ASTON SERIES

SINGLE HYDRONIC

Residential 1.5 - 6 Ton

Water-to-Water Geothermal Heat Pump

Submittal Data

English Language

IP/Metric Units

SD1006WG 09/13

GEOSTAR

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Model Nomenclature

1-2	3	4	5-7	8	9	10	11	12	13	14	15	16	17
10	5	*	040	A	R	1	0	0	C	0	0	S	0

Model Type
10 - Aston

Type
5 – Water-to-Water

Vintage
* - Factory Use Only

Unit Capacity (MBTUH)
018, 025, 040, 050, 060, 075

Future Option
A – Standard

Operation
R – Reversible
H – Heating Only

Voltage
1 – 208-230/60/1

Hot Water Generation & GeoStart Option
0 – No HWG, No GeoStart®
2 – HWG w/o Pump, No GeoStart[1]
3 – No HWG, GeoStart
5 – HWG w/o Pump, GeoStart[1]

Future Option
0 - Standard

Controls
S – Microprocessor

Future Option
0 – Standard

Future Option
0 – Standard

Coax Option[2]
C – Copper
N – CuproNickel
L – Source CuproNickel & Load Copper
S – Source Copper & Load CuproNickel

Future Option
0 – None

Rev.: 26 August 2013D

Notes:
1 Available on 040, 050, 060, and 075 only. Hot water generator requires field installed external pump kit.
2 018 and 025 **heating only** models are available only with copper double-wall vented load coax for potable water.

Aston Series hydronic units are Safety listed under UL1995 thru ETL and performance tested in accordance with standard AHRI/ISO 13256-2. AHRI does not currently certify water-to-water products under AHRI/ISO 13256-2.

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

AHRI Data

English (IP) Units

Model	Capacity Modulation	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump			
				Cooling 86°F Source 53.6°F Load		Heating 68°F Source 104°F Load		Cooling 59°F Source 53.6°F Load		Heating 50°F Source 104°F Load	
		Load GPM	Source GPM	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
018	Single	5	5	16,400	14.0	22,200	4.5	18,800	22.9	18,500	3.7
025	Single	7	7	23,700	13.6	32,800	4.6	26,700	21.2	27,100	3.8
040	Single	10	10	35,900	15.5	47,900	4.8	40,900	23.4	39,100	3.9
050	Single	15	15	49,800	13.9	65,000	4.4	55,600	21.6	54,200	3.7
060	Single	18	18	55,400	13.6	78,000	4.7	62,500	20.6	63,200	3.8
075	Single	19	19	66,000	12.3	93,100	4.2	74,100	18.0	77,100	3.5

Model	Capacity Modulation	Flow Rate		Ground Loop Heat Pump			
				Cooling 77°F Source 53.6°F Load		Heating 32°F Source 104°F Load	
		Load GPM	Source GPM	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
018	Single	5	5	17,300	16.6	14,700	3.1
025	Single	7	7	24,700	16.1	22,000	3.1
040	Single	10	10	37,700	17.5	30,500	3.1
050	Single	15	15	51,500	16.4	44,200	3.1
060	Single	18	18	58,000	16.1	50,100	3.1
075	Single	19	19	68,400	14.0	61,500	2.9

NOTE: All ratings based upon 208V operation.

01/03/12

ENERGY STAR® Compliance Table

Model	Tier 3	
	Ground Water	Ground Loop
012	Yes	Yes
025	Yes	Yes
040	Yes	Yes
050	Yes	Yes
060	Yes	Yes
075	No	No

1/29/12

ENERGY STAR Rating Criteria

In order for water-source heat pumps to be ENERGY STAR rated they must meet or exceed the minimum efficiency requirements listed below. Tier 3 represents the current minimum efficiency water source heat pumps must have in order to be ENERGY STAR rated.

Tier 3: 1/1/2012 – No Effective End Date Published

Water-to-Water	EER	COP
Ground Loop	16.1	3.1
Ground Water	20.1	3.5

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AHRI Data cont.

The Aston Series is rated in accordance to the upcoming performance standard AHRI/ASHRAE/ISO 13256-2. This new standard will have three major categories: Water Loop, Ground Water, and Ground Loop.

Unit of Measure: The Cooling COP

The cooling efficiency is measured in EER (US version measured in Btuh per Watt. The Metric version is measured in a cooling COP (Watt per Watt) similar to the traditional COP measurement.

Pump Power Correction Calculation

Within each model, only one water flow rate is specified for all three groups and pumping Watts are calculated using the following formula. This additional power is added onto the existing power consumption.

• Pump power correction = (gpm x 0.0631) x (Press Drop x 2990) / 300

Where 'gpm' is waterflow in gpm and 'Press Drop' is the pressure drop through the unit heat exchanger at rated water flow in feet of head.

ISO Capacity and Efficiency Calculations

The following equations illustrate cooling calculations:

• ISO Cooling Capacity = Cooling Capacity (Btuh) x 3.412

• ISO EER Efficiency (W/W) = ISO Cooling Capacity (Btuh) x 3.412 / [Power Input (Watts) + Pump Power Correction (Watt)]

The following equations illustrate heating calculations:

• ISO Heating Capacity = Heating Capacity (Btuh) x 3.412

• ISO COP Efficiency (W/W) = ISO Heating Capacity (Btuh) x 3.412 / [Power Input (Watts) + Pump Power Correction (Watt)]

Test Conditions

	ISO/AHRI 13256-2 WLHP	ISO/AHRI 13256-2 GWHP	ISO/AHRI 13256-2 GLHP
Cooling			
Liquid Entering Indoor Side - °F	53.6	53.6	53.6
Standard Rating Test			
Liquid Entering Heat Exchanger - °F	86	59	77
Part-load Rating Test			
Liquid Entering Heat Exchanger	86	59	68
Fluid Flow Rate	*	*	*
Heating			
Liquid Entering Indoor Side - °F	104	104	104
Standard Rating Test			
Liquid Entering Outdoor-side Heat Exchanger - °F	68	50	32
Part-load Rating Test			
Liquid Entering Outdoor-side Heat Exchanger	68	50	41
Fluid Flow Rate	*	*	*

NOTES: *Flow rate is specified by the manufacturer
WLHP = Water Loop Heat Pump; GWHP = Ground Water Heat Pump;
GLHP = Ground Loop Heat Pump

Conversions

Water Flow (lps) = GPM x 0.0631

Press Drop (Pascals) = Press Drop (ft hd) x 2990

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Contractor: _____ P.O.: _____

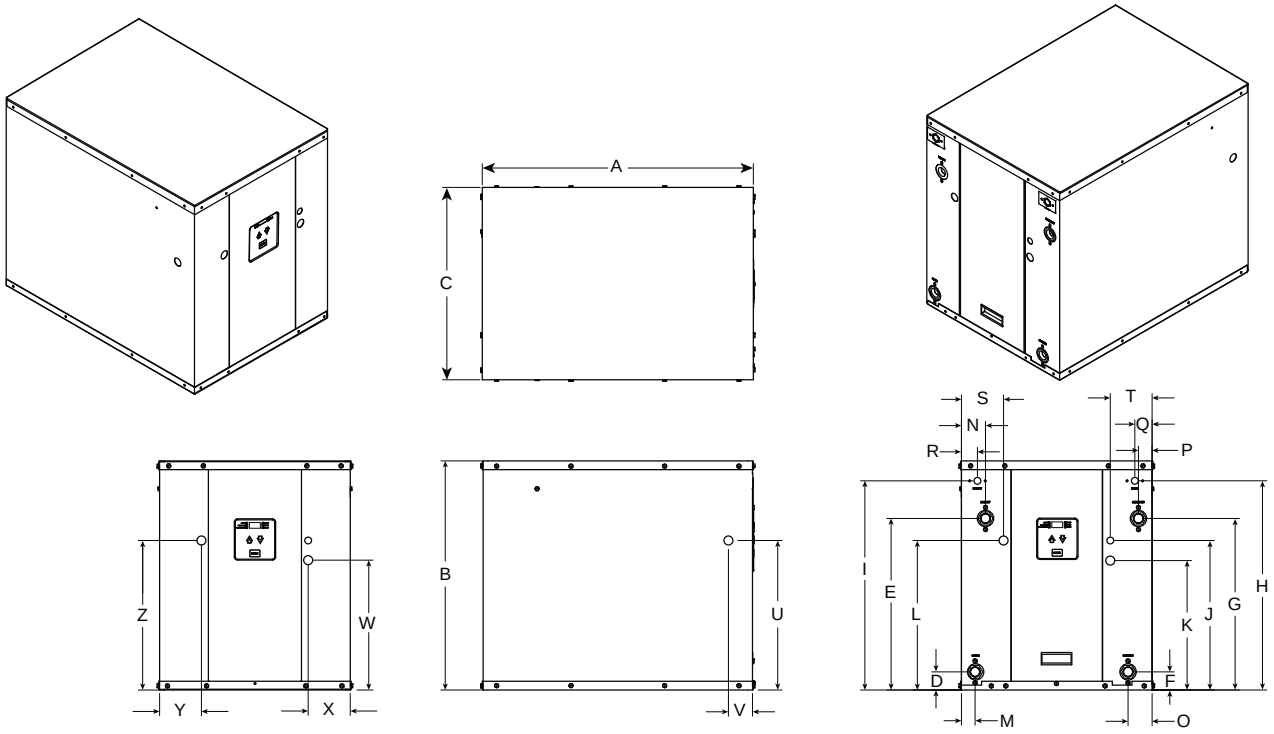
Engineer: _____

Project Name: _____ Unit Tag: _____

Aston Single Hydronic Unit
1.5 - 6 Tons 60Hz

GEOSTAR

Dimensional Data



6/11/13

Model		Overall Cabinet			Water Connections									Electrical Knockouts		
														J	K	L
		A	B	C	D	E	F	G	H	I				1/2 in. cond	3/4 in. cond	3/4 in. cond
		Depth	Height	Width	Load Liquid In	Load Liquid Out	Source Liquid In	Source Liquid Out	HWG In	HWG Out	Load Water FPT	Source Water FPT	HWG Water FPT	Low Voltage	Ext Pump	Power Supply
018	in.	23.5	26.1	19.5	10.0	22.2	10.0	22.2	-	-	1 in.	1 in.	-	16.0	14.2	14.2
	cm.	59.7	66.3	49.5	25.4	56.4	25.4	56.4	-	-	25.4 mm	25.4 mm	-	40.6	36.1	36.1
025	in.	23.5	26.1	19.5	10.0	22.2	10.0	22.2	-	-	1 in.	1 in.	-	16.0	14.2	14.2
	cm.	59.7	66.3	49.5	25.4	56.4	25.4	56.4	-	-	25.4 mm	25.4 mm	-	40.6	36.1	36.1
040	in.	31.0	26.2	22.0	2.1	19.6	2.1	19.6	23.9	23.9	1 in.	1 in.	1/2 in.	17.1	14.8	17.1
	cm.	78.7	66.5	55.9	5.3	49.8	5.3	49.8	60.7	60.7	25.4 mm	25.4 mm	12.7 mm	43.4	37.6	43.4
050	in.	31.0	26.2	22.0	2.2	20.6	2.2	20.6	23.9	23.9	1-1/4 in.	1-1/4 in.	1/2 in.	17.1	14.8	17.1
	cm.	78.7	66.5	55.9	5.6	52.3	5.6	52.3	60.7	60.7	31.8 mm	31.8 mm	12.7 mm	43.4	37.6	43.4
060 & 075	in.	31.0	26.2	22.0	2.4	23.0	2.4	23.0	20.6	20.6	1-1/4 in.	1-1/4 in.	1/2 in.	17.1	14.8	17.1
	cm.	78.7	66.5	55.9	6.1	58.4	6.1	58.4	52.3	52.3	31.8 mm	31.8 mm	12.7 mm	43.4	37.6	43.4

Model		Water Connections										Electrical Knockouts			
		M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		Load Liquid In	Load Liquid Out	Source Liquid In	Source Liquid Out	HWG In	HWG Out	Power Supply	Low Voltage	Side Power Supply	Side Power Supply	Ext Pump	Ext Pump	Power Supply	Power Supply
018	in.	2.4	2.4	2.4	2.4	-	-	3.5	2.9	14.9	2.6	2.1	1.8	2.9	4.1
	cm.	6.1	6.1	6.1	6.1	-	-	8.9	7.4	37.8	6.6	5.3	4.4	7.4	10.4
025	in.	2.4	2.4	2.4	2.4	-	-	3.5	2.9	14.9	2.6	2.1	1.8	2.9	4.1
	cm.	6.1	6.1	6.1	6.1	-	-	8.9	7.4	37.8	6.6	5.3	4.4	7.4	10.4
040	in.	1.6	2.8	2.8	1.6	2.0	1.8	4.8	4.8	17.1	2.8	14.9	4.8	4.8	17.1
	cm.	4.1	7.0	7.0	4.1	5.1	4.6	12.2	12.2	43.4	7.0	37.8	12.2	12.2	43.4
050	in.	1.8	3.6	3.6	1.8	2.1	1.8	4.8	4.8	17.1	2.8	14.9	4.8	4.8	17.1
	cm.	4.6	9.1	9.1	4.6	5.3	4.6	12.2	12.2	43.4	7.1	37.8	12.2	12.2	43.4
060 & 075	in.	1.8	4.0	4.0	1.8	4.2	1.4	4.8	4.8	17.1	2.8	14.9	4.8	4.8	17.1
	cm.	4.6	10.2	10.2	4.6	10.7	3.6	12.2	12.2	43.4	7.1	37.8	12.2	12.2	43.4

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Aston Single Hydronic Unit
1.5 - 6 Tons 60Hz

GEOSTAR

Physical Data

Model	018	025	040	050	060	075
Compressor (1 each)	Scroll					
Factory Charge R410a, oz [kg]	44.0 [1.25]	58.0 [1.64]	70 [1.98]	68 [1.93]	104 [2.95]	110 [3.12]
Coax & Piping Water Volume - gal [l]*	.52 [1.97]	.89 [3.38]	1.0 [3.94]	1.4 [5.25]	1.6 [6.13]	1.6 [6.13]
Weight - Operating, lb [kg]	191 [86.6]	225 [102.1]	290 [131.5]	325 [147.4]	345 [156.5]	345 [156.5]
Weight - Packaged, lb [kg]	213 [96.6]	247 [112.0]	305 [138.3]	340 [154.2]	360 [163.3]	360 [163.3]

NOTE: * Source or load side only.

8/6/10

Electrical Data

Model	Rated Voltage	Voltage Min/Max	Compressor			Load Pump	Source Pump	Total Unit FLA	Min Ckt Amp	Maximum Fuse/HACR
			RLA	LRA	LRA*					
018	208-230/60/1	187/253	9.0	48.0	17.0	1.8	5.4	16.2	18.5	30
025	208-230/60/1	187/253	13.5	61.0	21.4	1.8	5.4	20.7	24.1	35
040	208-230/60/1	187/253	20.0	115.0	40.3	1.8	5.4	27.2	32.2	50
050	208-230/60/1	187/253	26.4	134.0	46.9	1.8	5.4	33.6	40.2	60
060	208-230/60/1	187/253	30.1	145.0	50.8	1.8	5.4	37.3	44.8	70
075	208-230/60/1	187/253	26.9	145.0	50.8	1.8	5.4	34.1	40.8	60

3/26/13

NOTES: All fuses type “D” time delay (or HACR circuit breaker in USA).
Source pump amps shown are for up to a 1/2 HP pump.
Load pumps amps shown are for small circulators.
*LRA with optional GeoStart installed (208-230/60/1).

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Reference Calculations

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

NOTE: * C = 500 for pure water, 485 for brine.

Legend

Abbreviations and Definitions

ELT = entering load fluid temperature to heat pump
SWPD = source coax water pressure drop
LLT = leaving load fluid temperature from heat pump
PSI = pressure drop in pounds per square inch
LGPM = load flow in gallons per minute
FT HD = pressure drop in feet of head
LWPD = load coax water pressure drop
LWT = leaving water temperature
EWT = entering water temperature
Brine = water with a freeze inhibiting solution
kW = kilowatts
EST = entering source fluid temperature to heat pump
HE = heat extracted in MBTUH
LST = leaving source fluid temperature from heat pump
HC = total heating capacity in MBTUH
COP = coefficient of performance, heating [HC/kW x 3.413]
EER = energy efficiency ratio, cooling
TC = total cooling capacity in MBTUH
HR = heat rejected in MBTUH

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Pressure Drop

Model	GPM	Pressure Drop (psi)				
		30°F	60°F	80°F	100°F	120°F
018R*	3.0	0.5	0.4	0.4	0.3	0.3
	4.0	1.1	0.9	0.9	0.8	0.8
	5.0	1.6	1.4	1.4	1.3	1.3
	6.0	2.1	1.9	1.9	1.8	1.8
025R*	4.0	0.7	0.6	0.4	0.3	0.3
	5.5	1.3	1.1	0.9	0.7	0.6
	7.0	1.9	1.7	1.5	1.3	1.2
	8.5	2.6	2.4	2.2	2.0	1.9
040H/R	5.0	0.9	0.6	0.6	0.5	0.5
	7.5	2.3	2.1	2.0	1.9	1.8
	10.0	3.7	3.5	3.3	3.2	3.0
	12.5	5.0	4.7	4.4	4.2	4.0
050H/R	8.0	1.7	1.4	1.4	1.3	1.3
	11.5	3.6	3.4	3.2	3.0	2.8
	15.0	5.6	5.4	5.0	4.6	4.2
	18.5	8.3	8.1	7.6	7.2	6.8
060H/R	9.0	1.4	1.1	1.0	1.0	0.9
	13.5	4.2	3.9	3.5	3.1	2.7
	18.0	6.9	6.7	6.0	5.2	4.5
	22.5	10.7	10.5	10.0	9.4	8.7
075H/R	10.0	3.2	3.0	2.8	2.7	2.5
	14.5	5.5	5.3	5.1	4.9	4.7
	19.0	7.9	7.6	7.3	7.1	6.8
	23.5	11.5	11.3	11.0	10.8	10.5

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NOTES: Temperatures are Entering Water Temperatures
*Domestic water heating units source side pressure drop and reversible units load and source pressure drop.

Vented Only Load Side

Model	GPM	Pressure Drop (psi)			
		60°F	80°F	100°F	120°F
018H	3.0	0.5	0.4	0.4	0.3
	4.0	1.4	1.3	1.2	1.2
	5.0	2.2	2.1	2.1	2.0
	6.0	3.0	2.9	2.9	2.8
025H	4.0	1.3	1.3	1.2	1.2
	5.5	3.0	2.9	2.8	2.7
	7.0	4.6	4.4	4.3	4.1
	8.5	6.7	6.5	6.4	6.2

7/13/09

NOTES: Temperatures are Entering Water Temperatures.
Double wall vented coax for heating potable water

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Antifreeze Correction

Catalog performance can be corrected for antifreeze use. Please use the following table and note the example given.

Antifreeze Type	Antifreeze % by wt	Heating		Cooling		Pressure Drop
		Load	Source	Load	Source	
EWT - °F [°C]		**80 [26.7]**	**30 [-1.1]**	**50 [10.0]**	**90 [32.2]**	**30 [-1.1]**
Water	0	1.000	1.000	1.000	1.000	1.000
Ethylene Glycol	10	0.990	0.973	0.976	0.991	1.075
	20	0.978	0.943	0.947	0.979	1.163
	30	0.964	0.917	0.921	0.965	1.225
	40	0.953	0.890	0.897	0.955	1.324
	50	0.942	0.865	0.872	0.943	1.419
Propylene Glycol	10	0.981	0.958	0.959	0.981	1.130
	20	0.967	0.913	0.921	0.969	1.270
	30	0.946	0.854	0.869	0.950	1.433
	40	0.932	0.813	0.834	0.937	1.614
	50	0.915	0.770	0.796	0.922	1.816
Ethanol	10	0.986	0.927	0.945	0.991	1.242
	20	0.967	0.887	0.906	0.972	1.343
	30	0.944	0.856	0.869	0.947	1.383
	40	0.926	0.815	0.830	0.930	1.523
	50	0.907	0.779	0.795	0.911	1.639
Methanol	10	0.985	0.957	0.962	0.986	1.127
	20	0.969	0.924	0.929	0.970	1.197
	30	0.950	0.895	0.897	0.951	1.235
	40	0.935	0.863	0.866	0.936	1.323
	50	0.919	0.833	0.836	0.920	1.399

WARNING: Gray area represents antifreeze concentrations greater than 35% by weight and should be avoided due to the extreme performance penalty they represent.

