

**GB Comfort Series  
Geothermal Heat Pump  
Sizes 018, 024, 030, 036, 042, 048, 060**



## Product Data

### FEATURES & BENEFITS



#### Energy Efficiency

- 3.7 - 4.3 COP, 18.5 - 21.7 EER (Closed Loop)
- 4.3 - 5.2 COP, 22.7 - 28.1 EER (Open Loop)
- Optional supplemental domestic water heating

#### Comfort

- Single-stage scroll compressor
- Multi-speed constant torque blower motor

#### Control

- Microprocessor control
- Smart Start Assist (optional field installed)

#### Sound

- Fully insulated cabinet with fiberglass

#### Reliability, Quality and Durability

- Puron® refrigerant
- Tin plated copper tubing in air coil

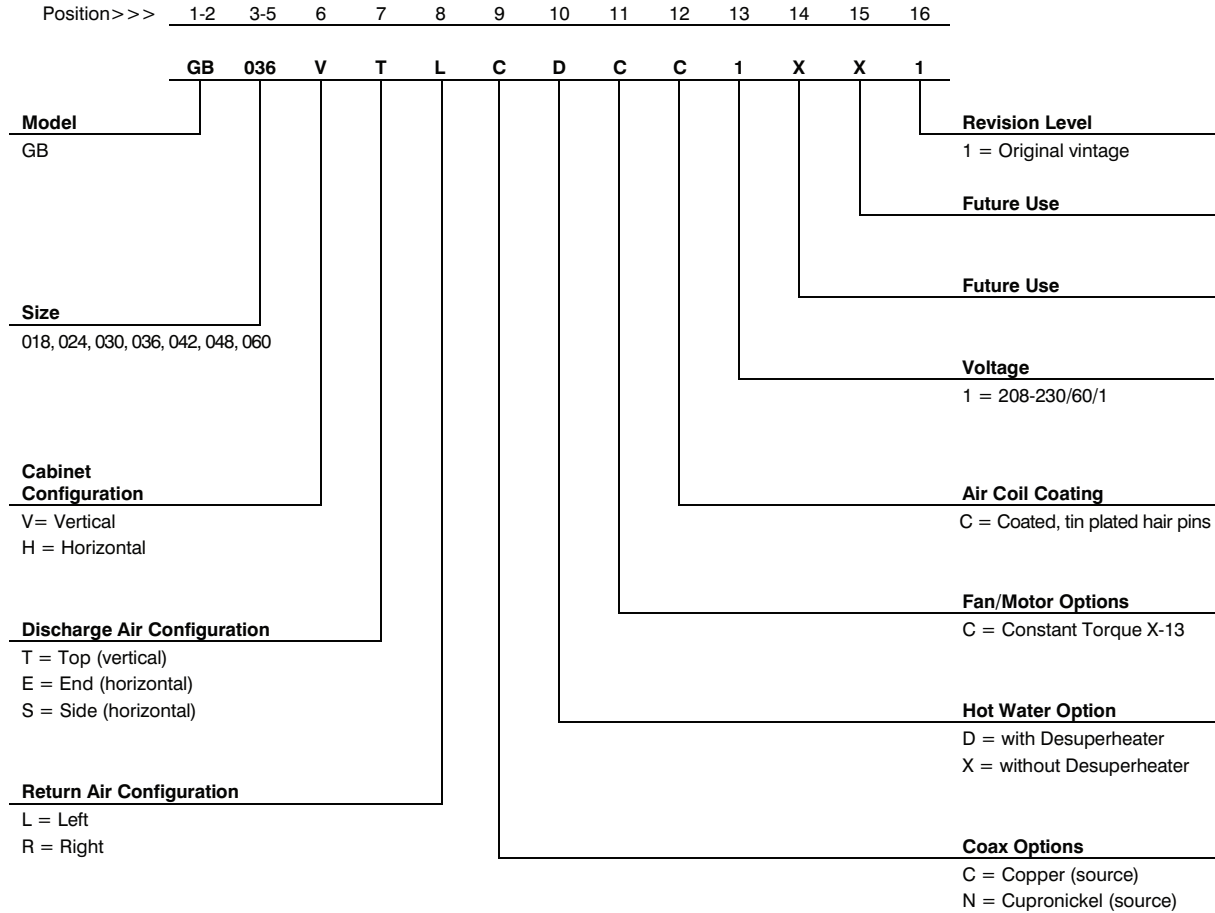
#### Flexibility and Installation

- Unit available in vertical upflow, and horizontal
- Compatible with many 2 stage heat, 1 stage cooling programmable thermostats

#### Indoor Air Quality

- MERV 8, 2" filter

# MODEL NUMBER NOMENCLATURE



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).



ISO 9001

QMI-SAI Global

## ACCESSORIES

### Factory Installed Options

- **Cupro-nickel Coil** - Recommended in conditions anticipating moderate scale formation or in brackish water.
- **Domestic Hot Water Heat Recovery Package:** - Used to heat domestic hot water using the wasted heat from the hot compressed gas of the compressor.

### Field Installed Accessories

- **SmartStart:** - A factory installed start-up device that improves efficiency as much as 65% and helps reduce wear and tear on the compressor during start-up.
- **Electric Heater Kit** - The Electric Heater Kit is a field installable electric resistance heater kit designed for the GB series heat pumps.

Aux. Heat Size Compatibility (Kw)				
GHP Model	KWBEH0101N		KWBEH0101B	
	05	10	15	20
GB018	•	—	—	—
GB024	•	•	—	—
GB030	•	•	—	—
GB036	•	•	•	—
GB042	•	•	•	—
GB048	•	•	•	•
GB060	•	•	•	•

• = Heater Kit compatible / — = Heater Kit NOT compatible

## AHRI RATINGS

GB with ECM Motor (Const Torque)													
Model Number	Fluid Flow Rate (GPM)	Water Loop				Ground Water				Ground Loop			
		Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP	Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP	Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP
GB018	5.0	19500	16.4	21300	5.3	21300	25.6	17700	4.5	20500	19.0	14800	3.8
GB024	6.0	24500	18.2	28500	5.7	28400	28.1	23700	4.6	26000	21.1	18000	4.0
GB030	7.0	27000	16.6	31000	5.9	31700	27.0	25000	5.2	28500	19.4	20500	4.3
GB036	10.0	36000	17.2	41000	5.6	40200	25.9	34400	4.9	37500	19.7	26000	4.1
GB042	10.5	40600	18.2	42400	6.0	45000	25.7	35000	5.1	42200	21.7	26800	4.1
GB048	12.0	47400	17.2	50000	5.3	52900	26.1	40500	4.3	49500	20.0	33400	3.7
GB060	15.0	60400	16.2	71500	5.7	66500	24.1	56700	4.9	61500	18.5	47000	4.2

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory ([www.ahridirectory.org](http://www.ahridirectory.org)) for the most up-to-date ratings information.

## PHYSICAL DATA

GB Series	018	024	030	036	042	048	060
Compressor Type (Qty 1)	Rotary	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Max Water Working Pressure (PSIG/kPa)	450/3100	450/3100	450/3100	450/3100	450/3100	450/3100	450/3100
<b>Standard Fan Motor &amp; Blower</b>							
Fan Motor Type/Speeds	Multi-speed Constant Torque						
Fan Motor (HP)	1/3	1/3	1/2	3/4	3/4	3/4	1
Blower Wheel Size (Dia. x W)	9x7	9x7	9x7	9x7	10x8	10x8	11x9
<b>Multi-speed Constant Torque Fan Motor</b>							
Fan Motor Type/Speeds	Multi-speed Constant Torque						
Fan Motor (HP) (in)	1/3	1/3	1/2	3/4	3/4	3/4	1
<b>Water Connection Size</b>							
FPT Swivel	1"	1"	1"	1"	1"	1"	1"
Coaxial Coil Volume (gal)	0.31	0.48	0.39	0.62	0.62	0.62	0.62
<b>Vertical Cabinet</b>							
Refrigeration Charge (oz)	35	65	71	68	83	86	92
Refrigerant Metering Device	Bi-directional thermal expansion valve (TXV)						
Air Coil Dimensions (H x L)	16.5x20	24x21	24x27	24x27	32x27	32x27	40x27
Standard Filter – 2" MERV 8 (H x L)	20x20	24x24	24x30	24x30	16x30 (2)	16x30 (2)	20x30 (2)
Weight – Operating (lbs)	195	229	269	281	334	340	396
Weight – Shipping (lbs)	212	242	292	304	360	366	422
<b>Horizontal Cabinet</b>							
Refrigeration Charge (oz)	35	65	71	71	80	82	90
Air Coil Dimensions (H x L)	18x18.5	18x28	20x32.5	20x32.5	20x43.25	20x43.25	20x54
Standard Filter – 2" MERV 8 (H x L)	18x20	20x30	20x34.5	20x34.5	20x24 (2)	20x24 (2)	20x28 (2)
Weight – Operating (lbs)	198	307	358	369	400	405	452
Weight – Shipping (lbs)	222	340	404	415	465	470	520

## ELECTRICAL DATA

Standard Motor – Constant Torque									
Model	Voltage/Hz/Ph	Compressor			Blower			Min Circuit Amps	Max Fuse
		Quantity	RLA	LRA	Quantity	FLA	HP		
GB018	208–230/60/1	1	7.4	33	1	2.8	0.33	12.1	15
GB024	208–230/60/1	1	13.5	58.3	1	2.8	0.33	19.7	30
GB030	208–230/60/1	1	12.8	58.3	1	4.1	0.5	20.1	30
GB036	208–230/60/1	1	16	77	1	6	0.75	26.0	40
GB042	208–230/60/1	1	16.7	79	1	6	0.75	26.9	40
GB048	208–230/60/1	1	19.9	109	1	6	0.75	30.9	50
GB060	208–230/60/1	1	25	134	1	7.6	1	38.9	60

