

**SUBMITTAL DATA**  
*Affinity Series*  
*Single Speed Hydronic Heat Pump*



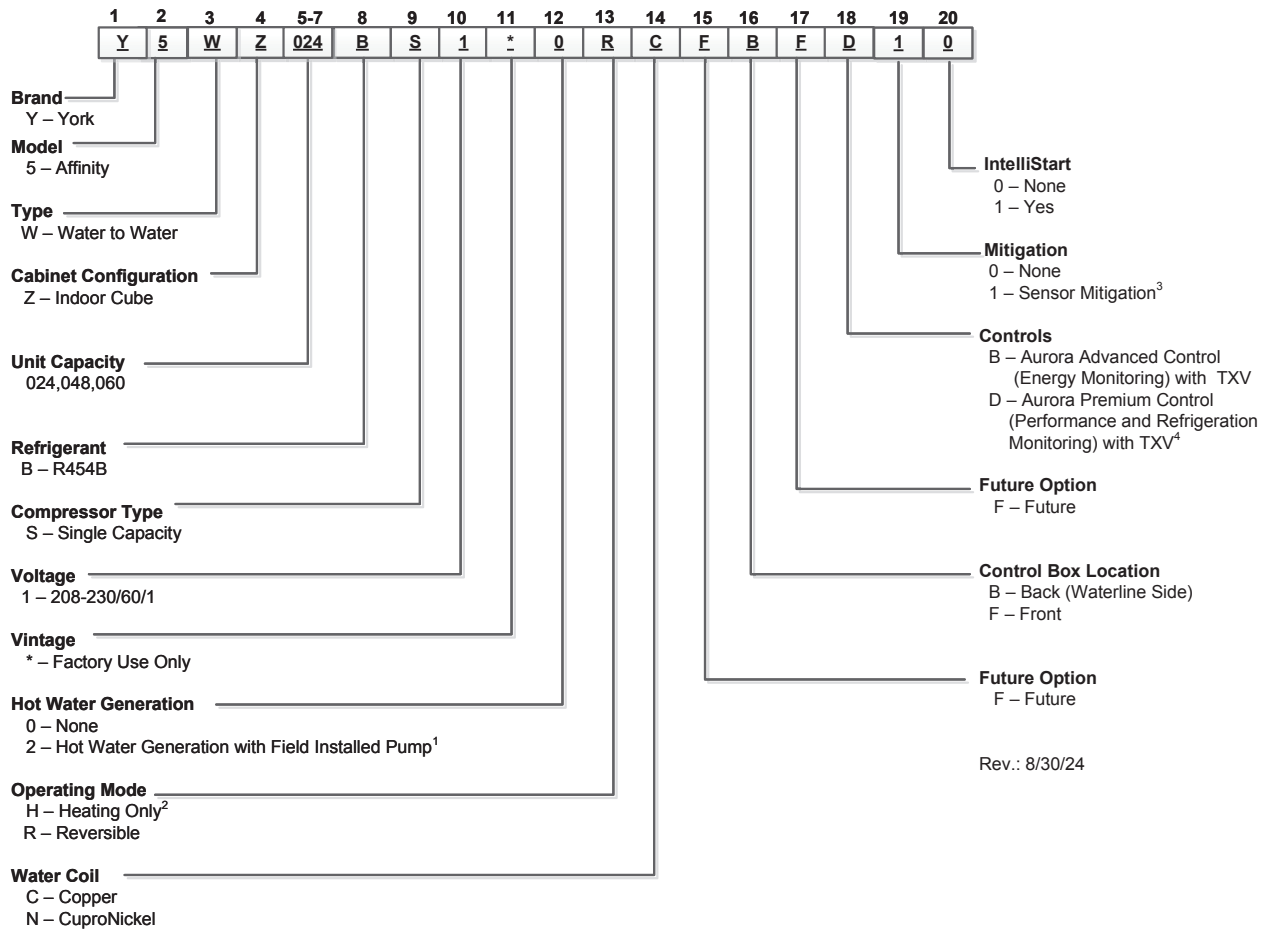
60Hz / R-454B

SDW5-0026Y



Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_

## Nomenclature



Rev.: 8/30/24

NOTES: 1 – Available on 048 and 060 only. Hot water generator requires field installed external pump kit.  
 2 – 024 heating only model is available only with copper double wall vented load coax for potable water, and is not designed to be converted to dedicated cooling units.  
 3 – Mitigation required on 060 model, not available on 024 and 048 models.  
 4 – Flow meter for Performance option is shipped with unit, and must be externally field installed.

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**Affinity Series-  
Geothermal Hydronic Heat Pump  
2-5 Tons 60Hz**



**AHRI/ISO 13256-1 Performance Ratings**

Model	Capacity Modulation	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling 86°F Source 53.6°F Load		Heating 68°F Source 104°F Load		Cooling 59°F Source 53.6°F Load		Heating 50°F Source 104°F Load		Cooling 77°F Source 53.6°F Load		Heating 32°F Source 104°F Load	
		Load Gpm	Source Gpm	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
<b>024</b>	Full	7	7	24,400	14.6	30,700	4.3	26,000	22.2	27,000	3.8	24,700	16.1	22,000	3.1
<b>048</b>	Full	15	15	48,100	14.0	63,000	4.4	51,100	20.9	52,600	3.6	49,700	16.1	42,700	3.1
<b>060</b>	Full	18	18	55,300	13.7	76,500	4.5	62,800	20.4	63,400	3.8	58,800	16.1	50,200	3.1

All ratings based upon 208V operation

10/11/24

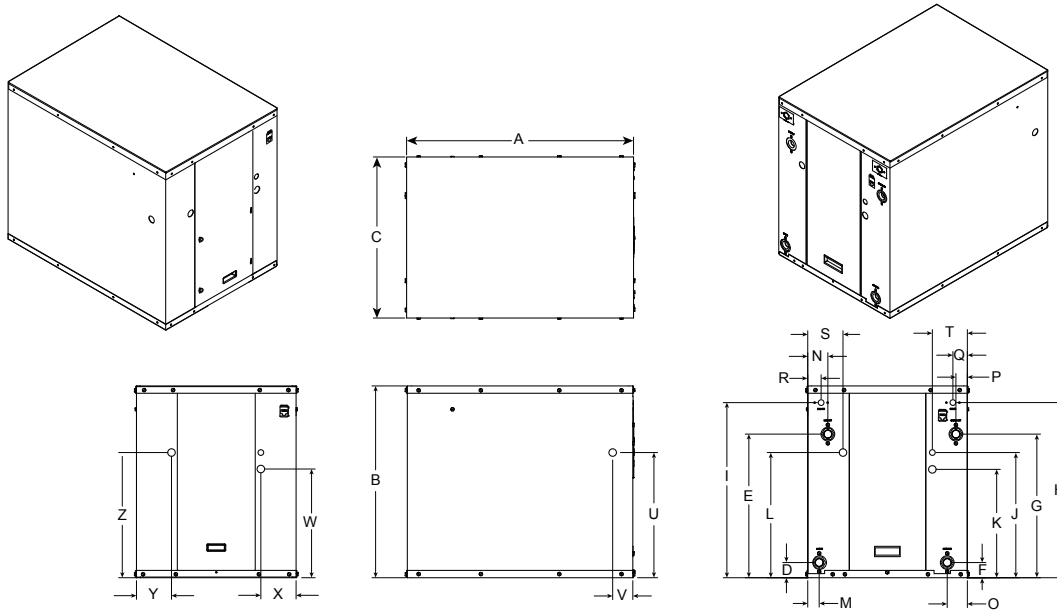
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## Dimensional Data



2/15/16

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

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

Note: Plastic front panel extends 1.4" (3.56 cm) beyond front of cabinet.

07/16/24

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## Physical Data

Model	024	024 Heating	048	060
Compressor (1 each)	Scroll			
Factory Charge R410a, oz [kg]	46.0 [1.30]	42.0 [1.19]	62 [1.76]	82 [2.32]
Coax & Piping Water Volume - gal [l]	.89 [3.38]	.89 [3.38]	1.4 [5.25]	1.6 [6.13]
Weight - Operating, lb [kg]	225 [102.1]	225 [102.1]	325 [147.4]	345 [156.5]
Weight - Packaged, lb [kg]	247 [112.0]	247 [112.0]	340 [154.2]	360 [163.3]

Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_  
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## Electrical Data

Unit Model	Rated Voltage	Voltage Min/Max	Compressor				Load Pump	Source Pump	Total Unit FLA	Min Ckt Amp	Maximum Fuse/HACR
			MCC	RLA	LRA	LRA*					
<b>024</b>	208-230/60/1	187/253	19.8	12.7	75.6	26.5	1.8	5.4	19.9	23.1	35
<b>048</b>	208-230/60/1	187/253	37.0	23.7	157.0	55.00	1.8	5.4	30.9	36.8	60
<b>060</b>	208-230/60/1	187/253	43.0	27.5	170.0	59.5	1.8	5.4	34.7	41.6	70

Notes: All fuses type "D" time delay (or HACR circuit breaker in USA).  
 Source pump amps shown are for up to a 1/2 HP pump  
 Load pump amps shown are for small circulators.  
 \*With optional IntelliStart

9/12/24

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## Definitions

### Abbreviations and Definitions

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

### Notes to Performance Data Tables

The following notes apply to all performance data tables:

- 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 EST. 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.
- Entering water temperatures below 40°F assumes 15% antifreeze solution.
- Interpolation between ELT, EST, and GPM data is permissible.
- Operation in the gray areas is not recommended.

## Reference Calculations

<p><b>Heating Calculations:</b></p> $LWT = EWT - \frac{HE}{GPM \times C^*}$ $HE = C^* \times GPM \times (EWT - LWT)$	<p><b>Cooling Calculations:</b></p> $LWT = EWT + \frac{HR}{GPM \times C^*}$ $HR = C^* \times GPM \times (LWT - EWT)$
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**NOTE:** \* C = 500 for pure water, 485 for brine.

