Serenity GW Series

Two & Single Stage, R-410a
Water-to-Water
Unit Specifications Catalog

GeoComfort®
Geothermal Systems

www.geocomfort.com

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Product Introduction & Unit Features

The GW Series Product Line is highly efficient, reliable and quiet operating, year-round comfort solution for your home or business.

The GW Series Line provides exceptional operating efficiency throughout a wide range of entering water temperatures between 25°F to 110°F.

The GW Series is manufactured in the heart of America. Pride in workmanship has been deeply embedded in the culture of our company. Every department places a high value on integrity and complete customer satisfaction. "World Class Service – Hometown Values" is far more than a slogan, it's a way of life.

The GW Series comes standard with powder coated steel cabinet designed for long life and extraordinary beauty. The cabinet is bolted together, rather than using screws for unmatched integral strength. The cabinet is also insulated with 3/8" insulation (foil faced) for quiet operation and easy clean up. Another noise reduction feature is rubber mounted Scroll compressors. These features work in concert to reduce vibration, which reduces noise.

All Coaxial Heat Exchangers are insulated to reduce corrosion, but also avoids condensation problems at low temperatures. The Bidirectional Expansion Valve delivers optimum refrigerant flow over a wide range of conditions and provides bidirectional operation without troublesome check valves. Highly advanced Copeland Scroll Compressor Technology deliver high efficiencies and comfort for any application.

Unit Features at a Glance

- Non-Ozone Depleting R-410A Refrigerant
- Appliance White Powder Coated Steel Construction
- Cabinet Bolted Together
- All Panels Removable for Easy Service
- Bidirectional Expansion Valve
- ETL Certified to UL & CSA Standards
- AHRI Rated to ISO Standards
- Copper Coaxial Water Heat Exchanger
- Flow Switch Protected
- Fault Retry To Eliminate Nuisance Service Calls
- High Efficiency Copeland Scroll Compressor
- 10 Year Limited Warranty

Optional features

- Cupro-nickel heat exchanger
- Hot Water Generator (Desuperheater)
- Extended warranty

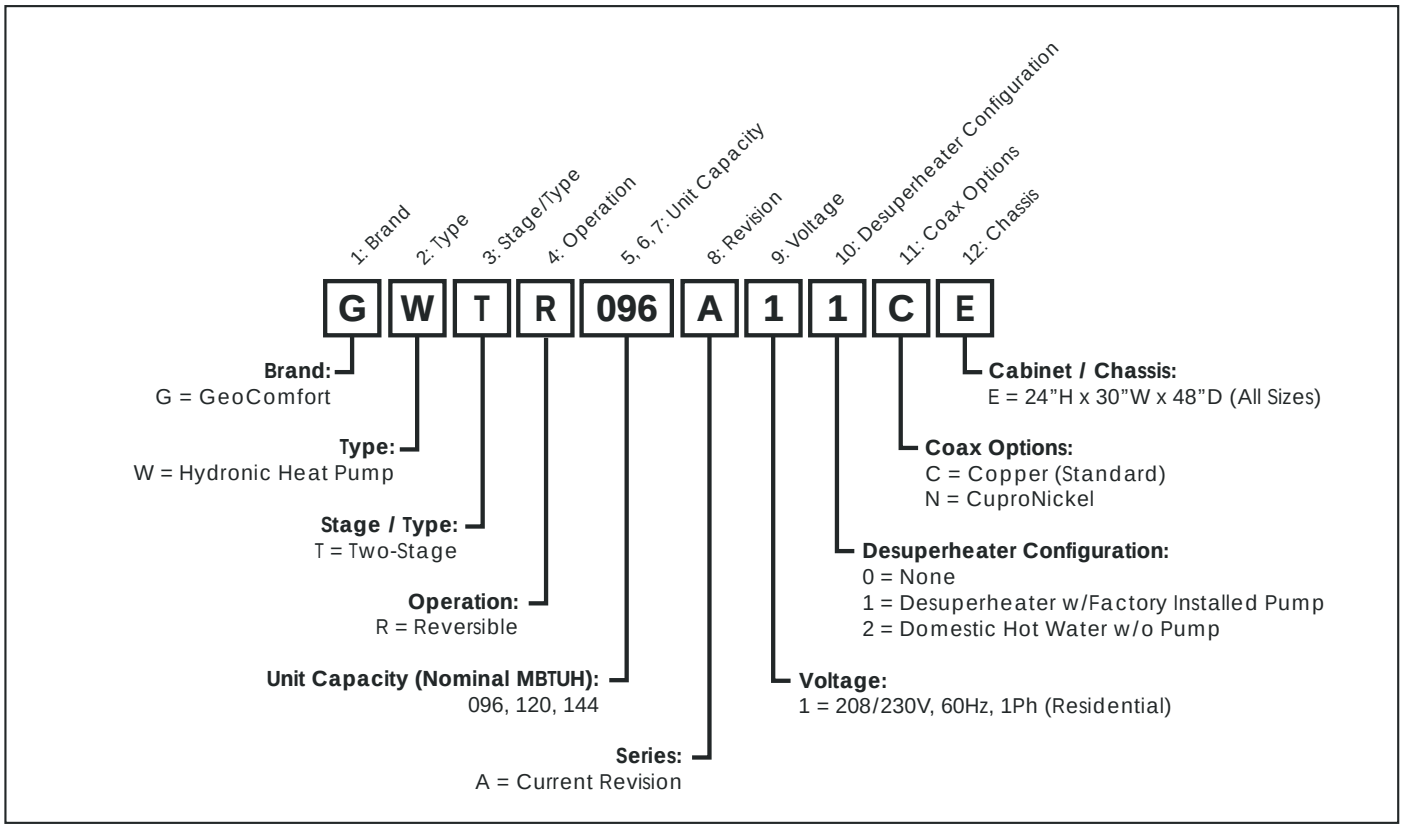
Unit Performance:
AHRI Data - Single & Dual Compressor Units

Ground Loop Heat Pump

Water-to-Water Models Single Compressor					
Model	Capacity	Heating		Cooling	
		Btu/hr	COP	Btu/hr	EER
GWS024	Nominal	21,000	3.7	22,800	18.1
GWS036	Nominal	31,600	3.7	34,200	18.1
GWS048	Nominal	44,700	3.6	48,400	17.9
GWS060	Nominal	50,000	3.5	54,100	17.2
GWS072	Nominal	61,400	3.3	66,500	16.5
GWS122	Nominal	105,300	3.5	114,000	17.2
Water-to-Water Models Dual Compressor					
GWT096	High	89,500	3.5	96,900	17.5
	Low	44,700	3.5	48,400	17.5
GWT120	High	100,000	3.4	108,300	17.0
	Low	50,000	3.4	54,100	17.0
GWT144	High	122,800	3.3	133,000	16.0
	Low	61,400	3.3	66,500	16.0

Notes:
Rated in accordance with ISO Standard 13256-2 which includes Pump Penalties.
Heating capacities based on 32°F EST & 104°F ELT.
Cooling capacities based on 77°F EST & 53.6°F ELT.
GWT096 thru GWT144 Models are stageable at one half (1/2) capacity in either heating or cooling mode.
Entering load temperature over 120°F heating and under 45°F Cooling is not permissible.
Floor heating is most generally designed for 85°F entering load temperature.

Unit Nomenclature:
Two-Stage Units



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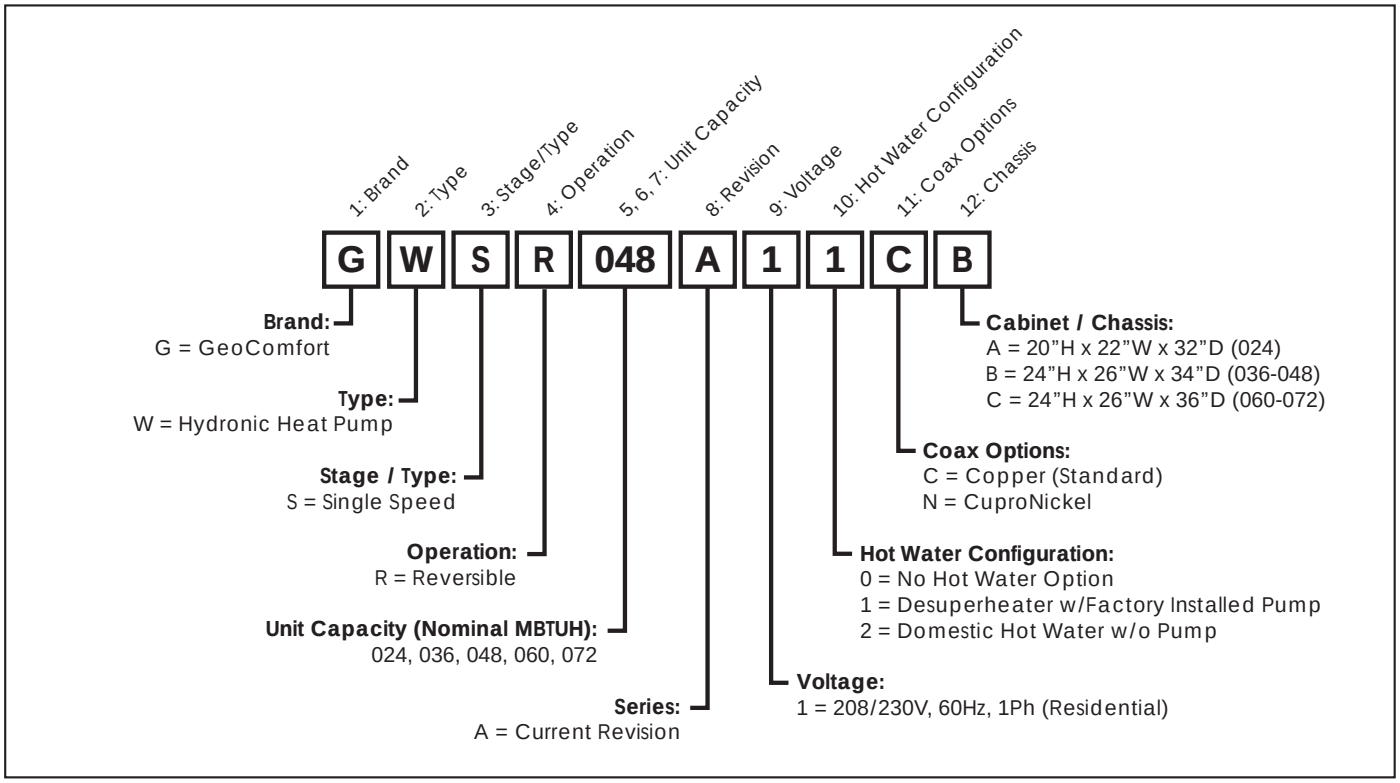
Unit Nomenclature:
Single Stage Units



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Glossary

Glossary of Terms

COP = Coefficient of Performance = BTU Output / BTU Input	HR = Total Heat Of Rejection, Btu/hr
DH = Desuperheater Capacity, Btu/hr	KW = Total Power Unit Input, Kilowatts
EER = Energy Efficiency Ratio = BTU output/Watts input	LWT = Leaving Source Water Temperature, Fahrenheit
EWT = Entering Source Water Temperature, Fahrenheit	LLT = Leaving Load Water Temperature, Fahrenheit
ELT = Entering Load Water Temperature, Fahrenheit	TC = Total Cooling Capacity, Btu/hr
GPM = Water Flow, Gallons Per Minute	HC = Heating Capacity, Btu/hr
HE = Total Heat Of Extraction, Btu/hr	WPD = Water Pressure Drop, PSI & Feet of Water

Calculations, & Water Flow Selection

Heating & Cooling Calculations

Heating	Cooling
$LWT = EWT - \frac{HE}{GPM \times 500^*}$	$LWT = EWT + \frac{HR}{GPM \times 500^*}$
$HE = 500^* \times GPM \times (EWT - LWT)$	$HR = 500^* \times GPM \times (LWT - EWT)$

*500 = Constant factor for pure water. Brine should be 485.

Source Water Flow Selection

Proper flow rate is crucial for reliable operation of geothermal heat pumps. The performance data shows three flow rates for each entering water temperature (EWT column). The general “rule of thumb” when selecting flow rates is the following:

Top flow rate: Open loop systems (1.5 to 2.0 gpm per ton)
Middle flow rate: Minimum closed loop system flow rate (2.25 to 2.50 gpm/ton)
Bottom flow rate: Nominal (optimum) closed loop system flow rate (3.0 gpm/ton)

Although the “rule of thumb” is adequate in most areas of North America, it is important to consider the application type before applying this “rule of thumb.” Antifreeze is generally required for all closed loop (geothermal) applications. Extreme Southern U.S. locations are the only exception. Open loop (well water) systems cannot use antifreeze, and must have enough flow rate in order to avoid freezing conditions at the Leaving Source Water Temperature (LWT) connection.

Calculations must be made for all systems without antifreeze to determine if the top flow rate is adequate to prevent LWT at or near freezing conditions. The following steps should taken in making this calculation:

Determine minimum EWT based upon your geographical area.
Go to the performance data table for the heat pump model selected and look up the the Heat of Extraction (HE) at the “rule of thumb” water flow rate (GPM) and at the design Entering Load Temperature (ELT).

Calculate the temperature difference (TD) based upon the HE and GPM of the model.
TD = HE / (GPM x 500).
Calculate the LWT.
LWT = EWT - TD.

If the LWT is below 35-38°F, there is potential for freezing conditions if the flow rate or water temperature is less than ideal conditions, and the flow rate must be increased.

Example 1:
EWT = 50°F.
Model GWSR036, heating. Flow rate = 5 GPM. HE = 26,800 Btuh.
TD = 26,800 / (5 x 500) = 10.7°F
LWT = 50 - 10.7 = 39.3°F
Water flow rate should be adequate under these conditions.

Example 2:
EWT = 40°F.
Model GWSR036, heating. Flow rate = 5 GPM. HE = 23,000 Btuh.
TD = 23,000 / (5 x 500) = 9.2°F
LWT = 40 - 9.2 = 30.8°F
Water flow rate must be increased.

GWS024 Performance Data:
2.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	3.3	1.4	3.1	85	20.1	14.5	97.1	1.57	3.77	17.6	14.5	95.6	1.55	2.5	3.80
				95	19.6	13.6	106.7	1.65	3.47	17.0	13.7	105.2	1.63	2.6	3.52
				110	19.0	12.8	121.4	1.73	3.21	16.3	12.8	119.8	1.70	2.7	3.26
	4.7	2.5	5.8	85	20.8	15.1	93.9	1.58	3.84	18.2	15.1	92.8	1.56	2.6	3.91
				95	20.2	14.2	103.7	1.67	3.54	17.5	14.3	102.5	1.64	2.7	3.61
				110	19.6	13.3	118.4	1.75	3.28	16.9	13.4	117.2	1.72	2.8	3.35
	6.0	4.1	9.4	85	21.0	15.4	92.0	1.58	3.89	18.4	15.4	91.1	1.55	2.6	3.96
				95	20.5	14.5	101.8	1.67	3.60	17.8	12.5	100.9	1.64	2.7	3.66
				110	19.9	13.6	116.6	1.75	3.33	17.1	13.7	115.7	1.72	2.8	3.39
50	3.3	1.3	2.9	85	26.1	20.2	100.6	1.64	4.65	22.8	20.4	98.7	1.59	3.2	4.79
				95	25.3	19.0	110.2	1.73	4.28	21.9	19.2	108.2	1.68	3.3	4.41
				110	24.4	17.9	124.6	1.81	3.94	21.0	18.1	122.6	1.77	3.4	4.05
	4.7	2.3	5.4	85	27.2	21.1	96.7	1.67	4.75	23.8	21.4	95.2	1.63	3.4	4.90
				95	26.3	20.0	106.3	1.76	4.36	22.8	20.1	104.8	1.71	3.5	4.50
				110	25.4	18.7	120.9	1.85	4.02	21.9	19.0	119.4	1.80	3.6	4.14
	6.0	3.8	8.7	85	27.7	21.7	94.2	1.68	4.83	24.3	21.9	93.1	1.63	3.5	4.99
				95	26.8	20.5	103.9	1.77	4.44	23.3	20.7	102.8	1.72	3.5	4.57
				110	25.9	19.2	118.6	1.86	4.08	22.3	19.5	117.4	1.81	3.6	4.21
70	3.3	1.3	2.9	85	31.7	25.5	104.0	1.75	5.32	27.8	25.8	101.6	1.67	3.9	5.56
				95	30.6	24.0	113.3	1.84	4.88	26.5	24.3	110.9	1.76	4.0	5.09
				110	29.5	22.6	127.7	1.93	4.48	25.3	22.9	125.2	1.85	4.1	4.67
	4.7	2.3	5.2	85	33.3	26.8	99.3	1.80	5.43	29.2	27.3	97.5	1.72	4.1	5.67
				95	32.1	25.3	108.8	1.89	4.97	27.9	25.7	107.0	1.81	4.2	5.19
				110	30.9	23.8	123.3	1.99	4.55	26.6	24.2	121.4	1.90	4.3	4.76
	6.0	3.6	8.3	85	34.2	27.7	96.4	1.82	5.51	29.9	28.1	95.0	1.73	4.3	5.78
				95	33.0	26.1	106.0	1.91	5.05	28.6	26.5	104.5	1.83	4.4	5.29
				110	31.7	24.5	120.6	2.01	4.63	27.3	25.0	119.1	1.92	4.5	4.85
90	3.3	1.2	2.7	85	36.6	30.0	106.9	1.73	6.18	32.0	30.6	104.2	1.73	4.6	6.20
				95	35.2	28.3	116.1	1.96	5.27	30.6	28.9	113.3	1.82	4.7	5.66
				110	33.9	26.6	130.1	2.02	4.92	29.1	27.1	127.4	1.92	4.8	5.18
	4.7	2.1	4.8	85	38.6	31.8	101.6	1.90	5.95	33.8	32.5	99.5	1.79	4.8	6.31
				95	37.2	30.0	111.0	2.00	5.45	32.3	30.7	108.9	1.89	4.9	5.77
				110	35.8	28.2	125.3	2.10	4.99	30.8	28.8	123.2	1.99	5.0	5.28
	6.0	3.3	7.7	85	39.9	33.0	98.3	1.93	6.06	35.0	33.7	96.7	1.82	5.0	6.44
				95	38.4	31.1	107.8	2.03	5.54	33.3	31.8	106.1	1.92	5.1	5.87
				110	36.9	29.2	122.3	2.13	5.07	31.7	29.9	120.6	2.01	5.2	5.37