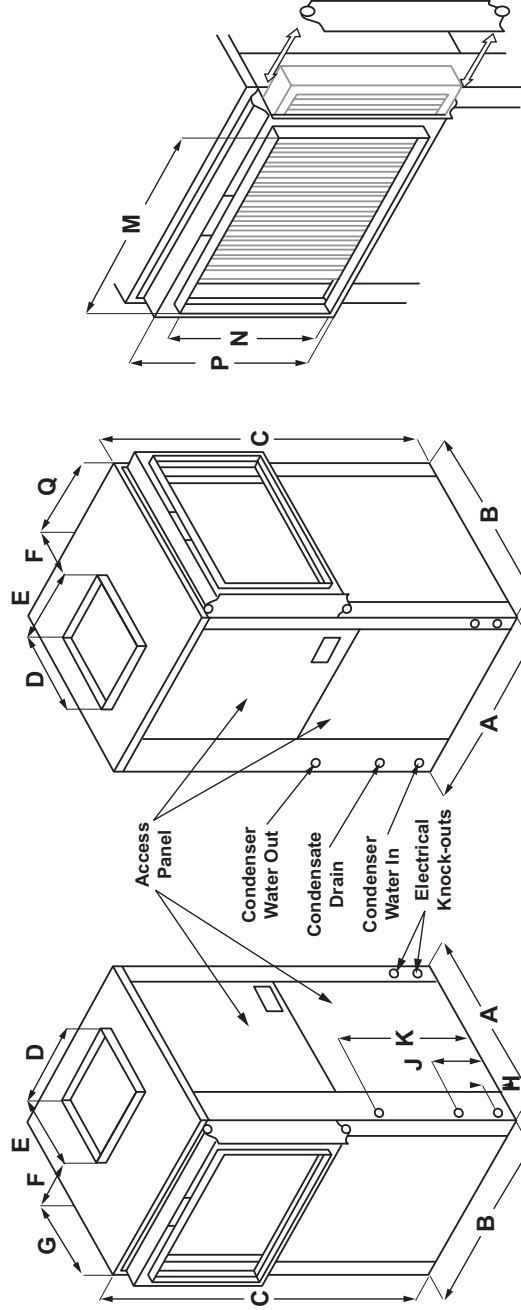
## BLOWER PERFORMANCE DATA

Standard Motor – Constant Torque													
Model	Motor Speed	Available External Static Pressure (inches of Water)											
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
GB018	High	730	700	660	615	580	545	505	460	–	–	–	–
	Medium	615	575	540	500	460	420	–	–	–	–	–	–
	Low	540	510	480	445	405	360	–	–	–	–	–	–
GB024	High	975	945	910	880	855	825	790	750	–	–	–	–
	Medium	905	885	855	825	790	755	700	650	–	–	–	–
	Low	725	700	670	640	585	530	–	–	–	–	–	–
GB030	High	1225	1195	1170	1140	1110	1075	1010	940	745	–	–	–
	Medium	1110	1075	1045	1015	985	955	915	880	700	–	–	–
	Low	955	925	890	860	825	790	750	715	685	–	–	–
GB036	High	1440	1420	1400	1380	1345	1315	1240	1165	1005	845	–	–
	Medium	1340	1315	1290	1270	1245	1225	1180	1135	990	845	–	–
	Low	1190	1165	1140	1115	1090	1065	1040	1020	915	810	–	–
GB042	High	1645	1635	1610	1585	1560	1535	1510	1485	1460	1430	–	–
	Medium	1455	1425	1400	1375	1345	1320	1290	1260	1225	1190	–	–
	Low	1220	1190	1160	1130	1100	1070	1015	955	895	830	–	–
GB048	High	1840	1820	1795	1775	1745	1720	1695	1670	1645	1615	–	–
	Medium	1655	1635	1610	1585	1560	1535	1510	1485	1460	1430	–	–
	Low	1455	1425	1400	1375	1345	1320	1290	1260	1225	1190	–	–
GB060	High	2225	2195	2165	2135	2105	2075	2045	2015	1980	1945	1900	1850
	Medium	2070	2045	2015	1990	1960	1925	1895	1870	1840	1810	1685	1600
	Low	1815	1785	1755	1725	1695	1665	1630	1595	1555	1515	1425	–

## DIMENSIONS - VERTICAL TOP DISCHARGE

Model	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	Condenser Water Connections	Recommended Replacement Nominal Filter Size
	Width	Depth	Height	Discharge Depth	Discharge Width	Cabinet Edge to Discharge	Left Side to Discharge	Water In	Bottom to Condensate Drain	Water Out	R/A Duct Width	R/A Duct Flange Height	Filter Rack Height	Right Side to Discharge		
<b>GB018</b>	21.75	21.75	39.25	13.75	13.75	4.00	6.12	2.25	7.50	12.25	18.00	18.00	20.00	4.00	1" FPT	20 x 20 x 2
<b>GB024</b>	21.75	26.25	47.25	13.75	15.75	6.25	4.87	2.50	8.75	15.00	22.00	22.00	24.00	4.00	1" FPT	24 x 24 x 2
<b>GB030</b>	24.25	33.50	47.25	15.75	15.75	8.87	7.00	2.50	8.50	14.50	28.00	22.00	24.00	4.00	1" FPT	24 x 30 x 2
<b>GB036</b>	24.25	33.50	47.25	15.75	15.75	8.87	7.00	2.50	8.50	14.50	28.00	22.00	24.00	4.00	1" FPT	24 x 30 x 2
<b>GB042</b>	26.25	33.50	58.25	17.75	17.75	7.87	6.75	3.25	8.50	13.25	28.00	30.00	32.00	4.00	1" FPT	16 x 30 x 2 (2)
<b>GB048</b>	26.25	33.50	58.25	17.75	17.75	7.87	6.75	3.25	8.50	13.25	28.00	30.00	32.00	4.00	1" FPT	16 x 30 x 2 (2)
<b>GB060</b>	26.25	33.50	66.25	17.75	17.75	7.87	7.00	3.25	8.50	13.25	28.00	38.00	40.00	4.00	1" FPT	20 x 30 x 2 (2)

NOTE: All dimensions are in inches unless otherwise noted. All dimensions within +/- 0.125". Specifications subject to change without notice.



**Right Hand Return (FRT)**

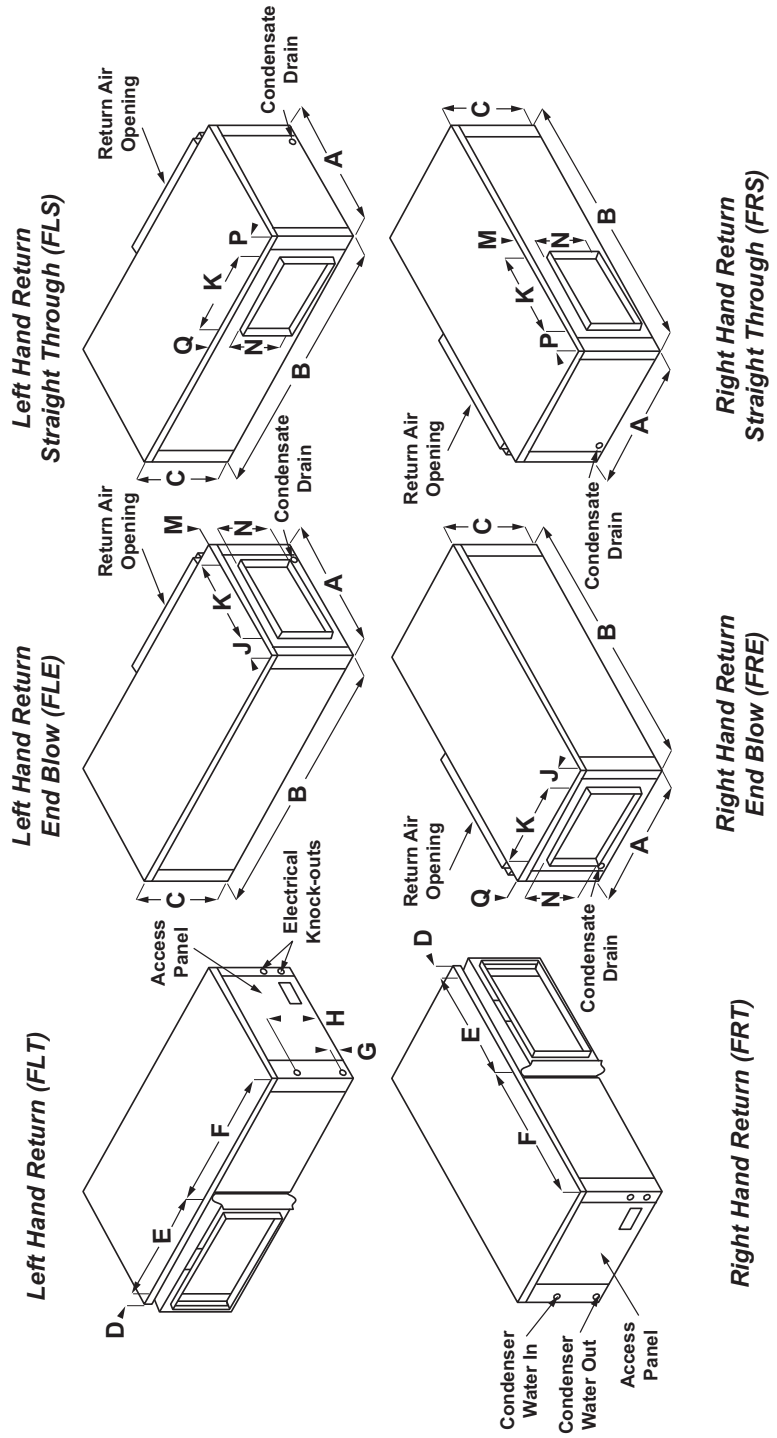
**Left Hand Return (FLT)**

# DIMENSIONS - HORIZONTAL

Model	A Width	B Depth	C Height	D Cab End to Filter Rack	E R/A Duct Width	F Cab Front to Filter Rack	G Water In	H Water Out	J Side to Discharge	K Discharge Width	M Top to Discharge (FLE & FRS)	N Discharge Height	P End to Discharge	Q Top to Discharge (FRE & FLS)	R Filter Rack Height	T R/A Duct Flange Height	Condenser Water Connections	Recommended Replacement Nominal Filter Size
GB018	22.25	45.25	19.75	1.62	20.25	23.25	2.50	12.50	2.75	13.75	3.12	13.75	2.75	2.87	18.00	18.00	1" FPT	18 x 20 x 2
GB024	26.25	54.75	22.00*	1.25	30.25	23.00	2.62	15.12	3.75	13.75	2.12	15.75	3.75	4.25	20.12	18.00	1" FPT	20 x 30 x 2
GB030	30.25	68.25	22.00*	2.00	35.00	31.25	2.50	13.25	4.50	15.75	4.00	15.75	4.50	2.25	20.12	18.00	1" FPT	20 x 34.5 x 2
GB036	30.25	68.25	22.00*	2.00	35.00	31.25	2.50	13.25	4.50	15.75	4.00	15.75	4.50	2.25	20.12	18.00	1" FPT	20 x 34.5 x 2
GB042	30.25	79.00	22.00*	0.75	48.25	29.62	2.75	13.25	4.50	17.75	2.25	17.75	4.50	2.12	20.12	18.00	1" FPT	20 x 24 x 2 (2)
GB048	30.25	79.00	22.00*	0.75	48.25	29.62	2.75	13.25	4.50	17.75	2.25	17.75	4.50	2.12	20.12	18.00	1" FPT	20 x 24 x 2 (2)
GB060	30.25	89.25	22.00*	1.87	56.25	31.00	2.62	13.25	4.50	17.75	2.25	17.75	4.50	2.12	20.12	18.00	1" FPT	20 x 28 x 2 (2)

NOTE: All dimensions within +- 0.125". Specifications subject to change without notice.

