YORK®
Heating and Air Conditioning

SUBMITTAL SET

AFFINITY
GEOTHERMAL HEAT PUMPS
DUAL CAPACITY

MODELS:
YAPT026 - 072
(2 THRU 6 NOMINAL TONS)

ENERGY STAR

AHRI CERTIFIED™ www.ahridirectory.org
Water Source HP
ANSI/AHRI/ASHRAE/ISO13256-1

C ETL LISTED US
Intertek

Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at www.york-geothermal.com

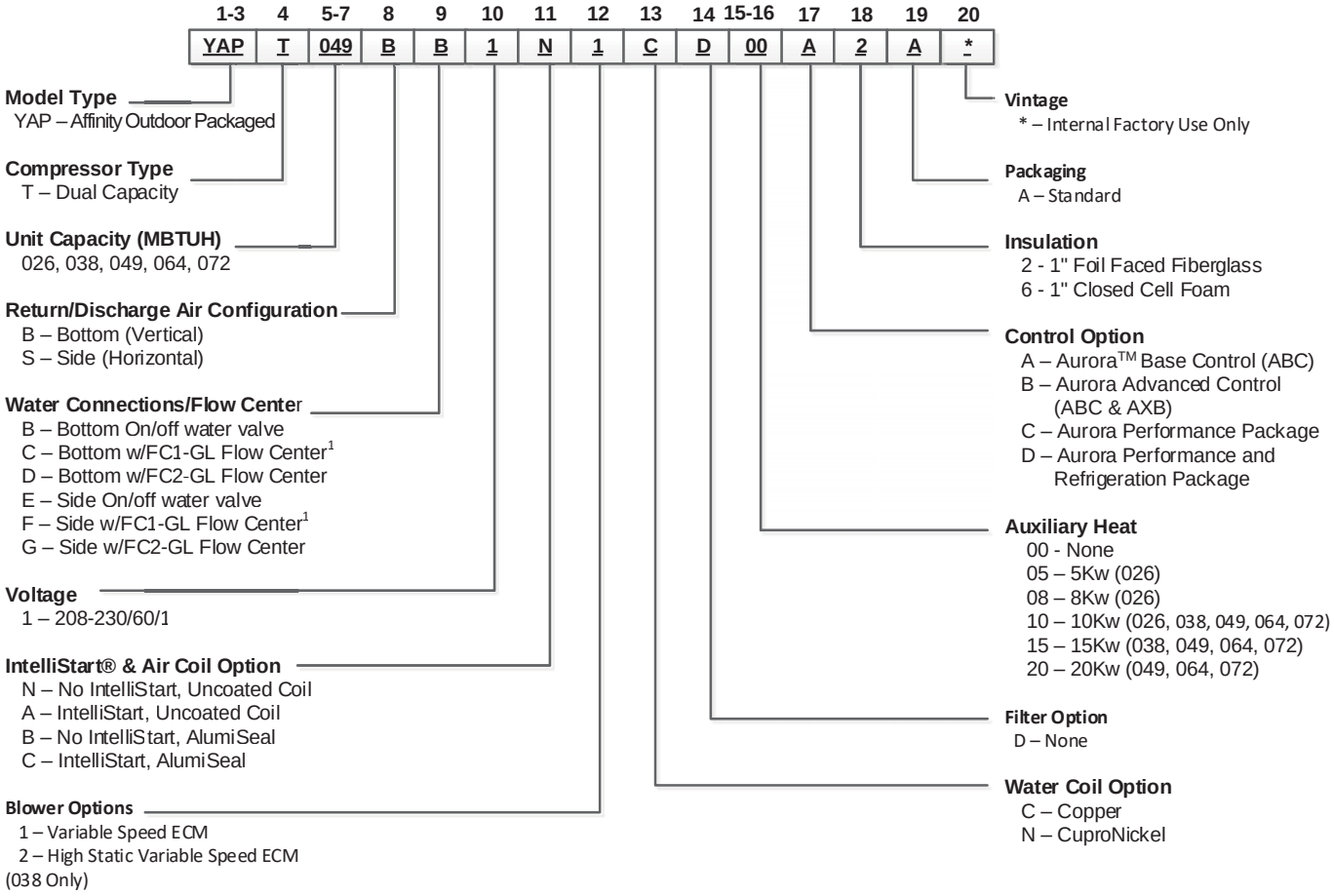
Additional rating information can found at
www.ahridirectory.org

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Model Nomenclature



Rev.: 9/28/17C

Notes:
All Models include sound kits as std. equipment
[1]FC1-GL not available in 064-072 units.

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

AHRI/ISO 13256-1 Performance Ratings

ECM motor

AHRI/ASHRAE/ISO 13256-1
English (IP) Units

Model	Capacity Modulation	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling EWT 86°F		Heating EWT 68°F		Cooling EWT 59°F		Heating EWT 50°F		Cooling Brine Full Load 77°F Part Load 68°F		Heating Brine Full Load 32°F Part Load 41°F	
		gpm	cfm	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
026	Full	8	950	23,500	15.6	29,100	5.4	26,200	22.5	23,800	4.7	24,800	17.9	19,300	3.9
	Part	7	750	17,600	17.2	21,400	6.0	20,600	28.7	17,100	4.8	19,600	25.1	15,800	4.4
038	Full	9	1300	36,500	17.0	41,900	5.4	40,000	24.4	34,700	4.8	38,200	19.7	28,300	4.1
	Part	8	1150	26,300	18.9	30,200	6.2	29,600	31.7	24,700	5.0	29,000	27.6	22,500	4.6
049	Full	12	1700	48,800	16.7	57,700	5.4	53,800	24.3	46,900	4.5	50,400	19.0	38,000	4.0
	Part	11	1450	36,000	18.8	41,300	6.0	41,000	32.1	33,300	4.6	39,500	27.1	30,200	4.3
064	Full	16	1800	60,000	15.8	71,700	5.1	67,500	23.1	58,200	4.5	62,500	18.2	46,300	3.8
	Part	14	1600	42,300	16.4	51,800	5.9	51,300	30.0	41,400	4.8	48,600	24.7	36,200	4.2
072	Full	18	2100	67,400	14.2	85,800	4.8	77,400	21.5	70,600	4.3	71,700	16.6	55,400	3.7
	Part	16	1600	50,800	15.5	64,700	5.1	59,000	27.3	52,300	4.2	55,800	21.8	46,700	3.9

7/18/17

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature
Heating capacities based upon 68°F DB, 59°F WB entering air temperature
All ratings based upon 208V operation

Energy Star Compliance Table

Model	Tier 3	
	Ground Water	Ground Loop
026	E	E
038	E	E
049	E	E
064	E	E
072	E	E

E = ECM 7/18/17

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 Start rated.

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

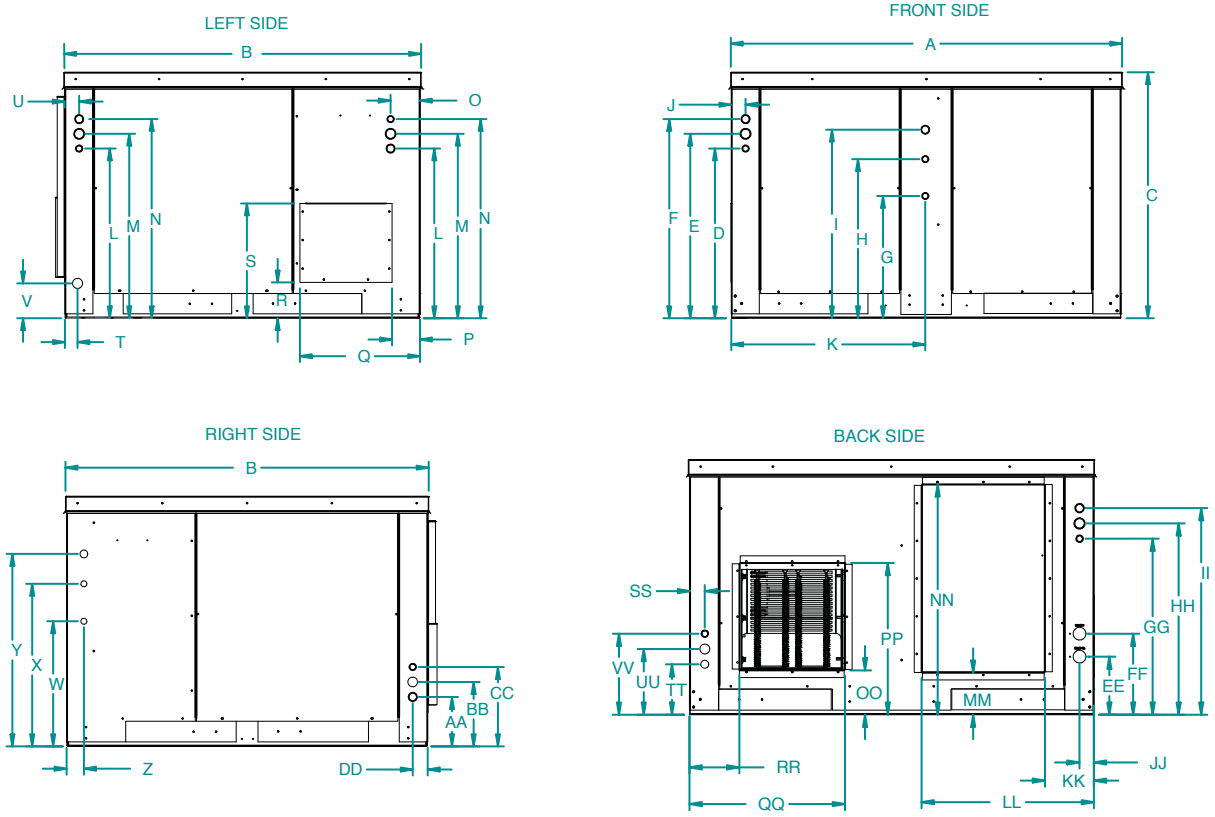
Water-to-Air	EER	COP
Ground Loop	17.1	3.6
Ground Water	21.1	4.1
Water-to-Water		
Ground Loop	16.1	3.1
Ground Water	20.1	3.5

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Dimensional Data



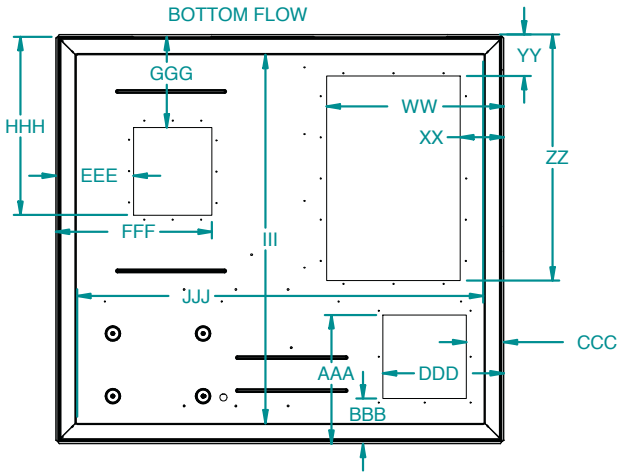
Side Discharge Configuraton		Overall Cabinet			Front Electrical Knockouts								Left Electrical Knockouts										
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
		Width	Depth	Height	7/8"	1-3/8"	1-1/8"	7/8"	7/8"	1-1/8"	N/A	N/A	7/8"	1-3/8"	1-1/8"	N/A	Pump				N/A	N/A	Condensate
026	in.	53.1	48.5	33.3	23.0	25.0	27.0	16.6	21.6	25.6	1.9	26.4	23.4	25.4	27.4	4.0	3.8	16.3	4.9	15.6	1.7	2.0	4.7
	cm.	134.9	123.2	84.6	58.4	63.5	68.6	42.2	54.9	65.0	4.8	67.1	59.4	64.5	69.6	10.2	9.7	41.4	12.4	39.6	4.3	5.1	11.9
038	in.	53.1	48.5	33.3	23.0	25.0	27.0	16.6	21.6	25.6	1.9	26.4	23.4	25.4	27.4	4.0	3.8	16.3	4.9	15.6	1.7	2.0	4.7
	cm.	134.9	123.2	84.6	58.4	63.5	68.6	42.2	54.9	65.0	4.8	67.1	59.4	64.5	69.6	10.2	9.7	41.4	12.4	39.6	4.3	5.1	11.9
049-072	in.	53.1	48.5	41.3	30.9	32.9	34.9	24.5	29.5	33.5	2.0	26.4	30.9	32.9	34.9	1.9	3.8	16.3	8.9	19.6	1.5	2.0	4.9
	cm.	134.9	123.2	104.9	78.5	83.6	88.6	62.2	74.9	85.1	5.1	67.1	78.5	83.6	88.6	4.8	9.7	41.4	22.6	49.8	3.8	5.1	11.9

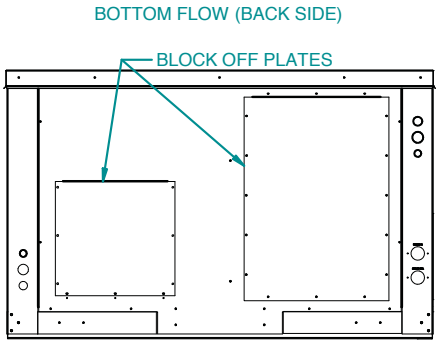
Side Discharge Configuraton		Right Side Electrical Knockouts								Back Side Electrical Knockouts																
		W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV
		7/8"	7/8"	1-1/8"	N/A	1-1/8"	1-3/8"	7/8"	N/A	WTR OUT	WTR IN	7/8"	1-3/8"	1-1/8"	N/A	Return				Discharge				N/A	1-1/8"	1-3/8"	7/8"
026	in.	16.7	21.7	25.7	2.3	6.6	8.6	10.6	2.0	7.6	10.6	23.0	25.3	27.0	1.9	6.4	22.5	5.5	30.2	5.5	16.5	18.2	8.7	2.0	6.6	8.6	10.6
	cm.	42.4	55.1	65.3	5.8	16.8	21.8	26.9	5.1	19.3	26.9	58.4	64.3	68.6	4.8	16.3	57.2	14.0	76.7	14.0	41.9	46.2	22.1	5.1	16.8	21.8	26.9
038	in.	16.7	21.7	25.7	2.3	6.6	8.6	10.6	2.0	7.6	10.6	23.0	25.3	27.0	1.9	6.4	22.5	5.5	30.2	5.8	19.8	20.4	6.7	2.0	6.6	8.6	10.6
	cm.	42.4	55.1	65.3	5.8	16.8	21.8	26.9	5.1	19.3	26.9	58.4	64.3	68.6	4.8	16.3	57.2	14.0	76.7	14.7	50.3	51.8	17.0	5.1	16.8	21.8	26.9
049-072	in.	24.6	29.6	33.6	2.3	6.6	8.6	10.6	2.0	7.6	10.6	30.9	32.9	34.9	1.9	6.4	22.5	9.3	34.1	5.5	19.1	20.1	6.7	2.0	6.6	8.6	10.6
	cm.	62.5	75.2	85.3	5.8	16.8	21.8	26.9	5.1	19.3	26.9	78.5	83.6	88.6	4.8	16.3	57.2	23.6	86.6	14.0	48.5	51.1	17.0	5.1	16.8	21.8	26.9

Discharge/Return flanges are field installed and extend 1" (25.4 mm) from cabinet

Fractional dimensions indicate knockout sizes.

Dimensional Data cont.





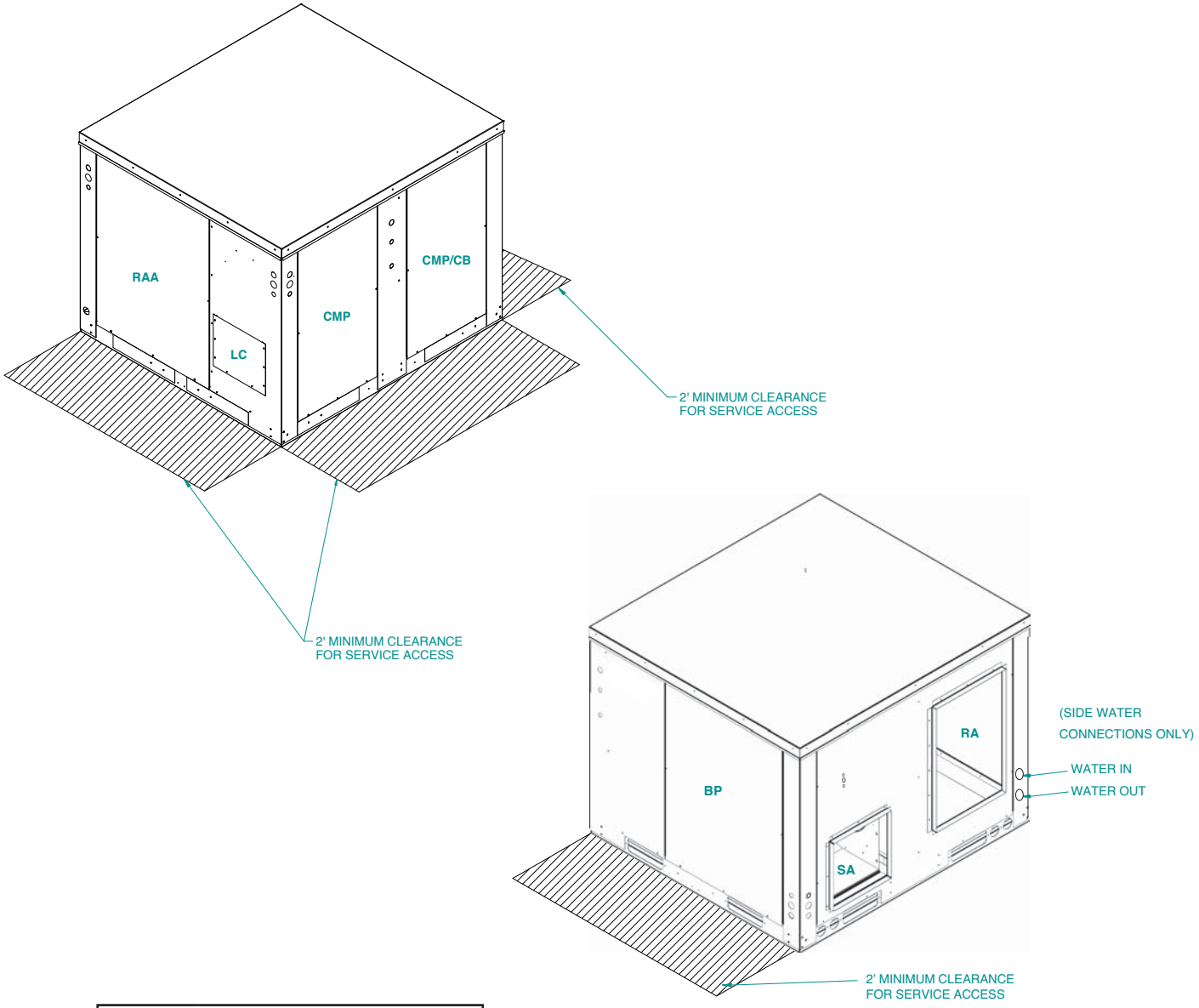
Bottom Flow Configu-raton		Bottom Side Features													
		WW	XX	YY	ZZ	AAA	BBB	CCC	DDD	EEE	FFF	GGG	HHH	III	JJJ
		Return				Loop				Discharge					
026	in.	21.3	5.3	5.0	29.5	15.4	5.4	4.5	14.5	9.3	18.7	10.9	21.3	44.2	48.8
	cm.	54.1	13.5	12.7	74.9	39.1	13.7	11.4	36.8	23.6	47.5	27.7	54.1	112.3	124.0
038	in.	21.3	5.3	5.0	29.5	15.4	5.4	4.5	14.5	7.2	20.4	12.3	25.7	44.2	48.8
	cm.	54.1	13.5	12.7	74.9	39.1	13.7	11.4	36.8	18.3	51.8	31.2	65.3	112.3	124.0
049-072	in.	21.3	5.3	5.0	29.5	15.4	5.4	4.5	14.5	7.2	20.4	12.3	25.7	44.2	48.8
	cm.	54.1	13.5	12.7	74.9	39.1	13.7	11.4	36.8	18.3	51.8	31.2	65.3	112.3	124.0

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Dimensional Data cont.



