.1	367.9	13.3	413.2	63.6	26.9	2.5	5.8	87.4	386.2	13.4	431.8	67.1	28.1	4.3	9.9	88.7
	45	2.6	6.1	30									173.5	11.3	212.1	21.8	15.1	2.9	6.6	69.2	178.9	11.3	217.7	23.7	15.5	4.9	11.3	69.5
		2.6	6.1	40	193.7	11.4	232.7	26.4	16.6	1.4	3.3	70.1	206.2	11.5	245.4	30.3	17.6	2.8	6.5	70.7	214.6	11.5	253.8	32.4	18.3	4.8	11.1	71.1
		2.6	6.1	50	226.6	11.5	266.0	34.1	19.3	1.3	3.0	71.6	243.5	11.6	283.0	38.6	20.7	2.8	6.4	72.4	253.9	11.6	293.5	41.1	21.5	4.7	10.9	72.8
		2.6	6.0	60	266.7	11.6	306.5	42.3	22.5	1.2	2.8	73.4	290.9	11.6	330.6	47.1	24.6	2.6	6.0	74.5	303.3	11.6	343.0	49.9	25.6	4.4	10.2	75.1
		2.6	6.0	70	306.8	11.6	346.4	49.5	26.0	1.2	2.8	75.2	334.0	11.6	373.8	55.2	28.2	2.6	5.9	76.5	349.9	11.6	389.7	58.3	29.6	4.4	10.1	77.2
		2.6	6.0	80	348.1	11.6	387.6	56.7	29.5	1.2	2.7	77.1	383.7	11.5	423.0	62.9	32.7	2.5	5.8	78.7	402.4	11.5	441.8	66.6	34.3	4.3	9.9	79.6
	60	4.5	10.4	30									175.6	11.1	213.4	21.7	15.7	2.9	6.6	66.9	180.6	11.1	218.5	23.6	16.1	4.9	11.3	67.1
		4.5	10.4	40	195.8	11.2	233.9	26.2	17.4	1.4	3.3	67.6	208.5	11.2	246.7	30.2	18.5	2.8	6.5	68.0	216.9	11.2	255.1	32.4	19.3	4.8	11.1	68.3
		4.5	10.4	50	229.1	11.2	267.4	33.9	20.3	1.3	3.0	68.7	245.5	11.2	283.8	38.5	21.7	2.8	6.4	69.3	256.9	11.2	295.2	41.0	22.8	4.7	10.9	69.7
		4.5	10.4	60	271.7	11.2	309.8	41.9	24.2	1.2	2.8	70.2	294.9	11.1	332.9	46.9	26.3	2.6	6.0	70.9	307.5	11.1	345.4	49.8	27.5	4.4	10.2	71.4
		4.5	10.4	70	310.8	11.1	348.7	49.3	27.9	1.2	2.8	71.5	339.5	11.0	377.1	54.9	30.6	2.6	5.9	72.5	356.4	11.0	393.8	58.1	32.3	4.4	10.1	73.0
		4.5	10.4	80	353.0	10.9	390.3	56.4	32.1	1.2	2.7	72.9	390.0	10.8	426.8	62.6	36.0	2.5	5.8	74.2	411.5	10.7	447.9	66.3	38.4	4.3	9.9	74.9
75	30	1.2	2.7	30	151.8	14.2	200.2	19.3	10.4	1.5	3.5	88.2	158.9	14.3	207.8	22.5	10.8	2.8	6.6	88.7	163.4	14.4	212.5	24.2	11.1	4.9	11.2	89.0
		1.2	2.7	40	178.8	14.6	228.6	27.4	11.9	1.4	3.2	90.1	188.0	14.8	238.4	31.2	12.4	2.8	6.5	90.7	195.6	14.8	246.1	33.1	12.8	4.8	11.0	91.2
		1.2	2.7	50	206.7	15.0	257.9	35.5	13.4	1.3	3.0	92.0	222.0	15.2	273.7	39.6	14.2	2.8	6.3	93.1	229.8	15.3	282.0	41.9	14.6	4.7	10.8	93.6
		1.2	2.7	60	244.7	15.4	297.3	43.7	15.4	1.2	2.8	94.6	263.4	15.6	316.6	48.3	16.4	2.6	6.0	95.9	273.2	15.7	326.8	50.9	16.9	4.4	10.2	96.6
		1.2	2.7	70	279.4	15.8	333.2	51.4	17.2	1.2	2.8	97.0	302.0	16.0	356.7	56.6	18.3	2.5	5.9	98.6	316.2	16.1	371.1	59.5	19.1	4.4	10.1	99.6
		1.2	2.7	80	314.6	16.2	369.7	59.0	18.9	1.2	2.7	99.5	346.5	16.3	402.2	64.6	20.6	2.5	5.8	101.7	361.5	16.5	417.9	67.9	21.3	4.3	9.9	102.8
	45	2.6	5.9	30	154.5	13.6	200.9	19.1	11.2	1.5	3.5	83.8	163.1	13.7	209.7	22.3	11.7	2.8	6.6	84.2	167.3	13.7	214.1	24.1	12.0	4.9	11.2	84.4
		2.6	5.9	40	183.1	13.8	230.3	27.1	13.0	1.4	3.2	85.1	193.1	14.0	240.7	30.9	13.6	2.8	6.5	85.5	200.8	14.0	248.6	32.9	14.1	4.8	11.0	85.9
		2.6	5.9	50	212.5	14.1	260.6	35.1	14.8	1.3	3.0	86.4	227.7	14.2	276.1	39.3	15.8	2.8	6.3	87.1	238.1	14.2	286.6	41.6	16.5	4.7	10.8	87.6
		2.6	5.9	60	251.9	14.3	300.6	43.2	17.3	1.2	2.8	88.2	271.3	14.4	320.5	48.0	18.5	2.6	6.0	89.1	282.5	14.4	331.8	50.6	19.2	4.4	10.2	89.6
		2.6	5.9	70	287.1	14.4	336.4	50.9	19.5	1.2	2.8	89.8	315.5	14.5	364.9	56.0	21.4	2.5	5.9	91.1	329.6	14.5	379.0	59.0	22.3	4.4	10.1	91.7
		2.6	5.9	80	326.6	14.5	376.3	58.2	22.1	1.2	2.7	91.6	358.8	14.6	408.7	64.0	24.1	2.5	5.8	93.1	379.2	14.6	428.9	67.3	25.6	4.3	9.9	94.0
	60	4.4	10.2	30	156.0	13.4	201.7	19.0	11.6	1.5	3.5	81.6	164.9	13.4	210.7	22.2	12.2	2.9	6.6	81.9	169.3	13.5	215.2	24.0	12.5	4.9	11.2	82.0
		4.4	10.2	40	185.1	13.6	231.3	27.0	13.6	1.4	3.2	82.6	195.8	13.6	242.3	30.8	14.3	2.8	6.5	82.9	203.4	13.7	250.0	32.8	14.8	4.8	11.0	83.2
		4.4	10.2	50	215.4	13.7	262.1	34.9	15.6	1.3	3.0	83.6	231.0	13.8	278.0	39.2	16.7	2.8	6.3	84.1	241.7	13.8	288.7	41.5	17.4	4.7	10.8	84.5
		4.4	10.2	60	255.7	13.8	302.8	43.0	18.4	1.2	2.8	84.9	276.3	13.9	323.6	47.7	19.8	2.6	6.0	85.6	288.8	13.8	336.0	50.4	20.7	4.4	10.2	86.1
		4.4	10.2	70	292.1	13.9	339.5	50.5	20.9	1.2	2.8	86.2	320.8	13.8	368.0	55.7	23.1	2.5	5.9	87.1	335.2	13.8	382.5	58.8	24.1	4.4	10.1	87.6
		4.4	10.2	80	332.4	13.9	379.7	57.8	23.9	1.2	2.7	87.5	366.2	13.8	413.3	63.7	26.4	2.5	5.8	88.7	385.4	13.8	432.4	67.1	27.8	4.3	9.9	89.4

Notes:
- Interpolation is permissible; extrapolation is not.
- All performance 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 in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 30 GPM							SLWT °F	Flow 45 GPM							SLWT °F	Flow 60 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
90	30	1.2	2.7	30	140.2	17.0	198.2	20.1	8.0	1.5	3.5	103.1	147.2	17.1	205.6	23.1	8.4	2.8	6.6	103.6	150.7	17.2	209.3	24.7	8.5	4.9	11.2	103.8
		1.2	2.7	40	165.6	17.5	225.3	28.3	9.2	1.4	3.2	104.9	173.8	17.7	234.2	31.8	9.5	2.8	6.5	105.5	180.0	17.8	240.6	33.7	9.8	4.8	11.0	106.0
		1.2	2.7	50	191.8	18.0	253.3	36.5	10.3	1.3	3.0	106.8	204.5	18.3	266.8	40.4	10.9	2.8	6.3	107.7	212.0	18.4	274.6	42.6	11.2	4.7	10.9	108.2
		1.2	2.7	60	225.8	18.6	289.3	45.0	11.8	1.2	2.8	109.2	243.1	18.8	307.3	49.2	12.5	2.6	6.0	110.4	251.2	19.0	316.0	51.6	12.9	4.4	10.3	111.0
		1.2	2.7	70	258.4	19.1	323.6	52.8	13.1	1.2	2.8	111.5	280.4	19.3	346.4	57.5	14.1	2.6	5.9	113.0	290.6	19.6	357.3	60.3	14.4	4.4	10.1	113.7
		1.2	2.7	80	293.2	19.6	360.0	60.4	14.5	1.2	2.7	113.9	320.2	19.9	387.9	65.7	15.7	2.5	5.8	115.8	334.6	20.0	403.0	68.8	16.2	4.3	9.9	116.8
	45	2.6	5.8	30	143.7	16.3	199.3	19.8	8.7	1.5	3.5	98.7	151.0	16.4	206.8	22.9	9.1	2.8	6.6	99.1	154.6	16.4	210.7	24.5	9.2	4.9	11.2	99.3
		2.6	5.8	40	170.0	16.6	226.8	28.0	10.0	1.4	3.2	100.0	179.8	16.7	236.9	31.6	10.6	2.8	6.5	100.4	185.7	16.8	243.2	33.5	10.8	4.8	11.0	100.7
		2.6	5.8	50	198.8	17.0	256.7	36.0	11.5	1.3	3.0	101.3	211.6	17.1	270.1	40.1	12.1	2.8	6.3	101.9	220.3	17.2	278.9	42.3	12.6	4.7	10.8	102.3
		2.6	5.8	60	233.9	17.3	293.1	44.4	13.3	1.2	2.8	102.9	252.0	17.5	311.6	48.8	14.2	2.6	6.0	103.7	262.9	17.5	322.6	51.3	14.8	4.4	10.2	104.2
		2.6	5.8	70	268.5	17.6	328.5	52.1	15.0	1.2	2.8	104.5	292.6	17.7	353.0	57.0	16.2	2.5	5.9	105.6	304.6	17.8	365.3	59.8	16.8	4.4	10.1	106.1
		2.6	5.8	80	307.7	17.8	368.3	59.4	17.0	1.2	2.7	106.3	334.7	18.0	396.0	65.1	18.3	2.5	5.8	107.5	352.8	18.0	414.2	68.2	19.3	4.3	9.9	108.3
	60	4.5	10.0	30	145.3	16.0	200.1	19.7	9.0	1.5	3.5	96.6	152.9	16.1	207.8	22.8	9.4	2.8	6.6	96.8	156.7	16.2	211.8	24.5	9.6	4.9	11.2	97.0
		4.5	10.0	40	171.7	16.3	227.5	27.9	10.5	1.4	3.2	97.5	182.3	16.4	238.3	31.4	11.1	2.8	6.5	97.8	188.6	16.5	244.8	33.4	11.4	4.8	11.0	98.1
		4.5	10.0	50	201.7	16.6	258.2	35.8	12.1	1.3	3.0	98.5	215.3	16.7	272.2	39.9	12.9	2.7	6.3	99.0	224.0	16.7	281.0	42.1	13.3	4.7	10.8	99.3
		4.5	10.0	60	237.9	16.8	295.1	44.2	14.1	1.2	2.8	99.7	256.8	16.9	314.5	48.6	15.1	2.6	6.0	100.4	268.0	16.9	325.7	51.1	15.7	4.4	10.2	100.7
		4.5	9.9	70	275.0	16.9	332.8	51.7	16.1	1.2	2.8	101.0	297.0	17.1	355.3	56.8	17.3	2.5	5.9	101.7	311.2	17.1	369.5	59.6	18.1	4.4	10.1	102.2
		4.5	9.9	80	313.9	17.0	372.0	59.0	18.3	1.2	2.7	102.3	343.9	17.1	402.2	64.7	20.0	2.5	5.8	103.3	360.3	17.1	418.8	68.0	20.9	4.3	9.9	103.9
105	30	1.2	2.7	30	128.0	20.3	197.2	21.0	6.1	1.5	3.5	117.9	133.8	20.4	203.4	23.7	6.4	2.9	6.6	118.4	136.8	20.5	206.7	25.2	6.5	4.9	11.3	118.6
		1.2	2.6	40	150.6	20.9	221.9	29.4	7.0	1.4	3.2	119.7	159.3	21.1	231.1	32.5	7.3	2.8	6.5	120.4	163.6	21.2	235.9	34.2	7.5	4.8	11.1	120.7
		1.2	2.6	50	176.7	21.5	250.1	37.6	8.0	1.3	3.0	121.7	186.5	21.8	260.9	41.3	8.3	2.8	6.4	122.4	193.2	21.9	267.9	43.2	8.6	4.7	10.9	122.9
		1.2	2.6	60	207.2	22.3	283.1	46.2	9.0	1.2	2.8	123.9	220.5	22.6	297.5	50.2	9.5	2.6	6.0	124.8	228.3	22.7	305.8	52.4	9.8	4.5	10.3	125.4
		1.2	2.6	70	238.4	22.8	316.3	54.1	10.1	1.2	2.8	126.1	255.7	23.2	334.8	58.6	10.7	2.6	5.9	127.3	264.7	23.4	344.6	61.2	11.0	4.4	10.1	128.0
		1.2	2.6	80	269.5	23.5	349.8	62.0	11.1	1.2	2.7	128.3	282.7	23.9	364.3	67.5	11.7	2.5	5.7	129.4	293.5	24.1	375.9	70.3	12.0	4.2	9.8	130.1
	45	2.6	5.7	30	131.8	19.5	198.2	20.7	6.7	1.5	3.5	113.7	137.9	19.6	204.7	23.5	6.9	2.9	6.6	114.0	141.2	19.6	208.2	25.0	7.1	4.9	11.3	114.1
		2.6	5.7	40	155.6	19.9	223.6	29.0	7.7	1.4	3.2	114.9	164.7	20.0	233.1	32.3	8.1	2.8	6.5	115.3	169.6	20.1	238.2	34.0	8.3	4.8	11.1	115.5
		2.6	5.7	50	182.8	20.3	252.2	37.2	8.8	1.3	3.0	116.2	194.2	20.5	264.2	40.9	9.3	2.8	6.4	116.7	201.2	20.6	271.5	42.9	9.6	4.7	10.9	117.0
		2.6	5.7	60	217.0	20.8	288.0	45.6	10.3	1.2	2.8	117.8	231.0	21.0	302.7	49.8	10.8	2.6	6.0	118.4	240.3	21.1	312.2	52.0	11.2	4.5	10.3	118.8
		2.6	5.7	70	247.6	21.2	320.0	53.5	11.5	1.2	2.8	119.2	267.5	21.4	340.5	58.1	12.3	2.6	5.9	120.1	279.3	21.5	352.6	60.7	12.8	4.4	10.1	120.6
		2.6	5.7	80	285.0	21.5	358.3	61.0	13.0	1.2	2.7	120.9	309.5	21.7	383.5	66.2	14.0	2.5	5.8	122.0	322.0	21.9	396.7	69.2	14.5	4.3	9.9	122.6
	60	4.5	9.8	30	133.7	19.2	199.1	20.6	6.9	1.5	3.5	111.5	140.0	19.3	205.7	23.4	7.2	2.9	6.6	111.7	142.9	19.3	208.9	25.0	7.4	4.9	11.3	111.9
		4.5	9.8	40	158.1	19.6	224.8	28.9	8.0	1.4	3.2	112.4	167.5	19.6	234.5	32.1	8.5	2.8	6.5	112.7	172.5	19.7	239.8	33.9	8.7	4.8	11.1	112.9
		4.5	9.8	50	186.0	19.9	253.9	36.9	9.3	1.3	3.0	113.4	198.7	20.0	267.0	40.7	9.9	2.8	6.4	113.8	205.3	20.1	273.8	42.8	10.2	4.7	10.9	114.1
		4.5	9.8	60	221.1	20.2	290.0	45.3	10.9	1.2	2.8	114.6	235.9	20.4	305.5	49.5	11.5	2.6	6.0	115.1	245.4	20.4	315.2	51.8	11.9	4.5	10.3	115.4
		4.5	9.8	70	253.1	20.5	323.2	53.1	12.3	1.2	2.8	115.7	273.9	20.7	344.5	57.8	13.2	2.6	5.9	116.4	287.2	20.7	357.9	60.4	13.8	4.4	10.1	116.9
		4.5	9.8	80	291.0	20.7	361.7	60.6	14.0	1.2	2.7	117.0	316.5	20.9	387.7	65.9	15.1	2.5	5.8	117.9	330.8	21.0	402.3	68.9	15.7	4.3	9.9	118.4

Notes:
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Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 30 GPM							SLWT °F	Flow 45 GPM							SLWT °F	Flow 60 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
120	30	1.2	2.7	30																	122.2	24.4	205.3	25.7	4.9	4.9	11.3	133.3
		1.2	2.6	40	135.6	24.9	220.4	30.5	5.3	1.4	3.2	134.4	142.5	25.0	227.9	33.3	5.5	2.8	6.5	135.0	145.9	25.2	231.8	34.9	5.6	4.8	11.1	135.3
		1.2	2.6	50	159.1	25.6	246.5	38.8	6.0	1.3	3.0	136.4	167.3	25.9	255.6	42.2	6.3	2.8	6.3	137.0	172.5	26.0	261.3	43.9	6.4	4.7	10.9	137.4
		1.2	2.6	60	187.4	26.4	277.6	47.5	6.9	1.2	2.8	138.6	197.8	26.8	289.3	51.2	7.2	2.6	6.0	139.4	204.8	26.9	296.6	53.2	7.4	4.4	10.3	139.9
		1.2	2.6	70	213.2	27.2	306.2	55.8	7.6	1.2	2.8	140.5																
		1.2	2.6	80																								
	45	2.6	5.7	30	119.4	23.2	198.5	21.6	5.1	1.5	3.5	128.5	124.0	23.3	203.6	24.2	5.2	2.9	6.6	128.8	126.5	23.4	206.3	25.5	5.3	4.9	11.3	128.9
		2.6	5.7	40	140.8	23.7	221.8	30.1	5.8	1.4	3.2	129.7	148.3	23.9	229.8	33.0	6.1	2.8	6.5	130.1	152.2	24.0	234.0	34.6	6.2	4.8	11.1	130.3
		2.6	5.6	50	165.0	24.3	247.8	38.4	6.7	1.3	3.0	131.0	175.7	24.5	259.2	41.8	7.1	2.8	6.4	131.5	181.0	24.6	264.8	43.6	7.2	4.7	10.9	131.8
		2.6	5.6	60	196.4	24.8	281.2	46.9	7.8	1.2	2.8	132.5	208.7	25.1	294.3	50.7	8.2	2.6	6.0	133.1	216.0	25.2	301.9	52.8	8.4	4.5	10.3	133.4
		2.6	5.6	70	225.2	25.4	311.8	55.0	8.7	1.2	2.8	133.9	241.9	25.6	329.4	59.2	9.3	2.6	5.9	134.7	252.5	25.7	340.1	61.6	9.7	4.4	10.1	135.1
		2.6	5.6	80	258.6	25.8	346.7	62.7	9.9	1.2	2.7	135.4	280.2	26.1	369.2	67.5	10.6	2.5	5.8	136.4	290.8	26.2	380.3	70.3	10.9	4.3	9.9	136.9
	60	4.5	9.7	30	121.3	22.9	199.3	21.4	5.3	1.5	3.5	126.4	126.2	23.0	204.6	24.1	5.5	2.9	6.6	126.6	128.8	23.0	207.4	25.4	5.6	4.9	11.3	126.7
		4.5	9.7	40	143.5	23.3	223.1	29.9	6.1	1.4	3.2	127.3	151.2	23.5	231.2	32.9	6.4	2.8	6.5	127.6	154.9	23.6	235.3	34.5	6.5	4.8	11.1	127.8
		4.5	9.7	50	168.2	23.8	249.4	38.2	7.0	1.3	3.0	128.3	179.3	24.0	261.0	41.6	7.4	2.8	6.4	128.7	184.9	24.0	266.8	43.5	7.7	4.7	10.9	128.9
		4.5	9.6	60	200.7	24.2	283.4	46.6	8.2	1.2	2.8	129.4	214.4	24.4	297.6	50.5	8.7	2.6	6.0	129.9	221.6	24.5	305.2	52.6	9.0	4.5	10.3	130.2
		4.5	9.6	70	232.3	24.6	316.2	54.5	9.4	1.2	2.8	130.5	248.3	24.8	333.1	59.0	9.9	2.6	5.9	131.1	259.4	24.9	344.3	61.4	10.4	4.4	10.1	131.5
		4.5	9.6	80	263.7	25.0	349.0	62.4	10.5	1.2	2.7	131.6	286.7	25.2	372.6	67.2	11.3	2.5	5.8	132.4	301.2	25.2	387.2	69.9	11.9	4.3	10.0	132.9

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 30 GPM							SLWT °F	Flow 45 GPM							SLWT °F	Flow 60 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
30	30	1.5	3.1	60	204.1	13.5	158.1	73.6	4.3	1.2	2.8	18.6																
		1.5	3.1	80	202.7	17.1	144.2	93.6	3.4	1.2	2.7	19.5	203.1	16.2	147.7	89.1	3.6	2.6	5.9	19.3	203.1	15.8	149.3	86.8	3.7	4.4	10.1	19.2
		1.5	3.1	100	199.1	21.7	125.1	113.4	2.6	1.2	2.7	20.6	199.7	20.6	129.6	109.0	2.8	2.5	5.8	20.4	200.1	20.0	131.8	106.7	2.8	4.3	9.9	20.3
		1.5	3.0	120																								
		1.5	3.0	130																								
	45	2.8	5.9	60	213.1	13.7	166.2	74.2	4.5	1.2	2.8	22.0	213.5	13.0	169.2	69.5	4.7	2.6	6.1	21.8	213.6	12.6	170.8	67.1	4.9	4.5	10.5	21.7
		2.8	5.8	80	210.3	17.5	150.6	94.1	3.5	1.2	2.7	22.7	210.9	16.5	154.5	89.4	3.7	2.5	5.9	22.5	211.1	16.0	156.3	87.1	3.8	4.4	10.1	22.4
		2.8	5.8	100	205.8	22.1	130.5	113.9	2.7	1.2	2.7	23.5	206.8	20.9	135.4	109.3	2.8	2.5	5.8	23.3	207.4	20.3	138.0	107.0	2.9	4.3	9.9	23.2
		2.8	5.8	120																								
		2.8	5.8	130																								
	60	4.8	10.0	60	217.8	14.0	170.1	74.5	4.5	1.2	2.8	23.8	218.4	13.1	173.6	69.7	4.8	2.6	6.1	23.7	218.7	12.7	175.2	67.3	5.0	4.5	10.5	23.6
		4.8	10.0	80	214.5	17.8	153.8	94.4	3.5	1.2	2.7	24.4	215.1	16.8	157.9	89.6	3.7	2.5	5.9	24.2	215.5	16.3	159.9	87.2	3.9	4.4	10.1	24.2
		4.8	9.9	100	209.7	22.5	133.1	114.1	2.7	1.2	2.7	25.0	210.9	21.2	138.4	109.5	2.9	2.5	5.8	24.9	211.5	20.6	141.1	107.1	3.0	4.3	9.9	24.8
		4.8	9.9	120																								
		4.8	9.9	130																								
40	30	1.4	2.9	60	232.7	13.4	187.0	75.5	4.9	1.2	2.8	26.5	232.7	12.5	189.9	70.3	5.3	2.6	6.1	26.3	233.2	12.1	191.9	67.8	5.5	4.5	10.4	26.2
		1.4	2.9	80	229.1	17.1	170.6	95.4	3.8	1.2	2.7	27.7	230.0	16.1	175.2	90.3	4.1	2.5	5.9	27.4	230.8	15.5	177.8	87.7	4.2	4.4	10.1	27.2
		1.4	2.8	100	225.5	21.7	151.5	115.2	3.0	1.2	2.7	29.0	227.1	20.4	157.6	110.2	3.2	2.5	5.7	28.6	227.7	19.8	160.2	107.7	3.3	4.3	9.9	28.4
		1.4	2.8	120																	222.3	25.0	137.1	127.5	2.5	4.1	9.6	29.8
		1.3	2.8	130																								
	45	2.8	5.8	60	243.7	13.7	197.0	76.3	5.1	1.2	2.8	30.5	245.7	12.7	202.2	70.9	5.6	2.6	6.1	30.3	246.2	12.3	204.3	68.2	5.8	4.5	10.4	30.2
		2.8	5.7	80	239.3	17.5	179.7	96.0	3.9	1.2	2.7	31.4	240.9	16.3	185.1	90.8	4.2	2.5	5.9	31.1	241.4	15.8	187.5	88.1	4.4	4.4	10.1	31.0
		2.8	5.7	100	235.1	22.1	159.5	115.8	3.1	1.2	2.7	32.3	236.7	20.8	165.9	110.6	3.3	2.5	5.7	32.0	237.2	20.1	168.6	108.0	3.4	4.3	9.9	31.9
		2.8	5.7	120																	231.0	25.4	144.4	127.8	2.6	4.1	9.6	32.9
		2.7	5.7	130																								
	60	4.8	9.8	60	251.3	13.9	203.7	76.8	5.2	1.2	2.8	32.6	253.3	12.9	209.1	71.3	5.7	2.6	6.1	32.4	253.9	12.5	211.5	68.5	5.9	4.5	10.4	32.3
		4.7	9.8	80	246.1	17.8	185.4	96.5	4.0	1.2	2.7	33.3	247.7	16.6	191.0	91.1	4.3	2.5	5.9	33.1	248.4	16.1	193.6	88.3	4.5	4.4	10.1	33.0
		4.7	9.8	100	240.5	22.5	163.7	116.2	3.1	1.2	2.7	34.0	242.4	21.1	170.3	110.9	3.3	2.5	5.7	33.8	242.9	20.4	173.3	108.2	3.5	4.3	9.9	33.7
		4.7	9.8	120																	236.0	25.8	148.1	128.0	2.7	4.1	9.6	34.5
		4.7	9.7	130																								
50	30	1.3	2.7	60	263.3	13.2	218.2	77.6	5.7	1.2	2.8	34.3	264.8	12.2	223.0	71.8	6.2	2.6	6.1	34.0	265.5	11.8	225.4	68.9	6.4	4.5	10.4	33.8
		1.3	2.7	80	258.1	17.0	200.1	97.3	4.3	1.2	2.7	35.7	258.6	15.8	204.5	91.6	4.6	2.5	5.9	35.3	259.5	15.3	207.4	88.7	4.8	4.4	10.1	35.1
		1.3	2.6	100	253.5	21.6	179.8	117.1	3.3	1.2	2.7	37.1	254.4	20.2	185.6	111.4	3.6	2.5	5.7	36.7	255.5	19.5	189.1	108.6	3.7	4.3	9.8	36.5
		1.3	2.6	120									249.2	25.5	162.2	131.2	2.8	2.4	5.5	38.3	250.6	24.6	166.5	128.5	2.9	4.1	9.5	38.0
		1.3	2.6	130																								
	45	2.7	5.7	60	279.4	13.6	233.1	78.6	5.9	1.2	2.8	38.8	281.1	12.5	238.5	72.5	6.5	2.6	6.1	38.6	282.5	11.9	241.8	69.4	6.8	4.5	10.4	38.4
		2.7	5.6	80	271.8	17.4	212.2	98.2	4.5	1.2	2.7	39.8	274.1	16.1	219.0	92.2	4.9	2.5	5.9	39.5	275.8	15.5	222.9	89.2	5.1	4.4	10.1	39.3
		2.7	5.6	100	265.3	22.1	189.8	117.8	3.5	1.2	2.7	40.9	268.0	20.6	197.8	112.0	3.8	2.5	5.7	40.5	268.6	19.8	201.0	109.0	3.9	4.3	9.8	40.4
		2.7	5.6	120									260.8	26.0	172.2	131.8	2.9	2.4	5.5	41.7	261.8	25.1	176.2	128.8	3.0	4.1	9.5	41.5
		2.7	5.5	130																								
	60	4.7	9.7	60	288.9	13.8	241.7	79.3	6.1	1.2	2.8	41.3	292.2	12.6	249.1	73.0	6.7	2.6	6.1	41.0	294.3	12.1	253.2	69.8	7.1	4.5	10.4	40.9
		4.7	9.6	80	280.2	17.8	219.5	98.8	4.6	1.2	2.7	42.1	283.5	16.4	227.6	92.7	5.0	2.5	5.9	41.8	284.7	15.7	231.1	89.5	5.3	4.4	10.1	41.7
		4.7	9.6	100	272.3	22.5	195.4	118.3	3.5	1.2	2.7	43.0	274.9	20.9	203.5	112.3	3.8	2.5	5.7	42.7	276.2	20.1	207.5	109.3	4.0	4.3	9.8	42.5
		4.6	9.6	120									266.9	26.4	176.8	132.0	2.9	2.4	5.5	43.6	267.9	25.5	180.9	129.1	3.1	4.1	9.5	43.5
		4.6	9.5	130																								