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**Affinity Series-  
Geothermal Hydronic Heat Pump  
2-5 Tons 60Hz**



## Pressure Drop

**Pressure Drop Table**

Model	GPM	Pressure Drop (psi)				
		30°F	60°F	80°F	100°F	120°F
024R*	4.0	0.9	0.7	0.6	0.5	0.4
	5.5	2.0	1.9	1.8	1.7	1.5
	7.0	3.2	3.0	2.9	2.8	2.6
	8.5	4.4	4.2	4.0	3.8	3.7
048H/R	8.0	1.7	1.4	1.4	1.3	1.3
	11.5	3.6	3.4	3.2	3.0	2.8
	15.0	5.6	5.4	5.0	4.6	4.2
	18.5	8.3	8.1	7.6	7.2	6.8
060H/R	9.0	1.4	1.1	1.0	1.0	0.9
	13.5	4.2	3.9	3.5	3.1	2.7
	18.0	6.9	6.7	6.0	5.2	4.5
	22.5	10.7	10.5	10.0	9.4	8.7

**Heating Only Load Side Pressure Drop Table**

Model	GPM	Pressure Drop (psi)			
		60°F	80°F	100°F	120°F
024H	4.0	1.3	1.3	1.2	1.2
	5.5	3.0	2.9	2.8	2.7
	7.0	4.6	4.4	4.3	4.1
	8.5	6.7	6.5	6.4	6.2

**Note:** Temperatures are Entering Water Temperatures 10/11/24

**Note:** Temperatures are Entering Water Temperatures 10/11/24  
 \*Domestic water heating units source side pressure drop and reversible units load and source pressure drop.



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**Affinity Series-  
Geothermal Hydronic Heat Pump  
2-5 Tons 60Hz**



**Performance Data**

**024 Heating**

Source		Load Flow-4 GPM							Load Flow-5.5 GPM							Load Flow-7 GPM							
EST	Flow	10	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST			
° F	GPM	° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F			
25	5.5	60	Operation not recommended																				
		80	Operation not recommended																				
		100	Operation not recommended																				
		120	Operation not recommended																				
		120	Operation not recommended																				
30	4	60	70.8	20.9	1.29	16.5	4.75	20.1	67.9	21.1	1.27	16.7	4.86	20.1	66.2	21.2	1.25	16.9	4.97	20.0			
		80	90.4	20.2	1.73	14.3	3.43	20.8	87.6	20.4	1.70	14.6	3.51	20.7	86.0	20.5	1.68	14.8	3.58	20.6			
		100	110.1	19.6	2.16	12.2	2.65	21.4	107.4	19.7	2.13	12.4	2.70	21.3	105.8	19.8	2.10	12.6	2.76	21.3			
		120	129.7	18.9	2.60	10.0	2.13	22.0	127.1	19.0	2.57	10.2	2.17	22.0	125.6	19.1	2.53	10.5	2.21	21.9			
	30	5.5	60	71.8	22.9	1.21	18.8	5.55	20.3	50.6	22.6	1.23	18.4	5.39	20.5	29.5	22.3	1.25	18.0	5.23	20.7		
			80	91.3	21.8	1.66	16.2	3.85	21.7	88.8	21.7	1.67	16.0	3.80	21.8	86.4	21.6	1.68	15.8	3.76	21.8		
			100	110.7	20.8	2.12	13.5	2.87	23.0	108.4	20.8	2.11	13.6	2.88	23.0	106.1	20.8	2.11	13.6	2.89	23.0		
			120	130.2	19.7	2.57	10.9	2.25	24.4	128.0	19.9	2.56	11.2	2.28	24.2	125.9	20.1	2.54	11.4	2.32	24.1		
		30	7	60	71.9	23.0	1.26	18.7	5.35	22.4	60.0	23.0	1.25	18.8	5.39	22.4	48.2	23.1	1.25	18.8	5.42	22.5	
				80	91.4	22.0	1.71	16.2	3.79	23.4	88.9	22.1	1.69	16.3	3.84	23.4	86.5	22.1	1.67	16.4	3.89	23.4	
				100	110.9	21.1	2.15	13.7	2.87	24.5	108.5	21.1	2.12	13.9	2.92	24.4	106.2	21.2	2.09	14.1	2.98	24.4	
				120	130.4	20.1	2.60	11.2	2.27	25.5	128.2	20.2	2.55	11.5	2.32	25.4	126.0	20.3	2.51	11.7	2.37	25.3	
50			4	60	74.8	28.7	1.25	24.4	6.68	37.4	62.3	28.6	1.27	24.3	6.59	37.5	49.9	28.6	1.28	24.2	6.51	37.5	
				80	94.2	27.6	1.70	21.8	4.73	38.8	91.2	27.6	1.71	21.8	4.72	38.8	88.2	27.7	1.72	21.8	4.71	38.7	
				100	113.7	26.5	2.15	19.1	3.60	40.1	110.8	26.7	2.15	19.3	3.62	40.0	107.9	26.9	2.15	19.5	3.64	39.9	
				120	133.1	25.4	2.60	16.5	2.86	41.5	130.4	25.7	2.60	16.8	2.89	41.3	127.7	26.0	2.59	17.2	2.93	41.2	
	50		5.5	60	75.0	29.2	1.27	24.8	6.75	40.0	67.2	29.3	1.27	24.9	6.77	40.0	59.4	29.4	1.27	25.0	6.79	40.0	
				80	94.4	28.0	1.70	22.2	4.83	41.1	91.4	28.2	1.69	22.4	4.87	41.0	88.4	28.4	1.69	22.6	4.92	40.9	
				100	113.8	26.9	2.13	19.6	3.69	42.1	110.9	27.1	2.12	19.9	3.74	42.0	108.1	27.3	2.11	20.1	3.79	41.9	
				120	133.2	25.7	2.57	16.9	2.93	43.2	130.5	26.0	2.55	17.3	2.99	43.0	127.8	26.3	2.54	17.7	3.04	42.9	
		50	7	60	75.3	29.7	1.28	25.3	6.83	42.6	72.1	29.9	1.27	25.6	6.93	42.5	68.9	30.2	1.26	25.9	7.03	42.4	
				80	94.7	28.4	1.70	22.6	4.94	43.3	91.6	28.7	1.68	23.0	5.02	43.2	88.5	29.0	1.66	23.3	5.10	43.1	
				100	114.0	27.2	2.12	20.0	3.80	44.1	111.1	27.5	2.09	20.4	3.86	44.0	108.2	27.8	2.07	20.8	3.93	43.9	
				120	133.4	26.0	2.54	17.3	3.03	44.9	130.6	26.3	2.51	17.8	3.09	44.8	127.8	26.7	2.48	18.2	3.15	44.6	
70			4	60	77.7	34.4	1.29	30.0	7.81	54.5	74.0	34.6	1.30	30.2	7.80	54.5	70.3	34.8	1.31	30.3	7.78	54.4	
				80	97.2	33.3	1.74	27.4	5.62	55.9	93.6	33.6	1.75	27.6	5.64	55.8	90.0	33.8	1.75	27.8	5.65	55.6	
				100	116.6	32.2	2.18	24.7	4.32	57.2	113.1	32.5	2.19	25.1	4.35	57.1	109.7	32.9	2.20	25.4	4.38	56.9	
				120	136.0	31.1	2.63	22.1	3.46	58.6	132.7	31.5	2.64	22.5	3.50	58.4	129.4	31.9	2.64	22.9	3.54	58.2	
	70		5.5	60	78.2	35.3	1.27	31.0	8.14	57.6	74.4	35.5	1.28	31.1	8.13	57.5	70.5	35.7	1.29	31.3	8.11	57.4	
				80	97.5	34.0	1.69	28.2	5.88	58.7	93.9	34.3	1.70	28.5	5.89	58.6	90.2	34.6	1.72	28.7	5.91	58.5	
				100	116.8	32.6	2.12	25.4	4.52	59.8	113.3	33.1	2.13	25.8	4.55	59.6	109.9	33.5	2.14	26.2	4.59	59.5	
				120	136.1	31.3	2.54	22.6	3.61	60.9	132.8	31.9	2.55	23.1	3.66	60.7	129.5	32.4	2.57	23.6	3.70	60.5	
		70	7	60	78.7	36.2	1.25	31.9	8.49	60.6	74.7	36.4	1.26	32.1	8.46	60.5	70.8	36.6	1.27	32.3	8.44	60.5	
				80	97.9	34.6	1.65	29.0	6.15	61.5	94.1	35.0	1.66	29.3	6.17	61.4	90.4	35.4	1.68	29.6	6.18	61.3	
				100	117.0	33.1	2.05	26.1	4.73	62.3	113.5	33.6	2.07	26.5	4.76	62.2	110.1	34.1	2.08	27.0	4.80	62.0	
				120	136.2	31.5	2.45	23.1	3.77	63.2	133.0	32.2	2.47	23.8	3.82	63.0	129.7	32.9	2.49	24.4	3.87	62.8	
90			4	60	81.0	40.8	1.42	36.0	8.42	71.5	76.6	41.1	1.38	36.4	8.76	71.3	72.2	41.3	1.33	36.8	9.10	71.1	
				80	100.7	40.1	1.83	33.8	6.41	72.6	96.3	40.3	1.77	34.2	6.68	72.4	91.9	40.4	1.71	34.6	6.94	72.2	
				100	Operation not recommended																		
				120	Operation not recommended																		
	90		5.5	60	81.6	41.9	1.43	37.0	8.60	75.1	77.0	42.1	1.38	37.4	8.93	75.0	72.5	42.3	1.34	37.7	9.28	74.8	
				80	101.2	41.2	1.84	34.9	6.56	76.0	96.7	41.3	1.78	35.2	6.81	75.8	92.2	41.5	1.72	35.6	7.08	75.7	
				100	Operation not recommended																		
				120	Operation not recommended																		
		90	7	60	82.1	42.9	1.43	38.0	8.79	78.8	77.4	43.1	1.39	38.4	9.13	78.7	72.8	43.3	1.34	38.7	9.47	78.6	
				80	101.8	42.2	1.84	35.9	6.71	79.4	97.1	42.4	1.79	36.3	6.96	79.3	92.5	42.5	1.73	36.6	7.21	79.2	
				100	Operation not recommended																		
				120	Operation not recommended																		

EST = entering source fluid temperature to heat pump  
 HC = total heating capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HE = heat extracted in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 COP = coefficient of performance  
 LLT = leaving load fluid temperature from heat pump

8/29/24

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# Performance Data cont.