Legend	
RA	Return Air
RAA	Return Air Access
SA	Supply Air
CB	Control Access Panel
CMP	Compressor Access Panel
BP	Blower Access Panel
LC	Loop Connection Access

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Physical Data

Model		DUAL CAPACITY				
		026	038	049	064	072
Compressor (1 each)		Copeland UltraTech, Dual Capacity Scroll				
Factory Charge R410a, oz [kg] (Aluminum tube and fin air coil)		52 [1.47]	78 [2.21]	92 [2.61]	96 [2.72]	110 [3.12]
ECM Blower Motor & Blower						
Blower Motor Type/Speeds	VS ECM	Variable Speed ECM				
Blower Motor- hp [W]	VS ECM	1/2 [373]	1/2 [373]	1 [746]	1 [746]	1 [746]
High Static Blower Motor - hp [W]	VS ECM	n/a	1 [746]	n/a	n/a	n/a
Blower Wheel Size (Dia x W), in. [mm]	VS ECM	9 x 7 [229 x 178]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]
High Static Blower Wheel Size - [Dia. x W], in. [mm]	VS ECM	n/a	11 x 10 [279 x 254]	n/a	n/a	n/a
Coax and Water Piping						
Water Connections Size (Side) - FPT - in [mm]		1" [25.4]	1" [25.4]	1" [25.4]	1" [25.4]	1" [25.4]
Water Connections Size (Flow Center Bottom)		GeoLink Double O-ring Fitting				
Water Connections Size (Water Valve Bottom)		1" Hose				
Coax & Piping Water Volume - gal [l]		0.7 [2.6]	1.3 [4.9]	1.6 [6.1]	1.6 [6.1]	2.3 [8.7]
Vertical						
Air Coil Dimensions (H x W), in. [mm]		24 x 20 [610 x 542]	28 x 25 [711 x 635]	32 x 25 [813 x 635]	36 x 25 [914 x 635]	36 x 25 [914 x 635]
Air Coil Total Face Area, ft2 [m2]		3.3 [0.310]	4.9 [0.451]	5.6 [0.570]	6.3 [0.641]	6.3 [0.641]
Air Coil Tube Size, in [mm]		3/8 [9.5]	3/8 [9.5]	3/8 [9.5]	3/8 [9.5]	3/8 [9.5]
Air Coil Number of rows		3	3	3	4	4
Weight - Operating, lb [kg]		502 [228]	545 [247]	580 [263]	596 [270]	606 [275]
Weight - Packaged, lb [kg]		532 [241]	575 [261]	610 [277]	626 [284]	636 [289]

8/7/2017

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Auxiliary Heat Ratings

Model	KW		Stages	BTU/HR		Min CFM			
	208V	230V		208V	230V		026	038	049 - 072
EAM5*	3.6	4.8	1	12,300	16,300	450	•		
EAM8*	5.7	7.6	2	19,400	25,900	550	•		
EAM10*	7.2	9.6	2	24,600	32,700	650	•		
EAL10*	7.2	9.6	2	24,600	32,700	1100		•	•
EAL15*	10.8	14.4	2	36,900	49,100	1250		•	•
EAL20*	14.4	19.2	2	49,200	65,500	1500			•

Air flow level for auxiliary heat (Aux) must be equal to or above the minimum CFM in this table

7/9/2017

Auxiliary Heat Electrical Data

Model	Supply Circuit	Heater Amps		Min Circuit Amp		Fuse (USA)		Fuse (CAN)		CKT BRK	
		208 V	240 V	208 V	240 V	208 V	240 V	208 V	240 V	208 V	240 V
EAM5*	Single	17.3	20.0	26.7	30.0	30	30	30	30	30	30
EAM8*	Single	27.5	31.7	39.3	44.6	40	45	40	45	40	45
EAM10*	Single	34.7	40.0	48.3	55.0	50	60	50	60	50	60
EAL10*	Single	34.7	40.0	53.3	60.0	60	60	60	60	60	60
EAL15*	Single	52.0	60.0	75.0	85.0	80	90	80	90	70	100
	L1/L2	34.7	40.0	53.3	60.0	60	60	60	60	60	60
	L3/L4	17.3	20.0	21.7	25.0	25	25	25	25	20	30
EAL20*	Single	69.3	80.0	96.7	110.0	100	110	100	110	100	100
	L1/L2	34.7	40.0	53.3	60.0	60	60	60	60	60	60
	L3/L4	34.7	40.0	43.3	50.0	45	50	45	50	40	50

All heaters rated single phase 60 cycle and include unit fan load

7/9/2017

All fuses type “D” time delay (or HACR circuit breaker in USA)

Supply wire size to be determined by local codes

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Electrical Data

Dual Capacity Unit with Variable Speed ECM Motor

Model	Rated Voltage	Voltage Min/Max	Compressor				Ext Loop FLA	Blower Motor FLA	Total Unit FLA	Min Circ Amp	Max Fuse/ HACR
			MCC	RLA	LRA	LRA**					
026	208-230/60/1	187/253	18.2	11.6	58.3	21.0	5.4	4.0	21.0	24.0	35
038	208-230/60/1	187/253	23.8	15.2	83.0	30.0	5.4	4.0	24.6	28.4	40
038*	208-230/60/1	187/253	23.8	15.2	83.0	30.0	5.4	7.0	27.6	31.4	50
049	208-230/60/1	187/253	33.0	21.1	104.0	37.0	5.4	7.0	33.5	38.8	60
064	208-230/60/1	187/253	42.3	27.1	152.9	54.0	5.4	7.0	39.5	46.2	70
072	208-230/60/1	187/253	46.3	29.6	179.2	63.0	5.4	7.0	42.0	49.4	70

*With optional 1 HP Variable Speed ECM motor 7/10/17
**With optional IntelliStart
Rated Voltage of 208/230/60/1
HACR circuit breaker in USA only
All fuses Class RK-5

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Blower Performance Data

Dual Capacity ECM Blower Table without Zoning

MODEL	MAX ESP	AIR FLOW SPEED SETTINGS											
		1	2	3	4	5	6	7	8	9	10	11	12
026	0.50		400	475 G	625	**725 L**	**775**	**850 H**	**950**	**1050**	1175 Aux		
038	0.50	650	700 G	825	950	**1075 L**	**1175**	**1275 H**	**1375**	**1450**	1500 Aux		
038 W/1HP*	0.75	675	850 G	**1025 L**	**1250 H**	**1425**	**1625**	1750	1925	2075 Aux	2225		
049	0.75	675	850 G	1000	1200	**1400 L**	**1600 H**	**1750**	1900	2100	2150 Aux		
064	0.75	700	875 G	1025	1225	1425	**1625 L**	**1775**	**1925 H**	**2125**	2175 Aux		
072	0.75	700	875	1025 G	1225	1425	**1625**	**1775 L**	**1925**	**2125 H**	2175 Aux		

Factory settings are at recommended G-L-H-Aux speed settings 7/24/17
L-H settings MUST be located within boldface CFM range
"Aux" is factory setting for auxiliary heat and must be equal to or above the "H" setting as well as at least the minimum required for the auxiliary heat package
"G" may be located anywhere within the airflow table
CFM is controlled within +/-5% up to the maximum ESP
Max ESP includes allowance for wet coil

Dual Capacity ECM Blower Table with IntelliZone2

MODEL	MAX ESP	AIR FLOW SPEED SETTINGS											
		1	2	3	4	5	6	7	8	9	10	11	12
026	0.50		400 G	475	**625 L 55%**	**725 70%**	**775 85%**	**850 H 100%**	**950**	**1050**	1175 Aux		
038	0.50	650	700 G	**825 L 55%**	**950 70%**	**1075**	**1175 85%**	**1275 H 100%**	**1375**	**1450**	1500 Aux		
038 W/1HP*	0.75	675 G	850 L 55%	1025 70%	1250 85%	1425 H 100%	1625	1750	1925	2075 Aux	2225		
049	0.75	675	850 G	**1000 L 55%**	**1200 70%**	**1400 85%**	**1600 H 100%**	**1750**	1900	2100	2150 Aux		
064	0.75	700	875 G	1025	**1225 L 55%**	**1425 70%**	**1625**	**1775 85%**	**1925 H 100%**	**2125**	2175 Aux		
072	0.75	700	875	1025 G	1225	**1425 L 55%**	**1625 70%**	**1775**	**1925 85%**	**2125 H 100%**	2175 Aux		

Factory settings are at recommended G-L-H-Aux speed settings 9/18/17
L-H settings MUST be located within boldface CFM range
"Aux" is factory setting for auxiliary heat and must be equal to or above the "H" setting as well as at least the minimum required for the auxiliary heat package
"G" may be located anywhere within the airflow table
CFM is controlled within +/-5% up to the maximum ESP
Max ESP includes allowance for wet coil

Dual Capacity ECM Blower Table with IntelliZone2•24V

MODEL	MAX ESP	AIR FLOW SPEED SETTINGS											
		1	2	3	4	5	6	7	8	9	10	11	12
026	0.50		400	475 G	625	**725 L**	**775**	**850 H**	**950**	**1050**	1175 Aux		
038	0.50	650	700 G	825	950	**1075 L**	**1175**	**1275 H**	**1375**	**1450**	1500 Aux		
038 W/1HP*	0.75	675	850 G	**1025 L**	**1250 H**	**1425**	**1625**	1750	1925	2075 Aux	2225		
049	0.75	675	850 G	1000	1200	**1400 L**	**1600 H**	**1750**	1900	2100	2150 Aux		
064	0.75	700	875 G	1025	1225	1425	**1625 L**	**1775**	**1925 H**	**2125**	2175 Aux		
072	0.75	700	875	1025 G	1225	1425	**1625**	**1775 L**	**1925**	**2125 H**	2175 Aux		

Factory settings are at recommended G-L-H-Aux speed settings 7/24/17
L-H settings MUST be located within boldface CFM range or higher
"Aux" is factory setting for auxiliary heat and must be equal to or above the "H" setting as well as at least the minimum required for the auxiliary heat package
"G" may be located anywhere within the airflow table
CFM is controlled within +/-5% up to the maximum ESP
Max ESP includes allowance for wet coil

Blower Performance Data cont.

Setting Blower Speed - Variable Speed ECM

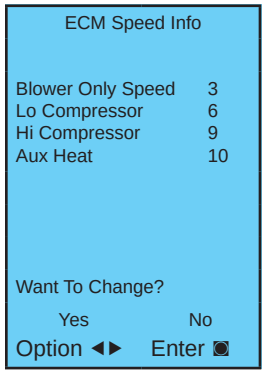
The ABC board's Yellow Config LED will flash the current ECM blower speed selections for "G", low, and high continuously with a short pause in between. The speeds can also be confirmed with the AID Tool under the Setup/ ECM Setup screen. The Aux will not be flashed but can be viewed in the AID Tool. The ECM blower motor speeds can be field adjusted with or without using an AID Tool.

ECM Setup without an AID Tool

The blower speeds for "G", Low (Y1), High (Y2), and Aux can be adjusted directly at the Aurora ABC board which utilizes the push button (SW1) on the ABC board. This procedure is outlined in the ECM Configuration Mode portion of the Aurora 'Base' Control System section. The Aux cannot be set manually without an AID Tool.

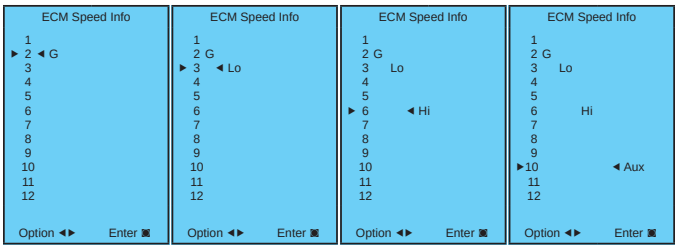
ECM Setup with an AID Tool

A much easier method utilizes the AID Tool to change the airflow using the procedure below. First navigate to the Setup screen and then select ECM Setup. This screen displays the current ECM settings. It allows the technician to enter the setup screens to change the ECM settings. Change the highlighted item using the ◄ and ► buttons and then press the ◙ button to select the item.



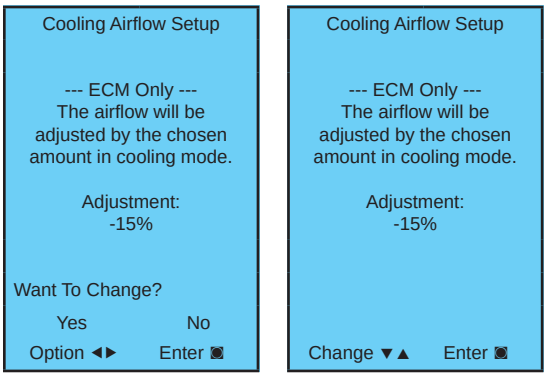
Selecting YES will enter ECM speed setup, while selecting NO will return to the previous screen.

ECM Speed Setup - These screens allow the technician to select the "G", low, high, and auxiliary heat blower speed for the ECM blower motor. Change the highlighted item using the ▲ and ▼ buttons. Press the ◙ button to select the speed.



After the auxiliary heat speed setting is selected the AID Tool will automatically transfer back to the ECM Setup screen.

Cooling Airflow Setup - These screens allow the technician to select -15%, -10%, -5%, None or +5%. Change the adjustment percentage using the ▲ and ▼ buttons. Press the ◙ button to save the change.



Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Operating Limits

Operating Limits	Cooling		Heating	
	(°F)	(°C)	(°F)	(°C)
Air Limits				
Min. Ambient Air	-10	-23.3	-10	-23.3
Rated Ambient Air	80	26.7	70	21.1
Max. Ambient Air	100	37.8	85	29.4
Min. Entering Air	50	10.0	40	4.4
Rated Entering Air db/wb	80.6/66.2	27/19	68	20.0
Max. Entering Air db/wb	110/83	43/28.3	80	26.7
Water Limits				
Min. Entering Water	30	-1.1	30	-1.1
Normal Entering Water	50-110	10-43.3	30-70	-1.1
Max. Entering Water	120	48.9	90	32.2
Nominal Water Flow	1.5 to 3.0 gpm per ton (1.6 to 3.2 l/m per kW)			

NOTE: Minimum/maximum limits are only for start-up conditions, and are meant for bringing the space up to occupancy temperature. Units are not designed to operate at the minimum/maximum conditions on a regular basis. The operating limits are dependent upon three primary factors: 1) water temperature, 2) return air temperature, and 3) ambient temperature. When any of the factors are at the minimum or maximum levels, the other two factors must be at the normal level for proper and reliable unit operation.

Definitions

Abbreviations and Definitions

cfm = airflow, cubic feet/minute
EWT = entering water temperature, Fahrenheit
gpm = water flow in gallons/minute
WPD = water pressure drop, psi and feet of water
EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb)
HC = air heating capacity, MBtu/h
TC = total cooling capacity, MBtu/h
SC = sensible cooling capacity, MBtu/h
kW = total power unit input, kilowatts
HR = total heat of rejection, MBtu/h
HE = total heat of extraction, MBtu/h
HWC = hot water generator capacity, MBtu/h
EER = Energy Efficient Ratio
= Btu output/Watt input
COP = Coefficient of Performance
= Btu output/Btu input
LWT = leaving water temperature, °F
LAT = leaving air temperature, °F
TH = total heating capacity, MBtu/h
LC = latent cooling capacity, MBtu/h
S/T = sensible to total cooling ratio

Reference Calculations

Heating Calculations:	Cooling Calculations:
$LWT = EWT - \frac{HE}{gpm \times 500}$	$LWT = EWT + \frac{HR}{gpm \times 500}$
$LAT = EAT + \frac{HC}{cfm \times 1.08}$	$LAT\ (DB) = EAT\ (DB) - \frac{SC}{cfm \times 1.08}$
	$LC = TC - SC$
$TH = HC + HW$	$S/T = \frac{SC}{TC}$

Notes to Performance Data Tables

The following notes apply to all performance data tables:

- Performance ratings are based on 80°F DB/67°F WB EAT for cooling and 70°F DB EAT for heating.
- Three flow rates are shown for each unit. The lowest flow rate shown is used for geothermal open loop/well water systems with a minimum of 50°F EWT. The middle flow rate shown is the minimum geothermal closed loop flow rate. The highest flow rate shown is optimum for geothermal closed loop systems and the suggested flow rate for boiler/tower applications.
- The hot water generator numbers are based on a flow rate of 0.4 gpm/ton of rated capacity with an EWT of 90°F.
- Entering water temperatures below 40°F assumes 15% antifreeze solution.
- For non-standard EAT conditions, apply the appropriate Correction Factor tables.
- Interpolation between EWT, gpm, and cfm data is permissible, extrapolation is not.