Antifreeze Correction Example

Antifreeze solution is propylene glycol 20% by weight for the source and methanol 10% for the load. Determine the corrected heating at 30°F source and 80°F load as well as pressure drop at 30°F for Model 050. Also, determine the corrected cooling at 90°F source and 50°F load.

The corrected heating capacity at 30°F/80°F would be:

46,700 MBTUH x 0.913 x 0.985 = 41,998 MBTUH

The corrected cooling capacity at 90°F/50°F would be:

44,200 x 0.969 x 0.962 = 41,202 MBTUH

The corrected pressure drop at 30°F and 15 GPM would be:

5.2 psi x 1.270 = 6.60 psi

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Model 018 - Performance Data

Cooling Capacity

Source		Load Flow-3 GPM							Load Flow-4 GPM						Load Flow-5 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	3	50	37.8	17.8	0.60	19.8	29.7	43.6	40.1	18.1	0.61	20.1	29.8	43.8	42.5	18.3	0.61	20.4	30.0	44.0
		70	56.8	19.3	0.59	21.3	32.5	44.6	59.3	19.4	0.60	21.5	32.6	44.8	61.9	19.6	0.60	21.6	32.7	44.9
		90	75.8	20.7	0.59	22.7	35.3	45.6	78.6	20.8	0.59	22.8	35.4	45.7	81.4	20.9	0.59	22.9	35.4	45.7
		110	94.7	22.2	0.58	24.2	38.3	46.6	97.8	22.2	0.58	24.2	38.3	46.6	100.8	22.2	0.58	24.2	38.3	46.6
	4	50	37.7	18.0	0.58	19.9	30.9	40.9	40.0	18.2	0.58	20.2	31.2	41.1	42.4	18.4	0.59	20.4	31.5	41.2
		70	56.7	19.3	0.57	21.3	33.8	41.7	59.3	19.5	0.57	21.4	34.0	41.8	61.9	19.6	0.58	21.6	34.1	41.9
		90	75.8	20.7	0.56	22.6	36.7	42.4	78.6	20.8	0.56	22.7	36.8	42.5	81.4	20.9	0.57	22.8	36.9	42.5
		110	94.9	22.0	0.56	23.9	39.6	43.2	97.9	22.1	0.56	23.9	39.7	43.2	100.9	22.1	0.56	24.0	39.8	43.2
	5	50	37.6	18.1	0.56	20.0	32.3	38.3	40.0	18.3	0.56	20.2	32.7	38.3	42.4	18.5	0.56	20.4	33.0	38.4
		70	56.7	19.3	0.55	21.2	35.2	38.7	59.3	19.5	0.55	21.4	35.5	38.8	61.9	19.7	0.55	21.5	35.8	38.9
		90	75.9	20.6	0.54	22.4	38.1	39.2	78.6	20.7	0.54	22.5	38.3	39.3	81.4	20.8	0.54	22.7	38.6	39.4
		110	95.0	21.8	0.53	23.6	41.1	39.7	98.0	21.9	0.53	23.7	41.3	39.8	100.9	22.0	0.53	23.8	41.5	39.8
50	3	50	38.4	16.9	0.80	19.6	22.9	63.4	40.5	17.3	0.80	20.0	23.3	63.8	42.7	17.8	0.80	20.5	23.7	64.1
		70	56.3	19.9	0.80	22.6	26.5	65.5	58.9	20.2	0.80	22.9	26.8	65.8	61.5	20.6	0.80	23.3	27.2	66.0
		90	74.3	22.9	0.80	25.6	30.1	67.6	77.3	23.1	0.79	25.8	30.4	67.8	80.4	23.4	0.79	26.1	30.7	67.9
		110	92.2	25.9	0.80	28.6	33.8	69.7	95.7	26.1	0.79	28.8	34.0	69.8	99.2	26.2	0.79	28.9	34.2	69.9
	4	50	38.3	17.0	0.77	19.6	22.0	60.8	40.5	17.4	0.77	20.0	22.6	61.0	42.6	17.8	0.77	20.5	23.1	61.2
		70	56.3	19.9	0.77	22.5	26.0	62.4	58.9	20.3	0.76	22.9	26.5	62.6	61.5	20.6	0.76	23.2	27.0	62.8
		90	74.3	22.9	0.76	25.5	30.2	64.0	77.3	23.1	0.76	25.7	30.5	64.2	80.4	23.4	0.76	25.9	30.9	64.3
		110	92.2	25.9	0.75	28.4	34.4	65.7	95.7	26.0	0.75	28.6	34.6	65.7	99.2	26.1	0.75	28.7	34.8	65.8
	5	50	38.2	17.1	0.75	19.7	24.7	58.1	40.4	17.5	0.75	20.0	25.3	58.3	42.6	17.9	0.74	20.4	25.9	58.4
		70	56.3	20.0	0.74	22.5	28.8	59.3	58.9	20.3	0.73	22.8	29.2	59.4	61.5	20.6	0.73	23.1	29.7	59.5
		90	74.3	22.9	0.72	25.4	33.0	60.5	77.3	23.1	0.72	25.6	33.3	60.5	80.4	23.3	0.72	25.8	33.6	60.6
		110	92.3	25.8	0.71	28.2	37.3	61.6	95.8	25.9	0.71	28.3	37.5	61.7	99.3	26.1	0.71	28.5	37.7	61.7
70	3	50	39.1	15.9	0.99	19.3	16.1	83.3	41.0	16.6	0.99	19.9	16.7	83.7	42.9	17.2	0.99	20.6	17.4	84.1
		70	55.9	20.5	1.00	23.9	20.5	86.4	58.5	21.0	1.00	24.4	21.1	86.8	61.1	21.5	0.99	24.9	21.7	87.1
		90	Operation not recommended																	
		110																		
	4	50	39.0	16.0	0.97	19.3	16.6	80.6	40.9	16.6	0.96	19.9	17.3	80.9	42.9	17.3	0.96	20.5	18.1	81.3
		70	55.9	20.6	0.96	23.8	21.4	83.1	58.5	21.1	0.96	24.3	22.0	83.4	61.1	21.6	0.95	24.8	22.6	83.7
		90	Operation not recommended																	
		110																		
	5	50	38.9	16.1	0.94	19.3	17.1	78.0	40.9	16.7	0.93	19.9	18.0	78.2	42.9	17.3	0.92	20.4	18.8	78.4
		70	55.8	20.7	0.92	23.8	22.4	79.8	58.5	21.1	0.92	24.2	23.0	80.0	61.1	21.6	0.91	24.7	23.7	80.2
		90	Operation not recommended																	
		110																		
90	3	50	40.4	14.0	1.30	18.4	11.8	102.7	42.1	14.5	1.30	19.0	12.3	103.0	43.8	15.1	1.30	19.5	12.7	103.4
		70	57.4	18.3	1.30	22.7	15.3	105.6	59.8	18.7	1.30	23.2	15.7	105.9	62.1	19.2	1.30	23.6	16.1	106.2
		90	Operation not recommended																	
		110																		
	4	50	40.3	14.1	1.27	18.4	11.2	100.1	42.0	14.6	1.26	19.0	11.6	100.4	43.8	15.2	1.26	19.5	12.0	100.7
		70	57.3	18.4	1.26	22.7	14.6	102.5	59.7	18.9	1.26	23.1	15.0	102.7	62.0	19.3	1.26	23.6	15.4	103.0
		90	Operation not recommended																	
		110																		
	5	50	40.2	14.3	1.24	18.5	12.6	97.6	42.0	14.8	1.23	18.9	13.2	97.8	43.7	15.3	1.23	19.4	13.7	98.0
		70	57.2	18.6	1.22	22.7	16.6	99.4	59.6	19.0	1.21	23.1	17.1	99.5	62.0	19.4	1.21	23.5	17.5	99.7
		90	Operation not recommended																	
		110																		
110	3	50	41.7	12.1	1.60	17.6	7.6	122.1	43.2	12.5	1.61	18.0	7.8	122.4	44.7	12.9	1.61	18.4	8.0	122.6
		70	59.0	16.1	1.60	21.5	10.0	124.8	61.0	16.5	1.60	21.9	10.3	125.1	63.1	16.8	1.61	22.3	10.5	125.3
		90	Operation not recommended																	
		110																		
	4	50	41.6	12.3	1.57	17.6	7.8	119.7	43.1	12.7	1.57	18.0	8.1	119.9	44.6	13.1	1.57	18.4	8.3	120.1
		70	58.8	16.3	1.56	21.6	10.5	121.9	60.9	16.6	1.56	22.0	10.7	122.1	63.0	17.0	1.56	22.3	10.9	122.3
		90	Operation not recommended																	
		110																		
	5	50	41.5	12.4	1.53	17.6	8.1	117.3	43.0	12.8	1.53	18.0	8.4	117.4	44.6	13.2	1.53	18.4	8.6	117.6
		70	58.7	16.5	1.51	21.6	10.9	118.9	60.8	16.8	1.51	22.0	11.1	119.1	62.9	17.2	1.51	22.4	11.4	119.2
		90	Operation not recommended																	
		110																		

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Model 018 - Performance Data cont.

Heating Capacity

Source		Load Flow-3 GPM							Load Flow-4 GPM						Load Flow-5 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	4	60	Operation not recommended																	
		80																		
		100																		
		120																		
	5	60	69.8	14.2	0.90	11.1	4.62	20.4	67.4	14.3	0.88	11.3	4.76	20.3	65.9	14.4	0.86	11.5	4.91	20.3
		80	89.4	13.7	1.21	9.6	3.31	21.1	87.1	13.8	1.19	9.7	3.38	21.0	85.7	13.9	1.17	9.9	3.46	20.9
		100	109.1	13.2	1.53	8.0	2.53	21.7	106.8	13.3	1.51	8.1	2.58	21.6	105.5	13.3	1.49	8.3	2.63	21.6
		120	128.7	12.7	1.84	6.4	2.02	22.4	126.6	12.8	1.82	6.5	2.05	22.3	125.3	12.8	1.80	6.7	2.08	22.3
30	3	60	70.4	15.1	0.91	12.0	4.86	21.8	68.3	15.2	0.90	12.1	4.96	21.7	66.3	15.2	0.88	12.2	5.06	21.6
		80	90.0	14.5	1.22	10.4	3.48	22.9	88.0	14.6	1.21	10.5	3.55	22.8	86.0	14.6	1.19	10.6	3.61	22.7
		100	109.6	14.0	1.54	8.7	2.66	24.0	107.7	14.0	1.52	8.8	2.71	23.9	105.8	14.1	1.49	9.0	2.76	23.8
		120	129.2	13.4	1.85	7.1	2.12	25.1	127.4	13.5	1.83	7.2	2.16	25.0	125.6	13.5	1.80	7.4	2.20	24.9
	4	60	70.7	15.5	0.91	12.4	5.02	23.2	68.6	15.6	0.89	12.6	5.14	23.2	66.5	15.7	0.88	12.7	5.26	23.1
		80	90.2	14.9	1.22	10.7	3.58	24.2	88.2	15.0	1.20	10.9	3.66	24.1	86.2	15.0	1.18	11.0	3.75	24.0
		100	109.8	14.3	1.53	9.0	2.73	25.1	107.9	14.3	1.50	9.2	2.79	25.0	105.9	14.4	1.48	9.3	2.85	24.9
		120	129.4	13.7	1.85	7.4	2.17	26.0	127.5	13.7	1.81	7.5	2.21	25.9	125.6	13.7	1.78	7.6	2.26	25.8
	5	60	70.9	15.9	0.90	12.8	5.18	24.7	68.8	16.1	0.89	13.0	5.32	24.6	66.7	16.2	0.87	13.2	5.46	24.5
		80	90.5	15.2	1.21	11.1	3.68	25.4	88.4	15.3	1.19	11.3	3.78	25.3	86.4	15.4	1.16	11.5	3.89	25.3
		100	110.0	14.6	1.53	9.4	2.80	26.1	108.0	14.6	1.49	9.5	2.87	26.1	106.0	14.7	1.46	9.7	2.95	26.0
		120	129.6	13.9	1.84	7.6	2.21	26.9	127.6	13.9	1.80	7.8	2.27	26.8	125.7	13.9	1.75	7.9	2.33	26.7
50	3	60	73.5	19.7	0.90	16.6	6.46	38.6	70.9	19.8	2.74	10.4	4.71	42.8	68.2	20.0	4.59	4.3	2.97	47.1
		80	93.0	18.9	1.21	14.7	4.58	39.9	90.4	19.0	2.43	10.7	3.48	42.7	87.9	19.1	3.65	6.6	2.37	45.4
		100	112.4	18.1	1.52	12.9	3.48	41.2	110.0	18.1	2.12	10.9	2.85	42.5	107.5	18.2	2.71	9.0	2.21	43.8
		120	131.9	17.3	1.84	11.0	2.76	42.4	129.5	17.3	1.80	11.1	2.82	42.3	127.2	17.4	1.77	11.3	2.88	42.2
	4	60	73.9	20.2	0.89	17.1	6.62	40.7	71.2	20.4	1.81	14.2	3.31	42.7	68.5	20.6	2.72	11.3	2.22	44.8
		80	93.3	19.3	1.21	15.2	4.69	41.7	90.7	19.5	1.80	13.3	3.16	43.0	88.1	19.6	2.40	11.4	2.40	44.4
		100	112.7	18.4	1.52	13.2	3.55	42.8	110.2	18.5	1.80	12.4	3.02	43.4	107.7	18.6	2.08	11.5	2.63	44.0
		120	132.1	17.6	1.83	11.3	2.81	43.8	129.7	17.6	1.80	11.5	2.87	43.7	127.3	17.7	1.76	11.7	2.94	43.6
	5	60	74.2	20.7	0.89	17.7	6.83	42.7	71.5	21.0	0.87	18.0	7.12	42.6	68.7	21.2	0.85	18.3	7.41	42.4
		80	93.6	19.8	1.20	15.6	4.82	43.5	90.9	19.9	1.17	15.9	4.99	43.4	88.3	20.1	1.15	16.2	5.17	43.3
		100	112.9	18.8	1.52	13.6	3.64	44.4	110.4	18.9	1.48	13.9	3.75	44.3	107.8	19.0	1.45	14.1	3.87	44.2
		120	132.3	17.9	1.83	11.6	2.86	45.2	129.8	17.9	1.79	11.8	2.94	45.1	127.4	18.0	1.75	12.0	3.02	45.1
70	3	60	76.6	24.2	0.88	21.2	8.06	55.4	73.4	24.5	4.59	8.8	4.46	64.0	70.2	24.7	8.30	-3.6	0.87	72.5
		80	95.9	23.2	1.19	19.1	5.69	56.9	92.8	23.4	3.65	10.9	3.41	62.5	89.7	23.5	6.11	2.7	1.13	68.2
		100	115.2	22.1	1.51	17.0	4.30	58.3	112.2	22.3	2.72	13.0	2.99	61.1	109.2	22.4	3.93	9.0	1.67	63.8
		120	134.5	21.1	1.82	14.9	3.40	59.8	131.6	21.2	1.78	15.1	3.48	59.6	128.7	21.2	1.74	15.3	3.57	59.5
	4	60	77.1	24.9	0.88	21.8	8.27	58.1	73.8	25.2	2.72	15.9	2.71	62.2	70.5	25.5	4.56	9.9	1.64	66.4
		80	96.3	23.7	1.19	19.6	5.82	59.3	93.1	23.9	2.41	15.7	2.91	62.0	90.0	24.2	3.62	11.8	1.96	64.8
		100	115.5	22.6	1.51	17.4	4.39	60.5	112.5	22.7	2.09	15.6	3.18	61.8	109.4	22.9	2.68	13.7	2.50	63.1
		120	134.7	21.5	1.82	15.2	3.45	61.7	131.8	21.5	1.78	15.4	3.54	61.6	128.9	21.6	1.74	15.7	3.64	61.4
	5	60	77.5	25.5	0.88	22.5	8.49	60.7	74.2	25.9	0.85	22.9	8.93	60.5	70.8	26.2	0.82	23.4	9.36	60.3
		80	96.7	24.3	1.19	20.2	5.96	61.7	93.5	24.5	1.16	20.6	6.20	61.5	90.2	24.8	1.13	21.0	6.45	61.4
		100	115.8	23.0	1.51	17.9	4.48	62.6	112.7	23.2	1.47	18.2	4.63	62.5	109.6	23.4	1.43	18.5	4.78	62.4
		120	135.0	21.8	1.82	15.6	3.51	63.6	132.0	21.9	1.78	15.8	3.61	63.5	129.1	22.0	1.74	16.1	3.70	63.4
90	3	60	79.6	28.5	0.88	25.5	9.49	72.5	75.6	28.4	0.85	25.5	9.84	72.5	71.6	28.2	0.81	25.4	10.20	72.5
		80	98.6	27.1	1.18	23.0	6.70	74.2	94.9	27.1	1.15	23.1	6.92	74.1	91.1	27.0	1.11	23.2	7.14	74.0
		100	Operation not recommended																	
		120																		
	4	60	80.1	29.2	0.88	26.2	9.72	75.7	76.0	29.0	0.85	26.1	10.05	75.7	71.9	28.8	0.81	26.0	10.40	75.8
		80	99.0	27.7	1.19	23.6	6.84	77.1	95.2	27.6	1.15	23.7	7.05	77.0	91.4	27.6	1.11	23.8	7.28	77.0
		100	Operation not recommended																	
		120																		
	5	60	80.5	29.9	0.88	26.9	9.96	78.9	76.3	29.6	0.85	26.7	10.28	79.0	72.1	29.3	0.81	26.5	10.60	79.1
		80	99.4	28.2	1.19	24.2	6.97	80.0	95.5	28.2	1.15	24.2	7.19	80.0	91.6	28.1	1.11	24.3	7.42	80.0
		100	Operation not recommended																	
		120																		

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Model 018 DHW - Performance Data cont.