## 024 Heating Vented Load Coax

Source		Load Flow-4 GPM							Load Flow-5.5 GPM							Load Flow-7 GPM						
EST	Flow	10	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST		
° F	GPM	° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F		
25	5.5	60	Operation not recommended																			
		80	Operation not recommended																			
		100	Operation not recommended																			
		120	Operation not recommended																			
	30	7	60	71.0	21.3	1.33	16.8	4.69	201	68.0	21.4	1.34	16.8	4.70	20.0	66.3	21.5	1.34	16.9	4.70	20.0	
			80	90.6	20.6	1.79	14.5	3.38	20.7	87.7	20.6	1.79	14.5	3.38	20.7	86.1	20.7	1.79	14.6	3.39	20.7	
			100	110.3	19.9	2.24	12.2	2.60	21.4	107.4	19.9	2.24	12.2	2.60	21.4	105.8	19.8	2.23	12.2	2.60	21.4	
			120	129.9	19.2	2.70	10.0	2.08	22.1	127.2	19.1	2.69	9.9	2.08	22.1	125.6	19.0	2.68	9.9	2.08	22.1	
		30	4	60	71.7	22.7	1.32	18.2	5.04	20.6	50.6	22.9	1.34	18.3	5.02	20.6	29.5	23.0	1.35	18.4	4.99	20.5
				80	91.3	21.9	1.80	15.8	3.58	21.9	88.9	22.1	1.79	16.0	3.62	21.7	86.6	22.3	1.79	16.2	3.66	21.6
				100	110.9	21.2	2.27	13.4	2.73	23.1	108.6	21.4	2.25	13.7	2.79	22.9	106.4	21.7	2.23	14.1	2.85	22.8
				120	130.5	20.4	2.75	11.0	2.17	24.3	128.4	20.7	2.71	11.5	2.24	24.1	126.2	21.0	2.67	11.9	2.30	23.9
30			5.5	60	71.9	23.0	1.35	18.4	5.01	22.6	60.1	23.2	1.33	18.7	5.13	22.5	48.3	23.5	1.31	19.0	5.24	22.4
				80	91.4	22.1	1.79	16.0	3.62	23.5	89.0	22.4	1.77	16.3	3.70	23.4	86.7	22.7	1.76	16.6	3.77	23.3
				100	110.9	21.2	2.24	13.6	2.78	24.5	108.7	21.5	2.22	14.0	2.84	24.4	106.4	21.9	2.21	14.3	2.90	24.2
				120	130.5	20.4	2.68	11.2	2.22	25.5	128.3	20.7	2.67	11.6	2.27	25.3	126.2	21.1	2.66	12.0	2.32	25.2
	30		7	60	72.0	23.3	1.37	18.6	4.98	24.5	69.5	23.6	1.32	19.1	5.25	24.4	67.0	23.9	1.27	19.6	5.51	24.2
				80	91.5	22.3	1.78	16.2	3.66	25.2	89.1	22.6	1.76	16.6	3.78	25.1	86.8	23.0	1.73	17.1	3.90	25.0
				100	111.0	21.3	2.20	13.8	2.84	25.9	108.7	21.7	2.19	14.2	2.90	25.8	106.5	22.0	2.18	14.6	2.96	25.7
				120	130.5	20.3	2.61	11.4	2.28	26.6	128.3	20.7	2.63	11.7	2.31	26.5	126.2	21.1	2.64	12.1	2.34	26.4
		50	4	60	74.6	28.4	1.39	23.7	5.94	37.8	62.2	28.6	1.38	23.9	6.06	37.7	49.8	28.9	1.37	24.2	6.18	37.5
				80	94.1	27.4	1.86	21.0	4.28	39.2	91.2	27.6	1.85	21.3	4.35	39.0	88.2	27.8	1.84	21.6	4.42	38.9
				100	113.6	26.4	2.34	18.4	3.29	40.5	110.7	26.6	2.32	18.7	3.34	40.4	107.9	26.8	2.31	18.9	3.39	40.2
				120	133.1	25.4	2.81	15.8	2.64	41.9	130.3	25.6	2.79	16.0	2.67	41.7	127.6	25.8	2.78	16.3	2.70	41.6
50			5.5	60	75.0	29.1	1.41	24.3	6.06	40.2	67.2	29.3	1.37	24.6	6.29	40.1	59.4	29.6	1.33	25.0	6.53	40.0
				80	94.4	27.9	1.85	21.5	4.40	41.3	91.4	28.1	1.82	21.9	4.52	41.2	88.3	28.3	1.79	22.2	4.63	41.1
				100	113.7	26.7	2.30	18.8	3.39	42.4	110.9	26.9	2.28	19.1	3.45	42.3	108.0	27.1	2.26	19.4	3.52	42.2
				120	133.1	25.5	2.75	16.1	2.71	43.5	130.4	25.7	2.74	16.3	2.75	43.4	127.6	25.9	2.73	16.6	2.78	43.3
	50		7	60	75.3	29.7	1.42	24.9	6.09	42.7	72.1	30.0	1.35	25.4	6.49	42.5	68.9	30.3	1.29	25.9	6.88	42.4
				80	94.6	28.3	1.84	22.0	4.47	43.5	91.5	28.6	1.80	22.5	4.64	43.4	88.5	28.9	1.75	22.9	4.82	43.3
				100	113.9	26.9	2.27	19.2	3.46	44.3	111.0	27.2	2.24	19.6	3.54	44.2	108.1	27.5	2.22	19.9	3.62	44.1
				120	133.2	25.6	2.69	16.4	2.77	45.2	130.4	25.8	2.69	16.7	2.80	45.1	127.7	26.1	2.69	16.9	2.84	45.0
		70	4	60	77.6	34.1	1.46	29.1	6.84	55.0	73.9	34.4	1.42	29.6	7.11	54.8	70.2	34.7	1.38	30.0	7.37	54.5
				80	96.9	32.9	1.93	26.3	4.99	56.5	93.4	33.1	1.91	26.6	5.09	56.3	89.8	33.3	1.88	26.9	5.19	56.1
				100	116.3	31.6	2.40	23.4	3.86	57.9	112.9	31.8	2.39	23.6	3.89	57.8	109.4	31.9	2.38	23.8	3.93	57.7
				120	135.7	30.4	2.87	20.6	3.10	59.4	132.3	30.5	2.88	20.6	3.10	59.4	129.0	30.5	2.88	20.7	3.10	59.3
70			5.5	60	78.1	35.1	1.47	30.1	7.02	57.9	74.3	35.4	1.40	30.6	7.39	57.7	70.5	35.7	1.34	31.1	7.80	57.5
				80	97.3	33.6	1.92	27.1	5.14	59.1	93.7	33.8	1.87	27.4	5.29	59.0	90.0	34.0	1.83	27.8	5.45	58.8
				100	116.5	32.1	2.37	24.0	3.97	60.3	113.0	32.3	2.34	24.3	4.03	60.2	109.5	32.4	2.32	24.5	4.10	60.2
				120	135.8	30.6	2.82	21.0	3.18	61.5	132.4	30.7	2.81	21.1	3.20	61.5	129.1	30.8	2.81	21.2	3.22	61.5
	70		7	60	78.6	36.1	1.47	31.1	7.20	60.8	74.7	36.4	1.39	31.6	7.72	60.7	70.8	36.6	1.30	32.2	8.25	60.5
				80	97.7	34.3	1.90	27.8	5.29	61.8	94.0	34.6	1.84	28.3	5.51	61.7	90.2	34.8	1.78	28.7	5.73	61.5
				100	116.8	32.6	2.34	24.6	4.08	62.8	113.2	32.8	2.30	24.9	4.18	62.7	109.7	32.9	2.25	25.2	4.28	62.6
				120	135.9	30.8	2.77	21.3	3.26	63.7	132.5	31.0	2.75	21.6	3.30	63.6	129.2	31.1	2.73	21.8	3.34	63.6
		90	4	Operation not recommended																		
			5.5	Operation not recommended																		
			7	Operation not recommended																		

EST = entering source fluid temperature to heat pump  
 HC = total heating capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HE = heat extracted in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 COP = coefficient of performance  
 LLT = leaving load fluid temperature from heat pump