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Correction Factor Tables

Air Flow Corrections (Dual Capacity Part Load)

Airflow		Cooling				Heating		
cfm Per Ton of Clg	% of Nominal	Total Cap	Sens Cap	Power	Heat of Rej	Htg Cap	Power	Heat of Ext
240	60	0.922	0.778	0.956	0.924	0.943	1.239	0.879
275	69	0.944	0.830	0.962	0.944	0.958	1.161	0.914
300	75	0.957	0.866	0.968	0.958	0.968	1.115	0.937
325	81	0.970	0.900	0.974	0.970	0.977	1.075	0.956
350	88	0.982	0.933	0.981	0.980	0.985	1.042	0.972
375	94	0.991	0.968	0.991	0.991	0.993	1.018	0.988
400	**100**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**
425	106	1.007	1.033	1.011	1.008	1.007	0.990	1.010
450	113	1.013	1.065	1.023	1.015	1.012	0.987	1.018
475	119	1.017	1.099	1.037	1.022	1.018	0.984	1.025
500	125	1.020	1.132	1.052	1.027	1.022	0.982	1.031
520	130	1.022	1.159	1.064	1.030	1.025	0.979	1.034

5/30/06

Air Flow Corrections (Dual Capacity Full Load)

Airflow		Cooling				Heating		
cfm Per Ton of Clg	% of Nominal	Total Cap	Sens Cap	Power	Heat of Rej	Htg Cap	Power	Heat of Ext
240	60	0.922	0.786	0.910	0.920	0.943	1.150	0.893
275	69	0.944	0.827	0.924	0.940	0.958	1.105	0.922
300	75	0.959	0.860	0.937	0.955	0.968	1.078	0.942
325	81	0.971	0.894	0.950	0.967	0.977	1.053	0.959
350	88	0.982	0.929	0.964	0.978	0.985	1.031	0.973
375	94	0.992	0.965	0.982	0.990	0.993	1.014	0.988
400	**100**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**
425	106	1.007	1.034	1.020	1.010	1.007	0.990	1.011
450	113	1.012	1.065	1.042	1.018	1.013	0.983	1.020
475	119	1.017	1.093	1.066	1.026	1.018	0.980	1.028
500	125	1.019	1.117	1.092	1.033	1.023	0.978	1.034
520	130	1.020	1.132	1.113	1.038	1.026	0.975	1.038

5/30/06

Cooling Capacity Corrections

Entering Air WB °F	Total Clg Cap	Sensible Cooling Capacity Multipliers - Entering DB °F										Power Input	Heat of Rejection
		60	65	70	75	80	80.6	85	90	95	100		
55	0.898	0.723	0.866	1.048	1.185	*	*	*	*	*	*	0.985	0.913
60	0.912		0.632	0.880	1.078	1.244	1.260	*	*	*	*	0.994	0.927
63	0.945			0.768	0.960	1.150	1.175	*	*	*	*	0.996	0.954
65	0.976			0.694	0.881	1.079	1.085	1.270	*	*	*	0.997	0.972
66.2	0.983			0.655	0.842	1.040	1.060	1.232	*	*	*	0.999	0.986
67	**1.000**			0.616	0.806	**1.000**	1.023	1.193	1.330	1.480	*	**1.000**	**1.000**
70	1.053				0.693	0.879	0.900	1.075	1.205	1.404	*	1.003	1.044
75	1.168					0.687	0.715	0.875	1.040	1.261	1.476	1.007	1.141

NOTE: * Sensible capacity equals total capacity at conditions shown.

3/28/12

Heating Capacity Corrections

Ent Air DB °F	Heating Corrections		
	Htg Cap	Power	Heat of Ext
45	1.062	0.739	1.158
50	1.050	0.790	1.130
55	1.037	0.842	1.096
60	1.025	0.893	1.064
65	1.012	0.945	1.030
68	1.005	0.976	1.012
70	**1.000**	**1.000**	**1.000**
75	0.987	1.048	0.970
80	0.975	1.099	0.930

11/10/09

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Antifreeze Corrections

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
EWT - °F [°C]		**30 [-1.1]**	**90 [32.2]**	**30 [-1.1]**
Water	0	1.000	1.000	1.000
Ethylene Glycol	10	0.973	0.991	1.075
	20	0.943	0.979	1.163
	30	0.917	0.965	1.225
	40	0.890	0.955	1.324
	50	0.865	0.943	1.419
Propylene Glycol	10	0.958	0.981	1.130
	20	0.913	0.969	1.270
	30	0.854	0.950	1.433
	40	0.813	0.937	1.614
	50	0.770	0.922	1.816
Ethanol	10	0.927	0.991	1.242
	20	0.887	0.972	1.343
	30	0.856	0.947	1.383
	40	0.815	0.930	1.523
	50	0.779	0.911	1.639
Methanol	10	0.957	0.986	1.127
	20	0.924	0.970	1.197
	30	0.895	0.951	1.235
	40	0.863	0.936	1.323
	50	0.833	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. Determine the corrected heating and cooling performance at 30°F and 90°F respectively as well as pressure drop at 30°F for the 026 Full Load.

The corrected cooling capacity at 90°F would be: 22,500 MBtu/h x 0.969 = 21,803 MBtu/h

The corrected heating capacity at 30°F would be: 18,700 MBtu/h x 0.913 = 17,073 MBtu/h

The corrected pressure drop at 30°F and 8 gpm would be: 10.8 feet of head x 1.270 = 13.7 feet of head

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Pressure Drop

Dual Capacity

Model	gpm	Pressure Drop (psi)				
		30°F	50°F	70°F	90°F	110°F
026 full load	4	1.4	1.3	1.2	1.1	1.0
	6	2.8	2.6	2.4	2.3	2.1
	8	4.7	4.4	4.1	3.8	3.5
	10	7.0	6.6	6.2	5.8	5.3
026 part load	3	0.8	0.7	0.7	0.7	0.6
	5	2.0	1.8	1.7	1.6	1.5
	7	3.6	3.4	3.2	3.0	2.8
	9	5.8	5.5	5.1	4.8	4.4
038 full load	5	1.2	1.2	1.1	1.0	1.0
	7	2.2	2.1	1.9	1.8	1.7
	9	3.4	3.2	3.0	2.8	2.6
	11	4.9	4.6	4.3	4	3.7
038 part load	4	0.9	0.8	0.8	0.7	0.7
	6	1.7	1.6	1.5	1.4	1.3
	8	2.8	2.6	2.5	2.3	2.1
	10	4.2	3.9	3.7	3.4	3.2
049 full load	6	1.2	1.2	1.1	1.0	1.0
	9	2.4	2.2	2.1	2.0	1.8
	12	3.9	3.6	3.4	3.2	2.9
	15	5.7	5.3	5	4.7	4.3
049 part load	5	0.9	0.9	0.8	0.8	0.7
	8	2.0	1.8	1.7	1.6	1.5
	11	3.4	3.1	2.9	2.8	2.5
	14	5.0	4.7	4.4	4.1	3.8
064 full load	8	1.8	1.7	1.6	1.4	1.3
	12	3.8	3.5	3.3	3.0	2.8
	16	6.5	6.0	5.6	5.2	4.8
	20	9.7	9.1	8.5	8.0	7.4
064 part load	6	1.0	0.9	0.9	0.8	0.8
	10	2.6	2.5	2.3	2.1	2.0
	14	5.0	4.7	4.4	4.1	3.8
	18	8.1	7.6	7.1	6.6	6.1
072 full load	12	3.2	3.0	2.8	2.6	2.4
	15	4.5	4.2	4.0	3.7	3.4
	18	6.0	5.7	5.3	4.9	4.6
	21	7.8	7.3	6.8	6.4	5.9
072 part load	10	2.3	2.1	2.0	1.9	1.7
	13	3.6	3.3	3.0	2.8	2.6
	16	5.0	4.6	4.3	4.0	3.7
	19	6.5	6.2	5.8	5.4	5.0

1/26/12

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

026 - Dual Capacity - Part Load (750 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	3.0	0.8	1.9	Operation not recommended						Operation not recommended						
	5.0	2.0	4.6													
	7.0	3.7	8.7	550	11.0	1.09	7.3	88.5	2.96							
				750	11.4	1.11	7.6	84.1	3.01							
30	3.0	0.8	1.8	Operation not recommended						Operation not recommended						
	5.0	1.9	4.5	550	12.5	1.08	8.8	91.0	3.39	550	18.5	12.7	0.68	0.57	20.5	32.6
				750	13.0	1.10	9.2	86.0	3.44	750	18.8	13.9	0.74	0.60	20.9	31.5
	7.0	3.6	8.4	550	13.3	1.10	9.5	92.3	3.52	550	18.6	12.7	0.68	0.55	20.5	33.8
				750	13.8	1.13	9.9	87.1	3.58	750	19.1	13.9	0.73	0.58	21.1	33.0
40	3.0	0.8	1.8	Operation not recommended						Operation not recommended						
	5.0	1.9	4.3	550	14.6	1.09	10.9	94.5	3.91	550	19.4	14.0	0.72	0.63	21.5	30.8
				750	15.1	1.11	11.3	88.6	3.97	750	19.7	15.3	0.77	0.66	22.0	29.9
	7.0	3.5	8.2	550	15.4	1.12	11.5	95.9	4.02	550	19.5	14.0	0.72	0.61	21.6	31.9
				750	15.9	1.14	12.0	89.6	4.09	750	20.0	15.3	0.77	0.64	22.2	31.2
50	3.0	0.7	1.7	550	16.1	1.11	12.3	97.1	4.26	550	19.8	14.6	0.74	0.71	22.2	27.8
				750	16.6	1.12	12.8	90.5	4.33	750	20.3	16.2	0.80	0.72	22.8	28.0
	5.0	1.8	4.2	550	16.7	1.11	12.9	98.1	4.41	550	20.0	14.7	0.74	0.69	22.3	28.8
				750	17.2	1.12	13.3	91.2	4.49	750	20.5	16.3	0.79	0.71	22.9	29.0
	7.0	3.4	7.9	550	17.5	1.13	13.6	99.4	4.51	550	20.3	15.1	0.74	0.69	22.6	29.5
				750	18.0	1.15	14.1	92.2	4.59	750	20.8	16.7	0.80	0.70	23.2	29.8
60	3.0	0.7	1.7	550	18.1	1.11	14.3	100.5	4.77	550	18.7	14.0	0.75	0.82	21.5	23.0
				750	18.5	1.12	14.7	92.9	4.85	750	19.3	15.5	0.81	0.83	22.1	23.2
	5.0	1.8	4.1	550	18.8	1.11	15.0	101.7	4.97	550	18.9	14.1	0.75	0.79	21.6	23.8
				750	19.3	1.12	15.4	93.8	5.06	750	19.4	15.6	0.80	0.81	22.2	24.0
	7.0	3.3	7.6	550	19.5	1.13	15.6	102.8	5.03	550	19.2	14.5	0.75	0.79	21.9	24.4
				750	19.9	1.14	16.0	94.6	5.12	750	19.8	16.0	0.81	0.80	22.5	24.6
70	3.0	0.7	1.6	550	20.1	1.11	16.2	103.8	5.27	550	17.7	13.4	0.76	0.92	20.8	19.3
				750	20.5	1.12	16.6	95.3	5.37	750	18.2	14.8	0.81	0.94	21.4	19.4
	5.0	1.7	3.9	550	20.9	1.11	17.1	105.2	5.53	550	17.9	13.5	0.75	0.90	20.9	19.9
				750	21.3	1.11	17.5	96.3	5.63	750	18.4	14.9	0.81	0.91	21.5	20.1
	7.0	3.2	7.4	550	21.5	1.13	17.6	106.2	5.55	550	18.2	13.8	0.76	0.89	21.2	20.4
				750	21.8	1.13	18.0	97.0	5.66	750	18.7	15.3	0.82	0.91	21.7	20.6
80	3.0	0.7	1.6	550	22.2	1.14	18.3	107.3	5.71	550	16.7	12.8	0.77	1.05	20.3	15.9
				750	22.5	1.13	18.6	97.7	5.81	750	17.2	14.2	0.83	1.07	20.9	16.0
	5.0	1.6	3.8	550	23.2	1.13	19.4	109.1	6.02	550	16.9	12.9	0.76	1.03	20.4	16.5
				750	23.5	1.12	19.7	99.0	6.13	750	17.4	14.3	0.82	1.05	20.9	16.6
	7.0	3.1	7.1	550	23.6	1.15	19.6	109.6	5.98	550	17.2	13.2	0.77	1.02	20.6	16.9
				750	23.8	1.14	19.9	99.4	6.09	750	17.6	14.6	0.83	1.04	21.2	17.0
90	3.0	0.7	1.5	550	24.3	1.16	20.3	110.8	6.12	550	15.8	12.3	0.78	1.19	19.8	13.3
				750	24.5	1.15	20.5	100.2	6.24	750	16.2	13.6	0.84	1.21	20.3	13.4
	5.0	1.6	3.7	550	25.5	1.15	21.6	113.0	6.49	550	15.9	12.3	0.78	1.16	19.9	13.8
				750	25.7	1.14	21.8	101.7	6.62	750	16.4	13.7	0.83	1.18	20.4	13.9
	7.0	3.0	6.9	550	25.6	1.18	21.6	113.1	6.39	550	16.2	12.7	0.78	1.15	20.1	14.1
				750	25.7	1.16	21.8	101.8	6.52	750	16.6	14.0	0.84	1.17	20.6	14.2
100	3.0	0.6	1.5	Operation not recommended						Operation not recommended						
	5.0	1.5	3.5							550	14.9	11.8	0.79	1.33	19.5	11.3
										750	15.4	13.0	0.85	1.35	20.0	11.3
	7.0	2.9	6.6							550	15.2	12.1	0.80	1.32	19.7	11.5
										750	15.6	13.4	0.86	1.34	20.2	11.6
110	3.0	0.6	1.4							Operation not recommended						
	5.0	1.5	3.4							550	14.0	11.2	0.80	1.50	19.1	9.3
										750	14.4	12.4	0.87	1.53	19.6	9.4
	7.0	2.8	6.4							550	14.2	11.5	0.81	1.49	19.3	9.6
										750	14.6	12.7	0.87	1.52	19.8	9.6
120	3.0	0.6	1.3							Operation not recommended						
	5.0	1.4	3.3							550	13.1	11.7	0.89	1.71	18.9	7.6
										750	13.3	12.7	0.95	1.75	19.3	7.6
	7.0	2.7	6.1							550	13.2	11.7	0.89	1.65	18.8	8.0
										750	13.4	12.7	0.94	1.71	19.3	7.9

7/29/17

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

026 - Dual Capacity - Full Load (950 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	4.0	1.4	3.2	Operation not recommended						Operation not recommended						
	6.0	2.8	6.5													
	8.0	4.8	11.1	750	15.5	1.41	10.7	89.2	3.21							
				950	16.0	1.46	11.0	85.6	3.22							
30	4.0	1.4	3.2	Operation not recommended						Operation not recommended						
	6.0	2.7	6.3	750	17.8	1.43	12.9	92.0	3.65	750	23.0	16.8	0.73	0.96	26.3	24.1
				950	18.4	1.48	13.3	87.9	3.64	950	23.4	18.4	0.78	1.01	26.9	23.2
	8.0	4.7	10.8	750	18.1	1.45	13.2	92.4	3.67	750	23.2	16.8	0.73	0.93	26.3	24.9
				950	18.7	1.49	13.6	88.3	3.68	950	23.7	18.4	0.77	0.98	27.1	24.3
40	4.0	1.3	3.1	Operation not recommended						Operation not recommended						
	6.0	2.6	6.1	750	20.4	1.49	15.3	95.2	4.02	750	24.9	18.1	0.73	1.06	28.5	23.6
				950	21.0	1.52	15.8	90.5	4.05	950	25.4	19.8	0.78	1.11	29.1	22.9
	8.0	4.5	10.4	750	20.8	1.50	15.7	95.7	4.06	750	25.1	18.1	0.72	1.03	28.6	24.5
				950	21.5	1.53	16.2	90.9	4.10	950	25.7	19.8	0.77	1.07	29.3	23.9
50	4.0	1.3	3.0	750	22.1	1.51	17.0	97.3	4.31	750	25.4	17.7	0.70	1.21	29.5	21.0
				950	22.8	1.53	17.6	92.2	4.37	950	26.7	19.6	0.74	1.27	31.1	21.0
	6.0	2.6	5.9	750	23.0	1.54	17.7	98.3	4.36	750	25.9	17.9	0.69	1.14	29.8	22.7
				950	23.7	1.56	18.4	93.1	4.44	950	27.3	19.9	0.73	1.20	31.4	22.8
	8.0	4.4	10.1	750	23.5	1.56	18.2	99.0	4.42	750	26.2	19.1	0.73	1.11	30.0	23.5
				950	24.2	1.58	18.8	93.6	4.50	950	27.6	21.2	0.77	1.17	31.6	23.6
60	4.0	1.2	2.9	750	24.4	1.56	19.1	100.1	4.58	750	24.3	17.3	0.71	1.32	28.8	18.4
				950	25.2	1.57	19.8	94.5	4.70	950	25.5	19.3	0.76	1.38	30.2	18.5
	6.0	2.5	5.7	750	25.5	1.60	20.0	101.5	4.66	750	24.9	17.5	0.71	1.25	29.1	19.8
				950	26.3	1.61	20.8	95.7	4.78	950	26.0	19.4	0.75	1.31	30.5	19.9
	8.0	4.2	9.8	750	26.1	1.62	20.6	102.2	4.72	750	25.1	18.5	0.74	1.22	29.3	20.5
				950	27.0	1.63	21.4	96.3	4.86	950	26.3	20.5	0.78	1.28	30.7	20.6
70	4.0	1.2	2.8	750	26.7	1.61	21.2	102.9	4.85	750	23.2	17.0	0.73	1.43	28.0	16.2
				950	27.6	1.61	22.1	96.9	5.02	950	24.2	18.9	0.78	1.48	29.2	16.3
	6.0	2.4	5.5	750	28.0	1.66	22.4	104.6	4.94	750	23.8	17.2	0.72	1.37	28.4	17.4
				950	29.0	1.66	23.3	98.2	5.10	950	24.8	19.0	0.77	1.41	29.6	17.5
	8.0	4.1	9.5	750	28.8	1.68	23.0	105.5	5.00	750	24.0	17.9	0.74	1.33	28.6	18.0
				950	29.7	1.68	24.0	99.0	5.19	950	25.1	19.8	0.79	1.39	29.8	18.1
80	4.0	1.2	2.7	750	29.3	1.70	23.5	106.1	5.05	750	22.0	16.7	0.76	1.57	27.4	14.0
				950	30.3	1.69	24.5	99.5	5.26	950	22.9	18.6	0.81	1.62	28.4	14.1
	6.0	2.3	5.4	750	31.0	1.77	24.9	108.2	5.13	750	22.6	17.0	0.75	1.52	27.8	14.9
				950	32.0	1.75	26.0	101.2	5.36	950	23.5	18.8	0.80	1.56	28.9	15.0
	8.0	4.0	9.2	750	31.9	1.79	25.7	109.3	5.21	750	22.9	17.4	0.76	1.49	27.9	15.4
				950	32.9	1.76	26.9	102.1	5.47	950	23.8	19.2	0.81	1.53	29.0	15.5
90	4.0	1.1	2.6	750	31.9	1.79	25.8	109.4	5.22	750	20.9	16.5	0.79	1.72	26.7	12.1
				950	33.0	1.76	27.0	102.2	5.49	950	21.6	18.4	0.85	1.76	27.6	12.3
	6.0	2.2	5.2	750	33.9	1.87	27.5	111.8	5.31	750	21.5	16.7	0.78	1.67	27.2	12.9
				950	35.1	1.84	28.8	104.2	5.60	950	22.3	18.6	0.83	1.71	28.1	13.0
	8.0	3.8	8.8	750	34.9	1.90	28.5	113.1	5.40	750	21.7	16.9	0.78	1.64	27.3	13.2
				950	36.2	1.85	29.8	105.2	5.73	950	22.5	18.7	0.83	1.68	28.2	13.4
100	4.0	1.1	2.5	Operation not recommended						Operation not recommended						
	6.0	2.2	5.0							750	20.5	16.6	0.81	1.87	26.8	11.0
										950	21.1	18.5	0.87	1.89	27.6	11.2
	8.0	3.7	8.5							750	20.7	16.6	0.80	1.83	26.9	11.3
										950	21.3	18.4	0.86	1.86	27.7	11.5
110	4.0	1.0	2.4							Operation not recommended						
	6.0	2.1	4.8							750	19.4	16.5	0.85	2.06	26.5	9.4
										950	20.0	18.4	0.92	2.08	27.1	9.6
	8.0	3.5	8.2							750	19.6	16.3	0.83	2.02	26.5	9.7
										950	20.2	18.0	0.89	2.05	27.2	9.9
120	4.0	1.0	2.3							Operation not recommended						
	6.0	2.0	4.6							750	18.3	15.9	0.87	2.27	26.0	8.0
										950	18.6	17.3	0.93	2.33	26.5	8.0
	8.0	3.4	7.9							750	18.4	15.9	0.86	2.20	25.9	8.4
										950	18.8	17.3	0.92	2.27	26.6	8.3