Heating Only Capacity

Source		Load Flow-3 GPM							Load Flow-4 GPM						Load Flow-5 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	4	60	Operation not recommended																	
		80																		
		100																		
		120																		
	5	60	70.0	14.5	0.97	11.2	4.38	20.4	67.6	14.7	0.95	11.4	4.52	20.3	66.1	14.8	0.93	11.6	4.66	20.2
		80	89.7	14.1	1.30	9.7	3.19	21.0	87.4	14.3	1.28	9.9	3.27	20.9	85.9	14.4	1.26	10.1	3.36	20.8
		100	109.5	13.8	1.62	8.2	2.48	21.6	107.2	13.9	1.60	8.4	2.54	21.5	105.8	14.0	1.58	8.6	2.59	21.5
		120	129.2	13.4	1.95	6.7	2.01	22.2	127.0	13.5	1.93	6.9	2.05	22.1	125.6	13.6	1.91	7.1	2.09	22.1
30	3	60	70.4	15.2	0.97	11.9	4.59	21.8	68.4	15.4	0.95	12.1	4.74	21.7	66.4	15.5	0.93	12.3	4.88	21.5
		80	90.2	14.9	1.30	10.4	3.35	22.8	88.2	15.0	1.28	10.6	3.43	22.7	86.2	15.1	1.26	10.8	3.52	22.6
		100	110.0	14.5	1.63	9.0	2.61	23.8	108.0	14.7	1.61	9.2	2.67	23.7	106.1	14.8	1.59	9.3	2.72	23.6
		120	129.8	14.2	1.96	7.5	2.12	24.8	127.8	14.3	1.94	7.7	2.16	24.7	125.9	14.4	1.92	7.8	2.20	24.6
	4	60	70.7	15.6	0.97	12.3	4.71	23.3	68.6	15.8	0.95	12.5	4.86	23.2	66.6	15.9	0.93	12.7	5.01	23.1
		80	90.4	15.2	1.30	10.8	3.43	24.1	88.4	15.3	1.28	11.0	3.51	24.0	86.4	15.5	1.26	11.2	3.60	23.9
		100	110.2	14.8	1.63	9.2	2.66	25.0	108.2	14.9	1.61	9.4	2.71	24.9	106.2	15.0	1.59	9.6	2.77	24.8
		120	129.9	14.4	1.96	7.7	2.15	25.8	127.9	14.5	1.94	7.9	2.19	25.7	126.0	14.6	1.92	8.0	2.23	25.6
	5	60	71.0	16.0	0.97	12.7	4.83	24.8	68.9	16.2	0.95	12.9	4.98	24.7	66.7	16.3	0.93	13.1	5.14	24.6
		80	90.7	15.5	1.30	11.1	3.50	25.4	88.6	15.7	1.28	11.3	3.59	25.3	86.5	15.8	1.26	11.5	3.68	25.3
		100	110.4	15.1	1.63	9.5	2.71	26.1	108.3	15.2	1.61	9.7	2.76	26.0	106.3	15.2	1.58	9.8	2.82	25.9
		120	130.0	14.6	1.96	7.9	2.18	26.7	128.0	14.7	1.94	8.0	2.22	26.7	126.1	14.7	1.91	8.2	2.26	26.6
50	3	60	73.4	19.6	0.98	16.2	5.87	38.9	70.8	19.8	0.95	16.5	6.10	38.7	68.2	20.0	0.93	16.8	6.33	38.5
		80	93.0	18.9	1.31	14.4	4.23	40.1	90.5	19.1	1.28	14.7	4.37	39.9	87.9	19.3	1.25	15.0	4.51	39.7
		100	112.5	18.3	1.64	12.7	3.26	41.3	110.1	18.4	1.61	12.9	3.35	41.1	107.6	18.6	1.58	13.2	3.44	41.0
		120	132.1	17.6	1.97	10.9	2.62	42.5	129.7	17.7	1.94	11.1	2.68	42.4	127.4	17.9	1.91	11.3	2.74	42.2
	4	60	73.8	20.1	0.98	16.7	6.03	40.9	71.1	20.3	0.95	17.0	6.26	40.7	68.5	20.5	0.93	17.3	6.49	40.5
		80	93.3	19.4	1.31	14.9	4.34	41.9	90.7	19.5	1.28	15.2	4.47	41.7	88.1	19.7	1.25	15.4	4.61	41.6
		100	112.8	18.6	1.64	13.0	3.33	42.9	110.3	18.8	1.61	13.3	3.41	42.8	107.8	18.9	1.58	13.5	3.50	42.6
		120	132.3	17.9	1.97	11.2	2.66	43.9	129.9	18.0	1.94	11.4	2.72	43.8	127.5	18.1	1.91	11.6	2.78	43.7
	5	60	74.2	20.6	0.98	17.3	6.18	42.9	71.4	20.8	0.95	17.6	6.43	42.7	68.7	21.1	0.93	17.9	6.68	42.6
		80	93.6	19.8	1.31	15.3	4.44	43.7	91.0	20.0	1.28	15.6	4.58	43.6	88.3	20.1	1.25	15.9	4.72	43.5
		100	113.1	19.0	1.64	13.4	3.39	44.5	110.5	19.1	1.61	13.6	3.48	44.4	107.9	19.2	1.58	13.8	3.57	44.3
		120	132.5	18.2	1.97	11.5	2.70	45.3	130.0	18.3	1.94	11.6	2.76	45.2	127.5	18.3	1.91	11.8	2.82	45.1
70	3	60	76.4	23.9	0.98	20.6	7.15	55.9	73.2	24.2	0.95	20.9	7.46	55.6	70.1	24.4	0.92	21.3	7.77	55.4
		80	95.8	22.9	1.31	18.5	5.12	57.3	92.7	23.2	1.28	18.8	5.30	57.1	89.6	23.4	1.25	19.1	5.49	56.9
		100	115.1	22.0	1.65	16.3	3.91	58.8	112.2	22.2	1.61	16.7	4.03	58.6	109.2	22.3	1.57	17.0	4.16	58.3
		120	134.4	21.0	1.98	14.2	3.11	60.2	131.6	21.2	1.94	14.5	3.20	60.0	128.8	21.3	1.90	14.8	3.28	59.8
	4	60	76.9	24.6	0.98	21.2	7.34	58.4	73.6	24.8	0.95	21.6	7.66	58.2	70.4	25.1	0.92	22.0	7.99	58.0
		80	96.2	23.5	1.31	19.0	5.24	59.6	93.0	23.7	1.28	19.3	5.43	59.4	89.9	23.9	1.25	19.7	5.62	59.3
		100	115.4	22.5	1.65	16.8	3.99	60.8	112.4	22.6	1.61	17.1	4.11	60.7	109.4	22.8	1.57	17.4	4.24	60.5
		120	134.7	21.4	1.98	14.6	3.17	62.0	131.8	21.5	1.94	14.9	3.25	61.9	128.9	21.6	1.90	15.1	3.33	61.7
	5	60	77.3	25.2	0.98	21.9	7.53	61.0	74.0	25.5	0.95	22.3	7.88	60.8	70.6	25.8	0.92	22.7	8.22	60.7
		80	96.5	24.1	1.31	19.6	5.37	61.9	93.3	24.3	1.28	19.9	5.56	61.8	90.1	24.5	1.25	20.2	5.76	61.7
		100	115.8	22.9	1.65	17.3	4.08	62.9	112.7	23.1	1.61	17.6	4.20	62.8	109.6	23.2	1.57	17.8	4.32	62.6
		120	135.0	21.8	1.98	15.0	3.23	63.8	132.0	21.9	1.94	15.2	3.30	63.7	129.0	21.9	1.90	15.4	3.38	63.6
90	3	60	79.2	28.0	0.98	24.7	8.37	73.1	79.3	28.2	0.95	24.9	8.69	72.9	79.5	28.3	0.92	25.2	9.01	72.7
		80	98.2	26.5	1.31	22.0	5.93	74.9	98.4	26.7	1.27	22.4	6.16	74.6	98.5	27.0	1.24	22.7	6.39	74.4
		100	Operation not recommended																	
		120																		
	4	60																		
		80																		
		100																		
		120																		
	5	60																		
		80																		
		100																		
		120																		

10/28/09

The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Model 025 - Performance Data

Cooling Capacity

Source		Load Flow-4 GPM							Load Flow-5.5 GPM						Load Flow-7 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	4	50	36.6	25.9	0.96	29.2	27.0	45.0	39.3	26.7	0.96	30.0	27.8	45.5	41.9	27.5	0.96	30.8	28.6	45.9
		70	55.5	28.0	0.96	31.3	29.2	46.1	58.5	28.6	0.96	31.8	29.7	46.4	61.4	29.1	0.96	32.3	30.3	46.7
		90	74.5	30.2	0.96	33.4	31.4	47.2	77.7	30.4	0.96	33.7	31.7	47.4	81.0	30.6	0.96	33.9	31.9	47.5
		110	93.4	32.3	0.96	35.6	33.6	48.3	96.9	32.3	0.96	35.5	33.6	48.3	100.5	32.2	0.96	35.5	33.5	48.3
	5.5	50	36.9	25.4	0.93	28.6	27.3	41.6	39.5	26.2	0.93	29.3	28.1	41.9	42.1	26.9	0.93	30.1	28.9	42.3
		70	56.0	27.1	0.93	30.3	29.2	42.4	58.9	27.6	0.93	30.7	29.7	42.6	61.7	28.1	0.93	31.2	30.2	42.8
		90	75.2	28.8	0.93	31.9	31.0	43.1	78.3	29.0	0.93	32.2	31.3	43.2	81.4	29.2	0.93	32.4	31.5	43.3
		110	94.3	30.5	0.93	33.6	32.9	43.8	97.7	30.4	0.93	33.6	32.9	43.8	101.0	30.4	0.93	33.6	32.9	43.8
	7	50	37.2	24.9	0.90	28.0	27.7	38.2	39.7	25.6	0.90	28.7	28.4	38.4	42.3	26.3	0.90	29.4	29.2	38.7
		70	56.5	26.1	0.90	29.2	29.1	38.6	59.3	26.6	0.90	29.7	29.7	38.7	62.0	27.1	0.90	30.1	30.2	38.9
		90	75.9	27.4	0.89	30.4	30.6	39.0	78.8	27.6	0.89	30.6	30.9	39.0	81.8	27.8	0.89	30.9	31.2	39.1
		110	95.3	28.6	0.89	31.6	32.1	39.3	98.4	28.6	0.89	31.6	32.1	39.3	101.6	28.6	0.89	31.6	32.1	39.3
50	4	50	37.3	24.6	1.24	28.8	21.2	64.8	39.8	25.4	1.24	29.6	21.8	65.2	42.3	26.2	1.24	30.4	22.5	65.7
		70	55.4	28.3	1.25	32.6	24.0	66.8	58.3	29.0	1.25	33.3	24.5	67.2	61.2	29.7	1.25	34.0	25.0	67.5
		90	73.4	32.1	1.26	36.4	26.7	68.8	76.8	32.7	1.26	37.0	27.1	69.1	80.2	33.3	1.26	37.6	27.5	69.4
		110	91.5	35.9	1.27	40.2	29.4	70.7	95.3	36.4	1.27	40.7	29.7	71.0	99.1	36.9	1.27	41.2	29.9	71.3
	5.5	50	37.5	24.3	1.20	28.4	20.3	61.5	39.9	25.1	1.20	29.2	21.0	61.9	42.4	25.9	1.20	30.0	21.6	62.2
		70	55.7	27.8	1.20	31.9	23.1	63.0	58.5	28.5	1.20	32.6	23.7	63.3	61.4	29.2	1.20	33.3	24.3	63.6
		90	73.9	31.3	1.21	35.4	25.9	64.4	77.2	31.8	1.21	35.9	26.4	64.7	80.5	32.4	1.21	36.5	26.8	64.9
		110	92.1	34.7	1.21	38.9	28.7	65.9	95.8	35.2	1.21	39.3	29.1	66.1	99.5	35.7	1.21	39.8	29.4	66.3
	7	50	37.6	24.1	1.16	28.0	22.0	58.3	40.0	24.9	1.16	28.8	22.8	58.5	42.4	25.7	1.16	29.6	23.5	58.7
		70	56.0	27.2	1.16	31.2	24.5	59.2	58.8	27.9	1.16	31.9	25.1	59.4	61.6	28.6	1.16	32.5	25.8	59.6
		90	74.3	30.4	1.16	34.3	27.1	60.1	77.5	30.9	1.16	34.9	27.5	60.3	80.7	31.5	1.16	35.4	28.0	60.4
		110	92.7	33.6	1.16	37.5	29.6	61.0	96.3	34.0	1.16	37.9	29.9	61.2	99.9	34.4	1.16	38.3	30.2	61.3
70	4	50	38.0	23.2	1.51	28.4	15.4	84.6	40.4	24.0	1.52	29.2	15.8	85.0	42.7	24.8	1.52	30.0	16.3	85.5
		70	55.2	28.6	1.53	33.9	18.7	87.5	58.1	29.5	1.54	34.8	19.2	87.9	61.0	30.4	1.54	35.7	19.7	88.4
		90	72.4	34.1	1.55	39.4	22.0	90.3	75.9	35.0	1.56	40.3	22.5	90.8	79.4	36.0	1.56	41.3	23.1	91.3
		110	Operation not recommended																	
	5.5	50	38.0	23.2	1.47	28.2	15.8	81.4	40.3	24.1	1.47	29.1	16.4	81.8	42.7	25.0	1.47	30.0	17.0	82.1
		70	55.3	28.5	1.48	33.5	19.3	83.6	58.2	29.4	1.48	34.4	19.9	84.0	61.1	30.3	1.48	35.3	20.5	84.3
		90	72.6	33.7	1.49	38.8	22.7	85.8	76.1	34.7	1.49	39.7	23.3	86.2	79.5	35.6	1.49	40.7	23.9	86.5
		110	Operation not recommended																	
	7	50	38.0	23.2	1.42	28.0	16.3	78.3	40.3	24.2	1.42	29.0	17.1	78.5	42.6	25.1	1.41	29.9	17.8	78.8
		70	55.4	28.3	1.42	33.1	19.9	79.8	58.3	29.2	1.42	34.1	20.6	80.0	61.1	30.1	1.41	35.0	21.3	80.3
		90	72.8	33.4	1.42	38.2	23.5	81.3	76.2	34.3	1.42	39.1	24.2	81.5	79.6	35.2	1.42	40.0	24.8	81.8
		110	90.2	38.5	1.42	43.3	27.1	82.8	94.2	39.4	1.42	44.2	27.7	83.0	98.2	40.2	1.42	45.0	28.3	83.3
90	4	50	39.3	20.9	1.93	27.4	11.6	104.1	41.4	21.5	1.94	28.1	12.0	104.5	43.5	22.2	1.94	28.8	12.3	104.9
		70	56.3	26.6	1.96	33.3	14.5	107.2	59.0	27.4	1.97	34.1	14.9	107.6	61.7	28.3	1.97	35.0	15.3	108.0
		90	Operation not recommended																	
		110																		
	5.5	50	39.2	20.9	1.88	27.3	11.1	101.1	41.3	21.6	1.88	28.0	11.5	101.4	43.4	22.4	1.88	28.8	11.9	101.7
		70	56.3	26.7	1.89	33.1	14.1	103.4	59.0	27.5	1.90	34.0	14.5	103.8	61.7	28.3	1.90	34.8	14.9	104.1
		90	Operation not recommended																	
		110																		
	7	50	39.2	21.0	1.83	27.2	12.3	98.0	41.3	21.7	1.83	28.0	12.8	98.2	43.4	22.5	1.83	28.7	13.3	98.5
		70	56.2	26.8	1.83	33.0	15.6	99.7	58.9	27.6	1.83	33.8	16.1	100.0	61.6	28.4	1.83	34.6	16.6	100.2
		90	Operation not recommended																	
		110																		
110	4	50	40.5	18.5	2.35	26.5	7.9	123.7	42.3	19.1	2.36	27.1	8.1	124.0	44.2	19.6	2.36	27.7	8.3	124.3
		70	57.3	24.6	2.39	32.7	10.3	126.9	59.8	25.4	2.40	33.5	10.6	127.3	62.3	26.2	2.40	34.4	10.9	127.7
		90	Operation not recommended																	
		110																		
	5.5	50	40.4	18.6	2.30	26.4	8.1	120.7	42.3	19.2	2.30	27.0	8.3	120.9	44.2	19.8	2.30	27.6	8.6	121.2
		70	57.2	24.9	2.31	32.8	10.8	123.3	59.7	25.6	2.32	33.5	11.1	123.6	62.2	26.4	2.32	34.3	11.4	123.9
		90	Operation not recommended																	
		110																		
	7	50	40.4	18.7	2.24	26.3	8.3	117.8	42.2	19.3	2.24	26.9	8.6	117.9	44.1	19.9	2.24	27.5	8.9	118.1
		70	57.0	25.2	2.24	32.8	11.3	119.7	59.6	25.9	2.24	33.5	11.6	119.9	62.2	26.6	2.24	34.2	11.9	120.1
		90	Operation not recommended																	
		110																		

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Model 025 - Performance Data cont.

Heating Capacity

Source		Load Flow-4 GPM							Load Flow-5.5 GPM						Load Flow-7 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	5.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	7	60	71.0	21.4	1.28	17.0	4.90	20.0	68.1	21.5	1.26	17.2	5.02	19.9	66.4	21.6	1.23	17.4	5.15	19.9
		80	90.6	20.5	1.70	14.7	3.54	20.7	87.7	20.7	1.67	14.9	3.62	20.6	86.1	20.8	1.65	15.1	3.70	20.5
		100	110.1	19.7	2.12	12.4	2.72	21.3	107.4	19.8	2.09	12.7	2.77	21.3	105.9	19.9	2.06	12.9	2.83	21.2
		120	129.7	18.8	2.54	10.1	2.17	22.0	127.1	19.0	2.51	10.4	2.21	21.9	125.6	19.1	2.48	10.6	2.26	21.9
30	4	60	71.4	22.2	1.29	17.8	5.04	20.8	69.1	22.4	1.26	18.1	5.21	20.7	66.7	22.6	1.23	18.4	5.38	20.5
		80	91.0	21.4	1.71	15.6	3.67	22.0	88.7	21.6	1.68	15.9	3.78	21.8	86.4	21.8	1.64	16.2	3.88	21.7
		100	110.6	20.6	2.12	13.4	2.84	23.1	108.4	20.8	2.09	13.6	2.91	23.0	106.2	20.9	2.06	13.9	2.98	22.8
		120	130.2	19.8	2.54	11.1	2.28	24.3	128.1	20.0	2.51	11.4	2.33	24.1	125.9	20.1	2.47	11.7	2.38	24.0
	5.5	60	71.8	22.9	1.29	18.4	5.19	22.6	69.3	23.0	1.26	18.7	5.35	22.5	66.8	23.2	1.23	19.0	5.53	22.4
		80	91.3	21.9	1.71	16.1	3.76	23.5	88.9	22.1	1.68	16.4	3.87	23.4	86.6	22.3	1.64	16.7	3.98	23.3
		100	110.8	21.0	2.12	13.7	2.90	24.5	108.6	21.2	2.09	14.1	2.97	24.4	106.3	21.4	2.06	14.4	3.05	24.2
		120	130.3	20.1	2.54	11.4	2.31	25.4	128.2	20.3	2.51	11.7	2.37	25.3	126.0	20.5	2.47	12.1	2.43	25.2
	7	60	72.1	23.5	1.29	19.1	5.34	24.4	69.6	23.7	1.26	19.3	5.50	24.3	67.0	23.8	1.23	19.6	5.67	24.2
		80	91.6	22.4	1.71	16.6	3.85	25.1	89.1	22.6	1.68	16.9	3.96	25.0	86.7	22.8	1.64	17.2	4.07	24.9
		100	111.0	21.4	2.12	14.1	2.95	25.8	108.7	21.6	2.09	14.5	3.03	25.7	106.4	21.9	2.06	14.8	3.12	25.6
		120	130.5	20.3	2.54	11.6	2.34	26.6	128.3	20.6	2.51	12.1	2.41	26.5	126.2	20.9	2.47	12.5	2.48	26.3
50	4	60	75.2	29.4	1.31	24.9	6.55	37.2	71.9	29.5	1.27	25.1	6.79	37.1	68.7	29.5	1.23	25.3	7.03	37.0
		80	94.5	28.2	1.74	22.3	4.74	38.5	91.4	28.3	1.69	22.5	4.89	38.4	88.3	28.3	1.65	22.7	5.04	38.3
		100	113.9	27.0	2.16	19.6	3.65	39.9	111.0	27.1	2.11	19.9	3.75	39.7	108.0	27.2	2.06	20.1	3.85	39.6
		120	133.3	25.9	2.59	17.0	2.91	41.2	130.5	25.9	2.54	17.3	2.99	41.1	127.7	26.0	2.48	17.5	3.07	41.0
	5.5	60	75.7	30.4	1.31	25.9	6.79	39.6	72.3	30.4	1.27	26.1	7.02	39.5	69.0	30.5	1.23	26.3	7.25	39.5
		80	95.0	29.1	1.74	23.2	4.90	40.7	91.8	29.1	1.69	23.4	5.04	40.6	88.6	29.2	1.65	23.6	5.19	40.6
		100	114.3	27.7	2.16	20.4	3.76	41.8	111.3	27.8	2.11	20.6	3.86	41.7	108.2	27.9	2.06	20.9	3.96	41.6
		120	133.6	26.4	2.59	17.6	2.99	42.9	130.7	26.5	2.54	17.9	3.06	42.8	127.8	26.6	2.48	18.2	3.15	42.7
	7	60	76.2	31.5	1.32	27.0	6.98	42.1	72.7	31.4	1.27	27.1	7.23	42.0	69.2	31.4	1.23	27.2	7.48	42.0
		80	95.4	30.0	1.74	24.0	5.02	42.9	92.1	30.0	1.69	24.2	5.18	42.9	88.8	30.0	1.65	24.4	5.34	42.8
		100	114.7	28.5	2.17	21.1	3.83	43.8	111.5	28.5	2.11	21.3	3.95	43.7	108.4	28.6	2.06	21.6	4.06	43.6
		120	133.9	27.0	2.59	18.1	3.04	44.7	131.0	27.1	2.54	18.4	3.13	44.6	128.0	27.3	2.48	18.8	3.22	44.5
70	4	60	78.9	36.6	1.33	32.1	8.06	53.5	74.8	36.5	1.28	32.1	8.37	53.4	70.7	36.4	1.23	32.2	8.67	53.4
		80	98.1	35.0	1.77	29.0	5.81	55.0	94.2	35.0	1.71	29.1	6.00	55.0	90.3	34.9	1.65	29.3	6.20	54.9
		100	117.3	33.5	2.20	25.9	4.45	56.6	113.5	33.4	2.14	26.1	4.59	56.5	109.8	33.4	2.07	26.3	4.73	56.4
		120	136.4	31.9	2.64	22.9	3.54	58.2	132.9	31.9	2.57	23.1	3.65	58.1	129.4	31.9	2.49	23.4	3.75	57.9
	5.5	60	79.6	38.0	1.34	33.4	8.34	56.6	75.3	37.9	1.28	33.5	8.65	56.6	71.1	37.7	1.23	33.5	8.98	56.6
		80	98.7	36.3	1.77	30.2	6.00	57.9	94.7	36.2	1.71	30.3	6.19	57.9	90.6	36.1	1.65	30.4	6.40	57.8
		100	117.8	34.5	2.21	27.0	4.58	59.2	114.0	34.5	2.14	27.2	4.72	59.1	110.1	34.4	2.07	27.3	4.87	59.0
		120	136.9	32.8	2.64	23.7	3.63	60.5	133.3	32.8	2.57	24.0	3.74	60.4	129.6	32.8	2.49	24.3	3.85	60.3
	7	60	80.3	39.4	1.34	34.8	8.61	59.7	75.9	39.2	1.29	34.8	8.95	59.7	71.5	39.0	1.23	34.8	9.29	59.7
		80	99.3	37.5	1.77	31.4	6.19	60.7	95.1	37.3	1.71	31.5	6.40	60.7	91.0	37.2	1.65	31.6	6.61	60.7
		100	118.3	35.5	2.21	28.0	4.72	61.8	114.4	35.5	2.14	28.2	4.86	61.7	110.4	35.4	2.07	28.3	5.01	61.7
		120	137.3	33.6	2.64	24.6	3.73	62.8	133.6	33.6	2.57	24.8	3.84	62.7	129.9	33.6	2.49	25.1	3.95	62.6
90	4	60	82.7	44.0	1.37	39.3	9.41	69.7	77.7	43.7	1.31	39.2	9.79	69.8	72.8	43.4	1.25	39.1	10.17	69.8
		80	101.6	41.9	1.80	35.7	6.80	71.6	96.9	41.7	1.73	35.8	7.07	71.6	92.2	41.5	1.66	35.9	7.33	71.5
		100	Operation not recommended																	
		120																		
	5.5	60	83.5	45.5	1.38	40.8	9.66	73.6	78.2	44.8	1.32	40.3	9.96	73.8	73.0	44.1	1.26	39.8	10.30	73.9
		80	102.3	43.2	1.81	37.0	6.99	75.2	97.4	42.8	1.74	36.8	7.22	75.2	92.5	42.4	1.66	36.7	7.46	75.2
		100	Operation not recommended																	
		120																		
	7	60	84.2	47.0	1.39	42.3	9.91	77.6	78.7	45.9	1.33	41.4	10.16	77.8	73.2	44.8	1.26	40.5	10.42	78.1
		80	102.9	44.5	1.82	38.3	7.18	78.7	97.8	43.8	1.74	37.9	7.38	78.8	92.7	43.2	1.67	37.5	7.59	79.0
		100	Operation not recommended																	
		120																		

8/19/09

The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Model 025 DHW - Performance Data cont.