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS024 Performance Data:
2.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	3.3	1.3	3.0	40	21.2	25.0	1.08	27.3	19.6	21.2	23.5	1.06	27.3	1.8	20.0
				45	23.0	26.6	1.11	31.2	20.8	23.0	25.0	1.08	31.2	1.8	21.3
				50	24.9	28.2	1.13	35.1	22.0	24.9	26.5	1.11	35.1	1.9	22.5
	4.7	2.3	5.4	40	21.4	25.1	1.03	30.8	20.7	21.4	23.6	1.02	30.8	1.7	21.0
				45	23.3	26.6	1.06	35.0	22.0	23.3	25.1	1.04	35.0	1.7	22.3
				50	25.1	28.2	1.08	39.2	23.4	25.1	26.6	1.06	39.2	1.8	23.6
	6.0	3.8	8.7	40	21.6	25.2	1.00	32.8	21.6	21.6	23.7	1.00	32.8	1.6	21.7
				45	23.5	26.8	1.02	37.2	23.0	23.5	25.3	1.02	37.2	1.7	23.1
				50	25.4	28.4	1.05	41.5	24.3	25.4	26.8	1.04	41.5	1.7	24.5
70	3.3	1.3	2.9	40	19.9	24.3	1.30	28.1	15.3	20.0	23.0	1.27	28.0	2.6	15.8
				45	21.6	25.8	1.33	32.0	16.2	21.7	24.4	1.29	32.0	2.7	16.8
				50	23.4	27.4	1.35	36.0	17.3	23.5	25.9	1.33	35.9	2.7	17.7
	4.7	2.3	5.2	40	20.2	24.4	1.24	31.3	16.3	20.3	23.1	1.22	31.3	2.5	16.7
				45	22.0	26.0	1.27	35.6	17.3	22.1	24.6	1.25	35.5	2.6	17.7
				50	23.7	27.6	1.29	39.8	18.4	23.8	26.0	1.26	39.8	2.6	18.9
	6.0	3.6	8.3	40	20.4	24.5	1.20	33.2	17.0	20.5	23.2	1.19	33.2	2.4	17.2
				45	22.2	26.1	1.22	37.6	18.1	21.0	24.7	1.15	38.0	2.4	18.3
				50	23.9	27.6	1.25	42.0	19.1	24.1	26.2	1.24	42.0	2.5	19.4
90	3.3	1.2	2.7	40	18.1	23.4	1.61	29.1	11.3	18.3	22.1	1.56	29.0	3.4	11.7
				45	19.7	24.9	1.64	33.2	12.0	19.9	23.5	1.59	33.1	3.5	12.5
				50	21.3	26.4	1.67	37.3	12.8	21.5	25.0	1.62	37.1	3.6	13.2
	4.7	2.1	4.8	40	18.5	23.5	1.51	32.1	12.2	18.6	22.3	1.48	32.0	3.3	12.6
				45	20.1	25.0	1.55	36.4	12.9	20.3	23.7	1.51	36.3	3.4	13.4
				50	21.7	26.5	1.57	40.7	13.8	21.9	25.1	1.55	40.6	3.4	14.2
	6.0	3.4	7.7	40	18.7	23.6	1.47	33.8	12.7	18.9	22.4	1.46	33.7	3.1	12.9
				45	20.3	25.1	1.50	38.2	13.5	20.5	23.8	1.49	38.2	3.2	13.8
				50	21.9	26.6	1.54	42.7	14.3	22.1	25.3	1.51	42.6	3.3	14.6
110	3.3	1.1	2.6	40	15.8	22.3	2.00	30.5	7.9	16.1	21.1	1.95	30.4	4.2	8.3
				45	17.1	23.7	2.03	34.7	8.4	17.4	22.4	1.98	34.5	4.3	8.8
				50	18.5	25.1	2.08	38.9	8.9	18.9	23.7	2.01	38.7	4.4	9.4
	4.7	2.1	4.8	40	16.2	22.3	1.88	33.1	8.6	16.5	21.2	1.85	32.9	4.1	8.9
				45	17.6	23.7	1.92	37.4	9.2	17.9	22.5	1.87	37.3	4.2	9.6
				50	19.0	25.2	1.97	41.8	9.7	19.3	23.9	1.91	41.7	4.3	10.1
	6.0	3.3	7.6	40	16.4	22.3	1.84	34.5	8.9	16.6	21.3	1.81	34.5	3.9	9.2
				45	17.8	23.7	1.86	39.1	9.6	18.1	22.6	1.86	39.0	4.0	9.8
				50	19.2	25.2	1.90	43.6	10.1	19.5	24.0	1.88	43.5	4.1	10.4

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS036 Performance Data:
3.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	5.0	1.8	4.2	85	30.2	21.7	97.1	2.35	3.77	26.5	21.7	95.6	2.33	3.8	3.80
				95	29.4	20.4	106.7	2.48	3.47	25.5	20.5	105.2	2.44	3.9	3.52
				110	28.4	19.2	121.4	2.60	3.21	24.4	19.3	119.8	2.55	4.0	3.26
	7.0	3.4	7.8	85	31.1	22.6	93.9	2.38	3.84	27.3	22.7	92.8	2.33	3.9	3.91
				95	30.3	21.3	103.7	2.50	3.54	26.3	21.4	102.5	2.46	4.0	3.61
				110	29.4	20.0	118.4	2.63	3.28	25.3	20.1	117.2	2.58	4.1	3.35
	9.0	5.4	12.5	85	31.5	23.0	92.0	2.38	3.89	27.6	23.2	91.1	2.33	3.9	3.96
				95	30.7	21.8	101.8	2.50	3.60	26.6	18.7	100.9	2.46	4.1	3.66
				110	29.9	20.4	116.6	2.63	3.33	25.7	20.5	115.7	2.58	4.2	3.39
50	5.0	1.7	3.9	85	39.1	30.3	100.6	2.46	4.65	34.2	30.6	98.7	2.39	4.9	4.79
				95	37.9	28.5	110.2	2.60	4.28	32.9	28.8	108.2	2.52	5.0	4.41
				110	36.6	26.8	124.6	2.72	3.94	31.5	27.1	122.6	2.65	4.1	4.05
	7.0	3.1	7.2	85	40.7	31.7	96.7	2.51	4.75	35.7	32.1	95.2	2.44	5.1	4.90
				95	39.4	30.0	106.3	2.65	4.36	34.2	30.2	104.8	2.57	5.2	4.5
				110	38.1	28.1	120.9	2.78	4.02	32.8	28.4	119.4	2.70	5.4	4.14
	9.0	5	11.6	85	41.6	32.6	94.2	2.52	4.83	36.4	32.8	93.1	2.44	5.2	4.99
				95	40.2	30.7	103.9	2.66	4.44	34.9	31.1	102.8	2.58	5.3	4.57
				110	38.9	28.9	118.6	2.79	4.08	33.4	29.2	117.4	2.71	5.5	4.21
70	5.0	1.7	3.9	85	47.6	38.2	104.0	2.62	5.32	41.6	38.7	101.6	2.51	5.9	5.56
				95	45.9	36.0	113.3	2.76	4.88	39.8	36.5	110.9	2.64	6.1	5.09
				110	44.2	33.8	127.7	2.89	4.48	38.0	34.4	125.2	2.77	6.2	4.67
	7.0	3.0	6.9	85	49.9	40.2	99.3	2.70	5.43	43.7	40.9	97.5	2.58	6.2	5.67
				95	48.2	38.0	108.8	2.84	4.97	41.8	38.5	107.0	2.72	6.4	5.19
				110	46.4	35.7	123.3	2.99	4.55	39.9	36.2	121.4	2.86	6.5	4.76
	9.0	4.8	11.1	85	51.3	41.5	96.4	2.73	5.51	44.9	42.2	95.0	2.60	6.4	5.78
				95	49.4	39.1	106.0	2.87	5.05	42.9	39.8	104.5	2.74	6.5	5.29
				110	47.6	36.8	120.6	3.01	4.63	40.9	37.4	119.1	2.88	6.7	4.85
90	5.0	1.6	3.6	85	54.8	45.1	106.9	2.60	6.18	48.0	45.9	104.2	2.59	6.8	6.20
				95	52.8	42.4	116.1	2.94	5.27	45.8	43.3	113.3	2.73	7.0	5.66
				110	50.8	39.9	130.3	3.02	4.92	43.7	40.7	127.4	2.87	7.1	5.18
	7.0	2.8	6.4	85	58.0	47.8	101.6	2.85	5.95	50.7	48.7	99.5	2.69	7.2	6.31
				95	55.9	45.1	111.0	3.00	5.45	48.5	46.0	108.9	2.87	7.4	5.77
				110	53.7	42.4	125.3	3.15	4.99	46.1	43.2	123.2	2.98	7.5	5.28
	9.0	4.4	10.3	85	59.9	49.4	98.3	2.90	6.06	52.4	50.5	96.7	2.73	7.5	6.44
				95	57.6	46.7	107.8	3.05	5.54	50.0	47.7	106.1	2.88	7.6	5.87
				110	55.3	43.9	122.3	3.20	5.07	47.6	44.8	120.6	3.02	7.8	5.37

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS036 Performance Data:
2.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	5.0	1.7	4.0	40	31.8	37.5	1.62	27.3	19.6	31.8	35.3	1.59	27.3	2.7	20.0
				45	34.6	39.9	1.66	31.2	20.8	34.6	37.5	1.62	31.2	2.7	21.3
				50	37.3	42.2	1.69	35.1	22.0	37.3	39.8	1.66	35.1	2.8	22.5
	7.0	3.1	7.2	40	32.1	37.6	1.55	30.8	20.7	32.1	35.4	1.53	30.8	2.5	21.0
				45	34.9	39.9	1.58	35.0	22.0	34.9	37.7	1.56	35.0	2.6	22.3
				50	37.7	42.4	1.62	39.2	23.4	37.7	39.9	1.60	39.2	2.7	23.6
	9.0	5	11.6	40	32.5	37.8	1.51	32.8	21.6	32.5	35.6	1.50	32.8	2.4	21.7
				45	35.3	40.2	1.54	37.2	23.0	35.3	37.9	1.53	37.2	2.5	23.1
				50	38.1	42.6	1.57	41.5	24.3	38.1	40.2	1.56	41.5	2.5	24.5
70	5.0	1.7	3.9	40	29.8	36.5	1.95	28.1	15.3	30.0	34.4	1.91	28.0	3.9	15.8
				45	32.4	38.8	2.00	32.0	16.2	32.6	36.6	1.94	32.0	4.0	16.8
				50	35.0	41.1	2.03	36.0	17.3	35.2	38.8	1.99	35.9	4.1	17.7
	7.0	3.0	6.9	40	30.3	36.6	1.86	31.3	16.3	30.5	34.6	1.83	31.3	3.7	16.7
				45	32.9	39.0	1.90	35.6	17.3	33.1	36.8	1.87	35.5	3.9	17.7
				50	35.6	41.3	1.93	39.8	18.4	35.8	39.1	1.90	39.8	3.9	18.9
	9.0	4.8	11.1	40	30.6	36.8	1.80	33.2	17.0	30.7	34.8	1.79	33.2	3.5	17.2
				45	33.3	39.2	1.84	37.6	18.1	31.5	37.0	1.72	38.0	3.7	18.3
				50	35.9	41.5	1.88	42.0	19.1	36.1	39.3	1.86	42.0	3.8	19.4
90	5.0	1.6	3.6	40	27.2	35.1	2.41	29.1	11.3	27.4	33.2	2.34	29.0	5.1	11.7
				45	29.5	37.3	2.46	33.2	12.0	29.8	35.3	2.39	33.1	5.2	12.5
				50	31.9	39.6	2.50	37.3	12.8	32.2	37.5	2.43	37.1	5.4	13.2
	7.0	2.8	6.4	40	27.7	35.3	2.27	32.1	12.2	27.9	33.4	2.22	32.0	4.9	12.6
				45	30.1	37.5	2.33	36.4	12.9	30.4	35.5	2.27	36.3	5.0	13.4
				50	32.5	39.8	2.36	40.7	13.8	32.8	37.7	2.32	40.6	5.2	14.2
	9.0	4.5	10.3	40	28.0	35.4	2.21	33.8	12.7	28.3	33.6	2.18	33.7	4.7	12.9
				45	30.4	37.6	2.25	38.2	13.5	30.7	35.7	2.23	38.2	4.8	13.8
				50	32.9	39.9	2.31	42.7	14.3	33.2	37.9	2.27	42.6	5.0	14.6
110	5.0	1.5	3.5	40	23.7	33.4	3.01	30.5	7.9	24.1	31.6	2.92	30.4	6.3	8.3
				45	25.7	35.6	3.05	34.7	8.4	26.1	33.6	2.97	34.5	6.5	8.8
				50	27.8	37.7	3.12	38.9	8.9	28.3	35.6	3.02	38.7	6.7	9.4
	7.0	2.8	6.4	40	24.3	33.5	2.81	33.1	8.6	24.7	31.8	2.77	32.9	6.1	8.9
				45	26.4	35.6	2.88	37.4	9.2	26.9	33.8	2.81	37.3	6.3	9.6
				50	28.5	37.8	2.95	41.8	9.7	29.0	35.8	2.86	41.7	6.4	10.1
	9.0	4.4	10.1	40	24.5	33.5	2.75	34.5	8.9	24.9	31.9	2.71	34.5	5.8	9.2
				45	26.7	35.6	2.79	39.1	9.6	27.1	33.9	2.78	39.0	6.0	9.8
				50	28.8	37.8	2.84	43.6	10.1	29.3	36.0	2.81	43.5	6.2	10.4

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS048 Performance Data:
4.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	7.2	2.2	5.0	85	42.8	30.7	96.8	3.42	3.66	37.5	30.8	95.4	3.40	5.3	3.69
				95	41.6	28.9	106.5	3.61	3.38	36.1	29.1	105.0	3.55	5.5	3.43
				110	40.3	27.3	121.1	3.78	3.12	34.6	27.3	119.6	3.72	5.7	3.17
	10.1	4.0	9.3	85	44.1	32.0	93.7	3.46	3.74	38.6	32.1	92.6	3.40	5.5	3.81
				95	42.9	30.1	103.5	3.65	3.45	37.2	30.3	102.4	3.58	5.7	3.51
				110	41.7	28.3	118.3	3.83	3.19	35.9	28.5	117.1	3.76	5.9	3.26
	13.0	6.5	15.0	85	44.7	32.6	91.9	3.46	3.79	39.1	32.8	91.0	3.39	5.6	3.86
				95	43.5	30.8	101.7	3.64	3.50	37.8	26.5	100.8	3.58	5.8	3.56
				110	42.3	28.9	116.5	3.82	3.24	36.4	29.1	115.6	3.76	5.9	3.30
50	7.2	2.0	4.7	85	55.4	42.9	100.3	3.59	4.52	48.5	43.3	98.4	3.48	6.9	4.66
				95	53.7	40.4	109.9	3.78	4.17	46.6	40.8	107.9	3.67	7.1	4.29
				110	51.9	38.0	124.4	3.96	3.84	44.6	38.4	122.3	3.86	7.3	3.94
	10.1	3.7	8.6	85	57.7	44.9	96.4	3.66	4.63	50.5	45.5	95.0	3.55	7.2	4.77
				95	55.8	42.4	106.1	3.85	4.25	48.4	42.8	104.6	3.74	7.4	4.38
				110	54.0	39.8	120.7	4.05	3.91	46.4	40.3	119.2	3.93	7.6	4.03
	13.0	6.0	14.0	85	58.9	46.1	94.1	3.68	4.70	51.6	46.5	92.9	3.55	7.3	4.86
				95	57.0	43.5	103.8	3.87	4.32	49.5	44.0	102.6	3.76	7.5	4.45
				110	55.1	40.9	118.5	4.07	3.97	47.3	41.4	117.3	3.94	7.7	4.09
70	7.2	2.0	4.7	85	67.4	54.1	103.6	3.81	5.18	59.0	54.8	101.3	3.65	8.4	5.41
				95	65.0	51.0	113.0	4.01	4.75	56.4	51.7	110.6	3.85	8.6	4.95
				110	62.6	47.9	127.3	4.21	4.36	53.8	48.7	124.9	4.04	8.8	4.54
	10.1	3.6	8.3	85	70.8	57.0	99.0	3.93	5.28	61.9	58.0	97.3	3.76	8.8	5.52
				95	68.2	53.8	108.5	4.13	4.84	59.2	54.6	106.7	3.96	9.0	5.05
				110	65.7	50.5	123.0	4.35	4.43	56.5	51.3	121.2	4.16	9.2	4.63
	13.0	5.8	13.3	85	72.7	58.8	96.2	3.97	5.36	63.6	59.8	94.8	3.79	9.0	5.62
				95	70.0	55.5	105.8	4.18	4.91	60.8	56.4	104.4	3.99	9.3	5.14
				110	67.4	52.1	120.4	4.39	4.50	57.9	53.0	118.9	4.19	9.5	4.71
90	7.2	1.9	4.3	85	77.7	63.8	106.5	3.78	6.02	68.0	65.1	103.8	3.78	9.7	6.03
				95	74.8	60.1	115.7	4.28	5.12	64.9	61.3	113.0	3.98	9.9	5.51
				110	72.0	56.5	129.9	4.40	4.79	61.9	57.6	127.1	4.18	10.1	5.04
	10.1	3.3	7.7	85	82.1	67.7	101.3	4.15	5.79	71.9	69.0	99.2	3.92	10.2	6.14
				95	79.1	63.8	110.7	4.37	5.30	68.7	65.2	108.6	4.13	10.5	5.61
				110	76.0	60.0	125.1	4.59	4.85	65.3	61.2	122.9	4.34	10.7	5.13
	13.0	5.3	12.3	85	84.9	70.0	98.1	4.22	5.89	74.3	71.5	96.4	3.97	10.6	6.27
				95	81.6	66.1	107.6	4.44	5.39	70.8	67.6	105.9	4.19	10.8	5.72
				110	78.4	62.2	122.1	4.66	4.93	67.4	63.5	120.4	4.40	11.0	5.23