\*Total unit height is 22.175 with base rails for GB024-60



# GB018 HEATING PERFORMANCE

GB018 Heating Performance @ 575 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	2.5	3.6	1.6	60	13.4	10.0	1.03	3.8
				70	13.0	9.4	1.08	3.5
				80	12.7	8.8	1.16	3.2
	4	8.3	3.6	60	14.0	10.5	1.05	3.9
				70	13.6	9.9	1.11	3.6
				80	13.2	9.3	1.18	3.3
	5	12.4	5.4	60	14.2	10.8	1.06	3.9
				70	13.9	10.1	1.12	3.7
				80	13.4	9.5	1.19	3.3
40	2.5	3.4	1.5	60	15.3	11.7	1.09	4.1
				70	14.9	11.0	1.15	3.8
				80	14.5	10.4	1.23	3.5
	4	8	3.5	60	16.0	12.4	1.11	4.2
				70	15.6	11.7	1.17	3.9
				80	15.2	11.0	1.25	3.6
	5	11.9	5.2	60	16.3	12.7	1.11	4.3
				70	15.9	11.9	1.17	4.0
				80	15.4	11.2	1.26	3.6
50	2.5	3.3	1.4	60	17.3	13.5	1.13	4.5
				70	16.8	12.8	1.20	4.1
				80	16.5	12.1	1.29	3.8
	4	7.7	3.3	60	18.2	14.4	1.14	4.7
				70	17.7	13.6	1.21	4.3
				80	17.3	12.8	1.31	3.9
	5	11.5	5.0	60	18.5	14.8	1.14	4.8
				70	18.0	13.9	1.22	4.3
				80	17.5	13.1	1.31	3.9
60	2.5	3.2	1.4	60	19.4	15.5	1.15	5.0
				70	18.9	14.7	1.23	4.5
				80	18.4	14.0	1.33	4.0
	4	7.4	3.2	60	20.4	16.6	1.15	5.2
				70	19.9	15.7	1.24	4.7
				80	19.4	14.8	1.35	4.2
	5	11.1	4.8	60	20.8	17.0	1.15	5.3
				70	20.3	16.1	1.24	4.8
				80	19.8	15.1	1.36	4.3
70	2.5	3.1	1.3	60	21.5	17.6	1.15	5.5
				70	21.0	16.8	1.25	4.9
				80	20.5	16.0	1.37	4.4
	4	7.2	3.1	60	22.7	18.9	1.16	5.8
				70	22.1	17.9	1.26	5.1
				80	21.6	17.0	1.39	4.6
	5	10.7	4.6	60	23.2	19.4	1.16	5.9
				70	22.6	18.4	1.27	5.2
				80	22.0	17.3	1.39	4.6
80	2.5	3	1.3	60	23.7	19.9	1.16	6.0
				70	23.2	18.9	1.28	5.3
				80	22.7	18.0	1.41	4.7
	4	7	3.0	60	25.1	21.3	1.16	6.3
				70	24.5	20.2	1.29	5.6
				80	23.9	19.1	1.44	4.9
	5	10.4	4.5	60	25.6	21.8	1.17	6.4
				70	25.0	20.7	1.30	5.6
				80	24.4	19.5	1.45	4.9

# GB018 COOLING PERFORMANCE

GB018 Cooling Performance @ 575 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBtu/hr.	Sensible kBtu/hr.	Ht. Rej. kBtu/hr.	Unit kW	EER
50	2.5	3.2	1.4	75/63	20.2	15.2	23.3	0.95	21.2
				80/67	21.5	15.6	24.6	0.93	23.1
				85/71	22.8	15.9	25.8	0.90	25.3
	4	7.4	3.2	75/63	20.8	15.4	23.9	0.95	21.8
				80/67	22.2	15.8	25.2	0.92	24.0
				85/71	23.5	16.2	26.5	0.89	26.4
	5	11.1	4.8	75/63	21.0	15.5	24.1	0.96	21.9
				80/67	22.4	15.9	25.4	0.93	24.2
				85/71	23.8	16.2	26.7	0.89	26.8
60	2.5	3.1	1.3	75/63	19.4	14.8	22.5	0.98	19.7
				80/67	20.6	15.2	23.7	0.97	21.3
				85/71	21.9	15.6	24.9	0.95	23.0
	4	7.2	3.1	75/63	19.9	15.0	23.0	0.96	20.7
				80/67	21.2	15.4	24.3	0.94	22.6
				85/71	22.6	15.8	25.5	0.91	24.8
	5	10.7	4.6	75/63	20.1	15.1	23.2	0.96	21.0
				80/67	21.4	15.5	24.5	0.93	23.0
				85/71	22.8	15.9	25.7	0.90	25.2
70	2.5	3	1.3	75/63	18.5	14.4	21.8	1.04	17.7
				80/67	19.7	14.8	23.0	1.04	19.0
				85/71	20.9	15.2	24.2	1.03	20.3
	4	7	3.0	75/63	19.0	14.6	22.2	1.01	18.9
				80/67	20.3	15.0	23.4	0.99	20.5
				85/71	21.5	15.4	24.7	0.98	22.0
	5	10.4	4.5	75/63	19.2	14.7	22.3	0.99	19.3
				80/67	20.5	15.1	23.6	0.98	21.0
				85/71	21.7	15.5	24.8	0.96	22.6
80	2.5	2.9	1.3	75/63	17.6	14.0	21.2	1.13	15.5
				80/67	18.7	14.4	22.3	1.14	16.5
				85/71	19.9	14.8	23.5	1.14	17.5
	4	6.7	2.9	75/63	18.1	14.2	21.5	1.08	16.7
				80/67	19.2	14.7	22.7	1.08	17.8
				85/71	20.5	15.0	23.9	1.07	19.1
	5	10.1	4.4	75/63	18.2	14.3	21.6	1.07	17.0
				80/67	19.4	14.7	22.8	1.06	18.3
				85/71	20.7	15.1	24.1	1.05	19.7
85	2.5	2.8	1.2	75/63	17.1	13.8	20.9	1.19	14.4
				80/67	18.2	14.2	22.0	1.19	15.3
				85/71	19.3	14.6	23.1	1.20	16.1
	4	6.6	2.9	75/63	17.6	14.0	21.2	1.13	15.5
				80/67	18.7	14.5	22.3	1.13	16.5
				85/71	19.9	14.8	23.5	1.13	17.6
	5	9.9	4.3	75/63	17.8	14.1	21.3	1.12	15.9
				80/67	18.9	14.5	22.4	1.11	17.0
				85/71	20.1	14.9	23.7	1.11	18.2
90	2.5	2.8	1.2	75/63	16.7	13.6	20.6	1.24	13.4
				80/67	17.7	14.1	21.7	1.25	14.1
				85/71	18.8	14.5	22.8	1.26	14.9
	4	6.5	2.8	75/63	17.1	13.8	20.9	1.19	14.4
				80/67	18.2	14.2	22.0	1.19	15.3
				85/71	19.4	14.7	23.2	1.19	16.3
	5	9.8	4.3	75/63	17.3	13.9	21.0	1.17	14.8
				80/67	18.4	14.3	22.1	1.17	15.7
				85/71	19.6	14.8	23.3	1.17	16.8
100	2.5	2.7	1.2	75/63	15.7	13.3	20.0	1.37	11.5
				80/67	16.8	13.7	21.1	1.38	12.2
				85/71	17.8	14.1	22.2	1.39	12.8
	4	6.3	2.7	75/63	16.2	13.4	20.3	1.31	12.3
				80/67	17.2	13.9	21.4	1.32	13.0
				85/71	18.4	14.3	22.5	1.32	13.9
	5	9.5	4.1	75/63	16.3	13.5	20.3	1.29	12.6
				80/67	17.4	13.9	21.4	1.30	13.4
				85/71	18.5	14.3	22.6	1.30	14.2
110	2.5	2.6	1.1	75/63	14.8	12.9	19.5	1.49	9.9
				80/67	15.8	13.3	20.5	1.51	10.4
				85/71	16.8	13.7	21.6	1.53	10.9
	4	6.1	2.6	75/63	15.2	13.0	19.7	1.44	10.5
				80/67	16.2	13.5	20.8	1.45	11.1
				85/71	17.3	14.0	21.9	1.47	11.8
	5	9.2	4.0	75/63	15.3	13.1	19.7	1.42	10.7
				80/67	16.4	13.5	20.9	1.44	11.4
				85/71	17.4	14.0	22.0	1.45	12.0