Heating Only Capacity

Source		Load Flow-4 GPM							Load Flow-5.5 GPM						Load Flow-7 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	5.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	7	60	71.1	21.6	1.40	16.8	4.52	20.0	68.1	21.7	1.39	17.0	4.59	20.0	66.4	21.8	1.37	17.1	4.66	20.0
		80	90.8	20.9	1.84	14.6	3.33	20.7	87.9	21.1	1.79	14.9	3.44	20.6	86.2	21.2	1.74	15.2	3.56	20.5
		100	110.4	20.3	2.29	12.5	2.60	21.3	107.6	20.4	2.20	12.9	2.72	21.2	106.0	20.5	2.11	13.3	2.85	21.1
		120	130.1	19.6	2.73	10.3	2.10	22.0	127.4	19.8	2.61	10.9	2.22	21.8	125.9	19.9	2.48	11.4	2.35	21.6
30	4	60	71.7	22.7	1.41	17.9	4.72	20.8	69.2	22.8	1.38	18.0	4.83	20.7	66.7	22.8	1.35	18.2	4.95	20.6
		80	91.4	22.1	1.86	15.7	3.48	21.9	89.0	22.1	1.77	16.1	3.67	21.7	86.5	22.2	1.68	16.4	3.87	21.5
		100	111.0	21.4	2.31	13.5	2.72	23.0	108.7	21.5	2.16	14.1	2.93	22.7	106.3	21.5	2.00	14.7	3.15	22.4
		120	130.7	20.8	2.76	11.4	2.21	24.1	128.4	20.9	2.55	12.2	2.42	23.7	126.2	20.9	2.33	12.9	2.63	23.3
	5.5	60	72.0	23.3	1.42	18.4	4.81	22.6	69.4	23.3	1.38	18.6	4.94	22.5	66.9	23.4	1.35	18.8	5.08	22.5
		80	91.6	22.5	1.87	16.2	3.54	23.5	89.1	22.6	1.80	16.5	3.68	23.4	86.7	22.7	1.73	16.8	3.84	23.2
		100	111.2	21.8	2.32	13.9	2.76	24.4	108.9	21.9	2.21	14.3	2.90	24.2	106.5	22.0	2.11	14.8	3.05	24.0
		120	130.9	21.1	2.77	11.7	2.24	25.3	128.6	21.2	2.63	12.2	2.36	25.1	126.3	21.3	2.50	12.7	2.50	24.8
	7	60	72.3	23.8	1.42	19.0	4.91	24.4	69.7	23.9	1.39	19.2	5.06	24.4	67.1	24.0	1.35	19.4	5.21	24.3
		80	91.9	23.0	1.87	16.6	3.60	25.1	89.3	23.1	1.83	16.9	3.70	25.0	86.8	23.2	1.79	17.1	3.80	25.0
		100	111.4	22.2	2.32	14.3	2.80	25.8	109.0	22.3	2.27	14.5	2.88	25.7	106.6	22.4	2.22	14.8	2.95	25.6
		120	131.0	21.4	2.77	11.9	2.26	26.5	128.7	21.5	2.72	12.2	2.32	26.4	126.4	21.6	2.66	12.5	2.38	26.3
50	4	60	75.2	29.5	1.47	24.4	5.85	37.4	71.9	29.5	1.42	24.7	6.06	37.3	68.7	29.6	1.38	24.9	6.27	37.2
		80	94.6	28.3	1.92	21.7	4.28	38.8	91.5	28.4	1.84	22.1	4.48	38.6	88.4	28.5	1.77	22.4	4.68	38.4
		100	114.0	27.1	2.38	19.0	3.32	40.2	111.0	27.2	2.27	19.5	3.50	40.0	108.1	27.4	2.16	20.0	3.68	39.7
		120	133.4	25.9	2.84	16.2	2.66	41.6	130.5	26.1	2.69	16.9	2.83	41.3	127.7	26.3	2.55	17.6	2.99	40.9
	5.5	60	75.6	30.3	1.47	25.3	6.03	39.8	72.3	30.4	1.43	25.5	6.25	39.8	69.0	30.5	1.38	25.7	6.48	39.7
		80	95.0	29.0	1.93	22.4	4.41	41.0	91.8	29.1	1.86	22.8	4.58	40.9	88.6	29.2	1.80	23.1	4.77	40.7
		100	114.3	27.7	2.38	19.6	3.41	42.1	111.3	27.9	2.30	20.0	3.55	41.9	108.3	28.0	2.21	20.5	3.71	41.8
		120	133.6	26.4	2.84	16.7	2.72	43.3	130.8	26.6	2.74	17.3	2.85	43.0	127.9	26.8	2.63	17.8	2.99	42.8
	7	60	76.1	31.2	1.48	26.1	6.13	42.3	72.7	31.3	1.43	26.4	6.38	42.2	69.2	31.4	1.38	26.6	6.63	42.2
		80	95.3	29.8	1.94	23.2	4.48	43.2	92.1	29.9	1.88	23.5	4.64	43.1	88.8	30.0	1.83	23.8	4.80	43.0
		100	114.6	28.3	2.39	20.2	3.45	44.1	111.5	28.5	2.33	20.6	3.57	43.9	108.5	28.7	2.27	21.0	3.69	43.8
		120	133.9	26.9	2.85	17.2	2.76	44.9	131.0	27.2	2.78	17.7	2.85	44.8	128.1	27.4	2.72	18.1	2.95	44.7
70	4	60	78.7	36.2	1.52	31.0	6.98	54.0	74.7	36.3	1.46	31.3	7.29	53.9	70.7	36.3	1.40	31.5	7.60	53.8
		80	97.8	34.5	1.98	27.7	5.09	55.7	94.0	34.6	1.92	28.1	5.29	55.5	90.2	34.7	1.85	28.4	5.49	55.4
		100	116.9	32.7	2.45	24.4	3.92	57.4	113.3	33.0	2.38	24.8	4.07	57.2	109.8	33.2	2.31	25.3	4.21	57.0
		120	136.0	31.0	2.91	21.1	3.12	59.1	132.6	31.3	2.84	21.6	3.24	58.9	129.3	31.6	2.76	22.2	3.35	58.6
	5.5	60	79.3	37.4	1.53	32.2	7.16	57.1	75.2	37.5	1.47	32.4	7.48	57.0	71.0	37.5	1.41	32.7	7.82	56.9
		80	98.3	35.5	1.99	28.7	5.22	58.5	94.4	35.7	1.93	29.1	5.43	58.3	90.5	35.8	1.86	29.5	5.64	58.2
		100	117.3	33.6	2.45	25.2	4.01	59.9	113.7	33.9	2.38	25.7	4.16	59.7	110.0	34.1	2.31	26.2	4.32	59.5
		120	136.3	31.7	2.92	21.8	3.19	61.3	132.9	32.1	2.84	22.4	3.31	61.0	129.5	32.4	2.77	23.0	3.43	60.8
	7	60	79.9	38.6	1.54	33.3	7.34	60.2	75.6	38.7	1.48	33.6	7.69	60.1	71.4	38.7	1.41	33.9	8.04	60.0
		80	98.8	36.5	2.00	29.7	5.35	61.2	94.8	36.7	1.93	30.1	5.57	61.1	90.9	36.9	1.86	30.5	5.80	61.0
		100	117.8	34.5	2.46	26.1	4.11	62.3	114.0	34.8	2.39	26.6	4.27	62.2	110.3	35.0	2.32	27.1	4.43	62.0
		120	136.7	32.4	2.92	22.4	3.25	63.4	133.2	32.8	2.85	23.1	3.38	63.2	129.8	33.2	2.77	23.7	3.51	63.0
90	4	60	82.0	42.7	1.56	37.4	8.02	70.7	82.2	43.0	1.49	37.9	8.48	70.5	82.3	43.3	1.42	38.5	8.93	70.2
		80	100.9	40.5	2.02	33.6	5.86	72.7	101.0	40.8	1.95	34.2	6.15	72.4	101.2	41.1	1.87	34.8	6.44	72.1
		100	Operation not recommended																	
		120																		
	5.5	60																		
		80																		
		100																		
		120																		
	7	60																		
		80																		
		100																		
		120																		

10/28/09

The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Aston Single Hydronic Unit
1.5 - 6 Tons 60Hz

GEOSTAR

Model 040 - Performance Data

Cooling Capacity

Source		Load Flow-5 GPM							Load Flow-7.5 GPM						Load Flow-10 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	5	50	34.0	38.7	1.38	43.4	28.0	47.9	37.8	39.8	1.39	44.5	28.7	48.4	41.6	40.9	1.39	45.6	29.4	48.8
		70	54.5	37.5	1.27	41.8	29.4	47.2	58.3	38.0	1.25	42.3	30.4	47.4	62.0	38.6	1.23	42.8	31.4	47.6
		90	75.1	36.2	1.17	40.2	31.1	46.6	78.8	36.2	1.12	40.0	32.6	46.5	82.5	36.2	1.06	39.9	34.1	46.4
		110	95.6	35.0	1.06	38.6	33.0	45.9	99.3	34.5	0.98	37.8	35.3	45.6	103.0	33.9	0.90	37.0	37.7	45.2
	7.5	50	34.5	37.7	1.32	42.2	28.6	43.2	38.2	38.6	1.33	43.1	29.1	43.5	41.9	39.4	1.33	43.9	29.6	43.8
		70	55.1	36.2	1.23	40.4	29.6	42.6	58.7	36.7	1.21	40.8	30.3	42.8	62.3	37.1	1.19	41.2	31.2	42.9
		90	75.7	34.7	1.13	38.6	30.7	42.1	79.3	34.8	1.09	38.5	31.9	42.1	82.8	34.9	1.05	38.5	33.1	42.0
		110	96.3	33.2	1.04	36.7	32.1	41.6	99.8	32.9	0.98	36.2	33.7	41.4	103.3	32.6	0.92	35.7	35.6	41.2
	10	50	34.9	36.7	1.26	41.0	29.1	38.5	38.5	37.3	1.27	41.6	29.5	38.6	42.2	37.9	1.27	42.2	29.8	38.7
		70	55.6	34.9	1.18	38.9	29.7	38.0	59.1	35.3	1.17	39.3	30.3	38.1	62.6	35.7	1.16	39.6	30.9	38.2
		90	76.3	33.2	1.09	36.9	30.3	37.6	79.7	33.3	1.07	37.0	31.2	37.6	83.1	33.5	1.04	37.1	32.1	37.6
		110	97.1	31.4	1.01	34.8	31.1	37.2	100.3	31.4	0.97	34.7	32.4	37.1	103.5	31.3	0.93	34.5	33.7	37.1
50	5	50	35.3	35.7	1.76	41.7	21.6	67.2	38.6	37.4	1.76	43.4	22.6	67.9	41.9	39.2	1.76	45.2	23.5	68.6
		70	53.4	40.2	1.73	46.1	24.5	69.0	57.3	41.5	1.72	47.4	25.5	69.5	61.2	42.8	1.71	48.6	26.4	70.1
		90	71.5	44.8	1.71	50.6	27.4	70.9	76.0	45.6	1.69	51.4	28.5	71.2	80.4	46.4	1.66	52.1	29.5	71.5
		110	89.6	49.4	1.68	55.1	30.4	72.7	94.7	49.7	1.65	55.3	31.7	72.8	99.7	50.1	1.62	55.6	33.0	72.9
	7.5	50	39.1	35.3	1.69	41.0	20.9	62.8	38.8	36.9	1.68	42.6	21.9	63.3	42.1	38.5	1.68	44.2	22.9	63.8
		70	57.8	39.2	1.65	44.8	23.7	64.0	58.7	40.3	1.64	45.9	24.5	64.4	61.4	41.5	1.63	47.1	25.4	64.7
		90	76.5	43.0	1.62	48.6	26.5	65.2	77.8	43.8	1.60	49.2	27.3	65.4	80.8	44.5	1.59	49.9	28.1	65.7
		110	95.2	46.9	1.59	52.3	29.5	66.5	95.4	47.2	1.56	52.5	30.2	66.5	100.2	47.5	1.54	52.7	30.9	66.6
	10	50	42.8	34.9	1.61	40.4	23.0	58.3	38.9	36.4	1.61	41.9	23.8	58.6	42.2	37.9	1.61	43.3	24.7	58.9
		70	62.1	38.1	1.57	43.5	25.3	59.0	60.1	39.1	1.57	44.5	26.1	59.2	61.7	40.2	1.56	45.5	26.9	59.4
		90	81.5	41.3	1.54	46.5	27.6	59.6	79.6	41.9	1.52	47.1	28.4	59.7	81.2	42.6	1.51	47.7	29.1	59.8
		110	100.8	44.5	1.50	49.6	30.0	60.2	96.2	44.7	1.48	49.7	30.8	60.3	100.7	44.9	1.46	49.9	31.5	60.3
70	5	50	36.6	32.6	2.14	39.9	15.2	86.5	39.4	35.0	2.14	42.3	16.4	87.4	42.3	37.4	2.13	44.7	17.6	88.4
		70	52.3	43.0	2.19	50.5	19.6	90.8	56.3	45.0	2.20	52.5	20.5	91.6	60.3	47.0	2.20	54.5	21.4	92.5
		90	68.0	53.3	2.25	61.0	23.7	95.2	73.2	55.0	2.26	62.7	24.4	95.8	78.3	56.6	2.26	64.3	25.0	96.5
		110	Operation not recommended																	
	7.5	50	36.5	32.9	2.05	39.8	16.0	82.3	39.4	35.2	2.04	42.2	17.2	83.1	42.2	37.6	2.04	44.5	18.5	83.8
		70	56.9	42.1	2.08	49.2	20.2	85.3	58.7	44.0	2.08	51.1	21.2	85.9	60.5	45.9	2.08	52.9	22.1	86.5
		90	73.9	51.4	2.11	58.6	24.3	88.4	76.4	52.7	2.12	59.9	24.9	88.8	78.8	54.1	2.12	61.3	25.5	89.3
		110	Operation not recommended																	
	10	50	36.4	33.1	1.96	39.8	16.9	78.2	39.3	35.5	1.95	42.1	18.2	78.7	42.2	37.8	1.94	44.4	19.5	79.2
		70	61.5	41.2	1.97	48.0	20.9	79.9	61.1	43.0	1.96	49.7	21.9	80.2	60.8	44.7	1.96	51.4	22.8	80.6
		90	79.8	49.4	1.98	56.1	24.9	81.6	79.6	50.5	1.98	57.2	25.5	81.8	79.4	51.6	1.97	58.3	26.1	82.0
		110	86.3	57.5	1.99	64.3	28.9	83.3	92.1	58.0	1.99	64.8	29.1	83.4	97.9	58.5	1.99	65.3	29.4	83.5
90	5	50	38.0	29.1	2.74	38.4	11.4	105.8	40.6	30.9	2.74	40.3	12.2	106.6	43.2	32.8	2.74	42.2	13.0	107.4
		70	53.8	39.2	2.80	48.8	15.0	110.1	57.5	41.1	2.81	50.7	15.7	110.9	61.1	43.0	2.81	52.6	16.4	111.7
		90	69.6	49.4	2.86	59.1	18.4	114.4	74.3	51.3	2.87	61.1	19.0	115.2	79.0	53.3	2.88	63.1	19.6	116.0
		110	Operation not recommended																	
	7.5	50	41.0	29.2	2.65	38.3	11.0	101.8	40.6	31.1	2.64	40.1	11.8	102.4	43.2	33.0	2.64	42.0	12.5	103.0
		70	57.9	38.9	2.68	48.1	14.5	104.9	59.6	40.8	2.68	49.9	15.2	105.5	61.2	42.7	2.68	51.8	15.9	106.1
		90	74.9	48.6	2.71	57.9	17.9	108.0	77.0	50.5	2.71	59.7	18.6	108.6	79.2	52.3	2.71	61.6	19.3	109.2
		110	Operation not recommended																	
	10	50	43.9	29.4	2.55	38.1	12.5	97.9	40.5	31.3	2.54	40.0	13.4	98.2	43.1	33.3	2.54	41.9	14.3	98.6
		70	62.0	38.7	2.56	47.4	16.2	99.8	61.7	40.5	2.55	49.2	17.0	100.1	61.3	42.3	2.54	51.0	17.8	100.5
		90	80.1	47.9	2.56	56.6	19.8	101.7	79.8	49.6	2.56	58.4	20.6	102.0	79.4	51.4	2.55	60.1	21.3	102.4
		110	Operation not recommended																	
110	5	50	39.5	25.5	3.34	36.9	7.6	125.2	41.8	26.9	3.35	38.3	8.0	125.8	44.2	28.2	3.35	39.6	8.4	126.3
		70	55.4	35.5	3.41	47.1	10.4	129.4	58.7	37.3	3.42	48.9	10.9	130.2	61.9	39.1	3.42	50.8	11.4	130.9
		90	Operation not recommended																	
		110																		
	7.5	50	39.4	25.6	3.24	36.7	7.9	121.4	41.8	27.0	3.24	38.1	8.3	121.8	44.1	28.5	3.24	39.5	8.8	122.2
		70	59.0	35.8	3.28	46.9	10.9	124.5	60.4	37.6	3.28	48.8	11.5	125.1	61.9	39.5	3.28	50.7	12.1	125.7
		90	Operation not recommended																	
		110																		
	10	50	39.4	25.7	3.14	36.4	8.2	117.5	41.7	27.2	3.14	37.9	8.7	117.8	44.1	28.7	3.13	39.4	9.2	118.1
		70	62.6	36.1	3.14	46.8	11.5	119.6	62.2	38.0	3.14	48.7	12.1	120.0	61.8	39.9	3.13	50.6	12.8	120.4
		90	Operation not recommended																	
		110																		

8/20/09

The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Model 040 - Performance Data cont.