8/29/24

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_



# Performance Data

## 024 Cooling

Source		Load Flow-4 GPM							Load Flow-5.5 GPM							Load Flow-7 GPM						
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F		
30	4	50	36.0	271	0.86	30.0	31.51	45.5	35.7	27.7	0.89	30.7	31.31	45.8	35.4	28.3	0.91	31.4	31.10	46.2		
		70	54.8	29.6	0.87	32.5	33.98	46.8	54.5	30.0	0.89	33.1	33.63	47.1	54.3	30.5	0.92	33.6	33.27	47.3		
		90	73.5	32.0	0.88	35.0	36.40	48.1	73.3	32.4	0.90	35.4	35.91	48.3	73.1	32.7	0.92	35.9	35.42	48.5		
		110	92.2	34.5	0.89	37.5	38.76	49.3	92.1	34.7	0.91	37.8	38.15	49.5	92.0	34.9	0.93	38.1	37.53	49.6		
	5.5	50	39.2	26.5	0.81	29.3	32.72	41.9	39.0	27.0	0.83	29.8	32.57	42.2	38.8	27.4	0.85	30.3	32.43	42.4		
		70	58.4	28.4	0.84	31.3	34.05	42.8	58.2	28.8	0.85	31.7	33.79	43.0	58.0	29.2	0.87	32.2	33.54	43.2		
		90	77.5	30.4	0.86	33.3	35.31	43.7	77.4	30.7	0.88	33.7	34.95	43.8	77.3	31.0	0.90	34.0	34.60	44.0		
		110	96.7	32.3	0.89	35.3	36.50	44.5	96.6	32.5	0.90	35.6	36.04	44.7	96.5	32.8	0.92	35.9	35.60	44.8		
	7	50	42.4	25.9	0.76	28.5	34.08	38.4	42.3	26.2	0.77	28.8	34.03	38.5	42.2	26.5	0.78	29.2	33.97	38.6		
		70	62.0	27.3	0.80	30.0	34.13	38.8	61.9	27.6	0.81	30.4	33.99	38.9	61.8	27.9	0.82	30.7	33.85	39.0		
		90	81.5	28.7	0.84	31.6	34.17	39.3	81.5	29.0	0.85	31.9	33.95	39.4	81.4	29.2	0.87	32.2	33.73	39.5		
		110	101.1	30.1	0.88	33.1	34.20	39.8	101.1	30.4	0.90	33.4	33.92	39.8	101.0	30.6	0.91	33.7	33.63	39.9		
50	4	50	36.7	25.9	1.14	29.7	24.48	65.3	36.2	26.7	1.18	30.7	24.42	65.8	35.8	27.6	1.22	31.7	24.37	66.3		
		70	54.6	30.0	1.16	33.9	27.42	67.5	54.2	30.6	1.20	34.7	27.16	67.9	53.9	31.3	1.24	35.5	26.91	68.3		
		90	72.4	34.1	1.19	38.2	30.22	69.7	72.2	34.6	1.23	38.7	29.80	70.0	72.0	35.0	1.26	39.3	29.37	70.3		
		110	90.3	38.2	1.22	42.4	32.90	71.8	90.2	38.5	1.25	42.7	32.32	72.0	90.0	38.8	1.29	43.1	31.75	72.2		
	5.5	50	39.6	25.6	1.11	29.3	23.07	61.9	39.3	26.2	1.12	30.0	23.40	62.2	39.0	26.9	1.13	30.7	23.73	62.6		
		70	58.0	29.4	1.14	33.3	25.88	63.6	57.8	29.9	1.15	33.9	25.94	63.8	57.6	30.5	1.17	34.5	26.00	64.1		
		90	76.4	33.3	1.16	37.2	28.56	65.2	76.3	33.7	1.19	37.7	28.34	65.4	76.1	34.1	1.21	38.2	28.13	65.6		
		110	94.9	37.1	1.19	41.2	31.11	66.8	94.7	37.4	1.22	41.5	30.60	67.0	94.6	37.7	1.25	41.9	30.12	67.1		
	7	50	42.6	25.3	1.08	28.9	25.83	58.5	42.4	25.7	1.07	29.4	26.31	58.6	42.3	26.2	1.05	29.8	26.80	58.8		
		70	61.5	28.8	1.11	32.6	27.78	59.6	61.4	29.2	1.11	33.0	28.02	59.7	61.3	29.7	1.11	33.4	28.26	59.8		
		90	80.5	32.4	1.14	36.3	29.69	60.7	80.4	32.8	1.15	36.7	29.64	60.8	80.3	33.1	1.16	37.1	29.58	60.9		
		110	99.4	36.0	1.17	40.0	31.55	61.8	99.3	36.3	1.19	40.3	31.17	61.9	99.2	36.6	1.22	40.7	30.79	62.0		
70	4	50	37.3	24.6	1.41	29.4	17.45	85.2	36.8	25.7	1.47	30.7	17.54	85.8	36.2	26.8	1.52	32.0	17.63	86.5		
		70	54.3	30.4	1.46	35.3	20.85	88.2	53.9	31.2	1.51	36.4	20.70	88.7	53.5	32.1	1.56	37.4	20.56	89.3		
		90	71.4	36.1	1.50	41.3	24.04	91.3	71.1	36.7	1.55	42.0	23.68	91.7	70.8	37.3	1.60	42.8	23.33	92.1		
		110	Operation not recommended																			
	5.5	50	40.0	24.6	1.41	29.4	17.51	81.9	39.7	25.5	1.41	30.3	18.04	82.3	39.3	26.4	1.42	31.2	18.56	82.7		
		70	57.7	30.4	1.44	35.3	21.14	84.3	57.4	31.1	1.46	36.0	21.35	84.6	57.1	31.8	1.47	36.8	21.55	85.0		
		90	75.4	36.1	1.47	41.1	24.61	86.7	75.1	36.6	1.50	41.8	24.47	86.9	74.9	37.2	1.53	42.4	24.33	87.2		
		110	Operation not recommended																			
	7	50	42.8	24.6	1.40	29.4	17.57	78.7	42.6	25.3	1.36	29.9	18.60	78.8	42.4	25.9	1.32	30.4	19.62	79.0		
		70	61.1	30.4	1.42	35.2	21.44	80.4	60.9	30.9	1.40	35.7	22.05	80.5	60.7	31.4	1.39	36.2	22.67	80.7		
		90	79.4	36.1	1.43	41.0	25.21	82.1	79.2	36.6	1.44	41.5	25.32	82.2	79.1	37.0	1.45	41.9	25.44	82.3		
		110	97.7	41.9	1.45	46.8	28.90	83.8	97.6	42.2	1.49	47.3	28.43	83.9	97.5	42.5	1.52	47.7	27.96	84.0		
90	4	50	38.9	21.5	1.85	27.8	12.74	104.3	38.3	22.6	1.91	29.1	12.93	105.0	37.8	23.8	1.97	30.5	13.11	105.7		
		70	55.7	27.8	1.91	34.3	15.76	107.7	55.2	28.8	1.96	35.5	15.83	108.3	54.7	29.8	2.00	36.6	15.89	108.9		
		90	Operation not recommended																			
		110	Operation not recommended																			
	5.5	50	41.3	21.4	1.84	27.6	11.63	101.2	40.9	22.3	1.86	28.7	12.03	101.7	40.5	23.3	1.88	29.7	12.41	102.1		
		70	58.8	27.7	1.87	34.1	14.79	103.8	58.4	28.5	1.89	35.0	15.06	104.2	58.1	29.4	1.92	35.9	15.32	104.6		
		90	Operation not recommended																			
		110	Operation not recommended																			
	7	50	43.7	21.3	1.83	27.5	12.76	98.1	43.5	22.1	1.81	28.2	13.48	98.3	43.3	22.9	1.79	29.0	14.19	98.5		
		70	61.9	27.6	1.84	33.9	16.23	100.0	61.7	28.3	1.83	34.5	16.69	100.2	61.5	29.0	1.83	35.2	17.16	100.4		
		90	Operation not recommended																			
		110	Operation not recommended																			
110	4	50	40.5	18.4	2.29	26.2	8.03	123.5	39.9	19.6	2.35	27.6	8.31	124.2	39.3	20.7	2.41	28.9	8.59	124.9		
		70	57.0	25.2	2.36	33.3	10.68	127.2	56.4	26.3	2.40	34.5	10.95	127.8	55.9	27.4	2.44	35.8	11.23	128.4		
		90	Operation not recommended																			
		110	Operation not recommended																			
	5.5	50	42.6	18.2	2.27	25.9	8.00	120.5	42.2	19.2	2.30	27.1	8.34	121.0	41.7	20.3	2.34	28.2	8.67	121.5		
		70	59.8	25.0	2.31	32.9	10.84	123.4	59.4	26.0	2.33	34.0	11.14	123.8	59.0	27.0	2.36	35.0	11.43	124.3		
		90	Operation not recommended																			
		110	Operation not recommended																			
	7	50	44.7	17.9	2.25	25.6	7.96	117.5	44.4	18.9	2.26	26.5	8.36	117.8	44.2	19.8	2.26	27.5	8.76	118.1		
		70	62.7	24.8	2.25	32.5	11.02	119.6	62.4	25.7	2.26	33.4	11.3	119.8	62.2	26.5	2.27	34.2	11.64	120.1		
		90	Operation not recommended																			
		110	Operation not recommended																			

EST = entering source fluid temperature to heat pump  
 TC = total cooling capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HR = heat rejected in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 EER = energy efficiency ratio  
 LLT = leaving load fluid temperature from heat pump