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS048 Performance Data:
4.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	7.2	2.1	4.8	40	45.1	53.1	2.33	27.5	19.4	45.1	50.0	2.28	27.5	3.8	19.8
				45	49.0	56.5	2.38	31.4	20.6	49.0	53.2	2.33	31.4	3.9	21.1
				50	52.9	59.8	2.43	35.4	21.8	52.9	56.4	2.38	35.4	4.0	22.3
	10.1	3.7	8.6	40	45.5	53.2	2.22	31.0	20.5	45.5	50.2	2.19	31.0	3.6	20.8
				45	49.4	56.6	2.27	35.2	21.8	49.4	53.4	2.24	35.2	3.7	22.1
				50	53.4	60.0	2.31	39.4	23.1	53.4	56.6	2.29	39.4	3.8	23.4
	13.0	6.0	14.0	40	46.0	53.5	2.16	32.9	21.3	46.0	50.4	2.15	32.9	3.4	21.4
				45	50.0	57.0	2.20	37.3	22.7	50.0	53.7	2.19	37.3	3.5	22.8
				50	54.0	60.3	2.25	41.7	24.0	54.0	56.9	2.23	41.7	3.6	24.2
70	7.2	2.0	4.7	40	42.3	51.7	2.80	28.3	15.1	42.5	48.8	2.73	28.2	5.5	15.6
				45	45.9	54.9	2.86	32.3	16.0	46.2	51.8	2.78	32.2	5.6	16.6
				50	49.6	58.3	2.91	36.3	17.1	49.9	55.0	2.85	36.2	5.8	17.5
	10.1	3.6	8.3	40	42.9	51.9	2.66	31.5	16.1	43.2	49.0	2.62	31.5	5.3	16.5
				45	46.6	55.2	2.72	35.8	17.2	46.9	52.2	2.68	35.7	5.5	17.5
				50	50.4	58.5	2.77	40.0	18.2	50.7	55.3	2.72	40.0	5.6	18.6
	13.0	5.8	13.3	40	43.3	52.1	2.58	33.3	16.8	43.6	49.3	2.57	33.3	5.0	17.0
				45	47.1	55.5	2.63	37.8	17.9	44.6	52.5	2.47	38.1	5.2	18.1
				50	50.8	58.7	2.69	42.2	18.9	51.1	55.6	2.66	42.1	5.4	19.2
90	7.2	1.9	4.3	40	38.5	49.7	3.46	29.4	11.1	38.8	47.0	3.35	29.3	7.2	11.6
				45	41.8	52.9	3.52	33.4	11.9	42.2	50.0	3.42	33.3	7.4	12.3
				50	45.2	56.1	3.58	37.5	12.6	45.6	53.1	3.49	37.4	7.6	13.1
	10.1	3.3	7.7	40	39.2	50.0	3.25	32.2	12.1	39.6	47.4	3.19	32.2	6.9	12.4
				45	42.7	53.2	3.33	36.6	12.8	43.1	50.3	3.25	36.5	7.1	13.3
				50	46.1	56.3	3.38	40.9	13.6	46.5	53.4	3.32	40.8	7.3	14.0
	13.0	5.4	12.4	40	39.7	50.1	3.17	33.9	12.5	40.1	47.5	3.13	33.8	6.7	12.8
				45	43.1	53.2	3.23	38.4	13.4	43.5	50.6	3.19	38.3	6.8	13.6
				50	46.6	56.5	3.30	42.8	14.1	47.0	53.7	3.25	42.8	7.0	14.5
110	7.2	1.8	4.2	40	33.5	47.3	4.31	30.7	7.8	34.1	44.7	4.18	30.6	8.9	8.2
				45	36.4	50.4	4.36	34.9	8.3	37.0	47.6	4.25	34.8	9.2	8.7
				50	39.4	53.3	4.47	39.1	8.8	40.1	50.4	4.32	38.9	9.4	9.3
	10.1	3.3	7.7	40	34.4	47.5	4.03	33.2	8.5	35.0	45.0	3.97	33.1	8.6	8.8
				45	37.4	50.5	4.12	37.6	9.1	38.1	47.9	4.03	37.5	8.9	9.5
				50	40.4	53.5	4.23	42.0	9.6	41.1	50.8	4.10	41.9	9.1	10.0
	13.0	5.3	12.1	40	34.8	47.5	3.94	34.7	8.8	35.3	45.2	3.89	34.6	8.2	9.1
				45	37.8	50.5	4.00	39.2	9.5	38.5	48.1	3.99	39.1	8.5	9.6
				50	40.8	53.5	4.07	43.7	10.0	41.5	51.0	4.03	43.6	8.8	10.3

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS060 Performance Data:
5.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	8.3	2.2	5.0	85	47.8	34.3	96.5	3.94	3.56	41.9	34.4	95.0	3.90	6.0	3.59
				95	46.5	32.3	106.1	4.15	3.28	40.3	32.5	104.7	4.09	6.1	3.33
				110	45.0	30.5	120.8	4.35	3.03	38.7	30.5	119.3	4.28	6.3	3.09
	11.7	4.0	9.3	85	49.3	35.8	93.5	3.98	3.63	43.2	35.9	92.4	3.90	6.1	3.70
				95	47.9	33.7	103.2	4.19	3.35	41.6	33.9	102.1	4.12	6.3	3.41
				110	46.6	31.7	118.0	4.40	3.10	40.1	31.9	116.9	4.32	6.5	3.17
	15.0	6.5	15.0	85	49.9	36.5	91.7	3.98	3.68	43.7	36.7	90.8	3.90	6.2	3.75
				95	48.6	34.5	101.5	4.19	3.40	42.2	29.6	100.6	4.12	6.4	3.46
				110	47.3	32.3	116.3	4.40	3.15	40.7	32.5	115.4	4.33	6.6	3.20
50	8.3	2.0	4.7	85	61.9	48.0	99.8	4.12	4.40	54.2	48.4	98.0	4.00	7.7	4.53
				95	60.0	45.2	109.4	4.35	4.05	52.1	45.6	107.5	4.22	7.9	4.17
				110	58.0	42.5	123.9	4.56	3.73	49.9	42.9	122.0	4.44	8.1	3.83
	11.7	3.7	8.6	85	64.5	50.2	96.1	4.20	4.50	56.5	50.8	94.7	4.08	8.0	4.63
				95	62.4	47.4	105.7	4.43	4.13	54.1	47.8	104.3	4.30	8.2	4.26
				110	60.4	44.5	120.4	4.66	3.80	51.9	45.0	118.9	4.52	8.5	3.92
	15.0	6.0	14.0	85	65.8	51.6	93.8	4.22	4.57	57.6	52.0	92.7	4.09	8.2	4.72
				95	63.7	48.6	103.5	4.45	4.20	55.3	49.2	102.4	4.32	8.4	4.33
				110	61.6	45.7	118.2	4.67	3.86	52.9	46.2	117.1	4.53	8.6	3.98
70	8.3	2.0	4.7	85	75.3	60.5	103.1	4.38	5.03	65.9	61.3	100.8	4.20	9.4	5.26
				95	72.6	57.0	112.4	4.61	4.62	63.0	57.8	110.1	4.42	9.6	4.81
				110	70.0	53.6	126.8	4.84	4.24	60.1	54.4	124.4	4.64	9.8	4.42
	11.7	3.6	8.3	85	79.1	63.7	98.6	4.51	5.13	69.2	64.8	96.9	4.32	9.8	5.37
				95	76.3	60.1	108.1	4.75	4.71	66.2	61.0	106.4	4.55	10.1	4.91
				110	73.5	56.5	122.6	5.00	4.31	63.2	57.4	120.8	4.78	10.3	4.50
	15.0	5.8	13.3	85	81.2	65.7	95.8	4.57	5.21	71.1	66.8	94.5	4.35	10.1	5.47
				95	78.3	62.0	105.4	4.80	4.78	67.9	63.0	104.1	4.59	10.3	5.00
				110	75.3	58.2	120.0	5.04	4.38	64.8	59.3	118.6	4.82	10.6	4.58
90	8.3	1.9	4.3	85	86.8	71.3	105.8	4.35	5.85	76.0	72.7	103.2	4.34	10.8	5.86
				95	83.6	67.2	115.1	4.92	4.98	72.6	68.5	112.4	4.57	11.1	5.36
				110	80.4	63.2	129.3	5.06	4.66	69.1	64.4	126.6	4.81	11.3	4.90
	11.7	3.3	7.7	85	91.8	75.6	100.7	4.78	5.63	80.3	77.1	98.8	4.50	11.4	5.97
				95	88.4	71.3	110.2	5.03	5.15	76.7	72.8	108.2	4.75	11.7	5.46
				110	85.0	67.1	124.6	5.28	4.72	73.0	68.4	122.5	4.99	11.9	4.99
	15.0	5.3	12.3	85	94.8	78.3	97.6	4.85	5.73	83.0	80.0	96.1	4.56	11.8	6.09
				95	91.2	73.9	107.2	5.10	5.24	79.2	75.5	105.6	4.81	12.1	5.56
				110	87.6	69.5	121.7	5.36	4.80	75.3	71.0	120.0	5.06	12.3	5.08

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS060 Performance Data:
5.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	8.3	2.1	4.8	40	50.4	59.3	2.7	27.9	18.6	50.4	55.9	2.65	27.9	4.2	19.0
				45	54.7	63.1	2.77	31.9	19.8	54.7	59.4	2.71	31.9	4.3	20.2
				50	59.1	66.9	2.82	35.8	20.9	59.1	63.0	2.76	35.8	4.4	21.4
	11.7	3.7	8.6	40	50.9	59.5	2.58	31.3	19.7	50.9	56.1	2.55	31.3	4.0	20.0
				45	55.3	63.3	2.64	35.5	20.9	55.3	59.7	2.60	35.5	4.1	21.2
				50	59.7	67.1	2.69	39.8	22.2	59.7	63.2	2.66	39.8	4.2	22.5
	15.0	6.0	14	40	51.4	59.8	2.51	33.1	20.5	51.4	56.4	2.50	33.1	3.8	20.6
				45	55.9	63.7	2.56	37.5	21.8	55.9	60.0	2.55	37.5	3.9	21.9
				50	60.3	67.4	2.61	42.0	23.1	60.3	63.6	2.59	42.0	4.0	23.3
70	8.3	2.0	4.7	40	47.3	57.7	3.25	28.7	14.5	47.5	54.5	3.17	28.6	6.1	15.0
				45	51.3	61.4	3.33	32.7	15.4	51.6	57.9	3.23	32.6	6.3	16.0
				50	55.5	65.1	3.38	36.7	16.4	55.8	61.5	3.31	36.6	6.5	16.8
	11.7	3.6	8.3	40	48.0	58.0	3.09	31.8	15.5	48.3	54.8	3.04	31.7	5.9	15.9
				45	52.1	61.7	3.16	36.1	16.5	52.4	58.3	3.11	36.0	6.1	16.8
				50	56.3	65.4	3.22	40.3	17.5	56.6	61.9	3.16	40.3	6.2	17.9
	15.0	5.8	13.3	40	48.4	58.3	3.00	33.5	16.1	48.7	55.1	2.98	33.5	5.6	16.3
				45	52.7	62.0	3.06	38.0	17.2	49.9	58.6	2.87	38.3	5.8	17.4
				50	56.8	65.6	3.12	42.4	18.2	57.1	62.2	3.10	42.4	6.0	18.4
90	8.3	1.9	4.3	40	43.0	55.6	4.02	29.7	10.7	43.4	52.5	3.90	29.6	8.1	11.1
				45	46.7	59.1	4.10	33.8	11.4	47.2	55.9	3.98	33.7	8.3	11.9
				50	50.5	62.7	4.16	37.9	12.1	51.0	59.3	4.06	37.8	8.5	12.6
	11.7	3.3	7.7	40	43.8	55.9	3.78	32.5	11.6	44.2	52.9	3.71	32.4	7.8	11.9
				45	47.7	59.4	3.88	36.8	12.3	48.1	56.3	3.78	36.7	8.0	12.7
				50	51.5	62.9	3.93	41.2	13.1	52.0	59.7	3.86	41.1	8.2	13.5
	15.0	5.4	12.4	40	44.3	56.0	3.69	34.1	12.0	44.8	53.1	3.64	34.0	7.4	12.3
				45	48.2	59.5	3.76	38.6	12.8	48.7	56.6	3.71	38.5	7.7	13.1
				50	52.0	63.1	3.84	43.1	13.5	52.5	60.0	3.78	43.0	7.9	13.9
110	8.3	1.8	4.2	40	37.5	52.9	5.01	31.0	7.5	38.1	50.0	4.86	30.9	9.9	7.8
				45	40.7	56.3	5.08	35.2	8.0	41.4	53.2	4.94	35.1	10.2	8.4
				50	44.0	59.6	5.20	39.4	8.5	44.8	56.4	5.02	39.3	10.6	8.9
	11.7	3.3	7.7	40	38.4	53.1	4.69	33.4	8.2	39.1	50.3	4.62	33.3	9.6	8.5
				45	41.9	56.4	4.79	37.8	8.7	42.6	53.5	4.68	37.7	9.9	9.1
				50	45.2	59.8	4.92	42.2	9.2	45.9	56.8	4.77	42.1	10.1	9.6
	15.0	5.3	12.1	40	38.8	53.1	4.59	34.8	8.5	39.5	50.5	4.52	34.7	9.2	8.7
				45	42.3	56.4	4.65	39.4	9.1	43.0	53.7	4.64	39.3	9.5	9.3
				50	45.6	59.8	4.74	43.9	9.6	46.4	57.0	4.69	43.8	9.8	9.9

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS072 Performance Data:
6.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	10.0	2.3	5.4	85	58.8	42.2	96.7	5.13	3.36	51.4	42.3	95.3	5.08	7.3	3.39
				95	57.1	39.7	106.4	5.40	3.10	49.5	39.9	104.9	5.32	7.5	3.14
				110	55.3	37.4	121.0	5.66	2.86	47.5	37.5	119.5	5.57	7.8	2.91
	14.0	4.4	10.1	85	60.5	44.0	93.7	5.18	3.42	53.0	44.1	92.6	5.09	7.5	3.49
				95	58.9	41.3	103.4	5.46	3.16	51.1	41.6	102.3	5.36	7.8	3.22
				110	57.3	38.9	118.2	5.73	2.93	49.2	39.1	117.0	5.62	8.0	2.98
	18.0	7.0	16.2	85	61.3	44.8	91.8	5.18	3.47	53.7	45.1	91.0	5.08	7.6	3.54
				95	59.7	42.3	101.6	5.45	3.21	51.8	36.4	100.8	5.36	7.9	3.26
				110	58.1	39.7	116.5	5.73	2.97	49.9	39.9	115.5	5.64	8.2	3.02
50	10.0	2.2	5.0	85	76.0	58.9	100.2	5.37	4.15	66.5	59.4	98.3	5.21	9.5	4.28
				95	73.7	55.4	109.7	5.66	3.82	64.0	55.9	107.8	5.50	9.7	3.93
				110	71.2	52.2	124.2	5.93	3.52	61.2	52.6	122.2	5.78	10.0	3.61
	14.0	4.1	9.4	85	79.2	61.7	96.3	5.48	4.24	69.4	62.4	94.9	5.32	9.9	4.37
				95	76.6	58.2	106.0	5.77	3.89	66.5	58.8	104.5	5.59	10.1	4.01
				110	74.2	54.6	120.6	6.06	3.58	63.7	55.3	119.1	5.88	10.4	3.70
	18.0	6.6	15.1	85	80.8	63.3	94.0	5.50	4.31	70.8	63.9	92.9	5.32	10.1	4.45
				95	78.2	59.7	103.7	5.79	3.96	67.9	60.4	102.5	5.62	10.3	4.08
				110	75.6	56.1	118.4	6.09	3.64	65.0	56.8	117.2	5.91	10.6	3.75
70	10.0	2.2	5.0	85	92.5	74.3	103.5	5.71	4.75	81.0	75.3	101.2	5.47	11.5	4.96
				95	89.2	70.1	112.8	6.01	4.35	77.4	71.0	110.5	5.76	11.8	4.54
				110	85.9	65.8	127.2	6.30	4.00	73.9	66.8	124.8	6.05	12.1	4.16
	14.0	3.9	14.4	85	97.1	78.3	98.9	5.88	4.84	85.0	79.5	97.2	5.62	12.1	5.06
				95	93.7	73.8	108.4	6.19	4.44	81.3	74.9	106.6	5.93	12.4	4.63
				110	90.2	69.4	122.9	6.51	4.06	77.6	70.5	121.1	6.23	12.7	4.25
	18.0	6.2	14.4	85	99.7	80.7	96.1	5.95	4.92	87.3	82.0	94.7	5.67	12.4	5.15
				95	96.1	76.1	105.7	6.26	4.50	83.4	77.4	104.3	5.98	12.7	4.71
				110	92.5	71.5	120.3	6.57	4.13	79.5	72.8	118.8	6.27	13.0	4.32
90	10.0	2.0	4.7	85	106.6	87.6	106.3	5.67	5.52	93.4	89.3	103.7	5.65	13.3	5.53
				95	102.7	82.5	115.5	6.41	4.70	89.1	84.2	112.8	5.96	13.6	5.05
				110	98.8	77.6	129.7	6.59	4.39	84.9	79.1	127.0	6.26	13.9	4.62
	14.0	3.6	8.3	85	112.7	92.9	101.1	6.22	5.31	98.7	94.7	99.1	5.87	14.0	5.63
				95	108.6	87.6	110.5	6.55	4.86	94.2	89.5	108.5	6.19	14.4	5.15
				110	104.3	82.4	124.9	6.88	4.45	89.7	84.0	122.8	6.50	14.6	4.71
	18.0	5.8	13.3	85	116.5	96.1	97.9	6.32	5.40	102	98.2	96.3	5.94	14.5	5.74
				95	112.0	90.7	107.4	6.64	4.94	97.2	92.8	105.8	6.27	14.8	5.24
				110	107.6	85.3	122.0	6.98	4.52	92.5	87.1	120.3	6.59	15.1	4.79