Heating Capacity

Source		Load Flow-5 GPM							Load Flow-7.5 GPM						Load Flow-10 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	7.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	10	60	72.2	29.7	1.83	23.5	4.76	20.2	68.2	29.7	1.78	23.6	4.89	20.1	66.1	29.6	1.72	23.7	5.04	20.1
		80	91.9	28.8	2.42	20.6	3.50	20.8	87.9	28.8	2.36	20.7	3.58	20.7	85.9	28.7	2.29	20.9	3.67	20.7
		100	111.5	28.0	3.00	17.7	2.73	21.3	107.7	27.9	2.94	17.9	2.78	21.3	105.7	27.8	2.87	18.0	2.84	21.3
		120	131.2	27.1	3.59	14.8	2.21	21.9	127.4	27.0	3.52	15.0	2.25	21.9	125.5	26.9	3.44	15.2	2.29	21.9
30	5	60	72.7	30.9	1.84	24.6	4.92	19.8	69.5	30.8	1.79	24.7	5.06	19.8	66.3	30.7	1.73	24.8	5.20	19.8
		80	92.4	30.0	2.42	21.8	3.64	21.0	89.3	30.0	2.36	21.9	3.73	21.0	86.2	29.9	2.30	22.0	3.81	20.9
		100	112.0	29.2	2.99	19.0	2.85	22.2	109.0	29.1	2.93	19.1	2.91	22.1	106.0	29.0	2.86	19.3	2.97	22.1
		120	131.7	28.3	3.57	16.1	2.32	23.4	128.7	28.3	3.50	16.3	2.37	23.3	125.8	28.2	3.43	16.5	2.41	23.2
	7.5	60	73.3	32.3	1.84	26.0	5.14	22.1	70.0	32.2	1.78	26.1	5.29	22.1	66.6	32.2	1.73	26.3	5.46	22.0
		80	92.8	31.0	2.43	22.7	3.74	23.1	89.6	31.0	2.36	23.0	3.85	23.0	86.4	31.1	2.29	23.2	3.97	22.9
		100	112.3	29.8	3.02	19.5	2.90	24.0	109.2	29.9	2.94	19.9	2.98	23.9	106.2	30.0	2.86	20.2	3.07	23.9
		120	131.8	28.6	3.61	16.3	2.32	25.0	128.9	28.7	3.52	16.7	2.39	24.9	125.9	28.9	3.43	17.1	2.46	24.8
	10	60	73.9	33.6	1.84	27.3	5.35	24.4	70.4	33.6	1.78	27.5	5.54	24.3	66.9	33.6	1.72	27.7	5.72	24.3
		80	93.2	32.0	2.44	23.7	3.85	25.1	89.9	32.1	2.37	24.1	3.99	25.0	86.6	32.2	2.29	24.4	4.12	25.0
		100	112.6	30.5	3.04	20.1	2.94	25.9	109.5	30.7	2.95	20.6	3.05	25.8	106.4	30.9	2.86	21.1	3.16	25.6
		120	131.9	28.9	3.64	16.5	2.33	26.6	129.0	29.2	3.54	17.1	2.42	26.5	126.1	29.5	3.43	17.8	2.52	26.3
50	5	60	76.9	41.1	1.88	34.7	6.37	35.7	72.7	40.8	1.81	34.7	6.61	35.7	68.4	40.6	1.74	34.6	6.84	35.7
		80	96.3	39.5	2.47	31.1	4.67	37.2	92.2	39.3	2.39	31.1	4.82	37.2	88.1	39.1	2.30	31.2	4.97	37.1
		100	115.6	37.9	3.06	27.4	3.61	38.7	111.7	37.7	2.96	27.6	3.72	38.6	107.8	37.6	2.87	27.8	3.84	38.5
		120	134.9	36.3	3.65	23.8	2.90	40.2	131.2	36.2	3.54	24.1	2.99	40.1	127.5	36.2	3.44	24.4	3.08	39.9
	7.5	60	77.7	43.0	1.86	36.6	6.77	38.9	73.2	42.7	1.80	36.5	6.95	38.9	68.7	42.3	1.74	36.4	7.15	38.9
		80	96.9	41.1	2.46	32.7	4.89	40.1	92.7	40.9	2.38	32.7	5.03	40.0	88.4	40.7	2.30	32.8	5.18	40.0
		100	116.1	39.1	3.06	28.7	3.75	41.3	112.1	39.1	2.97	29.0	3.86	41.2	108.0	39.0	2.87	29.2	3.98	41.1
		120	135.4	37.2	3.66	24.7	2.98	42.4	131.5	37.3	3.55	25.2	3.08	42.3	127.7	37.4	3.44	25.6	3.19	42.2
	10	60	78.5	44.9	1.84	38.6	7.14	42.0	73.8	44.5	1.79	38.4	7.29	42.1	69.1	44.1	1.74	38.2	7.43	42.1
		80	97.6	42.6	2.45	34.3	5.08	42.9	93.1	42.5	2.38	34.3	5.23	42.9	88.7	42.3	2.30	34.4	5.37	42.9
		100	116.7	40.4	3.07	30.0	3.85	43.8	112.5	40.4	2.97	30.3	3.99	43.8	108.3	40.4	2.87	30.6	4.13	43.7
		120	135.8	38.2	3.68	25.6	3.03	44.7	131.9	38.4	3.56	26.3	3.16	44.6	128.0	38.6	3.44	26.9	3.29	44.5
70	5	60	81.2	51.3	1.92	44.7	7.83	51.5	75.8	50.9	1.83	44.6	8.16	51.6	70.4	50.4	1.74	44.5	8.49	51.7
		80	100.2	48.9	2.52	40.3	5.69	53.4	95.1	48.6	2.42	40.4	5.91	53.4	90.0	48.3	2.31	40.4	6.13	53.3
		100	119.2	46.6	3.12	35.9	4.37	55.2	114.4	46.4	3.00	36.1	4.54	55.1	109.5	46.2	2.88	36.4	4.70	55.0
		120	138.2	44.2	3.72	31.5	3.48	57.0	133.7	44.2	3.59	31.9	3.61	56.8	129.1	44.1	3.45	32.3	3.75	56.7
	7.5	60	82.1	53.7	1.88	47.3	8.37	55.6	76.5	53.1	1.81	46.9	8.58	55.7	70.8	52.5	1.75	46.5	8.82	55.8
		80	101.1	51.1	2.49	42.6	6.00	57.1	95.7	50.7	2.40	42.5	6.18	57.1	90.4	50.3	2.31	42.4	6.38	57.1
		100	120.0	48.5	3.11	37.9	4.57	58.5	115.0	48.3	2.99	38.1	4.73	58.4	109.9	48.1	2.88	38.3	4.90	58.4
		120	138.9	45.9	3.72	33.2	3.61	59.9	134.2	45.9	3.58	33.6	3.75	59.8	129.5	45.9	3.45	34.1	3.90	59.6
	10	60	83.1	56.1	1.84	49.8	8.93	59.7	77.2	55.4	1.80	49.2	9.04	59.9	71.3	54.6	1.75	48.6	9.14	60.0
		80	102.0	53.2	2.47	44.8	6.32	60.8	96.4	52.8	2.39	44.6	6.47	60.8	90.8	52.3	2.31	44.4	6.62	60.8
		100	120.8	50.4	3.09	39.8	4.77	61.8	115.5	50.2	2.99	40.0	4.93	61.8	110.3	50.0	2.88	40.2	5.09	61.7
		120	139.6	47.5	3.72	34.8	3.74	62.8	134.7	47.6	3.58	35.4	3.90	62.7	129.8	47.7	3.44	36.0	4.06	62.6
90	5	60	85.4	61.5	1.99	54.7	9.05	67.4	78.5	59.0	1.88	52.5	9.20	68.3	71.6	56.4	1.77	50.4	9.34	69.2
		80	104.5	59.4	2.56	50.7	6.79	69.1	97.8	56.7	2.44	48.3	6.80	70.1	91.1	53.9	2.32	46.0	6.80	71.0
		100	Operation not recommended																	
		120																		
	7.5	60	86.2	63.7	2.01	56.8	9.30	72.6	79.0	60.4	1.89	53.9	9.37	73.5	71.8	57.1	1.77	51.0	9.44	74.3
		80	105.5	61.9	2.58	53.1	7.03	73.8	98.4	58.3	2.45	49.9	6.97	74.7	91.3	54.7	2.33	46.8	6.90	75.6
		100	124.8	60.1	3.15	49.3	5.59	75.0	117.8	56.2	3.01	45.9	5.47	76.0	110.8	52.4	2.88	42.6	5.33	76.9
		120	Operation not recommended																	
	10	60	87.1	65.8	2.02	58.9	9.54	77.9	79.5	61.8	1.90	55.3	9.55	78.6	71.9	57.7	1.77	51.7	9.55	79.3
		80	106.5	64.3	2.59	55.4	7.27	78.6	99.0	59.9	2.46	51.5	7.13	79.4	91.5	55.6	2.33	47.6	7.00	80.2
		100	125.9	62.7	3.16	51.9	5.82	79.3	118.4	58.1	3.02	47.8	5.62	80.2	111.0	53.4	2.88	43.6	5.43	81.0
		120	Operation not recommended																	

8/17/09

The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Aston Single Hydronic Unit
1.5 - 6 Tons 60Hz

GEOSTAR

Model 050 - Performance Data

Cooling Capacity

Source		Load Flow-8 GPM							Load Flow-11.5 GPM						Load Flow-15 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	8	50	35.8	55.2	1.98	61.9	27.9	46.0	38.8	57.0	2.00	63.8	28.6	46.4	41.9	58.8	2.01	65.7	29.3	46.9
		70	54.6	59.8	2.01	66.6	29.8	47.2	58.0	61.0	2.02	67.8	30.3	47.5	61.5	62.2	2.02	69.1	30.7	47.8
		90	73.4	64.3	2.03	71.3	31.6	48.4	77.2	64.9	2.04	71.9	31.9	48.5	81.0	65.5	2.04	72.5	32.2	48.7
		110	92.2	68.9	2.06	75.9	33.4	49.6	96.4	68.9	2.06	75.9	33.5	49.6	100.5	68.9	2.05	75.9	33.6	49.6
	11.5	50	35.9	54.6	1.90	61.1	28.8	42.1	39.0	56.3	1.92	62.8	29.3	42.5	42.0	57.9	1.94	64.5	29.8	42.8
		70	55.0	58.1	1.92	64.6	30.3	42.9	58.4	59.1	1.93	65.7	30.7	43.1	61.7	60.2	1.94	66.9	31.0	43.3
		90	74.2	61.5	1.93	68.1	31.8	43.6	77.8	62.0	1.94	68.6	32.0	43.8	81.4	62.6	1.94	69.2	32.3	43.9
		110	93.3	64.9	1.95	71.6	33.3	44.4	97.2	64.9	1.95	71.5	33.4	44.4	101.1	64.9	1.94	71.5	33.5	44.4
	15	50	36.1	54.1	1.82	60.3	29.7	38.3	39.1	55.6	1.85	61.8	30.1	38.5	42.2	57.0	1.87	63.4	30.5	38.7
		70	55.5	56.4	1.83	62.6	30.9	38.6	58.7	57.3	1.84	63.6	31.1	38.7	62.0	58.3	1.86	64.6	31.4	38.9
		90	74.9	58.6	1.83	64.9	32.0	38.9	78.3	59.1	1.84	65.4	32.2	39.0	81.8	59.6	1.84	65.9	32.3	39.1
		110	94.3	60.9	1.84	67.2	33.1	39.2	98.0	60.9	1.84	67.2	33.2	39.2	101.6	60.9	1.83	67.1	33.3	39.2
50	8	50	36.7	51.5	2.53	60.2	21.7	65.5	39.5	53.5	2.53	62.2	22.4	66.0	42.4	55.5	2.54	64.2	23.1	66.5
		70	54.6	59.9	2.58	68.7	24.4	67.7	57.9	61.5	2.59	70.4	24.9	68.1	61.3	63.1	2.60	72.0	25.5	68.5
		90	72.4	68.3	2.64	77.3	26.9	69.9	76.3	69.5	2.65	78.5	27.3	70.2	80.3	70.7	2.65	79.8	27.7	70.6
		110	90.2	76.7	2.70	85.9	29.4	72.1	94.7	77.5	2.71	86.7	29.6	72.4	99.2	78.3	2.71	87.5	29.8	72.6
	11.5	50	39.8	51.6	2.43	59.9	21.3	61.9	39.6	53.4	2.44	61.7	21.9	62.2	42.4	55.2	2.45	63.6	22.5	62.6
		70	58.3	58.9	2.47	67.4	23.9	63.4	58.2	60.3	2.48	68.8	24.4	63.7	61.5	61.7	2.48	70.2	24.9	64.0
		90	76.8	66.3	2.51	74.8	26.4	64.9	76.8	67.3	2.51	75.8	26.8	65.1	80.6	68.3	2.52	76.9	27.1	65.4
		110	95.3	73.6	2.55	82.3	28.9	66.5	95.4	74.2	2.55	82.9	29.1	66.6	99.7	74.8	2.55	83.5	29.3	66.7
	15	50	42.9	51.7	2.33	59.7	23.5	58.2	39.6	53.3	2.35	61.3	24.0	58.4	42.5	54.9	2.36	63.0	24.5	58.7
		70	62.0	58.0	2.35	66.0	25.8	59.1	58.4	59.2	2.36	67.2	26.2	59.2	61.7	60.4	2.37	68.5	26.5	59.4
		90	81.2	64.2	2.37	72.3	28.0	59.9	77.2	65.0	2.38	73.1	28.2	60.1	80.9	65.9	2.38	74.0	28.5	60.2
		110	100.3	70.5	2.39	78.6	30.2	60.8	96.0	70.9	2.39	79.1	30.3	60.9	100.2	71.4	2.40	79.5	30.5	60.9
70	8	50	37.7	47.9	3.07	58.4	15.6	85.0	40.2	50.1	3.07	60.5	16.3	85.6	42.8	52.2	3.07	62.7	17.0	86.2
		70	54.5	60.1	3.16	70.9	19.0	88.3	57.9	62.1	3.17	72.9	19.6	88.8	61.2	64.0	3.17	74.9	20.2	89.3
		90	71.4	72.3	3.25	83.4	22.2	91.5	75.5	74.1	3.26	85.2	22.7	92.0	79.6	75.9	3.27	87.0	23.2	92.4
		110	Operation not recommended																	
	11.5	50	37.5	48.6	2.96	58.7	16.4	81.6	40.1	50.6	2.96	60.6	17.1	82.0	42.8	52.5	2.96	62.6	17.7	82.4
		70	54.6	59.8	3.02	70.1	19.8	83.9	57.9	61.5	3.02	71.8	20.4	84.3	61.3	63.3	3.03	73.6	20.9	84.6
		90	71.7	71.0	3.08	81.5	23.1	86.2	75.8	72.5	3.09	83.1	23.5	86.5	79.8	74.0	3.10	84.6	23.9	86.9
		110	Operation not recommended																	
	15	50	37.3	49.3	2.84	59.0	17.4	78.1	40.0	51.1	2.85	60.8	17.9	78.4	42.7	52.8	2.85	62.5	18.5	78.6
		70	54.7	59.5	2.87	69.3	20.7	79.5	58.0	61.0	2.88	70.8	21.2	79.7	61.4	62.5	2.89	72.3	21.6	79.9
		90	72.0	69.8	2.91	79.7	24.0	81.0	76.1	71.0	2.92	80.9	24.3	81.1	80.1	72.1	2.92	82.1	24.7	81.3
		110	89.4	80.0	2.94	90.0	27.2	82.4	94.1	80.9	2.95	91.0	27.4	82.5	98.8	81.8	2.96	91.9	27.6	82.6
90	8	50	38.9	43.0	3.93	56.4	11.8	104.5	41.3	44.7	3.94	58.1	12.2	105.0	43.6	46.4	3.95	59.9	12.7	105.4
		70	56.0	54.5	4.02	68.2	14.5	107.6	59.0	56.2	4.04	70.0	14.9	108.0	62.0	58.0	4.05	71.8	15.4	108.5
		90	73.0	66.0	4.12	80.0	17.1	110.6	76.7	67.8	4.13	81.9	17.5	111.1	80.4	69.5	4.15	83.7	17.9	111.6
		110	Operation not recommended																	
	11.5	50	38.8	43.6	3.81	56.6	11.5	101.2	41.2	45.2	3.81	58.2	11.8	101.5	43.6	46.8	3.82	59.8	12.2	101.8
		70	55.9	54.7	3.87	67.9	14.1	103.4	59.0	56.3	3.88	69.6	14.5	103.8	62.0	57.9	3.89	71.2	14.9	104.1
		90	73.0	65.9	3.93	79.3	16.8	105.7	76.8	67.5	3.95	81.0	17.1	106.1	80.5	69.1	3.96	82.7	17.4	106.4
		110	Operation not recommended																	
	15	50	38.6	44.2	3.68	56.8	13.0	97.8	41.1	45.7	3.69	58.2	13.4	98.0	43.5	47.1	3.69	59.7	13.8	98.2
		70	55.8	55.0	3.72	67.7	15.9	99.3	58.9	56.5	3.72	69.2	16.3	99.5	62.0	57.9	3.73	70.7	16.7	99.7
		90	73.0	65.8	3.75	78.6	18.7	100.8	76.8	67.3	3.76	80.1	19.1	101.0	80.6	68.7	3.77	81.6	19.4	101.2
		110	Operation not recommended																	
110	8	50	40.2	38.0	4.79	54.3	7.9	124.0	42.3	39.3	4.81	55.7	8.2	124.4	44.4	40.6	4.82	57.1	8.4	124.7
		70	57.4	48.8	4.89	65.5	10.0	126.9	60.1	50.4	4.91	67.1	10.3	127.3	62.9	51.9	4.93	68.7	10.5	127.7
		90	Operation not recommended																	
		110																		
	11.5	50	40.1	38.6	4.66	54.4	8.3	120.8	42.2	39.8	4.67	55.7	8.5	121.0	44.4	41.0	4.68	57.0	8.8	121.3
		70	57.2	49.7	4.72	65.8	10.5	123.0	60.0	51.2	4.74	67.3	10.8	123.3	62.8	52.6	4.75	68.9	11.1	123.6
		90	Operation not recommended																	
		110																		
	15	50	39.9	39.1	4.52	54.5	8.7	117.5	42.1	40.3	4.53	55.7	8.9	117.7	44.3	41.4	4.53	56.9	9.1	117.8
		70	57.0	50.5	4.56	66.1	11.1	119.1	59.8	51.9	4.57	67.5	11.4	119.3	62.7	53.4	4.58	69.0	11.7	119.5
		90	Operation not recommended																	
		110																		

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Model 050 - Performance Data cont.