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

038 - Dual Capacity - Part Load (1150 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	4.0	0.9	2.2	Operation not recommended						Operation not recommended						
	6.0	1.8	4.1													
	8.0	2.9	6.8	1000	14.7	1.54	9.4	83.6	2.79							
				1150	15.3	1.79	9.2	82.3	2.50							
30	4.0	0.9	2.1	Operation not recommended						Operation not recommended						
	6.0	1.7	3.9	1000	16.3	1.49	11.3	85.1	3.22	1000	23.4	16.4	0.70	0.76	25.9	30.9
				1150	17.0	1.53	11.8	83.7	3.26	1150	23.7	18.0	0.76	0.80	26.5	29.8
	8.0	2.8	6.6	1000	17.4	1.53	12.2	86.1	3.34	1000	23.5	16.4	0.70	0.73	26.0	32.0
				1150	18.1	1.57	12.8	84.6	3.39	1150	24.1	18.0	0.75	0.77	26.7	31.2
40	4.0	0.9	2.0	Operation not recommended						Operation not recommended						
	6.0	1.7	3.8	1000	19.1	1.53	13.9	87.7	3.66	1000	27.1	19.3	0.71	0.85	29.9	32.0
				1150	19.7	1.56	14.4	85.9	3.71	1150	27.6	21.1	0.77	0.89	30.6	31.1
	8.0	2.8	6.4	1000	20.1	1.57	14.8	88.6	3.76	1000	27.3	19.3	0.71	0.82	30.1	33.2
				1150	20.8	1.60	15.4	86.7	3.82	1150	27.9	21.1	0.76	0.86	30.8	32.5
50	4.0	0.9	2.0	1000	21.1	1.57	15.7	89.5	3.93	1000	30.1	21.2	0.71	0.96	33.3	31.2
				1150	21.7	1.59	16.3	87.5	4.00	1150	30.9	23.5	0.76	0.98	34.2	31.5
	6.0	1.6	3.7	1000	21.8	1.57	16.4	90.2	4.07	1000	30.3	21.3	0.70	0.94	33.5	32.4
				1150	22.5	1.59	17.0	88.1	4.14	1150	31.2	23.6	0.76	0.96	34.4	32.6
	8.0	2.7	6.2	1000	22.8	1.61	17.3	91.1	4.16	1000	30.8	21.9	0.71	0.93	34.0	33.2
				1150	23.5	1.63	17.9	88.9	4.23	1150	31.7	24.2	0.76	0.95	34.9	33.5
60	4.0	0.8	1.9	1000	24.1	1.59	18.6	92.3	4.43	1000	28.3	21.1	0.75	1.10	32.0	25.6
				1150	24.7	1.60	19.2	89.9	4.51	1150	29.1	23.3	0.80	1.12	32.9	25.8
	6.0	1.6	3.6	1000	25.0	1.59	19.6	93.2	4.62	1000	28.5	21.2	0.74	1.07	32.2	26.6
				1150	25.6	1.60	20.2	90.6	4.70	1150	29.3	23.5	0.80	1.10	33.1	26.8
	8.0	2.6	6.0	1000	25.9	1.62	20.4	94.0	4.68	1000	29.0	21.8	0.75	1.06	32.6	27.2
				1150	26.5	1.63	20.9	91.3	4.76	1150	29.8	24.1	0.81	1.09	33.5	27.5
70	4.0	0.8	1.8	1000	27.1	1.61	21.6	95.1	4.92	1000	26.5	21.0	0.79	1.24	30.7	21.3
				1150	27.6	1.61	22.1	92.2	5.01	1150	27.2	23.2	0.85	1.27	31.5	21.5
	6.0	1.5	3.5	1000	28.3	1.61	22.8	96.2	5.16	1000	26.7	21.1	0.79	1.21	30.9	22.1
				1150	28.8	1.61	23.3	93.2	5.26	1150	27.5	23.3	0.85	1.23	31.7	22.2
	8.0	2.5	5.8	1000	29.0	1.64	23.4	96.8	5.18	1000	27.2	21.6	0.80	1.20	31.3	22.6
				1150	29.5	1.64	23.9	93.8	5.28	1150	27.9	23.9	0.86	1.22	32.1	22.8
80	4.0	0.8	1.8	1000	30.6	1.63	25.0	98.3	5.50	1000	25.3	20.6	0.81	1.43	30.2	17.7
				1150	31.0	1.62	25.5	95.0	5.61	1150	26.1	22.9	0.88	1.46	31.0	17.8
	6.0	1.4	3.3	1000	32.1	1.62	26.5	99.7	5.80	1000	25.6	20.8	0.81	1.40	30.3	18.3
				1150	32.4	1.61	26.9	96.1	5.91	1150	26.3	23.0	0.87	1.42	31.1	18.5
	8.0	2.4	5.6	1000	32.5	1.65	26.9	100.1	5.76	1000	26.0	21.3	0.82	1.38	30.7	18.8
				1150	32.8	1.64	27.2	96.4	5.87	1150	26.7	23.6	0.88	1.41	31.5	19.0
90	4.0	0.7	1.7	1000	34.1	1.65	28.5	101.6	6.07	1000	24.2	20.3	0.84	1.62	29.8	14.9
				1150	34.4	1.63	28.8	97.7	6.19	1150	24.9	22.5	0.90	1.65	30.5	15.1
	6.0	1.4	3.2	1000	35.9	1.63	30.3	103.2	6.44	1000	24.4	20.5	0.84	1.58	29.8	15.5
				1150	36.1	1.61	30.6	99.1	6.57	1150	25.1	22.6	0.90	1.61	30.6	15.6
	8.0	2.3	5.4	1000	36.0	1.67	30.3	103.4	6.34	1000	24.8	21.0	0.84	1.57	30.2	15.9
				1150	36.2	1.64	30.6	99.1	6.47	1150	25.5	23.2	0.91	1.60	31.0	16.0
100	4.0	0.7	1.7	Operation not recommended						Operation not recommended						
	6.0	1.3	3.1							1000	22.8	19.8	0.87	1.81	28.9	12.6
										1150	23.4	21.9	0.93	1.84	29.7	12.7
	8.0	2.2	5.2							1000	23.2	20.3	0.87	1.79	29.3	12.9
										1150	23.8	22.4	0.94	1.83	30.0	13.0
110	4.0	0.7	1.6							Operation not recommended						
	6.0	1.3	3.0							1000	21.1	19.1	0.90	2.04	28.1	10.4
										1150	21.7	21.1	0.97	2.08	28.8	10.5
	8.0	2.2	5.0							1000	21.5	19.5	0.91	2.02	28.4	10.6
										1150	22.1	21.6	0.98	2.06	29.1	10.7
120	4.0	0.7	1.5							Operation not recommended						
	6.0	1.2	2.9							1000	19.6	19.0	0.97	2.32	27.5	8.4
										1150	19.9	20.6	1.04	2.38	28.0	8.4
	8.0	2.1	4.8							1000	19.7	19.0	0.96	2.25	27.4	8.8
										1150	20.1	20.6	1.02	2.32	28.1	8.7

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Performance Data cont.

038 - Dual Capacity - Full Load (1300 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	5.0	1.3	3.0	Operation not recommended						Operation not recommended						
	7.0	2.2	5.1													
	9.0	3.5	8.1	1100	22.4	2.01	15.5	88.9	3.26							
				1300	23.1	2.08	16.1	86.5	3.27							
30	5.0	1.2	2.9	Operation not recommended						Operation not recommended						
	7.0	2.2	5.0	1100	25.4	2.11	18.3	91.4	3.54	1100	32.5	22.7	0.70	1.28	36.9	25.3
				1300	26.2	2.17	18.8	88.6	3.53	1300	33.0	24.8	0.75	1.35	37.6	24.4
	9.0	3.4	7.9	1100	25.9	2.13	18.6	91.8	3.56	1100	32.7	22.7	0.70	1.25	36.9	26.2
				1300	26.7	2.19	19.2	89.0	3.57	1300	33.5	24.8	0.74	1.31	37.9	25.6
40	5.0	1.2	2.8	Operation not recommended						Operation not recommended						
	7.0	2.1	4.8	1100	28.5	2.17	21.1	94.0	3.85	1100	35.5	24.9	0.70	1.44	40.5	24.6
				1300	29.4	2.22	21.8	90.9	3.88	1300	36.2	27.2	0.75	1.51	41.4	23.9
	9.0	3.3	7.6	1100	29.1	2.19	21.6	94.5	3.89	1100	35.8	24.9	0.69	1.40	40.6	25.6
				1300	30.0	2.24	22.4	91.4	3.93	1300	36.6	27.2	0.74	1.47	41.6	25.0
50	5.0	1.2	2.7	1100	30.5	2.18	23.0	95.6	4.09	1100	36.6	24.6	0.67	1.68	42.4	21.8
				1300	31.4	2.21	23.8	92.3	4.15	1300	38.6	27.4	0.71	1.77	44.6	21.8
	7.0	2.0	4.7	1100	31.6	2.23	24.0	96.6	4.14	1100	37.4	24.9	0.67	1.58	42.8	23.6
				1300	32.6	2.26	24.9	93.2	4.22	1300	39.3	27.7	0.70	1.66	45.0	23.7
	9.0	3.2	7.4	1100	32.3	2.25	24.6	97.2	4.20	1100	37.8	26.6	0.70	1.54	43.0	24.5
				1300	33.3	2.28	25.5	93.7	4.27	1300	39.8	29.5	0.74	1.62	45.3	24.5
60	5.0	1.1	2.6	1100	33.7	2.25	26.0	98.4	4.39	1100	36.3	25.1	0.69	1.83	42.5	19.8
				1300	34.8	2.27	27.1	94.8	4.50	1300	38.0	28.0	0.74	1.91	44.5	19.9
	7.0	2.0	4.5	1100	35.2	2.31	27.3	99.7	4.46	1100	37.1	25.4	0.69	1.74	43.0	21.3
				1300	36.4	2.33	28.4	95.9	4.58	1300	38.9	28.2	0.73	1.81	45.0	21.4
	9.0	3.1	7.2	1100	36.1	2.34	28.1	100.4	4.52	1100	37.5	26.8	0.71	1.70	43.3	22.1
				1300	37.3	2.35	29.3	96.6	4.65	1300	39.3	29.7	0.76	1.77	45.4	22.2
70	5.0	1.1	2.5	1100	37.0	2.32	29.1	101.1	4.68	1100	35.9	25.7	0.72	1.98	42.6	18.1
				1300	38.3	2.32	30.4	97.3	4.84	1300	37.5	28.6	0.76	2.06	44.5	18.2
	7.0	1.9	4.4	1100	38.9	2.39	30.7	102.7	4.76	1100	36.8	26.0	0.71	1.90	43.3	19.4
				1300	40.2	2.39	32.0	98.6	4.92	1300	38.4	28.8	0.75	1.96	45.1	19.5
	9.0	3.0	6.9	1100	39.9	2.42	31.6	103.6	4.82	1100	37.2	27.0	0.73	1.85	43.5	20.1
				1300	41.3	2.41	33.0	99.4	5.01	1300	38.9	29.9	0.77	1.93	45.4	20.2
80	5.0	1.1	2.5	1100	39.9	2.42	31.6	103.6	4.83	1100	34.1	24.2	0.71	2.15	41.5	15.9
				1300	41.3	2.40	33.1	99.4	5.04	1300	35.5	26.9	0.76	2.21	43.0	16.0
	7.0	1.8	4.2	1100	42.2	2.52	33.6	105.5	4.91	1100	35.1	24.5	0.70	2.07	42.1	16.9
				1300	43.6	2.49	35.1	101.1	5.13	1300	36.5	27.1	0.74	2.13	43.8	17.1
	9.0	2.9	6.7	1100	43.4	2.55	34.7	106.5	4.99	1100	35.4	25.1	0.71	2.03	42.4	17.5
				1300	44.9	2.51	36.3	102.0	5.24	1300	36.9	27.8	0.75	2.09	44.0	17.6
90	5.0	1.0	2.4	1100	42.8	2.52	34.2	106.0	4.97	1100	32.4	22.6	0.70	2.31	40.3	14.0
				1300	44.3	2.49	35.8	101.6	5.23	1300	33.5	25.2	0.75	2.37	41.6	14.1
	7.0	1.8	4.1	1100	45.5	2.64	36.5	108.3	5.05	1100	33.3	22.9	0.69	2.25	41.0	14.8
				1300	47.1	2.59	38.3	103.5	5.33	1300	34.6	25.4	0.74	2.31	42.4	15.0
	9.0	2.8	6.5	1100	46.9	2.68	37.8	109.5	5.14	1100	33.7	23.1	0.69	2.21	41.3	15.2
				1300	48.5	2.61	39.6	104.6	5.45	1300	35.0	25.6	0.73	2.26	42.7	15.5
100	5.0	1.0	2.3	Operation not recommended						Operation not recommended						
	7.0	1.7	3.9							1100	31.9	23.6	0.74	2.56	40.7	12.4
										1300	33.0	26.2	0.80	2.60	41.8	12.7
	9.0	2.7	6.2							1100	32.3	23.6	0.73	2.52	40.9	12.8
										1300	33.3	26.1	0.78	2.56	42.0	13.0
110	5.0	1.0	2.2							Operation not recommended						
	7.0	1.6	3.8							1100	30.5	24.4	0.80	2.88	40.3	10.6
										1300	31.3	27.1	0.86	2.90	41.3	10.8
	9.0	2.6	6.0							1100	30.8	24.0	0.78	2.83	40.5	10.9
										1300	31.7	26.5	0.84	2.86	41.4	11.1
120	5.0	0.9	2.1							Operation not recommended						
	7.0	1.6	3.6							1100	28.8	23.8	0.83	3.18	39.6	9.0
										1300	29.3	25.8	0.88	3.26	40.4	9.0
	9.0	2.5	5.8							1100	29.0	23.8	0.82	3.08	39.5	9.4
										1300	29.6	25.8	0.87	3.18	40.5	9.3

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Performance Data cont.

049 - Dual Capacity - Part Load (1450 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	5.0	0.9	2.2	Operation not recommended						Operation not recommended						
	8.0	2.0	4.6													
	11.0	3.4	7.8	1250	21.2	2.10	14.1	85.7	2.96							
				1450	22.0	2.13	14.7	84.1	3.02							
30	5.0	0.9	2.1	Operation not recommended						Operation not recommended						
	8.0	1.9	4.5	1250	24.5	2.13	17.2	88.1	3.36	1250	33.8	23.4	0.69	1.05	37.4	32.3
				1450	25.2	2.15	17.9	86.1	3.44	1450	34.4	25.5	0.74	1.10	38.1	31.2
	11.0	3.3	7.6	1250	25.1	2.15	17.8	88.6	3.42	1250	34.0	23.4	0.69	1.02	37.5	33.5
				1450	26.0	2.18	18.6	86.6	3.50	1450	34.8	25.5	0.73	1.07	38.5	32.7
40	5.0	0.9	2.0	Operation not recommended						Operation not recommended						
	8.0	1.9	4.3	1250	28.3	2.16	20.9	90.9	3.83	1250	36.6	26.3	0.72	1.18	40.6	30.9
				1450	29.3	2.16	21.9	88.7	3.96	1450	37.2	28.8	0.77	1.24	41.5	30.0
	11.0	3.2	7.4	1250	29.2	2.18	21.8	91.6	3.93	1250	36.8	26.3	0.72	1.15	40.8	32.1
				1450	30.2	2.19	22.7	89.3	4.04	1450	37.7	28.8	0.76	1.20	41.8	31.4
50	5.0	0.9	2.0	1250	29.7	2.12	22.5	92.0	4.11	1250	38.2	27.0	0.71	1.56	43.6	24.6
				1450	30.7	2.12	23.4	89.6	4.24	1450	39.4	31.9	0.81	1.62	45.0	24.3
	8.0	1.8	4.2	1250	32.1	2.19	24.6	93.7	4.29	1250	39.1	27.2	0.69	1.35	43.7	29.0
				1450	33.3	2.18	25.9	91.3	4.48	1450	40.3	32.0	0.79	1.41	45.1	28.5
	11.0	3.1	7.2	1250	33.3	2.21	25.8	94.7	4.42	1250	39.3	27.2	0.69	1.27	43.6	31.0
				1450	34.4	2.21	26.8	91.9	4.57	1450	40.5	32.0	0.79	1.33	45.1	30.4
60	5.0	0.8	1.9	1250	32.3	2.17	24.9	94.0	4.37	1250	37.5	26.7	0.71	1.74	43.4	21.6
				1450	33.5	2.16	26.1	91.4	4.55	1450	38.7	31.4	0.81	1.81	44.9	21.3
	8.0	1.8	4.1	1250	35.0	2.22	27.4	95.9	4.61	1250	38.1	26.9	0.70	1.54	43.4	24.7
				1450	36.4	2.20	28.9	93.2	4.85	1450	39.3	31.6	0.80	1.61	44.8	24.4
	11.0	3.0	6.9	1250	36.5	2.24	28.8	97.0	4.76	1250	38.5	26.9	0.70	1.46	43.5	26.3
				1450	37.8	2.22	30.2	94.1	4.99	1450	39.7	31.7	0.80	1.53	44.9	26.0
70	5.0	0.8	1.8	1250	35.0	2.22	27.4	95.9	4.62	1250	36.8	26.3	0.72	1.92	43.3	19.2
				1450	36.3	2.19	28.9	93.2	4.86	1450	37.9	31.0	0.82	2.01	44.8	18.9
	8.0	1.7	3.9	1250	38.0	2.26	30.3	98.1	4.93	1250	37.1	26.6	0.72	1.74	43.1	21.4
				1450	39.4	2.22	31.9	95.2	5.21	1450	38.3	31.2	0.82	1.81	44.5	21.1
	11.0	2.9	6.7	1250	39.7	2.28	31.9	99.4	5.10	1250	37.8	26.7	0.71	1.66	43.4	22.8
				1450	41.2	2.23	33.6	96.3	5.41	1450	38.9	31.4	0.81	1.72	44.8	22.6
80	5.0	0.8	1.8	1250	37.7	2.25	30.0	97.9	4.90	1250	34.6	25.5	0.74	2.15	41.9	16.1
				1450	39.2	2.21	31.6	95.0	5.18	1450	35.7	30.0	0.84	2.25	43.4	15.9
	8.0	1.6	3.8	1250	40.9	2.28	33.2	100.3	5.27	1250	34.8	25.8	0.74	2.00	41.6	17.4
				1450	42.6	2.22	35.0	97.2	5.62	1450	35.8	30.3	0.85	2.08	42.9	17.2
	11.0	2.8	6.5	1250	43.0	2.30	35.2	101.9	5.47	1250	35.6	26.0	0.73	1.91	42.1	18.6
				1450	44.7	2.24	37.1	98.6	5.85	1450	36.7	30.5	0.83	1.99	43.5	18.4
90	5.0	0.7	1.7	1250	40.4	2.29	32.6	99.9	5.18	1250	32.4	24.7	0.76	2.39	40.6	13.6
				1450	42.0	2.24	34.3	96.8	5.50	1450	33.5	29.0	0.87	2.49	41.9	13.5
	8.0	1.6	3.7	1250	43.9	2.30	36.1	102.5	5.60	1250	32.4	25.0	0.77	2.27	40.2	14.3
				1450	45.7	2.23	38.2	99.2	6.03	1450	33.3	29.4	0.88	2.35	41.3	14.2
	11.0	2.7	6.2	1250	46.3	2.33	38.4	104.3	5.84	1250	33.3	25.3	0.76	2.17	40.7	15.4
				1450	48.3	2.25	40.6	100.8	6.29	1450	34.4	29.7	0.86	2.27	42.1	15.2
100	5.0	0.7	1.7	Operation not recommended						Operation not recommended						
	8.0	1.5	3.5							1250	30.0	23.9	0.80	2.58	38.8	11.6
										1450	30.9	28.1	0.91	2.68	40.0	11.5
	11.0	2.6	6.0							1250	31.1	24.2	0.78	2.48	39.6	12.5
										1450	32.0	28.4	0.89	2.59	40.9	12.4
110	5.0	0.7	1.6							Operation not recommended						
	8.0	1.5	3.4							1250	27.6	22.7	0.83	2.89	37.4	9.5
										1450	28.5	26.7	0.94	3.01	38.7	9.5
	11.0	2.5	5.8							1250	28.9	23.1	0.80	2.80	38.4	10.3
										1450	29.7	27.2	0.92	2.92	39.6	10.2
120	5.0	0.7	1.5							Operation not recommended						
	8.0	1.4	3.3							1250	25.9	23.6	0.91	3.31	37.2	7.8
										1450	26.3	25.6	0.97	3.40	37.9	7.8
	11.0	2.4	5.6							1250	26.1	23.6	0.91	3.20	37.0	8.1
										1450	26.6	25.6	0.96	3.31	37.9	8.1

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Performance Data cont.