# GB024 HEATING PERFORMANCE

GB024 Heating Performance @ 800 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	3	2.4	1.0	60	18.2	13.6	1.38	3.9
				70	17.8	12.8	1.53	3.4
				80	17.6	11.9	1.71	3.0
	4	4	1.7	60	18.7	14.1	1.38	3.9
				70	18.3	13.2	1.54	3.5
				80	18.1	12.3	1.71	3.1
	6	8.2	3.6	60	19.3	14.7	1.39	4.1
				70	18.9	13.8	1.55	3.6
				80	18.6	12.8	1.72	3.2
40	3	2.3	1.0	60	20.7	16.0	1.41	4.3
				70	20.3	15.1	1.57	3.8
				80	20.0	14.2	1.74	3.4
	4	3.8	1.6	60	21.3	16.6	1.41	4.4
				70	21.0	15.7	1.58	3.9
				80	20.6	14.8	1.76	3.4
	6	8	3.5	60	22.1	17.4	1.42	4.5
				70	21.7	16.4	1.59	4.0
				80	21.3	15.4	1.77	3.5
50	3	2.2	1.0	60	23.4	18.6	1.44	4.8
				70	23.0	17.6	1.61	4.2
				80	22.6	16.6	1.79	3.7
	4	3.7	1.6	60	24.2	19.4	1.45	4.9
				70	23.8	18.4	1.62	4.3
				80	23.4	17.3	1.81	3.8
	6	7.7	3.3	60	25.2	20.3	1.46	5.0
				70	24.7	19.2	1.64	4.4
				80	24.2	18.0	1.83	3.9
60	3	2.1	0.9	60	26.3	21.3	1.48	5.2
				70	25.8	20.3	1.66	4.6
				80	25.4	19.2	1.85	4.0
	4	3.6	1.6	60	27.3	22.3	1.50	5.3
				70	26.8	21.2	1.67	4.7
				80	26.3	20.0	1.87	4.1
	6	7.4	3.2	60	28.5	23.4	1.51	5.5
				70	27.9	22.2	1.69	4.8
				80	27.3	21.0	1.88	4.2
70	3	2.1	0.9	60	29.3	24.2	1.52	5.6
				70	28.8	23.1	1.70	4.9
				80	28.4	21.9	1.90	4.4
	4	3.5	1.5	60	30.6	25.4	1.54	5.8
				70	29.9	24.3	1.73	5.1
				80	29.4	22.9	1.92	4.5
	6	7.2	3.1	60	32.0	26.8	1.57	6.0
				70	31.3	25.4	1.75	5.2
				80	30.6	24.0	1.95	4.6
80	3	2	0.9	60	32.5	27.2	1.58	6.0
				70	31.9	26.0	1.76	5.3
				80	31.4	24.7	1.97	4.7
	4	3.3	1.4	60	33.9	28.6	1.60	6.2
				70	33.3	27.3	1.79	5.4
				80	32.6	25.9	2.00	4.8
	6	6.9	3.0	60	35.5	30.4	1.64	6.3
				70	34.8	28.6	1.83	5.6
				80	34.0	27.1	2.04	4.9

# GB024 COOLING PERFORMANCE

GB024 Cooling Performance @ 800 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBtu/hr.	Sensible kBtu/hr.	Ht. Rej. kBtu/hr.	Unit kW	EER
50	3	2.1	0.9	75/63	27.1	20.5	30.5	1.05	25.9
				80/67	28.8	21.0	32.3	1.06	27.3
				85/71	30.6	21.6	34.1	1.06	28.8
	4	3.6	1.6	75/63	27.6	20.8	30.8	0.98	28.2
				80/67	29.4	21.3	32.7	0.98	30.0
				85/71	31.2	21.8	34.6	0.98	31.8
	6	7.4	3.2	75/63	28.1	21.0	31.1	0.92	30.8
				80/67	30.0	21.5	33.0	0.91	33.1
				85/71	31.9	22.1	34.9	0.90	35.5
60	3	2.1	0.9	75/63	25.8	20.0	29.7	1.20	21.5
				80/67	27.5	20.5	31.5	1.21	22.7
				85/71	29.2	21.1	33.3	1.22	23.9
	4	3.5	1.5	75/63	26.3	20.2	30.0	1.14	23.1
				80/67	28.1	20.7	31.9	1.14	24.6
				85/71	29.9	21.3	33.7	1.15	26.1
	6	7.2	3.1	75/63	26.8	20.4	30.4	1.08	24.9
				80/67	28.7	21.0	32.2	1.08	26.7
				85/71	30.5	21.6	34.0	1.07	28.5
70	3	2	0.9	75/63	24.6	19.4	29.0	1.36	18.1
				80/67	26.2	20.0	30.6	1.37	19.1
				85/71	27.8	20.6	32.3	1.39	20.1
	4	3.3	1.4	75/63	25.1	19.6	29.3	1.30	19.4
				80/67	26.7	20.3	30.9	1.31	20.5
				85/71	28.4	20.8	32.7	1.32	21.6
	6	6.9	3.0	75/63	25.6	19.8	29.6	1.24	20.7
				80/67	27.3	20.5	31.3	1.24	22.1
				85/71	29.0	21.1	33.1	1.24	23.3
80	3	1.9	0.8	75/63	23.3	18.9	28.2	1.53	15.3
				80/67	24.8	19.5	29.7	1.54	16.1
				85/71	26.4	20.1	31.4	1.56	17.0
	4	3.2	1.4	75/63	23.8	19.1	28.4	1.46	16.3
				80/67	25.3	19.7	30.1	1.48	17.2
				85/71	27.0	20.3	31.8	1.49	18.2
	6	6.7	2.9	75/63	24.2	19.3	28.7	1.41	17.2
				80/67	25.9	19.9	30.4	1.41	18.4
				85/71	27.6	20.5	32.2	1.42	19.5
85	3	1.9	0.8	75/63	22.7	18.7	27.8	1.61	14.1
				80/67	24.1	19.3	29.3	1.63	14.8
				85/71	25.6	19.9	30.9	1.65	15.5
	4	3.2	1.4	75/63	23.1	18.8	28.0	1.55	14.9
				80/67	24.7	19.4	29.7	1.56	15.8
				85/71	26.2	20.1	31.3	1.58	16.6
	6	6.6	2.9	75/63	23.5	19.0	28.3	1.49	15.8
				80/67	25.1	19.7	29.9	1.50	16.8
				85/71	26.8	20.2	31.7	1.51	17.8
90	3	1.9	0.8	75/63	22.0	18.4	27.4	1.71	12.9
				80/67	23.5	19.0	29.0	1.72	13.7
				85/71	24.9	19.6	30.5	1.74	14.3
	4	3.1	1.3	75/63	22.5	18.6	27.7	1.64	13.7
				80/67	23.9	19.2	29.2	1.66	14.5
				85/71	25.5	19.7	30.9	1.67	15.3
	6	6.5	2.8	75/63	22.9	18.7	27.9	1.59	14.5
				80/67	24.4	19.3	29.5	1.59	15.3
				85/71	26.0	20.0	31.2	1.60	16.2
100	3	1.8	0.8	75/63	20.8	17.8	26.7	1.90	10.9
				80/67	22.1	18.5	28.2	1.92	11.5
				85/71	23.5	19.1	29.7	1.94	12.1
	4	3	1.3	75/63	21.2	18.0	27.0	1.84	11.5
				80/67	22.5	18.7	28.4	1.86	12.1
				85/71	24.0	19.3	29.9	1.87	12.8
	6	6.3	2.7	75/63	21.5	18.2	27.2	1.78	12.1
				80/67	23.0	18.8	28.7	1.79	12.9
				85/71	24.5	19.4	30.2	1.81	13.6
110	3	1.8	0.8	75/63	19.4	17.3	26.1	2.13	9.2
				80/67	20.8	17.9	27.5	2.14	9.7
				85/71	22.1	18.6	29.0	2.16	10.3
	4	3	1.3	75/63	19.8	17.5	26.2	2.06	9.6
				80/67	21.1	18.1	27.7	2.07	10.2
				85/71	22.5	18.8	29.1	2.08	10.8
	6	6.1	2.6	75/63	20.1	17.6	26.4	2.01	10.0
				80/67	21.5	18.2	27.9	2.01	10.7
				85/71	23.0	18.9	29.4	2.02	11.4

# GB030 HEATING PERFORMANCE

GB030 Heating Performance @ 1000 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	4	1.4	0.6	60	19.8	15.0	1.43	4.1
				70	19.4	14.1	1.60	3.6
				80	19.0	13.0	1.78	3.1
	6	2.9	1.3	60	20.5	15.7	1.43	4.2
				70	20.0	14.6	1.60	3.7
				80	19.6	13.3	1.78	3.2
	8	4.9	2.1	60	21.0	16.1	1.43	4.3
				70	20.5	15.2	1.60	3.8
				80	19.8	14.0	1.78	3.2
40	4	1.4	0.6	60	22.4	17.6	1.43	4.6
				70	21.8	16.5	1.60	4.0
				80	21.5	15.3	1.79	3.5
	6	2.8	1.2	60	23.4	18.5	1.43	4.8
				70	22.8	17.3	1.60	4.2
				80	22.3	16.2	1.79	3.6
	8	4.7	2.0	60	23.9	19.2	1.43	4.9
				70	23.3	17.8	1.60	4.3
				80	22.5	16.6	1.79	3.7
50	4	1.3	0.6	60	25.3	20.4	1.43	5.2
				70	24.9	19.3	1.61	4.5
				80	24.3	18.1	1.81	3.9
	6	2.7	1.2	60	26.5	21.6	1.44	5.4
				70	26.0	20.8	1.62	4.7
				80	25.6	19.6	1.82	4.1
	8	4.6	2.0	60	27.2	22.5	1.45	5.5
				70	26.5	20.8	1.63	4.8
				80	25.9	19.7	1.82	4.2
60	4	1.3	0.6	60	28.6	23.7	1.46	5.7
				70	27.9	22.2	1.64	5.0
				80	27.3	21.0	1.84	4.4
	6	2.6	1.1	60	30.1	25.1	1.48	5.9
				70	29.3	23.5	1.66	5.2
				80	28.8	22.5	1.86	4.5
	8	4.4	1.9	60	30.8	25.9	1.50	6.0
				70	30.0	24.3	1.67	5.2
				80	29.4	22.9	1.87	4.6
70	4	1.2	0.5	60	32.1	26.9	1.52	6.2
				70	31.2	25.4	1.70	5.4
				80	30.6	24.1	1.89	4.7
	6	2.5	1.1	60	33.7	28.4	1.55	6.4
				70	33.2	27.6	1.74	5.6
				80	32.2	25.5	1.93	4.9
	8	4.3	1.9	60	34.8	29.6	1.58	6.4
				70	34.1	28.5	1.77	5.7
				80	33.5	27.3	1.97	5.0
80	4	1.2	0.5	60	35.8	30.4	1.60	6.5
				70	34.9	28.7	1.79	5.7
				80	34.2	27.3	1.99	5.0
	6	2.5	1.1	60	37.7	32.1	1.67	6.6
				70	36.9	30.5	1.86	5.8
				80	36.1	29.0	2.06	5.1
	8	4.1	1.8	60	39.2	33.4	1.72	6.7
				70	38.5	32.1	1.91	5.9
				80	37.7	31.3	2.12	5.2