Heating Capacity

Source		Load Flow-8 GPM							Load Flow-11.5 GPM						Load Flow-15 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	11.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	15	60	71.3	43.9	2.50	35.4	5.15	20.1	67.9	44.0	2.50	35.4	5.16	20.1	66.0	44.0	2.49	35.5	5.18	20.1
		80	91.0	42.6	3.41	31.0	3.66	20.7	87.6	42.6	3.37	31.1	3.71	20.7	85.9	42.6	3.33	31.3	3.75	20.7
		100	110.6	41.3	4.32	26.6	2.80	21.3	107.4	41.3	4.25	26.8	2.85	21.3	105.7	41.3	4.17	27.0	2.90	21.3
		120	130.3	40.0	5.23	22.2	2.24	22.0	127.2	40.0	5.12	22.5	2.29	21.9	125.5	39.9	5.01	22.8	2.33	21.9
30	8	60	71.8	45.7	2.36	37.6	5.67	20.3	69.0	45.8	2.43	37.5	5.53	20.3	66.3	45.8	2.49	37.3	5.39	20.4
		80	91.4	44.4	3.31	33.1	3.92	21.5	88.8	44.4	3.33	33.0	3.91	21.5	86.1	44.4	3.34	33.0	3.89	21.5
		100	111.1	43.0	4.27	28.5	2.96	22.7	108.5	43.0	4.23	28.6	2.98	22.6	105.9	43.0	4.19	28.7	3.01	22.6
		120	130.7	41.7	5.22	23.9	2.34	23.8	128.2	41.7	5.13	24.1	2.38	23.8	125.7	41.6	5.04	24.4	2.42	23.7
	11.5	60	72.2	47.2	2.50	38.6	5.53	22.4	69.3	47.2	2.49	38.7	5.56	22.4	66.5	47.3	2.48	38.8	5.59	22.4
		80	91.7	45.5	3.41	33.9	3.92	23.4	89.0	45.6	3.37	34.1	3.96	23.3	86.3	45.6	3.33	34.2	4.01	23.3
		100	111.3	43.9	4.31	29.2	2.98	24.3	108.7	43.9	4.25	29.4	3.03	24.2	106.0	43.9	4.18	29.6	3.08	24.2
		120	130.9	42.3	5.22	24.5	2.37	25.2	128.4	42.3	5.13	24.8	2.42	25.1	125.8	42.2	5.03	25.0	2.46	25.1
	15	60	72.5	48.6	2.64	39.6	5.39	24.6	69.6	48.7	2.56	40.0	5.59	24.5	66.7	48.8	2.47	40.4	5.79	24.5
		80	92.0	46.7	3.50	34.8	3.91	25.2	89.2	46.8	3.41	35.1	4.02	25.2	86.4	46.8	3.32	35.5	4.13	25.1
		100	111.5	44.8	4.36	29.9	3.01	25.9	108.9	44.8	4.27	30.2	3.08	25.8	106.2	44.8	4.17	30.6	3.15	25.8
		120	131.1	42.9	5.22	25.1	2.41	26.6	128.5	42.9	5.12	25.4	2.45	26.5	125.9	42.8	5.02	25.7	2.50	26.5
50	8	60	75.1	58.8	2.56	50.0	6.65	37.1	71.6	58.6	2.54	50.0	6.72	37.1	68.0	58.5	2.52	49.9	6.80	37.1
		80	94.5	56.3	3.47	44.4	4.71	38.5	91.1	56.2	3.42	44.6	4.80	38.5	87.7	56.2	3.36	44.7	4.88	38.5
		100	113.9	53.9	4.39	38.9	3.58	40.0	110.6	53.8	4.30	39.2	3.66	39.9	107.4	53.8	4.21	39.4	3.74	39.8
		120	133.2	51.4	5.30	33.3	2.83	41.4	130.2	51.4	5.18	33.7	2.91	41.3	127.1	51.5	5.06	34.2	2.98	41.2
	11.5	60	75.7	61.0	2.64	52.0	6.78	39.8	72.0	60.8	2.58	52.0	6.91	39.9	68.3	60.5	2.51	51.9	7.06	39.9
		80	95.0	58.1	3.53	46.1	4.83	41.0	91.5	57.9	3.44	46.2	4.93	41.0	87.9	57.8	3.36	46.3	5.04	41.0
		100	114.2	55.2	4.41	40.2	3.67	42.1	110.9	55.1	4.31	40.4	3.75	42.1	107.6	55.0	4.21	40.6	3.83	42.0
		120	133.5	52.4	5.30	34.3	2.89	43.3	130.3	52.3	5.18	34.6	2.96	43.2	127.2	52.3	5.06	35.0	3.03	43.1
	15	60	76.3	63.3	2.72	54.0	6.79	42.6	72.4	62.9	2.61	54.0	7.03	42.6	68.6	62.5	2.51	53.9	7.27	42.6
		80	95.4	59.9	3.58	47.7	4.89	43.4	91.8	59.6	3.47	47.8	5.03	43.4	88.2	59.4	3.36	47.9	5.17	43.4
		100	114.6	56.6	4.44	41.5	3.72	44.3	111.2	56.4	4.32	41.7	3.82	44.3	107.7	56.2	4.20	41.9	3.91	44.2
		120	133.7	53.3	5.30	35.2	2.94	45.2	130.5	53.2	5.18	35.5	3.01	45.1	127.3	53.1	5.05	35.8	3.07	45.1
70	8	60	78.5	71.8	2.76	62.4	7.62	53.9	74.1	71.5	2.65	62.5	7.92	53.9	69.8	71.2	2.54	62.5	8.21	53.9
		80	97.6	68.2	3.63	55.8	5.50	55.6	93.5	68.1	3.51	56.1	5.69	55.5	89.3	67.9	3.39	56.3	5.87	55.5
		100	116.7	64.7	4.51	49.3	4.20	57.3	112.8	64.6	4.37	49.7	4.34	57.2	108.9	64.6	4.23	50.2	4.47	57.1
		120	135.7	61.1	5.38	42.7	3.33	59.0	132.1	61.2	5.23	43.4	3.43	58.8	128.4	61.3	5.08	44.0	3.54	58.7
	11.5	60	79.3	74.9	2.78	65.4	7.90	57.3	74.7	74.3	2.66	65.2	8.18	57.3	70.1	73.7	2.55	65.0	8.48	57.3
		80	98.2	70.7	3.64	58.3	5.69	58.6	93.9	70.3	3.52	58.3	5.86	58.6	89.6	69.9	3.39	58.3	6.04	58.6
		100	117.2	66.6	4.51	51.2	4.32	60.0	113.1	66.3	4.37	51.4	4.44	59.9	109.1	66.1	4.24	51.6	4.57	59.9
		120	136.1	62.4	5.38	44.0	3.40	61.4	132.3	62.4	5.23	44.5	3.49	61.3	128.6	62.3	5.08	45.0	3.59	61.2
	15	60	80.1	77.9	2.79	68.4	8.18	60.6	75.3	77.1	2.67	67.9	8.47	60.7	70.5	76.2	2.55	67.5	8.76	60.7
		80	98.9	73.2	3.65	60.7	5.87	61.7	94.4	72.5	3.52	60.5	6.04	61.7	89.9	71.9	3.39	60.3	6.21	61.7
		100	117.6	68.4	4.52	53.0	4.44	62.7	113.5	68.0	4.38	53.1	4.56	62.7	109.3	67.6	4.24	53.1	4.68	62.7
		120	136.4	63.7	5.38	45.3	3.47	63.8	132.6	63.5	5.23	45.7	3.56	63.7	128.7	63.3	5.08	46.0	3.65	63.7
90	8	60	81.9	84.9	2.85	75.2	8.73	70.6	76.5	82.8	3.51	70.8	7.21	71.7	71.1	80.7	4.16	66.5	5.68	72.9
		80	100.6	80.1	3.71	67.4	6.32	72.6	95.6	78.7	4.09	64.8	5.70	73.3	90.6	77.4	4.47	62.2	5.08	74.0
		100	119.4	75.2	4.58	59.6	4.82	74.6	114.8	74.7	4.68	58.7	4.68	74.9	110.2	74.1	4.77	57.8	4.55	75.1
		120	Operation not recommended																	
	11.5	60	82.3	86.6	2.86	76.9	8.89	74.9	76.8	84.1	3.12	73.5	7.91	75.6	71.2	81.6	3.38	70.1	7.08	76.4
		80	101.1	81.8	3.72	69.0	6.43	76.5	95.9	80.2	3.84	67.1	6.12	76.9	90.8	78.6	3.95	65.1	5.83	77.3
		100	119.8	76.9	4.59	61.2	4.91	78.0	115.1	76.2	4.56	60.7	4.90	78.1	110.4	75.5	4.52	60.1	4.90	78.3
		120	Operation not recommended																	
	15	60	82.8	88.3	2.86	78.5	9.05	79.2	77.0	85.4	2.73	76.1	9.19	79.5	71.3	82.5	2.59	73.7	9.33	79.9
		80	101.5	83.4	3.73	70.7	6.55	80.3	96.2	81.6	3.58	69.3	6.68	80.5	91.0	79.7	3.43	68.0	6.81	80.7
		100	120.2	78.6	4.61	62.8	5.00	81.4	115.4	77.7	4.44	62.6	5.14	81.4	110.6	76.9	4.26	62.3	5.28	81.4
		120	Operation not recommended																	

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Model 060 - Performance Data

Cooling Capacity

Source		Load Flow-9 GPM							Load Flow-13.5 GPM						Load Flow-18 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	9	50	36.0	61.1	2.23	68.7	27.4	45.7	39.1	64.5	2.25	72.1	28.7	46.5	42.2	67.8	2.26	75.5	30.0	47.3
		70	54.4	68.1	2.26	75.9	30.1	47.4	58.0	70.6	2.28	78.4	31.0	48.0	61.6	73.1	2.29	80.9	32.0	48.5
		90	72.8	75.2	2.30	83.0	32.7	49.0	76.9	76.8	2.31	84.7	33.3	49.4	81.0	78.5	2.31	86.4	33.9	49.8
		110	91.2	82.2	2.33	90.2	35.3	50.7	95.8	83.0	2.34	91.0	35.5	50.8	100.4	83.8	2.34	91.8	35.8	51.0
	13.5	50	36.1	60.5	2.14	67.8	28.3	41.7	39.2	64.0	2.15	71.3	29.7	42.3	42.3	67.5	2.17	74.8	31.2	42.9
		70	54.8	66.1	2.16	73.5	30.6	42.8	58.4	68.6	2.17	76.0	31.7	43.2	61.9	71.1	2.18	78.5	32.7	43.6
		90	73.6	71.8	2.18	79.2	33.0	43.8	77.5	73.3	2.18	80.7	33.6	44.1	81.4	74.8	2.19	82.2	34.2	44.4
		110	92.3	77.4	2.20	84.9	35.3	44.9	96.6	77.9	2.20	85.4	35.4	45.0	101.0	78.4	2.20	85.9	35.6	45.1
	18	50	36.3	59.9	2.05	66.9	29.2	37.7	39.3	63.5	2.06	70.5	30.8	38.1	42.3	67.1	2.07	74.2	32.4	38.5
		70	55.3	64.1	2.05	71.1	31.2	38.1	58.7	66.6	2.06	73.6	32.3	38.4	62.1	69.1	2.07	76.1	33.4	38.7
		90	74.3	68.4	2.06	75.4	33.2	38.6	78.1	69.7	2.06	76.7	33.8	38.8	81.9	71.0	2.06	78.1	34.4	38.9
		110	93.4	72.6	2.06	79.6	35.2	39.1	97.5	72.8	2.06	79.8	35.3	39.1	101.6	73.0	2.06	80.0	35.4	39.2
50	9	50	36.8	57.4	2.86	67.2	21.4	65.4	39.8	60.2	2.87	70.0	22.4	66.0	42.8	63.0	2.88	72.8	23.3	66.7
		70	54.3	68.3	2.93	78.3	24.6	67.9	58.0	70.6	2.94	80.7	25.3	68.5	61.6	72.9	2.95	83.0	26.0	69.0
		90	71.8	79.3	3.00	89.5	27.6	70.5	76.2	81.1	3.01	91.3	28.1	70.9	80.5	82.8	3.02	93.2	28.6	71.3
		110	89.3	90.2	3.07	100.7	30.5	73.1	94.4	91.5	3.08	102.0	30.8	73.4	99.4	92.8	3.10	103.3	31.1	73.7
	13.5	50	36.9	57.3	2.75	66.6	20.9	61.5	39.8	60.2	2.75	69.6	21.9	62.0	42.8	63.1	2.76	72.5	22.9	62.5
		70	54.7	66.9	2.79	76.4	24.0	63.2	58.2	69.2	2.80	78.8	24.7	63.6	61.8	71.5	2.81	81.1	25.5	64.0
		90	72.5	76.6	2.83	86.2	27.0	65.0	76.7	78.2	2.84	87.9	27.5	65.3	80.8	79.9	2.85	89.7	28.0	65.6
		110	90.3	86.2	2.88	96.0	30.0	66.8	95.1	87.3	2.89	97.1	30.2	67.0	99.9	88.3	2.90	98.2	30.5	67.2
	18	50	36.9	57.2	2.63	66.1	23.1	57.6	39.8	60.2	2.64	69.2	24.3	57.9	42.8	63.2	2.64	72.2	25.4	58.3
		70	55.0	65.5	2.65	74.5	25.9	58.5	58.5	67.8	2.66	76.9	26.8	58.8	62.0	70.1	2.66	79.2	27.6	59.1
		90	73.1	73.9	2.67	83.0	28.7	59.5	77.1	75.4	2.68	84.6	29.2	59.7	81.2	77.0	2.68	86.2	29.8	59.9
		110	91.2	82.2	2.69	91.4	31.5	60.5	95.8	83.1	2.70	92.2	31.7	60.6	100.4	83.9	2.71	93.1	31.9	60.7
70	9	50	37.7	53.7	3.49	65.6	15.4	85.0	40.5	56.0	3.50	67.9	16.0	85.6	43.3	58.2	3.50	70.1	16.6	86.1
		70	54.3	68.5	3.60	80.8	19.1	88.5	58.0	70.6	3.61	82.9	19.6	89.0	61.7	72.7	3.62	85.0	20.1	89.5
		90	70.9	83.4	3.70	96.0	22.5	92.0	75.5	85.3	3.72	98.0	22.9	92.4	80.0	87.2	3.73	99.9	23.4	92.9
		110	Operation not recommended																	
	13.5	50	37.6	54.1	3.35	65.5	16.1	81.3	40.4	56.4	3.35	67.8	16.8	81.7	43.3	58.8	3.36	70.2	17.5	82.1
		70	54.5	67.7	3.42	79.4	19.8	83.7	58.1	69.8	3.43	81.5	20.4	84.1	61.8	71.9	3.44	83.6	20.9	84.5
		90	71.4	81.4	3.49	93.3	23.3	86.2	75.8	83.2	3.50	95.2	23.7	86.5	80.3	85.1	3.52	97.1	24.2	86.8
		110	Operation not recommended																	
	18	50	37.5	54.4	3.21	65.4	16.9	77.5	40.4	56.9	3.21	67.8	17.7	77.8	43.2	59.3	3.21	70.3	18.5	78.0
		70	54.7	66.9	3.24	77.9	20.6	78.9	58.3	69.0	3.25	80.1	21.2	79.2	61.9	71.1	3.26	82.2	21.8	79.4
		90	71.8	79.3	3.28	90.5	24.2	80.4	76.2	81.2	3.29	92.4	24.7	80.6	80.5	83.0	3.30	94.2	25.1	80.8
		110	89.0	91.8	3.31	103.1	27.7	81.8	94.1	93.3	3.33	104.7	28.0	82.0	99.1	94.8	3.35	106.2	28.3	82.2
90	9	50	39.1	47.6	4.48	62.8	11.5	104.4	41.6	49.5	4.48	64.7	11.9	104.8	44.1	51.4	4.49	66.7	12.4	105.3
		70	55.8	61.8	4.58	77.4	14.5	107.7	59.2	63.7	4.59	79.4	14.9	108.2	62.5	65.6	4.61	81.4	15.3	108.6
		90	72.6	76.1	4.68	92.0	17.3	111.1	76.7	78.0	4.70	94.0	17.7	111.5	80.8	79.9	4.73	96.1	18.0	112.0
		110	Operation not recommended																	
	13.5	50	39.0	48.0	4.32	62.7	11.1	100.8	41.5	49.9	4.32	64.6	11.5	101.1	44.1	51.9	4.33	66.6	12.0	101.4
		70	55.9	61.6	4.38	76.5	14.1	103.2	59.2	63.6	4.40	78.6	14.5	103.5	62.5	65.5	4.41	80.6	14.9	103.9
		90	72.8	75.2	4.45	90.4	16.9	105.6	76.8	77.2	4.47	92.5	17.3	106.0	80.9	79.2	4.49	94.6	17.6	106.3
		110	Operation not recommended																	
	18	50	38.9	48.4	4.16	62.5	12.6	97.2	41.5	50.4	4.16	64.5	13.1	97.4	44.0	52.4	4.16	66.5	13.7	97.6
		70	55.9	61.4	4.19	75.7	15.7	98.7	59.2	63.4	4.20	77.7	16.2	98.9	62.5	65.5	4.21	79.8	16.7	99.1
		90	73.0	74.4	4.22	88.8	18.8	100.2	77.0	76.5	4.24	90.9	19.3	100.4	81.0	78.6	4.25	93.1	19.7	100.7
		110	Operation not recommended																	
110	9	50	40.5	41.4	5.46	60.0	7.6	123.8	42.7	43.0	5.47	61.6	7.9	124.1	44.9	44.5	5.48	63.2	8.1	124.5
		70	57.4	55.1	5.55	74.0	9.9	127.0	60.3	56.8	5.58	75.9	10.2	127.4	63.3	58.6	5.61	77.7	10.4	127.8
		90	Operation not recommended																	
		110																		
	13.5	50	40.4	41.9	5.29	59.9	7.9	120.3	42.6	43.4	5.29	61.5	8.2	120.6	44.9	45.0	5.30	63.0	8.5	120.8
		70	57.3	55.5	5.35	73.7	10.4	122.7	60.3	57.3	5.36	75.6	10.7	123.0	63.2	59.2	5.38	77.5	11.0	123.3
		90	Operation not recommended																	
		110																		
	18	50	40.3	42.3	5.11	59.7	8.3	116.8	42.6	43.9	5.11	61.3	8.6	117.0	44.8	45.4	5.11	62.8	8.9	117.2
		70	57.2	55.9	5.14	73.4	10.9	118.4	60.2	57.8	5.15	75.4	11.2	118.6	63.2	59.8	5.16	77.4	11.6	118.9
		90	Operation not recommended																	
		110																		

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The manufacturer works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice. Purchaser's approval of this data set signifies that the equipment is acceptable under the provisions of the job specification. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely the manufacturer's opinion or commendation of its products.

Model 060 - Performance Data cont.