049 - Dual Capacity - Full Load (1700 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	6.0	1.3	3.0	Operation not recommended						Operation not recommended						
	9.0	2.5	5.7													
	12.0	4.0	9.2	1500	32.7	2.91	22.8	90.2	3.30							
				1700	33.9	2.95	23.8	88.5	3.37							
30	6.0	1.2	2.9	Operation not recommended						Operation not recommended						
	9.0	2.4	5.5	1500	37.0	2.99	26.8	92.8	3.63	1500	45.9	31.6	0.69	1.82	52.1	25.2
				1700	38.1	3.01	27.9	90.8	3.71	1700	46.7	34.5	0.74	1.92	53.2	24.3
	12.0	3.9	8.9	1500	37.9	3.01	27.6	93.4	3.69	1500	46.2	31.6	0.68	1.77	52.2	26.1
				1700	39.3	3.05	28.9	91.4	3.77	1700	47.3	34.5	0.73	1.85	53.6	25.5
40	6.0	1.2	2.8	Operation not recommended						Operation not recommended						
	9.0	2.3	5.3	1500	41.3	3.10	30.8	95.5	3.91	1500	49.4	34.2	0.69	2.04	56.4	24.3
				1700	42.8	3.10	32.2	93.3	4.05	1700	50.4	37.4	0.74	2.14	57.6	23.6
	12.0	3.7	8.7	1500	42.7	3.12	32.0	96.4	4.01	1500	49.8	34.2	0.69	1.98	56.6	25.2
				1700	44.1	3.14	33.4	94.0	4.12	1700	50.9	37.4	0.73	2.07	58.0	24.6
50	6.0	1.2	2.7	1500	42.4	3.11	31.8	96.2	4.00	1500	51.5	33.9	0.66	2.66	60.6	19.4
				1700	43.8	3.11	33.2	93.8	4.13	1700	53.1	40.0	0.75	2.77	62.6	19.2
	9.0	2.2	5.2	1500	45.7	3.21	34.8	98.2	4.18	1500	52.7	34.1	0.65	2.30	60.5	22.9
				1700	47.5	3.19	36.6	95.9	4.36	1700	54.3	40.2	0.74	2.41	62.5	22.5
	12.0	3.6	8.4	1500	47.5	3.23	36.5	99.3	4.31	1500	53.0	34.1	0.64	2.17	60.4	24.4
				1700	49.0	3.23	38.0	96.7	4.45	1700	54.6	40.2	0.74	2.28	62.4	23.9
60	6.0	1.1	2.6	1500	46.8	3.26	35.7	98.9	4.20	1500	50.4	33.7	0.67	2.85	60.1	17.7
				1700	48.5	3.24	37.4	96.4	4.38	1700	52.0	39.7	0.76	2.98	62.1	17.5
	9.0	2.2	5.0	1500	50.6	3.35	39.2	101.3	4.44	1500	51.2	33.9	0.66	2.53	59.9	20.2
				1700	52.6	3.30	41.3	98.7	4.67	1700	52.8	39.9	0.76	2.65	61.8	19.9
	12.0	3.5	8.1	1500	52.8	3.38	41.3	102.6	4.58	1500	51.8	34.0	0.66	2.40	60.0	21.6
				1700	54.7	3.34	43.3	99.8	4.80	1700	53.4	40.0	0.75	2.51	62.0	21.3
70	6.0	1.1	2.5	1500	51.2	3.42	39.5	101.6	4.39	1500	49.3	33.4	0.68	3.05	59.7	16.2
				1700	53.2	3.38	41.7	99.0	4.61	1700	50.8	39.3	0.77	3.19	61.7	15.9
	9.0	2.1	4.9	1500	55.6	3.48	43.7	104.3	4.68	1500	49.8	33.8	0.68	2.76	59.2	18.0
				1700	57.8	3.42	46.1	101.5	4.95	1700	51.3	39.7	0.77	2.88	61.2	17.8
	12.0	3.4	7.9	1500	58.1	3.52	46.1	105.9	4.84	1500	50.7	33.9	0.67	2.64	59.7	19.2
				1700	60.3	3.44	48.6	102.8	5.14	1700	52.2	39.8	0.76	2.74	61.6	19.1
80	6.0	1.1	2.5	1500	55.4	3.59	43.2	104.2	4.53	1500	46.9	32.7	0.70	3.25	58.0	14.4
				1700	57.6	3.52	45.6	101.4	4.79	1700	48.4	38.4	0.79	3.40	60.0	14.2
	9.0	2.0	4.7	1500	60.2	3.63	47.9	107.2	4.87	1500	47.2	33.0	0.70	3.02	57.5	15.6
				1700	62.7	3.53	50.6	104.1	5.20	1700	48.5	38.8	0.80	3.14	59.3	15.4
	12.0	3.3	7.6	1500	63.3	3.67	50.8	109.1	5.06	1500	48.2	33.3	0.69	2.89	58.1	16.7
				1700	65.8	3.57	53.7	105.8	5.41	1700	49.7	39.1	0.79	3.01	60.0	16.5
90	6.0	1.0	2.4	1500	59.7	3.75	46.9	106.8	4.66	1500	44.5	31.9	0.72	3.47	56.3	12.8
				1700	62.0	3.67	49.5	103.8	4.95	1700	45.9	37.5	0.82	3.61	58.2	12.7
	9.0	2.0	4.5	1500	64.9	3.77	52.0	110.1	5.04	1500	44.5	32.3	0.73	3.29	55.7	13.5
				1700	67.6	3.65	55.1	106.8	5.43	1700	45.7	38.0	0.83	3.41	57.4	13.4
	12.0	3.2	7.3	1500	68.5	3.81	55.5	112.3	5.26	1500	45.7	32.6	0.71	3.15	56.5	14.5
				1700	71.3	3.69	58.7	108.9	5.67	1700	47.2	38.4	0.81	3.29	58.4	14.3
100	6.0	1.0	2.3	Operation not recommended						Operation not recommended						
	9.0	1.9	4.4							1500	41.7	31.2	0.75	3.64	54.1	11.4
										1700	42.9	36.7	0.86	3.78	55.9	11.4
	12.0	3.1	7.1							1500	43.2	31.6	0.73	3.51	55.2	12.3
										1700	44.5	37.2	0.84	3.66	57.0	12.2
110	6.0	1.0	2.2							Operation not recommended						
	9.0	1.8	4.2							1500	38.8	30.1	0.78	3.99	52.5	9.7
				Operation not recommended						1700	40.1	35.4	0.88	4.16	54.3	9.7
	12.0	2.9	6.8							1500	40.7	30.7	0.75	3.87	53.9	10.5
										1700	41.8	36.0	0.86	4.03	55.6	10.4
120	6.0	0.9	2.1							Operation not recommended						
	9.0	1.7	4.0							1500	38.9	32.0	0.82	4.50	54.3	8.6
										1700	39.6	34.7	0.88	4.62	55.4	8.6
	12.0	2.8	6.5							1500	39.1	32.0	0.82	4.36	53.9	9.0
										1700	40.1	34.7	0.87	4.49	55.4	8.9

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Performance Data cont.

064 - Dual Capacity - Part Load (1600 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	6.0	1.1	2.4	Operation not recommended						Operation not recommended						
	10.0	2.7	6.2													
	14.0	5.1	11.9	1350	25.3	2.58	16.5	87.3	2.87							
				1600	26.1	2.61	17.2	85.1	2.93							
30	6.0	1.0	2.4	Operation not recommended						Operation not recommended						
	10.0	2.6	6.0	1350	28.5	2.62	19.6	89.6	3.19	1350	41.8	30.5	0.73	1.37	46.5	30.6
				1600	29.5	2.65	20.5	87.1	3.26	1600	42.5	33.3	0.78	1.44	47.4	29.5
	14.0	5.0	11.6	1350	29.5	2.62	20.6	90.3	3.30	1350	42.0	30.5	0.72	1.33	46.6	31.7
				1600	30.5	2.65	21.5	87.7	3.37	1600	43.1	33.3	0.77	1.39	47.8	30.9
40	6.0	1.0	2.3	Operation not recommended						Operation not recommended						
	10.0	2.5	5.9	1350	33.8	2.66	24.7	93.2	3.72	1350	46.0	32.7	0.71	1.53	51.3	30.1
				1600	34.7	2.67	25.6	90.1	3.81	1600	46.9	35.7	0.76	1.60	52.4	29.2
	14.0	4.8	11.2	1350	34.9	2.67	25.8	93.9	3.83	1350	46.4	32.7	0.71	1.49	51.5	31.2
				1600	35.8	2.68	26.7	90.7	3.92	1600	47.4	35.7	0.75	1.55	52.7	30.5
50	6.0	1.0	2.2	1350	38.5	2.66	29.4	96.4	4.24	1350	50.1	33.4	0.67	1.73	56.0	29.0
				1600	39.5	2.66	30.4	92.9	4.35	1600	51.6	37.9	0.73	1.82	57.8	28.3
	10.0	2.5	5.7	1350	39.1	2.71	29.8	96.8	4.22	1350	50.2	33.6	0.67	1.67	55.9	30.1
				1600	39.9	2.69	30.8	93.1	4.35	1600	51.7	38.2	0.74	1.74	57.6	29.6
	14.0	4.7	10.9	1350	40.2	2.73	30.9	97.6	4.33	1350	50.4	33.6	0.67	1.63	55.9	30.8
				1600	41.1	2.71	31.9	93.8	4.45	1600	51.8	38.2	0.74	1.71	57.7	30.3
60	6.0	0.9	2.2	1350	43.8	2.80	34.3	100.0	4.59	1350	47.0	32.3	0.69	1.98	53.8	23.8
				1600	44.7	2.77	35.3	95.9	4.73	1600	48.4	36.5	0.75	2.07	55.5	23.4
	10.0	2.4	5.5	1350	45.2	2.85	35.5	101.0	4.65	1350	47.2	32.6	0.69	1.92	53.8	24.6
				1600	45.9	2.81	36.3	96.6	4.79	1600	48.6	36.8	0.76	2.00	55.5	24.3
	14.0	4.5	10.5	1350	46.3	2.87	36.5	101.7	4.72	1350	47.4	32.7	0.69	1.88	53.8	25.3
				1600	47.0	2.83	37.3	97.2	4.86	1600	48.8	36.9	0.76	1.96	55.5	24.9
70	6.0	0.9	2.1	1350	49.2	2.93	39.2	103.7	4.91	1350	44.0	31.3	0.71	2.23	51.6	19.7
				1600	50.0	2.88	40.2	98.9	5.08	1600	45.3	35.1	0.77	2.32	53.3	19.5
	10.0	2.3	5.3	1350	51.3	2.98	41.1	105.2	5.04	1350	44.2	31.6	0.71	2.17	51.6	20.4
				1600	51.8	2.92	41.9	100.0	5.21	1600	45.6	35.5	0.78	2.26	53.3	20.2
	14.0	4.4	10.2	1350	52.2	3.02	42.0	105.8	5.08	1350	44.5	31.7	0.71	2.12	51.7	21.0
				1600	52.8	2.95	42.7	100.6	5.25	1600	45.9	35.6	0.78	2.21	53.4	20.7
80	6.0	0.9	2.0	1350	53.6	3.03	43.3	106.8	5.20	1350	41.0	29.6	0.72	2.56	49.7	16.0
				1600	54.1	2.96	44.0	101.3	5.36	1600	42.2	33.0	0.78	2.65	51.3	15.9
	10.0	2.2	5.1	1350	56.7	3.07	46.2	108.9	5.40	1350	41.3	29.9	0.72	2.50	49.9	16.5
				1600	56.9	2.98	46.8	102.9	5.59	1600	42.6	33.5	0.79	2.60	51.4	16.4
	14.0	4.3	9.8	1350	57.3	3.12	46.7	109.3	5.39	1350	41.6	30.1	0.72	2.46	50.0	16.9
				1600	57.6	3.03	47.2	103.3	5.58	1600	42.9	33.7	0.78	2.55	51.6	16.9
90	6.0	0.8	1.9	1350	58.1	3.12	47.5	109.9	5.47	1350	38.0	27.9	0.73	2.90	47.9	13.1
				1600	58.3	3.03	47.9	103.7	5.63	1600	39.2	31.0	0.79	2.98	49.3	13.1
	10.0	2.1	5.0	1350	62.0	3.17	51.2	112.5	5.74	1350	38.4	28.2	0.73	2.83	48.1	13.6
				1600	62.0	3.05	51.6	105.9	5.96	1600	39.6	31.4	0.79	2.93	49.6	13.5
	14.0	4.1	9.5	1350	62.4	3.21	51.5	112.8	5.69	1350	38.7	28.5	0.74	2.80	48.3	13.8
				1600	62.3	3.10	51.7	106.1	5.89	1600	40.0	31.7	0.79	2.88	49.8	13.9
100	6.0	0.8	1.9	Operation not recommended						Operation not recommended						
	10.0	2.1	4.8							1350	35.4	26.4	0.74	3.24	46.5	10.9
										1600	36.5	29.2	0.80	3.32	47.8	11.0
	14.0	4.0	9.1							1350	35.8	26.7	0.75	3.20	46.7	11.2
										1600	36.9	29.5	0.80	3.27	48.1	11.3
110	6.0	0.8	1.8							Operation not recommended						
	10.0	2.0	4.6							1350	32.4	24.6	0.76	3.65	44.8	8.9
										1600	33.4	27.0	0.81	3.72	46.1	9.0
	14.0	3.8	8.8							1350	32.8	25.0	0.76	3.59	45.1	9.1
										1600	33.9	27.4	0.81	3.67	46.4	9.2
120	6.0	0.7	1.7							Operation not recommended						
	10.0	1.9	4.4							1350	29.7	21.9	0.74	4.15	43.8	7.1
										1600	30.2	23.8	0.79	4.26	44.7	7.1
	14.0	3.7	8.4							1350	29.9	21.9	0.73	4.02	43.6	7.4
										1600	30.5	23.8	0.78	4.15	44.7	7.4

7/29/17

Performance Data cont.