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS072 Performance Data:
6.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	10.0	2.3	5.2	40	61.9	72.8	3.46	27.6	17.9	61.9	68.6	3.40	27.6	5.2	18.2
				45	67.2	77.5	3.54	31.6	19.0	67.2	73.0	3.46	31.6	5.3	19.4
				50	72.6	82.1	3.61	35.5	20.1	72.6	77.4	3.54	35.5	5.5	20.5
	14.0	4.1	9.4	40	62.5	73.1	3.31	31.1	18.9	62.5	68.9	3.26	31.1	5.0	19.2
				45	67.9	77.7	3.38	35.3	20.1	67.9	73.3	3.33	35.3	5.1	20.3
				50	73.3	82.4	3.45	39.5	21.3	73.3	77.7	3.40	39.5	5.2	21.5
	18.0	6.6	15.1	40	63.1	73.5	3.21	33.0	19.7	63.1	69.2	3.20	33.0	4.7	19.7
				45	68.6	78.2	3.28	37.4	20.9	68.6	73.7	3.26	37.4	4.8	21.0
				50	74.1	82.8	3.35	41.8	22.1	74.1	78.1	3.32	41.8	5.0	22.3
70	10.0	2.2	5.0	40	58.0	70.9	4.16	28.4	13.9	58.4	66.9	4.06	28.3	7.5	14.4
				45	63.0	75.4	4.26	32.4	14.8	63.4	71.2	4.14	32.3	7.7	15.3
				50	68.1	80.0	4.33	36.4	15.7	68.5	75.5	4.24	36.3	8.0	16.2
	14.0	3.9	9.0	40	58.9	71.2	3.96	31.6	14.9	59.3	67.3	3.89	31.5	7.2	15.2
				45	64.0	75.8	4.05	35.8	15.8	64.4	71.6	3.99	35.8	7.5	16.2
				50	69.1	80.4	4.13	40.1	16.8	69.5	76.0	4.05	40.1	7.6	17.2
	18.0	6.2	14.4	40	59.4	71.6	3.84	33.4	15.5	59.8	67.7	3.82	33.4	6.9	15.6
				45	64.7	76.2	3.92	37.8	16.5	61.3	72.0	3.68	38.2	7.1	16.7
				50	69.8	80.6	4.00	42.2	17.4	70.2	76.3	3.97	42.2	7.4	17.7
90	10.0	2.0	4.7	40	52.8	68.2	5.15	29.4	10.3	53.3	64.5	4.99	29.3	9.9	10.7
				45	57.4	72.6	5.24	33.5	10.9	57.9	68.6	5.10	33.4	10.2	11.4
				50	62.0	77.0	5.33	37.6	11.6	62.6	72.8	5.19	37.5	10.4	12.1
	14.0	3.6	8.4	40	53.8	68.6	4.84	32.3	11.1	54.3	65.0	4.74	32.2	9.5	11.5
				45	58.5	73.0	4.96	36.6	11.8	59.1	69.1	4.83	36.5	9.8	12.2
				50	63.3	77.3	5.03	41.0	12.6	63.9	73.3	4.95	40.9	10.0	12.9
	18.0	5.8	13.4	40	54.5	68.7	4.72	33.9	11.5	55.0	65.3	4.66	33.9	9.1	11.8
				45	59.2	73.1	4.81	38.4	12.3	59.7	69.5	4.75	38.4	9.4	12.6
				50	63.9	77.5	4.92	42.9	13.0	64.5	73.7	4.84	42.8	9.7	13.3
110	10.0	2.0	4.5	40	46.0	64.9	6.41	30.8	7.2	46.8	61.4	6.22	30.6	12.2	7.5
				45	50.0	69.1	6.50	35.0	7.7	50.8	65.4	6.33	34.8	12.6	8.0
				50	54.1	73.2	6.66	39.2	8.1	55.0	69.2	6.43	39.0	13.0	8.5
	14.0	3.6	8.3	40	47.2	65.2	6.00	33.3	7.9	48.0	61.8	5.91	33.1	11.8	8.1
				45	51.4	69.3	6.14	37.6	8.4	52.3	65.7	5.99	37.5	12.2	8.7
				50	55.5	73.5	6.30	42.1	8.8	56.4	69.7	6.11	41.9	12.4	9.2
	18.0	5.7	13.2	40	47.7	65.2	5.87	34.7	8.1	48.5	62.0	5.79	34.6	11.3	8.4
				45	51.9	69.3	5.95	39.2	8.7	52.8	66.0	5.94	39.1	11.7	8.9
				50	56.0	73.5	6.06	43.8	9.2	56.9	69.9	6.00	43.7	12.1	9.5

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT096 Performance Data:
8.0 Ton, High Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	14.5	2.2	5.0	85	85.6	61.4	96.8	7.04	3.56	75.0	61.6	95.4	6.99	10.7	3.59
				95	83.2	57.8	106.5	7.42	3.28	72.2	58.2	105.0	7.31	11.0	3.33
				110	80.6	54.5	121.1	7.78	3.03	69.3	54.6	119.6	7.65	11.3	3.09
	20.2	4.0	9.3	85	88.2	64.1	93.7	7.12	3.63	77.2	64.2	92.6	6.99	11.0	3.7
				95	85.8	60.2	103.5	7.50	3.35	74.4	60.6	102.4	7.37	11.3	3.41
				110	83.4	56.7	118.3	7.88	3.10	71.7	57.0	117.1	7.73	11.7	3.17
	26.0	6.5	15.0	85	89.4	65.3	91.9	7.11	3.68	78.2	65.7	91.0	6.98	11.1	3.75
				95	87.0	61.7	101.7	7.49	3.40	75.5	53.0	100.8	7.37	11.5	3.46
				110	84.7	57.8	116.5	7.87	3.15	72.8	58.2	115.6	7.74	11.9	3.20
50	14.5	2.0	4.7	85	110.8	85.8	100.3	7.38	4.40	97.0	86.6	98.4	7.16	13.8	4.53
				95	107.5	80.8	109.9	7.78	4.05	93.2	81.5	107.9	7.56	14.2	4.17
				110	103.8	76.0	124.4	8.15	3.73	89.2	76.7	122.3	7.94	14.6	3.83
	20.2	3.7	8.6	85	115.5	89.9	96.4	7.52	4.50	101.1	90.9	95.0	7.30	14.4	4.63
				95	111.6	84.9	106.1	7.92	4.13	96.9	85.6	104.6	7.69	14.8	4.26
				110	108.1	79.6	120.7	8.33	3.80	92.9	80.6	119.2	8.08	15.2	3.92
	26.0	6.0	14.0	85	117.8	92.3	94.1	7.56	4.57	103.1	93.1	92.9	7.31	14.7	4.72
				95	114.0	87.0	103.8	7.96	4.20	98.9	88.0	102.6	7.72	15.1	4.33
				110	110.1	81.8	118.5	8.36	3.86	94.7	82.7	117.3	8.11	15.5	3.98
70	14.5	2.0	4.7	85	134.8	108.3	103.6	7.85	5.03	118.0	109.7	101.3	7.51	16.8	5.26
				95	130.0	102.1	113.0	8.25	4.62	112.8	103.4	110.6	7.92	17.2	4.81
				110	125.2	95.9	127.3	8.66	4.24	107.6	97.4	124.9	8.31	17.6	4.42
	20.2	3.6	8.3	85	141.5	114.0	99.0	8.08	5.13	123.9	115.9	97.3	7.73	17.6	5.37
				95	136.5	107.6	108.5	8.50	4.71	118.5	109.2	106.7	8.15	18.0	4.91
				110	131.5	101.1	123.0	8.94	4.31	113.0	102.7	121.2	8.55	18.5	4.5
	26.0	5.8	13.3	85	145.3	117.6	96.2	8.17	5.21	127.2	119.5	94.8	7.79	18.1	5.47
				95	140.1	110.9	105.8	8.60	4.78	121.6	112.8	104.4	8.21	18.5	5.00
				110	134.8	104.2	120.4	9.03	4.38	115.9	106.1	118.9	8.62	18.9	4.58
90	14.5	1.9	4.3	85	155.4	127.7	106.5	7.78	5.85	136.0	130.1	103.8	7.77	19.3	5.86
				95	149.6	120.2	115.7	8.80	4.98	129.9	122.6	113.0	8.19	19.8	5.36
				110	143.9	113.1	129.9	9.06	4.66	123.7	115.2	127.1	8.61	20.2	4.90
	20.2	3.3	7.7	85	164.2	135.3	101.3	8.55	5.63	143.8	138.0	99.2	8.06	20.4	5.97
				95	158.2	127.7	110.7	9.00	5.15	137.3	130.3	108.6	8.50	20.9	5.46
				110	152.0	120.0	125.1	9.45	4.72	130.7	122.4	122.9	8.93	21.3	4.99
	26.0	5.3	12.3	85	169.7	140.1	98.1	8.68	5.73	148.6	143.1	96.4	8.17	21.1	6.09
				95	163.3	132.2	107.6	9.13	5.24	141.7	135.2	105.9	8.61	21.6	5.56
				110	156.8	124.3	112.1	9.58	4.80	134.8	127.0	120.4	9.05	22.0	5.08

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT096 Performance Data:
8.0 Ton, Low Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	7.2	2.1	4.9	85	42.8	30.7	96.8	3.52	3.56	37.5	30.8	95.4	3.49	5.3	3.59
				95	41.6	28.9	106.5	3.71	3.28	36.1	29.1	105.0	3.66	5.5	3.33
				110	40.3	27.3	121.1	3.89	3.03	34.6	27.3	119.6	3.83	5.7	3.09
	10.1	3.9	9.1	85	44.1	32.0	93.7	3.56	3.63	38.6	32.1	92.6	3.49	5.5	3.70
				95	42.9	30.1	103.5	3.75	3.35	37.2	30.3	102.4	3.68	5.7	3.41
				110	41.7	28.3	118.3	3.94	3.10	35.9	28.5	117.1	3.86	5.9	3.17
	13.0	6.3	14.6	85	44.7	32.6	91.9	3.56	3.68	39.1	32.8	91.0	3.49	5.6	3.75
				95	43.5	30.8	101.7	3.75	3.40	37.8	26.5	100.8	3.68	5.8	3.46
				110	42.3	28.9	116.5	3.93	3.15	36.4	29.1	115.6	3.87	5.9	3.20
50	7.2	2.0	4.5	85	55.4	42.9	100.3	3.69	4.40	48.5	43.3	98.4	3.58	6.9	4.53
				95	53.7	40.4	109.9	3.89	4.05	46.6	40.8	107.9	3.78	7.1	4.17
				110	51.9	38.0	124.4	4.08	3.73	44.6	38.4	122.3	3.97	7.3	3.83
	10.1	3.6	8.4	85	57.7	44.9	96.4	3.76	4.50	50.5	45.5	95.0	3.65	7.2	4.63
				95	55.8	42.4	106.1	3.96	4.13	48.4	42.8	104.6	3.84	7.4	4.26
				110	54.0	39.8	120.7	4.17	3.80	46.4	40.3	119.2	4.04	7.6	3.92
	13.0	5.9	13.6	85	58.9	46.1	94.1	3.78	4.57	51.6	46.5	92.9	3.66	7.3	4.72
				95	57.0	43.5	103.8	3.98	4.20	49.5	44.0	102.6	3.86	7.5	4.33
				110	55.1	40.9	118.5	4.18	3.86	47.3	41.4	117.3	4.06	7.7	3.98
70	7.2	2.0	4.5	85	67.4	54.1	103.6	3.92	5.03	59.0	54.8	101.3	3.76	8.4	5.26
				95	65.0	51.0	113.0	4.13	4.62	56.4	51.7	110.6	3.96	8.6	4.81
				110	62.6	47.9	127.3	4.33	4.24	53.8	48.7	124.9	4.16	8.8	4.42
	10.1	3.5	8.1	85	70.8	57.0	99.0	4.04	5.13	61.9	58.0	97.3	3.86	8.8	5.37
				95	68.2	53.8	108.5	4.25	4.71	59.2	54.6	106.7	4.07	9.0	4.91
				110	65.7	50.5	123.0	4.47	4.31	56.5	51.3	121.2	4.28	9.2	4.50
	13.0	5.6	12.9	85	72.7	58.5	96.2	4.09	5.21	63.6	59.8	94.8	3.90	9.0	5.47
				95	70.0	55.5	105.8	4.30	4.78	60.8	56.4	104.4	4.11	9.3	5.00
				110	67.4	52.1	120.4	4.51	4.38	57.9	53.0	118.9	4.31	9.5	4.58
90	7.2	1.8	4.2	85	77.7	63.8	106.5	3.89	5.85	68.0	65.1	103.8	3.88	9.7	5.86
				95	74.8	60.1	115.7	4.40	4.98	64.9	61.3	113.0	4.09	9.9	5.36
				110	72.0	56.5	129.9	4.53	4.66	61.9	57.6	127.1	4.30	10.1	4.90
	10.1	3.2	7.4	85	82.1	67.7	101.3	4.27	5.63	71.9	69.0	99.2	4.03	10.2	5.97
				95	79.1	63.8	110.7	4.50	5.15	68.7	65.2	108.6	4.25	10.5	5.46
				110	76.0	60.0	125.1	4.72	4.72	65.3	61.2	122.9	4.46	10.7	4.99
	13.0	5.2	12.0	85	84.9	70.0	98.1	4.34	5.73	74.3	71.5	96.4	4.08	10.6	6.09
				95	81.6	66.1	107.6	4.56	5.24	70.8	67.6	105.9	4.31	10.8	5.56
				110	78.4	62.2	122.1	4.79	4.80	67.4	63.5	120.4	4.52	11.0	5.08

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT096 Performance Data:
8.0 Ton, High Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	14.5	2.1	4.8	40	90.1	106.1	4.76	27.5	19.0	90.1	100.0	4.67	27.5	7.6	19.3
				45	97.9	113.0	4.87	31.4	20.1	97.9	106.3	4.76	31.4	7.8	20.6
				50	105.8	119.7	4.96	35.4	21.3	105.8	112.8	4.86	35.4	8.0	21.8
	20.2	3.7	8.6	40	91.1	106.5	4.54	31.0	20.0	91.1	100.3	4.48	31.0	7.2	20.3
				45	98.9	113.2	4.64	35.2	21.3	98.9	106.8	4.58	35.2	7.4	21.6
				50	106.9	120.1	4.73	39.4	22.6	106.9	113.2	4.68	39.4	7.6	22.9
	26.0	6.0	14	40	92.0	107.1	4.41	32.9	20.9	92.0	100.9	4.39	32.9	6.8	20.9
				45	100	113.9	4.50	37.3	22.2	100.0	107.4	4.48	37.3	7.0	22.3
				50	108	120.6	4.60	41.7	23.5	108.0	113.9	4.56	41.7	7.2	23.7
70	14.5	2.0	4.7	40	84.6	103.3	5.72	28.3	14.8	85.1	97.5	5.58	28.2	10.9	15.2
				45	91.8	109.8	5.85	32.3	15.7	92.3	103.7	5.69	32.2	11.3	16.2
				50	99.2	116.5	5.95	36.3	16.7	99.8	110.0	5.82	36.2	11.7	17.1
	20.2	3.6	8.3	40	85.9	103.7	5.44	31.5	15.8	86.4	98.1	5.35	31.5	10.6	16.1
				45	93.3	110.4	5.56	35.8	16.8	93.8	104.4	5.48	35.7	10.9	17.1
				50	100.7	117.1	5.67	40.0	17.8	101.3	110.7	5.56	40.0	11.1	18.2
	26.0	5.8	13.3	40	86.6	104.3	5.28	33.3	16.4	87.1	98.6	5.25	33.3	10.0	16.6
				45	84.2	111.0	5.38	37.8	17.5	89.3	104.9	5.05	38.1	10.4	17.7
				50	101.7	117.5	5.50	42.2	18.5	102.3	11.2	5.45	42.1	10.7	18.8
90	14.5	1.9	4.3	40	76.9	99.4	7.07	29.4	10.9	77.7	94.0	6.85	29.3	14.4	11.3
				45	83.6	105.8	7.21	33.4	11.6	84.4	100.0	7.00	33.3	14.8	12.1
				50	90.3	112.3	7.32	37.5	12.3	91.2	106.1	7.13	37.4	15.2	12.8
	20.2	3.3	7.7	40	78.4	100.0	6.65	32.2	11.8	79.2	94.7	6.52	32.2	13.9	12.2
				45	85.3	106.3	6.82	36.6	12.5	86.1	100.7	6.64	36.5	14.3	13.0
				50	92.2	112.6	6.92	40.9	13.3	93.1	106.8	6.80	40.8	14.6	13.7
	26.0	5.4	12.4	40	79.4	100.2	6.48	33.9	12.2	80.1	95.1	6.40	33.8	13.3	12.5
				45	86.2	106.5	6.60	38.4	13.1	87.1	101.2	6.53	38.3	13.7	13.3
				50	93.1	113.0	6.76	42.8	13.8	94.0	107.4	6.65	42.8	14.1	14.1
110	14.5	1.8	4.2	40	67.1	94.6	8.81	30.7	7.6	68.2	89.5	8.55	30.6	17.8	8.0
				45	72.9	100.7	8.93	34.9	8.2	74.1	95.3	8.69	34.8	18.3	8.5
				50	78.8	106.7	9.15	39.1	8.6	80.1	100.9	8.84	38.9	18.9	9.1
	20.2	3.3	7.7	40	68.8	95.0	8.24	33.2	8.3	69.9	90.0	8.12	33.1	17.2	8.6
				45	74.9	100.9	8.43	37.6	8.9	76.2	95.8	8.23	37.5	17.8	9.2
				50	80.8	107.1	8.66	42.0	9.3	82.2	101.6	8.39	41.9	18.1	9.8
	26.0	5.3	12.1	40	69.5	95.0	8.07	34.7	8.6	70.7	90.3	7.95	34.6	16.5	8.9
				45	75.6	100.9	8.18	39.2	9.2	76.9	96.1	8.16	39.1	17.0	9.4
				50	81.6	107.1	8.33	43.7	9.8	83.0	101.9	8.24	43.6	17.6	10.1