Notes:
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- Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 30 GPM							SLWT °F	Flow 45 GPM							SLWT °F	Flow 60 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
60	30	1.2	2.5	60	301.2	13.1	256.5	80.1	6.5	1.2	2.8	42.6	306.0	11.9	265.5	73.6	7.3	2.6	6.0	42.0	307.4	11.3	268.9	70.3	7.7	4.5	10.4	41.8
		1.2	2.5	80	292.9	17.0	235.0	99.6	4.9	1.2	2.7	44.0	296.7	15.5	243.7	93.3	5.4	2.5	5.9	43.5	297.0	14.9	246.1	90.0	5.7	4.4	10.1	43.3
		1.2	2.5	100	286.9	21.6	213.3	119.3	3.8	1.1	2.7	45.6	289.1	19.9	221.1	113.0	4.1	2.5	5.7	45.0	289.6	19.2	224.2	109.7	4.3	4.3	9.8	44.8
		1.2	2.5	120	278.7	27.2	185.8	138.8	2.9	1.1	2.6	47.4	281.0	25.3	194.7	132.7	3.2	2.4	5.5	46.8	282.8	24.3	199.8	129.6	3.3	4.1	9.5	46.5
		1.2	2.4	130																								
	45	2.6	5.3	60	324.7	13.4	279.0	81.7	7.0	1.2	2.8	47.4	328.1	12.1	286.9	74.6	7.8	2.6	6.0	47.0	330.7	11.4	291.8	71.0	8.3	4.5	10.4	46.8
		2.6	5.3	80	312.9	17.4	253.6	101.0	5.2	1.2	2.7	48.5	316.4	15.9	262.3	94.1	5.7	2.5	5.9	48.1	319.6	15.1	268.1	90.7	6.1	4.4	10.1	47.9
		2.6	5.3	100	301.4	22.2	225.7	120.3	3.9	1.1	2.7	49.8	306.0	20.3	236.6	113.7	4.3	2.5	5.7	49.3	307.6	19.5	241.1	110.4	4.5	4.3	9.8	49.1
		2.6	5.3	120									295.2	25.8	207.2	133.3	3.3	2.4	5.5	50.6	296.6	24.8	212.0	130.0	3.4	4.1	9.5	50.4
		2.5	5.2	130																								
	60	4.4	9.1	60	336.5	13.6	290.0	82.5	7.2	1.2	2.8	50.1	341.4	12.2	299.7	75.2	8.1	2.6	6.0	49.8	345.3	11.5	306.2	71.5	8.8	4.5	10.4	49.6
		4.4	9.1	80	322.3	17.7	261.8	101.6	5.3	1.2	2.7	51.1	328.2	16.1	273.4	94.7	5.9	2.5	5.9	50.7	330.4	15.3	278.3	91.1	6.3	4.4	10.1	50.5
		4.4	9.1	100	310.1	22.6	233.1	120.9	4.0	1.1	2.7	52.1	314.8	20.7	244.2	114.1	4.4	2.5	5.7	51.7	316.9	19.8	249.4	110.7	4.7	4.3	9.8	51.5
		4.4	9.1	120									302.5	26.2	213.0	133.6	3.4	2.4	5.5	52.7	304.5	25.2	218.5	130.3	3.5	4.1	9.5	52.5
		4.3	8.9	130																								
70	30	1.2	2.5	60	340.3	12.8	296.7	82.7	7.6	1.2	2.8	49.9	344.9	11.4	306.0	75.3	8.6	2.6	6.0	49.3	345.4	10.8	308.6	71.5	9.1	4.5	10.4	49.1
		1.2	2.5	80	328.6	16.7	271.5	102.0	5.6	1.2	2.7	51.6	331.3	15.2	279.5	94.8	6.2	2.5	5.8	51.0	335.4	14.4	286.3	91.2	6.6	4.4	10.1	50.6
		1.2	2.5	100	317.0	21.5	243.7	121.3	4.2	1.1	2.6	53.5	322.4	19.6	255.6	114.5	4.7	2.5	5.7	52.6	324.2	18.7	260.4	110.9	4.9	4.3	9.8	52.3
		1.2	2.4	120	306.6	27.0	214.4	140.7	3.2	1.1	2.6	55.5	310.7	24.9	225.6	134.0	3.5	2.4	5.5	54.7	312.0	23.9	230.3	130.5	3.7	4.1	9.5	54.4
		1.2	2.4	130																	305.9	26.9	214.2	140.4	3.2	4.1	9.4	55.5
	45	2.5	5.2	60	367.2	13.1	322.4	84.5	8.1	1.2	2.8	55.4	375.4	11.5	336.1	76.7	9.4	2.6	6.0	54.9	378.8	10.7	342.1	72.6	10.2	4.5	10.4	54.6
		2.5	5.2	80	352.6	17.2	294.1	103.6	5.9	1.2	2.7	56.7	358.9	15.4	306.3	96.0	6.7	2.5	5.8	56.1	361.2	14.6	311.5	92.1	7.1	4.4	10.1	55.9
		2.5	5.2	100	337.6	22.0	262.6	122.7	4.4	1.1	2.6	58.1	342.3	20.0	274.0	115.4	4.9	2.5	5.7	57.6	346.6	19.0	281.8	111.7	5.3	4.3	9.8	57.2
		2.5	5.2	120									327.7	25.5	240.7	134.8	3.7	2.4	5.5	59.1	331.2	24.3	248.2	131.2	3.9	4.1	9.5	58.7
		2.5	5.1	130																	323.6	27.4	230.1	141.0	3.4	4.1	9.4	59.5
	60	4.3	9.0	60	384.0	13.3	338.7	85.6	8.4	1.2	2.8	58.5	392.0	11.6	352.4	77.4	9.8	2.6	6.0	58.1	396.1	10.8	359.3	73.2	10.7	4.5	10.4	57.9
		4.3	9.0	80	365.7	17.5	305.9	104.5	6.1	1.2	2.7	59.6	372.4	15.7	319.0	96.6	6.9	2.5	5.8	59.2	376.8	14.7	326.6	92.6	7.5	4.4	10.1	58.9
		4.3	9.0	100	347.5	22.5	270.7	123.4	4.5	1.1	2.6	60.8	355.0	20.3	285.5	115.9	5.1	2.5	5.7	60.3	359.2	19.3	293.4	112.1	5.4	4.3	9.8	60.0
		4.3	8.9	120									338.3	25.9	250.1	135.2	3.8	2.4	5.5	61.4	341.2	24.7	257.0	131.5	4.0	4.1	9.5	61.2
		4.2	8.7	130																	332.2	27.8	237.3	141.3	3.5	4.1	9.4	61.9

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 45 GPM							SLWT °F	Flow 68 GPM							SLWT °F	Flow 90 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	45	1.6	3.7	30									254.4	18.2	316.4	22.1	13.6	4.2	9.7	73.8	262.2	18.2	324.4	23.8	14.0	7.1	16.4	74.1
		1.6	3.7	40	283.6	18.5	346.7	26.7	14.9	2.0	4.7	75.1	301.3	18.7	365.0	30.6	15.7	4.2	9.6	76.0	312.3	18.8	376.3	32.7	16.2	7.0	16.2	76.5
		1.6	3.7	50	331.1	18.9	395.7	34.5	17.0	1.9	4.4	77.3	355.2	19.1	420.5	39.0	18.0	4.1	9.4	78.5	369.2	19.3	435.0	41.4	18.6	6.9	15.9	79.1
		1.6	3.7	60	387.7	19.5	454.2	42.8	19.3	1.8	4.1	80.0	421.5	19.7	488.7	47.6	20.8	3.9	8.9	81.6	436.2	19.9	504.1	50.3	21.3	6.5	15.0	82.4
		1.6	3.7	70	444.2	19.9	512.1	50.3	21.7	1.8	4.0	82.8	480.9	20.3	550.2	55.9	23.0	3.8	8.7	84.6	503.4	20.4	572.9	58.8	24.0	6.4	14.8	85.7
		1.6	3.7	80	501.7	20.3	571.2	57.6	24.0	1.7	4.0	85.6	549.5	20.7	620.1	63.8	25.8	3.7	8.6	88.0	571.8	21.0	643.5	67.3	26.4	6.3	14.6	89.1
	68	3.5	8.1	30									260.5	17.3	319.6	21.9	14.8	4.2	9.7	69.1	267.7	17.4	326.9	23.7	15.2	7.1	16.5	69.4
		3.5	8.1	40	289.8	17.5	349.5	26.4	16.3	2.0	4.7	70.0	308.3	17.6	368.4	30.4	17.2	4.2	9.6	70.6	320.4	17.6	380.6	32.5	17.9	7.0	16.2	70.9
		3.5	8.1	50	338.1	17.7	398.7	34.2	18.7	1.9	4.4	71.4	362.3	17.9	423.3	38.8	19.9	4.1	9.4	72.2	378.1	17.9	439.2	41.1	20.8	6.9	15.9	72.6
		3.5	8.1	60	399.3	18.0	460.7	42.3	21.8	1.8	4.1	73.5	432.8	18.1	494.6	47.3	23.5	3.9	8.9	74.5	449.9	18.2	511.8	50.0	24.4	6.5	15.0	75.1
		3.5	8.1	70	453.4	18.2	515.6	49.8	24.5	1.8	4.0	75.2	496.5	18.3	558.9	55.4	26.7	3.8	8.7	76.6	518.7	18.3	581.2	58.5	27.8	6.4	14.8	77.3
		3.5	8.1	80	513.7	18.3	576.2	57.1	27.6	1.7	4.0	77.1	567.7	18.3	630.2	63.3	30.5	3.7	8.6	78.9	596.0	18.3	658.5	66.7	32.0	6.3	14.6	79.9
	90	6.0	13.8	30									262.9	17.0	320.9	21.8	15.4	4.2	9.8	66.9	270.1	17.1	328.3	23.6	15.7	7.1	16.5	67.1
		6.0	13.8	40	292.4	17.2	351.0	26.3	16.9	2.0	4.7	67.6	312.1	17.2	370.9	30.3	18.0	4.2	9.6	68.0	323.4	17.3	382.3	32.4	18.6	7.0	16.2	68.3
		6.0	13.8	50	339.9	17.3	399.0	34.1	19.5	1.9	4.4	68.6	366.3	17.4	425.6	38.7	21.0	4.1	9.4	69.2	382.1	17.4	441.4	41.1	21.9	6.9	15.9	69.6
		6.0	13.8	60	403.7	17.4	463.0	42.1	23.1	1.8	4.1	70.1	436.8	17.4	496.2	47.2	25.0	3.9	8.9	70.8	455.7	17.4	515.0	49.9	26.1	6.5	15.0	71.2
		6.0	13.8	70	459.6	17.4	519.0	49.6	26.3	1.8	4.1	71.3	505.9	17.3	564.9	55.1	29.1	3.8	8.8	72.4	527.6	17.3	586.5	58.3	30.4	6.4	14.8	72.9
		6.0	13.7	80	524.3	17.2	583.1	56.6	30.2	1.7	4.0	72.8	574.9	17.2	633.5	63.1	33.3	3.7	8.6	73.9								
75	45	1.6	3.6	30	225.3	21.7	299.3	19.4	10.1	2.2	5.0	88.2	236.4	21.8	310.9	22.6	10.5	4.2	9.7	88.7	243.4	21.9	318.0	24.3	10.8	7.1	16.4	89.0
		1.6	3.6	40	266.9	22.1	342.4	27.5	11.7	2.0	4.6	90.1	281.7	22.4	358.0	31.3	12.2	4.1	9.6	90.8	293.0	22.4	369.5	33.1	12.7	7.0	16.1	91.3
		1.6	3.6	50	309.8	22.7	387.3	35.5	13.3	1.9	4.4	92.1	332.0	23.0	410.4	39.7	14.0	4.1	9.4	93.1	344.8	23.1	423.7	41.9	14.5	6.9	15.9	93.7
		1.6	3.6	60	366.9	23.3	446.5	43.7	15.3	1.8	4.1	94.7	395.0	23.7	475.8	48.4	16.2	3.9	8.9	96.1	408.3	23.9	489.9	50.9	16.6	6.5	15.0	96.7
		1.6	3.6	70	418.3	24.0	500.0	51.4	17.0	1.8	4.0	97.2	452.5	24.4	535.9	56.7	18.0	3.8	8.7	98.9	470.3	24.7	554.6	59.5	18.5	6.4	14.8	99.7
		1.6	3.6	80	473.3	24.6	557.2	58.9	18.7	1.7	4.0	99.9	516.0	25.1	601.7	64.8	20.0	3.7	8.6	102.0	537.1	25.5	624.0	68.0	20.5	6.3	14.6	103.1
	68	3.4	7.9	30	229.7	20.8	300.6	19.2	10.9	2.2	5.0	83.7	243.3	20.8	314.2	22.4	11.5	4.2	9.7	84.1	249.8	20.9	321.0	24.1	11.8	7.1	16.4	84.3
		3.4	7.9	40	273.5	21.0	345.2	27.2	12.8	2.0	4.7	85.0	289.6	21.2	361.8	31.0	13.5	4.1	9.6	85.5	301.0	21.2	373.3	32.9	14.0	7.0	16.1	85.8
		3.4	7.9	50	318.5	21.4	391.3	35.1	14.7	1.9	4.4	86.4	341.9	21.5	415.4	39.4	15.6	4.1	9.4	87.1	356.8	21.6	430.4	41.6	16.3	6.9	15.9	87.5
		3.4	7.9	60	377.4	21.7	451.5	43.3	17.1	1.8	4.1	88.2	407.1	21.9	481.9	48.1	18.2	3.8	8.9	89.1	423.4	22.0	498.5	50.6	18.9	6.5	15.0	89.6
		3.4	7.9	70	430.8	22.0	506.1	50.8	19.2	1.8	4.0	89.9	471.3	22.2	547.1	56.1	20.9	3.8	8.7	91.1	490.9	22.3	567.1	59.1	21.6	6.4	14.8	91.8
		3.4	7.9	80	491.0	22.3	567.0	58.1	21.7	1.7	4.0	91.8	535.2	22.6	612.3	64.2	23.3	3.7	8.6	93.2	562.5	22.7	639.8	67.5	24.4	6.3	14.6	94.1
	90	5.9	13.5	30	232.4	20.4	302.1	19.1	11.3	2.2	5.0	81.6	246.1	20.5	315.9	22.3	12.0	4.2	9.7	81.9	252.7	20.5	322.7	24.0	12.3	7.1	16.4	82.0
		5.8	13.5	40	276.9	20.6	347.3	27.0	13.4	2.0	4.7	82.6	293.1	20.7	363.8	30.9	14.1	4.1	9.6	83.0	304.7	20.7	375.4	32.9	14.6	7.0	16.1	83.2
		5.8	13.5	50	324.0	20.8	395.0	34.8	15.5	1.9	4.4	83.7	346.6	21.0	418.1	39.3	16.4	4.1	9.4	84.2	361.7	21.0	433.4	41.5	17.1	6.9	15.9	84.5
		5.8	13.5	60	382.4	21.1	454.3	43.0	18.0	1.8	4.1	85.0	413.7	21.2	486.1	47.9	19.4	3.9	8.9	85.7	431.3	21.2	503.7	50.4	20.2	6.5	15.0	86.2
		5.8	13.5	70	437.0	21.3	509.6	50.6	20.4	1.8	4.0	86.3	478.6	21.4	551.5	55.9	22.3	3.8	8.7	87.3	498.6	21.4	571.7	58.9	23.1	6.4	14.8	87.8
		5.8	13.4	80	498.1	21.4	571.1	57.8	23.2	1.7	4.0	87.8	545.1	21.5	618.6	63.9	25.2	3.7	8.6	88.9	571.6	21.6	645.3	67.3	26.3	6.3	14.6	89.6

Notes:
- Interpolation is permissible; extrapolation is not.
- All performance 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 in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 45 GPM							SLWT °F	Flow 68 GPM							SLWT °F	Flow 90 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
90	45	1.5	3.6	30	204.2	26.3	294.0	20.4	7.5	2.2	5.0	103.1	216.0	26.4	305.9	23.3	8.0	4.2	9.7	103.6	221.5	26.4	311.7	24.8	8.1	7.1	16.4	103.9
		1.5	3.6	40	245.5	26.7	336.6	28.5	8.9	2.0	4.6	105.0	258.5	26.9	350.4	32.0	9.3	4.1	9.6	105.6	268.1	27.0	360.2	33.7	9.7	7.0	16.1	106.0
		1.5	3.5	50	286.2	27.3	379.4	36.6	10.2	1.9	4.4	106.9	306.1	27.6	400.2	40.5	10.8	4.1	9.4	107.8	317.2	27.7	411.8	42.6	11.1	6.9	15.9	108.3
		1.5	3.5	60	340.4	28.0	436.0	44.9	11.8	1.8	4.1	109.4	363.2	28.5	460.3	49.3	12.4	3.9	8.9	110.4	376.3	28.6	474.0	51.7	12.8	6.5	15.1	111.1
		1.5	3.5	70	387.3	28.8	485.6	52.8	13.1	1.8	4.0	111.6	419.8	29.2	519.5	57.7	14.0	3.8	8.8	113.1	433.7	29.6	534.7	60.4	14.2	6.4	14.8	113.8
		1.5	3.5	80	441.3	29.5	542.1	60.3	14.5	1.7	4.0	114.1	474.5	30.3	577.8	66.0	15.2	3.7	8.6	115.8	497.4	30.5	601.5	68.9	15.8	6.3	14.6	116.9
	68	3.4	7.8	30	210.8	25.1	296.4	20.1	8.3	2.2	5.0	98.7	222.9	25.1	308.5	23.1	8.7	4.2	9.7	99.1	228.7	25.1	314.4	24.6	8.9	7.1	16.4	99.2
		3.4	7.8	40	253.0	25.3	339.4	28.1	9.8	2.0	4.6	100.0	267.6	25.4	354.3	31.7	10.3	4.1	9.6	100.4	277.8	25.5	364.7	33.5	10.7	7.0	16.1	100.7
		3.4	7.8	50	297.8	25.6	385.2	36.1	11.4	1.9	4.4	101.3	318.0	25.8	406.1	40.1	12.1	4.1	9.4	101.9	330.7	25.9	419.1	42.3	12.6	6.9	15.9	102.3
		3.4	7.8	60	350.6	26.1	439.8	44.4	13.2	1.8	4.1	102.9	378.7	26.3	468.6	48.9	14.1	3.9	8.9	103.7	394.4	26.4	484.5	51.3	14.7	6.5	15.0	104.2
		3.4	7.7	70	405.3	26.5	495.7	52.0	15.0	1.8	4.0	104.6	436.7	26.8	528.3	57.2	16.0	3.8	8.7	105.5	455.8	27.0	547.8	59.9	16.6	6.4	14.8	106.1
		3.4	7.7	80	459.9	27.0	551.9	59.5	16.8	1.7	4.0	106.3	502.4	27.3	595.5	65.2	18.1	3.7	8.6	107.6	524.4	27.5	618.2	68.3	18.8	6.3	14.6	108.4
	90	5.7	13.2	30	213.9	24.6	298.0	19.9	8.6	2.2	5.0	96.6	226.0	24.7	310.2	23.0	9.1	4.2	9.7	96.8	232.1	24.7	316.3	24.5	9.3	7.1	16.4	97.0
		5.7	13.2	40	256.9	24.8	341.6	27.9	10.3	2.0	4.6	97.5	272.9	24.9	357.7	31.5	10.9	4.1	9.6	97.9	282.3	24.9	367.3	33.4	11.3	7.0	16.1	98.1
		5.7	13.2	50	302.1	25.0	387.5	35.9	12.0	1.9	4.4	98.5	323.5	25.2	409.3	40.0	12.8	4.1	9.4	99.0	336.4	25.2	422.4	42.1	13.3	6.9	15.9	99.3
		5.7	13.2	60	356.9	25.4	443.4	44.2	14.0	1.8	4.1	99.8	386.1	25.5	473.2	48.7	15.0	3.9	8.9	100.5	401.9	25.6	489.2	51.1	15.6	6.5	15.0	100.8
		5.7	13.2	70	412.1	25.6	499.5	51.7	16.0	1.8	4.0	101.1	445.6	25.9	533.9	56.9	17.1	3.8	8.7	101.9	465.8	26.0	554.4	59.6	17.8	6.4	14.8	102.3
		5.7	13.2	80	468.4	25.9	556.9	59.1	18.0	1.7	4.0	102.4	512.6	26.2	601.9	64.9	19.5	3.7	8.6	103.5	535.3	26.3	625.1	68.1	20.2	6.3	14.6	104.0
105	45	1.5	3.6	30									191.0	32.1	300.5	24.0	5.8	4.2	9.7	118.5	195.8	32.1	305.4	25.4	5.9	7.1	16.5	118.7
		1.5	3.5	40	220.1	32.4	330.7	29.7	6.6	2.0	4.6	119.9	232.0	32.6	343.2	32.8	6.9	4.2	9.6	120.4	239.5	32.7	351.0	34.4	7.1	7.0	16.2	120.8
		1.5	3.5	50	259.4	33.0	372.0	37.9	7.6	1.9	4.4	121.7	276.1	33.3	389.6	41.4	8.1	4.1	9.4	122.5	286.5	33.3	400.2	43.3	8.4	6.9	15.9	123.0
		1.5	3.5	60	307.9	33.8	423.2	46.3	8.9	1.8	4.1	123.9	328.4	34.2	445.0	50.4	9.3	3.9	8.9	124.9	339.6	34.4	456.8	52.5	9.6	6.5	15.1	125.4
		1.5	3.5	70	355.1	34.5	472.9	54.2	10.0	1.8	4.1	126.1	380.9	35.0	500.4	58.8	10.6	3.8	8.8	127.3	393.1	35.4	513.9	61.3	10.8	6.4	14.8	127.9
		1.5	3.5	80	400.7	35.5	522.0	62.1	11.0	1.7	4.0	128.2	432.8	36.2	556.4	67.2	11.6	3.7	8.6	129.8	451.0	36.5	575.3	70.0	12.0	6.3	14.6	130.6
	68	3.4	7.7	30	188.8	30.5	292.9	21.1	6.1	2.2	5.0	113.6	199.0	30.5	303.2	23.8	6.4	4.2	9.7	114.0	204.2	30.5	308.4	25.2	6.6	7.1	16.4	114.1
		3.3	7.7	40	229.2	30.6	333.7	29.2	7.4	2.0	4.6	114.9	243.2	30.7	348.0	32.4	7.8	4.1	9.6	115.3	250.4	30.8	355.5	34.1	8.0	7.0	16.2	115.5
		3.3	7.6	50	271.7	30.9	377.2	37.3	8.6	1.9	4.4	116.2	289.4	31.1	395.6	41.0	9.1	4.1	9.4	116.7	300.3	31.2	406.7	43.0	9.5	6.9	15.9	117.0
		3.3	7.6	60	322.8	31.4	430.1	45.7	10.1	1.8	4.1	117.7	346.2	31.7	454.2	49.8	10.8	3.9	8.9	118.4	359.5	31.7	467.8	52.0	11.1	6.5	15.1	118.8
		3.3	7.6	70	370.1	32.0	479.2	53.5	11.4	1.8	4.0	119.1	400.0	32.3	510.1	58.2	12.2	3.8	8.8	120.0	416.8	32.4	527.4	60.7	12.6	6.4	14.8	120.5
		3.3	7.6	80	424.9	32.4	535.6	61.1	12.9	1.7	4.0	120.8	460.9	32.9	572.9	66.4	13.8	3.7	8.6	121.9	478.5	33.1	591.5	69.3	14.2	6.3	14.6	122.5
	90	5.7	13.1	30	192.4	30.0	294.6	20.9	6.4	2.2	5.0	111.5	202.7	30.0	304.9	23.7	6.7	4.2	9.7	111.8	208.2	30.0	310.4	25.1	6.9	7.1	16.4	111.9
		5.6	13.0	40	232.2	30.1	334.7	29.1	7.7	2.0	4.6	112.5	247.7	30.1	350.3	32.3	8.2	4.1	9.6	112.8	255.7	30.1	358.3	34.0	8.5	7.0	16.2	113.0
		5.6	13.0	50	276.9	30.2	379.9	37.0	9.1	1.9	4.4	113.5	295.6	30.3	399.1	40.8	9.7	4.1	9.4	113.9	306.8	30.4	410.4	42.8	10.0	6.9	15.9	114.1
		5.6	13.0	60	329.3	30.5	433.4	45.4	10.7	1.8	4.1	114.6	353.8	30.7	458.6	49.6	11.5	3.9	8.9	115.2	367.6	30.8	472.6	51.8	11.9	6.5	15.1	115.5
		5.6	13.0	70	379.1	30.9	484.6	53.1	12.2	1.8	4.0	115.7	410.2	31.2	516.6	57.9	13.1	3.8	8.8	116.5	429.0	31.2	535.6	60.5	13.7	6.4	14.8	116.9
		5.6	12.9	80	434.5	31.3	541.3	60.6	13.8	1.7	4.0	117.0	472.0	31.6	579.8	66.1	14.9	3.7	8.6	117.9	492.3	31.8	600.8	69.0	15.4	6.3	14.6	118.4