08/29/24

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_

**Performance Data cont.**

**048 Heating**

Source		Load Flow-8 GPM							Load Flow-11.5 GPM					Load Flow-15 GPM							
EST °F	Flow GPM	ELT °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	LLT °F	HC MBTUH	Power kW	HE MBTUH	COP	LST °F	
25	11.5	60	Operation not recommended																		
		80	Operation not recommended																		
		100	Operation not recommended																		
		120	Operation not recommended																		
	15	60	70.8	41.9	2.44	33.6	5.03	20.4	67.5	42.0	2.43	33.7	5.06	20.4	65.8	42.0	2.42	33.7	5.09	20.4	
80		90.5	40.9	3.34	29.5	3.58	21.0	87.3	40.7	3.30	29.5	3.61	21.0	85.6	40.6	3.26	29.5	3.65	21.0		
100		110.3	39.8	4.25	25.3	2.75	21.5	107.1	39.5	4.18	25.3	2.77	21.5	105.4	39.2	4.11	25.2	2.80	21.5		
120		130.0	38.8	5.15	21.2	2.21	22.1	126.9	38.3	5.05	21.1	2.22	22.1	125.2	37.8	4.95	20.9	2.24	22.1		
30	8	60	71.3	43.9	2.42	35.6	5.32	20.8	60.6	44.1	2.47	35.6	5.23	20.8	50.0	44.2	2.52	35.6	5.14	20.8	
		80	91.1	43.0	3.35	31.6	3.76	21.9	88.5	43.1	3.35	31.6	3.76	21.9	85.9	43.1	3.35	31.7	3.77	21.8	
		100	110.9	42.1	4.28	27.5	2.88	22.9	108.3	42.1	4.23	27.6	2.91	22.9	105.8	42.0	4.19	27.7	2.94	22.9	
		120	130.6	41.2	5.21	23.4	2.32	24.0	128.1	41.1	5.12	23.6	2.35	23.9	125.6	40.9	5.02	23.8	2.39	23.9	
	11.5	60	71.8	45.8	2.52	37.2	5.33	22.7	65.0	45.9	2.49	37.4	5.39	22.7	58.3	46.0	2.47	37.6	5.46	22.7	
		80	91.4	44.4	3.41	32.7	3.81	23.6	88.8	44.4	3.36	32.9	3.87	23.6	86.1	44.4	3.32	33.1	3.93	23.5	
		100	111.1	43.0	4.31	28.3	2.92	24.5	108.5	42.9	4.23	28.5	2.97	24.4	105.9	42.9	4.16	28.7	3.02	24.4	
		120	130.7	41.6	5.20	23.8	2.34	25.3	128.2	41.4	5.10	24.0	2.38	25.3	125.7	41.3	5.01	24.2	2.42	25.2	
	15	60	72.3	47.6	2.61	38.7	5.34	24.7	69.4	47.7	2.52	39.1	5.57	24.6	66.6	47.8	2.42	39.5	5.79	24.6	
		80	91.8	45.7	3.47	33.9	3.86	25.3	89.0	45.7	3.37	34.2	3.98	25.3	86.3	45.8	3.28	34.6	4.09	25.2	
		100	111.3	43.8	4.33	29.0	2.96	26.0	108.7	43.8	4.23	29.3	3.03	26.0	106.0	43.7	4.13	29.6	3.10	25.9	
		120	130.8	41.9	5.19	24.2	2.37	26.7	128.3	41.8	5.09	24.4	2.41	26.6	125.7	41.7	4.99	24.7	2.45	26.6	
50	8	60	74.7	56.9	2.53	48.3	6.54	37.6	67.2	56.8	2.52	48.2	6.60	37.6	59.8	56.8	2.50	48.2	6.66	37.6	
		80	94.1	54.8	3.42	43.1	4.68	38.9	90.8	54.8	3.38	43.2	4.75	38.9	87.5	54.7	3.34	43.3	4.81	38.8	
		100	113.6	52.7	4.31	38.0	3.58	40.2	110.4	52.7	4.24	38.2	3.64	40.2	107.2	52.7	4.17	38.4	3.70	40.1	
		120	133.0	50.6	5.20	32.9	2.86	41.5	130.0	50.6	5.10	33.2	2.91	41.4	127.0	50.6	5.01	33.5	2.96	41.4	
	11.5	60	75.2	59.1	2.59	50.2	6.69	40.2	69.6	58.9	2.53	50.3	6.83	40.2	64.1	58.8	2.47	50.3	6.98	40.2	
		80	94.5	56.4	3.45	44.7	4.80	41.3	91.1	56.3	3.37	44.8	4.89	41.2	87.7	56.2	3.30	45.0	4.99	41.2	
		100	113.9	53.8	4.31	39.1	3.66	42.3	110.6	53.8	4.22	39.4	3.73	42.3	107.4	53.7	4.14	39.6	3.81	42.2	
		120	133.2	51.2	5.17	33.5	2.90	43.4	130.1	51.2	5.07	33.9	2.96	43.3	127.0	51.2	4.97	34.2	3.02	43.3	
	15	60	75.8	61.3	2.65	52.2	6.77	42.8	72.1	61.0	2.54	52.3	7.03	42.8	68.4	60.8	2.44	52.4	7.30	42.8	
		80	95.0	58.1	3.48	46.2	4.90	43.6	91.5	57.9	3.37	46.4	5.04	43.6	87.9	57.8	3.27	46.6	5.18	43.6	
		100	114.2	54.9	4.31	40.2	3.74	44.5	110.8	54.9	4.20	40.5	3.83	44.4	107.5	54.8	4.10	40.8	3.92	44.4	
		120	133.3	51.8	5.14	34.2	2.96	45.3	130.2	51.8	5.04	34.6	3.02	45.2	127.1	51.8	4.94	35.0	3.08	45.2	
70	8	60	78.0	69.9	2.64	60.9	7.76	54.3	73.8	69.6	2.56	60.9	7.97	54.3	69.5	69.3	2.48	60.8	8.19	54.3	
		80	97.2	66.6	3.49	54.7	5.60	55.9	93.1	66.5	3.40	54.8	5.73	55.9	89.1	66.3	3.32	55.0	5.86	55.8	
		100	116.3	63.3	4.33	48.5	4.28	57.5	112.5	63.3	4.24	48.8	4.37	57.4	108.7	63.3	4.15	49.1	4.47	57.3	
		120	135.5	60.0	5.18	42.3	3.39	59.1	131.9	60.2	5.09	42.8	3.47	59.0	128.3	60.3	4.99	43.3	3.54	58.8	
	11.5	60	78.7	72.4	2.66	63.3	7.97	57.6	74.2	72.0	2.56	63.2	8.23	57.7	69.8	71.5	2.47	63.1	8.50	57.7	
		80	97.7	68.5	3.48	56.6	5.76	58.9	93.5	68.3	3.39	56.7	5.91	58.9	89.4	68.0	3.29	56.8	6.06	58.9	
		100	116.7	64.7	4.31	50.0	4.40	60.2	112.8	64.6	4.21	50.3	4.50	60.2	108.9	64.6	4.11	50.5	4.60	60.1	
		120	135.7	60.8	5.13	43.3	3.47	61.5	132.0	61.0	5.03	43.8	3.55	61.4	128.4	61.1	4.94	44.3	3.63	61.3	
	15	60	79.3	74.9	2.68	65.8	8.19	61.0	74.7	74.3	2.57	65.5	8.50	61.0	70.1	73.7	2.45	65.3	8.81	61.0	
		80	98.2	70.5	3.48	58.6	5.93	61.9	93.9	70.1	3.37	58.6	6.10	61.9	89.6	69.8	3.26	58.6	6.27	61.9	
		100	117.0	66.0	4.28	51.4	4.52	62.9	113.0	65.9	4.18	51.7	4.63	62.9	109.0	65.8	4.07	51.9	4.74	62.9	
		120	135.9	61.6	5.08	44.3	3.55	63.9	132.2	61.8	4.98	44.8	3.63	63.8	128.5	61.9	4.88	45.2	3.72	63.8	
90	8	60	81.1	81.9	2.78	72.4	8.63	71.3	75.9	79.8	3.46	68.0	7.07	72.5	70.7	77.7	4.14	63.6	5.50	73.6	
		80	99.9	77.4	3.64	65.0	6.24	73.3	95.1	76.1	4.04	62.3	5.58	73.9	90.3	74.8	4.44	59.6	4.93	74.6	
		100	118.8	72.9	4.49	57.6	4.75	75.2	114.3	72.4	4.62	56.6	4.59	75.4	109.9	71.8	4.75	55.6	4.43	75.7	
		120	Operation not recommended																		
	11.5	60	81.5	83.6	2.79	74.1	8.80	75.5	76.2	81.2	3.06	70.7	7.77	76.2	70.8	78.8	3.34	67.4	6.91	76.9	
		80	100.5	79.5	3.65	67.0	6.37	76.9	95.5	77.7	3.78	64.8	6.03	77.3	90.4	76.0	3.91	62.7	5.70	77.8	
		100	119.4	75.3	4.52	59.9	4.88	78.3	114.7	74.3	4.50	58.9	4.84	78.5	110.1	73.2	4.47	58.0	4.80	78.7	
		120	Operation not recommended																		
	15	60	82.0	85.3	2.79	75.8	8.96	79.6	76.5	82.6	2.67	73.5	9.09	79.9	71.0	79.9	2.54	71.2	9.22	80.2	
		80	101.0	81.5	3.67	69.0	6.51	80.5	95.8	79.4	3.52	67.4	6.62	80.7	90.6	77.3	3.37	65.8	6.72	81.0	
		100	120.0	77.8	4.55	62.2	5.01	81.4	115.2	76.2	4.37	61.3	5.11	81.6	110.3	74.6	4.19	60.3	5.21	81.7	
		120	Operation not recommended																		

EST = entering source fluid temperature to heat pump  
 HC = total heating capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HE = heat extracted in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 COP = coefficient of performance  
 LLT = leaving load fluid temperature from heat pump