# GB030 COOLING PERFORMANCE

GB030 Cooling Performance @ 1000 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBtu/hr.	Sensible kBtu/hr.	Ht. Rej. kBtu/hr.	Unit kW	EER
50	4	1.3	0.6	75/63	30.0	24.0	34.0	1.23	24.5
				80/67	31.9	24.6	36.1	1.27	25.2
				85/71	33.8	25.4	38.1	1.31	25.8
	6	2.6	1.1	75/63	30.9	24.3	34.6	1.14	27.2
				80/67	32.8	25.0	36.7	1.17	28.1
				85/71	34.8	25.7	38.9	1.21	28.7
	8	4.4	1.9	75/63	31.3	24.5	34.9	1.09	28.8
				80/67	33.2	25.2	36.9	1.12	29.7
				85/71	35.3	25.9	39.2	1.16	30.5
60	4	1.2	0.5	75/63	28.7	23.4	33.1	1.38	20.8
				80/67	30.4	24.2	35.0	1.42	21.5
				85/71	32.3	24.9	37.1	1.47	22.0
	6	2.5	1.1	75/63	29.5	23.7	33.7	1.29	22.9
				80/67	31.4	24.4	35.7	1.33	23.7
				85/71	33.2	25.2	37.7	1.37	24.3
	8	4.3	1.9	75/63	29.9	23.9	33.9	1.25	24.0
				80/67	31.7	24.7	35.9	1.28	24.9
				85/71	33.8	25.3	38.2	1.32	25.7
70	4	1.2	0.5	75/63	27.3	22.8	32.3	1.54	17.7
				80/67	29.0	23.6	34.1	1.58	18.4
				85/71	30.8	24.4	36.1	1.63	18.9
	6	2.5	1.1	75/63	28.0	23.1	32.7	1.46	19.3
				80/67	29.9	23.9	34.7	1.49	20.1
				85/71	31.7	24.7	36.7	1.53	20.7
	8	4.1	1.8	75/63	28.4	23.3	32.9	1.41	20.1
				80/67	30.3	24.0	35.0	1.44	21.0
				85/71	32.2	24.8	37.1	1.48	21.7
80	4	1.1	0.5	75/63	25.9	22.3	31.4	1.72	15.1
				80/67	27.6	23.0	33.2	1.76	15.7
				85/71	29.3	23.8	35.1	1.81	16.2
	6	2.4	1.0	75/63	26.6	22.6	31.8	1.63	16.3
				80/67	28.3	23.3	33.7	1.67	17.0
				85/71	30.2	24.0	35.7	1.71	17.7
	8	4	1.7	75/63	26.9	22.7	32.0	1.59	16.9
				80/67	28.7	23.4	34.0	1.62	17.7
				85/71	30.6	24.3	36.0	1.66	18.5
85	4	1.1	0.5	75/63	25.2	22.0	31.0	1.82	13.9
				80/67	26.8	22.8	32.8	1.85	14.5
				85/71	28.6	23.5	34.7	1.91	15.0
	6	2.3	1.0	75/63	25.9	22.2	31.4	1.73	15.0
				80/67	27.6	23.1	33.2	1.76	15.7
				85/71	29.4	23.8	35.2	1.80	16.3
	8	3.9	1.7	75/63	26.2	22.4	31.6	1.68	15.6
				80/67	27.9	23.2	33.4	1.71	16.3
				85/71	29.8	23.9	35.4	1.75	17.0
90	4	1.1	0.5	75/63	24.5	21.7	30.5	1.92	12.8
				80/67	26.1	22.5	32.3	1.96	13.4
				85/71	27.8	23.3	34.2	2.00	13.9
	6	2.3	1.0	75/63	25.2	21.9	31.0	1.83	13.8
				80/67	26.8	22.8	32.7	1.86	14.4
				85/71	28.5	23.6	34.6	1.90	15.0
	8	3.9	1.7	75/63	25.5	22.1	31.2	1.78	14.3
				80/67	27.2	22.9	33.0	1.81	15.0
				85/71	29.0	23.6	34.9	1.85	15.7
100	4	1.1	0.5	75/63	23.0	21.1	29.7	2.14	10.8
				80/67	24.6	22.0	31.5	2.17	11.3
				85/71	26.2	22.8	33.2	2.22	11.8
	6	2.2	1.0	75/63	23.6	21.4	30.1	2.04	11.6
				80/67	25.3	22.1	31.9	2.08	12.2
				85/71	26.9	23.0	33.7	2.12	12.7
	8	3.7	1.6	75/63	23.9	21.5	30.2	2.00	12.0
				80/67	25.6	22.3	32.1	2.03	12.6
				85/71	27.3	23.2	33.9	2.07	13.2
110	4	1	0.4	75/63	21.5	20.5	29.0	2.39	9.0
				80/67	23.0	21.4	30.7	2.42	9.5
				85/71	24.6	22.2	32.4	2.45	10.0
	6	2.2	1.0	75/63	22.1	20.8	29.3	2.29	9.7
				80/67	23.6	21.6	31.0	2.32	10.2
				85/71	25.3	22.5	32.8	2.35	10.8
	8	3.6	1.6	75/63	22.4	20.8	29.5	2.25	10.0
				80/67	23.9	21.7	31.1	2.27	10.5
				85/71	25.6	22.6	32.9	2.30	11.1

# GB036 HEATING PERFORMANCE

GB036 Heating Performance @ 1200 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	4.5	2.3	1.0	60	26.3	20.0	1.90	4.1
				70	25.7	18.8	2.09	3.6
				80	25.2	17.4	2.31	3.2
	6	3.8	1.6	60	27.0	20.4	1.91	4.2
				70	26.7	19.4	2.10	3.7
				80	26.0	18.4	2.32	3.3
	9	8	3.5	60	28.3	21.7	1.92	4.3
				70	27.8	20.5	2.12	3.8
				80	27.1	19.4	2.34	3.4
40	4.5	2.2	1.0	60	29.5	23.1	1.94	4.5
				70	29.2	21.5	2.14	4.0
				80	28.3	20.6	2.36	3.5
	6	3.7	1.6	60	30.8	24.6	1.96	4.6
				70	30.6	22.6	2.16	4.2
				80	29.7	21.6	2.37	3.7
	9	7.7	3.3	60	32.1	25.3	1.97	4.8
				70	31.4	24.3	2.17	4.2
				80	31.1	22.8	2.39	3.8
50	4.5	2.1	0.9	60	33.7	26.9	1.99	5.0
				70	32.9	25.5	2.19	4.4
				80	32.3	24.4	2.41	3.9
	6	3.6	1.6	60	35.0	28.4	2.01	5.1
				70	34.4	27.0	2.21	4.6
				80	33.8	25.6	2.43	4.1
	9	7.4	3.2	60	36.6	29.6	2.03	5.3
				70	35.7	28.4	2.23	4.7
				80	35.0	27.0	2.45	4.2
60	4.5	2.1	0.9	60	37.8	30.8	2.04	5.4
				70	36.9	29.7	2.24	4.8
				80	36.3	28.0	2.47	4.3
	6	3.4	1.5	60	39.6	32.6	2.06	5.6
				70	38.7	30.8	2.26	5.0
				80	37.8	29.7	2.49	4.5
	9	7.2	3.1	60	41.6	34.6	2.08	5.9
				70	40.9	33.3	2.29	5.2
				80	39.7	31.0	2.52	4.6
70	4.5	2	0.9	60	42.3	35.1	2.09	5.9
				70	41.4	33.6	2.30	5.3
				80	40.5	32.2	2.53	4.7
	6	3.3	1.4	60	44.4	37.5	2.12	6.1
				70	43.3	34.9	2.33	5.5
				80	42.4	33.7	2.56	4.9
	9	6.9	3.0	60	47.4	40.4	2.16	6.4
				70	45.6	38.5	2.37	5.6
				80	44.7	36.2	2.60	5.0
80	4.5	1.9	0.8	60	47.0	39.6	2.16	6.4
				70	46.2	38.1	2.37	5.7
				80	45.3	36.4	2.61	5.1
	6	3.2	1.4	60	49.1	41.8	2.19	6.6
				70	48.1	40.4	2.41	5.9
				80	47.1	38.8	2.65	5.2
	9	6.7	2.9	60	52.8	45.3	2.24	6.9
				70	51.4	43.3	2.46	6.1
				80	49.7	40.1	2.69	5.4