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- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 45 GPM							SLWT °F	Flow 68 GPM							SLWT °F	Flow 90 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
120	45	1.2	2.7	30																								
		1.6	3.6	40																								
		1.5	3.5	50									241.9	40.3	379.3	42.5	5.8	4.1	9.4	137.1	250.1	40.3	387.7	44.1	6.0	6.9	15.9	137.5
		1.5	3.5	60	272.2	40.8	411.5	47.9	6.5	1.8	4.1	138.5	289.4	41.2	429.9	51.5	6.8	3.9	8.9	139.3	299.9	41.2	440.5	53.4	7.1	6.5	15.1	139.8
		1.5	3.5	70	313.0	41.7	455.1	56.1	7.3	1.7	4.0	140.4																
		1.5	3.5	80																								
	68	3.4	7.7	30																								
		3.4	7.7	40																	219.0	37.4	346.7	34.9	5.8	7.0	16.2	130.3
		3.3	7.6	50	241.8	37.6	369.9	38.7	6.3	1.9	4.4	131.0	257.7	37.7	386.1	42.0	6.7	4.1	9.4	131.5	265.4	37.7	394.2	43.8	6.9	6.9	15.9	131.7
		3.3	7.6	60	290.0	37.9	419.5	47.1	7.5	1.8	4.1	132.5	307.8	38.2	438.3	51.0	7.9	3.9	8.9	133.0	319.4	38.3	450.0	52.9	8.2	6.5	15.1	133.3
		3.3	7.5	70	333.5	38.5	464.9	55.2	8.5	1.8	4.1	133.7	358.5	38.8	491.0	59.5	9.1	3.8	8.8	134.5	373.4	38.9	506.2	61.7	9.4	6.4	14.9	134.9
		3.3	7.5	80	383.4	39.0	516.5	62.9	9.7	1.7	4.0	135.1	414.5	39.4	549.0	67.8	10.3	3.7	8.6	136.0	429.0	39.7	564.4	70.4	10.6	6.3	14.6	136.5
	90	4.2	9.7	30																								
		5.7	13.1	40									218.5	36.6	343.3	33.2	5.9	4.2	9.6	127.7	224.8	36.6	349.7	34.7	6.1	7.0	16.2	127.8
		5.6	12.9	50	247.5	36.7	372.6	38.4	6.7	1.9	4.4	128.3	264.1	36.7	389.4	41.8	7.2	4.1	9.4	128.7	272.0	36.8	397.6	43.6	7.3	6.9	15.9	128.9
		5.6	12.8	60	297.1	36.9	423.0	46.8	8.0	1.8	4.1	129.4	318.3	37.0	444.6	50.7	8.6	3.9	8.9	129.9	328.8	37.1	455.5	52.7	8.8	6.5	15.1	130.1
		5.5	12.8	70	345.1	37.2	472.2	54.7	9.2	1.8	4.1	130.5	369.2	37.6	497.3	59.1	9.8	3.8	8.8	131.0	384.7	37.6	513.1	61.4	10.2	6.4	14.8	131.4
		5.5	12.8	80	391.6	37.8	520.5	62.6	10.3	1.7	4.0	131.6	425.2	38.1	555.3	67.5	11.1	3.7	8.6	132.3	444.7	38.2	575.0	70.1	11.6	6.3	14.6	132.8
		5.5	12.8	90	446.6	38.2	577.1	70.1	11.6	1.7	3.9	132.8	486.4	38.7	618.3	75.6	12.5	3.7	8.5	133.8	505.4	38.9	638.3	78.7	12.9	6.3	14.4	134.2

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- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Source				Load								Load								Load							
EWT °F	Flow			EWT °F	Flow 45 GPM							SLWT °F	Flow 68 GPM							SLWT °F	Flow 90 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
30	45	2.0	4.6	60	304.5	20.6	234.2	73.5	4.2	1.8	4.2	18.6	306.2	19.4	239.8	69.1	4.5	3.8	8.8	18.3	306.5	18.9	242.0	66.8	4.6	6.7	15.4	18.2
		2.0	4.5	80	296.7	26.4	206.6	93.3	3.2	1.8	4.2	19.7	298.8	25.0	213.6	89.0	3.4	3.7	8.5	19.5	299.5	24.3	216.8	86.7	3.5	6.5	14.9	19.4
		1.9	4.5	100																	302.9	31.6	195.2	106.8	2.7	6.4	14.8	20.7
		1.9	4.4	120																								
	68	3.7	8.5	60	318.1	20.9	246.6	74.1	4.4	1.8	4.2	21.9	319.2	19.8	251.7	69.5	4.6	3.8	8.8	21.8	319.7	19.2	254.2	67.1	4.8	6.7	15.4	21.7
		3.6	8.4	80	317.2	27.0	225.3	94.2	3.4	1.8	4.2	22.8	318.4	25.4	231.9	89.6	3.6	3.7	8.5	22.5	318.9	24.6	235.1	87.1	3.7	6.5	14.9	22.4
		3.6	8.4	100									312.1	33.0	199.5	109.4	2.7	3.7	8.5	23.6	313.1	31.9	204.3	107.0	2.8	6.4	14.7	23.4
		2.7	6.2	120																								
		2.7	6.2	130																								
	90	6.4	14.7	60	327.9	21.3	255.3	74.6	4.5	1.8	4.1	23.8	329.0	20.1	260.6	69.8	4.8	3.8	8.8	23.7	329.7	19.4	263.4	67.3	4.9	6.7	15.4	23.6
		6.3	14.6	80	323.5	27.4	230.1	94.5	3.4	1.7	4.0	24.5	324.9	25.7	237.2	89.8	3.7	3.7	8.5	24.3	325.5	24.9	240.6	87.3	3.8	6.5	14.9	24.2
		6.3	14.5	100									319.1	33.4	205.3	109.6	2.8	3.7	8.4	25.1	320.1	32.3	210.1	107.2	2.9	6.4	14.7	25.0
		4.7	10.8	120																								
		4.7	10.8	130																								
40	45	1.8	4.3	60	349.3	20.4	279.7	75.5	4.9	1.8	4.1	26.6	351.3	19.1	286.1	70.5	5.2	3.8	8.8	26.2	352.1	18.5	289.0	67.8	5.4	6.7	15.3	26.1
		1.8	4.2	80	347.0	26.1	258.0	95.5	3.8	1.7	4.0	27.8	347.9	24.4	264.6	90.4	4.1	3.7	8.5	27.4	348.4	23.6	267.9	87.8	4.2	6.4	14.9	27.2
		1.8	4.2	100	342.7	33.8	227.5	115.4	2.9	1.7	4.0	29.3	342.9	31.6	235.1	110.3	3.1	3.6	8.4	28.9	343.8	30.5	239.8	107.7	3.2	6.3	14.6	28.7
		1.8	4.1	120																								
		1.3	3.0	130																								
	68	3.6	8.3	60	367.5	20.8	296.6	76.3	5.1	1.8	4.1	30.4	369.4	19.4	303.0	71.0	5.5	3.8	8.8	30.2	370.6	18.8	306.6	68.2	5.7	6.7	15.3	30.1
		3.6	8.3	80	362.0	26.6	271.4	96.2	3.9	1.7	4.0	31.3	363.4	24.8	278.8	90.9	4.2	3.7	8.5	31.0	364.2	23.9	282.5	88.1	4.4	6.4	14.9	30.9
		3.6	8.2	100	355.7	34.3	238.7	116.0	3.0	1.7	3.9	32.4	358.0	32.0	248.9	110.8	3.2	3.6	8.3	32.1	359.1	30.8	253.9	108.1	3.4	6.3	14.5	31.9
		3.6	8.2	120																								
		2.7	6.2	130																								
	90	6.3	14.4	60	378.9	21.2	306.6	76.9	5.2	1.8	4.1	32.6	381.3	19.8	313.9	71.4	5.6	3.8	8.8	32.4	382.6	19.0	317.6	68.5	5.9	6.7	15.3	32.3
		6.2	14.4	80	371.8	27.0	279.7	96.6	4.0	1.7	4.0	33.3	373.9	25.2	288.0	91.2	4.3	3.7	8.5	33.1	375.0	24.3	292.2	88.4	4.5	6.4	14.9	33.0
		6.2	14.3	100	363.6	34.8	244.8	116.3	3.0	1.7	3.9	34.2	366.4	32.4	255.7	111.0	3.3	3.6	8.3	33.9	367.8	31.3	261.2	108.3	3.4	6.3	14.5	33.8
		6.2	14.3	120																								
		4.6	10.6	130																								
50	45	1.7	4.0	60	397.2	20.2	328.4	77.7	5.6	1.8	4.1	34.3	398.4	18.8	334.3	71.9	6.0	3.8	8.8	34.0	399.4	18.1	337.7	68.9	6.3	6.6	15.3	33.9
		1.7	3.9	80	389.0	25.8	301.1	97.4	4.3	1.7	4.0	35.7	392.1	23.9	310.4	91.8	4.7	3.7	8.5	35.2	393.6	23.0	315.0	88.8	4.9	6.4	14.9	35.0
		1.7	3.9	100	383.8	33.1	270.8	117.2	3.3	1.7	3.9	37.3	385.1	30.8	280.1	111.6	3.6	3.6	8.3	36.8	385.6	29.6	284.7	108.6	3.7	6.3	14.5	36.6
		1.7	3.8	120																	378.1	38.4	247.2	128.5	2.8	6.3	14.5	38.4
		1.6	3.8	130																								
	68	3.5	8.2	60	420.8	20.7	350.3	78.7	5.9	1.8	4.1	38.8	424.6	19.1	359.4	72.7	6.4	3.8	8.8	38.5	426.9	18.3	364.3	69.5	6.7	6.6	15.3	38.3
		3.5	8.2	80	411.2	26.3	321.5	98.4	4.5	1.7	4.0	39.7	414.5	24.4	331.3	92.4	4.9	3.7	8.5	39.4	416.4	23.4	336.4	89.3	5.1	6.4	14.9	39.2
		3.5	8.1	100	401.6	33.7	286.5	118.0	3.4	1.7	3.9	40.9	404.7	31.2	298.1	112.2	3.7	3.6	8.3	40.5	406.2	30.0	303.8	109.1	3.9	6.3	14.5	40.3
		3.5	8.1	120									393.2	40.4	255.4	131.9	2.8	3.5	8.0	41.9	395.2	38.8	262.9	128.9	2.9	6.2	14.4	41.7
		3.5	8.0	130																								
	90	6.2	14.2	60	436.4	21.1	364.5	79.4	6.0	1.8	4.1	41.3	441.7	19.4	375.4	73.2	6.6	3.8	8.8	41.1	444.2	18.6	380.8	69.9	7.0	6.6	15.3	40.9
		6.1	14.2	80	424.0	26.8	332.6	98.9	4.6	1.7	4.0	42.0	428.3	24.8	343.7	92.9	5.0	3.7	8.5	41.8	430.5	23.8	349.4	89.6	5.3	6.4	14.9	41.6
		6.1	14.1	100	411.7	34.3	294.6	118.5	3.5	1.7	3.9	43.0	415.6	31.7	307.4	112.5	3.8	3.6	8.3	42.7	417.5	30.4	313.6	109.4	4.0	6.3	14.5	42.5
		6.1	14.0	120									401.7	40.9	262.0	132.2	2.9	3.5	8.0	43.8	404.2	39.3	270.2	129.1	3.0	6.2	14.4	43.6
		6.0	13.9	130																								

Notes:
- Interpolation is permissible; extrapolation is not.
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- Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 45 GPM							SLWT °F	Flow 68 GPM							SLWT °F	Flow 90 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
60	45	1.6	3.7	60	456.3	20.1	387.6	80.3	6.5	1.8	4.1	42.6	461.8	18.4	398.9	73.8	7.1	3.8	8.7	42.1	463.5	17.6	403.4	70.3	7.5	6.6	15.3	42.0
		1.6	3.7	80	444.5	25.6	357.3	99.9	4.9	1.7	4.0	43.9	448.5	23.6	368.1	93.5	5.4	3.7	8.5	43.4	451.4	22.5	374.6	90.1	5.7	6.4	14.8	43.1
		1.6	3.7	100	431.0	32.8	319.2	119.3	3.7	1.7	3.9	45.7	434.9	30.2	332.0	113.1	4.1	3.6	8.3	45.1	437.4	28.9	338.8	109.8	4.3	6.3	14.5	44.8
		1.6	3.6	120	418.8	42.1	275.3	138.9	2.8	1.6	3.8	47.7	422.8	38.9	290.2	132.8	3.1	3.5	8.0	47.1	424.8	37.2	297.9	129.6	3.2	6.2	14.2	46.7
		1.6	3.6	130																								
	68	3.4	7.7	60	491.0	20.6	420.8	81.8	6.9	1.8	4.1	47.3	498.0	18.7	434.1	74.9	7.6	3.8	8.7	47.0	501.7	17.8	441.1	71.2	8.1	6.6	15.3	46.8
		3.3	7.7	80	471.6	26.3	382.0	101.1	5.2	1.7	4.0	48.4	479.3	24.0	397.4	94.4	5.7	3.7	8.5	48.0	483.4	22.9	405.2	90.8	6.1	6.4	14.8	47.8
		3.3	7.7	100	454.7	33.5	340.6	120.4	3.9	1.7	3.9	49.7	461.1	30.7	356.3	113.9	4.3	3.6	8.3	49.2	465.0	29.3	365.0	110.4	4.6	6.3	14.5	48.9
		3.3	7.7	120									443.0	39.4	308.5	133.4	3.2	3.5	8.0	50.7	446.3	37.7	317.6	130.1	3.4	6.2	14.2	50.4
		3.3	7.5	130																								
	90	5.8	13.5	60	509.8	21.0	438.1	82.7	7.1	1.8	4.1	50.2	518.4	19.0	453.5	75.5	7.9	3.8	8.7	49.9	522.8	18.0	461.4	71.6	8.5	6.6	15.3	49.7
		5.8	13.4	80	488.3	26.8	397.0	101.8	5.3	1.7	4.0	51.0	496.7	24.4	413.4	94.9	5.9	3.7	8.5	50.7	501.5	23.3	422.0	91.2	6.3	6.4	14.8	50.5
		5.8	13.4	100	467.3	34.1	351.0	121.0	4.0	1.7	3.9	52.1	474.6	31.2	368.1	114.3	4.4	3.6	8.3	51.7	479.1	29.8	377.5	110.7	4.7	6.3	14.5	51.5
		5.8	13.4	120									453.6	40.0	317.0	133.7	3.3	3.5	8.0	52.8	457.7	38.2	327.2	130.3	3.5	6.2	14.2	52.6
		5.7	13.1	130																								
70	45	1.6	3.6	60	516.5	19.8	448.9	83.0	7.4	1.8	4.1	50.0	521.2	18.0	459.9	75.6	8.3	3.8	8.7	49.6	525.2	17.0	467.3	71.7	8.8	6.6	15.3	49.3
		1.6	3.6	80	497.4	25.3	410.9	102.2	5.6	1.7	4.0	51.5	503.7	23.1	424.8	95.1	6.2	3.7	8.5	51.0	506.7	22.0	431.5	91.3	6.5	6.4	14.8	50.7
		1.6	3.6	100	478.9	32.3	368.6	121.5	4.2	1.7	3.9	53.4	485.7	29.6	384.8	114.6	4.7	3.6	8.3	52.7	490.1	28.2	394.0	111.0	5.0	6.3	14.4	52.3
		1.6	3.6	120	455.7	41.4	314.3	140.5	3.1	1.7	3.9	55.8	463.7	38.0	334.2	134.0	3.5	3.5	8.1	54.9	467.9	36.2	344.3	130.5	3.7	6.1	14.2	54.5
		1.5	3.5	130																	449.7	41.1	309.7	140.2	3.1	6.1	14.2	55.7
	68	3.3	7.6	60	559.8	20.3	490.4	84.9	7.9	1.8	4.1	55.4	569.8	18.2	507.8	77.0	9.0	3.8	8.7	55.0	575.0	17.0	516.8	72.8	9.7	6.6	15.3	54.7
		3.3	7.6	80	533.8	26.1	444.9	103.8	5.9	1.7	4.0	56.6	542.3	23.7	461.6	96.3	6.6	3.7	8.5	56.1	550.0	22.3	473.8	92.3	7.1	6.4	14.8	55.8
		3.3	7.6	100	505.7	33.2	392.3	122.7	4.4	1.7	3.9	58.1	517.4	30.2	414.4	115.6	4.9	3.6	8.3	57.4	523.0	28.7	425.1	111.7	5.2	6.3	14.4	57.1
		3.3	7.6	120									489.0	38.7	356.9	134.8	3.6	3.5	8.1	59.1	494.3	36.9	368.6	131.1	3.9	6.1	14.2	58.8
		3.2	7.4	130																	476.2	41.7	334.0	140.8	3.3	6.1	14.2	59.6
	90	5.7	13.2	60	583.8	20.8	513.0	86.0	8.2	1.8	4.1	58.6	596.2	18.4	533.3	77.8	9.4	3.8	8.7	58.3	602.5	17.2	543.8	73.4	10.2	6.6	15.2	58.1
		5.7	13.2	80	554.0	26.7	463.1	104.8	6.1	1.7	4.0	59.6	566.9	24.0	485.0	97.0	6.9	3.7	8.5	59.2	573.9	22.7	496.5	92.8	7.4	6.4	14.8	58.9
		5.7	13.2	100	522.0	33.9	406.1	123.4	4.5	1.7	3.9	60.8	536.2	30.7	431.4	116.2	5.1	3.6	8.3	60.3	543.6	29.1	444.2	112.2	5.4	6.3	14.4	60.0
		5.7	13.2	120									504.0	39.3	370.0	135.3	3.7	3.5	8.1	61.6	510.5	37.4	383.0	131.5	4.0	6.1	14.2	61.3
		5.6	12.9	130																	488.9	42.3	344.6	141.0	3.4	6.1	14.2	62.0

Notes:
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- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 75 GPM							SLWT °F	Flow 113 GPM							SLWT °F	Flow 150 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
60	75	1.7	3.8	30	363.9	27.0	455.9	19.7	13.5	1.9	4.5	71.8	382.0	27.2	474.7	22.8	14.1	3.9	8.9	72.3	391.7	27.3	484.8	24.5	14.3	6.6	15.2	72.5
		1.7	3.8	40	432.0	27.8	526.7	27.8	15.1	1.8	4.2	73.6	455.6	28.1	551.4	31.5	15.8	3.8	8.8	74.3	470.8	28.2	567.1	33.4	16.2	6.5	14.9	74.7
		1.7	3.8	50	501.7	28.7	599.5	35.9	17.0	1.7	4.0	75.5	536.6	29.0	635.7	40.0	18.0	3.7	8.6	76.5	556.1	29.2	655.8	42.2	18.5	6.4	14.7	77.0
		1.7	3.8	60	596.2	29.6	697.2	44.1	19.6	1.6	3.8	78.1	640.7	30.0	743.2	48.7	20.7	3.6	8.2	79.3	662.6	30.3	766.0	51.2	21.2	6.1	14.0	79.9
		1.7	3.8	70	680.4	30.5	784.5	51.9	21.7	1.6	3.7	80.4	740.1	31.0	845.8	56.9	23.2	3.5	8.1	82.0	766.9	31.3	873.8	59.8	23.8	6.0	13.8	82.8
		1.7	3.8	80	777.0	31.3	883.9	59.2	24.1	1.6	3.7	83.1	840.8	32.1	950.3	65.1	25.4	3.5	8.0	84.9	882.3	32.4	992.8	68.2	26.5	5.9	13.6	86.0
	113	3.6	8.4	30	369.6	26.0	458.4	19.6	14.2	1.9	4.5	67.8	388.1	26.2	477.5	22.7	14.8	3.9	8.9	68.2	398.2	26.3	487.9	24.4	15.1	6.6	15.2	68.3
		3.6	8.4	40	438.4	26.7	529.4	27.7	16.4	1.8	4.2	69.0	462.8	26.9	554.6	31.4	17.2	3.8	8.8	69.5	479.1	27.0	571.2	33.3	17.7	6.5	15.0	69.8
		3.6	8.4	50	511.3	27.3	604.3	35.6	18.4	1.7	4.0	70.3	547.7	27.5	641.6	39.8	19.6	3.7	8.6	71.0	569.2	27.6	663.5	42.0	20.2	6.4	14.7	71.4
		3.6	8.4	60	605.8	27.9	701.0	43.9	21.3	1.7	3.8	72.0	654.0	28.2	750.1	48.4	22.8	3.6	8.2	72.9	680.3	28.3	776.7	50.9	23.7	6.1	14.1	73.4
		3.6	8.4	70	699.9	28.3	796.6	51.3	24.3	1.6	3.8	73.7	758.7	28.7	856.6	56.6	26.0	3.5	8.1	74.8	789.6	28.9	888.1	59.5	26.9	6.0	13.8	75.4
		3.6	8.4	80	795.2	28.8	893.6	58.7	27.1	1.6	3.7	75.5	866.3	29.3	966.2	64.6	29.1	3.5	8.0	76.8								
	150	6.2	14.4	30	372.3	25.8	460.2	19.5	14.5	1.9	4.5	65.9	391.0	25.9	479.4	22.7	15.1	3.9	8.9	66.1	401.3	26.0	490.0	24.3	15.4	6.6	15.2	66.3
		6.2	14.4	40	441.8	26.3	531.4	27.6	16.8	1.8	4.2	66.8	466.3	26.5	556.7	31.3	17.6	3.8	8.8	67.1	483.1	26.6	573.7	33.2	18.2	6.5	15.0	67.4
		6.2	14.4	50	515.6	26.8	607.0	35.5	19.3	1.7	4.0	67.8	554.6	26.9	646.5	39.7	20.6	3.8	8.7	68.3	575.1	27.0	667.4	41.9	21.3	6.4	14.7	68.6
		6.2	14.4	60	611.9	27.2	704.8	43.7	22.5	1.7	3.8	69.1	661.6	27.4	755.1	48.3	24.1	3.6	8.2	69.8	688.1	27.5	781.9	50.8	25.0	6.1	14.1	70.1
		6.2	14.4	70	706.7	27.5	800.7	51.1	25.7	1.6	3.8	70.4	767.2	27.8	861.9	56.4	27.6	3.5	8.1	71.2	798.6	27.9	893.8	59.3	28.6	6.0	13.9	71.6
		6.2	14.3	80	799.8	27.9	895.0	58.6	28.6	1.6	3.7	71.7																
75	75	1.6	3.8	30	343.1	31.8	451.8	20.3	10.5	1.9	4.5	86.8	359.7	32.1	469.1	23.3	10.9	3.9	8.9	87.3	368.6	32.2	478.4	24.8	11.1	6.6	15.2	87.5
		1.6	3.8	40	407.9	32.8	519.8	28.5	12.1	1.8	4.1	88.6	431.0	33.1	543.9	31.9	12.7	3.8	8.8	89.2	443.9	33.3	557.5	33.8	13.0	6.5	14.9	89.6
		1.6	3.8	50	477.5	33.8	592.7	36.6	13.7	1.7	4.0	90.5	507.7	34.2	624.6	40.5	14.4	3.7	8.6	91.4	526.4	34.4	643.9	42.6	14.9	6.4	14.7	91.9
		1.6	3.8	60	562.1	35.0	681.5	45.0	15.6	1.6	3.8	92.9	603.3	35.5	724.5	49.3	16.5	3.6	8.2	94.0	626.0	35.7	748.0	51.7	17.0	6.1	14.0	94.6
		1.6	3.7	70	648.8	36.0	771.8	52.7	17.5	1.6	3.7	95.2	697.9	36.7	823.2	57.6	18.5	3.5	8.1	96.6	723.7	37.1	850.2	60.3	19.0	6.0	13.8	97.3
		1.6	3.7	80	731.8	37.3	859.0	60.4	19.1	1.6	3.7	97.5	794.3	38.1	924.2	65.9	20.3	3.5	8.0	99.3	827.8	38.6	959.3	68.9	20.9	5.9	13.7	100.2
	113	3.6	8.2	30	349.1	30.8	454.1	20.1	11.1	1.9	4.5	82.8	366.3	30.9	471.8	23.1	11.6	3.9	8.9	83.1	375.4	31.1	481.4	24.7	11.9	6.6	15.2	83.3
		3.6	8.2	40	414.0	31.5	521.5	28.3	12.9	1.8	4.2	84.0	439.5	31.7	547.7	31.8	13.6	3.8	8.8	84.5	453.0	31.9	561.9	33.6	14.0	6.5	14.9	84.7
		3.6	8.2	50	487.1	32.2	597.0	36.3	14.9	1.7	4.0	85.3	519.7	32.5	630.7	40.3	15.7	3.7	8.6	85.9	538.8	32.7	650.3	42.4	16.2	6.4	14.7	86.2
		3.6	8.2	60	576.1	33.0	688.8	44.7	17.1	1.6	3.8	86.9	621.3	33.4	735.2	49.0	18.3	3.6	8.2	87.7	643.9	33.6	758.4	51.4	18.9	6.1	14.0	88.1
		3.6	8.2	70	665.6	33.7	780.7	52.2	19.4	1.6	3.7	88.5	716.8	34.2	833.5	57.3	20.6	3.5	8.1	89.4	747.8	34.4	865.2	60.0	21.4	6.0	13.8	90.0
		3.5	8.2	80	753.9	34.5	871.7	59.8	21.5	1.6	3.7	90.1	824.6	35.0	944.0	65.4	23.2	3.5	8.0	91.4	860.7	35.3	981.1	68.5	24.0	5.9	13.6	92.1
	150	6.1	14.1	30	352.1	30.5	456.0	20.1	11.5	1.9	4.5	80.9	369.2	30.6	473.7	23.1	12.0	3.9	8.9	81.1	378.7	30.7	483.5	24.6	12.3	6.6	15.2	81.3
		6.1	14.1	40	417.9	31.1	523.9	28.2	13.4	1.8	4.2	81.8	443.2	31.3	550.0	31.7	14.1	3.8	8.8	82.1	457.4	31.4	564.6	33.6	14.5	6.5	14.9	82.3
		6.1	14.1	50	491.8	31.6	599.8	36.2	15.5	1.7	4.0	82.8	526.8	31.9	635.7	40.2	16.4	3.7	8.6	83.3	544.7	32.0	654.0	42.3	16.9	6.4	14.7	83.5
		6.1	14.1	60	582.1	32.3	692.4	44.5	17.9	1.6	3.8	84.0	628.3	32.6	739.5	48.9	19.2	3.6	8.2	84.6	652.1	32.7	763.8	51.3	19.8	6.1	14.0	84.9
		6.1	14.1	70	673.1	32.9	785.2	52.0	20.4	1.6	3.7	85.2	727.0	33.2	840.3	57.1	21.8	3.5	8.1	86.0	758.7	33.4	872.6	59.9	22.6	6.0	13.8	86.4
		6.1	14.1	80	763.8	33.4	877.9	59.6	22.7	1.6	3.7	86.5	836.5	33.8	951.8	65.2	24.6	3.5	8.0	87.4	873.4	34.0	989.6	68.3	25.5	5.9	13.6	88.0