064 - Dual Capacity - Full Load (1800 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	8.0	1.9	4.3	Operation not recommended						Operation not recommended						
	12.0	3.9	8.9													
	16.0	6.6	15.1	1500	39.8	3.36	28.3	94.5	3.46							
				1800	40.7	3.52	28.7	90.9	3.39							
30	8.0	1.8	4.2	Operation not recommended						Operation not recommended						
	12.0	3.7	8.7	1500	45.9	3.42	34.2	98.3	3.93	1500	58.1	39.7	0.68	2.36	66.1	24.6
				1800	47.1	3.64	34.7	94.2	3.79	1800	59.0	43.4	0.74	2.49	67.5	23.7
	16.0	6.4	14.7	1500	46.5	3.51	34.5	98.7	3.88	1500	58.4	39.7	0.68	2.29	66.2	25.5
				1800	47.6	3.68	35.1	94.5	3.80	1800	59.8	43.4	0.73	2.40	68.0	24.9
40	8.0	1.8	4.1	Operation not recommended						Operation not recommended						
	12.0	3.6	8.4	1500	51.9	3.62	39.6	102.1	4.20	1500	61.8	41.4	0.67	2.61	70.7	23.6
				1800	53.1	3.78	40.2	97.3	4.12	1800	63.0	45.2	0.72	2.74	72.3	23.0
	16.0	6.2	14.3	1500	52.7	3.68	40.2	102.5	4.19	1500	62.3	41.4	0.66	2.54	71.0	24.6
				1800	53.9	3.81	40.9	97.7	4.14	1800	63.7	45.2	0.71	2.65	72.8	24.0
50	8.0	1.7	3.9	1500	54.8	3.74	42.1	103.8	4.29	1500	65.0	42.4	0.65	2.84	74.6	22.9
				1800	56.0	3.86	42.8	98.8	4.26	1800	66.3	46.1	0.70	3.02	76.6	22.0
	12.0	3.5	8.1	1500	58.0	3.81	45.0	105.8	4.46	1500	65.6	42.8	0.65	2.78	75.1	23.6
				1800	59.2	3.91	45.8	100.4	4.44	1800	67.0	46.6	0.70	2.95	77.0	22.7
	16.0	6.0	13.8	1500	59.0	3.86	45.8	106.4	4.48	1500	66.3	43.3	0.65	2.73	75.6	24.3
				1800	60.2	3.95	46.7	101.0	4.47	1800	67.6	47.0	0.70	2.90	77.5	23.3
60	8.0	1.7	3.8	1500	61.8	4.02	48.1	108.1	4.51	1500	62.2	41.7	0.67	3.09	72.7	20.1
				1800	63.1	4.08	49.2	102.5	4.53	1800	63.8	45.3	0.71	3.28	75.0	19.4
	12.0	3.4	7.9	1500	64.6	4.08	50.7	109.9	4.64	1500	62.8	42.0	0.67	3.02	73.1	20.8
				1800	66.0	4.13	51.9	104.0	4.68	1800	64.4	45.7	0.71	3.21	75.4	20.0
	16.0	5.8	13.4	1500	66.0	4.13	51.9	110.8	4.69	1500	63.4	42.5	0.67	2.97	73.6	21.3
				1800	67.5	4.18	53.3	104.7	4.74	1800	65.0	46.1	0.71	3.16	75.8	20.6
70	8.0	1.6	3.7	1500	68.8	4.29	54.1	112.4	4.70	1500	59.4	40.9	0.69	3.34	70.8	17.8
				1800	70.3	4.31	55.6	106.1	4.78	1800	61.2	44.4	0.73	3.55	73.3	17.2
	12.0	3.3	7.6	1500	71.3	4.35	56.4	114.0	4.80	1500	60.0	41.3	0.69	3.27	71.1	18.3
				1800	72.9	4.36	58.0	107.5	4.90	1800	61.9	44.8	0.72	3.48	73.8	17.8
	16.0	5.6	12.9	1500	73.1	4.40	58.1	115.1	4.87	1500	60.5	41.7	0.69	3.21	71.5	18.8
				1800	74.8	4.40	59.8	108.5	4.98	1800	62.5	45.3	0.73	3.42	74.1	18.3
80	8.0	1.5	3.6	1500	75.2	4.57	59.6	116.4	4.83	1500	56.4	39.4	0.70	3.67	68.9	15.4
				1800	77.0	4.54	61.5	109.6	4.97	1800	58.5	42.8	0.73	3.91	71.8	15.0
	12.0	3.2	7.4	1500	77.0	4.63	61.2	117.5	4.88	1500	57.0	39.8	0.70	3.60	69.3	15.8
				1800	78.9	4.58	63.2	110.6	5.05	1800	59.1	43.2	0.73	3.83	72.1	15.4
	16.0	5.4	12.5	1500	79.4	4.68	63.4	119.0	4.97	1500	57.5	40.2	0.70	3.54	69.6	16.3
				1800	81.3	4.63	65.6	111.8	5.15	1800	59.7	43.7	0.73	3.76	72.5	15.9
90	8.0	1.5	3.4	1500	81.7	4.85	65.2	120.4	4.94	1500	53.4	38.0	0.71	4.00	67.0	13.3
				1800	83.7	4.78	67.4	113.0	5.13	1800	55.7	41.2	0.74	4.26	70.3	13.1
	12.0	3.1	7.1	1500	82.8	4.90	66.1	121.1	4.95	1500	54.0	38.3	0.71	3.92	67.4	13.8
				1800	84.8	4.80	68.5	113.6	5.18	1800	56.3	41.6	0.74	4.18	70.5	13.5
	16.0	5.2	12.1	1500	85.6	4.96	68.7	122.9	5.06	1500	54.5	38.8	0.71	3.86	67.7	14.1
				1800	87.9	4.85	71.3	115.2	5.31	1800	56.9	42.0	0.74	4.11	70.9	13.8
100	8.0	1.4	3.3	Operation not recommended						Operation not recommended						
	12.0	3.0	6.8							1500	50.0	35.7	0.71	4.36	64.9	11.5
										1800	52.4	38.8	0.74	4.65	68.2	11.3
	16.0	5.0	11.6							1500	50.5	36.1	0.71	4.29	65.1	11.8
										1800	52.9	39.2	0.74	4.57	68.5	11.6
110	8.0	1.4	3.2							Operation not recommended						
	12.0	2.9	6.6							1500	46.0	33.1	0.72	4.81	62.4	9.6
										1800	48.5	35.9	0.74	5.13	66.0	9.5
	16.0	4.8	11.2							1500	46.5	33.4	0.72	4.72	62.6	9.8
										1800	48.9	36.3	0.74	5.04	66.1	9.7
120	8.0	1.3	3.1							Operation not recommended						
	12.0	2.7	6.3							1500	45.6	32.3	0.71	5.58	64.7	8.2
										1800	46.5	35.0	0.75	5.73	66.0	8.1
	16.0	4.6	10.7							1500	46.0	32.3	0.70	5.40	64.5	8.5
										1800	47.0	35.0	0.74	5.57	66.0	8.4

7/29/17 ADL

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

072 - Dual Capacity - Part Load (1600 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	10.0	2.3	5.4	Operation not recommended						Operation not recommended						
	13.0	3.5	8.1													
	16.0	5.0	11.6	1300	35.9	3.50	23.9	95.5	3.01							
				1600	37.6	3.54	25.5	91.7	3.11							
30	10.0	2.3	5.3	Operation not recommended						Operation not recommended						
	13.0	3.4	7.9	1300	38.8	3.60	26.5	97.7	3.16	1300	50.5	35.4	0.70	1.74	56.5	29.1
				1600	40.8	3.65	28.3	93.6	3.28	1600	51.4	38.7	0.75	1.83	57.6	28.1
	16.0	4.9	11.3	1300	40.5	3.60	28.3	98.9	3.30	1300	50.8	35.4	0.70	1.69	56.6	30.1
				1600	42.5	3.65	30.0	94.6	3.41	1600	52.0	38.7	0.74	1.77	58.1	29.4
40	10.0	2.2	5.1	Operation not recommended						Operation not recommended						
	13.0	3.3	7.6	1300	45.4	3.73	32.6	102.3	3.57	1300	54.1	37.0	0.68	2.00	60.9	27.1
				1600	47.3	3.74	34.6	97.4	3.71	1600	55.1	40.4	0.73	2.09	62.3	26.3
	16.0	4.7	11.0	1300	46.9	3.74	34.2	103.4	3.68	1300	54.5	37.0	0.68	1.94	61.1	28.2
				1600	49.0	3.75	36.2	98.4	3.83	1600	55.7	40.4	0.72	2.03	62.7	27.5
50	10.0	2.1	4.9	1300	51.1	3.81	38.1	106.4	3.93	1300	57.4	36.7	0.64	2.30	65.2	25.0
				1600	53.3	3.77	40.5	100.9	4.15	1600	59.2	41.6	0.70	2.42	67.4	24.5
	13.0	3.2	7.4	1300	51.8	3.85	38.7	106.9	3.94	1300	57.5	37.0	0.64	2.22	65.1	25.9
				1600	53.9	3.83	40.8	101.2	4.12	1600	59.3	42.1	0.71	2.34	67.3	25.4
	16.0	4.6	10.6	1300	53.3	3.87	40.1	108.0	4.04	1300	57.7	37.0	0.64	2.16	65.1	26.7
				1600	55.6	3.85	42.5	102.2	4.23	1600	59.4	42.1	0.71	2.28	67.2	26.1
60	10.0	2.1	4.8	1300	56.9	3.94	43.5	110.5	4.23	1300	54.6	36.2	0.66	2.57	63.3	21.2
				1600	59.3	3.86	46.1	104.3	4.50	1600	56.2	40.9	0.73	2.68	65.4	20.9
	13.0	3.1	7.2	1300	58.5	3.98	44.9	111.7	4.31	1300	54.8	36.6	0.67	2.49	63.3	22.0
				1600	60.8	3.91	47.5	105.2	4.56	1600	56.4	41.4	0.73	2.60	65.3	21.7
	16.0	4.4	10.3	1300	59.8	4.02	46.1	112.6	4.36	1300	55.0	36.7	0.67	2.44	63.3	22.6
				1600	62.2	3.95	48.8	106.0	4.62	1600	56.7	41.5	0.73	2.54	65.4	22.3
70	10.0	2.0	4.6	1300	62.8	4.07	48.9	114.7	4.52	1300	51.8	35.7	0.69	2.84	61.4	18.2
				1600	65.3	3.95	51.8	107.8	4.85	1600	53.3	40.2	0.76	2.95	63.3	18.0
	13.0	3.0	6.9	1300	65.1	4.11	51.1	116.4	4.64	1300	52.1	36.2	0.70	2.75	61.4	18.9
				1600	67.7	3.99	54.1	109.2	4.97	1600	53.6	40.7	0.76	2.86	63.3	18.7
	16.0	4.3	9.9	1300	66.3	4.17	52.1	117.2	4.66	1300	52.4	36.3	0.69	2.71	61.6	19.3
				1600	68.9	4.05	55.0	109.9	4.98	1600	54.0	40.8	0.76	2.80	63.6	19.3
80	10.0	1.9	4.5	1300	68.2	4.14	54.1	118.6	4.83	1300	49.0	34.5	0.70	3.27	60.2	15.0
				1600	70.7	3.99	57.1	110.9	5.19	1600	51.2	38.5	0.75	3.36	62.7	15.2
	13.0	2.9	6.7	1300	71.8	4.19	57.5	121.1	5.02	1300	50.1	34.8	0.70	3.18	60.9	15.7
				1600	74.4	4.02	60.6	113.0	5.42	1600	51.6	39.0	0.76	3.28	62.8	15.7
	16.0	4.2	9.6	1300	72.6	4.25	58.1	121.7	5.01	1300	50.5	35.1	0.69	3.14	61.2	16.1
				1600	75.1	4.09	61.2	113.5	5.39	1600	51.3	39.2	0.76	3.22	62.3	15.9
90	10.0	1.9	4.3	1300	73.6	4.20	59.3	122.4	5.13	1300	46.3	33.2	0.72	3.70	58.9	12.5
				1600	76.1	4.03	62.3	114.0	5.54	1600	47.7	36.9	0.77	3.77	60.6	12.6
	13.0	2.8	6.5	1300	78.4	4.26	63.8	125.8	5.39	1300	46.8	33.5	0.72	3.62	59.1	12.9
				1600	81.0	4.05	67.2	116.9	5.87	1600	48.2	37.3	0.77	3.70	60.8	13.0
	16.0	4.0	9.3	1300	78.9	4.32	64.1	126.2	5.35	1300	47.2	33.8	0.72	3.56	59.4	13.3
				1600	81.3	4.13	67.3	117.1	5.78	1600	48.7	37.6	0.77	3.64	61.1	13.4
100	10.0	1.8	4.2	Operation not recommended						Operation not recommended						
	13.0	2.7	6.2							1300	43.6	31.8	0.73	4.15	57.7	10.5
										1600	45.0	35.2	0.78	4.20	59.3	10.7
	16.0	3.9	8.9							1300	44.2	32.2	0.73	4.09	58.1	10.8
										1600	45.5	35.6	0.78	4.14	59.6	11.0
110	10.0	1.7	4.0							Operation not recommended						
	13.0	2.6	6.0							1300	40.4	30.0	0.74	4.69	56.4	8.6
										1600	41.8	33.1	0.79	4.71	57.8	8.9
	16.0	3.7	8.6							1300	41.1	30.5	0.74	4.63	56.9	8.9
										1600	42.3	33.6	0.79	4.65	58.1	9.1
120	10.0	1.7	3.8							Operation not recommended						
	13.0	2.5	5.8							1300	37.2	28.8	0.77	5.28	55.3	7.1
										1600	37.9	31.3	0.82	5.42	56.4	7.0
	16.0	3.6	8.2							1300	37.6	28.8	0.77	5.11	55.0	7.4
										1600	38.4	31.3	0.81	5.27	56.4	7.3

7/29/17 ADL

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

072 - Dual Capacity - Full Load (2100 cfm)

EWT °F	Flow Rate GPM	WPD		HEATING - EAT 70°F						COOLING - EAT 80/67 °F						
		PSI	FT/HD	Airflow CFM	HC MBtu/h	Power kW	HE MBtu/h	LAT °F	COP	Airflow CFM	TC Mbtu/h	SC Mbtu/h	S/T Ratio	Power kW	HR Mbtu/h	EER
20	12.0	3.3	7.6	Operation not recommended						Operation not recommended						
	15.0	4.7	10.8													
	18.0	6.2	14.3	1750	48.9	4.22	34.5	95.9	3.40							
				2100	50.7	4.49	35.4	92.4	3.31							
30	12.0	3.2	7.4	Operation not recommended						Operation not recommended						
	15.0	4.5	10.5	1750	55.9	4.35	41.1	99.6	3.76	1750	65.8	46.2	0.70	2.84	75.5	23.1
				2100	57.9	4.63	42.1	95.5	3.66	2100	66.9	50.5	0.75	3.00	77.1	22.3
	18.0	6.0	13.9	1750	56.4	4.40	41.4	99.8	3.76	1750	66.1	46.2	0.70	2.76	75.6	24.0
				2100	58.5	4.68	42.5	95.8	3.66	2100	67.8	50.5	0.75	2.90	77.6	23.4
40	12.0	3.1	7.1	Operation not recommended						Operation not recommended						
	15.0	4.4	10.2	1750	63.5	4.57	47.9	103.6	4.08	1750	68.9	48.2	0.70	3.21	79.9	21.5
				2100	65.7	4.78	49.4	99.0	4.03	2100	70.2	52.6	0.75	3.37	81.7	20.9
	18.0	5.8	13.5	1750	64.4	4.62	48.7	104.1	4.09	1750	69.5	48.2	0.69	3.12	80.1	22.3
				2100	66.6	4.83	50.2	99.4	4.05	2100	71.0	52.6	0.74	3.26	82.1	21.8
50	12.0	3.0	6.9	1750	67.4	4.68	51.4	105.6	4.22	1750	71.4	49.3	0.69	3.53	83.4	20.2
				2100	69.6	4.85	53.1	100.7	4.21	2100	72.9	53.6	0.74	3.75	85.7	19.4
	15.0	4.3	9.9	1750	71.2	4.77	54.9	107.6	4.37	1750	72.1	49.8	0.69	3.46	83.9	20.9
				2100	73.5	4.93	56.7	102.4	4.37	2100	73.5	54.2	0.74	3.68	86.1	20.0
	18.0	5.7	13.1	1750	72.4	4.83	56.0	108.3	4.40	1750	72.9	50.8	0.70	3.40	84.5	21.4
				2100	74.8	4.98	57.8	103.0	4.41	2100	74.3	54.7	0.74	3.62	86.7	20.5
60	12.0	2.9	6.7	1750	75.0	4.96	58.1	109.7	4.43	1750	70.2	48.7	0.69	3.82	83.2	18.4
				2100	77.5	5.06	60.2	104.2	4.49	2100	71.7	52.6	0.73	4.06	85.5	17.7
	15.0	4.1	9.6	1750	78.3	5.05	61.1	111.4	4.55	1750	70.9	49.2	0.69	3.74	83.7	19.0
				2100	80.9	5.13	63.4	105.7	4.62	2100	72.3	53.2	0.74	3.97	85.9	18.2
	18.0	5.5	12.7	1750	80.1	5.11	62.7	112.4	4.60	1750	71.7	50.0	0.70	3.67	84.2	19.5
				2100	82.7	5.18	65.1	106.5	4.68	2100	73.1	53.8	0.74	3.91	86.4	18.7
70	12.0	2.8	6.5	1750	82.6	5.23	64.8	113.7	4.63	1750	69.0	48.1	0.70	4.10	83.0	16.8
				2100	85.2	5.27	67.3	107.6	4.74	2100	70.5	51.7	0.73	4.36	85.3	16.2
	15.0	4.0	9.2	1750	85.5	5.32	67.4	115.3	4.72	1750	69.7	48.6	0.70	4.01	83.4	17.4
				2100	88.3	5.33	70.1	108.9	4.86	2100	71.1	52.2	0.73	4.26	85.7	16.7
	18.0	5.3	12.2	1750	87.8	5.38	69.4	116.4	4.78	1750	70.5	49.1	0.70	3.94	83.9	17.9
				2100	90.7	5.38	72.3	110.0	4.94	2100	71.9	52.8	0.73	4.20	86.2	17.1
80	12.0	2.7	6.3	1750	91.3	5.57	72.4	118.3	4.81	1750	66.0	46.4	0.70	4.50	81.3	14.7
				2100	94.3	5.52	75.5	111.6	5.00	2100	67.4	50.2	0.74	4.79	83.7	14.1
	15.0	3.9	8.9	1750	93.5	5.64	74.3	119.5	4.86	1750	66.6	46.9	0.70	4.41	81.7	15.1
				2100	96.5	5.57	77.5	112.5	5.08	2100	68.0	50.6	0.74	4.69	84.0	14.5
	18.0	5.1	11.8	1750	96.3	5.71	76.9	121.0	4.94	1750	67.4	47.6	0.71	4.33	82.1	15.6
				2100	99.5	5.63	80.4	113.9	5.19	2100	68.7	51.2	0.74	4.61	84.5	14.9
90	12.0	2.6	6.0	1750	100.1	5.90	79.9	122.9	4.97	1750	63.0	44.8	0.71	4.90	79.7	12.8
				2100	103.3	5.78	83.6	115.6	5.24	2100	64.3	48.6	0.76	5.22	82.1	12.3
	15.0	3.7	8.6	1750	101.5	5.96	81.1	123.7	4.99	1750	63.6	45.2	0.71	4.80	79.9	13.2
				2100	104.7	5.80	84.9	116.2	5.29	2100	64.9	49.1	0.76	5.11	82.3	12.7
	18.0	4.9	11.4	1750	104.9	6.04	84.3	125.5	5.09	1750	64.3	46.1	0.72	4.72	80.4	13.6
				2100	108.4	5.87	88.4	117.8	5.42	2100	65.6	49.6	0.76	5.03	82.7	13.0
100	12.0	2.5	5.8	Operation not recommended						Operation not recommended						
	15.0	3.6	8.3							1750	59.6	43.1	0.72	5.34	77.8	11.1
										2100	60.8	46.6	0.77	5.69	80.2	10.7
	18.0	4.8	11.0							1750	60.2	43.7	0.73	5.25	78.1	11.5
										2100	61.4	47.0	0.77	5.59	80.5	11.0
110	12.0	2.4	5.6							Operation not recommended						
	15.0	3.5	8.0							1750	55.6	41.0	0.74	5.89	75.6	9.4
										2100	56.7	44.1	0.78	6.27	78.1	9.0
	18.0	4.6	10.6							1750	56.2	41.4	0.74	5.79	75.9	9.7
										2100	57.3	44.5	0.78	6.15	78.3	9.3
120	12.0	2.3	5.4							Operation not recommended						
	15.0	3.3	7.7							1750	50.5	38.1	0.75	6.88	74.0	7.3
										2100	51.4	41.3	0.80	7.06	75.5	7.3
	18.0	4.4	10.2							1750	51.0	38.1	0.75	6.66	73.7	7.7
										2100	52.0	41.3	0.79	6.87	75.5	7.6