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_

**Performance Data cont.**

**048 Cooling**

Source		Load Flow-8 GPM							Load Flow-11.5 GPM							Load Flow-15 GPM						
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F		
30	8	50	36.5	52.3	1.88	58.7	27.82	45.1	39.4	54.1	1.94	60.7	27.93	45.6	42.3	55.8	1.99	62.6	28.04	46.1		
		70	55.4	56.5	1.92	63.0	29.48	46.2	58.7	57.7	1.96	64.4	29.43	46.6	61.9	59.0	2.01	65.8	29.39	47.0		
		90	74.4	60.7	1.95	67.4	31.08	47.4	77.9	61.4	1.99	68.2	30.89	47.6	81.5	62.1	2.02	69.0	30.71	47.8		
		110	93.3	64.9	1.99	71.7	32.61	48.5	97.1	65.1	2.02	72.0	32.31	48.6	101.0	65.3	2.04	72.3	32.01	48.6		
	11.5	50	36.3	53.2	1.85	59.5	28.76	41.7	39.3	54.8	1.89	61.3	28.99	42.1	42.2	56.4	1.93	63.0	29.22	42.4		
		70	55.5	56.4	1.87	62.8	30.15	42.4	58.7	57.5	1.90	64.0	30.25	42.7	61.9	58.6	1.93	65.2	30.35	42.9		
		90	74.6	59.7	1.89	66.1	31.51	43.1	78.1	60.3	1.91	66.8	31.50	43.3	81.6	60.9	1.93	67.5	31.48	43.4		
		110	93.8	62.9	1.92	69.4	32.85	43.9	97.6	63.0	1.93	69.6	32.73	43.9	101.3	63.1	1.94	69.7	32.61	43.9		
	15	50	36.1	54.1	1.82	60.3	29.73	38.3	39.1	55.6	1.85	61.8	30.10	38.5	42.2	57.0	1.87	63.4	30.48	38.7		
		70	55.5	56.4	1.83	62.6	30.86	38.6	58.7	57.3	1.84	63.6	31.13	38.7	62.0	58.3	1.86	64.6	31.40	38.9		
		90	74.9	58.6	1.83	64.9	31.98	38.9	78.3	59.1	1.84	65.4	32.16	39.0	81.8	59.6	1.84	65.9	32.33	39.1		
		110	94.3	60.9	1.84	67.2	33.10	39.2	98.0	60.9	1.84	67.2	33.19	39.2	101.6	60.9	1.83	67.1	33.28	39.2		
50	8	50	37.4	49.1	2.44	57.4	21.57	64.8	40.0	51.2	2.48	59.7	21.97	65.4	42.7	53.4	2.52	62.0	22.36	66.0		
		70	55.5	56.5	2.51	65.0	23.85	66.8	58.6	58.2	2.54	66.9	24.15	67.2	61.7	60.0	2.57	68.8	24.45	67.7		
		90	73.5	63.9	2.58	72.6	26.00	68.7	77.2	65.3	2.60	74.1	26.23	69.1	80.8	66.7	2.62	75.6	26.46	69.5		
		110	91.6	71.3	2.65	80.3	28.03	70.7	95.8	72.3	2.66	81.4	28.21	71.0	99.9	73.4	2.67	82.5	28.39	71.3		
	11.5	50	40.2	50.1	2.38	58.2	21.09	61.5	39.8	52.0	2.40	60.2	21.63	61.9	42.6	53.9	2.43	62.2	22.15	62.3		
		70	58.8	57.0	2.41	65.2	23.62	62.9	58.6	58.3	2.43	66.6	23.94	63.2	61.8	59.6	2.46	67.9	24.26	63.5		
		90	77.4	63.9	2.45	72.3	26.07	64.3	77.3	64.6	2.46	73.0	26.20	64.5	81.0	65.2	2.48	73.7	26.33	64.7		
		110	96.0	70.8	2.49	79.3	28.44	65.7	96.0	70.9	2.50	79.4	28.40	65.8	100.3	70.9	2.50	79.4	28.36	65.9		
	15	50	43.0	51.2	2.32	59.1	23.44	58.1	39.7	52.8	2.33	60.7	23.93	58.3	42.5	54.4	2.35	62.4	24.43	58.6		
		70	62.1	57.6	2.32	65.5	25.87	59.0	58.5	58.3	2.33	66.3	26.08	59.1	61.9	59.1	2.34	67.1	26.28	59.2		
		90	81.2	64.0	2.33	71.9	28.30	59.9	77.4	63.9	2.33	71.8	28.22	59.9	81.2	63.7	2.34	71.7	28.14	59.9		
		110	100.3	70.4	2.33	78.4	30.72	60.8	96.2	69.4	2.33	77.4	30.36	60.6	100.6	68.4	2.34	76.4	30.00	60.5		
70	8	50	38.2	45.8	2.99	56.0	15.32	84.4	40.6	48.4	3.02	58.7	16.00	85.1	43.0	50.9	3.05	61.3	16.69	85.8		
		70	55.5	56.4	3.10	67.0	18.21	87.3	58.5	58.8	3.11	69.4	18.87	87.9	61.6	61.1	3.13	71.8	19.52	88.5		
		90	72.7	67.0	3.20	77.9	20.92	90.1	76.5	69.2	3.21	80.1	21.56	90.6	80.2	71.3	3.21	82.3	22.21	91.2		
		110	Operation not recommended																			
	11.5	50	37.9	47.0	2.90	56.9	16.21	81.2	40.4	49.2	2.92	59.1	16.86	81.7	42.9	51.4	2.94	61.4	17.50	82.1		
		70	55.2	57.6	2.96	67.7	19.49	83.3	58.4	59.0	2.97	69.2	19.90	83.7	61.7	60.5	2.98	70.6	20.30	84.0		
		90	72.4	68.2	3.01	78.4	22.65	85.5	76.4	68.9	3.02	79.2	22.84	85.7	80.4	69.6	3.02	79.9	23.03	85.9		
		110	Operation not recommended																			
	15	50	37.6	48.2	2.81	57.8	17.15	77.9	40.2	50.0	2.82	59.6	17.76	78.2	42.9	51.8	2.82	61.4	18.37	78.4		
		70	54.9	58.8	2.81	68.4	20.89	79.4	58.3	59.3	2.82	68.9	21.03	79.5	61.8	59.8	2.83	69.5	21.17	79.6		
		90	72.1	69.3	2.82	78.9	24.62	80.9	76.4	68.6	2.83	78.2	24.28	80.8	80.7	67.9	2.83	77.5	23.95	80.7		
		110	89.4	79.9	2.82	89.5	28.33	82.3	94.5	77.9	2.83	87.6	27.53	82.0	99.6	75.9	2.84	85.6	26.73	81.8		
90	8	50	39.4	41.0	3.85	54.1	11.49	103.9	41.7	42.8	3.89	56.1	11.92	104.4	43.9	44.7	3.92	58.0	12.35	105.0		
		70	56.6	52.2	3.96	65.7	14.07	106.9	59.5	53.9	3.99	67.5	14.47	107.4	62.4	55.6	4.01	69.3	14.88	107.9		
		90	73.7	63.4	4.07	77.3	16.50	109.9	77.3	65.0	4.09	78.9	16.89	110.3	80.9	66.6	4.11	80.6	17.28	110.8		
		110	Operation not recommended																			
	11.5	50	39.2	41.8	3.73	54.5	11.20	100.7	41.5	43.5	3.76	56.3	11.56	101.1	43.8	45.1	3.79	58.0	11.92	101.5		
		70	56.4	52.7	3.80	65.7	13.88	103.0	59.4	54.1	3.82	67.1	14.15	103.3	62.4	55.4	3.84	68.5	14.42	103.6		
		90	73.6	63.7	3.86	76.8	16.47	105.2	77.3	64.7	3.88	77.9	16.66	105.5	81.0	65.7	3.90	79.0	16.85	105.7		
		110	Operation not recommended																			
	15	50	39.0	42.7	3.62	55.0	12.77	97.6	41.4	44.1	3.63	56.5	13.18	97.8	43.7	45.6	3.65	58.1	13.58	98.0		
		70	56.3	53.3	3.64	65.7	15.81	99.0	59.3	54.3	3.65	66.7	16.00	99.2	62.4	55.2	3.67	67.7	16.19	99.3		
		90	73.5	64.0	3.66	76.4	18.82	100.5	77.3	64.4	3.67	76.9	18.80	100.6	81.1	64.8	3.69	77.4	18.78	100.6		
		110	Operation not recommended																			
110	8	50	40.7	36.1	4.71	52.2	7.66	123.4	42.7	37.3	4.75	53.5	7.84	123.8	44.7	38.4	4.79	54.7	8.02	124.1		
		70	57.7	47.9	4.83	64.4	9.92	126.6	60.4	49.0	4.86	65.6	10.08	126.9	63.1	50.1	4.90	66.8	10.23	127.2		
		90	Operation not recommended																			
		110	Operation not recommended																			
	11.5	50	40.6	36.6	4.57	52.2	8.02	120.3	42.6	37.8	4.60	53.4	8.21	120.6	44.7	38.9	4.64	54.7	8.39	120.8		
		70	57.7	47.9	4.64	63.7	10.31	122.6	60.4	49.1	4.67	65.0	10.51	122.9	63.1	50.3	4.70	66.4	10.7	123.1		
		90	Operation not recommended																			
		110	Operation not recommended																			
	15	50	40.4	37.1	4.42	52.2	8.39	117.2	42.5	38.3	4.45	53.4	8.59	117.3	44.6	39.4	4.48	54.7	8.79	117.5		
		70	57.7	47.8	4.46	63.0	10.7	118.7	60.4	49.2	4.48	64.5	10.97	118.9	63.0	50.6	4.51	66.0	11.21	119.1		
		90	Operation not recommended																			
		110	Operation not recommended																			

EST = entering source fluid temperature to heat pump  
 TC = total cooling capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HR = heat rejected in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 EER = energy efficiency ratio  
 LLT = leaving load fluid temperature from heat pump