Notes:
- Interpolation is permissible; extrapolation is not.
- All performance 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 in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 75 GPM							SLWT °F	Flow 113 GPM							SLWT °F	Flow 150 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
90	75	1.6	3.7	30	320.0	37.6	448.5	21.0	8.3	1.9	4.4	101.8	334.8	37.8	463.9	23.7	8.6	3.9	8.9	102.3	342.7	38.0	472.3	25.2	8.8	6.6	15.2	102.5
		1.6	3.7	40	379.8	38.7	511.8	29.3	9.5	1.8	4.1	103.6	402.0	39.0	535.1	32.5	10.0	3.8	8.8	104.2	412.8	39.2	546.6	34.2	10.2	6.5	14.9	104.5
		1.6	3.7	50	446.7	39.8	582.4	37.5	10.9	1.7	4.0	105.5	474.2	40.3	611.7	41.2	11.4	3.7	8.6	106.2	490.3	40.5	628.4	43.1	11.8	6.4	14.7	106.7
		1.6	3.7	60	530.1	41.1	670.5	45.9	12.5	1.6	3.8	107.8	562.1	41.8	704.7	50.1	13.1	3.6	8.2	108.7	582.4	42.0	725.8	52.3	13.5	6.1	14.1	109.2
		1.6	3.7	70	603.7	42.5	748.8	53.9	13.8	1.6	3.8	109.8	647.1	43.3	794.8	58.5	14.5	3.5	8.1	111.0	672.1	43.7	821.1	61.0	15.0	6.0	13.9	111.7
		1.6	3.7	80	685.2	43.9	835.1	61.7	15.2	1.6	3.7	112.1	744.4	44.8	897.2	66.8	16.2	3.5	8.0	113.7	770.6	45.3	925.2	69.7	16.5	5.9	13.7	114.4
	113	3.5	8.1	30	326.7	36.4	450.7	20.8	8.8	1.9	4.4	97.9	341.8	36.5	466.5	23.6	9.2	3.9	8.9	98.1	350.2	36.7	475.3	25.1	9.4	6.6	15.2	98.3
		3.5	8.1	40	389.1	37.1	515.8	29.0	10.3	1.8	4.1	99.0	411.9	37.4	539.5	32.3	10.8	3.8	8.8	99.4	423.8	37.6	552.0	34.0	11.1	6.5	14.9	99.7
		3.5	8.1	50	458.0	38.0	587.5	37.1	11.9	1.7	4.0	100.3	489.4	38.3	620.0	40.9	12.6	3.7	8.6	100.8	504.9	38.5	636.2	42.9	12.9	6.4	14.7	101.1
		3.5	8.0	60	545.6	38.9	678.4	45.5	13.8	1.6	3.8	101.9	583.2	39.4	717.5	49.7	14.6	3.6	8.2	102.5	602.2	39.6	737.2	52.0	15.0	6.1	14.1	102.9
		3.5	8.0	70	624.3	39.9	760.3	53.3	15.4	1.6	3.7	103.3	672.3	40.4	810.2	58.1	16.4	3.5	8.1	104.1	701.6	40.6	840.3	60.6	17.0	6.0	13.9	104.7
		3.5	8.0	80	714.2	40.8	853.3	60.9	17.2	1.6	3.7	104.9	769.7	41.5	911.5	66.3	18.2	3.5	8.0	105.9	805.6	41.8	948.4	69.2	18.9	5.9	13.7	106.6
	150	6.0	13.8	30	329.8	36.0	452.6	20.7	9.1	1.9	4.4	95.9	345.3	36.1	468.6	23.5	9.5	3.9	8.9	96.1	353.3	36.2	476.9	25.0	9.7	6.6	15.2	96.2
		6.0	13.8	40	393.2	36.7	518.3	28.9	10.7	1.8	4.1	96.8	416.6	36.8	542.3	32.2	11.2	3.8	8.8	97.1	429.0	37.0	555.1	34.0	11.5	6.5	14.9	97.3
		6.0	13.8	50	463.9	37.3	591.1	37.0	12.4	1.7	4.0	97.8	495.6	37.6	623.8	40.8	13.1	3.7	8.6	98.2	511.5	37.8	640.3	42.8	13.5	6.4	14.7	98.4
		6.0	13.8	60	552.0	38.1	682.0	45.3	14.4	1.6	3.8	98.9	591.6	38.5	722.9	49.6	15.3	3.6	8.2	99.5	611.4	38.7	743.3	51.9	15.7	6.1	14.1	99.7
		6.0	13.8	70	636.1	38.9	768.7	53.0	16.3	1.6	3.7	100.1	683.1	39.4	817.4	57.9	17.3	3.5	8.1	100.7	713.0	39.6	847.9	60.5	17.9	6.0	13.8	101.1
		6.0	13.8	80	725.2	39.7	860.5	60.6	18.2	1.6	3.7	101.3	784.3	40.2	921.6	66.1	19.4	3.5	8.0	102.1	821.3	40.5	959.4	69.0	20.2	5.9	13.7	102.6
105	75	1.6	3.7	30	292.0	44.5	443.8	21.7	6.4	1.9	4.4	116.7	304.9	44.7	457.3	24.3	6.6	3.9	8.9	117.1	311.9	44.9	464.9	25.6	6.8	6.6	15.2	117.3
		1.6	3.6	40	348.2	45.7	504.0	30.2	7.4	1.8	4.1	118.4	367.6	46.0	524.4	33.1	7.8	3.8	8.8	119.0	376.9	46.2	534.4	34.7	7.9	6.5	15.0	119.3
		1.6	3.6	50	411.4	46.9	571.2	38.4	8.5	1.7	4.0	120.3	433.8	47.4	595.5	41.9	8.9	3.8	8.7	121.0	447.4	47.6	609.9	43.7	9.1	6.4	14.8	121.4
		1.6	3.6	60	486.5	48.4	651.6	47.1	9.8	1.7	3.8	122.5	514.6	49.1	682.0	50.9	10.2	3.6	8.3	123.3	532.5	49.3	700.7	52.9	10.5	6.1	14.1	123.8
		1.6	3.6	70	556.2	50.0	726.8	55.2	10.8	1.6	3.8	124.5	593.4	50.8	766.6	59.5	11.4	3.5	8.1	125.5	613.8	51.2	788.6	61.8	11.6	6.0	13.9	126.0
		1.6	3.6	80	634.0	51.5	809.9	63.1	12.0	1.6	3.7	126.6	680.0	52.5	859.3	67.9	12.6	3.5	8.0	127.9	701.2	53.2	882.6	70.6	12.8	5.9	13.7	128.5
	113	3.4	8.0	30	301.4	43.0	448.1	21.5	6.9	1.9	4.4	112.8	313.5	43.2	460.8	24.1	7.1	3.9	8.9	113.1	320.4	43.3	468.2	25.5	7.3	6.6	15.2	113.2
		3.4	7.9	40	358.9	43.9	508.6	29.9	8.0	1.8	4.1	114.0	379.3	44.1	529.6	32.9	8.5	3.8	8.8	114.4	389.5	44.2	540.4	34.5	8.7	6.5	15.0	114.6
		3.4	7.9	50	422.8	44.8	575.5	38.1	9.3	1.7	4.0	115.2	451.0	45.1	604.9	41.6	9.8	3.8	8.7	115.7	464.6	45.3	619.2	43.5	10.1	6.4	14.7	116.0
		3.4	7.9	60	504.6	45.9	661.1	46.6	10.8	1.7	3.8	116.7	537.6	46.3	695.6	50.5	11.4	3.6	8.3	117.3	554.4	46.6	713.3	52.6	11.7	6.1	14.1	117.6
		3.4	7.9	70	581.4	46.9	741.5	54.5	12.2	1.6	3.8	118.1	620.9	47.6	783.2	59.0	12.8	3.5	8.1	118.8	645.3	47.8	808.6	61.4	13.3	6.0	13.9	119.2
		3.4	7.9	80	659.5	48.2	823.8	62.4	13.5	1.6	3.7	119.5	711.7	48.9	878.6	67.4	14.3	3.5	8.0	120.4	742.9	49.2	910.9	70.1	14.8	5.9	13.7	121.0
	150	5.9	13.6	30	305.1	42.5	450.2	21.4	7.1	1.9	4.4	110.9	317.9	42.6	463.4	24.0	7.4	3.9	8.9	111.1	324.8	42.8	470.8	25.4	7.5	6.6	15.2	111.2
		5.9	13.6	40	364.0	43.2	511.6	29.7	8.4	1.8	4.1	111.8	384.7	43.5	533.0	32.8	8.8	3.8	8.8	112.1	394.9	43.6	543.6	34.4	9.0	6.5	15.0	112.2
		5.9	13.6	50	429.1	44.1	579.4	37.9	9.7	1.7	4.0	112.7	458.6	44.3	609.7	41.4	10.3	3.7	8.6	113.1	472.3	44.5	624.0	43.4	10.6	6.4	14.7	113.3
		5.9	13.6	60	513.0	44.9	666.3	46.4	11.4	1.7	3.8	113.8	547.7	45.3	702.4	50.3	12.0	3.6	8.2	114.3	564.7	45.6	720.1	52.5	12.3	6.1	14.1	114.5
		5.9	13.6	70	591.9	45.9	748.4	54.2	12.8	1.6	3.8	114.9	633.2	46.4	791.6	58.8	13.6	3.5	8.1	115.5	658.5	46.7	817.7	61.2	14.0	6.0	13.9	115.8
		5.9	13.6	80	671.8	46.9	831.8	62.0	14.3	1.6	3.7	116.0	727.0	47.5	889.2	67.1	15.2	3.5	8.0	116.7	759.5	47.8	922.6	69.8	15.8	5.9	13.7	117.2

Notes:
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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 75 GPM							SLWT °F	Flow 113 GPM							SLWT °F	Flow 150 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
120	75	1.6	3.7	30																								
		1.6	3.6	40																								
		1.6	3.6	50	366.3	55.3	555.0	39.7	6.4	1.7	4.0	134.9	388.4	55.7	578.3	42.8	6.8	3.8	8.7	135.6	398.1	55.9	588.9	44.4	6.9	6.4	14.8	135.9
		1.6	3.6	60	435.9	56.9	630.0	48.4	7.4	1.7	3.8	137.0	459.5	57.6	655.9	51.9	7.8	3.6	8.3	137.7	473.2	57.8	670.5	53.7	8.0	6.1	14.1	138.1
		1.6	3.6	70	501.7	58.5	701.4	56.6	8.3	1.6	3.7	138.9	530.3	59.4	733.2	60.6	8.7	3.5	8.1	139.7	548.4	59.8	752.3	62.7	8.9	6.0	13.9	140.2
		1.6	3.6	80	566.7	60.4	773.0	64.9	9.4	1.6	3.7	140.8																
	113	3.4	7.9	30																								
		3.4	7.9	40									340.2	52.0	517.7	33.6	6.4	3.8	8.8	129.1	347.6	52.2	525.7	35.1	6.5	6.5	15.0	129.3
		3.4	7.9	50	382.9	52.8	563.0	39.2	7.1	1.7	4.0	130.0	406.1	53.1	587.3	42.4	7.5	3.8	8.7	130.5	417.2	53.3	599.1	44.1	7.7	6.4	14.8	130.7
		3.4	7.8	60	454.9	54.0	639.3	47.9	8.3	1.7	3.8	131.4	485.3	54.4	671.0	51.4	8.8	3.6	8.3	132.0	498.7	54.7	685.5	53.4	9.0	6.1	14.1	132.2
		3.4	7.8	70	527.5	55.2	715.8	55.9	9.4	1.6	3.8	132.8	561.9	55.9	752.6	60.1	9.9	3.5	8.1	133.4	581.1	56.2	772.8	62.2	10.2	6.0	13.9	133.7
		3.4	7.8	80	603.2	56.5	796.1	63.9	10.7	1.6	3.7	134.1	644.5	57.4	840.3	68.6	11.2	3.5	8.0	134.9	668.7	57.8	865.8	71.1	11.6	5.9	13.7	135.3
	150	5.9	13.6	30																								
		5.8	13.5	40	329.4	51.0	503.6	30.7	6.4	1.8	4.1	126.7	346.8	51.3	521.7	33.5	6.7	3.8	8.8	126.9	354.7	51.5	530.2	35.0	6.9	6.5	15.0	127.1
		5.8	13.4	50	390.1	52.0	567.4	39.0	7.5	1.7	4.0	127.6	413.9	52.3	592.3	42.3	7.9	3.8	8.7	127.9	425.3	52.4	604.1	44.0	8.1	6.4	14.8	128.1
		5.8	13.4	60	465.4	52.9	646.0	47.6	8.7	1.7	3.8	128.7	495.7	53.3	677.7	51.2	9.2	3.6	8.3	129.1	511.3	53.6	694.2	53.2	9.5	6.1	14.1	129.3
		5.8	13.4	70	539.3	54.0	723.6	55.6	9.9	1.6	3.8	129.7	574.8	54.6	761.1	59.8	10.5	3.5	8.1	130.2	595.6	54.9	782.8	62.1	10.8	6.0	13.9	130.4
		5.8	13.4	80	616.8	55.2	805.0	63.5	11.2	1.6	3.7	130.7	664.4	55.9	855.0	68.2	11.9	3.5	8.0	131.4	687.8	56.3	879.8	70.8	12.2	5.9	13.7	131.7

Notes:
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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 75 GPM							SLWT °F	Flow 113 GPM							SLWT °F	Flow 150 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
30	75	1.9	4.5	60	458.6	30.4	355.0	72.2	4.4	1.7	3.8	19.6	458.6	29.0	359.8	68.1	4.6	3.6	8.4	19.4	458.7	28.3	362.1	66.1	4.7	6.2	14.4	19.4
		1.9	4.4	80	458.5	37.9	329.2	92.3	3.5	1.6	3.7	20.4	459.2	36.2	335.7	88.2	3.7	3.5	8.2	20.2	457.7	35.4	337.0	86.1	3.8	6.1	14.0	20.2
		1.9	4.4	100									449.9	45.3	295.5	108.0	2.8	3.5	8.0	21.3	451.1	44.3	300.1	106.1	2.9	6.0	13.8	21.2
		1.9	4.3	120																								
	113	3.8	8.8	60	476.1	31.0	370.5	72.7	4.5	1.7	3.8	22.8	476.4	29.5	375.7	68.4	4.7	3.6	8.4	22.7	476.5	28.8	378.2	66.4	4.8	6.2	14.4	22.6
		3.8	8.8	80	473.7	38.6	341.8	92.7	3.5	1.6	3.7	23.4	473.9	36.8	348.3	88.4	3.7	3.5	8.2	23.3	474.0	36.0	351.4	86.4	3.8	6.1	14.0	23.2
		3.8	8.8	100									465.9	46.0	309.1	108.3	2.9	3.5	8.0	23.9	467.5	44.9	314.2	106.3	3.0	6.0	13.8	23.9
		3.8	8.8	120																								
		3.8	8.7	130																								
	150	6.5	15.1	60	486.4	31.4	379.1	73.0	4.5	1.7	3.8	24.4	486.7	29.9	384.6	68.6	4.8	3.6	8.4	24.3	487.1	29.2	387.4	66.5	4.9	6.2	14.4	24.3
		6.5	15.0	80	483.4	39.2	349.5	93.0	3.6	1.6	3.7	24.9	483.9	37.3	356.5	88.6	3.8	3.5	8.2	24.8	484.0	36.5	359.6	86.5	3.9	6.1	14.0	24.7
		6.5	15.0	100									475.5	46.6	316.5	108.5	3.0	3.5	8.0	25.3	477.0	45.5	321.7	106.4	3.0	6.0	13.7	25.3
		6.5	14.9	120																								
		6.4	14.9	130																								
40	75	1.8	4.1	60	522.5	30.4	418.8	73.9	4.9	1.7	3.8	27.8	523.6	28.8	425.4	69.3	5.2	3.6	8.4	27.6	523.5	28.1	427.8	67.0	5.3	6.2	14.4	27.5
		1.8	4.1	80	522.0	37.9	392.8	94.0	3.9	1.6	3.7	28.7	522.6	35.9	400.1	89.3	4.1	3.5	8.2	28.4	522.5	35.0	403.2	87.0	4.3	6.1	14.0	28.3
		1.8	4.1	100	516.0	47.2	355.1	113.9	3.1	1.6	3.7	29.8	518.6	44.8	365.8	109.3	3.3	3.5	8.0	29.5	519.4	43.6	370.6	107.0	3.4	5.9	13.7	29.4
		1.8	4.0	120																								
		1.7	4.0	130																								
	113	3.8	8.7	60	547.9	31.1	441.9	74.6	5.1	1.7	3.8	31.4	549.1	29.3	449.0	69.7	5.4	3.6	8.4	31.3	549.3	28.6	451.8	67.3	5.5	6.2	14.4	31.2
		3.8	8.7	80	545.8	38.6	414.0	94.6	4.1	1.6	3.7	32.1	546.3	36.6	421.5	89.7	4.3	3.5	8.2	31.9	546.2	35.6	424.7	87.3	4.4	6.1	14.0	31.8
		3.8	8.7	100	537.1	48.1	372.9	114.5	3.2	1.6	3.7	32.9	540.7	45.6	385.2	109.7	3.4	3.5	8.0	32.7	541.5	44.4	390.1	107.3	3.5	5.9	13.7	32.6
		3.7	8.6	120																								
		3.7	8.6	130																								
	150	6.4	14.9	60	563.8	31.6	456.0	75.0	5.2	1.7	3.8	33.3	564.5	29.8	462.7	70.0	5.5	3.6	8.4	33.2	565.0	29.0	466.0	67.5	5.7	6.2	14.4	33.2
		6.4	14.8	80	559.0	39.3	424.9	95.0	4.1	1.6	3.7	33.8	560.3	37.1	433.5	90.0	4.4	3.5	8.2	33.7	560.7	36.1	437.4	87.5	4.5	6.1	14.0	33.6
		6.4	14.8	100	548.9	48.9	382.0	114.8	3.3	1.6	3.7	34.5	552.4	46.3	394.6	109.9	3.5	3.5	8.0	34.3	553.6	45.0	400.2	107.5	3.6	5.9	13.7	34.2
		6.4	14.7	120																								
		6.3	14.6	130																								
50	75	1.7	4.0	60	594.3	30.3	490.8	75.9	5.6	1.7	3.8	35.7	594.5	28.6	497.0	70.5	5.9	3.6	8.4	35.5	595.3	27.7	500.7	67.9	6.1	6.2	14.4	35.4
		1.7	4.0	80	588.9	37.8	459.8	95.8	4.4	1.6	3.7	36.8	590.2	35.6	468.7	90.5	4.7	3.5	8.2	36.5	592.2	34.6	474.3	87.9	4.9	6.1	14.0	36.3
		1.7	4.0	100	582.1	47.1	421.4	115.7	3.5	1.6	3.7	38.1	586.6	44.3	435.4	110.5	3.8	3.5	8.0	37.6	586.2	43.0	439.5	107.9	3.9	5.9	13.7	37.5
		1.7	3.9	120									570.9	55.2	382.6	130.2	2.9	3.4	7.8	39.1	573.4	53.6	390.5	127.7	3.0	5.8	13.3	38.9
		1.7	3.9	130																								
	113	3.7	8.6	60	629.1	31.2	522.8	76.8	5.8	1.7	3.8	39.9	633.2	29.2	533.7	71.2	6.3	3.6	8.4	39.7	634.4	28.2	538.0	68.5	6.5	6.2	14.4	39.6
		3.7	8.6	80	621.6	38.7	489.4	96.7	4.6	1.6	3.7	40.6	624.5	36.4	500.5	91.1	4.9	3.5	8.2	40.4	625.4	35.3	505.0	88.4	5.1	6.1	14.0	40.3
		3.7	8.6	100	610.3	48.1	446.1	116.4	3.7	1.6	3.7	41.6	614.1	45.2	459.8	111.0	3.9	3.5	8.0	41.3	615.9	43.9	466.2	108.3	4.0	5.9	13.7	41.2
		3.7	8.5	120									595.1	56.2	403.2	130.7	3.0	3.4	7.8	42.4	598.4	54.6	412.1	128.1	3.2	5.8	13.3	42.2
		3.7	8.5	130																								
	150	6.3	14.6	60	649.2	31.7	541.0	77.3	6.0	1.7	3.8	42.1	653.5	29.6	552.4	71.6	6.4	3.6	8.4	41.9	655.4	28.7	557.5	68.7	6.7	6.2	14.4	41.8
		6.3	14.6	80	638.9	39.4	504.3	97.1	4.7	1.6	3.7	42.7	642.2	37.0	516.1	91.4	5.1	3.5	8.2	42.5	643.5	35.8	521.2	88.6	5.2	6.1	14.0	42.4
		6.3	14.6	100	625.0	49.0	457.9	116.8	3.7	1.6	3.7	43.5	629.2	46.0	472.4	111.2	4.0	3.5	8.0	43.2	631.7	44.5	479.7	108.5	4.1	5.9	13.7	43.1
		6.3	14.6	120									607.8	57.1	413.1	130.9	3.1	3.4	7.8	44.1	611.6	55.4	422.6	128.3	3.2	5.8	13.3	44.0
		6.2	14.4	130																								