Heating Capacity

Source		Load Flow-9 GPM							Load Flow-13.5 GPM						Load Flow-18 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	13.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	18	60	71.1	48.3	2.93	38.3	4.83	20.6	67.4	48.6	2.86	38.8	4.98	20.6	65.6	48.9	2.79	39.4	5.14	20.5
		80	90.8	47.3	3.93	33.9	3.53	21.1	87.3	47.6	3.85	34.4	3.62	21.1	85.5	47.8	3.76	35.0	3.72	21.0
		100	110.6	46.3	4.93	29.5	2.75	21.6	107.1	46.5	4.83	30.0	2.82	21.6	105.4	46.8	4.74	30.6	2.89	21.5
		120	130.4	45.3	5.93	25.1	2.24	22.1	126.9	45.5	5.82	25.6	2.29	22.1	125.2	45.7	5.71	26.2	2.35	22.0
30	9	60	71.5	50.1	2.94	40.1	4.99	20.8	68.7	50.5	2.87	40.7	5.17	20.7	65.8	50.9	2.79	41.4	5.35	20.5
		80	91.3	49.3	3.95	35.9	3.66	21.8	88.5	49.7	3.86	36.5	3.77	21.6	85.7	50.0	3.77	37.1	3.89	21.5
		100	111.1	48.6	4.95	31.7	2.87	22.7	108.4	48.8	4.85	32.3	2.95	22.6	105.6	49.0	4.74	32.8	3.03	22.5
		120	131.0	47.8	5.96	27.5	2.35	23.7	128.2	48.0	5.84	28.0	2.41	23.6	125.5	48.1	5.72	28.6	2.46	23.5
	13.5	60	71.9	52.1	3.0	42.0	5.17	22.9	68.9	51.8	2.87	42.0	5.29	22.9	65.9	51.6	2.8	42.0	5.41	22.8
		80	91.7	50.9	4.0	37.4	3.77	23.7	88.7	50.8	3.86	37.6	3.86	23.6	85.8	50.7	3.8	37.8	3.95	23.5
		100	111.4	49.7	5.0	32.8	2.94	24.4	108.6	49.8	4.84	33.2	3.01	24.3	105.7	49.8	4.7	33.7	3.08	24.3
		120	131.1	48.6	6.0	28.2	2.39	25.2	128.4	48.8	5.83	28.9	2.45	25.1	125.6	49.0	5.7	29.5	2.51	25.0
	18	60	72.4	54.1	2.97	44.0	5.34	25.0	69.2	53.2	2.88	43.3	5.41	25.0	66.0	52.2	2.79	42.7	5.48	25.1
		80	92.0	52.5	3.96	39.0	3.88	25.5	89.0	52.0	3.86	38.8	3.95	25.6	85.9	51.4	3.76	38.6	4.01	25.6
		100	111.7	50.9	4.96	34.0	3.01	26.1	108.7	50.8	4.84	34.2	3.07	26.1	105.8	50.6	4.72	34.5	3.14	26.1
		120	131.3	49.3	5.95	29.0	2.43	26.7	128.5	49.6	5.82	29.7	2.50	26.6	125.7	49.8	5.69	30.4	2.56	26.5
50	9	60	75.1	66.0	3.0	55.7	6.34	37.2	71.4	66.2	2.92	56.2	6.62	37.1	67.6	66.3	2.8	56.7	6.90	37.0
		80	94.6	63.9	4.0	50.2	4.66	38.5	91.0	64.1	3.89	50.8	4.83	38.4	87.4	64.3	3.8	51.4	4.99	38.2
		100	114.1	61.7	5.0	44.7	3.63	39.8	110.6	62.0	4.86	45.4	3.74	39.6	107.1	62.3	4.7	46.1	3.86	39.4
		120	133.7	59.6	6.0	39.3	2.93	41.0	130.3	60.0	5.83	40.1	3.02	40.8	126.9	60.3	5.7	40.9	3.11	40.6
	13.5	60	75.8	68.8	3.1	58.4	6.61	40.1	71.8	68.5	2.93	58.5	6.84	40.1	67.8	68.2	2.8	58.5	7.09	40.0
		80	95.2	66.2	4.0	52.5	4.81	41.1	91.4	66.1	3.90	52.8	4.96	41.0	87.6	66.1	3.8	53.2	5.13	41.0
		100	114.6	63.7	5.0	46.6	3.72	42.1	111.0	63.8	4.87	47.2	3.84	42.0	107.3	64.0	4.7	47.8	3.96	41.9
		120	134.0	61.1	6.0	40.6	2.98	43.1	130.5	61.5	5.85	41.5	3.08	42.9	127.1	61.9	5.7	42.4	3.18	42.8
	18	60	76.4	71.6	3.1	61.1	6.79	43.0	72.2	70.8	2.95	60.7	7.01	43.0	68.0	70.0	2.8	60.4	7.24	43.1
		80	95.7	68.6	4.1	54.7	4.93	43.7	91.7	68.2	3.92	54.8	5.09	43.7	87.8	67.8	3.8	54.9	5.25	43.7
		100	115.0	65.6	5.1	48.4	3.79	44.5	111.3	65.6	4.89	48.9	3.92	44.4	107.5	65.6	4.7	49.4	4.06	44.3
		120	134.3	62.6	6.0	42.0	3.03	45.2	130.8	63.0	5.87	43.0	3.15	45.1	127.3	63.4	5.7	44.0	3.26	45.0
70	9	60	78.8	81.9	3.12	71.3	7.69	53.7	74.1	81.8	2.98	71.6	8.07	53.6	69.4	81.7	2.83	72.0	8.46	53.5
		80	98.0	78.4	4.06	64.5	5.65	55.2	93.5	78.5	3.92	65.1	5.88	55.1	89.0	78.6	3.78	65.7	6.10	54.9
		100	117.2	74.9	5.01	57.8	4.38	56.8	112.9	75.2	4.87	58.6	4.54	56.6	108.7	75.6	4.72	59.4	4.69	56.4
		120	136.4	71.4	5.95	51.1	3.52	58.3	132.3	72.0	5.81	52.1	3.63	58.1	128.3	72.5	5.67	53.1	3.75	57.8
	13.5	60	79.6	85.5	3.1	74.8	7.97	57.4	74.6	85.1	3.00	74.9	8.33	57.3	69.7	84.8	2.8	75.0	8.73	57.3
		80	98.7	81.6	4.1	67.5	5.81	58.6	94.0	81.5	3.95	68.0	6.04	58.5	89.3	81.4	3.8	68.5	6.29	58.4
		100	117.8	77.6	5.1	60.3	4.48	59.8	113.4	77.8	4.91	61.1	4.65	59.6	108.9	78.1	4.7	61.9	4.83	59.5
		120	136.9	73.7	6.0	53.0	3.57	61.0	132.7	74.2	5.86	54.2	3.71	60.8	128.6	74.8	5.7	55.4	3.86	60.6
	18	60	80.4	89.1	3.17	78.3	8.24	61.0	75.2	88.5	3.02	78.2	8.62	61.0	70.1	87.8	2.86	78.0	8.99	61.1
		80	99.4	84.7	4.16	70.5	5.97	61.9	94.5	84.5	3.98	70.9	6.23	61.9	89.6	84.2	3.80	71.2	6.49	61.8
		100	118.4	80.3	5.14	62.7	4.57	62.8	113.8	80.5	4.95	63.6	4.77	62.7	109.2	80.6	4.75	64.4	4.98	62.6
		120	137.4	75.9	6.13	55.0	3.63	63.7	133.1	76.5	5.91	56.3	3.80	63.6	128.8	77.0	5.69	57.6	3.96	63.4
90	9	60	82.4	97.7	3.26	86.6	8.78	70.2	76.5	95.2	3.09	84.7	9.04	70.6	70.6	92.7	2.92	82.7	9.30	71.0
		80	101.4	93.2	4.25	78.7	6.42	72.0	95.9	91.9	4.06	78.0	6.65	72.1	90.4	90.5	3.86	77.4	6.87	72.3
		100	Operation not recommended																	
		120																		
	13.5	60	82.8	99.7	3.3	88.4	8.89	74.9	76.8	96.7	3.11	86.1	9.12	75.3	70.7	93.7	2.9	83.7	9.37	75.7
		80	101.8	95.3	4.3	80.6	6.52	76.3	96.2	93.5	4.08	79.6	6.72	76.4	90.5	91.8	3.9	78.6	6.94	76.6
		100	120.8	90.9	5.3	72.8	5.04	77.6	115.6	90.4	5.05	73.1	5.24	77.5	110.3	89.9	4.8	73.4	5.46	77.5
		120	Operation not recommended																	
	18	60	83.3	101.6	3.31	90.3	8.99	79.7	77.1	98.2	3.13	87.5	9.22	80.0	70.8	94.7	2.94	84.7	9.44	80.3
		80	102.3	97.3	4.31	82.6	6.61	80.5	96.5	95.2	4.10	81.2	6.81	80.7	90.7	93.1	3.89	79.8	7.00	80.9
		100	121.3	93.0	5.31	74.9	5.13	81.4	115.9	92.2	5.08	74.9	5.33	81.4	110.5	91.4	4.85	74.9	5.53	81.4
		120	Operation not recommended																	

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Model 075 - Performance Data

Cooling Capacity

Source		Load Flow-10 GPM							Load Flow-14.5 GPM						Load Flow-19 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F
30	10	50	34.7	74.0	3.14	84.7	23.6	47.5	37.9	77.8	3.19	88.7	24.4	48.3	41.1	81.6	3.24	92.7	25.2	49.1
		70	52.4	85.1	3.29	96.4	25.9	49.9	56.3	88.0	3.34	99.3	26.3	50.5	60.2	90.8	3.38	102.3	26.8	51.1
		90	70.2	96.3	3.45	108.0	27.9	52.3	74.7	98.1	3.49	110.0	28.1	52.7	79.2	99.9	3.53	112.0	28.3	53.1
		110	87.9	107.4	3.60	119.7	29.8	54.7	93.0	108.3	3.64	120.7	29.8	54.9	98.2	109.1	3.67	121.6	29.7	55.1
	14.5	50	34.7	74.1	3.01	84.4	24.6	43.3	37.9	77.8	3.05	88.2	25.5	43.9	41.2	81.4	3.09	91.9	26.3	44.5
		70	52.9	83.1	3.12	93.8	26.6	44.9	56.6	85.8	3.16	96.6	27.2	45.3	60.4	88.5	3.20	99.4	27.7	45.8
		90	71.0	92.2	3.24	103.2	28.5	46.5	75.3	93.8	3.27	105.0	28.7	46.8	79.6	95.5	3.30	106.8	28.9	47.1
		110	89.1	101.2	3.35	112.6	30.2	48.1	94.0	101.9	3.38	113.4	30.2	48.2	98.9	102.6	3.41	114.2	30.1	48.3
	19	50	34.7	74.2	2.88	84.0	25.8	39.1	37.9	77.7	2.91	87.6	26.7	39.5	41.2	81.2	2.94	91.2	27.6	39.9
		70	53.3	81.1	2.95	91.2	27.5	39.9	57.0	83.6	2.98	93.8	28.1	40.2	60.7	86.1	3.01	96.4	28.6	40.5
		90	71.8	88.1	3.03	98.4	29.1	40.7	76.0	89.6	3.05	100.0	29.4	40.8	80.1	91.1	3.07	101.6	29.6	41.0
		110	90.4	95.0	3.10	105.6	30.6	41.5	95.0	95.5	3.12	106.1	30.6	41.5	99.6	96.0	3.14	106.7	30.6	41.6
50	10	50	35.8	68.9	3.94	82.3	18.5	67.0	38.8	72.3	3.99	85.9	19.2	67.7	41.8	75.6	4.03	89.4	19.8	68.4
		70	52.9	83.0	4.16	97.2	21.0	70.0	56.6	85.8	4.21	100.2	21.4	70.6	60.4	88.6	4.26	103.1	21.8	71.3
		90	70.0	97.0	4.38	112.0	23.2	73.1	74.5	99.3	4.44	114.5	23.4	73.6	79.0	101.6	4.49	116.9	23.6	74.1
		110	87.1	111.1	4.60	126.8	25.2	76.1	92.3	112.9	4.66	128.8	25.2	76.5	97.6	114.6	4.72	130.7	25.3	77.0
	14.5	50	35.7	69.3	3.78	82.2	18.3	62.9	38.7	72.6	3.82	85.6	19.0	63.5	41.8	75.9	3.86	89.0	19.7	64.0
		70	53.2	81.7	3.95	95.2	20.7	65.1	56.8	84.4	3.99	98.0	21.1	65.5	60.5	87.1	4.04	100.9	21.6	66.0
		90	70.6	94.1	4.12	108.2	22.9	67.2	75.0	96.3	4.17	110.5	23.1	67.6	79.3	98.4	4.22	112.7	23.3	67.9
		110	88.0	106.6	4.29	121.2	24.9	69.3	93.1	108.1	4.34	122.9	24.9	69.6	98.1	109.6	4.40	124.6	24.9	69.9
	19	50	35.6	69.7	3.63	82.0	20.3	58.9	38.7	72.9	3.66	85.4	21.1	59.3	41.7	76.2	3.69	88.7	21.8	59.6
		70	53.4	80.5	3.74	93.2	22.5	60.1	57.1	83.0	3.78	95.9	23.0	60.4	60.7	85.6	3.81	98.6	23.5	60.7
		90	71.2	91.3	3.86	104.4	24.6	61.3	75.4	93.2	3.90	106.5	24.9	61.6	79.7	95.1	3.94	108.6	25.1	61.8
		110	89.0	102.1	3.97	115.6	26.6	62.5	93.8	103.3	4.02	117.0	26.6	62.7	98.6	104.6	4.07	118.5	26.6	62.9
70	10	50	36.8	63.8	4.74	80.0	13.5	86.5	39.6	66.7	4.78	83.0	13.9	87.1	42.4	69.6	4.82	86.1	14.4	87.7
		70	53.3	80.8	5.03	98.0	16.1	90.2	57.0	83.6	5.08	101.0	16.5	90.8	60.6	86.4	5.14	104.0	16.8	91.4
		90	69.8	97.8	5.31	115.9	18.4	93.9	74.3	100.5	5.38	118.9	18.7	94.5	78.8	103.3	5.45	121.9	18.9	95.1
		110	Operation not recommended																	
	14.5	50	36.7	64.5	4.56	80.0	14.1	82.6	39.5	67.4	4.59	83.1	14.7	83.1	42.4	70.4	4.63	86.1	15.2	83.5
		70	53.4	80.3	4.78	96.6	16.8	85.3	57.1	83.0	4.83	99.5	17.2	85.7	60.7	85.8	4.88	102.4	17.6	86.2
		90	70.2	96.1	5.00	113.2	19.2	87.9	74.6	98.7	5.07	116.0	19.5	88.4	79.0	101.2	5.13	118.7	19.7	88.8
		110	Operation not recommended																	
	19	50	36.6	65.1	4.37	80.0	14.9	78.7	39.4	68.1	4.40	83.1	15.5	79.0	42.3	71.1	4.43	86.2	16.0	79.4
		70	53.6	79.8	4.53	95.2	17.6	80.3	57.2	82.5	4.57	98.1	18.0	80.6	60.8	85.1	4.62	100.9	18.4	80.9
		90	70.5	94.4	4.68	110.4	20.2	82.0	74.9	96.8	4.75	113.0	20.4	82.3	79.2	99.2	4.81	115.6	20.6	82.5
		110	87.5	109.1	4.84	125.6	22.5	83.6	92.6	111.2	4.92	127.9	22.6	83.9	97.7	113.2	5.00	130.3	22.6	84.1
90	10	50	38.3	56.8	6.04	77.4	10.1	106.0	40.8	59.2	6.08	79.9	10.5	106.5	43.3	61.5	6.12	82.4	10.8	107.0
		70	54.9	73.1	6.36	94.8	12.3	109.5	58.2	75.5	6.41	97.3	12.6	110.1	61.6	77.8	6.46	99.9	12.9	110.6
		90	71.6	89.4	6.68	112.2	14.2	113.1	75.7	91.8	6.74	114.8	14.5	113.7	79.8	94.1	6.81	117.4	14.7	114.2
		110	Operation not recommended																	
	14.5	50	38.1	57.5	5.82	77.4	9.9	102.2	40.7	59.9	5.85	79.9	10.2	102.6	43.2	62.4	5.88	82.4	10.6	103.0
		70	54.9	73.2	6.07	93.9	12.1	104.8	58.2	75.5	6.11	96.4	12.4	105.2	61.6	77.9	6.16	98.9	12.6	105.6
		90	71.7	88.8	6.32	110.4	14.0	107.5	75.8	91.1	6.38	112.9	14.3	107.9	79.9	93.4	6.43	115.3	14.5	108.2
		110	Operation not recommended																	
	19	50	38.0	58.3	5.60	77.4	11.2	98.4	40.6	60.7	5.63	79.9	11.6	98.7	43.1	63.2	5.65	82.5	12.0	99.0
		70	54.9	73.3	5.79	93.0	13.5	100.1	58.2	75.6	5.82	95.4	13.9	100.4	61.5	77.9	5.85	97.9	14.2	100.6
		90	71.8	88.3	5.97	108.6	15.7	101.8	75.9	90.4	6.01	110.9	16.0	102.0	80.0	92.6	6.06	113.3	16.2	102.3
		110	Operation not recommended																	
110	10	50	39.7	49.8	7.34	74.9	6.8	125.4	42.0	51.6	7.38	76.8	7.0	125.8	44.2	53.4	7.41	78.7	7.2	126.2
		70	56.5	65.4	7.69	91.6	8.5	128.9	59.5	67.3	7.74	93.7	8.7	129.3	62.5	69.2	7.78	95.8	8.9	129.7
		90	Operation not recommended																	
		110																		
	14.5	50	39.6	50.6	7.09	74.8	7.1	121.8	41.8	52.5	7.11	76.7	7.4	122.1	44.1	54.4	7.14	78.7	7.6	122.4
		70	56.4	66.1	7.37	91.2	9.0	124.4	59.4	68.0	7.40	93.3	9.2	124.7	62.4	69.9	7.44	95.3	9.4	125.0
		90	Operation not recommended																	
		110																		
	19	50	39.4	51.4	6.83	74.7	7.5	118.1	41.7	53.4	6.85	76.7	7.8	118.3	44.0	55.3	6.87	78.7	8.0	118.5
		70	56.2	66.7	7.04	90.8	9.5	119.9	59.3	68.7	7.07	92.8	9.7	120.1	62.3	70.7	7.09	94.9	10.0	120.3
		90	Operation not recommended																	
		110																		

8/20/09

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Model 075 - Performance Data cont.