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT096 Performance Data:
8.0 Ton, Low Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	7.2	2.0	4.7	40	45.1	53.1	2.38	27.5	19.0	45.1	50.0	2.33	27.5	3.8	19.3
				45	49.0	56.5	2.43	31.4	20.1	49.0	53.2	2.38	31.4	3.9	20.6
				50	52.9	59.8	2.48	35.4	21.3	52.9	56.4	2.43	35.4	4.0	21.8
	10.1	3.6	8.4	40	45.5	53.2	2.27	31.0	20.0	45.5	50.2	2.24	31.0	3.6	20.3
				45	49.4	56.6	2.32	35.2	21.3	49.4	53.4	2.29	35.2	3.7	21.6
				50	53.4	60.0	2.37	39.4	22.6	53.4	56.6	2.34	39.4	3.8	22.9
	13.0	5.9	13.6	40	46.0	53.5	2.21	32.9	20.9	46.0	50.4	2.20	32.9	3.4	20.9
				45	50.0	57.0	2.25	37.3	22.2	50.0	53.7	2.24	37.3	3.5	22.3
				50	54.0	60.3	2.30	41.7	23.5	54.0	56.9	2.28	41.7	3.6	23.7
70	7.2	2.0	4.5	40	42.3	51.7	2.86	28.3	14.8	42.5	48.8	2.79	28.2	5.5	15.2
				45	45.9	54.9	2.93	32.3	15.7	46.2	51.8	2.84	32.2	5.6	16.2
				50	49.6	58.3	2.97	36.3	16.7	49.9	55.0	2.91	36.2	5.8	17.1
	10.1	3.5	8.1	40	42.9	51.9	2.72	31.5	15.8	43.2	49.0	2.68	31.5	5.3	16.1
				45	46.6	55.2	2.78	35.8	16.8	46.9	52.2	2.74	35.7	5.5	17.1
				50	50.4	58.5	2.83	40.0	17.8	50.7	55.3	2.78	40.0	5.6	18.2
	13.0	5.6	12.9	40	43.3	52.1	2.64	33.3	16.4	43.6	49.3	2.62	33.3	5.0	16.6
				45	47.1	55.5	2.69	37.8	17.5	44.6	52.5	2.53	38.1	5.2	17.7
				50	50.8	58.7	2.75	42.2	18.5	51.1	55.6	2.72	42.1	5.4	18.8
90	7.2	1.8	4.2	40	38.5	49.7	3.54	29.4	10.9	38.8	47.0	3.43	29.3	7.2	11.3
				45	41.8	52.9	2.60	33.4	11.6	42.2	50.0	3.50	33.3	7.4	12.1
				50	45.2	56.1	3.66	37.5	12.3	45.6	53.1	3.57	37.4	7.6	12.8
	10.1	3.3	7.5	40	39.2	50.0	3.33	32.2	11.8	39.6	47.4	3.26	32.2	6.9	12.2
				45	42.7	53.2	3.41	36.6	12.5	43.1	50.3	3.32	36.5	7.1	13.0
				50	46.1	56.3	3.46	40.9	13.3	46.5	53.4	3.40	40.8	7.3	13.7
	13.0	5.2	12.0	40	39.7	50.1	3.24	33.9	12.2	40.1	47.5	3.20	33.8	6.7	12.5
				45	43.1	53.2	3.30	38.4	13.1	43.5	50.6	3.27	38.3	6.8	13.3
				50	46.6	56.5	3.38	42.8	13.8	47.0	53.7	3.32	42.8	7.0	14.1
110	7.2	1.8	4.0	40	33.5	47.3	4.40	30.7	7.6	34.1	44.7	4.28	30.6	8.9	8.0
				45	36.4	50.4	4.46	34.9	8.2	37.0	47.6	4.35	34.8	9.2	8.5
				50	39.4	53.3	4.57	39.1	8.6	40.1	50.4	4.42	38.9	9.4	9.1
	10.1	3.2	7.4	40	34.4	47.5	4.12	33.2	8.3	35.0	45.0	4.06	33.1	8.6	8.6
				45	37.4	50.5	4.21	37.6	8.9	38.1	47.9	4.12	37.5	8.9	9.2
				50	40.4	53.5	4.33	42.0	9.3	41.1	50.8	4.20	41.9	9.1	9.8
	13.0	5.1	11.8	40	34.8	47.5	4.03	34.7	8.6	35.3	45.2	3.98	34.6	8.2	8.9
				45	37.8	50.5	4.09	39.2	9.2	38.5	48.1	4.08	39.1	8.5	9.4
				50	40.8	53.5	4.17	43.7	9.8	41.5	51.0	4.12	43.6	8.8	10.1

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT120 Performance Data:
10.0 Ton, High Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	15.6	2.3	5.3	85	95.7	68.7	97.3	8.10	3.46	83.8	68.8	95.8	8.04	11.9	3.49
				95	93.0	64.7	106.9	8.54	3.19	80.7	65.0	105.4	8.41	12.3	3.24
				110	90.0	60.9	121.6	8.95	2.95	77.4	61.0	119.9	8.80	12.6	3.00
	21.8	4.3	9.8	85	98.6	71.6	94.1	8.19	3.53	86.3	71.8	92.9	8.04	12.3	3.60
				95	95.9	67.3	103.8	8.63	3.26	83.2	67.7	102.6	8.48	12.7	3.32
				110	93.3	63.3	118.6	9.06	3.02	80.2	63.7	117.4	8.89	13.1	3.07
	28.0	6.8	15.8	85	99.9	72.9	92.1	8.18	3.58	87.4	73.4	91.2	8.03	12.4	3.64
				95	97.2	68.9	101.9	8.62	3.31	84.4	59.3	101.0	8.48	12.9	3.36
				110	94.6	64.7	116.8	9.05	3.06	81.3	65.0	115.8	8.91	13.3	3.11
50	15.6	2.1	4.9	85	123.8	95.9	100.9	8.49	4.27	108.4	96.8	98.9	8.24	15.4	4.40
				95	120.1	90.3	110.4	8.95	3.93	104.2	91.1	108.4	8.69	15.9	4.05
				110	116.0	85.0	124.9	9.38	3.62	99.7	85.7	122.8	9.14	16.3	3.72
	21.8	4.0	9.1	85	129.0	100.5	96.9	8.66	4.37	113.0	101.6	95.4	8.40	16.1	4.50
				95	124.8	94.8	106.5	9.12	4.01	108.3	95.7	105.0	8.84	16.5	4.13
				110	120.8	89.0	121.1	9.59	3.69	103.8	90.0	119.5	9.30	17.0	3.81
	28.0	6.4	14.7	85	131.7	103.1	94.4	8.70	4.44	115.3	104.0	93.2	8.41	16.4	4.59
				95	127.4	97.3	104.1	9.16	4.08	110.6	98.4	102.9	8.89	16.8	4.20
				110	123.1	91.4	118.8	9.62	3.75	105.8	92.5	117.6	9.34	17.3	3.86
70	15.6	2.1	4.9	85	150.6	121.0	104.4	9.03	4.89	131.9	122.6	101.9	8.64	18.8	5.11
				95	145.3	114.1	113.7	9.49	4.48	126.1	115.6	111.2	9.11	19.2	4.67
				110	139.9	107.1	128.0	9.96	4.12	120.3	108.9	125.5	9.56	19.6	4.29
	21.8	3.8	8.8	85	158.2	127.4	99.5	9.29	4.99	138.5	129.6	97.7	8.89	19.7	5.21
				95	152.6	120.2	109.0	9.78	4.57	132.4	122.0	107.2	9.37	20.2	4.77
				110	146.9	112.9	123.5	10.29	4.19	126.3	114.8	121.6	9.84	20.6	4.38
	28.0	6.1	14.0	85	162.4	131.4	96.6	9.40	5.06	142.2	133.6	95.2	8.96	20.2	5.31
				95	156.6	124.0	106.2	9.89	4.64	135.9	126.1	104.7	9.45	20.7	4.86
				110	150.7	116.5	120.8	10.38	4.25	129.5	118.5	119.3	9.92	21.2	4.45
90	15.6	2.0	4.6	85	173.7	142.7	107.3	8.96	5.68	152.0	145.4	104.5	8.94	21.6	5.70
				95	167.2	134.4	116.5	10.13	4.84	145.1	137.1	113.6	9.42	22.1	5.20
				110	160.8	126.4	130.7	10.42	4.52	138.3	128.7	127.8	9.90	22.6	4.76
	21.8	3.5	8.1	85	183.5	151.2	101.9	9.83	5.47	160.7	154.3	99.8	9.27	22.9	5.80
				95	176.9	142.7	111.3	10.35	5.01	153.5	145.7	109.1	9.78	23.4	5.30
				110	169.9	134.1	125.6	10.87	4.58	146.1	136.8	123.4	10.27	23.9	4.85
	28.0	5.6	13	85	189.7	156.6	98.5	9.99	5.57	166.1	159.9	96.9	9.39	23.6	5.92
				95	182.5	147.7	108.0	10.50	5.09	158.4	151.1	106.3	9.91	24.1	5.40
				110	175.3	138.9	122.5	11.03	4.66	150.7	141.9	120.8	10.41	24.6	4.93

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT120 Performance Data:
10.0 Ton, Low Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	8.3	2.2	5.0	85	47.8	34.3	96.5	4.05	3.46	41.9	34.4	95.0	4.02	6.0	3.49
				95	46.5	32.3	106.1	4.27	3.19	40.3	32.5	104.7	4.21	6.1	3.24
				110	45.0	30.5	120.8	4.48	2.95	38.7	30.5	119.3	4.40	6.3	3.00
	11.7	4.0	9.3	85	49.3	35.8	93.5	4.10	3.53	43.2	35.9	92.4	4.02	6.1	3.60
				95	47.9	33.7	103.2	4.31	3.26	41.6	33.9	102.1	4.24	6.3	3.32
				110	46.6	31.7	118.0	4.53	3.02	40.1	31.9	116.9	4.44	6.5	3.07
	15.0	6.5	15.0	85	49.9	36.5	91.7	4.09	3.58	43.7	36.7	90.8	4.02	6.2	3.64
				95	48.6	34.5	101.5	4.31	3.31	42.2	29.6	100.6	4.24	6.4	3.36
				110	47.3	32.3	116.3	4.53	3.06	40.7	32.5	115.4	4.45	6.6	3.11
50	8.3	2.0	4.7	85	61.9	48.0	99.8	4.25	4.27	54.2	48.4	98.0	4.12	7.7	4.40
				95	60.0	45.2	109.4	4.47	3.93	52.1	45.6	107.5	4.35	7.9	4.05
				110	58.0	42.5	123.9	4.69	3.62	49.9	42.9	122.0	4.57	8.1	3.72
	11.7	3.7	8.6	85	64.5	50.2	96.1	4.33	4.37	56.5	50.8	94.7	4.20	8.0	4.50
				95	62.4	47.4	105.7	4.56	4.01	54.1	47.8	104.3	4.42	8.2	4.13
				110	60.4	44.5	120.4	4.79	3.69	51.9	45.0	118.9	4.65	8.5	3.81
	15.0	6.0	14.0	85	65.8	51.6	93.8	4.35	4.44	57.6	52.0	92.7	4.21	8.5	4.59
				95	63.7	48.6	103.5	4.58	4.08	55.3	49.2	102.4	4.44	8.4	4.20
				110	61.6	45.7	118.2	4.81	3.75	52.9	46.2	117.1	4.67	8.6	3.86
70	8.3	2.0	4.7	85	75.3	60.5	103.1	4.51	4.89	65.9	61.3	100.8	4.32	9.4	5.11
				95	72.6	57.0	112.4	4.75	4.48	63.0	57.8	110.1	4.55	9.6	4.67
				110	70.0	53.6	126.8	4.98	4.12	60.1	54.4	124.4	4.78	9.8	4.29
	11.7	3.6	8.3	85	79.1	63.7	98.6	4.65	4.99	69.2	64.8	96.9	4.45	9.8	5.21
				95	76.3	60.1	108.1	4.89	4.57	66.2	61.0	106.4	4.69	10.1	4.77
				110	73.5	56.5	122.6	5.15	4.19	63.2	57.4	120.8	4.92	10.3	4.38
	15.0	5.8	13.3	85	81.2	65.7	95.8	4.70	5.06	71.1	66.8	94.5	4.48	10.1	5.31
				95	78.3	62.0	105.4	4.95	4.64	67.9	63.0	104.1	4.72	10.3	4.86
				110	75.3	56.5	120.0	5.19	4.25	64.8	59.3	118.6	4.96	10.6	4.45
90	8.3	1.9	4.3	85	86.8	71.3	105.8	4.48	5.68	76.0	72.7	103.2	4.47	10.8	5.70
				95	83.6	67.2	115.1	5.06	4.84	72.6	68.5	112.4	4.71	11.1	5.20
				110	80.4	63.2	129.3	5.21	4.52	69.1	64.4	126.6	4.95	11.3	4.76
	11.7	3.3	7.7	85	91.8	75.6	100.7	4.92	5.47	80.3	77.1	98.8	4.64	11.4	5.80
				95	88.4	71.3	110.2	5.18	5.01	76.7	72.8	108.2	4.89	11.7	5.30
				110	85.0	67.1	124.6	5.44	4.58	73.0	68.4	122.5	5.14	11.9	4.85
	15.0	5.3	12.3	85	94.8	78.3	97.6	4.99	5.57	83.0	80.0	96.1	4.70	11.8	5.92
				95	91.2	73.9	107.2	5.25	5.09	79.2	75.5	105.6	4.95	12.1	5.40
				110	87.6	69.5	121.7	5.51	4.66	75.3	71.0	120.0	5.20	12.3	4.93

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT120 Performance Data: 10.0 Ton, High Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	15.6	2.2	5.1	40	100.7	118.6	5.47	27.1	18.4	100.7	111.8	5.37	27.1	8.5	18.8
				45	109.5	126.3	5.60	30.9	19.6	109.5	118.8	5.47	30.9	8.7	20.0
				50	118.2	133.8	5.71	34.8	20.7	118.2	126.1	5.59	34.8	8.9	21.1
	21.8	4.0	9.1	40	101.8	119.0	5.23	30.6	19.5	101.8	112.2	5.16	30.6	8.1	19.7
				45	110.5	126.5	5.34	34.8	20.7	110.5	119.4	5.27	34.8	8.3	21.0
				50	119.4	134.2	5.45	39.0	21.9	119.4	126.5	5.38	39.0	8.5	22.2
	28.0	6.4	14.7	40	102.8	119.6	5.08	32.7	20.3	102.8	112.7	5.05	32.7	7.7	20.3
				45	111.8	127.3	5.18	37.0	21.6	111.8	120.0	5.16	37.0	7.9	21.7
				50	120.7	134.8	5.29	41.4	22.8	120.7	127.2	5.25	41.4	8.1	23.0
70	15.6	2.1	4.9	40	94.5	115.5	6.58	27.9	14.4	95.1	109.0	6.42	27.8	12.2	14.8
				45	102.6	122.8	6.73	31.8	15.2	103.2	115.9	6.55	31.7	12.6	15.8
				50	110.9	130.2	6.84	35.8	16.2	111.6	122.9	6.70	35.7	13.0	16.6
	21.8	3.8	8.8	40	96.0	115.9	6.26	31.2	15.3	96.5	109.6	6.16	31.1	11.8	15.7
				45	104.3	123.4	6.40	35.4	16.3	104.9	116.7	6.30	35.4	12.2	16.6
				50	112.6	130.9	6.52	39.7	17.3	113.2	123.7	6.40	39.6	12.4	17.7
	28.0	6.1	14.0	40	96.8	116.5	6.07	33.1	15.9	97.4	110.2	6.04	33.0	11.2	16.1
				45	105.3	124.0	6.19	37.5	17.0	99.8	117.3	5.81	37.9	11.6	17.2
				50	113.6	131.3	6.32	41.9	18.0	114.3	124.3	6.27	41.8	12.0	18.2
90	15.6	2.0	4.6	40	86.0	111.1	8.14	29.0	10.6	86.8	105.1	7.89	28.8	16.1	11.0
				45	93.5	118.2	8.29	33.0	11.3	94.4	111.8	8.06	32.9	16.6	11.7
				50	101.0	125.5	8.43	37.0	12.0	101.9	118.6	8.21	36.9	17.0	12.4
	21.8	3.5	8.2	40	87.7	111.8	7.66	31.9	11.5	88.5	105.9	7.50	31.9	15.5	11.8
				45	95.3	118.8	7.84	36.2	12.2	96.3	112.5	7.64	36.2	15.9	12.6
				50	103.0	125.9	7.96	40.5	12.9	104.0	119.4	7.82	40.4	16.3	13.3
	28.0	5.7	13.1	40	88.7	112.0	7.46	33.7	11.9	89.5	106.3	7.37	33.6	14.9	12.2
				45	96.4	119.0	7.60	38.1	12.7	97.3	113.1	7.51	38.0	15.3	12.9
				50	104.1	126.3	7.77	42.6	13.4	105.1	120.0	7.65	42.5	15.7	13.7
110	15.6	1.9	4.4	40	75.0	105.7	10.13	30.4	7.4	76.3	100.0	9.84	30.2	19.9	7.8
				45	81.4	112.6	10.27	34.5	7.9	82.8	106.5	10.00	34.4	20.5	8.3
				50	88.1	119.2	10.53	38.7	8.4	89.6	112.7	10.17	38.5	21.1	8.8
	21.8	3.5	8.1	40	76.9	106.1	9.48	32.9	8.1	78.2	100.6	9.34	32.8	19.2	8.4
				45	83.7	112.8	9.70	37.3	8.6	85.1	107.1	9.47	37.2	19.9	9.0
				50	90.4	119.6	9.96	41.7	9.1	91.9	113.5	9.66	41.6	20.3	9.5
	28.0	5.5	12.8	40	77.7	106.1	9.28	34.5	8.4	79.0	101.0	9.15	34.4	18.4	8.6
				45	84.5	112.8	9.41	39.0	9.0	86.0	107.4	9.38	38.9	19.0	9.2
				50	91.2	119.6	9.59	43.5	9.5	92.7	113.9	9.48	43.4	19.7	9.8