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- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 75 GPM							SLWT °F	Flow 113 GPM							SLWT °F	Flow 150 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT								PSI	FT	
60	75	1.6	3.8	60	686.7	30.4	582.9	78.3	6.4	1.7	3.8	44.0	687.8	28.4	590.9	72.2	6.9	3.6	8.4	43.7	690.2	27.4	596.9	69.2	7.2	6.2	14.4	43.5
		1.6	3.8	80	675.5	37.9	546.0	98.1	5.1	1.6	3.7	45.1	676.6	35.5	555.6	92.0	5.4	3.5	8.1	44.8	680.8	34.2	564.0	89.1	5.7	6.1	14.0	44.5
		1.6	3.8	100	660.2	47.2	499.1	117.8	4.0	1.6	3.6	46.6	665.9	44.1	515.4	111.9	4.3	3.5	8.0	46.1	669.4	42.7	523.8	109.0	4.5	5.9	13.6	45.8
		1.6	3.8	120	636.7	58.5	437.2	137.2	3.1	1.5	3.6	48.3	647.4	54.8	460.6	131.6	3.4	3.4	7.7	47.7	650.5	53.1	469.5	128.8	3.5	5.8	13.3	47.4
		1.6	3.7	130																	635.9	59.2	434.1	138.6	3.1	5.7	13.1	48.4
	113	3.6	8.2	60	731.0	31.3	624.1	79.5	6.7	1.7	3.8	48.6	737.7	29.0	638.8	73.1	7.3	3.6	8.4	48.3	742.6	27.8	647.7	69.9	7.7	6.2	14.4	48.2
		3.5	8.2	80	713.9	39.0	580.9	99.1	5.3	1.6	3.7	49.5	720.6	36.2	597.0	92.8	5.7	3.5	8.1	49.1	723.4	35.0	604.1	89.7	6.0	6.1	14.0	49.0
		3.5	8.2	100	693.9	48.4	528.8	118.7	4.1	1.6	3.6	50.5	701.9	45.1	548.1	112.5	4.5	3.5	8.0	50.1	704.5	43.5	556.0	109.5	4.7	5.9	13.6	50.0
		3.5	8.1	120	664.8	59.8	460.7	138.0	3.2	1.5	3.6	51.8	675.9	55.9	485.1	132.1	3.5	3.4	7.7	51.4	679.8	54.1	495.2	129.2	3.6	5.8	13.3	51.2
		3.5	8.0	130																								
	150	6.1	14.0	60	755.4	31.9	646.5	80.2	6.9	1.7	3.8	51.1	765.0	29.4	664.7	73.6	7.6	3.6	8.4	50.8	768.4	28.3	671.9	70.3	7.9	6.2	14.4	50.7
		6.1	14.0	80	734.7	39.8	599.0	99.7	5.4	1.6	3.7	51.8	742.3	36.9	616.5	93.2	5.9	3.5	8.1	51.5	745.8	35.5	624.5	90.0	6.1	6.1	14.0	51.4
		6.1	14.0	100	711.5	49.2	543.5	119.2	4.2	1.6	3.6	52.6	720.2	45.8	563.8	112.9	4.6	3.5	8.0	52.3	723.4	44.3	572.4	109.7	4.8	5.9	13.7	52.2
		6.0	13.9	120	679.0	60.8	471.5	138.4	3.3	1.5	3.6	53.6	690.8	56.8	496.9	132.4	3.5	3.4	7.8	53.3	696.4	55.0	508.9	129.4	3.7	5.8	13.3	53.1
		6.0	13.7	130																								
70	75	1.6	3.7	60	770.4	30.4	666.6	80.6	7.2	1.7	3.8	51.7	777.9	27.9	682.5	73.8	7.9	3.6	8.4	51.2	781.7	26.8	690.3	70.4	8.3	6.2	14.3	51.0
		1.6	3.7	80	755.9	37.9	626.5	100.3	5.7	1.6	3.7	52.8	762.4	35.1	642.6	93.6	6.2	3.5	8.1	52.4	761.8	33.8	646.4	90.2	6.4	6.1	14.0	52.2
		1.6	3.7	100	734.8	47.1	574.1	119.8	4.4	1.6	3.6	54.4	739.5	43.8	590.0	113.2	4.8	3.4	7.9	53.9	743.3	42.2	599.3	110.0	5.0	5.9	13.6	53.7
		1.6	3.7	120	703.9	58.3	505.1	139.0	3.4	1.5	3.6	56.4	713.7	54.4	528.2	132.8	3.7	3.4	7.8	55.8	719.4	52.5	540.3	129.7	3.9	5.8	13.4	55.4
		1.6	3.7	130																	701.5	58.5	502.0	139.5	3.5	5.8	13.4	56.5
	113	3.5	8.1	60	832.8	31.2	726.2	82.2	7.7	1.7	3.8	56.7	843.2	28.5	745.9	74.9	8.5	3.6	8.3	56.4	848.4	27.2	755.6	71.3	9.0	6.2	14.3	56.2
		3.5	8.1	80	802.5	39.2	668.8	101.5	5.9	1.6	3.7	57.8	814.0	36.0	691.1	94.5	6.5	3.5	8.1	57.4	821.1	34.5	703.4	91.0	6.9	6.0	14.0	57.2
		3.5	8.1	100	773.1	48.5	607.5	120.8	4.6	1.6	3.6	59.0	787.0	44.8	634.1	114.1	5.1	3.4	7.9	58.5	791.4	43.1	644.3	110.7	5.3	5.9	13.6	58.3
		3.5	8.0	120	735.3	59.9	530.9	139.9	3.5	1.5	3.5	60.5	753.3	55.6	563.6	133.5	3.9	3.4	7.8	59.9	758.1	53.6	575.3	130.2	4.1	5.8	13.4	59.6
		3.4	7.9	130																	738.5	59.6	535.0	140.0	3.6	5.8	13.4	60.4
	150	6.0	13.8	60	863.6	31.9	754.7	83.0	7.9	1.7	3.8	59.6	874.1	29.1	774.9	75.5	8.8	3.6	8.3	59.4	880.9	27.6	786.6	71.8	9.3	6.2	14.3	59.2
		6.0	13.8	80	830.9	40.0	694.5	102.3	6.1	1.6	3.7	60.4	845.8	36.6	720.9	95.0	6.7	3.5	8.1	60.1	850.6	35.1	730.9	91.4	7.1	6.0	13.9	59.9
		6.0	13.8	100	796.1	49.5	627.2	121.4	4.7	1.6	3.6	61.4	811.0	45.7	655.2	114.5	5.2	3.4	7.9	61.0	817.2	43.9	667.5	111.0	5.4	5.9	13.6	60.8
		5.9	13.7	120	752.1	61.0	544.1	140.3	3.6	1.5	3.5	62.6	770.7	56.6	577.7	133.8	4.0	3.4	7.8	62.1	777.7	54.5	591.7	130.5	4.2	5.8	13.4	61.9
		5.9	13.5	130																	755.0	60.6	548.2	140.2	3.7	5.8	13.4	62.5

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- Operation in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Source				Load									Load								Load							
	Flow				Flow 98 GPM								Flow 146 GPM								Flow 195 GPM							
EWT °F	GPM	WPD		EWT °F	TC	kW	HR	LLWT °F	EER	WPD		SLWT °F	TC	kW	HR	LLWT °F	EER	WPD		SLWT °F	TC	kW	HR	LLWT °F	EER	WPD		SLWT °F
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	98	2.0	4.7	30	483.1	34.9	602.3	19.6	13.8	2.3	5.3	72.0	505.1	35.2	625.1	22.7	14.4	4.6	10.6	72.4	517.9	35.4	638.5	24.4	14.6	7.9	18.3	72.7
		2.0	4.7	40	566.6	36.0	689.4	27.8	15.8	2.2	5.0	73.7	597.0	36.4	721.1	31.4	16.4	4.5	10.5	74.3	616.6	36.6	741.4	33.3	16.9	7.8	18.1	74.7
		2.0	4.7	50	654.5	37.1	781.2	35.9	17.6	2.1	4.9	75.5	703.0	37.6	831.2	39.9	18.7	4.5	10.3	76.5	728.1	37.9	857.4	42.1	19.2	7.7	17.8	77.1
		2.0	4.7	60	778.1	38.4	909.2	44.2	20.2	2.0	4.7	78.1	842.6	39.0	975.5	48.5	21.6	4.3	9.9	79.5	875.3	39.3	1009.5	51.0	22.3	7.4	17.1	80.2
		2.0	4.7	70	894.9	39.7	1030.3	51.7	22.6	2.0	4.6	80.6	979.6	40.4	1117.4	56.6	24.3	4.2	9.8	82.4	1025.6	40.9	1165.1	59.5	25.1	7.3	16.9	83.4
		2.0	4.7	80	985.9	40.8	1124.3	59.8	24.5	1.9	4.4	81.8	1132.1	42.0	1275.4	64.5	26.9	4.2	9.6	85.7	1192.0	42.7	1337.8	67.7	27.9	7.2	16.7	87.0
	146	4.4	10.1	30	489.4	33.8	604.7	19.4	14.5	2.3	5.3	68.0	512.2	34.0	628.1	22.6	15.1	4.6	10.6	68.3	525.5	34.1	641.9	24.3	15.4	8.0	18.3	68.5
		4.4	10.1	40	574.7	34.5	692.5	27.6	16.6	2.2	5.0	69.2	606.5	34.8	725.1	31.2	17.4	4.5	10.5	69.6	627.4	34.9	746.5	33.2	18.0	7.8	18.1	69.9
		4.4	10.1	50	666.9	35.2	787.0	35.7	18.9	2.1	4.9	70.5	715.2	35.5	836.4	39.7	20.1	4.5	10.3	71.1	746.1	35.6	867.7	41.9	20.9	7.7	17.8	71.6
		4.4	10.1	60	800.2	35.9	922.6	43.7	22.3	2.0	4.7	72.3	863.9	36.2	987.5	48.2	23.9	4.3	9.9	73.2	897.6	36.5	1022.1	50.8	24.6	7.4	17.1	73.7
		4.4	10.1	70	919.3	36.6	1044.3	51.2	25.1	2.0	4.6	74.0	1004.2	37.1	1130.9	56.2	27.1	4.2	9.8	75.2	1054.3	37.4	1181.9	59.2	28.2	7.3	16.9	75.9
		4.3	10.0	80	1062.0	37.3	1189.1	58.3	28.5	2.0	4.5	76.0	1164.5	38.0	1294.1	64.0	30.6	4.2	9.6	77.5	1230.3	38.4	1361.3	67.4	32.1	7.2	16.7	78.5
	195	7.6	17.6	30	492.4	33.4	606.2	19.4	14.8	2.3	5.3	66.0	515.3	33.5	629.6	22.5	15.4	4.6	10.6	66.2	529.2	33.6	643.9	24.2	15.7	8.0	18.4	66.4
		7.6	17.6	40	578.8	33.9	694.6	27.5	17.1	2.2	5.0	66.9	610.9	34.1	727.3	31.2	17.9	4.5	10.5	67.2	632.6	34.2	749.4	33.1	18.5	7.8	18.1	67.4
		7.6	17.6	50	673.0	34.4	790.4	35.5	19.6	2.1	4.9	67.8	722.7	34.6	840.8	39.6	20.9	4.5	10.3	68.4	754.7	34.7	873.0	41.8	21.8	7.7	17.8	68.7
		7.6	17.5	60	808.0	34.8	926.8	43.5	23.2	2.0	4.7	69.2	870.4	35.1	990.2	48.1	24.8	4.3	9.9	69.9	912.0	35.2	1031.9	50.7	25.9	7.4	17.1	70.3
		7.6	17.5	70	936.3	35.2	1056.3	50.9	26.6	2.0	4.6	70.6	1019.3	35.5	1140.5	56.0	28.7	4.2	9.8	71.5	1072.5	35.7	1194.1	59.0	30.1	7.3	16.9	72.0
		7.6	17.5	80	1066.9	35.7	1188.7	58.2	29.9	2.0	4.5	72.0	1184.7	36.0	1307.4	63.7	32.9	4.2	9.6	73.3								
75	98	2.0	4.6	30	456.9	41.0	596.6	20.1	11.2	2.3	5.3	87.1	476.2	41.3	617.0	23.1	11.5	4.6	10.6	87.5	487.6	41.5	629.2	24.7	11.7	7.9	18.3	87.7
		2.0	4.6	40	531.8	42.4	676.4	28.5	12.6	2.1	4.9	88.6	562.0	42.8	707.9	31.9	13.1	4.5	10.5	89.2	579.1	43.1	726.2	33.7	13.4	7.8	18.1	89.6
		2.0	4.6	50	620.6	43.7	769.8	36.7	14.2	2.1	4.9	90.4	658.6	44.4	810.2	40.5	14.8	4.5	10.3	91.3	683.7	44.7	836.3	42.6	15.3	7.7	17.8	91.8
		2.0	4.6	60	734.7	45.5	889.9	45.0	16.2	2.0	4.6	92.8	783.8	46.4	942.0	49.3	16.9	4.3	9.9	93.9	814.1	46.8	973.7	51.7	17.4	7.4	17.1	94.5
		2.0	4.6	70	847.8	47.1	1008.5	52.7	18.0	2.0	4.6	95.3	912.4	48.2	1077.0	57.5	18.9	4.2	9.8	96.7	952.4	48.9	1119.1	60.2	19.5	7.3	16.9	97.5
		2.0	4.6	80	962.6	49.1	1130.0	60.3	19.6	2.0	4.5	97.7	1053.6	50.4	1225.4	65.5	20.9	4.2	9.6	99.7	1107.2	51.2	1281.8	68.6	21.6	7.2	16.7	100.9
	146	4.3	9.9	30	464.7	39.7	600.0	20.0	11.7	2.3	5.3	83.1	484.7	39.9	621.0	23.0	12.1	4.6	10.6	83.4	495.6	40.1	632.5	24.6	12.3	7.9	18.3	83.5
		4.3	9.9	40	542.4	40.8	681.5	28.3	13.3	2.1	5.0	84.2	573.6	41.1	713.7	31.7	14.0	4.5	10.5	84.6	591.9	41.3	732.9	33.6	14.3	7.8	18.1	84.8
		4.3	9.9	50	633.8	41.8	776.4	36.4	15.2	2.1	4.9	85.4	675.3	42.3	819.6	40.3	16.0	4.5	10.3	86.0	701.7	42.5	846.7	42.4	16.5	7.7	17.8	86.3
		4.3	9.9	60	753.8	43.0	900.4	44.6	17.5	2.0	4.6	87.1	808.8	43.6	957.4	48.9	18.6	4.3	9.9	87.9	843.8	43.8	993.3	51.4	19.3	7.4	17.1	88.3
		4.3	9.9	70	872.5	44.1	1022.9	52.2	19.8	2.0	4.6	88.7	949.3	44.7	1102.0	57.0	21.2	4.2	9.7	89.8	989.4	45.2	1143.6	59.9	21.9	7.3	16.9	90.4
		4.3	9.9	80	1003.9	45.2	1158.2	59.5	22.2	2.0	4.5	90.6	1100.1	46.1	1257.5	64.9	23.9	4.2	9.6	92.0	1159.1	46.7	1318.3	68.1	24.8	7.2	16.7	92.9
	195	7.5	17.2	30	468.7	39.2	602.6	19.9	11.9	2.3	5.3	81.1	488.8	39.5	623.4	22.9	12.4	4.6	10.6	81.3	500.2	39.6	635.5	24.6	12.6	7.9	18.3	81.4
		7.5	17.2	40	547.7	40.2	684.8	28.2	13.6	2.1	5.0	81.9	579.1	40.5	717.2	31.6	14.3	4.5	10.5	82.2	596.8	40.7	735.6	33.5	14.7	7.8	18.1	82.4
		7.5	17.2	50	641.0	41.0	780.9	36.2	15.6	2.1	4.9	82.8	683.9	41.4	825.1	40.1	16.5	4.5	10.3	83.3	711.2	41.5	852.9	42.3	17.1	7.7	17.8	83.5
		7.5	17.2	60	759.1	42.0	902.4	44.5	18.1	2.0	4.6	84.0	823.0	42.4	967.7	48.7	19.4	4.3	9.9	84.7	856.4	42.6	1001.8	51.2	20.1	7.4	17.1	85.1
		7.4	17.2	70	878.7	42.9	1025.0	52.1	20.5	2.0	4.6	85.3	964.2	43.3	1111.9	56.8	22.3	4.2	9.8	86.2	1005.0	43.7	1154.1	59.7	23.0	7.3	16.9	86.6
		7.4	17.2	80	1018.6	43.6	1167.4	59.2	23.4	2.0	4.5	86.8	1120.6	44.2	1271.5	64.6	25.3	4.2	9.6	87.9	1176.0	44.7	1328.7	67.9	26.3	7.2	16.7	88.5

Notes:
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Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 98 GPM							SLWT °F	Flow 146 GPM							SLWT °F	Flow 195 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
90	98	2.0	4.5	30	426.8	47.9	590.2	20.8	8.9	2.3	5.3	102.1	442.3	48.3	607.1	23.6	9.2	4.6	10.6	102.4	451.6	48.6	617.3	25.1	9.3	7.9	18.3	102.6
		2.0	4.5	40	496.0	49.6	665.1	29.3	10.0	2.1	4.9	103.6	521.7	50.0	692.5	32.5	10.4	4.5	10.5	104.1	535.7	50.4	707.5	34.2	10.6	7.8	18.1	104.4
		2.0	4.5	50	577.3	51.2	752.1	37.6	11.3	2.1	4.9	105.3	611.2	52.0	788.6	41.2	11.8	4.5	10.3	106.0	632.1	52.3	810.6	43.2	12.1	7.7	17.8	106.4
		2.0	4.5	60	681.1	53.4	863.3	46.1	12.8	2.0	4.7	107.5	725.7	54.3	911.0	50.1	13.4	4.3	9.9	108.5	754.2	54.7	940.9	52.3	13.8	7.4	17.2	109.1
		2.0	4.5	70	783.5	55.4	972.7	54.0	14.1	2.0	4.6	109.7	848.3	56.5	1041.2	58.4	15.0	4.2	9.8	111.1	878.4	57.3	1074.0	61.0	15.3	7.3	16.9	111.8
		2.0	4.5	80	896.2	57.7	1092.9	61.7	15.5	2.0	4.5	112.2	980.2	59.1	1181.8	66.5	16.6	4.2	9.7	114.0	1025.0	60.0	1229.7	69.5	17.1	7.2	16.7	115.0
	146	4.2	9.7	30	435.3	46.4	593.6	20.6	9.4	2.3	5.3	98.1	451.8	46.7	611.1	23.4	9.7	4.6	10.6	98.3	461.9	46.9	622.0	25.0	9.8	7.9	18.3	98.5
		4.2	9.7	40	507.4	47.7	670.2	29.1	10.6	2.1	4.9	99.1	534.7	48.1	699.0	32.3	11.1	4.5	10.5	99.5	549.1	48.4	714.2	34.1	11.3	7.8	18.1	99.7
		4.2	9.7	50	592.5	49.0	759.8	37.3	12.1	2.1	4.9	100.3	631.2	49.6	800.3	40.9	12.7	4.5	10.3	100.8	651.4	49.9	821.8	43.0	13.0	7.7	17.8	101.1
		4.2	9.7	60	705.7	50.6	878.4	45.6	13.9	2.0	4.7	101.9	752.8	51.4	928.1	49.7	14.7	4.3	9.9	102.6	782.5	51.7	958.8	52.0	15.2	7.4	17.1	103.0
		4.2	9.7	70	816.2	52.1	994.0	53.3	15.7	2.0	4.6	103.4	876.6	53.1	1057.7	58.0	16.5	4.2	9.8	104.3	917.3	53.5	1099.9	60.6	17.1	7.3	16.9	104.9
		4.2	9.7	80	938.1	53.7	1121.2	60.8	17.5	2.0	4.5	105.2	1017.9	54.9	1205.3	66.0	18.5	4.2	9.6	106.4	1073.4	55.5	1262.8	69.0	19.3	7.2	16.7	107.1
	195	7.3	16.9	30	439.6	45.9	596.2	20.5	9.6	2.3	5.3	96.1	456.0	46.2	613.4	23.4	9.9	4.6	10.6	96.2	467.3	46.4	625.5	24.9	10.1	7.9	18.3	96.4
		7.3	16.9	40	513.6	47.0	674.1	28.9	10.9	2.1	4.9	96.8	541.2	47.4	703.1	32.2	11.4	4.5	10.5	97.1	556.3	47.7	719.0	34.0	11.7	7.8	18.1	97.3
		7.3	16.9	50	597.4	48.2	762.0	37.2	12.4	2.1	4.9	97.7	639.9	48.7	806.0	40.8	13.1	4.5	10.3	98.1	661.3	49.0	828.4	42.9	13.5	7.7	17.8	98.4
		7.3	16.9	60	716.0	49.6	885.2	45.4	14.4	2.0	4.6	98.9	767.3	50.2	938.4	49.5	15.3	4.3	9.9	99.5	794.6	50.5	966.9	51.9	15.7	7.4	17.1	99.8
		7.3	16.9	70	828.9	50.8	1002.3	53.1	16.3	2.0	4.6	100.1	893.0	51.6	1069.1	57.8	17.3	4.2	9.8	100.8	939.6	51.9	1116.8	60.4	18.1	7.3	16.9	101.3
		7.3	16.9	80	955.9	52.1	1133.7	60.4	18.4	2.0	4.5	101.5	1039.8	53.1	1220.8	65.7	19.6	4.2	9.6	102.4	1094.8	53.6	1277.6	68.7	20.4	7.2	16.7	103.0
105	98	1.9	4.5	30	391.3	56.1	582.9	21.5	7.0	2.3	5.3	117.0	404.6	56.6	597.6	24.1	7.2	4.6	10.6	117.3	413.9	56.8	607.6	25.5	7.3	8.0	18.4	117.5
		1.9	4.5	40	456.2	58.0	654.0	30.2	7.9	2.1	4.9	118.5	478.6	58.5	678.3	33.1	8.2	4.5	10.5	119.0	490.1	58.8	690.9	34.7	8.3	7.9	18.1	119.3
		1.9	4.5	50	532.3	59.9	736.6	38.6	8.9	2.1	4.9	120.2	559.7	60.7	766.7	41.9	9.2	4.5	10.3	120.8	577.7	61.0	785.9	43.8	9.5	7.7	17.9	121.2
		1.9	4.5	60	629.4	62.3	841.9	47.2	10.1	2.0	4.7	122.3	663.8	63.3	879.8	50.9	10.5	4.3	9.9	123.1	688.4	63.7	905.9	53.0	10.8	7.5	17.2	123.6
		1.9	4.5	70	719.8	64.7	940.7	55.3	11.1	2.0	4.6	124.3	775.4	65.9	1000.2	59.4	11.8	4.2	9.8	125.5	802.8	66.7	1030.4	61.8	12.0	7.4	17.0	126.1
		1.9	4.5	80	823.9	67.3	1053.6	63.1	12.2	2.0	4.5	126.6	893.3	69.0	1128.6	67.7	13.0	4.2	9.7	128.1	934.5	69.8	1172.6	70.4	13.4	7.3	16.8	129.0
	146	4.2	9.6	30	401.2	54.3	586.6	21.3	7.4	2.3	5.3	113.1	415.4	54.7	602.0	24.0	7.6	4.6	10.6	113.3	424.0	54.9	611.4	25.4	7.7	8.0	18.4	113.4
		4.2	9.6	40	468.5	55.9	659.1	29.9	8.4	2.1	4.9	114.1	492.7	56.3	684.7	32.9	8.8	4.5	10.5	114.4	505.2	56.6	698.1	34.5	8.9	7.9	18.1	114.6
		4.2	9.6	50	545.4	57.4	741.1	38.3	9.5	2.1	4.9	115.2	580.7	58.0	778.6	41.6	10.0	4.5	10.3	115.7	598.1	58.3	797.1	43.5	10.3	7.7	17.9	115.9
		4.1	9.6	60	650.8	59.3	853.0	46.7	11.0	2.0	4.7	116.7	690.2	60.0	895.1	50.6	11.5	4.3	9.9	117.2	716.7	60.4	922.6	52.7	11.9	7.5	17.2	117.6
		4.1	9.6	70	748.0	61.1	956.6	54.7	12.2	2.0	4.6	118.1	806.1	62.1	1018.1	59.0	13.0	4.2	9.8	118.9	840.7	62.7	1054.5	61.4	13.4	7.3	16.9	119.4
		4.1	9.6	80	860.6	63.1	1075.8	62.4	13.6	2.0	4.5	119.7	943.0	64.3	1162.2	67.1	14.7	4.2	9.7	120.9	979.6	65.1	1201.8	69.9	15.0	7.3	16.7	121.4
	195	7.2	16.7	30	406.2	53.7	589.4	21.2	7.6	2.3	5.3	111.1	420.8	54.0	605.1	23.9	7.8	4.6	10.6	111.2	429.8	54.3	614.9	25.3	7.9	8.0	18.3	111.3
		7.2	16.7	40	475.2	55.1	663.1	29.8	8.6	2.1	4.9	111.8	500.0	55.5	689.2	32.8	9.0	4.5	10.5	112.1	511.8	55.8	702.1	34.5	9.2	7.8	18.1	112.2
		7.2	16.7	50	553.8	56.5	746.4	38.1	9.8	2.1	4.9	112.6	590.2	57.0	784.6	41.5	10.4	4.5	10.3	113.0	608.2	57.3	803.6	43.4	10.6	7.7	17.9	113.2
		7.2	16.7	60	661.0	58.1	859.4	46.5	11.4	2.0	4.7	113.8	703.1	58.8	903.8	50.4	12.0	4.3	9.9	114.2	729.6	59.2	931.5	52.5	12.3	7.4	17.2	114.5
		7.2	16.7	70	762.5	59.8	966.4	54.4	12.8	2.0	4.6	114.9	822.8	60.6	1029.7	58.7	13.6	4.2	9.8	115.5	862.5	61.0	1070.8	61.2	14.1	7.3	16.9	115.9
		7.2	16.7	80	878.2	61.4	1087.7	62.0	14.3	2.0	4.5	116.1	963.4	62.4	1176.4	66.8	15.4	4.2	9.7	117.0	1004.9	63.1	1220.3	69.7	15.9	7.3	16.7	117.4