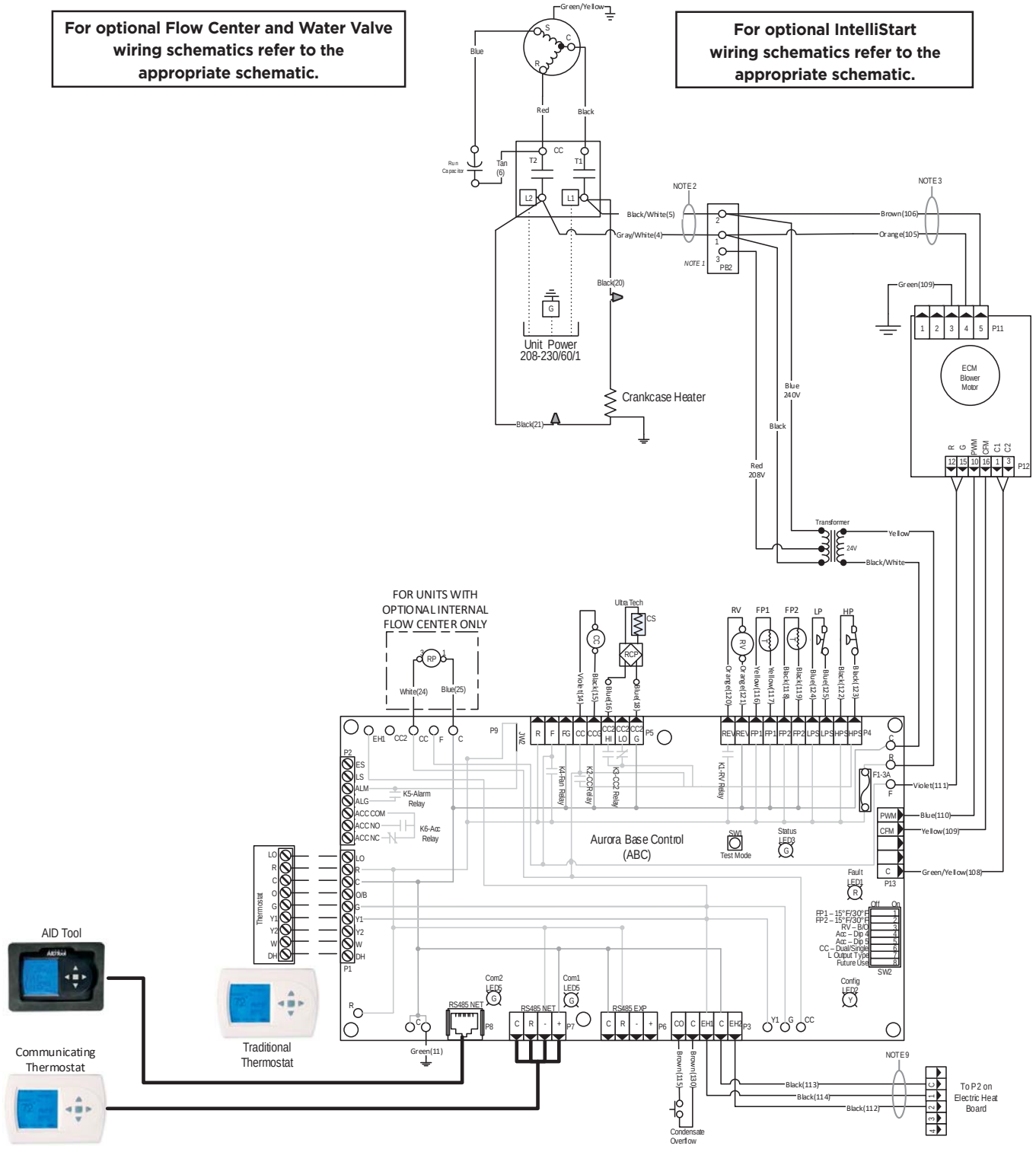
7/29/17 ADL

Wiring Schematics

Aurora Base Controls with ECM and IntelliStart

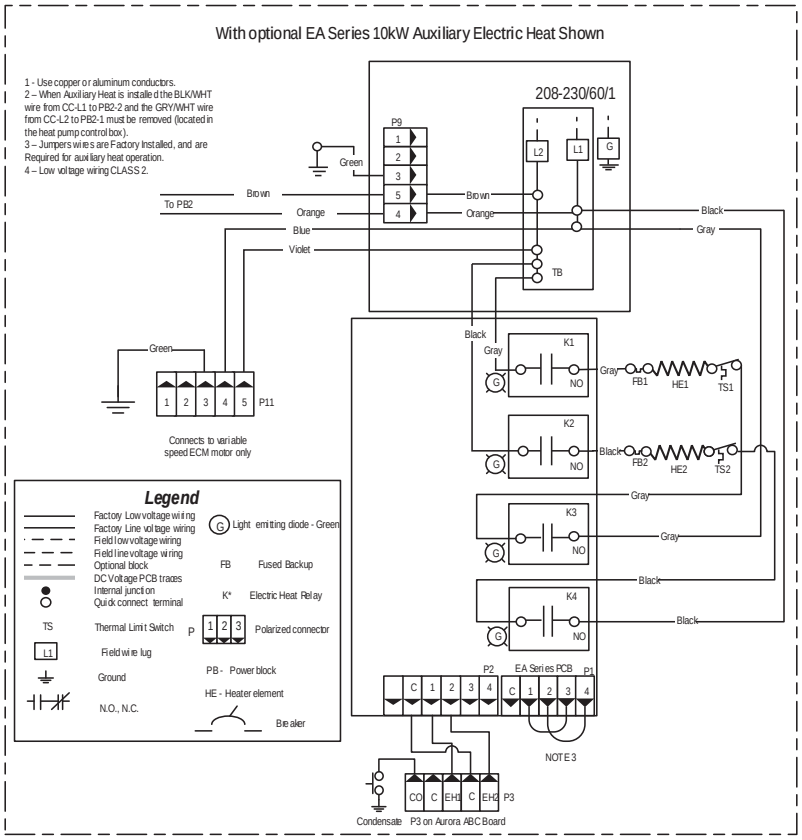
For optional Flow Center and Water Valve wiring schematics refer to the appropriate schematic.

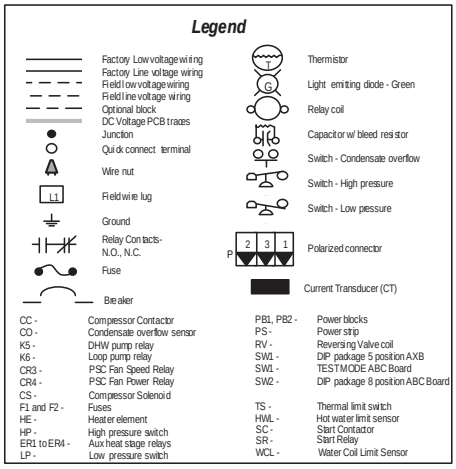
For optional IntelliStart wiring schematics refer to the appropriate schematic.



Wiring Schematics cont.

Aurora Base Controls with ECM and IntelliStart cont.





Notes

1 - Switch blue and red wires for 208V operation.

2 - The blk/wh and gray/wh wires are removed when Aux Heat is installed

3 – When Auxiliary Heat is field installed the harness will then be connected to the auxiliary heat unit. The auxiliary heat unit will then power the blower. Refer to EAS/EAM/EAL Auxiliary Heat kit installation instructions.

4 – Low voltage wiring CLASS 2.

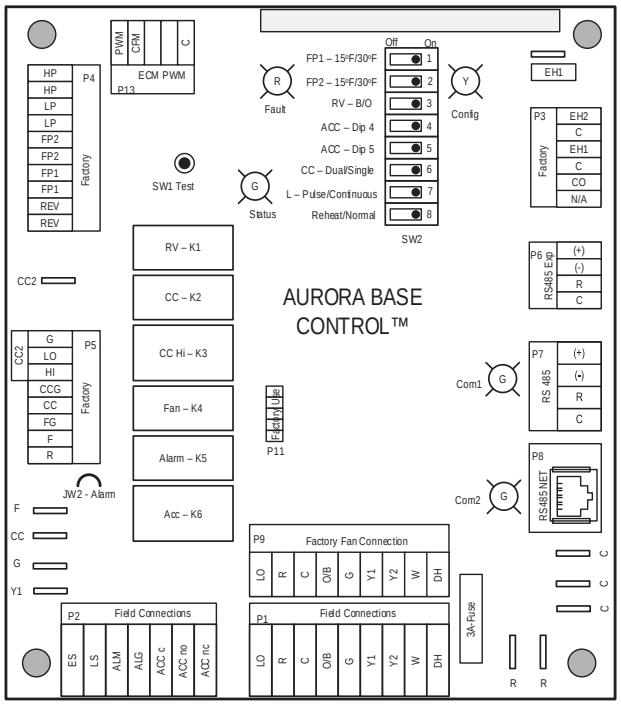
5 – Brown blower power wire routed through Current Transducer two times.

6 – Field Connected: Refer to Installation Manual and Auxiliary Heat Instructions for Current Transducer installation.

7 - Wires provided for Auxiliary Heat low voltage control. Wires are secured at blower.

Wiring Schematics cont.

Aurora Base Controls with ECM and IntelliStart



ABC SW2 Accessory Relay		
DESCRIPTION	**SW2-4**	**SW2-5**
Cycle with Blower	ON	ON
Cycle with Compressor	OFF	OFF
Water Valve Slow Opening	ON	OFF
Cycle with Comm. T-stat Hum Cmd	OFF	ON

Aurora LED Flash Codes			
Slow Flash	1 second on and 1 second off		
Fast Flash	100 milliseconds on and 100 milliseconds off		
Flash Code	100 milliseconds on and 400 milliseconds off with a 2 second pause before repeating		
Random Start Delay (Alternating Colors)		Configuration LED (LED2, Yellow)	
Status LED (LED1, Green)	Fast Flash	No Software Overide	OFF
Configuration LED (LED2, Yellow)	Fast Flash	DIP Switch Overide	Slow Flash
Fault LED (LED3, Red)	Fast Flash		
Fault LED (LED1, Red)		Status LED (LED3, Green)	
Normal Mode	OFF	Normal Mode	ON
Input Fault Lockout	Flash Code 1	Control is Non-Functional	OFF
High Pressure Lockout	Flash Code 2	Test Mode	Slow Flash
Low Pressure Lockout	Flash Code 3	Lockout Active	Fast Flash
Future Use	Flash Code 4	Dehumidification Mode	Flash Code 2
Freeze Detection – FP1	Flash Code 5	Future Use	Flash Code 3
Reserved	Flash Code 6	Future Use	Flash Code 4
Condensate Overflow Lockout	Flash Code 7	Load Shed	Flash Code 5
Over/Under Voltage Shutdown	Flash Code 8	ESD	Flash Code 6
Future Use	Flash Code 9	Future Use	Flash Code 7
Future Use	Flash Code 10		
FP1 and FP2 Sensor Error	Flash Code 11		

Notes

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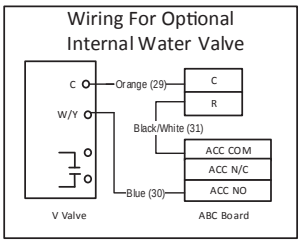
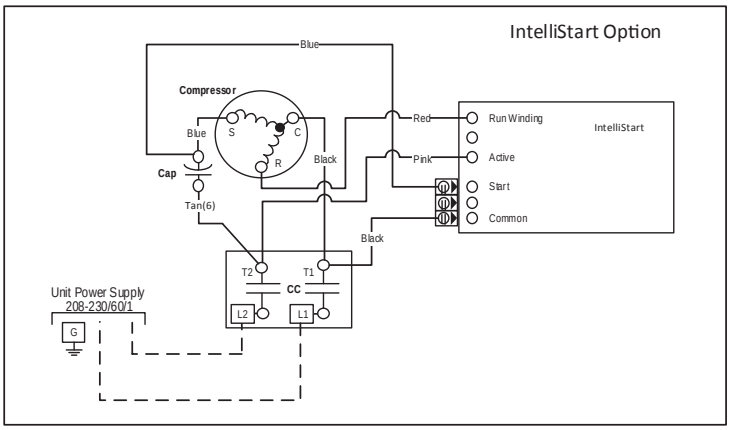
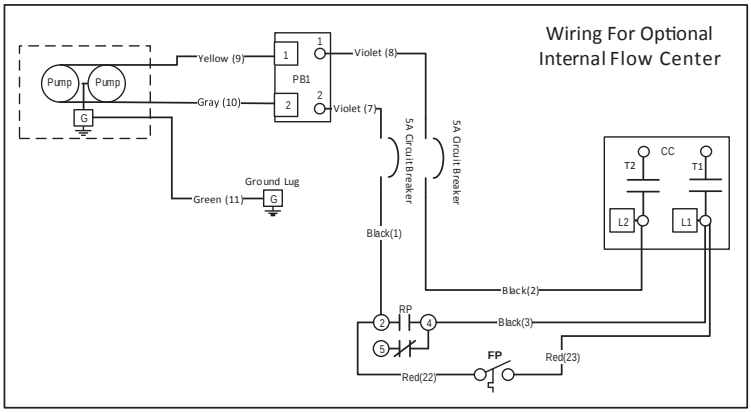
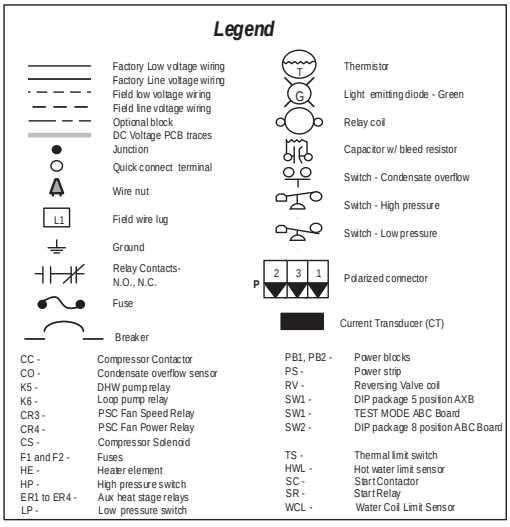
Wiring Schematics cont.

Aurora Base Controls with ECM and IntelliStart



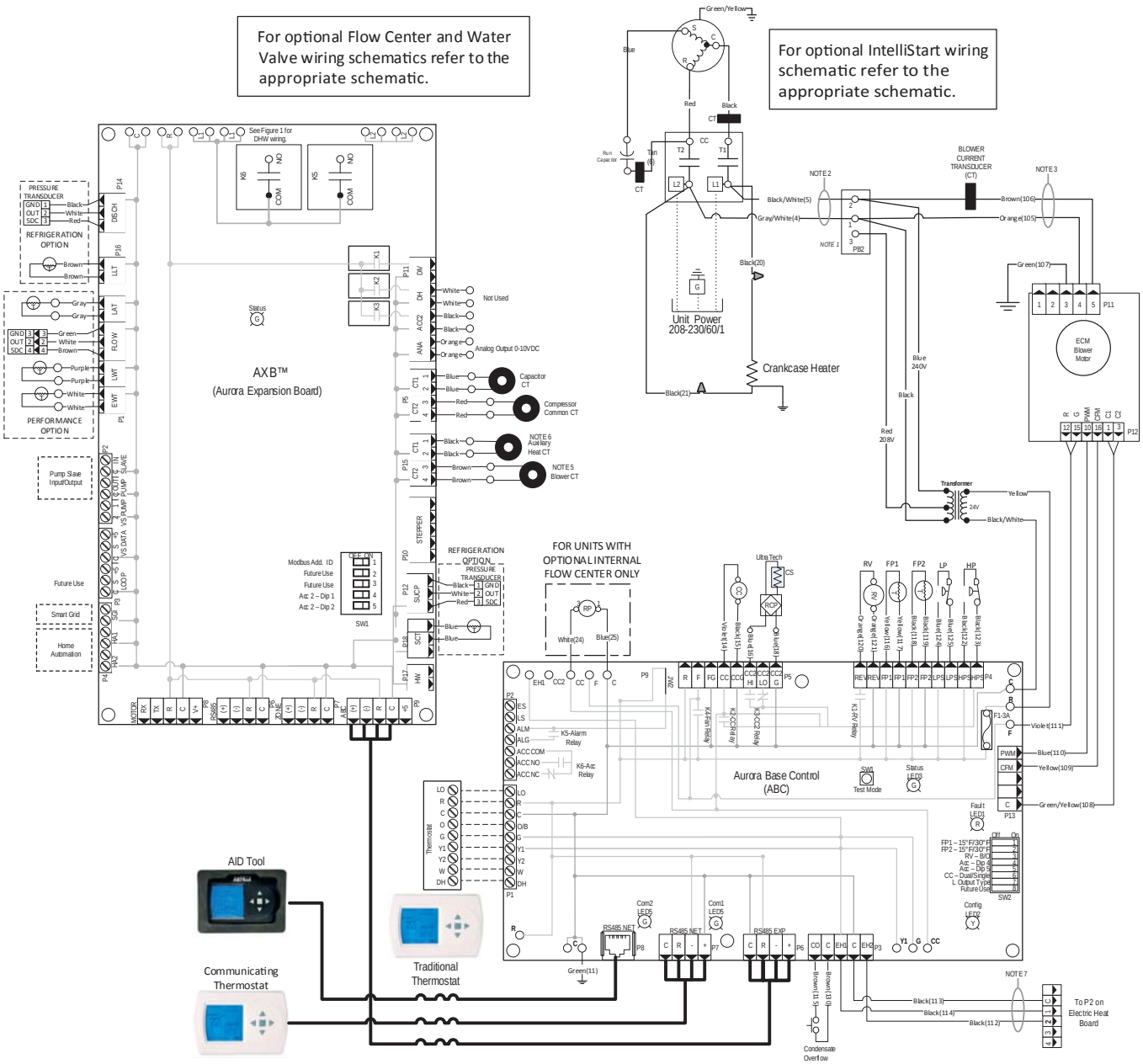






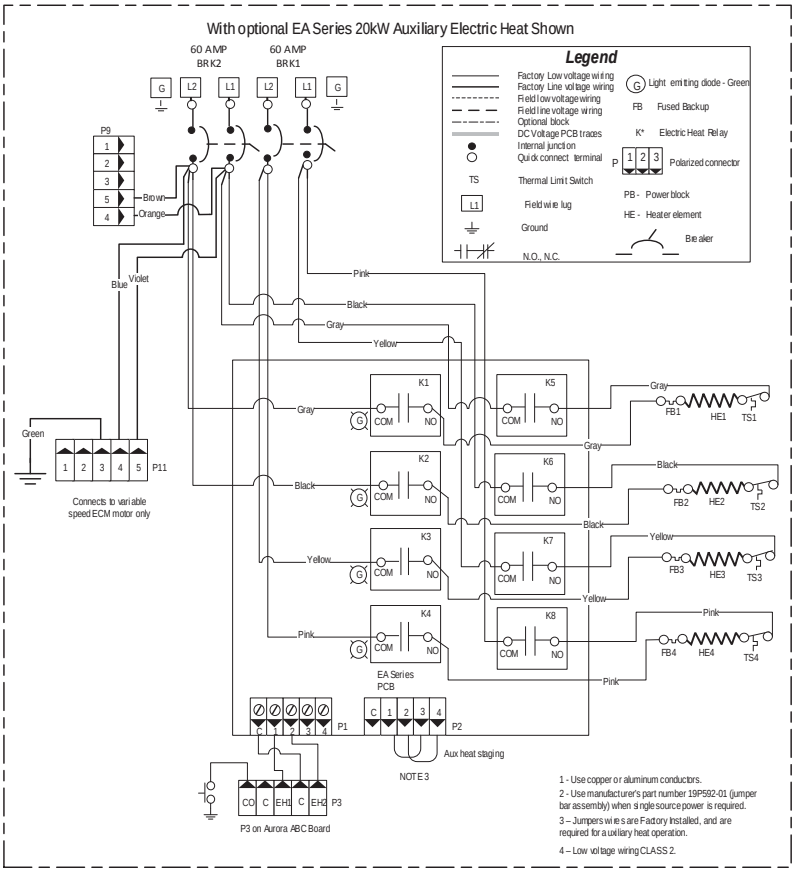
Wiring Schematics cont.

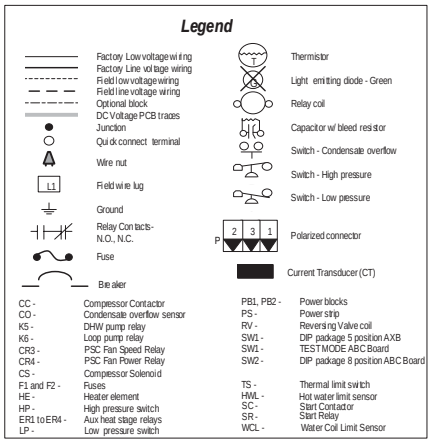
Aurora Advanced Controls with ECM and IntelliStart



Wiring Schematics

Aurora Advanced Controls with ECM and IntelliStart cont.