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT120 Performance Data:
10.0 Ton, Low Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	8.3	2.1	4.8	40	50.4	59.3	2.74	27.9	18.4	50.4	55.9	2.68	27.9	4.2	18.8
				45	54.7	63.1	2.8	31.9	19.6	54.7	59.4	2.74	31.9	4.3	20.0
				50	59.1	66.9	2.85	35.8	20.7	59.1	63.0	2.80	35.8	4.4	21.1
	11.7	3.7	8.6	40	50.9	59.5	2.61	31.3	19.5	50.9	56.1	2.58	31.3	4.0	19.7
				45	55.3	63.3	2.67	35.5	20.7	55.3	59.7	2.64	35.5	4.1	21.0
				50	59.7	67.1	2.72	39.8	21.9	59.7	63.2	2.69	39.8	4.2	22.2
	15.0	6.0	14.0	40	51.4	59.8	2.54	33.1	20.3	51.4	56.4	2.53	33.1	3.8	20.3
				45	55.9	63.7	2.59	37.5	21.6	55.9	60.0	2.58	37.5	3.9	21.7
				50	60.3	67.4	2.65	42.0	22.8	60.3	63.6	2.62	42.0	4.0	23.0
70	8.3	2.0	4.7	40	47.3	57.7	3.29	28.7	14.4	47.5	54.5	3.21	28.6	6.1	14.8
				45	51.3	61.4	3.37	32.7	15.2	51.6	57.9	3.27	32.6	6.3	15.8
				50	55.5	65.1	3.42	36.7	16.2	55.8	61.5	3.35	36.6	6.5	16.6
	11.7	3.6	8.3	40	48.0	58.0	3.13	31.8	51.3	48.3	54.8	3.08	31.7	5.9	15.7
				45	52.1	61.7	3.20	36.1	16.3	52.4	58.3	3.15	36.0	6.1	16.6
				50	56.3	65.4	3.26	40.3	17.3	56.6	61.9	3.20	40.3	6.2	17.7
	15.0	5.8	13.3	40	48.4	58.3	3.04	33.5	15.9	48.7	55.1	3.02	33.5	5.6	16.1
				45	52.7	62.0	3.10	38.0	17.0	49.9	58.6	2.91	38.3	5.8	17.2
				50	56.8	65.6	3.16	42.4	18.0	57.1	62.2	3.13	42.4	6.0	18.2
90	8.3	1.9	4.3	40	43.0	55.6	4.07	29.7	10.6	43.4	52.5	3.94	29.6	8.1	11.0
				45	46.7	59.1	4.15	33.8	11.3	47.2	55.9	4.03	33.7	8.3	11.7
				50	50.5	62.7	4.21	37.9	12.0	51.0	59.3	4.10	37.8	8.5	12.4
	11.7	3.3	7.7	40	43.8	55.9	3.83	32.5	11.5	44.2	52.9	3.75	32.4	7.8	11.8
				45	47.7	59.4	3.92	36.8	12.2	48.1	56.3	3.82	36.7	8.0	12.6
				50	51.5	62.9	3.98	41.2	12.9	52.0	59.7	3.91	41.1	8.2	13.3
	15.0	5.4	12.4	40	44.3	56.0	3.73	34.1	11.9	44.8	53.1	3.68	34.0	7.4	12.2
				45	48.2	59.5	3.80	38.6	12.7	48.7	56.6	3.76	38.5	7.7	12.9
				50	52.0	63.1	3.89	43.1	13.4	52.5	60.0	3.82	43.0	7.9	13.7
110	8.3	1.8	4.2	40	37.5	52.9	5.07	31.0	7.4	38.1	50.0	4.92	30.9	9.9	7.8
				45	40.7	56.3	5.14	35.2	7.9	41.4	53.2	5.00	35.1	10.2	8.3
				50	44.0	59.6	5.26	39.4	8.4	44.8	56.4	5.08	39.3	10.6	8.8
	11.7	3.3	7.7	40	38.4	53.1	4.74	33.4	8.1	39.1	50.3	4.67	33.3	9.6	8.4
				45	41.9	56.4	4.85	37.8	8.6	42.6	53.5	4.74	37.7	9.9	9.0
				50	45.2	59.8	4.98	42.2	9.1	45.9	56.8	4.83	42.1	10.1	9.5
	15.0	5.3	12.1	40	38.8	53.1	4.64	34.8	8.4	39.5	50.5	4.58	34.7	9.2	8.6
				45	42.3	56.4	4.70	39.4	9.0	43.0	53.7	4.69	39.3	9.5	9.2
				50	45.6	59.8	4.79	43.9	9.5	46.4	57.0	4.74	43.8	9.8	9.8

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS122 Performance Data:
10.0 Ton, Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	16.7	2.3	5.3	85	100.7	72.3	97.1	8.29	3.56	88.2	72.4	95.6	8.22	12.5	3.59
				95	97.9	68.1	106.7	8.74	3.28	84.9	68.5	105.2	8.60	12.9	3.33
				110	94.8	64.1	121.4	9.15	3.03	81.5	64.2	119.8	9.00	13.3	3.09
	23.3	4.3	9.8	85	103.8	75.4	93.9	8.38	3.63	90.9	75.5	92.8	8.22	12.9	3.70
				95	100.9	70.9	103.7	8.82	3.35	87.6	71.3	102.5	8.67	13.3	3.41
				110	98.2	66.7	118.4	9.27	3.10	84.4	67.1	117.2	9.09	13.8	3.17
	30.0	6.8	15.8	85	105.1	76.8	92.0	8.37	3.68	92.0	77.2	91.1	8.21	13.1	3.75
				95	102.4	72.6	101.8	8.82	3.40	88.8	62.4	100.9	8.67	13.5	3.46
				110	99.6	68.1	116.6	9.26	3.15	85.6	68.5	115.7	9.11	14.0	3.20
50	16.7	2.1	4.9	85	130.3	101	100.6	8.68	4.40	114.1	101.9	98.7	8.42	16.2	4.53
				95	126.4	95.1	110.2	9.15	4.05	109.7	95.9	108.2	8.89	16.7	4.17
				110	122.1	89.4	124.6	9.59	3.73	105.0	90.3	122.6	9.35	17.1	3.83
	23.3	4.0	9.1	85	135.8	105.7	96.7	8.85	4.50	118.9	106.9	95.2	8.59	16.9	4.63
				95	131.3	99.8	106.3	9.32	4.13	114.0	100.7	104.8	9.04	17.4	4.26
				110	127.1	93.7	120.9	9.80	3.80	109.3	94.8	119.4	9.51	17.8	3.92
	30.0	6.4	14.7	85	138.6	108.6	94.2	8.89	4.57	121.3	109.5	93.1	8.60	17.3	4.72
				95	134.1	102.4	103.9	9.36	4.20	116.4	103.6	102.8	9.09	17.7	4.33
				110	129.6	96.2	118.6	9.84	3.86	111.4	97.3	117.4	9.55	18.2	3.98
70	16.7	2.1	4.9	85	158.6	127.4	104.0	9.23	5.03	138.8	129.0	101.6	8.84	19.7	5.26
				95	152.9	120.1	113.3	9.71	4.62	132.7	121.7	110.9	9.31	20.2	4.81
				110	147.3	112.8	127.7	10.19	4.24	126.6	114.6	125.2	9.78	20.7	4.42
	23.3	3.8	8.8	85	166.5	134.1	99.3	9.50	5.13	145.8	136.4	97.5	9.09	20.7	5.37
				95	160.6	126.6	108.8	10.00	4.71	139.4	128.4	107.0	9.58	21.2	4.91
				110	154.7	118.9	123.3	10.52	4.31	133.0	120.8	121.4	10.06	21.7	4.50
	30.0	6.1	14	85	171.0	138.4	96.4	9.61	5.21	149.7	140.6	95.0	9.17	21.3	5.47
				95	164.8	130.5	106.0	10.11	4.78	143.0	132.7	104.5	9.66	21.8	5.00
				110	158.6	122.6	120.6	10.62	4.38	136.3	124.8	119.1	10.14	22.3	4.58
90	16.7	2.0	4.6	85	182.8	150.2	106.9	9.16	5.85	160.0	153.1	104.2	9.14	22.8	5.86
				95	176.1	141.5	116.1	10.36	4.98	152.8	144.3	113.3	9.63	23.3	5.36
				110	169.3	133.0	130.3	10.66	4.66	145.5	135.5	127.4	10.12	23.8	4.90
	23.3	3.5	8.1	85	193.2	159.2	101.6	10.06	5.63	169.2	162.4	99.5	9.48	24.1	5.97
				95	186.2	150.2	111.0	10.59	5.51	161.6	153.3	108.9	10.00	24.6	5.46
				110	178.9	141.2	125.3	11.12	4.72	153.8	144.0	123.2	10.50	25.1	4.99
	30.0	5.6	13	85	199.7	164.8	98.3	10.21	5.73	174.8	168.3	96.7	9.61	24.9	6.09
				95	192.1	155.5	107.8	10.74	5.24	166.7	159.0	106.1	10.13	25.4	5.56
				110	184.5	146.2	122.3	11.28	4.80	158.6	149.4	120.6	10.64	25.9	5.08

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWS122 Performance Data:
10.0 Ton, Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	16.7	2.1	4.8	40	106.0	124.8	5.69	27.3	18.6	106.0	117.6	5.59	27.3	8.9	19
				45	115.2	132.9	5.82	31.2	19.8	115.2	125.1	5.70	31.2	9.1	20.2
				50	124.4	140.8	5.94	35.1	20.9	124.4	132.7	5.82	35.1	9.4	21.4
	23.3	3.7	8.6	40	107.1	125.3	5.44	30.8	19.7	107.1	118.1	5.37	30.8	8.5	20.0
				45	116.3	133.2	5.55	35.0	20.9	116.3	125.7	5.48	35.0	8.7	21.2
				50	125.7	141.2	5.67	39.2	22.2	125.7	133.1	5.60	39.2	8.9	22.5
	30.0	6.0	14.0	40	108.2	125.9	5.28	32.8	20.5	108.2	118.7	5.26	32.8	8.1	20.6
				45	117.6	134.0	5.39	37.2	21.8	117.6	126.3	5.37	37.2	8.3	21.9
				50	127.0	141.9	5.50	41.5	23.1	127.0	133.9	5.46	41.5	8.5	23.3
70	16.7	2.0	4.7	40	99.5	121.6	6.85	28.1	14.5	100.1	114.8	6.68	28.0	12.8	15.0
				45	108.0	129.2	7.01	32.0	15.4	108.6	122.0	6.81	32.0	13.3	16.0
				50	116.8	137.1	7.12	36.0	16.4	117.4	129.4	6.97	35.9	13.7	16.8
	23.3	3.6	8.3	40	101.0	122.0	6.51	31.3	15.5	101.6	115.4	6.40	31.3	12.4	15.9
				45	109.8	129.9	6.66	35.6	16.5	110.4	122.8	6.55	35.5	12.8	16.8
				50	118.5	137.8	6.78	39.8	17.5	119.2	130.2	6.65	39.8	13.1	17.9
	30.0	5.8	13.3	40	101.9	122.7	6.32	33.2	16.1	102.5	116.0	6.28	33.2	11.8	16.3
				45	110.9	130.5	6.45	37.6	17.2	105.1	123.4	6.05	38.0	12.2	17.4
				50	119.6	138.2	6.58	42.0	18.2	120.3	130.9	6.52	42.0	12.6	18.4
90	16.7	1.9	4.3	40	90.5	117.0	8.46	29.1	10.7	91.4	110.6	8.20	29.0	17.0	11.1
				45	98.4	124.4	8.63	33.2	11.4	99.3	117.6	8.38	33.1	17.4	11.9
				50	106.3	132.1	8.77	37.3	12.1	107.3	124.9	8.54	37.1	17.9	12.6
	23.3	3.3	7.7	40	92.3	117.6	7.96	32.1	11.6	9.32	111.5	7.80	32.0	16.3	11.9
				45	100.4	125.1	8.16	36.4	12.3	101.3	118.5	7.95	36.3	16.8	12.7
				50	108.5	132.5	8.28	40.7	13.1	109.5	125.7	8.14	40.6	17.2	13.5
	30.0	5.4	12.4	40	93.4	117.9	7.76	33.8	12.0	94.3	111.9	7.66	33.7	15.7	12.3
				45	101.5	125.3	7.91	38.2	12.8	102.4	119.1	7.82	38.2	16.1	13.1
				50	109.5	132.9	8.09	42.7	13.5	110.6	126.3	7.95	42.6	16.6	13.9
110	16.7	1.8	4.2	40	87.9	111.3	10.54	30.5	7.5	80.3	105.3	10.23	30.4	20.9	7.8
				45	85.7	118.5	10.69	34.7	8.0	87.2	112.1	10.40	34.5	21.6	8.4
				50	92.7	125.5	10.95	38.9	8.5	94.3	118.7	10.58	38.7	22.2	8.9
	23.3	3.3	7.7	40	80.9	111.7	9.87	33.1	8.2	82.3	105.9	9.72	32.9	20.3	8.5
				45	88.1	118.7	10.09	37.4	8.7	89.6	112.7	9.86	37.3	20.9	9.1
				50	95.1	125.9	10.36	41.8	9.2	96.7	119.5	10.05	41.7	21.3	9.6
	30.0	5.3	12.1	40	81.8	111.7	9.66	34.5	8.5	83.2	106.3	9.52	34.5	19.4	8.7
				45	89.0	118.7	9.79	39.4	9.1	90.5	113.1	9.76	39.0	20.0	9.3
				50	96.0	125.9	9.97	43.6	9.6	97.6	119.9	9.87	43.5	20.7	9.9

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT144 Performance Data: 12.0 Ton, High Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	17.8	2.3	5.4	85	117.5	84.3	98.2	10.26	3.36	102.9	84.5	96.6	10.17	14.6	3.39
				95	114.2	79.4	107.8	10.81	3.10	99.1	79.9	106.1	10.65	15.1	3.14
				110	110.6	74.8	122.4	11.33	2.86	95.1	74.9	120.7	11.14	15.5	2.91
	24.9	4.4	10.1	85	121.1	87.9	94.7	10.37	3.42	106.0	88.1	93.5	10.17	15.1	3.49
				95	117.7	82.7	104.5	10.92	3.16	102.2	83.2	103.2	10.72	15.6	3.22
				110	114.5	77.8	119.2	11.47	2.93	98.4	78.2	117.9	11.25	16.1	2.98
	32.0	7.0	16.2	85	122.6	89.6	92.7	10.36	3.47	107.4	90.1	91.7	10.16	15.3	3.54
				95	119.4	84.7	102.5	10.91	3.21	103.6	72.8	101.5	10.73	15.8	3.26
				110	116.2	79.4	117.3	11.45	2.97	99.9	79.9	116.2	11.27	16.3	3.02
50	17.8	2.2	5.0	85	152.0	117.8	102.1	10.75	4.15	133.1	118.8	100.0	10.42	18.9	4.28
				95	147.5	110.9	111.6	11.32	3.82	128.0	111.9	109.4	11.00	19.5	3.93
				110	142.5	104.3	126.0	11.87	3.52	122.5	105.3	123.8	11.56	20.0	3.61
	24.9	4.1	9.4	85	158.5	123.4	97.7	10.95	4.24	138.7	124.8	96.2	10.63	19.7	4.37
				95	153.2	116.5	107.3	11.54	3.89	133.0	117.5	105.7	11.19	20.3	4.01
				110	148.3	109.3	121.9	12.13	3.58	127.5	110.6	120.3	11.76	20.8	3.70
	32.0	6.6	15.1	85	161.7	126.6	95.1	11.01	4.31	141.6	127.7	93.8	10.64	20.1	4.45
				95	156.5	119.4	104.8	11.59	3.96	135.8	120.8	103.5	11.25	20.7	4.08
				110	151.2	112.2	119.4	12.17	3.64	130.0	113.5	118.1	11.81	21.2	3.75
70	17.8	2.2	5.0	85	185.0	148.6	105.8	11.42	4.75	162.0	150.5	103.2	10.93	23.0	4.96
				95	178.4	140.1	115.1	12.01	4.35	154.8	141.9	112.4	11.52	23.6	4.54
				110	171.8	131.6	129.3	12.60	4.00	147.7	133.7	126.6	12.10	24.1	4.16
	24.9	3.9	9.0	85	194.2	156.5	100.6	11.76	4.84	170.1	159.1	98.7	11.25	24.2	5.06
				95	187.3	147.6	110.1	12.37	4.44	162.6	149.9	108.1	11.86	24.8	4.63
				110	180.5	138.7	124.5	13.02	4.06	155.1	140.9	122.5	12.45	25.3	4.25
	32.0	6.2	14.4	85	199.5	161.4	97.5	11.89	4.92	174.7	164.1	95.9	11.34	24.8	5.15
				95	192.3	152.2	107.0	12.51	4.50	166.9	154.8	105.4	11.95	25.4	4.71
				110	185.1	143.1	121.6	13.14	4.13	159.1	145.6	119.9	12.55	26.0	4.32
90	17.8	2.0	4.7	85	213.3	175.2	109.0	11.33	5.52	186.7	178.6	106	11.31	26.6	5.53
				95	205.4	165.0	118.1	12.82	4.70	178.2	168.3	115.0	11.92	27.2	5.05
				110	197.5	155.2	132.2	13.19	4.39	169.8	158.1	129.1	12.53	27.7	4.62
	24.9	3.6	8.3	85	225.4	185.7	103.1	12.44	5.31	197.3	189.5	100.9	11.73	28.1	5.63
				95	217.2	175.2	112.5	13.10	4.86	188.5	178.9	110.2	12.37	28.7	5.15
				110	208.7	164.7	126.8	13.75	4.45	179.4	168.0	124.4	13.00	29.3	4.71
	32.0	5.8	13.3	85	233.0	192.3	99.6	12.64	5.40	204.0	196.4	97.7	11.89	29.0	5.74
				95	224.1	181.4	109.0	13.29	4.94	194.5	185.5	107.2	12.54	29.6	5.24
				110	215.2	170.6	123.5	13.95	4.52	185.0	174.3	121.6	13.17	30.2	4.79

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT144 Performance Data:
12.0 Ton, Low Heating