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 98 GPM							SLWT °F	Flow 146 GPM							SLWT °F	Flow 195 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
120	98	2.0	4.5	30	353.3	66.1	579.0	22.4	5.3	2.3	5.3	131.8	364.0	66.6	591.3	24.7	5.5	4.6	10.6	132.1	371.9	66.8	599.9	26.0	5.6	8.0	18.4	132.3
		1.9	4.5	40	415.1	68.0	647.2	31.1	6.1	2.1	4.9	133.4	431.5	68.6	665.6	33.8	6.3	4.6	10.5	133.8	440.4	68.9	675.6	35.2	6.4	7.9	18.2	134.0
		1.9	4.5	50	481.2	70.2	720.8	39.7	6.9	2.1	4.9	135.0	506.7	70.9	748.6	42.7	7.1	4.5	10.4	135.6	517.9	71.4	761.5	44.4	7.3	7.8	17.9	135.9
		1.9	4.5	60	566.0	72.8	814.6	48.5	7.8	2.0	4.7	137.0	601.6	73.7	853.0	51.8	8.2	4.3	9.9	137.7	617.3	74.2	870.6	53.7	8.3	7.5	17.2	138.1
		1.9	4.5	70	656.7	75.3	913.8	56.6	8.7	2.0	4.6	139.0	695.1	76.7	957.0	60.5	9.1	4.2	9.8	139.9	721.6	77.3	985.3	62.6	9.3	7.3	16.9	140.4
		1.9	4.5	80																								
	146	4.2	9.6	30	363.6	64.0	581.8	22.1	5.7	2.3	5.3	128.0	375.4	64.3	594.9	24.6	5.8	4.6	10.6	128.2	384.0	64.5	604.0	25.8	6.0	8.0	18.4	128.3
		4.1	9.5	40	427.8	65.5	651.3	30.8	6.5	2.1	4.9	129.0	445.2	66.0	670.4	33.6	6.7	4.5	10.5	129.3	456.5	66.2	682.4	35.1	6.9	7.9	18.1	129.5
		4.1	9.5	50	498.6	67.3	728.1	39.3	7.4	2.1	4.9	130.1	526.3	67.8	757.7	42.4	7.8	4.5	10.3	130.5	539.4	68.1	771.9	44.2	7.9	7.8	17.9	130.7
		4.1	9.5	60	590.0	69.3	826.5	48.0	8.5	2.0	4.7	131.5	627.0	70.0	865.9	51.4	9.0	4.3	9.9	132.0	644.7	70.5	885.3	53.4	9.1	7.5	17.2	132.3
		4.1	9.5	70	686.7	71.3	930.0	56.0	9.6	2.0	4.6	132.9	731.3	72.4	978.3	60.0	10.1	4.2	9.8	133.5	759.9	72.9	1008.8	62.2	10.4	7.4	17.0	133.9
		4.1	9.5	80	790.3	73.6	1041.3	63.8	10.7	2.0	4.5	134.4	847.3	75.0	1103.2	68.4	11.3	4.2	9.7	135.2								
	195	7.2	16.6	30	368.8	63.2	584.5	22.0	5.8	2.3	5.3	126.0	381.2	63.5	597.9	24.5	6.0	4.6	10.6	126.1	389.9	63.7	607.3	25.8	6.1	8.0	18.4	126.2
		7.2	16.5	40	434.3	64.6	654.8	30.6	6.7	2.1	4.9	126.8	452.7	65.1	674.9	33.5	7.0	4.6	10.5	127.0	464.2	65.3	687.1	35.0	7.1	7.9	18.2	127.1
		7.1	16.5	50	506.8	66.3	732.9	39.1	7.6	2.1	4.9	127.6	535.7	66.6	763.1	42.3	8.0	4.5	10.4	127.9	550.0	67.0	778.5	44.1	8.2	7.8	17.9	128.1
		7.1	16.5	60	601.9	68.0	834.0	47.7	8.9	2.0	4.7	128.6	640.1	68.7	874.5	51.2	9.3	4.3	9.9	129.0	659.1	69.1	895.0	53.3	9.5	7.5	17.2	129.2
		7.1	16.5	70	701.3	69.8	939.5	55.7	10.0	2.0	4.6	129.7	747.8	70.8	989.2	59.8	10.6	4.2	9.8	130.2	778.3	71.2	1021.3	62.0	10.9	7.4	17.0	130.5
		7.1	16.5	80	803.4	71.8	1048.4	63.6	11.2	2.0	4.5	130.8	873.2	73.0	1122.3	68.0	12.0	4.2	9.7	131.5	915.1	73.6	1166.2	70.6	12.4	7.3	16.8	132.0

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 98 GPM							SLWT °F	Flow 146 GPM							SLWT °F	Flow 195 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
30	98	2.3	5.3	60	610.9	39.2	477.3	72.5	4.6	2.0	4.7	19.4	610.5	37.5	482.7	68.4	4.8	4.4	10.1	19.3	610.6	36.6	485.7	66.3	4.9	7.6	17.6	19.2
		2.3	5.2	80	610.7	48.3	446.0	92.5	3.7	2.0	4.6	20.3	611.6	46.2	453.9	88.4	3.9	4.3	9.9	20.1	611.7	45.2	457.6	86.3	4.0	7.4	17.1	20.0
		2.3	5.2	100	603.9	59.8	399.8	112.4	3.0	2.0	4.5	21.2	605.7	57.1	410.8	108.4	3.1	4.2	9.7	21.0	606.5	55.8	416.0	106.3	3.2	7.3	16.9	20.9
		2.2	5.2	120																								
	146	4.6	10.5	60	631.4	39.9	495.2	72.9	4.6	2.0	4.7	22.6	632.0	38.1	501.9	68.7	4.9	4.4	10.1	22.5	631.9	37.2	504.9	66.5	5.0	7.6	17.6	22.4
		4.5	10.5	80	629.2	49.2	461.4	92.9	3.8	2.0	4.6	23.2	630.1	47.0	469.7	88.7	3.9	4.3	9.9	23.1	630.6	45.9	473.9	86.5	4.0	7.4	17.1	23.0
		4.5	10.5	100	621.0	60.8	413.4	112.8	3.0	2.0	4.5	23.9	622.9	58.1	424.7	108.6	3.1	4.2	9.7	23.8	624.1	56.7	430.7	106.5	3.2	7.3	16.8	23.7
		4.5	10.4	120																								
		4.5	10.4	130																								
	195	7.9	18.2	60	644.6	40.6	506.2	73.2	4.7	2.0	4.7	24.3	645.4	38.7	513.3	68.8	4.9	4.4	10.1	24.2	645.7	37.8	516.8	66.6	5.0	7.6	17.6	24.2
		7.9	18.1	80	640.9	50.0	470.4	93.1	3.8	2.0	4.6	24.8	642.0	47.7	479.1	88.8	3.9	4.3	9.8	24.7	642.4	46.6	483.4	86.6	4.0	7.4	17.1	24.6
		7.8	18.1	100	632.0	61.8	421.2	113.0	3.0	2.0	4.5	25.3	634.2	58.9	433.2	108.8	3.2	4.2	9.7	25.2	635.3	57.5	439.1	106.6	3.2	7.3	16.8	25.1
		7.8	18.1	120																								
		7.8	18	130																								
40	98	2.1	4.9	60	685.6	39.3	551.3	74.0	5.1	2.0	4.7	27.8	688.2	37.3	560.8	69.4	5.4	4.4	10.1	27.5	688.6	36.4	564.6	67.1	5.6	7.6	17.6	27.4
		2.1	4.9	80	682.8	48.5	517.4	94.0	4.1	2.0	4.6	28.7	684.1	46.2	526.5	89.4	4.3	4.3	9.8	28.4	684.8	45.0	531.1	87.1	4.5	7.4	17.1	28.3
		2.1	4.9	100	677.2	59.8	473.0	114.0	3.3	2.0	4.5	29.8	679.6	57.0	485.2	109.4	3.5	4.2	9.7	29.5	680.7	55.5	491.2	107.0	3.6	7.3	16.8	29.4
		2.1	4.9	120									670.8	70.6	429.9	129.3	2.8	4.1	9.4	30.7	670.6	68.8	435.8	127.0	2.9	7.1	16.4	30.5
		2.1	4.8	130																								
	146	4.5	10.4	60	718.1	40.2	581.0	74.7	5.2	2.0	4.7	31.3	720.0	38.1	590.2	69.9	5.5	4.4	10.1	31.2	721.0	37.0	594.8	67.4	5.7	7.6	17.6	31.1
		4.5	10.4	80	709.9	49.6	540.8	94.6	4.2	2.0	4.6	32.0	712.0	47.1	551.3	89.8	4.4	4.3	9.8	31.8	713.1	45.9	556.6	87.4	4.6	7.4	17.1	31.7
		4.5	10.3	100	702.0	61.1	493.5	114.5	3.4	2.0	4.5	32.8	705.2	58.1	507.1	109.8	3.6	4.2	9.7	32.6	705.6	56.5	512.8	107.3	3.7	7.3	16.8	32.5
		4.5	10.3	120									693.1	71.8	448.1	129.6	2.8	4.1	9.4	33.5	694.7	69.9	456.1	127.2	2.9	7.1	16.4	33.4
		4.4	10.2	130																								
	195	7.8	18	60	737.9	40.9	598.4	75.1	5.3	2.0	4.7	33.3	740.6	38.7	608.7	70.2	5.6	4.4	10.1	33.2	741.7	37.5	613.6	67.6	5.8	7.6	17.6	33.1
		7.8	17.9	80	726.4	50.4	554.4	94.9	4.2	2.0	4.6	33.9	729.8	47.9	566.5	90.0	4.5	4.3	9.8	33.7	731.3	46.6	572.4	87.5	4.6	7.4	17.1	33.6
		7.8	17.9	100	716.0	62.1	504.1	114.7	3.4	2.0	4.5	34.5	719.2	59.0	518.1	109.9	3.6	4.2	9.6	34.3	719.9	57.4	524.1	107.5	3.7	7.3	16.8	34.2
		7.7	17.8	120									705.5	72.9	456.9	129.8	2.8	4.1	9.4	35.0	707.3	70.9	465.3	127.4	2.9	7.1	16.4	34.9
		7.7	17.7	130																								
50	98	2.1	4.9	60	775.6	39.4	641.2	75.8	5.8	2.0	4.7	35.8	776.7	37.1	650.3	70.6	6.1	4.4	10.1	35.5	780.5	35.8	658.2	68.0	6.4	7.6	17.6	35.3
		2.1	4.8	80	762.2	48.8	595.6	95.6	4.6	2.0	4.6	36.9	767.6	46.1	610.2	90.6	4.9	4.3	9.8	36.5	769.3	44.8	616.5	87.9	5.0	7.4	17.1	36.4
		2.1	4.8	100	754.9	60.1	550.0	115.6	3.7	2.0	4.5	38.1	757.6	56.8	563.6	110.5	3.9	4.2	9.6	37.8	756.1	55.3	567.4	107.8	4.0	7.3	16.7	37.7
		2.1	4.8	120	745.1	74.2	491.8	135.4	2.9	1.9	4.4	39.5	749.0	70.3	509.3	130.4	3.1	4.1	9.4	39.1	748.7	68.3	515.7	127.8	3.2	7.1	16.3	39.0
		2.1	4.8	130																								
	146	4.5	10.3	60	820.4	40.4	682.6	76.8	6.0	2.0	4.7	39.8	827.6	37.8	698.7	71.3	6.4	4.4	10.1	39.6	830.2	36.5	705.8	68.5	6.7	7.6	17.6	39.4
		4.4	10.2	80	803.9	50.0	633.3	96.5	4.7	2.0	4.6	40.6	809.6	47.2	648.7	91.1	5.0	4.3	9.8	40.4	812.4	45.7	656.5	88.4	5.2	7.4	17.1	40.2
		4.4	10.2	100	788.3	61.5	578.4	116.2	3.8	2.0	4.5	41.6	792.2	58.1	593.9	111.0	4.0	4.2	9.6	41.3	794.3	56.4	601.8	108.2	4.1	7.3	16.7	41.2
		4.4	10.2	120									778.8	71.6	534.5	130.8	3.2	4.1	9.4	42.3	780.7	69.5	543.4	128.1	3.3	7.1	16.3	42.2
		4.4	10.1	130																								
	195	7.7	17.7	60	849.3	41.1	709.0	77.3	6.1	2.0	4.7	42.1	856.4	38.4	725.4	71.7	6.5	4.4	10.1	41.9	860.2	37.0	734.0	68.8	6.8	7.6	17.6	41.8
		7.7	17.7	80	826.5	50.9	652.7	97.0	4.8	2.0	4.6	42.7	833.2	48.0	669.5	91.5	5.1	4.3	9.8	42.5	836.6	46.5	678.1	88.6	5.3	7.4	17.1	42.4
		7.7	17.7	100	806.7	62.6	593.2	116.6	3.8	2.0	4.5	43.5	811.4	59.1	609.9	111.2	4.0	4.2	9.6	43.3	814.5	57.3	619.0	108.4	4.2	7.3	16.7	43.2
		7.6	17.6	120									794.7	72.7	546.6	131.0	3.2	4.1	9.4	44.1	796.4	70.6	555.5	128.3	3.3	7.1	16.3	44.0
		7.6	17.5	130																								

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Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 98 GPM							SLWT °F	Flow 146 GPM							SLWT °F	Flow 195 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	98	2.0	4.6	60	900.4	39.5	765.7	78.4	6.7	2.0	4.7	43.9	904.4	36.7	779.2	72.4	7.2	4.4	10.1	43.6	910.9	35.2	790.8	69.3	7.6	7.6	17.5	43.4
		2.0	4.6	80	872.8	49.4	704.4	97.9	5.2	2.0	4.6	45.3	883.1	46.2	725.5	92.2	5.6	4.3	9.8	44.8	886.7	44.6	734.5	89.1	5.8	7.4	17.1	44.6
		2.0	4.6	100	854.4	60.7	647.1	117.6	4.1	1.9	4.5	46.7	861.0	57.1	666.3	111.9	4.4	4.2	9.6	46.2	861.5	55.3	672.8	108.9	4.6	7.2	16.7	46.0
		2.0	4.6	120	836.5	74.6	581.8	137.3	3.3	1.9	4.4	48.2	839.7	70.3	599.8	131.7	3.5	4.1	9.4	47.8	842.5	68.2	610.0	128.8	3.6	7.1	16.3	47.6
		2.0	4.5	130																	833.1	75.6	575.0	138.7	3.2	7.0	16.1	48.4
	146	4.3	9.8	60	960.9	40.7	822.2	79.6	6.9	2.0	4.7	48.4	974.5	37.4	846.9	73.4	7.6	4.4	10.1	48.1	980.8	35.7	858.9	70.1	8.0	7.6	17.5	47.9
		4.3	9.8	80	927.6	50.7	754.6	99.0	5.4	2.0	4.6	49.4	939.2	47.3	778.0	92.9	5.8	4.3	9.8	49.0	945.1	45.6	789.6	89.7	6.1	7.4	17.1	48.9
		4.3	9.8	100	897.2	62.3	684.6	118.5	4.2	1.9	4.5	50.5	906.7	58.4	707.4	112.5	4.5	4.2	9.6	50.1	912.0	56.5	719.3	109.4	4.7	7.2	16.7	49.9
		4.2	9.8	120	871.8	76.5	610.9	138.0	3.3	1.9	4.4	51.7	878.7	71.8	633.7	132.2	3.6	4.1	9.4	51.3	883.1	69.5	645.9	129.2	3.7	7.1	16.3	51.1
		4.2	9.7	130																								
	195	7.4	17	60	995.8	41.5	854.3	80.3	7.0	2.0	4.7	51.0	1012.1	38.0	882.5	73.9	7.8	4.4	10.1	50.7	1020.0	36.2	896.5	70.5	8.3	7.6	17.5	50.6
		7.4	17	80	956.7	51.7	780.2	99.6	5.4	2.0	4.6	51.8	970.7	48.1	806.5	93.4	5.9	4.3	9.8	51.5	977.7	46.3	819.7	90.1	6.2	7.4	17.1	51.3
		7.4	17	100	921.7	63.5	705.0	119.0	4.3	1.9	4.5	52.6	932.7	59.5	729.7	112.9	4.6	4.2	9.6	52.3	938.2	57.5	742.1	109.7	4.8	7.2	16.7	52.2
		7.4	17	120	890.5	77.8	625.0	138.4	3.4	1.9	4.4	53.6	900.0	73.0	650.8	132.5	3.6	4.1	9.4	53.3	905.2	70.7	664.1	129.4	3.8	7.1	16.3	53.1
		7.3	16.7	130																								
70	98	2.0	4.6	60	1024.0	39.4	889.6	80.9	7.6	2.0	4.7	51.4	1036.1	35.9	913.6	74.2	8.5	4.4	10.1	50.9	1042.1	34.1	925.7	70.7	9.0	7.6	17.5	50.6
		2.0	4.6	80	982.5	49.7	813.0	100.2	5.8	2.0	4.6	53.0	996.0	46.0	839.0	93.7	6.3	4.3	9.8	52.4	1006.5	44.1	856.0	90.4	6.7	7.4	17.1	52.0
		2.0	4.6	100	950.1	61.3	741.1	119.6	4.5	1.9	4.5	54.6	964.6	57.1	769.7	113.3	5.0	4.2	9.6	54.0	966.4	55.1	778.5	110.0	5.1	7.2	16.7	53.8
		2.0	4.5	120	922.1	75.0	666.1	139.1	3.6	1.9	4.4	56.4	930.1	70.3	690.2	132.9	3.9	4.1	9.4	55.8	935.1	67.9	703.3	129.7	4.0	7.1	16.3	55.5
		1.9	4.5	130																	918.9	75.3	662.0	139.6	3.6	7.0	16.1	56.5
	146	4.2	9.7	60	1102.9	40.8	963.7	82.5	7.9	2.0	4.7	56.5	1122.3	36.8	996.7	75.4	8.9	4.4	10.0	56.0	1137.5	34.6	1019.4	71.7	9.6	7.6	17.5	55.7
		4.2	9.7	80	1055.8	51.3	881.0	101.7	6.0	2.0	4.6	57.6	1076.0	47.1	915.2	94.8	6.7	4.2	9.8	57.1	1086.7	45.1	933.0	91.2	7.1	7.4	17.1	56.9
		4.2	9.7	100	1009.4	63.1	794.2	120.8	4.7	1.9	4.5	58.9	1028.4	58.6	828.5	114.2	5.1	4.2	9.6	58.4	1037.2	56.4	844.9	110.7	5.4	7.2	16.7	58.1
		4.2	9.7	120	969.8	77.1	706.7	140.1	3.7	1.9	4.4	60.3	981.5	72.1	735.5	133.6	4.0	4.1	9.5	59.8	988.0	69.5	750.9	130.3	4.2	7.1	16.4	59.6
		4.1	9.5	130																	968.0	77.0	705.2	140.1	3.7	7.1	16.4	60.3
	195	7.3	16.8	60	1157.0	41.5	1015.3	83.6	8.2	2.0	4.7	59.3	1180.1	37.3	1052.8	76.2	9.3	4.4	10.0	59.0	1191.7	35.1	1071.9	72.2	10.0	7.6	17.5	58.8
		7.3	16.8	80	1097.0	52.4	918.0	102.5	6.1	2.0	4.6	60.3	1121.1	48.1	957.1	95.4	6.8	4.2	9.8	59.9	1133.0	45.8	976.6	91.7	7.2	7.4	17.0	59.7
		7.3	16.8	100	1044.8	64.5	824.7	121.5	4.7	1.9	4.5	61.3	1065.2	59.8	861.2	114.7	5.2	4.2	9.6	60.9	1075.2	57.4	879.3	111.1	5.5	7.2	16.7	60.7
		7.3	16.7	120	994.7	78.7	726.3	140.6	3.7	1.9	4.5	62.5	1012.5	73.4	762.2	134.1	4.0	4.1	9.5	62.1	1021.2	70.7	780.0	130.6	4.2	7.1	16.5	61.9
		7.1	16.5	130																	996.1	78.3	729.0	140.4	3.7	7.1	16.4	62.4

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Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 120 GPM							SLWT °F	Flow 180 GPM							SLWT °F	Flow 240 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	120	1.5	3.5	30									637.6	44.8	790.6	22.5	13.8	3.4	7.8	72.8	654.2	45.1	807.9	24.2	14.1	5.9	13.5	73.1
		1.5	3.5	40	709.6	45.9	866.1	27.5	15.0	1.6	3.6	74.1	749.9	46.4	908.0	31.2	15.7	3.4	7.7	74.7	777.2	46.6	936.1	33.2	16.2	5.8	13.4	75.2
		1.5	3.5	50	826.3	47.2	987.4	35.5	17.0	1.5	3.6	76.0	884.4	47.9	1047.8	39.6	17.9	3.3	7.6	77.0	917.7	48.3	1082.5	41.9	18.5	5.7	13.2	77.6
		1.5	3.5	60	974.7	49.0	1142.0	43.8	19.3	1.5	3.4	78.6	1054.7	49.9	1225.1	48.3	20.5	3.2	7.4	80.0	1102.6	50.3	1274.3	50.8	21.3	5.5	12.8	80.8
		1.5	3.4	70	1127.4	50.7	1300.3	51.2	21.6	1.5	3.4	81.2	1230.3	51.9	1407.4	56.3	23.0	3.2	7.3	83.0	1288.7	52.6	1468.1	59.3	23.8	5.5	12.6	84.0
		1.5	3.4	80	1240.3	52.1	1418.1	59.5	23.5	1.4	3.2	83.1	1420.6	54.3	1605.8	64.2	25.4	3.1	7.2	86.4	1496.4	55.3	1685.1	67.5	26.3	5.4	12.5	87.7
	180	3.3	7.6	30									646.7	43.3	794.3	22.4	14.7	3.4	7.8	68.6	664.1	43.4	812.2	24.1	15.0	5.9	13.5	68.7
		3.3	7.6	40	723.5	44.0	873.5	27.3	16.2	1.6	3.6	69.4	764.9	44.3	916.1	31.0	17.0	3.4	7.7	69.9	791.9	44.5	943.7	33.0	17.5	5.8	13.4	70.2
		3.3	7.5	50	837.2	44.9	990.4	35.3	18.3	1.5	3.6	70.7	899.5	45.4	1054.3	39.5	19.5	3.3	7.7	71.4	937.0	45.6	1092.7	41.8	20.2	5.7	13.2	71.8
		3.3	7.5	60	998.2	46.0	1155.2	43.4	21.3	1.5	3.4	72.5	1086.9	46.5	1245.7	47.9	23.0	3.2	7.4	73.5	1130.4	46.9	1290.5	50.6	23.7	5.5	12.8	74.0
		3.3	7.5	70	1150.6	47.1	1311.3	50.8	24.0	1.5	3.4	74.2	1260.7	48.0	1424.3	56.0	25.8	3.2	7.3	75.5	1330.2	48.3	1495.1	58.9	27.1	5.5	12.6	76.3
		3.3	7.5	80	1268.0	48.1	1432.1	59.0	26.3	1.4	3.2	75.5	1459.9	49.5	1628.8	63.7	29.0	3.1	7.2	77.8	1544.3	50.2	1715.5	67.1	30.3	5.4	12.5	78.8
	240	5.7	13.1	30									647.6	43.0	794.2	22.4	15.1	3.5	8.0	66.5	663.9	43.1	811.1	24.1	15.4	6.0	13.8	66.6
		5.7	13.1	40	726.0	43.6	874.6	27.2	16.7	1.6	3.7	67.1	767.7	43.8	917.1	31.0	17.5	3.4	7.9	67.5	793.8	44.0	943.8	33.0	18.0	5.9	13.7	67.7
		5.7	13.1	50	842.9	44.3	994.1	35.2	19.0	1.6	3.6	68.1	905.7	44.6	1057.8	39.4	20.3	3.4	7.8	68.6	942.8	44.8	1095.8	41.7	21.0	5.9	13.5	68.9
		5.7	13.1	60	1011.1	45.1	1164.9	43.2	22.4	1.5	3.5	69.5	1095.3	45.5	1250.7	47.9	24.1	3.3	7.6	70.3	1139.6	45.8	1296.0	50.5	24.9	5.7	13.1	70.6
		5.7	13.1	70	1169.7	45.9	1326.1	50.5	25.5	1.5	3.5	70.9	1276.0	46.5	1434.8	55.8	27.4	3.2	7.5	71.8	1341.1	46.9	1501.0	58.8	28.6	5.6	13.0	72.4
		5.7	13.1	80	1289.9	46.6	1449.0	58.7	28.0	1.4	3.3	71.9	1481.9	47.6	1644.4	63.5	31.1	3.2	7.4	73.7	1569.2	48.1	1733.3	66.9	32.6	5.6	12.8	74.4
75	120	1.5	3.4	30	575.1	52.2	753.2	19.8	10.7	1.7	3.8	87.4	601.4	52.6	780.7	22.9	11.1	3.4	7.8	87.9	616.0	52.8	796.3	24.6	11.3	5.9	13.5	88.1
		1.5	3.4	40	671.3	53.8	854.9	28.2	12.1	1.6	3.6	89.1	705.6	54.4	891.4	31.7	12.6	3.4	7.7	89.7	730.1	54.7	916.9	33.6	13.0	5.8	13.4	90.1
		1.5	3.4	50	775.8	55.6	965.5	36.4	13.6	1.5	3.5	90.9	828.2	56.4	1020.7	40.3	14.3	3.3	7.6	91.7	858.3	56.9	1052.3	42.5	14.7	5.7	13.2	92.3
		1.5	3.4	60	922.9	57.7	1119.9	44.7	15.5	1.5	3.4	93.4	990.6	58.8	1191.3	49.0	16.4	3.2	7.4	94.5	1024.3	59.5	1227.5	51.5	16.7	5.5	12.8	95.1
		1.5	3.4	70	1061.7	59.9	1266.1	52.3	17.2	1.5	3.4	95.8	1145.5	61.5	1355.3	57.3	18.1	3.2	7.3	97.3	1201.0	62.2	1413.3	60.0	18.8	5.5	12.6	98.2
		1.5	3.4	80	1216.1	62.3	1428.7	59.7	19.0	1.4	3.3	98.5	1320.4	64.4	1540.3	65.3	19.9	3.1	7.2	100.4	1388.2	65.7	1612.2	68.4	20.5	5.4	12.5	101.6
	180	3.2	7.4	30	585.6	50.5	757.8	19.7	11.4	1.7	3.8	83.3	612.0	50.8	785.3	22.8	11.8	3.4	7.8	83.6	627.6	51.0	801.6	24.5	12.1	5.9	13.5	83.8
		3.2	7.4	40	682.5	51.7	858.9	28.0	13.0	1.6	3.6	84.4	721.7	52.1	899.6	31.5	13.6	3.4	7.7	84.8	746.7	52.4	925.7	33.4	14.0	5.8	13.4	85.1
		3.2	7.4	50	797.6	53.0	978.2	36.0	14.8	1.5	3.5	85.6	849.6	53.6	1032.6	40.1	15.6	3.3	7.6	86.2	884.7	53.9	1068.6	42.2	16.1	5.7	13.2	86.6
		3.2	7.4	60	947.1	54.5	1133.2	44.2	17.1	1.5	3.4	87.3	1018.5	55.4	1207.4	48.7	18.1	3.2	7.4	88.2	1060.1	55.8	1250.4	51.2	18.7	5.5	12.8	88.6
		3.2	7.4	70	1094.3	56.0	1285.4	51.8	19.2	1.5	3.4	89.0	1187.7	57.1	1382.7	56.8	20.4	3.2	7.3	90.1	1247.9	57.6	1444.5	59.6	21.3	5.5	12.6	90.8
		3.2	7.4	80	1244.8	57.8	1442.1	59.2	21.2	1.4	3.3	90.8	1383.9	59.1	1585.4	64.6	23.0	3.1	7.2	92.4	1459.2	59.9	1663.5	67.8	24.0	5.4	12.5	93.3
	240	5.6	12.9	30	590.1	49.9	760.4	19.6	11.8	1.7	3.8	81.2	617.7	50.2	789.0	22.7	12.2	3.4	7.8	81.4	633.3	50.4	805.3	24.4	12.5	5.9	13.5	81.6
		5.6	12.9	40	689.0	51.0	863.1	27.9	13.4	1.6	3.6	82.0	731.3	51.3	906.4	31.4	14.2	3.4	7.7	82.4	754.9	51.6	930.9	33.4	14.6	5.8	13.4	82.6
		5.6	12.9	50	805.6	52.0	983.1	35.9	15.4	1.5	3.5	83.0	861.3	52.6	1040.6	39.9	16.3	3.3	7.6	83.5	896.7	52.8	1076.8	42.1	16.9	5.7	13.2	83.8
		5.6	12.9	60	958.6	53.3	1140.5	44.1	17.9	1.5	3.4	84.3	1033.7	54.0	1217.9	48.5	19.0	3.2	7.4	84.9	1076.7	54.3	1262.1	51.0	19.7	5.5	12.8	85.3
		5.6	12.9	70	1108.8	54.5	1294.8	51.5	20.2	1.5	3.4	85.6	1213.3	55.3	1402.1	56.5	21.8	3.2	7.3	86.5	1266.9	55.9	1457.5	59.4	22.6	5.5	12.6	86.9
		5.6	12.9	80	1265.8	55.9	1456.5	58.9	22.5	1.4	3.3	86.9	1408.6	56.9	1602.7	64.3	24.6	3.1	7.2	88.2	1486.8	57.5	1683.1	67.6	25.7	5.4	12.5	88.8