Notes

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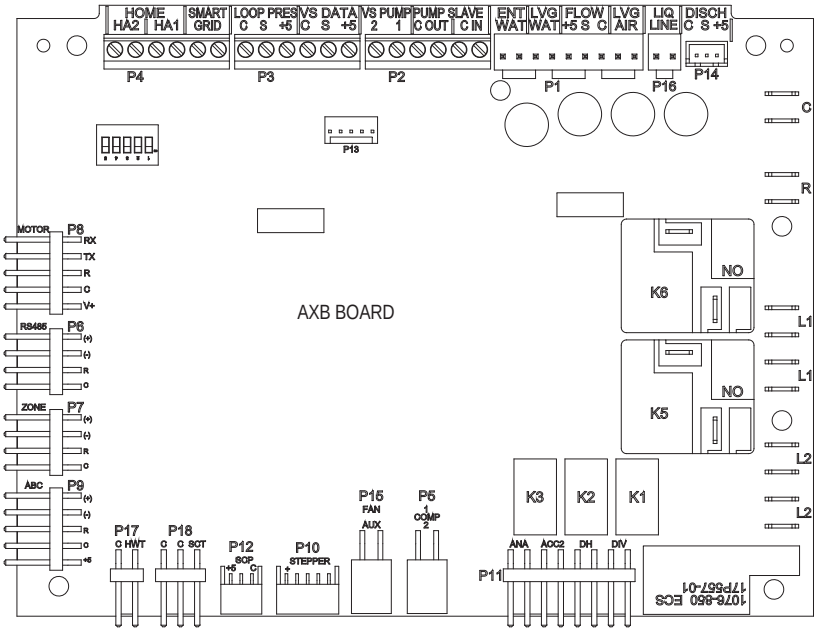
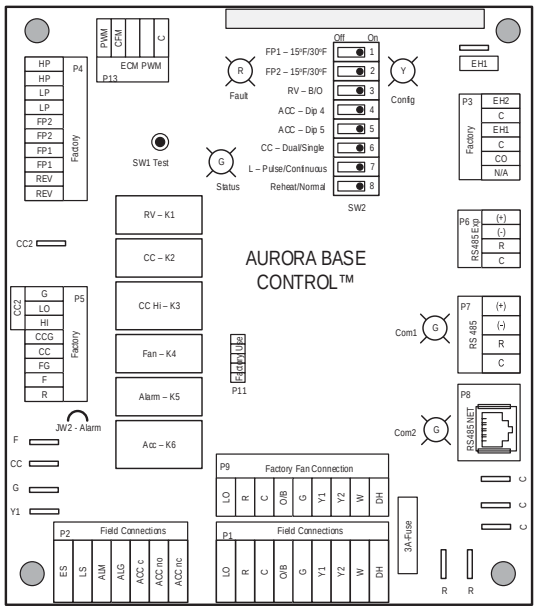
Wiring Schematics cont.

Aurora Advanced with ECM and IntelliStart





Aurora LED Flash Codes			
Slow Flash	1 second on and 1 second off		
Fast Flash	100 milliseconds on and 100 milliseconds off		
Flash Code	100 milliseconds on and 400 milliseconds off with a 2 second pause before repeating		
Fault LED (LED 1, Red)		Random Start Delay (Alternating Colors)	
Normal Mode	OFF	Status LED (LED1, Green)	Fast Flash
Input Fault Lockout	Flash Code 1	Configuration LED (LED 2, Yellow)	Fast Flash
High Pressure Lockout	Flash Code 2	Fault LED (LED 3, Red)	Fast Flash
Low Pressure Lockout	Flash Code 3	Configuration LED (LED 2, Yellow)	
Freeze Detection - FP2	Flash Code 4	No Software Overide	OFF
Freeze Detection - FP1	Flash Code 5	DIP Switch Overide	Slow Flash
Reserved	Flash Code 6	Status LED (LED 3, Green)	
Condensate Overflow Lockout	Flash Code 7	Normal Mode	ON
Over/Under Voltage Shutdown	Flash Code 8	Control is Non - Functional	OFF
Future Use	Flash Code 9	Test Mode	Slow Flash
Compressor Monitoring	Flash Code 10	Lockout Active	Fast Flash
Fault- FP1 Sensor Error	Flash Code 11	Dehumidification Mode	Flash Code 2
Future Use	Flash Code 12	Future Use	Flash Code 3
Non-Critical AXB Sensor Error	Flash Code 13	Future Use	Flash Code 4
Critical AXB Sensor Error	Flash Code 14	Load Shed	Flash Code 5
Alarm - Hot Water	Flash Code 15	ESD	Flash Code 6
Fault Variable Speed Pump	Flash Code 16	Future Use	Flash Code 7
Future Use	Flash Code 17	Fault LED (LED 1, Red) Cont.	
Non-Critical Communication Error	Flash Code 18	Alarm - Home Automation 1	Flash Code 23
Fault - Critical Communication Error	Flash Code 19	Alarm - Home Automation 2	Flash Code 24
Alarm - Low Loop Pressure	Flash Code 21	Fault - EEV Error	Flash Code 25
Fault - Communication ECM Fan Motor Error	Flash Code 22		

AXB Accessory 2 DIP Settings		
SW1-4	SW1-5	DESCRIPTION
ON	ON	Cycles with Blower
OFF	ON	Cycles with CC first stage compressor or compressor spd 1-12
ON	OFF	Cycles with CC2 second stage of compressor or comp spd 7-12
OFF	OFF	Cycles with DH from ABC board

ABC SW2 Accessory Relay		
DESCRIPTION	SW2-4	SW2-5
Cycle with Blower	ON	ON
Cycle with Compressor	OFF	OFF
Water Valve Slow Opening	ON	OFF
Cycle with Comm. T-stat Hum Cmd	OFF	ON

Notes

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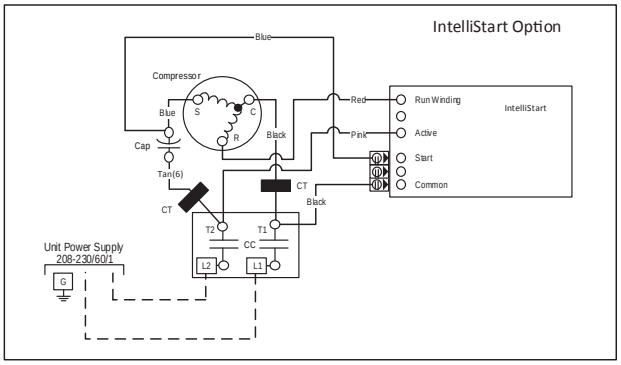
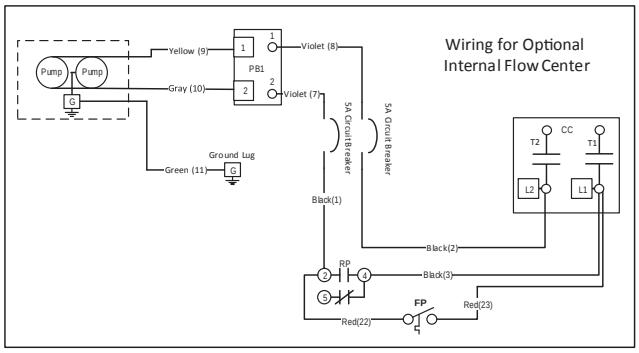
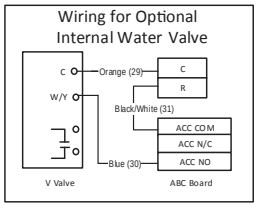
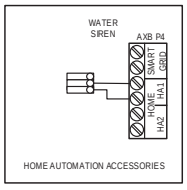
Wiring Schematics cont.

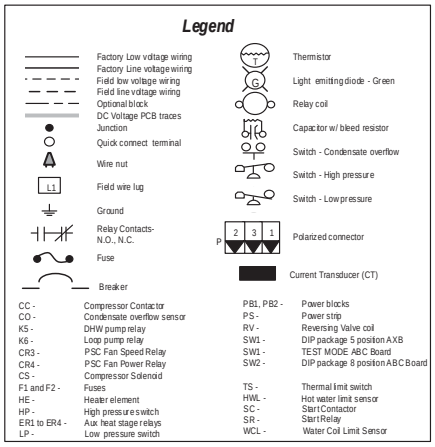
Aurora Advanced with ECM and IntelliStart cont.











Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Engineering Guide Specifications

General

Furnish and install Water Source Heat Pumps, as indicated on the plans. Equipment shall be completely assembled, piped and internally wired. Capacities and characteristics as listed in the schedule and the specifications that follow. The reverse cycle heating/cooling units shall be either side or bottom air inlet and discharge for pad or roof mounting. Units shall be AHRI/ISO 13256-1 certified and listed by a nationally recognized safety-testing laboratory or agency, such as ETL Testing Laboratory. Each unit shall be computer run-tested at the factory with conditioned water and operation verified to catalog data. Each unit shall be mounted on a pallet and shipped stretch-wrapped. The units shall be designed to operate with entering liquid temperature between 20°F and 120°F [-6.7°C and 48.9°C].

Casing and Cabinet

The cabinet is constructed of a super durable polyester powder coat paint on G60 galvanized heavy gauge sheet metal which is certified for: 750 hour certified ASTM B117 salt spray, 80 cycles of SAE-J2334 cyclical salt spray, >336 hours. ASTM G154 UVB rating. The interior shall be insulated with 1-inch thick, multi-density, cleanable aluminum foil coated glass fiber with edges sealed or tucked under flanges to prevent the introduction of glass fibers into the discharge air or 1″ closed cell foam. Standard cabinet panel insulation must meet NFPA 90A requirements, air erosion and mold growth limits of UL-181, stringent fungal resistance test per ASTM-C1071 and ASTM G21, and shall meet zero level bacteria growth per ASTM G22. Unit insulation must meet these stringent requirements or unit(s) will not be accepted.

One blower, one return air, and two compressor compartment access panels shall be ‘lift-out’ removable with supply and return ductwork in place. The front access panels shall be lift-out to provide easy access to the electrical/compressor section. The control box shall be removable to allow easy access to the compressor. The internal component layout shall provide for service access from the front side for restricted installations.

A duct collar shall be provided for field installation on the supply and return air openings. All units shall have an insulated divider panel between the air handling section and the compressor section to minimize the transmission of compressor noise and to permit operational service testing without air bypass.

The compressor shall be double isolation mounted using selected durometer grommets to provide vibration free compressor mounting.

The drain pan shall be of plastic construction to inhibit corrosion and bacterial growth. Drain outlet shall be located on pan as to allow complete and unobstructed drainage of condensate. The unit as standard will be supplied with solid-state electronic condensate overflow protection. Mechanical float switches WILL NOT be accepted. All units shall be furnished with a PVC stub condensate drain connection.

Refrigerant Circuit

All units shall contain a sealed refrigerant circuit including a hermetic motor-compressor, discharge line muffler, bidirectional thermostatic expansion valve, finned tube air-to-refrigerant heat exchanger, reversing valve, coaxial tube water-to-refrigerant heat exchanger, and service ports.

Compressors shall be high-efficiency dual capacity scroll type designed for heat pump duty and mounted on vibration isolators. Compressor motors shall be single-phase PSC with overload protection. The finned tube air-to-refrigerant heat exchanger will be aluminum tube/aluminum fin and shall be sized for low-face velocity and constructed of lanced aluminum fins bonded to performance enhanced tubes in a staggered pattern not less than three rows deep for superior performance. The aluminum tube and fin air-to-refrigerant heat exchanger has as optional to be electro-coated with AlumiSeal. All models shall include discharge mufflers to help quiet compressor discharge gas pulsations. Refrigerant to air heat exchangers shall utilize enhanced tube construction rated to withstand 600 psig (4135 kPa) refrigerant working pressure.

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.

All units shall have the source coaxial tube refrigerant-to-water heat exchanger coated with ThermaShield. Refrigerant suction lines shall be insulated to prevent condensation at low liquid temperatures.

Engineering Guide Specifications cont.

Blower Motor and Assembly

The blower shall be a direct drive centrifugal type with a dynamically balanced wheel. The housing and wheel shall be designed for quiet low outlet velocity operation. The blower housing shall be removable from the unit without disconnecting the supply air ductwork for servicing of the blower motor. The blower motor shall be a variable-speed ECM type. The Variable Speed ECM blower motor shall be soft starting, shall maintain constant cfm over its operating static range, and shall provide 12 cfm settings. The blower motor shall be isolated from the housing by rubber grommets. The motor shall be permanently lubricated and have thermostatic overload protection. Variable Speed ECM motors shall be long-life ball bearing type.

Electrical

A control box shall be located within the unit compressor compartment and shall contain a 75VA transformer, 24 volt activated, 2 pole compressor contactor, circuit breakers for protecting loop pumps, 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. An Aurora, a microprocessor-based controller, interfaces with a multi-stage electronic thermostat to monitor and control unit operation shall be provided. The control shall provide operational sequencing, blower speed control, high and low pressure switch monitoring, freeze detection sensing, condensate overflow sensing, auxiliary heat staging, lockout mode control, loop pump control, LED status and fault indicators, fault memory, field selectable options, and accessory output. The Lockout signal output shall have a pulsed option so that DDC systems can read specific lockout conditions from the control.

The optional Aurora Advanced Control shall also feature an Energy Monitoring Package that will provide real time total power consumption, compressor monitoring, On Peak input signal for utility controlled demand programs, loop pump linking for multiple units driving a common flow center and up to two optional home automation inputs to drive dedicated alarms for sump pump, security system, and smoke/CO_2 or dirty air filter sensors. Optional Refrigerant and Performance Monitoring kits to provide real time data including refrigerant superheat and subcooling, as well as heat of extraction/rejection capacity data. The capability for communicating to advanced IntelliZone2 zoning packages with up to 4 zones (Dual Capacity), shall also be provided with complete fault and information display on the zoning MasterStat.

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. The blower motor and control box shall be harness plug wired for easy removal.

An optional Aurora Interface Diagnostic (AID) Tool shall communicate with the Aurora control allowing quick and easy access to setup, monitoring, and troubleshooting of any Aurora control. The device shall include the features of ECM airflow setup, fault description and history, manual operation capability, sensor readings, timings, and other diagnostic tools.

Optional IntelliStart® (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. IntelliStart shall reduce normal starting current by up to 60%.

Piping

All side water line (supply and return) connections shall be 1″ FPT copper fittings fixed to the corner post, which eliminates the need for backup pipe wrenches. All bottom flow center connections shall be 1-1/4″ PE fusion to GL fittings that provide a double o-ring seal. All bottom water valve options accept 1″ hose. All water piping shall be insulated to prevent condensation at low liquid temperatures, the condensate connection shall be a 3/4 in. [19.1 mm] PVC pipe.

Options and Accessories

Cupronickel Heat Exchanger

An optional cupronickel water-to-refrigerant heat exchanger shall be provided.

Thermostat (field-installed)

A multi-stage auto-changeover electronic digital thermostat shall be provided. The thermostat shall offer three heating and two cooling stages with precise temperature control. An OFF-HEAT-AUTO-COOL-EMERG system switch, OFF-AUTO blower switch, and indicating LEDs shall be provided. The thermostat shall display in °F or °C. The thermostat shall be either a communicating type or a traditional 24 VAC type.

Communicating Thermostat (field-installed)

A communicating auto-changeover electronic digital thermostat shall be provided. The thermostat shall offer variable speed heating and cooling staging with precise temperature control. An OFF-HEAT-AUTO-COOL-EMERG system switch, OFF-AUTO blower switch, and indicating display shall be provided. The thermostat shall display in °F or °C. The thermostat shall provide real time energy consumption data of the unit.

Engineering Guide Specifications cont.

Communicating Color Touchscreen Thermostat (field-installed)

A color touchscreen communicating auto-changeover electronic digital thermostat shall be provided. The thermostat shall offer variable speed heating and cooling staging with precise temperature control. An OFF-HEAT-AUTO-COOL-EMERG system switch, OFF-AUTO blower switch, and indicating display shall be provided. The thermostat shall display in °F or °C. The thermostat shall provide real time and historical energy consumption data of the unit.

AlpinePure Drain Pan Treatment

Provides dependable, sustained time-release protection from slime build-up and foul smelling odors in the drain pan. Also adds a light, pleasant scent to the air.

Earth Loop Flow Center

A self-contained module shall provide all liquid flow, fill and connection requirements for ground source closed loop systems up to 20 gpm. The pumps shall be wired to a power block located in the nearest unit. The heat pump units shall contain low voltage pump linking control so that two units may share one flow center.

Auxiliary Heater (factory or field-installed)

An electric resistance heater shall provide supplemental and/or emergency heating capability. Units shall have the control panel and resistance heater coil assembly mounted internally. A low voltage plug shall be provided in each unit for quick auxiliary heat connection. The heater shall operate in sequenced stages as controlled by the unit's microprocessor. The heater shall feed line voltage power to the unit blower and transformer to provide emergency heat capability in the event of an open compressor circuit breaker.

Symphony/Aurora Weblink (if available)

Symphony is a Wi-Fi enabled smart comfort system for your geothermal heat pump that is unsurpassed in its ease of use, feature set and capability. Symphony marries the sophisticated Aurora controls of your Geothermal System with a web enabled Aurora Weblink Router giving you access to your comfort geothermal heat pump from practically anywhere. Symphony is cloud-based and includes your whole geothermal system and isn't limited to just the thermostat as in other 'smart thermostat' systems. Symphony web-portal provides control over every aspect of your geothermal heat pump including:

- View your geothermal system's operation from anywhere. Great for vacation or second homes.
- Dashboard for quick review of operation, alerts and energy use (if installed).
- Smart Device capability
- Modify your zone temperature setpoints and programs remotely
- IntelliZone2 zoning system compatible to access up to 6 zone thermostats with variable speed, 4 zones with dual capacity, and 2 zones with single speed geothermal heat pumps.
- Observe and track energy use for the last 13 months (if installed).
- Receive equipment alerts and service reminders (as well as your dealer) via email and texts
- Monitor earth loop and air temperature of your geothermal heat pump directly (if installed).
- Utilize a 'wireless' thermostat system with no visible thermostats using a smart device. By mounting a communicating thermostat in a closet with external mud-in sensor located in the living space, a smart device can be used as a wireless thermostat for the ultimate in flexibility (TPCC32U01*, TPCM32U03A*, TPCM32U04A*, or MasterStat only)
- Optional Add-on sensor for sump pump alarm. If a sump pump overflows you will receive a text or email.

External Sump Alarm Sensors for Aurora Controls (if available)

The sensor can be added to any Aurora Advanced Control System (including both ABC and AXB) to monitor a sump pump. The sensor can be connected to the Aurora Home Automation inputs (HA-1 or HA-2) of the AXB board. These will each display an E23 and E24 code respectively when the alarm is active and when Symphony/AWL is installed will also produce text/e-mail notifications.

- This sensor provides a relay closure that can be used to trip a fault when moisture is present. This can be used as a primary sump alarm or simply a wet basement or signal a blown washing machine hose.

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Revision Guide

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