EWT	GPM	WPD		Heating						Heating with Desuperheater					
		PSI	FT	ELT	HC	HE	LLT	KW	COP	HC	HE	LLT	KW	DH	COP
30	10.0	2.2	5.0	85	58.8	42.2	96.7	5.13	3.36	51.4	42.3	95.3	5.08	7.3	3.39
				95	57.1	39.7	106.4	5.40	3.10	49.5	39.9	104.9	5.32	7.5	3.14
				110	55.3	37.4	121.0	5.66	2.86	47.5	37.5	119.5	5.57	7.8	2.91
	14.0	4.0	9.3	85	60.5	44.0	93.7	5.18	3.42	53.0	44.1	92.6	5.09	7.5	3.49
				95	58.9	41.3	103.4	5.46	3.16	51.1	41.6	102.3	5.36	7.8	3.22
				110	57.3	38.9	118.2	5.73	2.93	49.2	39.1	117.0	5.62	8.0	2.98
	18.0	6.5	15.0	85	61.3	44.8	91.8	5.18	3.47	53.7	45.1	91.0	5.08	7.6	3.54
				95	59.7	42.3	101.6	5.45	3.21	51.8	36.4	100.8	5.36	7.9	3.26
				110	58.1	39.7	116.5	5.73	2.97	49.9	39.9	115.5	5.65	8.2	3.02
50	10.0	2.0	4.7	85	76.0	58.9	100.2	5.37	4.15	66.5	59.4	98.3	5.21	9.5	4.28
				95	73.7	55.4	109.7	5.66	3.82	64.0	55.9	107.8	5.50	9.7	3.93
				110	71.2	52.2	124.2	5.93	3.52	61.2	52.6	122.2	5.78	10.0	3.61
	14.0	3.7	8.6	85	79.2	61.7	96.3	5.48	4.24	69.4	62.4	94.9	5.32	9.9	4.37
				95	76.6	58.2	106.0	5.77	3.89	66.5	58.8	104.5	5.59	10.1	4.01
				110	74.2	54.6	120.6	6.06	3.58	63.7	55.3	119.1	5.88	10.4	3.70
	18.0	6.0	14.0	85	80.8	63.3	94.0	5.50	4.31	70.8	63.9	92.9	5.32	10.1	4.45
				95	78.2	59.7	103.7	5.79	3.96	67.9	60.4	102.5	5.62	10.3	4.08
				110	75.6	56.1	118.4	6.09	3.64	65.0	56.8	117.2	5.91	10.6	3.75
70	10.0	2.0	4.7	85	92.5	74.3	103.5	5.71	4.75	81.0	75.3	101.2	5.47	11.5	4.96
				95	89.2	70.1	112.8	6.01	4.35	77.4	71.0	110.5	5.76	11.8	4.54
				110	85.9	65.8	127.2	6.30	4.00	73.9	66.8	124.8	6.05	12.1	4.16
	14.0	3.6	8.3	85	97.1	78.3	98.9	5.88	4.84	85.0	79.5	97.2	5.62	12.1	5.06
				95	93.7	73.8	108.4	6.19	4.44	81.3	74.9	106.6	5.93	12.4	4.63
				110	90.2	69.4	122.9	6.51	4.06	77.6	70.5	121.1	6.23	12.7	4.25
	18.0	5.8	13.3	85	99.7	80.7	96.1	5.95	4.92	87.3	82.0	94.7	5.67	12.4	5.15
				95	96.1	76.1	105.7	6.26	4.50	83.4	77.4	104.3	5.98	12.7	4.71
				110	92.5	71.5	120.3	6.57	4.13	79.5	72.8	118.8	6.27	13.0	4.32
90	10.0	1.9	4.3	85	106.6	87.6	106.3	5.67	5.52	93.4	89.3	103.7	5.65	13.3	5.53
				95	102.7	82.5	115.5	6.41	4.70	89.1	84.2	112.8	5.96	13.6	5.05
				110	98.8	77.6	129.7	6.59	4.39	84.9	79.1	127.0	6.26	13.9	4.62
	14.0	3.3	7.7	85	112.7	92.9	101.1	6.22	5.31	98.7	94.7	99.1	5.87	14.0	5.63
				95	108.6	87.6	110.5	6.55	4.86	94.2	89.5	108.5	6.19	14.4	5.15
				110	104.3	82.4	124.9	6.88	4.45	89.7	84.0	122.8	6.50	14.6	4.71
	18.0	5.3	12.3	85	116.5	96.1	97.9	6.32	5.40	102.0	98.2	96.3	5.94	14.5	5.74
				95	112.0	90.7	107.4	6.64	4.94	97.2	92.8	105.8	6.27	14.8	5.24
				110	107.6	85.3	122.0	6.98	4.52	92.5	87.1	120.3	6.59	15.1	4.79

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT144 Performance Data: 12.0 Ton, High Cooling

EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	17.8	2.3	5.2	40	123.7	145.7	7.14	26.1	17.3	123.7	137.2	7.01	26.1	10.4	17.7
				45	134.4	155.1	7.30	29.9	18.4	134.4	145.9	7.14	29.9	10.7	18.8
				50	145.1	164.3	7.45	33.7	19.5	145.1	154.8	7.29	33.7	10.9	19.9
	24.9	4.1	9.4	40	125.0	146.2	6.82	29.9	18.3	125.0	137.7	6.73	29.9	9.9	18.6
				45	135.7	155.4	6.97	34.1	19.5	135.7	146.6	6.88	34.1	10.2	19.7
				50	146.7	164.8	7.11	38.2	20.6	146.7	155.3	7.02	38.2	10.4	20.9
	32.0	6.6	15.1	40	126.3	146.9	6.62	32.1	19.1	126.3	138.5	6.59	32.1	9.4	19.2
				45	137.2	156.4	6.76	36.4	20.3	137.2	147.4	6.73	36.4	9.7	20.4
				50	148.2	165.6	6.90	40.7	21.5	148.2	156.3	6.85	40.7	9.9	21.6
70	17.8	2.2	5.0	40	116.1	141.8	8.59	27.0	13.5	116.7	133.9	8.38	26.9	15.0	13.9
				45	126.0	150.8	8.79	30.8	14.3	126.7	142.3	8.54	30.8	15.5	14.8
				50	136.2	159.9	8.93	34.7	15.3	137.0	151.0	8.74	34.6	16.0	15.7
	24.9	3.9	9.0	40	117.9	142.3	8.17	30.5	14.4	118.5	134.6	8.03	30.5	14.5	14.8
				45	128.1	151.5	8.35	34.7	15.3	128.8	143.3	8.22	34.6	15.0	15.7
				50	138.3	160.7	8.51	38.9	16.2	139.1	151.9	8.35	38.8	15.2	16.7
	32.0	6.2	14.4	40	118.9	143.1	7.92	32.6	15.0	119.6	135.3	7.88	32.5	13.7	15.2
				45	129.3	152.3	8.08	36.9	16.0	122.6	144.0	7.58	37.3	14.2	16.2
				50	139.5	161.2	8.25	41.3	16.9	140.3	152.7	8.18	41.2	14.7	17.2
90	17.8	2.0	4.7	40	105.6	136.5	10.62	28.1	9.9	106.6	129.1	10.29	28.0	19.8	10.4
				45	114.8	145.1	10.82	32.1	10.6	115.9	137.2	10.51	32.0	20.3	11.0
				50	124.0	154.1	11.00	36.1	11.3	125.2	145.7	10.71	35.9	20.8	11.7
	24.9	3.6	8.4	40	107.6	137.2	9.99	31.3	10.8	108.7	130.0	9.78	31.3	19.1	11.1
				45	117.1	145.9	10.23	35.6	11.4	118.2	138.2	9.97	35.5	19.6	11.9
				50	126.5	154.6	10.38	39.8	12.2	127.7	146.6	10.20	39.7	20.1	12.5
	32.0	5.8	13.4	40	108.9	137.5	9.73	33.2	11.2	110.0	130.5	9.61	33.1	18.3	11.4
				45	118.4	146.2	9.91	37.6	11.9	119.5	138.9	9.81	37.5	18.8	12.2
				50	127.8	155.1	10.14	42.0	12.6	129.0	147.4	9.98	41.9	19.3	12.9
110	17.8	2.0	4.5	40	92.1	129.8	13.22	29.6	7.0	93.6	122.8	12.84	29.5	24.4	7.3
				45	100.0	138.3	13.40	33.8	7.5	101.7	130.7	13.05	33.6	25.2	7.8
				50	108.2	146.4	13.73	37.8	7.9	110.0	138.5	13.27	37.6	25.9	8.3
	24.9	3.6	8.3	40	94.4	130.4	12.38	32.4	7.6	96.0	123.5	12.19	32.3	23.6	7.9
				45	102.8	138.5	12.65	36.7	8.1	104.5	131.5	12.36	36.6	24.4	8.5
				50	111.0	146.9	13.00	41.1	8.5	112.8	139.4	12.60	40.9	24.9	9.0
	32.0	5.7	13.2	40	95.4	130.4	12.11	34.0	7.9	97.0	124.0	11.94	33.9	22.6	8.1
				45	103.8	138.5	12.28	38.5	8.5	105.6	132.0	12.24	38.4	23.4	8.6
				50	112.0	146.9	12.51	43.0	9.0	113.9	139.9	12.37	42.9	24.1	9.2

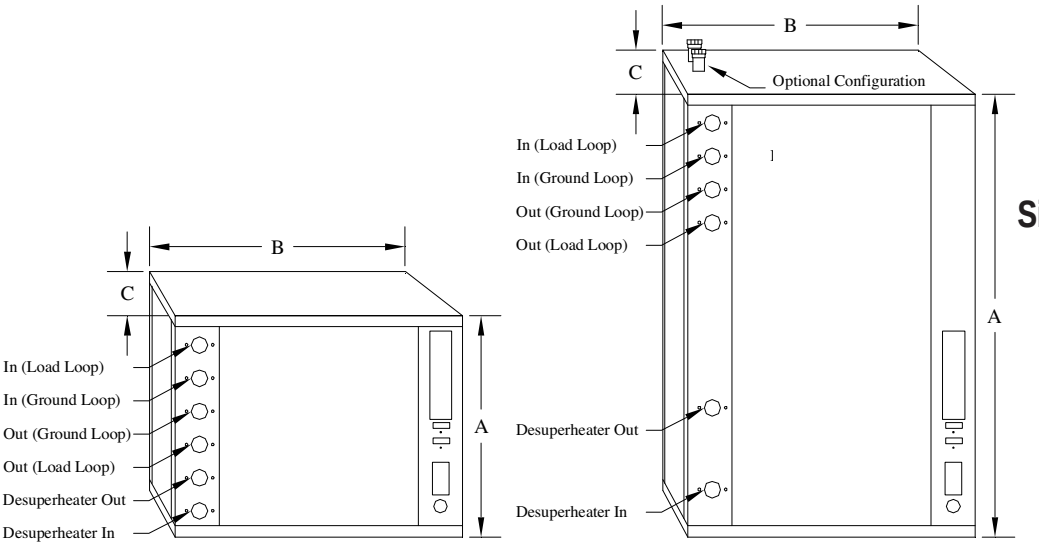
Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

GWT144 Performance Data:
12.0 Ton, Low Cooling

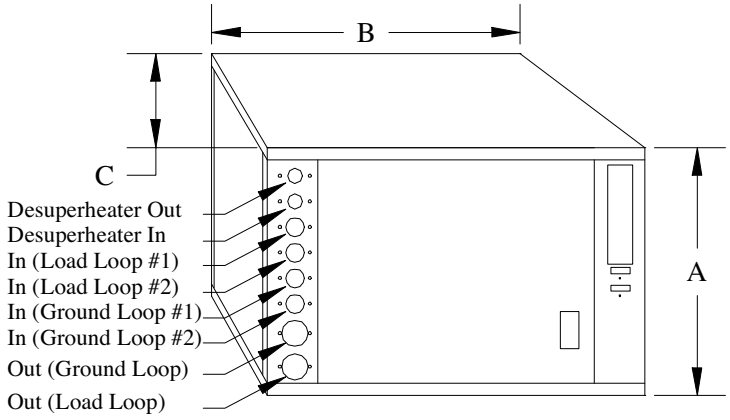
EWT	GPM	WPD		Cooling						Cooling with Desuperheater					
		PSI	FT	ELT	TC	HR	KW	LLT	EER	TC	HR	KW	LLT	DH	EER
50	10.0	2.1	4.8	40	61.9	72.8	3.57	27.6	17.3	61.9	68.6	3.50	27.6	5.2	17.7
				45	67.2	77.5	3.65	31.6	18.4	67.2	73.0	3.57	31.6	5.3	18.8
				50	72.6	82.1	3.73	35.5	19.5	72.6	77.4	3.65	35.5	5.5	19.9
	14.0	3.7	8.6	40	62.5	73.1	3.41	31.1	18.3	62.5	68.9	3.37	31.1	5.0	18.6
				45	67.9	77.7	3.48	35.3	19.5	67.9	73.3	3.44	35.3	5.1	19.7
				50	73.3	82.4	3.55	39.5	20.6	73.3	77.7	3.51	39.5	5.2	20.9
	18.0	6.0	14	40	63.1	73.5	3.31	33.0	19.1	63.1	69.2	3.30	33.0	4.7	19.2
				45	68.6	78.2	3.38	37.4	20.3	68.6	73.7	3.36	37.4	4.8	20.4
				50	74.1	82.8	3.45	41.8	21.5	74.1	78.1	3.42	41.8	5.0	21.6
70	10.0	2.0	4.7	40	58.0	70.9	4.29	28.4	13.5	58.4	66.9	4.19	28.3	7.5	13.9
				45	63.0	75.4	4.39	32.4	14.3	63.4	71.2	4.27	32.3	7.7	14.8
				50	68.1	80.0	4.47	36.4	15.3	68.5	75.5	4.37	36.3	8.0	15.7
	14.0	3.6	8.3	40	58.9	71.2	4.09	31.6	14.4	59.3	67.3	4.02	31.5	7.2	14.8
				45	64.0	75.8	4.17	35.8	15.3	64.4	71.6	4.11	35.8	7.5	15.7
				50	69.1	80.4	4.25	40.1	16.2	69.5	76.0	4.17	40.1	7.6	16.7
	18.0	5.8	13.3	40	59.4	71.6	3.96	33.4	15.0	59.8	67.7	3.94	33.4	6.9	15.2
				45	64.7	76.2	4.04	37.8	16.0	61.3	72.0	3.79	38.2	7.1	16.2
				50	69.8	80.6	4.13	42.2	16.9	70.2	76.3	4.09	42.2	7.4	17.2
90	10.0	1.9	4.3	40	52.8	68.2	5.31	29.4	9.9	53.3	64.5	5.14	29.3	9.9	10.4
				45	57.4	72.6	5.41	33.5	10.6	57.9	68.6	5.26	33.4	10.2	11.0
				50	62.0	77.0	5.50	37.6	11.3	62.6	72.8	5.35	37.5	10.4	11.7
	14.0	3.3	7.7	40	53.8	68.6	4.99	32.3	10.8	54.3	65.0	4.89	32.2	9.5	11.1
				45	58.5	73.0	5.12	36.6	11.4	59.1	69.1	4.99	36.5	9.8	11.9
				50	63.3	77.3	5.19	41.0	12.2	63.9	73.3	5.10	40.9	10.0	12.5
	18.0	5.4	12.4	40	54.5	68.7	4.87	33.9	11.2	55.0	65.3	4.81	33.9	9.1	11.4
				45	59.2	73.1	4.96	38.4	11.9	59.7	69.5	4.90	38.4	9.4	12.2
				50	63.9	77.5	5.07	42.9	12.6	64.5	73.7	4.99	42.8	9.7	12.9
110	10.0	1.8	4.2	40	46.0	64.9	6.61	30.8	7.0	46.8	61.4	6.42	30.6	12.2	7.3
				45	50.0	69.1	6.70	35.0	7.5	50.8	65.4	6.52	34.8	12.6	7.8
				50	54.1	73.2	6.87	39.2	7.9	55.0	69.2	6.63	39.0	13.0	8.3
	14.0	3.3	7.7	40	47.2	65.2	6.19	33.3	7.6	48.0	61.8	6.09	33.1	11.8	7.9
				45	51.4	69.3	6.33	37.6	8.1	52.3	65.7	6.18	37.5	12.2	8.5
				50	55.5	73.5	6.50	42.1	8.5	56.4	69.7	6.30	41.9	12.4	9.0
	18.0	5.3	12.1	40	47.7	65.2	6.06	34.7	7.9	48.5	62.0	5.97	34.6	11.3	8.1
				45	51.9	69.3	6.14	39.2	8.5	52.8	66.0	6.12	39.1	11.7	8.6
				50	56.0	73.5	6.25	43.8	9.0	56.9	69.9	6.19	43.7	12.1	9.2

Notes:
1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EWT & GPM data is permissible.
3. See Flow Rate Selection on page 7 for proper application.
4. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
5. Load flow rate is the same as the source flow rate at each of the three flow selections.

Dimensional Data



Single Compressor



Dual Compressor

Single Compressor Units								
Model	Dimensional Data			Ground Loop		Load Loop		Weight
	A	B	C	IN	OUT	IN	OUT	
GWS024	20	22	32	0.75”	0.75”	0.75”	0.75”	220
GWS036	24	26	34	1”	1”	1”	1”	270
GWS048	24	26	34	1”	1”	1”	1”	320
GWS060	24	26	36	1”	1”	1”	1”	370
GWS072	24	26	36	1”	1”	1”	1”	370
GWS122	48	26	24	1.5”	1.5”	1.5”	1.5”	650
Dual Compressor Units								
Model	Dimensional Data			Ground Loop		Load Loop		Weight
	A	B	C	IN*	OUT	IN*	OUT	
GWT096	24	30	48	1”	1.25”	1”	1.25”	550
GWT120	24	30	48	1”	1.5”	1”	1.5”	650
GWT144	24	30	48	1”	1.5”	1”	1.5”	660

* There are two “IN” connections, but only one “Out” connection

Electrical Data:
Single Compressor Units

Model	Power		Compressor		Total Unit FLA	Minimum Circuit Ampacity	Maximum Fuse Size
	Volts	Phase	RLA	LRA			
GWS024	208-230	1	10.6	64.0	10.6	15	20
	208-230	3	7.4	63.0	7.4	10	15
	460	3	3.6	28.0	3.6	5	5
	575	3	2.9	22.5	2.9	5	5
GWS036	208-230	1	16.3	112.0	16.3	20	30
	208-230	3	10.9	88.0	10.9	15	20
	460	3	5.4	44.0	5.4	10	10
	575	3	4.1	34.0	4.1	10	10
GWS048	208-230	1	21.8	134.0	21.8	30	45
	208-230	3	14.4	123.0	14.4	20	25
	460	3	6.2	46.0	6.2	10	10
	575	3	5.0	37.0	5.0	10	10
GWS060	208-230	1	24.7	158.0	24.7	35	55
	208-230	3	16.3	155.0	16.3	20	30
	460	3	8.0	75.0	8.0	10	15
	575	3	6.5	54.0	6.5	10	10
GWS072	208-230	1	25.7	148.0	25.7	35	55
	208-230	3	18.2	149.0	18.2	25	40
	460	3	9.1	75.0	9.1	15	20
	575	3	7.3	54.0	7.3	10	15
GWS122	208-230	3	32.8	239.0	32.8	45	70
	460	3	16.4	125.0	16.4	25	35
	575	3	12.7	80.0	12.7	20	25

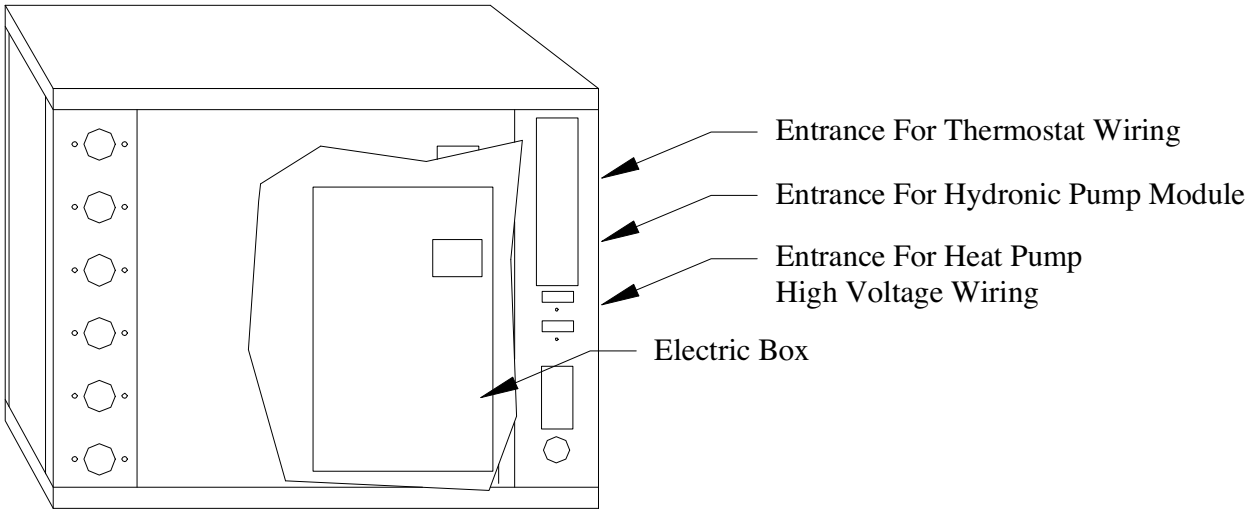
Note:
Make sure compressors do not run backwards on three phase equipment.