Notes:
- Interpolation is permissible; extrapolation is not.
- All performance 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 in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 120 GPM							SLWT °F	Flow 180 GPM							SLWT °F	Flow 240 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
90	120	1.5	3.4	30	535.8	61.2	744.6	20.5	8.5	1.7	3.8	102.4	558.4	61.6	768.7	23.4	8.8	3.4	7.8	102.8	571.5	61.9	782.8	25.0	9.0	5.9	13.5	103.1
		1.5	3.3	40	625.9	63.1	841.2	29.0	9.6	1.6	3.6	104.0	655.9	63.8	873.5	32.3	10.0	3.4	7.7	104.6	676.2	64.1	895.0	34.0	10.2	5.8	13.4	104.9
		1.4	3.3	50	725.7	65.1	947.9	37.3	10.8	1.5	3.5	105.8	769.1	66.1	994.8	41.0	11.3	3.3	7.6	106.5	797.0	66.5	1024.0	43.0	11.6	5.7	13.2	107.0
		1.4	3.3	60	852.8	67.9	1084.5	45.8	12.2	1.5	3.4	108.0	911.9	69.1	1147.7	49.9	12.8	3.2	7.4	109.0	945.6	69.7	1183.4	52.1	13.2	5.6	12.8	109.6
		1.4	3.3	70	980.2	70.5	1220.8	53.7	13.5	1.5	3.4	110.2	1066.7	72.0	1312.2	58.1	14.4	3.2	7.3	111.7	1104.5	73.1	1353.8	60.8	14.7	5.5	12.7	112.4
		1.4	3.3	80	1131.2	73.3	1381.3	61.1	15.0	1.4	3.3	112.9	1231.3	75.4	1488.6	66.3	15.9	3.1	7.2	114.7	1288.3	76.7	1550.0	69.2	16.3	5.4	12.5	115.7
	180	3.2	7.3	30	547.6	59.1	749.3	20.3	9.1	1.7	3.8	98.3	571.1	59.5	774.1	23.3	9.4	3.4	7.8	98.6	584.7	59.7	788.5	24.8	9.6	5.9	13.5	98.7
		3.2	7.3	40	638.5	60.7	845.5	28.8	10.3	1.6	3.6	99.3	675.0	61.2	883.7	32.1	10.8	3.4	7.7	99.8	694.8	61.5	904.6	33.9	11.1	5.8	13.4	100.0
		3.2	7.3	50	745.5	62.2	957.8	36.9	11.8	1.5	3.5	100.6	792.9	63.0	1007.7	40.7	12.4	3.3	7.6	101.1	822.5	63.3	1038.3	42.8	12.8	5.7	13.2	101.4
		3.2	7.3	60	880.2	64.2	1099.3	45.4	13.5	1.5	3.4	102.1	947.4	65.1	1169.7	49.5	14.3	3.2	7.4	102.8	987.1	65.5	1210.7	51.8	14.8	5.5	12.8	103.3
		3.2	7.3	70	1017.8	66.2	1243.5	53.0	15.1	1.5	3.4	103.7	1109.5	67.3	1339.1	57.7	16.2	3.2	7.3	104.7	1153.2	68.1	1385.6	60.4	16.6	5.5	12.6	105.2
		3.2	7.3	80	1167.6	68.3	1400.7	60.5	16.8	1.4	3.3	105.4	1278.4	70.0	1517.1	65.8	18.0	3.1	7.2	106.7	1354.7	70.8	1596.1	68.7	18.8	5.4	12.5	107.6
	240	5.5	12.7	30	553.3	58.5	752.8	20.2	9.4	1.7	3.8	96.2	577.1	58.8	777.8	23.2	9.8	3.4	7.8	96.4	590.3	59.0	791.7	24.8	9.9	5.9	13.5	96.5
		5.5	12.7	40	646.3	59.8	850.5	28.6	10.7	1.6	3.6	97.0	683.4	60.3	889.1	32.0	11.3	3.4	7.7	97.3	704.1	60.5	910.6	33.8	11.6	5.8	13.4	97.5
		5.5	12.7	50	755.3	61.1	963.8	36.7	12.3	1.5	3.5	97.9	804.8	61.7	1015.5	40.6	13.0	3.3	7.6	98.3	834.7	62.1	1046.6	42.7	13.4	5.7	13.2	98.6
		5.5	12.7	60	893.8	62.9	1108.4	45.1	14.1	1.5	3.4	99.1	963.2	63.7	1180.5	49.3	15.0	3.2	7.4	99.7	1003.7	64.1	1222.3	51.7	15.6	5.5	12.8	100.0
		5.5	12.7	70	1034.6	64.5	1254.8	52.8	15.9	1.5	3.4	100.3	1129.4	65.5	1352.9	57.4	17.1	3.2	7.3	101.1	1176.9	66.2	1402.6	60.2	17.7	5.5	12.6	101.5
		5.5	12.7	80	1187.1	66.3	1413.5	60.2	17.8	1.4	3.3	101.6	1307.0	67.7	1537.9	65.4	19.2	3.1	7.2	102.7	1381.4	68.4	1614.8	68.5	20.1	5.4	12.5	103.3
105	120	1.4	3.3	30	491.5	71.9	736.7	21.3	6.6	1.7	3.8	117.4	510.7	72.4	757.6	24.0	6.9	3.4	7.8	117.7	522.2	72.7	770.2	25.4	7.0	5.9	13.6	117.9
		1.4	3.3	40	573.7	74.1	826.5	29.9	7.5	1.6	3.6	118.9	603.7	74.8	858.7	32.9	7.8	3.4	7.8	119.5	618.2	75.2	874.8	34.6	8.0	5.8	13.4	119.7
		1.4	3.3	50	668.9	76.5	929.8	38.3	8.5	1.5	3.6	120.7	704.9	77.4	969.1	41.7	8.8	3.3	7.7	121.3	727.6	77.9	993.4	43.6	9.1	5.7	13.3	121.7
		1.4	3.3	60	786.0	79.6	1057.4	46.9	9.6	1.5	3.4	122.8	834.2	80.8	1110.0	50.8	10.0	3.2	7.4	123.6	863.1	81.4	1141.0	52.8	10.3	5.6	12.9	124.1
		1.4	3.3	70	907.9	82.4	1189.1	54.9	10.7	1.5	3.4	124.9	973.7	84.2	1260.8	59.2	11.2	3.2	7.3	126.1	1009.3	85.3	1300.2	61.6	11.5	5.5	12.7	126.8
		1.4	3.3	80	1039.2	85.8	1332.0	62.6	11.8	1.5	3.3	127.3	1120.4	88.3	1421.8	67.5	12.3	3.1	7.2	128.8	1174.3	89.4	1479.4	70.2	12.8	5.4	12.5	129.7
	180	3.1	7.2	30	506.0	69.4	742.9	21.1	7.2	1.7	3.8	113.3	524.8	69.8	763.1	23.8	7.4	3.4	7.8	113.5	535.9	70.1	775.2	25.3	7.5	5.9	13.5	113.7
		3.1	7.2	40	590.3	71.2	833.3	29.6	8.1	1.6	3.6	114.3	622.1	71.8	866.9	32.7	8.5	3.4	7.7	114.7	638.3	72.1	884.2	34.4	8.7	5.8	13.4	114.9
		3.1	7.2	50	688.6	73.0	937.7	37.9	9.3	1.5	3.6	115.5	732.7	73.8	984.5	41.4	9.8	3.3	7.7	116.0	754.8	74.2	1008.1	43.4	10.0	5.7	13.2	116.2
		3.1	7.2	60	818.9	75.3	1075.9	46.4	10.7	1.5	3.4	117.0	869.4	76.4	1130.0	50.4	11.2	3.2	7.4	117.6	903.4	76.8	1165.4	52.5	11.6	5.6	12.8	117.9
		3.1	7.2	70	944.1	77.6	1208.8	54.3	12.0	1.5	3.4	118.4	1014.0	79.1	1283.7	58.7	12.6	3.2	7.3	119.2	1058.7	79.8	1331.0	61.2	13.0	5.5	12.7	119.8
		3.1	7.2	80	1078.0	80.2	1351.8	62.0	13.2	1.4	3.3	120.0	1179.2	82.0	1459.0	66.9	14.1	3.1	7.2	121.2	1232.9	83.1	1516.6	69.7	14.6	5.4	12.5	121.8
	240	5.4	12.5	30	512.5	68.6	746.6	20.9	7.4	1.7	3.8	111.2	531.6	69.0	767.2	23.7	7.7	3.4	7.8	111.4	543.3	69.3	779.7	25.2	7.8	5.9	13.5	111.5
		5.4	12.5	40	598.5	70.2	838.2	29.5	8.5	1.6	3.6	112.0	631.1	70.8	872.6	32.6	8.9	3.4	7.7	112.3	647.4	71.1	889.9	34.3	9.1	5.8	13.4	112.4
		5.4	12.5	50	696.5	71.8	941.5	37.8	9.7	1.5	3.6	112.8	744.8	72.5	992.1	41.3	10.2	3.3	7.7	113.2	767.8	72.9	1016.4	43.3	10.5	5.7	13.2	113.4
		5.4	12.5	60	831.7	73.8	1083.7	46.2	11.2	1.5	3.4	114.0	885.8	74.8	1141.0	50.2	11.8	3.2	7.4	114.5	920.0	75.2	1176.6	52.3	12.2	5.6	12.8	114.8
		5.4	12.5	70	956.3	75.9	1215.4	54.1	12.5	1.5	3.4	115.1	1035.8	77.1	1298.9	58.5	13.4	3.2	7.3	115.8	1082.9	77.8	1348.2	61.0	13.9	5.5	12.7	116.2
		5.4	12.5	80	1100.3	78.1	1366.8	61.6	14.0	1.4	3.3	116.3	1212.9	79.5	1484.3	66.5	15.2	3.1	7.2	117.3	1264.9	80.6	1539.7	69.4	15.6	5.4	12.5	117.8

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Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 120 GPM							SLWT °F	Flow 180 GPM							SLWT °F	Flow 240 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
120	120	1.4	3.3	30									460.8	85.1	751.3	24.6	5.3	3.4	7.9	132.5	469.1	85.6	761.1	25.9	5.3	5.9	13.6	132.7
		1.4	3.3	40	520.0	87.2	817.4	30.8	5.8	1.6	3.6	133.8	544.3	87.9	844.0	33.6	6.0	3.4	7.8	134.3	556.4	88.2	857.5	35.1	6.1	5.8	13.4	134.5
		1.4	3.3	50	603.6	89.9	910.5	39.4	6.5	1.5	3.6	135.4	638.7	90.8	948.4	42.5	6.8	3.3	7.7	136.1	654.9	91.3	966.4	44.3	7.0	5.7	13.3	136.4
		1.4	3.3	60	713.9	93.2	1031.8	48.1	7.4	1.5	3.4	137.5	752.6	94.6	1075.3	51.7	7.7	3.2	7.4	138.3	777.7	95.1	1102.1	53.5	7.9	5.6	12.8	138.7
		1.4	3.3	70	816.2	96.7	1146.0	56.4	8.2	1.5	3.4	139.5	872.1	98.5	1208.1	60.3	8.6	3.2	7.3	140.5								
		1.4	3.3	80																								
	180	3.1	7.2	30	458.9	81.8	738.0	21.9	5.5	1.7	3.8	128.2	475.1	82.2	755.6	24.4	5.7	3.4	7.9	128.4	484.9	82.5	766.5	25.7	5.8	5.9	13.6	128.5
		3.1	7.2	40	537.6	83.7	823.2	30.5	6.3	1.6	3.6	129.2	563.7	84.3	851.4	33.4	6.6	3.4	7.8	129.6	576.0	84.7	864.9	34.9	6.7	5.8	13.4	129.7
		3.1	7.2	50	627.2	85.8	920.0	39.0	7.2	1.5	3.6	130.4	664.7	86.6	960.1	42.2	7.5	3.3	7.7	130.8	682.0	87.0	978.9	44.0	7.7	5.7	13.3	131.0
		3.1	7.1	60	744.8	88.4	1046.4	47.6	8.3	1.5	3.4	131.8	791.0	89.4	1095.9	51.2	8.7	3.2	7.4	132.3	815.7	90.0	1122.6	53.2	8.9	5.6	12.9	132.6
		3.1	7.1	70	857.6	91.1	1168.4	55.7	9.3	1.5	3.4	133.1	918.9	92.5	1234.6	59.8	9.8	3.2	7.3	133.9	958.8	93.2	1276.6	62.0	10.1	5.5	12.7	134.3
		3.1	7.2	80	992.2	93.9	1312.7	63.4	10.4	1.5	3.3	134.7	1072.4	95.8	1399.2	68.1	11.0	3.1	7.2	135.7								
	240	5.4	12.5	30	465.4	80.9	741.5	21.8	5.7	1.7	3.8	126.1	482.6	81.2	759.7	24.3	5.9	3.4	7.9	126.3	492.5	81.5	770.7	25.7	6.0	5.9	13.6	126.4
		5.4	12.4	40	545.8	82.7	827.9	30.4	6.6	1.6	3.6	126.9	572.9	83.2	856.8	33.3	6.8	3.4	7.8	127.2	585.8	83.6	870.9	34.8	7.0	5.8	13.4	127.3
		5.4	12.4	50	638.4	84.4	926.4	38.8	7.5	1.5	3.6	127.8	676.3	85.1	966.5	42.1	7.9	3.3	7.7	128.1	695.6	85.5	987.2	43.9	8.1	5.8	13.3	128.3
		5.4	12.4	60	755.7	86.8	1051.8	47.4	8.7	1.5	3.4	128.8	807.7	87.6	1106.7	51.0	9.2	3.2	7.4	129.3	833.7	88.2	1134.6	53.1	9.4	5.6	12.9	129.5
		5.4	12.4	70	876.7	89.1	1180.8	55.4	9.8	1.5	3.4	129.9	940.6	90.3	1248.8	59.5	10.4	3.2	7.3	130.5	981.4	91.0	1291.9	61.8	10.7	5.5	12.7	130.8
		5.4	12.4	80	1015.8	91.6	1328.2	63.0	11.0	1.4	3.3	131.1	1096.7	93.4	1415.2	67.8	11.7	3.1	7.2	131.8	1148.3	94.3	1469.9	70.4	12.1	5.4	12.5	132.3

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Source				Load								Load								Load							
EWT °F	Flow			EWT °F	Flow 120 GPM							SLWT °F	Flow 180 GPM							SLWT °F	Flow 240 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
30	120	2.5	5.8	60	771.8	49.9	601.7	72.9	4.4	2.3	5.2	19.1																
		2.5	5.7	80	771.8	61.6	561.5	92.9	3.6	2.2	5.1	20.0	772.4	58.8	571.7	88.6	3.7	4.8	11.1	19.8	772.0	57.5	575.9	86.5	3.8	8.4	19.3	19.7
		2.5	5.7	100	763.1	76.6	501.9	112.8	2.8	2.2	5.0	21.0	764.6	73.0	515.5	108.6	3.0	4.7	11.0	20.8	765.3	71.2	522.2	106.4	3.1	8.2	19.0	20.7
		2.4	5.6	120																								
		2.4	5.6	130																								
	180	5.1	11.7	60	798.3	50.9	624.7	73.3	4.5	2.3	5.2	22.4	797.8	48.5	632.3	68.9	4.7	4.9	11.3	22.3	797.3	47.3	635.8	66.6	4.8	8.5	19.7	22.3
		5.0	11.6	80	796.1	62.9	581.6	93.3	3.6	2.2	5.1	23.1	796.8	59.9	592.3	88.9	3.8	4.8	11.1	22.9	796.4	58.5	596.8	86.7	3.9	8.3	19.3	22.9
		5.0	11.6	100	785.8	78.0	519.9	113.2	2.9	2.2	5.0	23.8	787.8	74.3	534.4	108.8	3.1	4.7	10.9	23.6	789.0	72.4	541.8	106.6	3.1	8.2	19.0	23.5
		5.0	11.6	120																								
		5.0	11.6	130																								
	240	8.8	20.2	60	814.7	51.7	638.1	73.6	4.6	2.3	5.2	24.2	815.0	49.3	646.8	69.1	4.8	4.9	11.3	24.1	814.8	48.1	650.8	66.8	4.9	8.5	19.7	24.0
		8.7	20.1	80	811.0	63.9	592.9	93.6	3.7	2.2	5.1	24.7	811.9	60.9	604.2	89.1	3.9	4.8	11.1	24.6	812.3	59.4	609.7	86.8	4.0	8.3	19.3	24.5
		8.7	20.0	100	800.0	79.2	529.8	113.5	2.9	2.2	5.0	25.2	802.5	75.4	545.4	109.0	3.1	4.7	10.9	25.1	804.0	73.5	553.0	106.8	3.2	8.2	19.0	25.0
		8.7	20.0	120																								
		8.7	20.0	130																								
40	120	2.3	5.4	60	865.1	50.0	694.5	74.4	4.9	2.3	5.2	27.4	868.5	47.4	706.9	69.7	5.2	4.9	11.3	27.2	868.2	46.1	710.9	67.2	5.4	8.5	19.7	27.1
		2.3	5.4	80	860.8	61.8	649.9	94.4	4.0	2.2	5.1	28.4	864.0	58.6	664.0	89.7	4.2	4.8	11.1	28.1	864.1	57.1	669.2	87.2	4.3	8.3	19.2	28.0
		2.3	5.3	100	854.4	76.6	593.0	114.4	3.2	2.2	5.0	29.5	858.3	72.6	610.5	109.6	3.4	4.7	10.9	29.2	859.2	70.7	617.8	107.2	3.5	8.2	18.9	29.1
		2.3	5.3	120									846.1	90.3	538.1	129.5	2.7	4.6	10.7	30.4	847.4	87.9	547.5	127.2	2.7	8.0	18.5	30.3
		2.3	5.3	130																								
	180	5.0	11.6	60	906.1	51.1	731.5	75.1	5.1	2.3	5.2	31.1	909.3	48.3	744.4	70.1	5.4	4.9	11.3	31.0	909.8	47.0	749.5	67.6	5.6	8.5	19.7	30.9
		5.0	11.5	80	896.8	63.2	681.2	95.0	4.1	2.2	5.1	31.9	899.9	59.8	695.7	90.1	4.3	4.8	11.1	31.7	900.7	58.2	702.1	87.5	4.5	8.3	19.2	31.6
		5.0	11.5	100	887.9	78.2	621.0	114.9	3.3	2.2	5.0	32.7	891.0	74.0	638.3	110.0	3.5	4.7	10.9	32.4	891.5	72.1	645.6	107.5	3.6	8.2	18.9	32.3
		5.0	11.5	120									876.1	91.9	562.4	129.9	2.7	4.6	10.6	33.3	878.1	89.5	572.9	127.4	2.8	8.0	18.5	33.2
		5.0	11.4	130																								
	240	8.7	20.0	60	932.5	52.0	755.0	75.6	5.2	2.3	5.2	33.1	935.2	49.1	767.6	70.4	5.5	4.9	11.3	33.0	936.1	47.7	773.3	67.8	5.7	8.5	19.7	32.9
		8.6	19.9	80	919.0	64.3	699.6	95.4	4.2	2.2	5.1	33.7	922.3	60.9	714.6	90.3	4.4	4.8	11.1	33.5	923.7	59.2	721.9	87.7	4.5	8.3	19.2	33.5
		8.6	19.8	100	906.5	79.5	635.1	115.2	3.3	2.2	5.0	34.3	909.6	75.3	652.7	110.2	3.5	4.7	10.9	34.2	910.7	73.1	661.2	107.7	3.6	8.2	18.9	34.1
		8.6	19.8	120									892.5	93.3	574.1	130.1	2.8	4.6	10.6	34.9	894.8	90.8	585.1	127.6	2.9	8.0	18.5	34.8
		8.6	19.8	130																								
50	120	2.3	5.3	60	978.1	50.0	807.4	76.3	5.6	2.3	5.2	35.4	977.1	47.1	816.5	70.9	5.9	4.9	11.3	35.2	979.5	45.6	823.9	68.2	6.1	8.5	19.7	35.0
		2.3	5.3	80	963.7	61.9	752.4	96.1	4.4	2.2	5.1	36.5	965.0	58.5	765.5	90.8	4.7	4.8	11.1	36.2	967.4	56.7	773.8	88.1	4.9	8.3	19.2	36.1
		2.3	5.3	100	952.2	76.7	690.6	116.0	3.5	2.2	5.0	37.8	953.5	72.3	706.7	110.7	3.8	4.7	10.9	37.5	956.7	70.2	717.1	108.0	3.9	8.2	18.9	37.3
		2.3	5.3	120	938.5	95.2	613.5	135.9	2.8	2.1	4.9	39.3	945.5	89.7	639.4	130.6	3.0	4.6	10.6	38.8	946.5	87.1	649.2	128.0	3.1	8.0	18.4	38.6
		2.3	5.2	130																								
	180	5.0	11.4	60	1035.0	51.4	859.5	77.3	5.8	2.3	5.2	39.6	1041.2	48.1	877.1	71.6	6.2	4.9	11.3	39.4	1046.6	46.5	888.1	68.7	6.5	8.5	19.7	39.2
		4.9	11.4	80	1014.0	63.7	796.7	97.0	4.6	2.2	5.1	40.5	1022.7	59.8	818.7	91.4	4.9	4.8	11.1	40.2	1025.1	57.9	827.5	88.6	5.1	8.3	19.2	40.0
		4.9	11.4	100	995.4	78.7	727.0	116.7	3.6	2.2	5.0	41.4	1001.2	74.0	748.8	111.2	3.9	4.7	10.9	41.1	1003.2	71.7	758.4	108.4	4.0	8.2	18.9	41.0
		4.9	11.4	120									984.0	91.6	671.5	131.1	3.1	4.6	10.6	42.1	985.1	88.9	681.9	128.3	3.2	8.0	18.4	42.0
		4.9	11.3	130																								
	240	8.6	19.8	60	1070.6	52.4	891.7	77.9	5.9	2.2	5.2	41.9	1080.9	48.9	913.9	72.0	6.4	4.9	11.3	41.7	1084.5	47.2	923.3	69.0	6.7	8.5	19.7	41.6
		8.5	19.7	80	1043.3	64.9	821.8	97.5	4.7	2.2	5.1	42.6	1052.1	60.9	844.5	91.8	5.0	4.8	11.1	42.4	1055.9	58.9	854.8	88.8	5.2	8.3	19.2	42.3
		8.5	19.6	100	1019.5	80.1	746.2	117.2	3.7	2.2	5.0	43.4	1025.7	75.3	768.9	111.5	4.0	4.7	10.9	43.1	1028.9	73.0	779.9	108.7	4.1	8.2	18.9	43.0
		8.5	19.6	120									1003.9	93.1	686.2	131.3	3.1	4.6	10.6	43.9	1006.5	90.3	698.5	128.5	3.2	8.0	18.4	43.8
		8.5	19.6	130																								

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Table continued on next page.

Table continued from previous page.