# GB036 COOLING PERFORMANCE

GB036 Cooling Performance @ 1200 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBtu/hr.	Sensible kBtu/hr.	Ht. Rej. kBTu/hr.	Unit kW	EER
50	4.5	2.1	0.9	75/63	37.1	29.1	42.4	1.64	22.6
				80/67	39.4	30.0	44.8	1.66	23.7
				85/71	42.0	30.7	47.5	1.68	24.9
	6	3.4	1.5	75/63	37.8	29.4	42.9	1.56	24.2
				80/67	40.3	30.3	45.4	1.58	25.6
				85/71	42.9	31.2	48.1	1.59	27.0
	9	7.2	3.1	75/63	38.6	29.7	43.4	1.48	26.1
				80/67	41.2	30.6	46.1	1.48	27.7
				85/71	43.9	31.4	48.9	1.49	29.4
60	4.5	2	0.9	75/63	35.4	28.4	41.3	1.81	19.5
				80/67	37.8	29.2	43.7	1.84	20.6
				85/71	40.1	30.2	46.1	1.86	21.6
	6	3.3	1.4	75/63	36.2	28.7	41.8	1.74	20.8
				80/67	38.5	29.6	44.2	1.75	22.0
				85/71	41.0	30.5	46.8	1.77	23.2
	9	6.9	3.0	75/63	36.9	29.0	42.3	1.66	22.3
				80/67	39.5	29.9	44.9	1.67	23.7
				85/71	42.0	30.8	47.5	1.67	25.1
70	4.5	1.9	0.8	75/63	33.9	27.8	40.3	2.00	17.0
				80/67	36.1	28.7	42.6	2.02	17.9
				85/71	38.4	29.6	45.0	2.04	18.8
	6	3.2	1.4	75/63	34.5	28.0	40.6	1.92	18.0
				80/67	36.8	28.9	43.0	1.94	19.0
				85/71	39.2	29.9	45.6	1.95	20.1
	9	6.7	2.9	75/63	35.2	28.3	41.1	1.84	19.1
				80/67	37.6	29.2	43.6	1.85	20.3
				85/71	40.0	30.1	46.1	1.86	21.5
80	4.5	1.9	0.8	75/63	32.1	27.0	39.1	2.19	14.6
				80/67	34.2	28.0	41.3	2.22	15.4
				85/71	36.4	28.9	43.7	2.24	16.2
	6	3.1	1.3	75/63	32.7	27.3	39.5	2.11	15.4
				80/67	35.0	28.3	41.9	2.13	16.4
				85/71	37.3	29.2	44.2	2.15	17.3
	9	6.5	2.8	75/63	33.5	27.4	40.0	2.04	16.4
				80/67	35.8	28.5	42.4	2.05	17.4
				85/71	38.2	29.4	44.9	2.06	18.5
85	4.5	1.8	0.8	75/63	31.2	26.7	38.6	2.30	13.5
				80/67	33.3	27.6	40.7	2.32	14.3
				85/71	35.4	28.5	43.0	2.35	15.1
	6	3.1	1.3	75/63	31.9	27.0	39.0	2.22	14.4
				80/67	34.0	27.9	41.2	2.24	15.2
				85/71	36.6	28.1	43.9	2.26	16.2
	9	6.4	2.8	75/63	32.5	27.2	39.4	2.14	15.2
				80/67	34.8	28.2	41.7	2.15	16.1
				85/71	37.1	29.1	44.1	2.16	17.1
90	4.5	1.8	0.8	75/63	30.3	26.3	38.0	2.41	12.5
				80/67	32.4	27.3	40.1	2.44	13.3
				85/71	34.6	28.2	42.4	2.46	14.1
	6	3	1.3	75/63	31.0	26.6	38.4	2.33	13.3
				80/67	33.1	27.5	40.7	2.35	14.1
				85/71	35.2	28.5	42.8	2.37	14.8
	9	6.3	2.7	75/63	31.6	26.9	38.8	2.25	14.0
				80/67	33.8	27.8	41.0	2.26	14.9
				85/71	35.8	28.7	43.2	2.28	15.7
100	4.5	1.7	0.7	75/63	28.6	25.6	37.0	2.66	10.7
				80/67	30.5	26.6	39.1	2.68	11.4
				85/71	32.6	27.6	41.2	2.69	12.1
	6	2.9	1.3	75/63	29.2	25.9	37.4	2.58	11.3
				80/67	31.2	26.8	39.4	2.59	12.0
				85/71	33.4	27.7	41.7	2.60	12.8
	9	6.1	2.6	75/63	29.8	26.1	37.7	2.49	11.9
				80/67	31.9	27.0	39.9	2.51	12.7
				85/71	34.0	28.1	42.1	2.51	13.5
110	4.5	1.7	0.7	75/63	26.8	24.2	36.2	2.94	9.1
				80/67	28.7	25.9	38.1	2.95	9.7
				85/71	30.8	26.8	40.3	2.97	10.4
	6	2.8	1.2	75/63	27.4	24.4	36.4	2.85	9.6
				80/67	29.3	26.1	38.4	2.86	10.2
				85/71	31.3	27.1	40.5	2.87	10.9
	9	5.9	2.6	75/63	27.9	25.3	36.7	2.77	10.1
				80/67	29.9	26.4	38.7	2.77	10.8
				85/71	32.0	27.4	40.8	2.77	11.5

# GB042 HEATING PERFORMANCE

GB042 Heating Performance @ 1400 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	5	1.7	0.7	60	26.2	20.3	1.87	4.1
				70	25.5	18.8	2.09	3.6
				80	25.0	17.5	2.33	3.1
	8	3.9	1.7	60	27.6	21.6	1.89	4.3
				70	26.9	20.2	2.11	3.7
				80	26.3	18.8	2.35	3.3
	11	6.9	3.0	60	28.4	22.4	1.90	4.4
				70	27.7	20.9	2.11	3.8
				80	27.0	19.4	2.35	3.4
40	5	1.6	0.7	60	29.9	23.7	1.91	4.6
				70	29.2	21.9	2.12	4.0
				80	28.8	20.9	2.37	3.6
	8	3.7	1.6	60	31.7	25.1	1.92	4.8
				70	30.8	23.8	2.15	4.2
				80	30.3	22.2	2.39	3.7
	11	6.6	2.9	60	32.8	26.3	1.94	5.0
				70	31.7	24.9	2.16	4.3
				80	31.0	23.3	2.40	3.8
50	5	1.5	0.7	60	33.9	27.4	1.95	5.1
				70	33.3	26.0	2.17	4.5
				80	32.3	24.1	2.42	3.9
	8	3.6	1.6	60	36.1	29.7	1.97	5.4
				70	35.1	27.4	2.20	4.7
				80	34.3	26.3	2.44	4.1
	11	6.4	2.8	60	37.2	30.7	1.99	5.5
				70	36.5	29.4	2.21	4.8
				80	35.4	27.5	2.46	4.2
60	5	1.5	0.7	60	38.2	31.6	2.00	5.6
				70	37.4	30.0	2.23	4.9
				80	36.7	28.7	2.47	4.3
	8	3.5	1.5	60	41.3	35.1	2.04	5.9
				70	40.1	33.2	2.26	5.2
				80	38.6	30.6	2.50	4.5
	11	6.2	2.7	60	42.5	35.7	2.05	6.1
				70	41.0	33.8	2.27	5.3
				80	40.1	32.1	2.52	4.7
70	5	1.4	0.6	60	43.0	36.1	2.06	6.1
				70	41.7	34.6	2.29	5.3
				80	41.1	32.8	2.53	4.8
	8	3.4	1.5	60	46.5	39.0	2.10	6.5
				70	45.5	37.8	2.33	5.7
				80	44.3	36.0	2.58	5.0
	11	6	2.6	60	48.1	40.8	2.12	6.6
				70	46.1	40.0	2.36	5.7
				80	45.2	37.0	2.60	5.1
80	5	1.4	0.6	60	47.9	40.8	2.12	6.6
				70	46.9	38.9	2.36	5.8
				80	45.9	37.1	2.61	5.2
	8	3.3	1.4	60	52.6	44.6	2.18	7.1
				70	47.9	42.5	2.37	5.9
				80	48.9	40.6	2.67	5.4
	11	5.8	2.5	60	53.9	48.1	2.22	7.1
				70	52.7	45.1	2.45	6.3
				80	51.3	42.3	2.71	5.6

# GB042 COOLING PERFORMANCE

GB042 Cooling Performance @ 1400 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling			Unit kW	EER	
				Ent. Air db/wb,F	Total kBTu/hr.	Sensible kBTu/hr.			Ht. Rej. kBTu/hr.
50	5	1.5	0.7	75/63	43.5	34.3	49.1	1.68	25.8
				80/67	46.3	35.4	51.9	1.70	27.3
				85/71	49.2	36.3	55.0	1.72	28.6
	8	3.5	1.5	75/63	45.0	35.0	50.1	1.53	29.4
				80/67	48.1	36.0	53.2	1.54	31.3
				85/71	51.0	37.0	56.2	1.54	33.2
	11	6.2	2.7	75/63	45.8	35.2	50.7	1.46	31.4
				80/67	48.8	36.4	53.7	1.45	33.6
				85/71	52.0	37.4	56.9	1.45	35.9
60	5	1.4	0.6	75/63	41.6	33.4	47.8	1.88	22.1
				80/67	44.3	34.5	50.6	1.90	23.3
				85/71	47.1	35.5	53.4	1.92	24.5
	8	3.4	1.5	75/63	43.0	34.0	48.8	1.74	24.7
				80/67	45.9	35.1	51.7	1.74	26.3
				85/71	48.9	36.1	54.7	1.75	27.9
	11	6	2.6	75/63	43.7	34.3	49.3	1.67	26.2
				80/67	46.6	35.5	52.2	1.67	27.9
				85/71	49.7	36.5	55.3	1.67	29.7
70	5	1.4	0.6	75/63	39.5	32.7	46.3	2.08	19.0
				80/67	42.1	33.8	49.0	2.10	20.0
				85/71	44.9	34.7	51.9	2.13	21.1
	8	3.3	1.4	75/63	40.9	33.2	47.3	1.95	21.0
				80/67	43.6	34.3	50.1	1.95	22.3
				85/71	46.5	35.4	53.0	1.97	23.7
	11	5.8	2.5	75/63	41.5	33.5	47.7	1.88	22.1
				80/67	44.4	34.5	50.7	1.89	23.6
				85/71	47.3	35.7	53.6	1.89	25.0
80	5	1.4	0.6	75/63	37.5	31.8	45.0	2.31	16.3
				80/67	40.0	32.9	47.6	2.33	17.2
				85/71	42.5	34.0	50.2	2.35	18.1
	8	3.2	1.4	75/63	38.8	32.4	45.8	2.16	17.9
				80/67	41.5	33.4	48.6	2.18	19.1
				85/71	44.2	34.5	51.4	2.19	20.2
	11	5.6	2.4	75/63	39.4	32.6	46.2	2.10	18.8
				80/67	42.1	33.8	49.0	2.11	20.0
				85/71	45.0	34.7	52.0	2.12	21.3
85	5	1.3	0.6	75/63	36.4	31.4	44.3	2.42	15.0
				80/67	39.0	32.5	46.9	2.44	16.0
				85/71	41.4	33.6	49.4	2.47	16.8
	8	3.1	1.3	75/63	37.8	31.8	45.2	2.28	16.6
				80/67	40.3	33.0	47.8	2.29	17.6
				85/71	43.0	34.2	50.5	2.30	18.7
	11	5.5	2.4	75/63	38.3	32.2	45.5	2.22	17.3
				80/67	41.0	33.2	48.3	2.22	18.4
				85/71	43.7	34.4	51.0	2.23	19.6
90	5	1.3	0.6	75/63	35.5	30.9	43.7	2.55	13.9
				80/67	37.8	32.2	46.1	2.57	14.7
				85/71	40.2	33.3	48.7	2.59	15.5
	8	3.1	1.3	75/63	36.6	31.5	44.4	2.40	15.2
				80/67	39.2	32.7	47.0	2.41	16.2
				85/71	41.8	33.8	49.7	2.43	17.2
	11	5.4	2.3	75/63	37.2	31.7	44.8	2.34	15.9
				80/67	39.8	32.9	47.4	2.34	17.0
				85/71	42.5	34.0	50.2	2.35	18.1
100	5	1.3	0.6	75/63	33.4	30.2	42.4	2.81	11.9
				80/67	35.6	31.3	44.8	2.84	12.6
				85/71	38.0	32.5	47.3	2.86	13.3
	8	3	1.3	75/63	34.5	30.5	43.1	2.67	12.9
				80/67	36.9	31.8	45.5	2.68	13.8
				85/71	39.4	33.0	48.2	2.69	14.6
	11	5.3	2.3	75/63	34.9	30.8	43.3	2.61	13.4
				80/67	37.5	31.9	46.0	2.61	14.4
				85/71	40.1	33.2	48.6	2.62	15.3
110	5	1.2	0.5	75/63	31.3	29.3	41.3	3.11	10.1
				80/67	33.5	30.6	43.6	3.14	10.7
				85/71	35.4	31.6	45.6	3.16	11.2
	8	2.9	1.3	75/63	32.3	29.7	41.8	2.96	10.9
				80/67	34.7	30.9	44.3	2.98	11.7
				85/71	37.0	32.1	46.8	2.99	12.4
	11	5.1	2.2	75/63	32.8	29.9	42.2	2.90	11.3
				80/67	35.2	31.1	44.6	2.91	12.1
				85/71	37.6	32.3	47.1	2.92	12.9