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_

Engineer: \_\_\_\_\_

Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_



## Performance Data cont.

### 060 Heating

Source		Load Flow-9 GPM							Load Flow-13.5GPM							Load Flow-18 GPM							
EST	Flow	ELT	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST	LLT	HC	Power	HE	COP	LST			
° F	GPM	° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F			
25	13.5	60	Operation not recommended																				
		80	Operation not recommended																				
		100	Operation not recommended																				
		120	Operation not recommended																				
	30	9	60	71.0	48.1	2.89	38.2	4.88	20.6	67.4	48.5	2.83	38.8	5.02	20.6	65.6	48.8	2.77	39.3	5.16	20.49		
			80	90.8	47.0	3.90	33.7	3.53	21.1	87.2	47.4	3.82	34.3	3.63	21.1	85.5	47.7	3.74	34.9	3.73	21.0		
			100	110.5	46.0	4.91	29.2	2.74	21.7	107.1	46.3	4.81	29.8	2.82	21.6	105.3	46.5	4.72	30.4	2.89	21.5		
			120	130.3	44.9	5.92	24.7	2.22	22.2	126.9	45.2	5.81	25.3	2.28	22.1	125.2	45.4	5.69	26.0	2.34	22.0		
		30	13.5	60	71.9	52.0	2.9	41.9	5.19	22.8	66.7	52.2	2.85	42.5	5.36	22.7	61.6	52.5	2.8	43.0	5.54	22.7	
				80	91.5	50.1	3.9	36.6	3.72	23.7	88.6	50.4	3.85	37.2	3.83	23.6	85.8	50.6	3.8	37.8	3.95	23.5	
				100	111.0	48.2	4.9	31.3	2.85	24.7	108.3	48.5	4.84	31.9	2.93	24.6	105.6	48.8	4.7	32.6	3.02	24.4	
				120	130.6	46.3	6.0	26.0	2.28	25.6	128.0	46.6	5.84	26.7	2.34	25.5	125.4	46.9	5.7	27.4	2.40	25.3	
30			18	60	72.1	52.8	2.97	42.7	5.21	25.1	69.1	53.0	2.86	43.3	5.45	25.0	66.1	53.2	2.74	43.8	5.69	25.0	
				80	91.6	50.8	3.96	37.3	3.76	25.7	88.8	51.1	3.85	38.0	3.90	25.7	85.9	51.3	3.73	38.6	4.03	25.6	
				100	111.2	48.9	4.95	32.0	2.89	26.3	108.4	49.2	4.84	32.7	2.98	26.3	105.7	49.5	4.72	33.4	3.07	26.2	
				120	130.7	46.9	5.94	26.6	2.31	26.9	128.1	47.3	5.83	27.4	2.38	26.9	125.5	47.6	5.71	28.1	2.44	26.8	
	50		9	60	75.2	66.6	3.0	56.2	6.36	37.1	69.3	66.9	2.95	56.9	6.61	37.0	63.3	67.3	2.9	57.5	6.87	36.8	
				80	94.6	63.8	4.0	50.0	4.61	38.5	91.0	64.1	3.92	50.7	4.77	38.4	87.4	64.5	3.8	51.4	4.94	38.2	
				100	114.0	61.0	5.0	43.9	3.55	39.9	110.5	61.3	4.90	44.6	3.66	39.8	107.1	61.6	4.8	45.3	3.78	39.6	
				120	133.3	58.3	6.0	37.7	2.84	41.4	130.0	58.5	5.87	38.5	2.92	41.2	126.7	58.8	5.7	39.2	3.00	41.0	
		50	13.5	60	75.7	68.4	3.1	57.9	6.57	40.1	70.7	68.7	2.95	58.6	6.82	40.0	65.7	69.0	2.9	59.2	7.08	39.9	
				80	95.0	65.5	4.0	51.7	4.75	41.2	91.3	65.8	3.93	52.4	4.91	41.1	87.6	66.1	3.8	53.1	5.08	41.0	
				100	114.3	62.6	5.0	45.4	3.65	42.3	110.8	62.9	4.90	46.2	3.76	42.2	107.2	63.2	4.8	46.9	3.88	42.0	
				120	133.7	59.7	6.0	39.2	2.91	43.4	130.3	60.0	5.87	40.0	2.99	43.2	126.9	60.4	5.7	40.8	3.08	43.1	
50			18	60	76.1	70.2	3.1	59.7	6.67	43.2	72.1	70.4	2.95	60.3	6.95	43.1	68.1	70.7	2.8	60.9	7.22	43.0	
				80	95.4	67.2	4.0	53.3	4.84	43.9	91.6	67.4	3.93	54.0	5.02	43.8	87.8	67.7	3.8	54.7	5.19	43.7	
				100	114.7	64.2	5.0	47.0	3.72	44.6	111.1	64.5	4.90	47.8	3.85	44.5	107.4	64.8	4.8	48.5	3.97	44.4	
				120	134.0	61.2	6.0	40.6	2.97	45.3	130.5	61.5	5.87	41.5	3.07	45.2	127.1	61.9	5.7	42.3	3.16	45.1	
	70		9	60	78.8	82.0	3.19	71.1	7.53	53.7	74.1	82.4	3.05	72.0	7.93	53.5	69.5	82.8	2.91	72.9	8.34	53.3	
				80	97.9	78.3	4.14	64.1	5.53	55.3	93.5	78.6	4.00	65.0	5.77	55.1	89.0	79.0	3.85	65.8	6.01	54.9	
				100	117.1	74.5	5.10	57.1	4.28	56.9	112.8	74.9	4.95	58.0	4.44	56.7	108.6	75.2	4.80	58.8	4.59	56.5	
				120	136.2	70.8	6.05	50.2	3.43	58.5	132.2	71.1	5.90	51.0	3.54	58.3	128.2	71.4	5.74	51.8	3.64	58.1	
		70	13.5	60	79.4	84.8	3.2	73.9	7.83	57.5	74.6	85.1	3.05	74.7	8.18	57.3	69.8	85.5	2.9	75.4	8.54	57.2	
				80	98.5	80.9	4.1	66.7	5.73	58.7	93.9	81.2	4.00	67.6	5.95	58.5	89.3	81.6	3.9	68.4	6.18	58.4	
				100	117.6	77.0	5.1	59.6	4.42	59.9	113.3	77.3	4.96	60.4	4.57	59.8	108.9	77.7	4.8	61.3	4.74	59.6	
				120	136.7	73.1	6.1	52.4	3.53	61.1	132.6	73.5	5.91	53.3	3.64	61.0	128.5	73.8	5.7	54.2	3.76	60.8	
70			18	60	80.0	87.5	3.15	76.7	8.14	61.2	75.1	87.8	3.05	77.4	8.44	61.1	70.1	88.1	2.95	78.0	8.75	61.1	
				80	99.1	83.5	4.13	69.4	5.92	62.1	94.4	83.8	4.01	70.1	6.13	62.0	89.6	84.1	3.88	70.9	6.35	61.9	
				100	118.2	79.4	5.11	62.0	4.55	62.9	113.7	79.8	4.96	62.9	4.72	62.8	109.2	80.2	4.82	63.7	4.88	62.7	
				120	137.3	75.4	6.09	54.6	3.63	63.7	133.0	75.8	5.92	55.6	3.76	63.6	128.7	76.2	5.75	56.6	3.88	63.5	
	90		9	60	82.1	96.5	3.22	85.5	8.78	70.4	76.3	94.0	3.06	83.6	9.03	70.9	70.5	91.5	2.89	81.6	9.28	71.3	
				80	101.1	92.2	4.22	77.8	6.40	72.2	95.7	90.8	4.03	77.1	6.62	72.3	90.2	89.4	3.83	76.3	6.84	72.5	
				100	Operation not recommended																		
				120	Operation not recommended																		
		90	13.5	60	82.6	98.5	3.3	87.3	8.86	75.1	76.6	95.5	3.08	85.0	9.09	75.5	70.6	92.6	2.9	82.7	9.36	75.9	
				80	101.5	93.9	4.3	79.4	6.47	76.5	95.9	92.3	4.05	78.4	6.68	76.6	90.4	90.6	3.8	77.5	6.91	76.8	
				100	120.5	89.4	5.3	71.4	4.98	77.8	115.3	89.0	5.02	71.9	5.19	77.7	110.2	88.6	4.8	72.3	5.42	77.7	
				120	Operation not recommended																		
90			18	60	83.0	100.4	3.29	89.2	8.94	79.8	76.9	97.1	3.10	86.5	9.19	80.1	70.7	93.7	2.91	83.8	9.43	80.4	
				80	101.9	95.6	4.29	81.0	6.54	80.7	96.2	93.7	4.07	79.8	6.75	80.9	90.5	91.8	3.86	78.7	6.97	81.0	
				100	120.8	90.9	5.28	72.8	5.04	81.7	115.6	90.4	5.05	73.2	5.26	81.6	110.3	90.0	4.81	73.6	5.48	81.6	
				120	Operation not recommended																		

EST = entering source fluid temperature to heat pump  
 HC = total heating capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HE = heat extracted in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 COP = coefficient of performance  
 LLT = leaving load fluid temperature from heat pump