Source				Load									Load								Load							
EWT °F	Flow			EWT °F	Flow 120 GPM							SLWT °F	Flow 180 GPM							SLWT °F	Flow 240 GPM							SLWT °F
	GPM	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD			TC	kW	HR	LLWT °F	EER	WPD		
		PSI	FT							PSI	FT							PSI	FT							PSI	FT	
60	120	2.2	5.1	60	1127.0	50.4	954.9	78.8	6.4	2.2	5.2	43.6	1140.6	46.8	981.1	72.7	6.9	4.9	11.3	43.2	1144.3	45.0	990.7	69.5	7.2	8.5	19.7	43.0
		2.2	5.1	80	1103.4	62.5	890.0	98.5	5.0	2.2	5.1	44.8	1111.7	58.4	912.2	92.4	5.4	4.8	11.1	44.4	1112.0	56.5	919.2	89.3	5.6	8.3	19.2	44.3
		2.2	5.1	100	1077.8	77.4	813.7	118.1	4.0	2.2	5.0	46.3	1081.1	72.5	833.6	112.1	4.2	4.7	10.8	45.9	1086.2	70.1	847.2	109.1	4.4	8.2	18.8	45.7
		2.2	5.1	120	1051.5	95.8	724.7	137.8	3.1	2.1	4.9	48.0	1062.5	89.7	756.5	132.0	3.4	4.6	10.6	47.4	1064.7	86.8	768.5	129.0	3.5	8.1	18.6	47.2
		2.2	5.1	130																	1052.3	96.6	722.7	138.9	3.1	8.1	18.8	48.1
	180	4.8	11.0	60	1213.0	51.9	1035.9	80.2	6.7	2.2	5.2	48.2	1223.5	47.9	1059.9	73.6	7.3	4.9	11.3	47.9	1231.6	46.0	1074.8	70.3	7.7	8.5	19.7	47.7
		4.8	11.0	80	1168.4	64.6	947.9	99.6	5.2	2.2	5.1	49.2	1183.5	60.0	978.7	93.2	5.7	4.8	11.0	48.8	1191.2	57.8	994.0	90.0	5.9	8.3	19.2	48.6
		4.8	11.0	100	1131.1	79.7	859.2	119.0	4.1	2.2	5.0	50.3	1144.7	74.3	891.3	112.8	4.4	4.7	10.8	49.9	1150.0	71.7	905.4	109.7	4.6	8.2	18.8	49.7
		4.8	11.0	120	1099.9	98.2	764.8	138.6	3.2	2.1	4.9	51.5	1109.1	91.8	796.0	132.5	3.5	4.6	10.6	51.1	1114.1	88.7	811.5	129.4	3.6	8.1	18.6	50.9
		4.7	11.0	130																								
	240	8.3	19.1	60	1253.7	53.2	1072.3	80.9	6.9	2.2	5.2	50.8	1273.2	48.8	1106.6	74.2	7.6	4.9	11.3	50.5	1284.8	46.7	1125.6	70.7	8.0	8.5	19.7	50.3
		8.3	19.1	80	1206.4	66.0	981.2	100.2	5.3	2.2	5.1	51.6	1226.4	61.1	1017.9	93.7	5.8	4.8	11.0	51.3	1233.6	58.8	1032.9	90.3	6.1	8.3	19.2	51.1
		8.3	19.1	100	1162.5	81.3	885.1	119.6	4.2	2.2	5.0	52.5	1177.4	75.7	919.1	113.2	4.5	4.7	10.8	52.2	1185.3	73.0	936.2	110.0	4.7	8.2	18.9	52.0
		8.3	19.1	120									1136.9	93.4	818.1	132.8	3.5	4.6	10.6	53.1	1142.7	90.3	834.6	129.7	3.7	8.1	18.6	53.0
		8.2	19.0	130																								
70	120	2.2	5.0	60	1276.9	50.6	1104.3	81.3	7.2	2.2	5.2	51.1	1299.5	46.2	1141.8	74.5	8.0	4.9	11.3	50.4	1306.6	44.1	1156.0	70.9	8.4	8.5	19.6	50.2
		2.2	5.0	80	1242.0	63.0	1026.9	100.8	5.6	2.2	5.1	52.5	1250.4	58.3	1051.4	94.0	6.1	4.8	11.0	52.0	1265.3	55.9	1074.4	90.6	6.4	8.3	19.2	51.6
		2.2	5.0	100	1195.5	78.1	929.1	120.1	4.4	2.2	5.0	54.3	1214.7	72.4	967.7	113.6	4.8	4.7	10.8	53.6	1220.2	69.7	982.2	110.3	5.0	8.2	18.8	53.3
		2.2	5.0	120	1162.2	96.1	834.4	139.6	3.4	2.1	4.9	56.1	1175.1	89.6	869.5	133.2	3.7	4.6	10.6	55.4	1179.0	86.5	884.0	130.0	3.9	8.0	18.4	55.2
		2.2	5.0	130																	1162.6	96.0	834.9	139.8	3.4	7.9	18.2	56.1
	180	4.7	10.9	60	1386.5	52.4	1207.7	83.1	7.6	2.2	5.2	56.2	1410.7	47.6	1248.3	75.7	8.5	4.9	11.3	55.8	1422.8	45.1	1268.8	71.9	9.1	8.5	19.6	55.6
		4.7	10.9	80	1333.9	65.2	1111.3	102.3	5.9	2.2	5.1	57.3	1349.4	60.1	1144.3	95.1	6.5	4.8	11.0	56.9	1362.9	57.5	1166.8	91.4	6.8	8.3	19.2	56.7
		4.7	10.9	100	1276.6	80.5	1001.8	121.5	4.6	2.2	5.0	58.7	1293.2	74.6	1038.6	114.5	5.0	4.7	10.8	58.2	1309.0	71.5	1064.9	111.0	5.3	8.2	18.8	57.9
		4.7	10.9	120	1220.4	99.2	881.8	140.6	3.5	2.1	4.9	60.1	1239.6	92.0	925.6	134.0	3.9	4.6	10.6	59.6	1250.4	88.5	948.4	130.6	4.1	8.0	18.4	59.3
		4.7	10.8	130																	1224.3	98.4	888.5	140.4	3.6	7.9	18.2	60.1
	240	8.2	18.9	60	1455.9	53.6	1273.1	84.3	7.9	2.2	5.2	59.1	1484.6	48.5	1319.2	76.5	8.9	4.9	11.3	58.7	1498.9	45.9	1342.3	72.5	9.5	8.5	19.6	58.6
		8.2	18.8	80	1385.3	66.9	1157.1	103.2	6.0	2.2	5.1	60.1	1408.0	61.4	1198.6	95.7	6.7	4.8	11.0	59.7	1428.9	58.5	1229.3	92.0	7.1	8.3	19.2	59.5
		8.2	18.8	100	1315.6	82.6	1033.6	122.1	4.6	2.2	5.0	61.2	1342.7	76.2	1082.8	115.1	5.1	4.7	10.8	60.7	1357.5	73.0	1108.3	111.4	5.4	8.2	18.8	60.5
		8.2	18.8	120	1254.1	101.3	908.4	141.2	3.6	2.1	4.9	62.3	1278.9	93.8	958.7	134.4	4.0	4.6	10.6	61.9	1290.7	90.3	982.5	130.9	4.2	8.0	18.4	61.7
		8.1	18.8	130																	1257.7	100.3	915.6	140.6	3.7	7.9	18.2	62.3

Notes:
- Interpolation is permissible; extrapolation is not.
- All performance 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 in grey shaded area requires antifreeze solution, protect Source side to 10°F below LWT.

Antifreeze Corrections Table

Antifreeze Type	Antifreeze %	Cooling EWT 90 °F		Heating EWT 30 °F		WPD Corr. Fct. EWT 30 °F
		Total Cap	Power	Total Cap	Power	
Water	0	1.000	1.000			
Propylene Glycol	5	0.995	1.003	0.989	0.997	1.070
	15	0.986	1.009	0.968	0.990	1.210
	25	0.978	1.014	0.947	0.983	1.360
Methanol	5	0.997	1.002	0.989	0.997	1.070
	15	0.990	1.007	0.968	0.990	1.160
	25	0.982	1.012	0.949	0.984	1.220
Ethanol	5	0.998	1.002	0.981	0.994	1.140
	15	0.994	1.005	0.944	0.983	1.300
	25	0.986	1.009	0.917	0.974	1.360
Ethylene Glycol	5	0.998	1.002	0.993	0.998	1.040
	15	0.994	1.004	0.980	0.994	1.120
	25	0.988	1.008	0.966	0.990	1.200

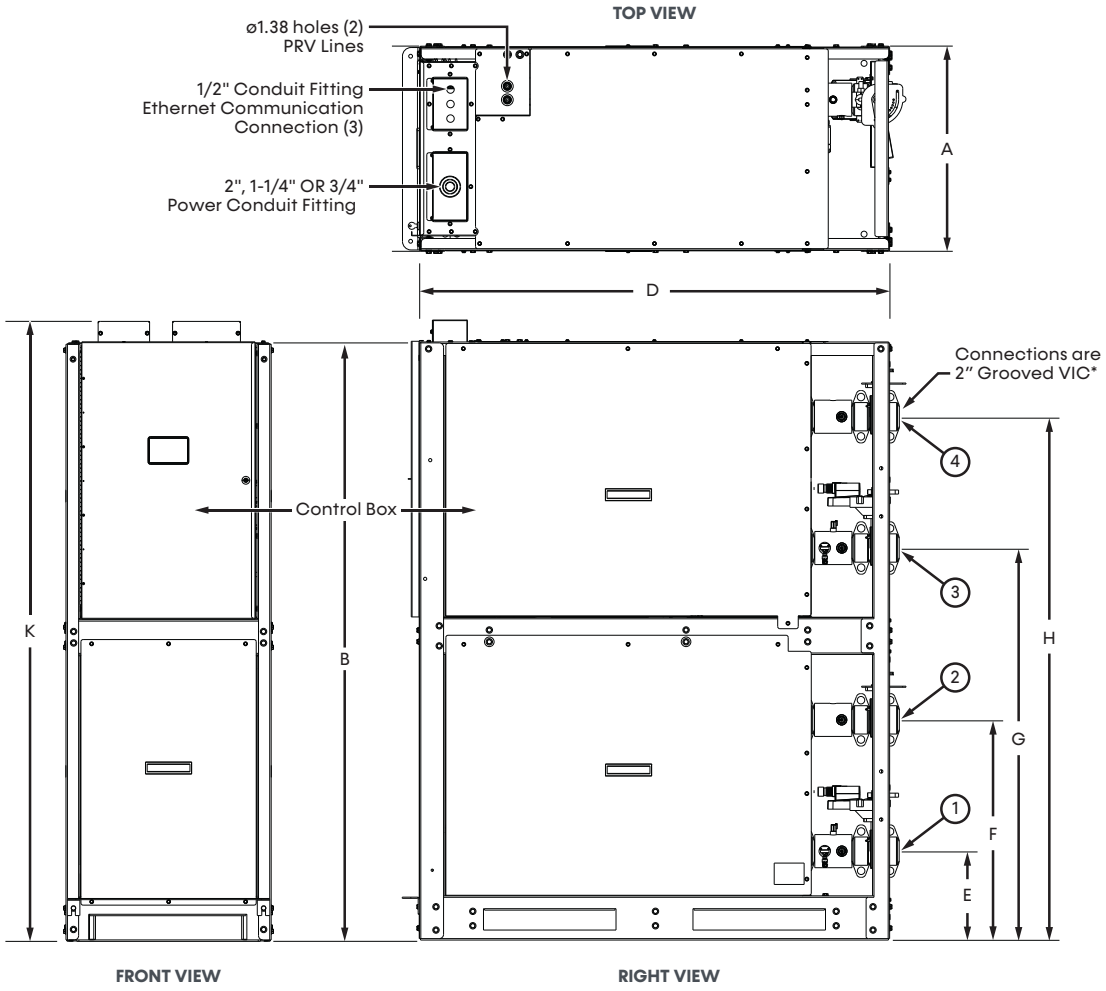
Standard Compressor

Base Model	Voltage Code	Rated Voltage	Voltage Min/Max	Compressor			Total Unit FLA	Min Circuit Ampacity (MCA)	Max Overcurrent Protection (MOP)
				QTY	RLA	LRA			
SWT20	H	208/230V-3PH-60Hz	187/252	2.0	33.3	255.0	66.6	74.9	100
	F	460V-3PH-60HZ	432/504	2.0	15.4	140.0	30.8	34.7	50
	N	575V-3PH-60Hz	540/630	2.0	12.9	107.6	25.8	29.0	40
SWT30	H	208/230V-3PH-60Hz	187/252	2.0	49.0	386.3	98.0	110.3	150
	F	460V-3PH-60HZ	432/504	2.0	24.0	182.0	48.0	54.0	70
	N	575V-3PH-60Hz	540/630	2.0	19.2	131.0	38.4	43.2	60
SWT50	H	208/230V-3PH-60Hz	187/252	2.0	74.4	578.1	148.8	167.4	225
	F	460V-3PH-60HZ	432/504	2.0	38.8	280.7	77.6	87.3	125
	N	575V-3PH-60Hz	540/630	2.0	28.4	250.0	56.8	63.9	90
SWT65	H	208/230V-3PH-60Hz	187/252	2.0	102.8	599.0	205.6	231.3	300
	F	460V-3PH-60HZ	432/504	2.0	48.0	310.0	96.0	108.0	150
	N	575V-3PH-60Hz	540/630	2.0	43.1	239.0	86.2	97.0	125
SWT80	F	460V-3PH-60HZ	432/504	2.0	67.5	442.0	135.0	151.9	200
	N	575V-3PH-60Hz	540/630	2.0	45.2	375.0	90.4	101.7	125

SWT Physical Data

Model SWT	Heat Pumps SWT				
	20	30	50	65	80
Refrigerant Circuits (quantity)	2	2	2	2	2
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll
Compressor Quantity	2	2	2	2	2
Refrigerant Charge R-454B (lbs) [kgs]	6.0 [2.7]	10.5 [4.8]	15.5 [7.0]	19.5 [8.8]	24.0 [10.9]
Module Shipping Weight[1] (lbs) [kgs]	946 [429]	1,093 [496]	1,429 [648]	1,879 [852]	2,050 [930]
Module Operating Weight[2] (lbs) [kgs]	966 [438]	1,139 [517]	1,510 [685]	1,981 [898]	2,197 [997]
Heat Exchangers	**20**	**30**	**50**	**65**	**80**
Heat Exchanger (type) Brazed Plate	Brazed Plate	Brazed Plate	Brazed Plate	Brazed Plate	Brazed Plate
Independent Refrigerant Circuits (quantity)	2	2	2	2	2
Water Storage Volume headerless (gals) [L]	6.0 [22.7]	8.6 [32.6]	13.0 [49.2]	15.4 [58.3]	18.6 [70.4]
Minimum System Volume[3] (gal) [L]	120 [454]	180 [681]	300 [1,136]	390 [1,476]	480 [1,817]
Maximum Design Working Pressure - Water Side (psi) [kPa]	300 [2,068]	300 [2,068]	300 [2,068]	300 [2,068]	300 [2,068]

NOTES:
1. Module shipping weight includes refrigerant charge and packaging
2. Module operating weight includes water and refrigerant charge. Multiply times the number of modules for a total system operational weight.
3. Minimum system volume is required to provide stable operation. Storage/buffer tanks may be utilized in return piping to meet the minimum volume requirements.
4. Headerless water connections will be 2" Grooved VIC for 20/30 Tons and 2.5" Grooved VIC for 50/65/80 Tons.



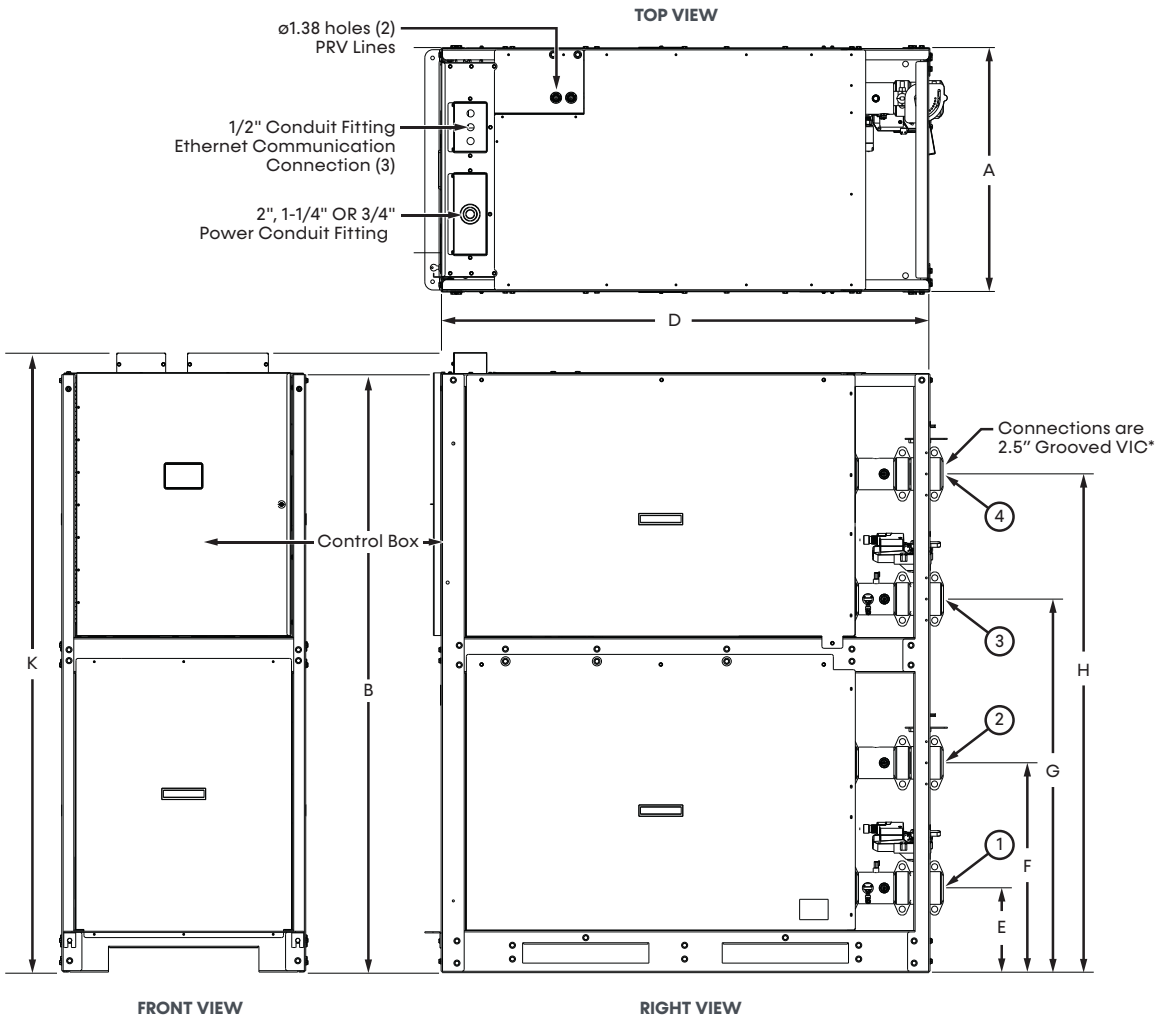
NOTES

* Optional grooved-to-MPT adapter available for transitioning to a hose kit or other piping arrangements.

Model Size	A Chassis Width	B Chassis Height	D Chassis Depth	E Header Location	F Header Location	G Header Location	H Header Location	K Height with Electrical Connections	Connection Size (Grooved VIC)
020 030	24.00 (60.96)	70.00 (177.8)	55.00 (139.7)	10.35 (26.29)	25.71 (65.30)	45.80 (116.33)	61.16 (155.35)	72.51 (184.18)	2 in.

NOTES:
1. Dimensions shown in inches (centimeters).

Model	1	2	3	4
SWT	Load Water Outlet	Load Water Inlet	Source Water Outlet	Source Water Inlet



NOTES

* Optional grooved-to-MPT adapter available for transitioning to a hose kit or other piping arrangements.

Model Size	A Chassis Width	B Chassis Height	D Chassis Depth	E Header Location	F Header Location	G Header Location	H Header Location	K Height with Electrical Connections	Connection Size (Grooved VIC)
050 065 080	30.00 (76.20)	73.54 (186.79)	60.00 (152.40)	10.39 (26.39)	25.75 (65.41)	45.85 (116.46)	61.20 (155.45)	76.10 (193.30)	2.5 in.

NOTES:
1. Dimensions shown in inches (centimeters).

Model	1	2	3	4
SWT	Load Water Outlet	Load Water Inlet	Source Water Outlet	Source Water Inlet

GENERAL

Furnish and install ClimateMaster SWT large 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 30° to 120°F (-1.1° to 48.9°C) as standard. All equipment listed in this section must be rated in accordance with Air-Conditioning, Heating and Refrigeration Institute/International Standards Organization (AHRI/ISO 13256-2). All equipment must be tested, investigated, and determined to comply with the requirements of the standards for Heating and Cooling Equipment UL 60335-2-40 4th Edition, UL 60335-1 6th Edition for the United States and Can/CSA C22.2 No. 60335-2-40:22, CAN/CSA C22.2 No 60335-1:16 for Canada, by Intertek Testing Laboratories (ETL). The units shall have ETL-US-C labels.

All units shall pass a factory acceptance test. The quality control system shall automatically perform the factory acceptance test via computer. **NOTE: If unit fails the factory acceptance test it shall not be allowed to ship.**

BASIC CONSTRUCTION

All units must have multiple removable panels for serviceability of compressor compartment. Units having only one access panel shall not be acceptable. All units must have front access for side-by-side installations.

The heat pumps shall be fabricated from heavy gauge galvanized steel. All interior surfaces shall be lined with 1/2-inch (12.7 mm) thick, 11/2 lb/ft3 (24 kg/m3) acoustic type glass fiber insulation. Insulation placement shall be designed in a manner that will eliminate any exposed edges.

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.

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 steel grooved fittings. 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.

Option: Compressor Blankets shall be factory installed on each compressor.

REFRIGERANT CIRCUIT

Units shall have sealed, isolated refrigerant circuit(s), each including a high-efficiency scroll compressor designed for heat pump operation, a electronic expansion valve for precise refrigerant metering, a reversing valve, load and source brazed-plate refrigerant-to-water heat exchangers, and safety controls including a high pressure switch, discharge and suction pressure transducers, water flow proving sensor, and low fluid temperature sensors. 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.

Unit shall be supplied with extended range insulation, which adds closed cell insulation to internal water lines, and provides insulation on suction side refrigeration tubing including refrigerant-to-water heat exchangers.

Hermetic compressors shall be internally sprung. The compressors shall have a vibration isolation system. The compressors will be mounted on specially engineered sound-tested EPDM vibration isolation grommets to a large heavy gauge cabinet divider panel. Compressors shall have thermal overload protection.

The refrigerant-to-water heat exchangers shall be stainless steel-copper brazed plate, rated to withstand 650 PSIG (4482 kPa) working refrigerant pressure and 300 PSIG (2068.4 kPa) working water pressure.

All units shall be supplied with a Refrigerant Detection System (RDS) with sensors strategically placed within the cabinet. In the event of a refrigerant leak, the RDS disables compressor operation and the RDS control board sends a signal the control to energize a pair of contacts to control a ventilation fan, if required. Units charged with 62 ounces or greater of R-454B that do not have an RDS shall not be acceptable.

Option: Units shall be supplied with factory installed pressure relief valves that will open at 625PSIG. The valves shall be provided to route (field connected) refrigerant out of the building in the event of a fire, or other high pressure situation.

ELECTRICAL

A control box shall be located within the unit compressor compartment and shall contain a transformer, 24V activated, 3-pole compressor contactor, terminal block for communication wiring and solid-state controller for complete unit operation. Reversing valve 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 24V and provide heating or cooling as required by the desired application. Units shall have a solid-state time delay relay and random start to prevent both compressors from starting simultaneously.

OPTICORE COMMUNICATING CONTROLS

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.
This control system is a communicating controller with the following features:

a. 28 universal inputs.
b. 16 universal outputs.
c. 4.3" touchscreen interface (HMI).
d. Anti-short cycle time delay on compressor operation.
e. Random start on power up mode.
f. BMS integration via BACnet MS/TP, Modbus, or ARC156.
g. Electronic Expansion Valve (EEV) control.
h. Low-voltage protection.
i. Phase monitoring.
j. High-voltage protection.
k. Unit shutdown on high or low refrigerant pressures.
l. Unit shutdown on low water temperature.
m. 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.
n. Ability to defeat time delays for servicing.
o. Thermal dispersion flow sensor
p. Emergency shutdown contacts.
q. Entering and leaving water temperature sensing.
r. Compressor discharge and suction temperature sensing.
s. 75VA control transformer. Control transformer shall have load side short circuit and overload protection via a built-in circuit breaker.

NOTE: Units not providing the five safety protections of anti-short cycle, low voltage, high voltage, and high refrigerant pressure cut-out will not be accepted.

WARRANTY

ClimateMaster shall warranty equipment for a period of 12 months from startup or 18 months from shipping (whichever occurs first).

Option: Extended 4-year compressor warranty covers compressor for a total of 5 years.

Option: Extended 4-year refrigeration circuit warranty covers coils, reversing valve, expansion valve and compressor for a total of 5 years.

Option: Extended 4-year control board warranty covers the factory-supplied controls for a total of 5 years.

FIELD-INSTALLED OPTIONS

Piping Adapters

Units shall be supplied with full-set of four (4) grooved to MPT piping adapters to facilitate connection to the building loop. These are available in 2″ and 2.5″ diameters.

Hose Kits

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

Strainers

The following strainers are field obtained and installed.

a. 3-inch FPT Y-strainer. 20-40 mesh screen.

b. 3-inch FPT Basket strainer. 20-40 mesh screen.

⚠ ATTENTION

This product specification document is furnished as a means to copy and paste ClimateMaster product information into project specification. It is not intended to be a complete list of product requirements. This document is an excerpt from the product submittal and must not be used without consulting the complete product submittal. For complete product installation and application requirements, please consult the complete product submittal. ClimateMaster is not responsible for misuse of this document or a failure to adequately review specific requirements in the product catalog.

Revision History

Date	Section	Description
03/09/26	All	First Published

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