# GB048 HEATING PERFORMANCE

GB048 Heating Performance @ 1600 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	6	4	1.7	60	32.7	24.6	2.41	4.0
				70	32.1	23.1	2.66	3.5
				80	31.5	21.8	2.95	3.1
	8	6.6	2.9	60	33.8	25.6	2.43	4.1
				70	33.1	24.0	2.68	3.6
				80	32.6	22.7	2.97	3.2
	12	13.8	6.0	60	35.3	26.8	2.45	4.2
				70	34.3	25.4	2.70	3.7
				80	33.8	23.9	3.00	3.3
40	6	3.8	1.6	60	37.2	28.8	2.48	4.4
				70	36.5	27.4	2.74	3.9
				80	35.9	25.9	3.04	3.5
	8	6.4	2.8	60	38.4	29.9	2.49	4.5
				70	37.7	28.5	2.76	4.0
				80	37.3	26.6	3.07	3.6
	12	13.3	5.8	60	40.0	31.6	2.52	4.7
				70	39.2	29.9	2.79	4.1
				80	38.6	28.3	3.10	3.7
50	6	3.7	1.6	60	42.1	33.5	2.55	4.8
				70	41.3	31.8	2.83	4.3
				80	41.0	30.2	3.13	3.8
	8	6.2	2.7	60	43.8	35.1	2.57	5.0
				70	42.9	33.3	2.85	4.4
				80	42.2	31.6	3.16	3.9
	12	12.8	5.6	60	45.6	37.3	2.60	5.1
				70	44.6	35.3	2.88	4.5
				80	43.8	33.2	3.19	4.0
60	6	3.6	1.6	60	47.7	38.7	2.62	5.3
				70	47.0	36.9	2.91	4.7
				80	45.9	34.9	3.22	4.2
	8	6	2.6	60	49.5	40.6	2.64	5.5
				70	48.5	38.6	2.93	4.8
				80	47.7	37.0	3.26	4.3
	12	12.4	5.4	60	51.8	42.8	2.67	5.7
				70	50.6	41.0	2.96	5.0
				80	49.9	38.3	3.28	4.5
70	6	3.4	1.5	60	53.1	44.1	2.68	5.8
				70	52.1	42.1	2.98	5.1
				80	51.3	40.1	3.31	4.5
	8	5.8	2.5	60	55.5	46.4	2.70	6.0
				70	54.8	44.9	3.01	5.3
				80	53.4	42.2	3.34	4.7
	12	12	5.2	60	58.2	49.1	2.72	6.3
				70	57.0	46.8	3.03	5.5
				80	55.8	44.4	3.37	4.9
80	6	3.3	1.4	60	58.9	49.8	2.73	6.3
				70	57.9	47.6	3.04	5.6
				80	56.9	45.4	3.38	4.9
	8	5.6	2.4	60	61.7	52.5	2.74	6.6
				70	60.5	50.2	3.06	5.8
				80	59.5	47.8	3.41	5.1
	12	11.6	5.0	60	64.9	55.6	2.76	6.9
				70	63.3	53.0	3.09	6.0
				80	61.9	50.4	3.44	5.3

# GB048 COOLING PERFORMANCE

GB048 Cooling Performance @ 1600 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBtu/hr.	Sensible kBtu/hr.	Ht. Rej. kBtu/hr.	Unit kW	EER
50	6	3.6	1.6	75/63	49.9	39.2	56.9	2.14	23.3
				80/67	53.3	40.3	60.2	2.13	25.1
				85/71	56.6	41.4	63.6	2.10	26.9
	8	6	2.6	75/63	50.9	39.6	57.6	2.04	25.0
				80/67	54.4	40.7	61.1	2.01	27.0
				85/71	57.9	41.9	64.5	1.98	29.2
	12	12.4	5.4	75/63	52.1	40.0	58.5	1.94	26.9
				80/67	55.6	41.3	61.9	1.90	29.2
				85/71	59.3	42.4	65.5	1.86	31.9
60	6	3.4	1.5	75/63	47.8	38.2	55.5	2.37	20.1
				80/67	50.9	39.5	58.6	2.36	21.5
				85/71	54.2	40.5	61.9	2.35	23.1
	8	5.8	2.5	75/63	48.8	38.6	56.2	2.26	21.6
				80/67	52.1	39.8	59.5	2.24	23.2
				85/71	55.4	41.1	62.7	2.22	25.0
	12	12	5.2	75/63	49.8	39.1	56.8	2.15	23.1
				80/67	53.2	40.4	60.2	2.12	25.1
				85/71	56.7	41.6	63.6	2.09	27.2
70	6	3.3	1.4	75/63	45.5	37.3	54.0	2.64	17.3
				80/67	48.6	38.5	57.2	2.63	18.5
				85/71	51.6	39.8	60.2	2.62	19.7
	8	5.6	2.4	75/63	46.5	37.7	54.6	2.52	18.5
				80/67	49.6	39.0	57.8	2.50	19.8
				85/71	52.9	40.2	61.0	2.48	21.3
	12	11.6	5.0	75/63	47.5	38.1	55.3	2.40	19.8
				80/67	50.7	39.4	58.5	2.38	21.3
				85/71	54.1	40.7	61.8	2.35	23.1
80	6	3.2	1.4	75/63	43.3	36.4	52.7	2.93	14.8
				80/67	46.2	37.7	55.6	2.93	15.8
				85/71	49.2	38.8	58.7	2.93	16.8
	8	5.4	2.3	75/63	44.2	36.7	53.3	2.81	15.7
				80/67	47.2	38.1	56.2	2.80	16.9
				85/71	50.4	39.2	59.4	2.78	18.1
	12	11.2	4.9	75/63	45.2	37.1	53.8	2.69	16.8
				80/67	48.3	38.4	57.0	2.67	18.1
				85/71	51.5	39.7	60.1	2.64	19.5
85	6	3.2	1.4	75/63	42.1	36.0	52.0	3.09	13.6
				80/67	45.0	37.1	55.0	3.09	14.5
				85/71	47.8	38.5	57.8	3.09	15.5
	8	5.3	2.3	75/63	43.0	36.3	52.5	2.97	14.5
				80/67	45.9	37.6	55.5	2.96	15.5
				85/71	49.0	38.8	58.5	2.94	16.6
	12	11	4.8	75/63	44.0	36.6	53.1	2.85	15.5
				80/67	47.0	37.9	56.2	2.83	16.6
				85/71	50.1	39.2	59.2	2.80	17.9
90	6	3.1	1.3	75/63	41.0	35.4	51.5	3.26	12.6
				80/67	43.7	36.8	54.2	3.26	13.4
				85/71	46.7	37.9	57.2	3.26	14.3
	8	5.2	2.3	75/63	41.8	35.8	51.9	3.14	13.3
				80/67	44.7	37.1	54.8	3.13	14.3
				85/71	47.6	38.4	57.7	3.11	15.3
	12	10.8	4.7	75/63	42.8	36.1	52.4	3.01	14.2
				80/67	45.7	37.5	55.3	2.99	15.3
				85/71	48.8	38.6	58.5	2.97	16.4
100	6	3	1.3	75/63	38.7	34.4	50.3	3.63	10.7
				80/67	41.3	35.8	52.9	3.63	11.4
				85/71	43.9	37.1	55.6	3.63	12.1
	8	5.1	2.2	75/63	39.5	34.8	50.7	3.50	11.3
				80/67	42.1	36.2	53.3	3.49	12.1
				85/71	44.9	37.4	56.1	3.48	12.9
	12	10.5	4.6	75/63	40.3	35.1	51.1	3.38	11.9
				80/67	43.1	36.5	53.9	3.36	12.8
				85/71	46.0	37.8	56.8	3.34	13.8
110	6	2.9	1.3	75/63	36.2	33.5	49.0	4.02	9.0
				80/67	38.7	34.9	51.6	4.03	9.6
				85/71	41.1	36.2	54.1	4.03	10.2
	8	4.9	2.1	75/63	37.0	33.8	49.4	3.90	9.5
				80/67	39.5	35.2	51.9	3.89	10.1
				85/71	42.2	36.5	54.7	3.88	10.9
	12	10.2	4.4	75/63	37.7	34.2	49.7	3.77	10.0
				80/67	40.3	35.5	52.3	3.76	10.7
				85/71	43.1	36.9	55.2	3.74	11.5