Electrical Data:
Dual Compressor Units

Model	Power		Compressor		Total Unit FLA	Minimum Circuit Ampacity	Maximum Fuse Size
	Volts	Phase	RLA	LRA			
GWT096*	208-230	1	21.8 Each	134.0 Each	43.6	30.0 Each	45.0 Each
	208-230	3	14.4 Each	123.0 Each	28.8	20.0 Each	25.0 Each
	460	3	6.2 Each	46.0 Each	12.4	10.0 Each	10.0 Each
	575	3	5.0 Each	37.0 Each	10.0	10.0 Each	10.0 Each
GWT120*	208-230	1	24.7 Each	158.0 Each	49.4	35.0 Each	55.0 Each
	208-230	3	16.3 Each	155.0 Each	32.6	20.0 Each	30.0 Each
	460	3	8.0 Each	75.0 Each	16.0	10.0 Each	15.0 Each
	575	3	6.5 Each	54.0 Each	13.0	10.0 Each	10.0 each
GWT144*	208-230	1	25.7 Each	148.0 Each	51.4	35.0 Each	55.0 Each
	208-230	3	18.2 Each	149.0 Each	36.4	25.0 Each	40.0 Each
	460	3	9.1 Each	75.0 Each	18.2	15.0 Each	20.0 Each
	575	3	7.3 Each	54.0 Each	14.6	10.0 Each	15.0 Each

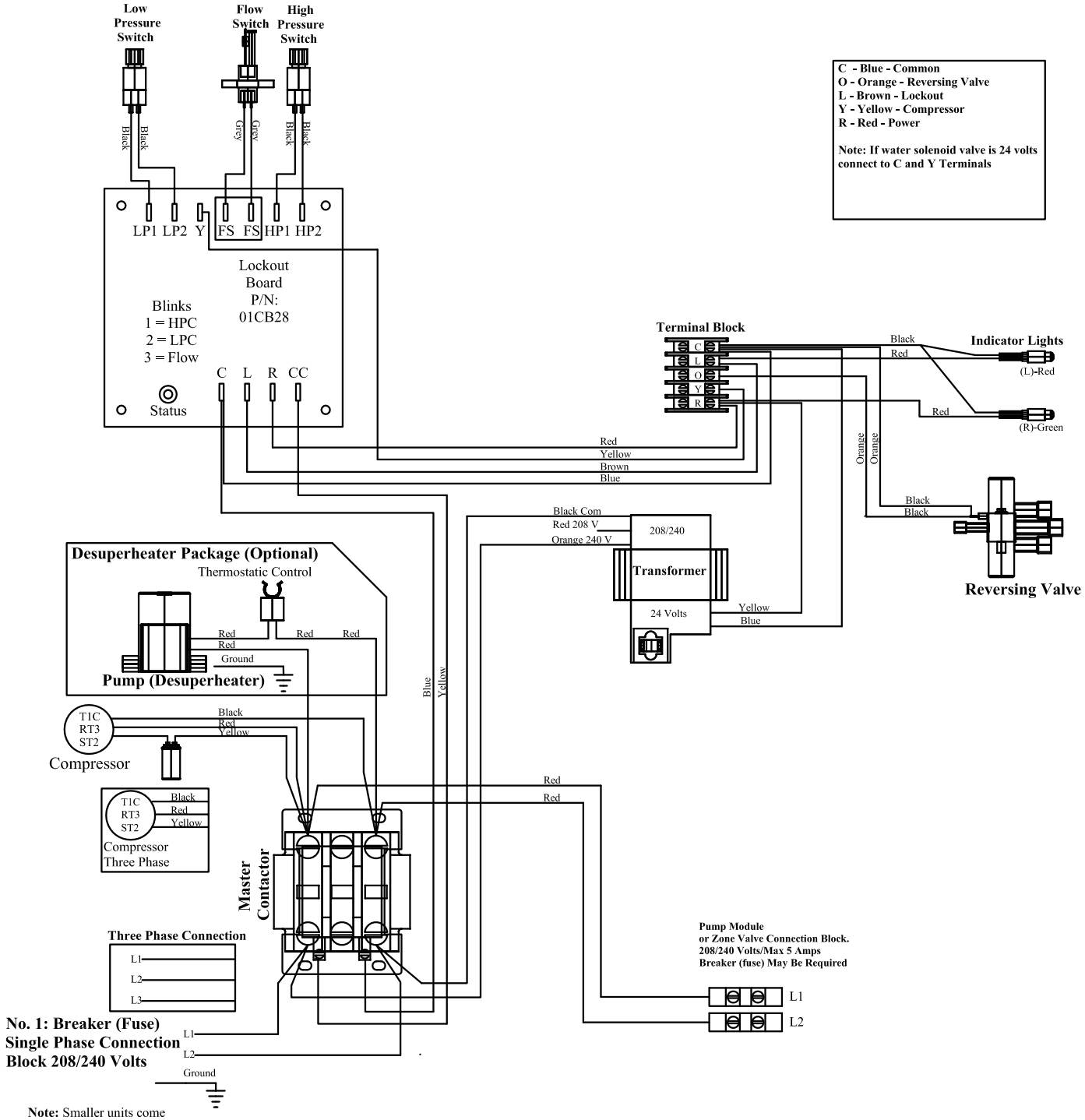
Note:
* GWT096 thru GWT144 Models comes with two compressors, separate refrigerant systems. Separate electrical circuits should be installed with these models. GW096 thru GW144 units may be operated as two-stage equipment in either heating or cooling mode.
Make sure compressors do not run backwards on three phase equipment.

Unit Wiring

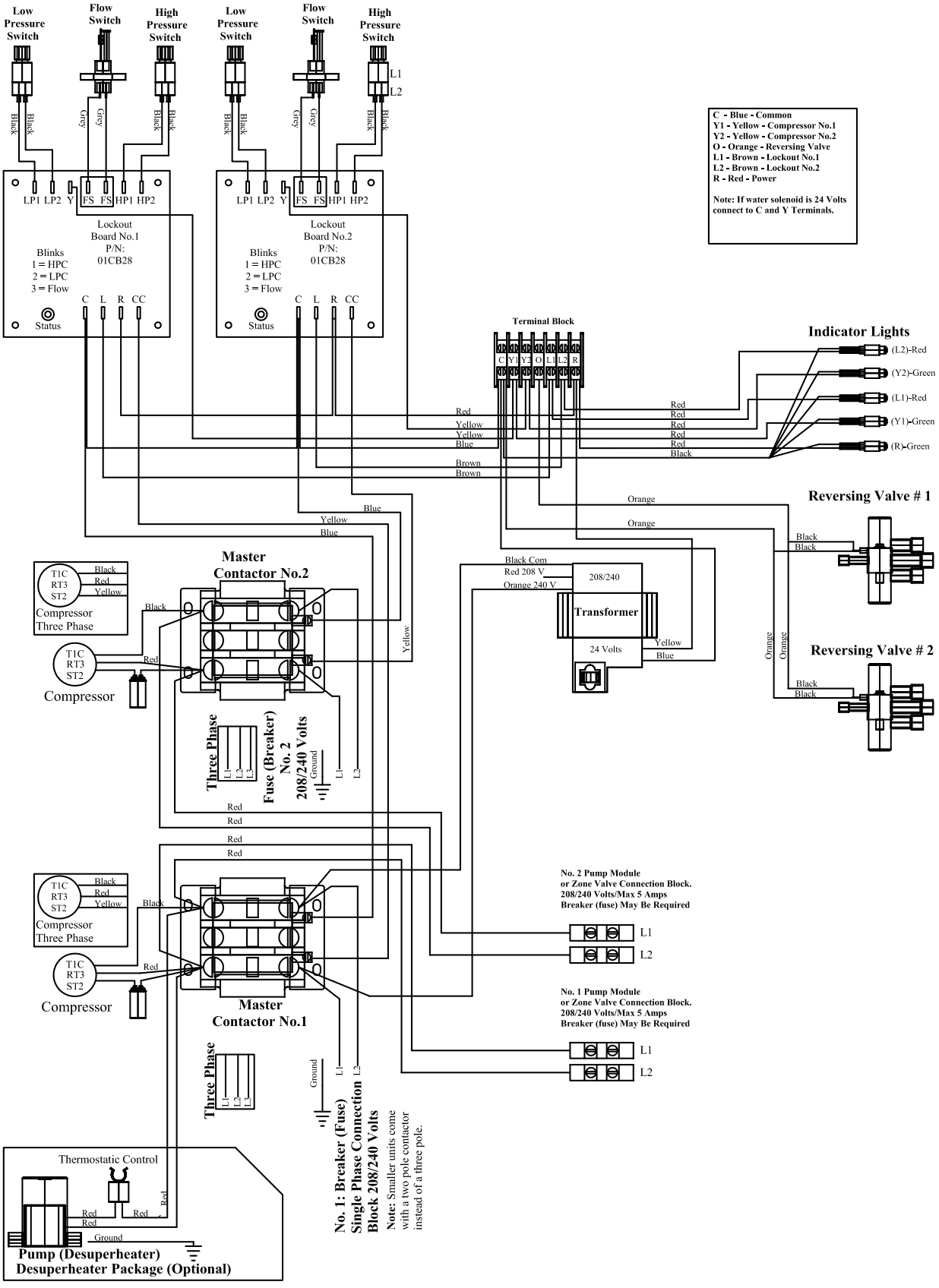


Installing Wires High Voltage
Main Electric Supply for GW Series (compressor compartment) should enter the unit at the heat pump high voltage wiring entrance. Wire should be run through a conduit pipe up to the cabinet and wired to the heat pump main electric box located in the compressor compartment. Wires should be connected to the master contactor in the electrical box. See electric wiring diagram located on the inside of the electric box cover.

GWS Series, Singe Compressor Wiring Diagram



GWT Series, Dual Compressor Wiring Diagram



01CB28 Lockout Board Control Feature and Operation, For Single Speed & Dual Compressor Units

The G Series Logic Controlled System
(01CB28) is a microprocessor-based printed circuit board. It is located in the unit control box for convenient accessibility. This control board is specially design for the G series units. The Board provides control of the unit as well as outputs for status modes, faults and diagnostics.

Startup
The unit will not operate until all inputs and safety controls are checked for normal conditions.

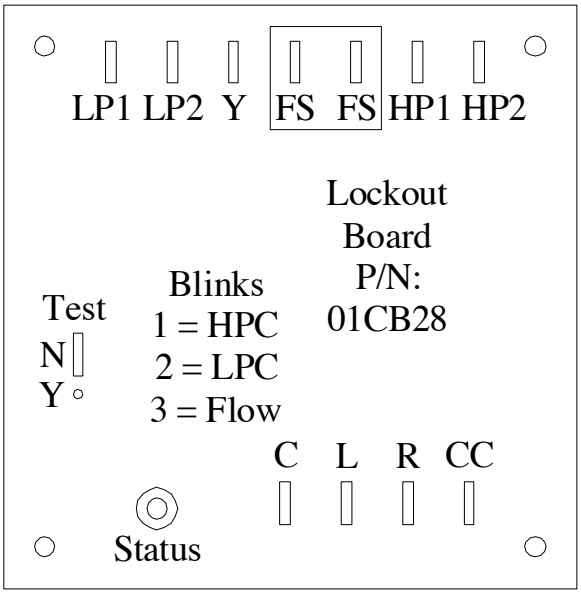
Fault Retry & Diagnostics
All faults are retried three times, with 5 minute delay between each attempt, before finally locking the unit out.
1 Blink for high pressure switch
2 Blinks for low pressure switch
3 Blinks for flow switch

Safety Controls
The G Series control receives separate signals for a high pressure switch for safety, a low pressure switch to prevent loss refrigerant charge damage & a flow switch for freeze protection.

Testing
The G Series control allows service personal to shorten timing delays for fast diagnostics. If jumper is set to no positions, timing is set to standard, If jumper is set to yes position; timing is reduced for service and startup.

Flow Switch (Freeze Protection) Operation
When the 24vac is applied to the y terminal, the control is monitoring the flow switch input. If the flow switch opens (no water flow), the control board will energize the compressor contractor, and start the compressor, after the random start is over. If the flow switch is still open after the 30 seconds, the control will de-energize the compressor contractor. The control board won't start the sequence unless the flow switch closes. If the flow switch opens while the compressor is energizes, the control board will energize the compressor contractor for a minimum time period of 30 seconds, after 30 seconds, the control board will de-energize the compressor contractor and go into a soft lockout. The control board will not energize the compressor contractor unless the flow switch closes and the anti-short cycle time has expired. If the flow switch opens three times with-in 1 hour, the control board will go into manual lockout and the fault indicator will energize. When the flow switch is open , or if in lockout mode, the status led on the control board will blink, three times.

G Series Logic Control Board



LP1 - Low Pressure
LP2 - Low Pressure
Y - H/C Call
FS - Flow Switch
FS - Flow Switch
SS - Contactor
HP1 - High Pressure
HP2 - High Pressure
C - Common
L - Fault
R - Power

Anti-Short Cycle Operation
If all safety controls are satisfactory, the compressor contractor will energize when the control board receives 24VAC on the thermostat input "y" terminal. If the 24VAC on the "y" terminal is removed, the control board will de-energize the compressor contactor and go into a 300 second lockout. If the 24VAC is reapplied to the "y" terminal again, the control board will not energize the compressor contractor until after the 300 second lockout is over.

High & Low Pressure Safety Operation
When the 24vac is applied to the "y" terminal, the control board is monitoring the high & low pressure switch input to make sure that they are closed. The control board won't start the sequence unless the high & Low pressure switch are closed. If the high & low pressure switch opens while the compressor contactor is energized, the control will de-energize the compressor contractor and go into a soft lockout. The control board will not energize the compressor contractor unless the high or low pressure switch closes and the anti-short cycle time has expired. If the high or low pressure switch opens three times with in 1 hour, the control board will go into manual lockout and the fault contact will energize. When the high or low pressure switch opens or if in lockout mode, the status led on the control board will board will blink, one for high & two for low pressure switch.

Engineering Specifications

General
The Geothermal Heat Pump system and the earth loop system shall be one system and include all interconnecting piping and controls to provide an efficient, harmoniously balanced package. All units shall be tested and rated by ETL in accordance with UL and CSA test laboratory safety and performance standards. Each unit shall be mounted on a pallet and shipped in a corrugated box. Units shall be designed to operate with entering liquid temperature between 25°F and 110°F.

Refrigerant Circuit
Compressor shall be hermetically sealed high efficient scroll, mounted on vibration isolators. The coaxial water heat exchanger shall be designed for low water pressure drop and constructed of a copper with an optional cupro-nickel inner tube and a steel outer tube with enhanced heat exchanger surface. An optional domestic water desuperheater coil of vented double wall copper construction for potable water with high limit control shall be employed. The thermostatic expansion device shall be a bi-directional mechanical controlled and shall provide proper superheat over the entire liquid temperature range with minimal hunting. The reversing valve shall be of copper construction with a 24V solenoid valve with fail-to-heating position.

Cabinet
The cabinet shall be of heavy gauge steel. It shall be bolted together, and be installed with high-density insulation, with smoke and flame spread of class 1 type and acoustic value of NRC .45. It shall be oriented to allow complete component service access from all sides. Electrical box shall be of heavy gauge stainless steel located on the access panel side of the cabinet.

Controls
Units shall incorporate a microprocessor based control board. Equipment shall incorporate both high and low pressure switches and freeze protection with total refrigerant circuit lockout with manual reset. The board shall provide detachable terminal block, LED status, fault indicators, fault memory and accessory output.

Piping & Connections
Loop water connections (supply/Return) shall be ¾” or 1-inch FPT brass swivel connection, which provide a union for easy connection. Larger fitting shall be female copper (1¼ to 1½) connection. All water piping shall be insulated

Options, Accessories, & Warranty

Desuperheater
Optional desuperheater package of vented double wall copper constructed heat exchanger coil suitable for potable water shall be provided. The heat exchanger and hot water circulating pump shall be factory installed inside the cabinet.

Field Installed Hydronic Pump Module (Flow Center)
Pump module shall be self contained and provide all liquid flow, liquid fill and connection required for earth loop system. The pumps shall be wired to the pump terminal strip inside unit electric box.

Warranty
Residential Class Equipment
Enertech Manufacturing, LLC warrants the REFRIGERANT SYSTEM, to include the compressor, condenser, evaporator, expansion valve, and reversing valve, to be free from defect in material and workmanship for a period of TEN (10) YEARS FROM THE DATE OF INSTALLATION.†

Enertech Manufacturing, LLC warrants its GEOTHERMAL UNIT against defect in materials and workmanship for FIVE (5) YEARS FROM THE DATE OF INSTALLATION.†

Enertech Manufacturing, LLC warrants SERVICE LABOR ALLOWANCES for TWO (2) YEARS FROM THE DATE OF INSTALLATION† for servicing, removing, or reinstalling parts for the refrigerant circuit, steel cabinets or for any defect in materials and workmanship as set forth above.

† Warranty start date will be delivery date unless proof of startup (no later than 90 days after invoice) is presented. All warranties must be purchased within 90 days of invoice. For unoccupied spec homes, extended warranty may be purchased within 360 days of invoice. Warranty commences at startup date.

Notes

Notes

Revision Table

Date:	By:	Page:	Description:
08 Oct, 2008	DS	36 & 37	Updated Unit Wiring Diagrams
08 Oct, 2008	DS	All	Discontinued GWTR074
22 May, 2008	DS	All	First Published

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