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_

Engineer: \_\_\_\_\_

Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_



# Performance Data cont.

## 060 Cooling

Source		Load Flow-9 GPM							Load Flow-13.5 GPM							Load Flow-18 GPM						
EST °F	Flow GPM	ELT °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F	LLT °F	TC MBTUH	Power kW	HR MBTUH	EER	LST °F		
30	9	50	36.0	60.9	2.10	68.1	29.00	45.6	39.3	62.9	2.17	70.3	28.96	46.1	42.6	64.8	2.24	72.4	28.93	46.6		
		70	54.4	68.0	2.18	75.4	31.24	47.3	58.1	69.5	2.23	77.1	31.21	47.7	61.9	71.0	2.28	78.7	31.17	48.0		
		90	72.8	75.1	2.25	82.8	33.33	49.0	77.0	76.1	2.28	83.9	33.34	49.2	81.2	77.1	2.31	85.0	33.34	49.5		
		110	91.2	82.2	2.33	90.2	35.28	50.7	95.8	82.8	2.34	90.7	35.36	50.8	100.5	83.3	2.35	91.3	35.45	50.9		
	13.5	50	36.3	59.8	2.08	66.9	28.75	41.6	39.4	62.4	2.10	69.6	29.68	42.0	42.6	65.0	2.13	72.3	30.59	42.4		
		70	55.1	65.0	2.12	72.3	30.67	42.6	58.6	66.9	2.13	74.2	31.35	42.9	62.1	68.8	2.15	76.1	32.03	43.2		
		90	73.9	70.2	2.16	77.6	32.52	43.6	77.8	71.4	2.16	78.8	32.98	43.8	81.7	72.5	2.17	79.9	33.44	44.0		
		110	92.7	75.5	2.20	83.0	34.30	44.7	97.0	75.9	2.20	83.3	34.56	44.7	101.3	76.3	2.19	83.7	34.82	44.8		
	18	50	36.6	58.7	2.06	65.7	28.50	37.5	39.5	62.0	2.04	68.9	30.47	37.9	42.5	65.2	2.01	72.1	32.44	38.3		
		70	55.8	62.0	2.06	69.1	30.06	37.9	59.1	64.3	2.04	71.2	31.53	38.2	62.4	66.5	2.02	73.4	32.99	38.4		
		90	75.0	65.4	2.07	72.4	31.63	38.3	78.6	66.6	2.05	73.6	32.59	38.4	82.2	67.9	2.02	74.8	33.54	38.6		
		110	94.3	68.7	2.07	75.8	33.19	38.7	98.2	69.0	2.05	75.9	33.64	38.7	102.1	69.2	2.03	76.1	34.09	38.7		
50	9	50	37.0	56.9	2.76	66.3	22.26	65.2	40.0	59.1	2.81	68.6	22.49	65.7	43.0	61.2	2.87	71.0	22.72	66.3		
		70	54.5	67.8	2.89	77.7	25.02	67.8	58.1	69.6	2.92	79.6	25.28	68.2	61.8	71.4	2.95	81.5	25.53	68.7		
		90	72.0	78.7	3.02	89.0	27.55	70.4	76.3	80.2	3.02	90.5	27.87	70.7	80.6	81.6	3.03	92.0	28.20	71.1		
		110	89.5	89.7	3.15	100.4	29.87	73.0	94.5	90.8	3.13	101.4	30.30	73.2	99.5	91.9	3.11	102.4	30.73	73.5		
	13.5	50	37.0	56.7	2.70	65.9	20.99	61.3	40.0	59.1	2.73	68.4	21.69	61.8	42.9	61.6	2.75	71.0	22.37	62.2		
		70	54.8	66.2	2.77	75.7	23.88	63.1	58.4	68.2	2.79	77.7	24.48	63.5	62.0	70.2	2.80	79.8	25.08	63.8		
		90	72.7	75.7	2.84	85.4	26.63	64.9	76.8	77.3	2.85	87.0	27.16	65.2	81.0	78.9	2.85	88.6	27.70	65.4		
		110	90.5	85.2	2.92	95.2	29.24	66.7	95.2	86.4	2.91	96.3	29.73	66.8	100.0	87.6	2.90	97.5	30.22	67.0		
	18	50	37.1	56.5	2.65	65.5	22.64	57.5	40.0	59.2	2.64	68.2	23.92	57.8	42.9	62.0	2.64	71.0	25.19	58.1		
		70	55.2	64.6	2.66	73.6	25.36	58.4	58.6	66.8	2.66	75.9	26.36	58.7	62.1	69.1	2.66	78.1	27.36	59.0		
		90	73.3	72.7	2.67	81.8	28.05	59.4	77.3	74.4	2.67	83.5	28.77	59.6	81.3	76.2	2.67	85.3	29.48	59.8		
		110	91.5	80.8	2.68	89.9	30.71	60.3	96.0	82.1	2.69	91.2	31.15	60.4	100.5	83.3	2.69	92.5	31.58	60.6		
70	9	50	37.9	52.9	3.41	64.5	15.51	84.8	40.6	55.3	3.45	67.0	16.01	85.4	43.4	57.6	3.49	69.5	16.50	85.9		
		70	54.5	67.6	3.60	79.9	18.80	88.3	58.1	69.8	3.61	82.1	19.35	88.8	61.8	71.9	3.61	84.2	19.89	89.3		
		90	71.1	82.4	3.78	95.3	21.77	91.8	75.6	84.3	3.76	97.1	22.41	92.2	80.1	86.1	3.74	98.9	23.05	92.7		
		110	Operation not recommended																			
	13.5	50	37.7	53.6	3.32	64.9	16.13	81.1	40.5	55.9	3.35	67.3	16.67	81.5	43.3	58.2	3.38	69.7	17.20	82.0		
		70	54.6	67.4	3.42	79.1	19.68	83.6	58.2	69.6	3.44	81.3	20.22	84.0	61.8	71.7	3.46	83.5	20.76	84.4		
		90	71.4	81.2	3.53	93.2	23.02	86.1	75.8	83.3	3.53	95.3	23.59	86.5	80.2	85.3	3.53	97.4	24.17	86.8		
		110	Operation not recommended																			
	18	50	37.6	54.2	3.23	65.2	16.78	77.5	40.4	56.5	3.25	67.5	17.37	77.7	43.3	58.7	3.27	69.9	17.95	78.0		
		70	54.6	67.1	3.25	78.2	20.65	79.0	58.2	69.4	3.27	80.5	21.18	79.2	61.8	71.6	3.30	82.9	21.72	79.5		
		90	71.7	80.0	3.27	91.2	24.46	80.4	76.0	82.3	3.30	93.5	24.95	80.7	80.3	84.5	3.32	95.8	25.43	81.0		
		110	88.7	92.9	3.29	104.1	28.24	81.9	93.8	95.2	3.32	106.5	28.66	82.2	98.8	97.4	3.35	108.8	29.07	82.5		
90	9	50	39.3	46.7	4.43	61.8	11.47	104.1	41.8	48.6	4.45	63.8	11.86	104.6	44.2	50.6	4.47	65.8	12.25	105.1		
		70	56.1	60.9	4.57	76.5	14.28	107.5	59.3	62.8	4.58	78.4	14.70	108.0	62.6	64.7	4.59	80.4	15.11	108.4		
		90	72.8	75.1	4.72	91.2	16.89	110.9	76.9	77.0	4.72	93.1	17.35	111.3	81.0	78.9	4.72	95.0	17.80	111.8		
		110	Operation not recommended																			
	13.5	50	39.2	47.3	4.29	62.0	11.03	100.6	41.7	49.2	4.31	63.9	11.42	101.0	44.2	51.1	4.33	65.8	11.80	101.3		
		70	56.0	61.1	4.38	76.0	13.95	103.1	59.3	63.0	4.39	78.0	14.35	103.4	62.6	65.0	4.41	80.0	14.74	103.8		
		90	72.9	74.8	4.46	90.0	16.76	105.5	76.9	76.8	4.47	92.1	17.17	105.9	81.0	78.9	4.49	94.2	17.57	106.2		
		110	Operation not recommended																			
	18	50	39.0	48.0	4.16	62.2	12.50	97.1	41.5	49.8	4.17	64.0	12.91	97.3	44.1	51.6	4.19	65.8	13.33	97.5		
		70	56.0	61.2	4.18	75.5	15.73	98.6	59.3	63.2	4.20	77.5	16.15	98.9	62.5	65.2	4.22	79.6	16.57	99.1		
		90	72.9	74.4	4.21	88.8	18.93	100.2	77.0	76.6	4.23	91.1	19.35	100.4	81.0	78.8	4.26	93.3	19.76	100.7		
		110	Operation not recommended																			
110	9	50	40.7	40.4	5.44	59.0	7.43	123.5	42.9	42.0	5.44	60.5	7.71	123.9	45.0	43.5	5.44	62.1	8.00	124.2		
		70	57.6	54.1	5.54	73.1	9.77	126.7	60.5	55.9	5.56	74.8	10.05	127.1	63.4	57.6	5.57	76.6	10.33	127.5		
		90	Operation not recommended																			
		110	Operation not recommended																			
	13.5	50	40.6	41.1	5.27	59.1	7.81	120.1	42.8	42.5	5.27	60.5	8.07	120.4	45.0	44.0	5.27	61.9	8.34	120.6		
		70	57.5	54.7	5.33	72.9	10.27	122.5	60.4	56.5	5.34	74.7	10.56	122.8	63.3	58.2	5.36	76.5	10.86	123.1		
		90	Operation not recommended																			
		110	Operation not recommended																			
	18	50	40.4	41.8	5.09	59.2	8.21	116.8	42.7	43.1	5.10	60.5	8.46	116.9	44.9	44.4	5.10	61.8	8.71	117.1		
		70	57.3	55.3	5.12	72.8	10.81	118.3	60.3	57.1	5.13	74.6	11.12	118.5	63.3	58.8	5.14	76.3	11.43	118.7		
		90	Operation not recommended																			
		110	Operation not recommended																			

EST = entering source fluid temperature to heat pump  
 TC = total cooling capacity in MBTUH  
 ELT = entering load fluid temperature to heat pump  
 HR = heat rejected in MBTUH  
 LST = leaving source fluid temperature from heat pump  
 EER = energy efficiency ratio  
 LLT = leaving load fluid temperature from heat pump

8/29/24

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Contractor: \_\_\_\_\_ P.O.: \_\_\_\_\_

Engineer: \_\_\_\_\_

Project Name: \_\_\_\_\_ Unit Tag: \_\_\_\_\_

**Affinity Series-  
Geothermal Hydronic Heat Pump  
2-5 Tons 60Hz**



## Revision Guide

<b>Pages:</b>	<b>Description:</b>	<b>Date:</b>	<b>By:</b>
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