# GB060 HEATING PERFORMANCE

GB060 Heating Performance @ 2000 CFM								
Entering Water, °F	Water flow, GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Ent. Air °F	Total kBtu/hr.	Ht. Abs. kBtu/hr.	Unit kW	COP
30	7.5	3.2	1.4	60	44.2	33.8	3.16	4.1
				70	43.6	31.9	3.47	3.7
				80	43.2	30.2	3.82	3.3
	10	5.3	2.3	60	46.0	35.0	3.18	4.2
				70	45.1	33.3	3.50	3.8
				80	44.5	31.5	3.85	3.4
	15	11	4.8	60	47.6	36.8	3.21	4.3
				70	46.8	34.9	3.52	3.9
				80	46.1	33.0	3.87	3.5
40	7.5	3	1.3	60	49.8	39.0	3.24	4.5
				70	49.1	37.2	3.56	4.0
				80	48.9	35.6	3.92	3.7
	10	5.1	2.2	60	52.4	41.1	3.27	4.7
				70	51.5	39.1	3.59	4.2
				80	50.6	37.2	3.95	3.8
	15	10.6	4.6	60	54.5	43.0	3.30	4.8
				70	53.5	41.3	3.63	4.3
				80	52.6	38.9	3.99	3.9
50	7.5	2.9	1.3	60	56.8	45.6	3.34	5.0
				70	56.0	43.6	3.66	4.5
				80	55.2	41.4	4.03	4.0
	10	4.9	2.1	60	58.9	47.6	3.37	5.1
				70	58.4	46.1	3.70	4.6
				80	57.3	43.5	4.07	4.1
	15	10.2	4.4	60	62.5	50.6	3.41	5.4
				70	61.0	48.2	3.74	4.8
				80	59.8	45.8	4.11	4.3
60	7.5	2.8	1.2	60	64.0	52.4	3.43	5.5
				70	62.9	50.2	3.77	4.9
				80	62.0	47.9	4.15	4.4
	10	4.8	2.1	60	67.0	55.3	3.48	5.6
				70	65.7	52.9	3.81	5.0
				80	64.6	50.3	4.19	4.5
	15	9.9	4.3	60	70.7	58.5	3.52	5.9
				70	69.2	55.6	3.86	5.2
				80	67.6	53.0	4.25	4.7
70	7.5	2.7	1.2	60	71.5	59.8	3.54	5.9
				70	70.2	57.4	3.89	5.3
				80	69.2	54.7	4.28	4.7
	10	4.6	2.0	60	74.7	62.8	3.59	6.1
				70	73.1	60.0	3.93	5.4
				80	72.2	57.5	4.33	4.9
	15	9.6	4.2	60	79.4	66.8	3.65	6.4
				70	77.6	63.6	4.00	5.7
				80	75.7	60.7	4.39	5.1
80	7.5	2.7	1.2	60	79.5	67.3	3.65	6.4
				70	78.0	64.6	4.01	5.7
				80	76.6	61.9	4.41	5.1
	10	4.5	2.0	60	83.7	71.5	3.71	6.6
				70	81.9	68.5	4.07	5.9
				80	80.2	65.1	4.47	5.3
	15	9.2	4.0	60	87.8	74.2	3.77	6.8
				70	85.5	70.9	4.13	6.1
					80	84.1	68.8	4.55

# GB060 COOLING PERFORMANCE

GB060 Cooling Performance @ 2000 CFM									
Entering Water °F	Water flow GPM	Pressure Drop Ft. Water	Pressure Drop (Psi)	Cooling					
				Ent. Air db/wb,F	Total kBTu/hr.	Sensible kBTu/hr.	Ht. Rej. kBTu/hr.	Unit kW	EER
50	7.5	2.8	1.2	75/63	64.4	50.2	74.5	3.07	20.9
				80/67	66.9	51.7	79.2	3.11	22.2
				85/71	73.0	53.5	83.5	3.14	23.3
	10	4.8	2.1	75/63	65.9	50.5	75.6	2.95	22.3
				80/67	70.2	52.5	80.1	2.97	23.6
				85/71	74.7	54.3	84.7	3.00	24.9
	15	9.9	4.3	75/63	67.2	51.4	76.6	2.83	23.8
				80/67	71.8	53.1	81.3	2.85	25.2
				85/71	76.6	54.8	86.2	2.86	26.8
60	7.5	2.7	1.2	75/63	61.9	49.0	72.9	3.34	18.5
				80/67	66.0	50.8	77.1	3.37	19.6
				85/71	70.2	52.6	81.4	3.40	20.7
	10	4.6	2.0	75/63	63.0	49.6	73.6	3.21	19.7
				80/67	67.3	51.3	77.9	3.23	20.9
				85/71	71.7	53.4	82.5	3.25	22.1
	15	9.6	4.2	75/63	64.3	50.0	74.5	3.08	20.9
				80/67	68.8	51.8	79.1	3.09	22.3
				85/71	73.5	53.7	83.8	3.10	23.7
70	7.5	2.7	1.2	75/63	59.2	47.6	71.1	3.65	16.2
				80/67	62.5	49.5	74.5	3.67	17.0
				85/71	63.1	51.1	75.1	3.66	17.3
	10	4.5	2.0	75/63	60.3	48.4	71.8	3.50	17.2
				80/67	64.5	50.1	76.1	3.52	18.3
				85/71	68.3	52.8	79.9	3.53	19.3
	15	9.2	4.0	75/63	61.6	48.9	72.7	3.37	18.3
				80/67	66.0	50.5	77.2	3.38	19.6
				85/71	70.4	52.6	81.6	3.38	20.8
80	7.5	2.6	1.1	75/63	53.4	46.4	66.3	3.97	13.5
				80/67	55.0	47.6	67.9	3.97	13.9
				85/71	66.4	52.4	79.9	4.09	16.3
	10	4.3	1.9	75/63	58.3	48.4	71.0	3.87	15.1
				80/67	62.8	50.7	75.6	3.89	16.1
				85/71	61.1	50.4	73.7	3.84	15.9
	15	8.9	3.9	75/63	58.6	47.5	70.7	3.70	15.9
				80/67	62.8	49.2	75.0	3.71	16.9
				85/71	68.8	53.0	81.8	3.91	17.6
85	7.5	2.5	1.1	75/63	53.1	44.0	66.7	4.17	12.7
				80/67	54.8	47.5	68.4	4.18	13.1
				85/71	64.7	52.1	78.8	4.28	15.1
	10	4.2	1.8	75/63	51.9	45.8	64.8	4.00	13.0
				80/67	61.2	50.1	74.6	4.08	15.0
				85/71	66.2	52.4	79.8	4.12	16.1
	15	8.8	3.8	75/63	55.9	44.3	68.6	3.89	14.4
				80/67	59.4	46.9	72.1	3.88	15.3
				85/71	66.9	52.3	80.4	4.08	16.4
90	7.5	2.5	1.1	75/63	51.7	43.3	65.9	4.38	11.8
				80/67	55.6	44.2	70.0	4.41	12.6
				85/71	62.8	51.0	77.6	4.48	14.0
	10	4.2	1.8	75/63	52.7	43.9	66.5	4.23	12.5
				80/67	56.5	45.5	70.4	4.24	13.3
				85/71	64.3	51.9	78.5	4.31	14.9
	15	8.7	3.8	75/63	53.8	44.3	67.1	4.08	13.2
				80/67	55.8	47.9	69.1	4.06	13.7
				85/71	65.1	51.5	79.2	4.27	15.3
100	7.5	2.4	1.0	75/63	49.0	41.2	64.7	4.84	10.1
				80/67	52.0	43.2	67.9	4.86	10.7
				85/71	51.8	47.3	67.6	4.86	10.7
	10	4.1	1.8	75/63	48.2	44.3	63.3	4.66	10.3
				80/67	52.0	45.8	67.3	4.68	11.1
				85/71	60.4	50.4	76.1	4.76	12.7
	15	8.4	3.6	75/63	50.1	43.6	64.8	4.52	11.1
				80/67	53.0	46.6	67.7	4.51	11.7
				85/71	54.4	48.1	69.1	4.50	12.1
110	7.5	2.3	1.0	75/63	44.8	41.4	62.1	5.36	8.4
				80/67	47.1	44.2	64.5	5.38	8.8
				85/71	48.7	46.2	66.3	5.39	9.0
	10	3.9	1.7	75/63	44.7	42.9	61.5	5.19	8.6
				80/67	48.4	44.4	65.3	5.21	9.3
				85/71	56.8	49.1	74.1	5.28	10.8
	15	8.2	3.6	75/63	49.3	44.7	66.1	5.16	9.6
				80/67	49.9	44.1	66.3	5.04	9.9
				85/71	57.7	49.4	74.7	5.17	11.2

## ANTI-FREEZE CORRECTION TABLE

Antifreeze Type	Antifreeze % volume	Cooling			Heating		WPD Correction Factor EWT 30°F
		EWT 90 °F			EWT 30 °F		
		Total Cap.	Sens. Cap	Power	Htg. Cap	Power	
Water	0	1.000	1.000	1.000	1.000	1.000	1.000
Propylene Glycol	5	0.997	0.997	1.004	0.989	0.997	1.060
	10	0.994	0.994	1.006	0.986	0.995	1.125
	15	0.990	0.990	1.009	0.978	0.988	1.190
	25	0.983	0.983	1.016	0.960	0.979	1.300
Methanol	5	0.997	0.997	1.003	0.990	0.997	1.060
	10	0.996	0.996	1.005	0.979	0.993	1.100
	15	0.994	0.994	1.008	0.970	0.990	1.140
Ethanol	5	0.998	0.998	1.002	0.981	0.994	1.160
	10	0.996	0.996	1.004	0.960	0.988	1.230
	15	0.992	0.992	1.006	0.944	0.983	1.280
	25	0.986	0.986	1.009	0.917	0.974	1.400