Heating Capacity

Source		Load Flow-10 GPM							Load Flow-14.5 GPM						Load Flow-19 GPM					
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F
25	14.5	60	Operation not recommended																	
		80																		
		100																		
		120																		
	19	60	72.1	58.8	3.90	45.5	4.42	20.1	68.4	58.9	3.78	46.0	4.57	20.0	66.4	59.0	3.66	46.5	4.72	19.95
		80	91.8	57.4	5.11	40.0	3.29	20.7	88.2	57.5	4.97	40.6	3.39	20.6	86.2	57.6	4.82	41.1	3.50	20.5
		100	111.6	56.1	6.32	34.5	2.60	21.3	108.0	56.1	6.15	35.1	2.67	21.2	106.1	56.1	5.98	35.7	2.75	21.1
		120	131.3	54.7	7.53	29.0	2.13	21.9	127.8	54.7	7.34	29.7	2.18	21.8	125.9	54.7	7.14	30.3	2.24	21.7
30	10	60	72.6	61.1	3.90	47.8	4.59	20.1	69.6	61.2	3.79	48.3	4.74	20.0	66.7	61.3	3.68	48.7	4.88	20.0
		80	92.3	59.7	5.12	42.3	3.42	21.3	89.4	59.8	4.99	42.8	3.52	21.2	86.5	59.9	4.85	43.3	3.61	21.1
		100	112.0	58.4	6.35	36.7	2.69	22.4	109.2	58.4	6.19	37.3	2.77	22.3	106.3	58.4	6.03	37.9	2.84	22.2
		120	131.8	57.0	7.57	31.2	2.21	23.6	129.0	57.0	7.39	31.8	2.26	23.4	126.2	57.0	7.20	32.4	2.32	23.3
	14.5	60	73.1	63.5	3.9	50.1	4.74	22.2	70.0	63.6	3.82	50.5	4.88	22.2	66.9	63.7	3.7	51.0	5.03	22.1
		80	92.7	61.7	5.2	44.1	3.51	23.2	89.7	61.8	5.02	44.6	3.60	23.1	86.7	61.9	4.9	45.2	3.71	23.0
		100	112.4	59.9	6.4	38.1	2.75	24.1	109.4	60.0	6.23	38.7	2.82	24.0	106.5	60.1	6.1	39.4	2.90	23.9
		120	132.0	58.2	7.6	32.1	2.24	25.0	129.2	58.2	7.43	32.8	2.29	24.9	126.3	58.3	7.2	33.5	2.36	24.8
	19	60	73.6	65.8	3.95	52.3	4.88	24.3	70.4	65.9	3.84	52.8	5.03	24.3	67.2	66.0	3.73	53.3	5.18	24.2
		80	93.1	63.6	5.19	45.9	3.59	25.0	90.0	63.7	5.05	46.5	3.70	25.0	86.9	63.8	4.92	47.1	3.80	24.9
		100	112.7	61.5	6.43	39.5	2.80	25.7	109.7	61.6	6.27	40.2	2.88	25.6	106.7	61.7	6.10	40.8	2.96	25.6
		120	132.2	59.3	7.67	33.1	2.27	26.4	129.3	59.4	7.48	33.9	2.33	26.3	126.5	59.5	7.29	34.6	2.39	26.2
50	10	60	76.7	81.0	4.2	66.7	5.60	36.2	72.7	81.0	4.02	67.3	5.85	36.1	68.8	81.0	3.9	67.8	6.10	36.0
		80	96.1	78.2	5.4	59.6	4.17	37.7	92.3	78.2	5.24	60.3	4.34	37.6	88.5	78.3	5.1	61.0	4.50	37.4
		100	115.5	75.3	6.7	52.5	3.28	39.2	111.9	75.4	6.46	53.3	3.39	39.0	108.2	75.5	6.3	54.2	3.51	38.8
		120	134.9	72.5	7.9	45.4	2.66	40.6	131.4	72.6	7.69	46.4	2.75	40.4	127.9	72.8	7.5	47.3	2.84	40.2
	14.5	60	77.4	84.5	4.2	70.1	5.86	39.1	73.3	84.4	4.07	70.5	6.08	39.1	69.2	84.3	3.9	71.0	6.32	39.0
		80	96.7	81.1	5.5	62.4	4.35	40.3	92.8	81.1	5.29	63.1	4.50	40.2	88.8	81.2	5.1	63.7	4.66	40.1
		100	116.0	77.7	6.7	54.8	3.39	41.5	112.2	77.9	6.51	55.7	3.51	41.4	108.5	78.0	6.3	56.5	3.63	41.2
		120	135.3	74.4	8.0	47.2	2.74	42.7	131.7	74.6	7.73	48.2	2.83	42.5	128.1	74.8	7.5	49.3	2.93	42.3
	19	60	78.1	87.9	4.3	73.4	5.98	42.0	73.8	87.8	4.11	73.8	6.19	42.0	69.5	87.7	4.0	74.1	6.40	42.0
		80	97.3	84.0	5.5	65.2	4.42	42.9	93.2	84.1	5.33	65.9	4.58	42.9	89.1	84.1	5.2	66.5	4.74	42.8
		100	116.5	80.2	6.8	57.1	3.44	43.8	112.6	80.3	6.55	58.0	3.57	43.7	108.7	80.5	6.3	58.9	3.69	43.6
		120	135.7	76.3	8.0	48.9	2.77	44.7	132.0	76.6	7.77	50.1	2.87	44.6	128.3	76.9	7.5	51.2	2.98	44.4
70	10	60	80.8	100.9	4.48	85.6	6.60	52.3	75.9	100.8	4.26	86.3	6.96	52.2	70.9	100.7	4.03	86.9	7.32	52.1
		80	99.9	96.6	5.74	77.0	4.93	54.1	95.2	96.6	5.50	77.8	5.16	54.0	90.5	96.6	5.26	78.7	5.39	53.8
		100	119.0	92.2	7.00	68.3	3.86	55.9	114.5	92.4	6.74	69.4	4.02	55.7	110.0	92.6	6.48	70.4	4.18	55.5
		120	138.1	87.9	8.26	59.7	3.12	57.7	133.9	88.2	7.99	60.9	3.24	57.4	129.6	88.5	7.71	62.2	3.36	57.2
	14.5	60	81.7	105.5	4.5	90.0	6.84	56.0	76.6	105.2	4.32	90.5	7.14	56.0	71.4	105.0	4.1	91.0	7.48	55.9
		80	100.7	100.5	5.8	80.8	5.09	57.5	95.8	100.5	5.55	81.5	5.30	57.4	90.9	100.5	5.3	82.3	5.53	57.2
		100	119.7	95.6	7.0	71.5	3.97	58.9	115.1	95.7	6.79	72.6	4.13	58.7	110.4	95.9	6.5	73.7	4.31	58.6
		120	138.7	90.6	8.3	62.2	3.19	60.3	134.3	91.0	8.02	63.6	3.32	60.1	129.9	91.4	7.7	65.0	3.46	59.9
	19	60	82.7	110.0	4.55	94.5	7.08	59.7	77.3	109.7	4.38	94.7	7.35	59.7	71.9	109.3	4.20	95.0	7.62	59.7
		80	101.5	104.4	5.82	84.6	5.26	60.8	96.4	104.4	5.60	85.2	5.47	60.7	91.3	104.3	5.39	85.9	5.67	60.7
		100	120.4	98.9	7.09	74.7	4.09	61.9	115.6	99.1	6.83	75.8	4.26	61.8	110.8	99.3	6.57	76.9	4.43	61.7
		120	139.2	93.3	8.36	64.8	3.27	63.0	134.7	93.8	8.06	66.3	3.42	62.8	130.2	94.3	7.76	67.8	3.56	62.6
90	10	60	84.8	120.1	4.74	103.9	7.42	68.6	78.6	117.4	4.45	102.2	7.75	68.9	72.4	114.6	4.16	100.4	8.07	69.3
		80	103.7	114.9	6.02	94.4	5.59	70.5	97.9	113.2	5.71	93.7	5.82	70.7	92.1	111.5	5.39	93.1	6.06	70.8
		100	Operation not recommended																	
		120																		
	14.5	60	85.3	122.8	4.77	106.5	7.55	73.4	79.0	119.5	4.49	104.2	7.80	73.7	72.6	116.2	4.22	101.8	8.08	74.0
		80	104.2	117.6	6.07	96.8	5.67	74.9	98.3	115.4	5.76	95.8	5.88	75.0	92.3	113.3	5.44	94.7	6.10	75.2
		100	123.2	112.4	7.38	87.2	4.46	76.4	117.6	111.4	7.02	87.4	4.65	76.4	112.0	110.4	6.67	87.7	4.85	76.3
		120	Operation not recommended																	
	19	60	85.9	125.4	4.79	109.1	7.67	78.2	79.3	121.6	4.53	106.1	7.88	78.5	72.8	117.8	4.27	103.2	8.08	78.8
		80	104.8	120.2	6.13	99.3	5.75	79.2	98.6	117.7	5.81	97.9	5.95	79.4	92.5	115.2	5.49	96.4	6.15	79.5
		100	123.7	115.0	7.46	89.5	4.51	80.3	118.0	113.8	7.08	89.6	4.72	80.3	112.2	112.5	6.70	89.7	4.92	80.3
		120	Operation not recommended																	

8/19/09

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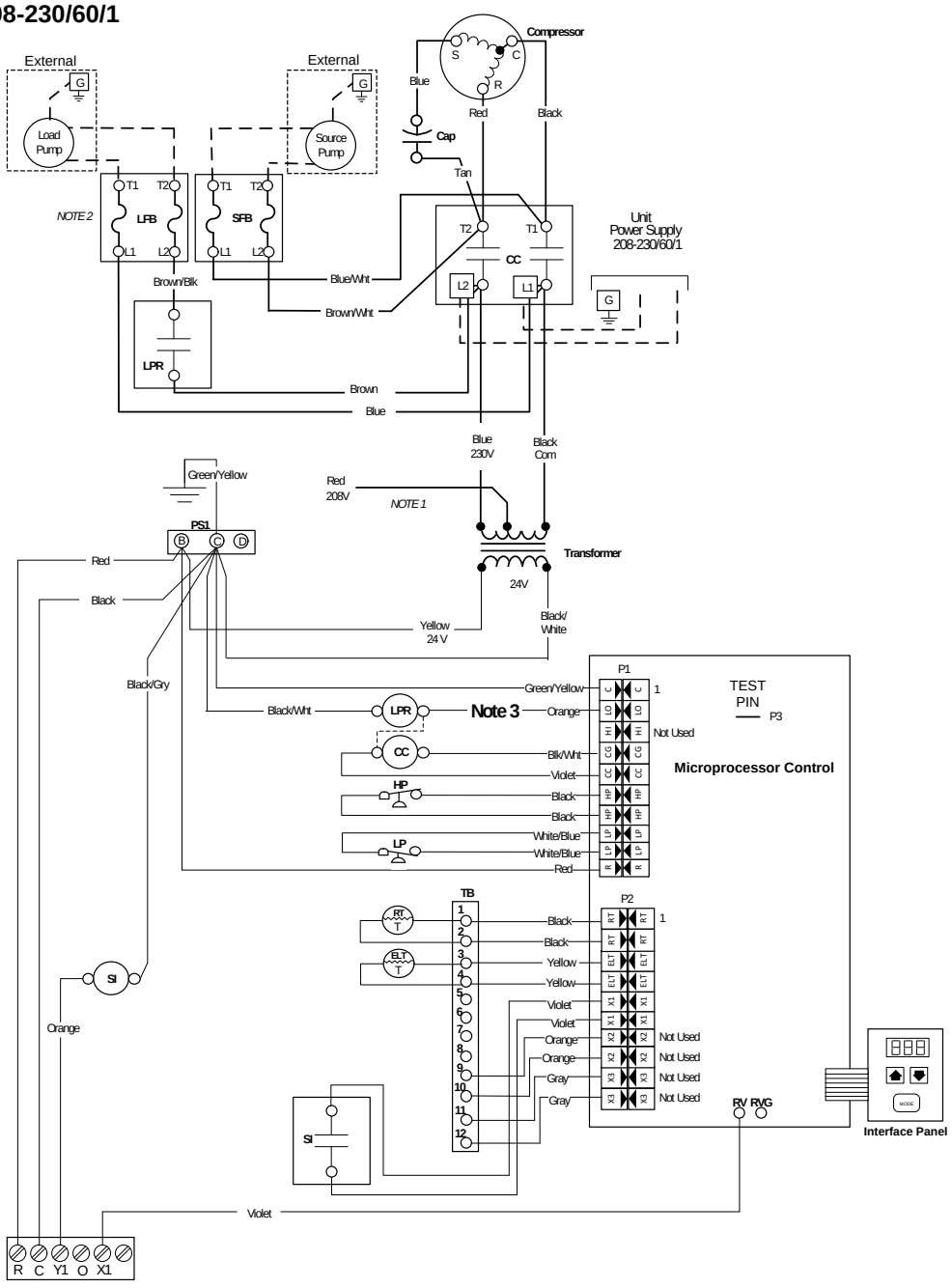
Wiring Schematics

Heating Only - 208-230/60/1



97P798-01 01/21/10

Legend

Factory low voltage wiring Factory line voltage wiring Field low voltage wiring Field line voltage wiring Optional block Quick connect terminal Screw terminal - field connection Fuse	CC - Compressor contactor RV Reversing Valve output ELT - Entering Load Side Water Temperature HP - High pressure switch LP - Low pressure switch LPR - Load Pump Relay RT - Refrigerant Liquid line Temperature SI - Slave Input relay RC - Reversing Valve Coil LFB - Load Pump Fuse Block SFB - Source Pump Fuse Block	L1 Field wire lug Ground Relay Contacts - N.O., N.C. P Polarized connector	Switch - High pressure Switch - Low pressure Relay coil Capacitor T Thermistor	**Notes:** **1. Taped and wire tied off** **2. 3AG 10 Amp fuse** **3. For cycle load pump with a geo storage tank. Remove the orange wire from the LPR relay coil and install a jumper between the LPR relay coil and the comp contactor coil as shown in the schematic above.**

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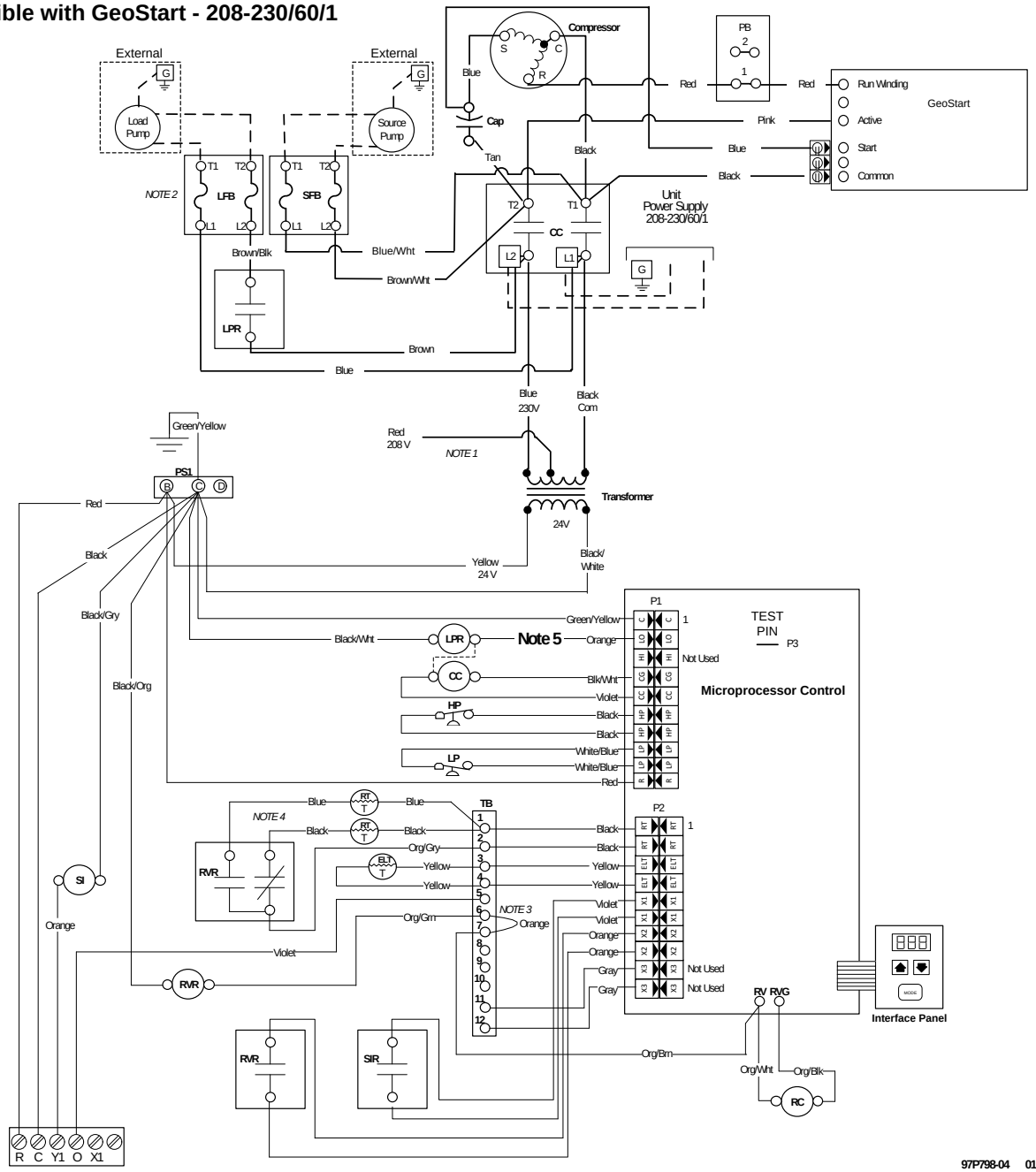
Wiring Schematics cont.

Reversible with GeoStart - 208-230/60/1



97P798-04 01/21/10

Legend

- Factory low voltage wiring
- Factory line voltage wiring
- Field low voltage wiring
- Field line voltage wiring
- Optional block
- Quick connect terminal
- Screw terminal - field connection
- Fuse

CC -	Compressor Contactor
RV	Reversing Valve Output
ELT -	Entering Load Side Water Temperature
HP -	High Pressure Switch
LP -	Low Pressure Switch
LPR -	Load Pump Relay Contacts
RT -	Refrigerant Liquid Line Temperature
SIR -	Slave Input Relay
RC -	Reversing Valve Coil
LFB -	Load Pump Fuse Block
SFB -	Source Pump Fuse Block
RVR -	Reversing Valve Relay

- L1 — Field wire lug
- Ground
- Relay Contacts - N.O., N.C.
- P — Polarized connector
- Switch - High pressure
- Switch - Low pressure
- Relay coil
- Capacitor
- Thermistor

Notes:

1. **Taped and wire tied off**
2. **3AG 10 Amp fuse**
3. **Move jumper wire to 5 and 6 for reversible secondary unit**
4. **Black Thermistor - Source Coax**
   Blue Thermistor - Load Coax
5. **For cycle load pump with a geo storage tank. Remove the orange wire from the LPR relay coil and install a jumper between the LPR relay coil and the comp contactor coil as shown in the schematic above.**

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Engineering Guide Specifications

General

The liquid source water-to-water heat pump shall be a single packaged heating only or reverse-cycle heating/cooling unit. Dedicated non-reversing heating only units shall be easily field convertible to cooling only units. The unit shall be listed by a nationally recognized safety-testing laboratory or agency, such as ETL Testing Laboratory, Underwriters Laboratory (UL), or Canadian Standards Association (CSA). The unit shall be rated in accordance with Air Conditioning, Heating, and Refrigeration Institute/International Standards Organization (AHRI/ISO) and Canadian Standards Association (CSA-US). The liquid source water-to-water heat pump unit shall be designed to operate with source liquid temperatures between 30°F [-1.1°C] and 110°F [43.3°C] in cooling, and between 25°F [-3.9°C] and 90°F [32.2°C] in heating.

Casing and Cabinet

The cabinet shall be fabricated from heavy-gauge galvanized steel and finished with corrosion-resistant powder coating. This corrosion protection system shall meet the stringent 1,000 hour salt spray test per ASTM B117. The interior shall be insulated with ½ in. thick, multi-density, coated glass fiber for noise suppression.

All units shall have separate holes and knockouts for entrance of line voltage and low voltage control wiring. All factory-installed wiring passing through factory knockouts and openings shall be protected from sheet metal edges at openings by plastic ferrules. The control box shall be field switchable from front to back for improved application flexibility with quick attach low voltage harnesses. The control box is shipped standard on the opposite end of the water connections.

Refrigerant Circuit

All units shall utilize the non-ozone depleting and low global warming potential refrigerant R-410A. All units shall contain a sealed refrigerant circuit including a hermetic motor-compressor, bidirectional thermostatic expansion valve, reversing valve, coaxial tube water-to-refrigerant heat exchanger, optional hot water generator coil, and service ports. An optional vented double wall load coaxial water-to-refrigerant heat exchanger is available on 018 and 025.

Compressors shall be high-efficiency scroll type designed for heat pump duty and mounted on vibration isolators. The compressor shall be double isolation mounted using selected durometer grommets to provide vibration free compressor mounting. All models will feature a compressor discharge muffler to help quiet compressor gas pulsations. A high density sound attenuating blanket shall be factory installed around the compressor to reduce sound. Compressor motors shall be single-phase PSC with overload protection.
The coaxial water-to-refrigerant heat exchanger shall be designed for low water pressure drop and constructed of a convoluted copper (cupronickel option) inner tube and a steel outer tube. Refrigerant-to-water heat exchangers shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 600 PSIG (4135 kPa) working refrigerant pressure and 450 PSIG (3101 kPa) working water pressure. The thermostatic expansion valve shall provide proper superheat over the entire liquid temperature range with minimal “hunting.” The valve shall operate bidirectionally without the use of check valves.

Option: Cupronickel refrigerant-to-water heat exchanger shall be of copper-nickel inner water tube and steel refrigerant outer tube design, rated to withstand 600 PSIG (4135 kPa) working refrigerant pressure and 450 PSIG (3101 kPa) working water pressure. Water lines shall also be of cupronickel construction.

Option: Hot Water Generator (available on 040-075) - Internal double wall vented hot water generator coil refrigerant to water heat exchangers suitable for potable water shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 600 PSIG (4135 kPa) working refrigerant pressure and 450 PSIG (3101 kPa) working water pressure.

Option: Vented double wall water-to-refrigerant heat exchange (available on 018 and 025) - Internal vented double wall water-to-refrigerant coaxial heat exchangers suitable for potable water shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 600 PSIG (4136 kPA) working refrigerant pressure and 450 PSIG (3101 kPA) water pressure.

Piping and Connections

Supply and return water connections shall be 1 in. [25.4 mm] for the 018-040, 1 ¼ in. [31.75 mm] for the 050-075, and all hot water generator water connections shall be ½ in. [12.7 mm] FPT copper fittings. The FPT fittings shall be fixed to the cabinet by use of a captive fitting, which eliminates the need for backup pipe wrenches.

Electrical

A control box shall be located within the unit compressor compartment and shall contain a 75VA transformer with a built-in circuit breaker, 24 volt activated compressor contactor, terminal block for thermostat wiring and solid-state controller for complete unit operation. Electromechanical operation WILL NOT be accepted. Units shall be name-plated for use with time delay fuses or HACR circuit breakers. Unit controls shall be 24 volt and provide heating or cooling as required by the remote thermostat/sensor.

A standard microprocessor-based controller that interfaces with an electronic thermostat to monitor and control unit operation shall be provided. The control shall provide operational sequencing, high and low pressure switch monitoring, freeze detection, hot water limit thermistor sensing, lockout mode control, hot water and loop pump control, LED status and fault indicators, fault memory, field selectable options and accessory output. The control shall provide fault retry three times before locking out to limit nuisance trips. Anti short-cycle protection shall be integral to the control.

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Engineering Guide Specifications

A detachable terminal block with screw terminals will be provided for field control wiring. All units shall have knockouts for entrance of low and line voltage wiring.

Option: GeoStart (compressor Soft Starter) shall be factory installed for use in applications that require low starting amps, reduced compressor start-up noise, off-grid, and improved start-up behavior. GeoStart shall reduce normal starting current by 60% on 208/60/1 units.

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Revision Guide

Pages:	Description:	Date:	By:
All	Updated Series to New Nomenclature	06 Sept 2013	DS
All	Moved All Commercial Information to New Document	06 Sept 2013	DS
2	Updated 018 Revision Level	09 May 2013	DS
6	Updated 018 Electrical Data	09 May 2013	DS
All	Minor Formatting Corrections	29 Oct 2012	DS
3	Updated AHRI Data Table	29 Oct 2012	DS
27	Added Notes Regarding Discharge Mufflers	29 Oct 2012	DS
29	Added Revision Guide	29 Oct 2012	DS

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