

SUBMITTAL DATA
Affinity Series
Dual-Capacity Hydronic Heat Pump



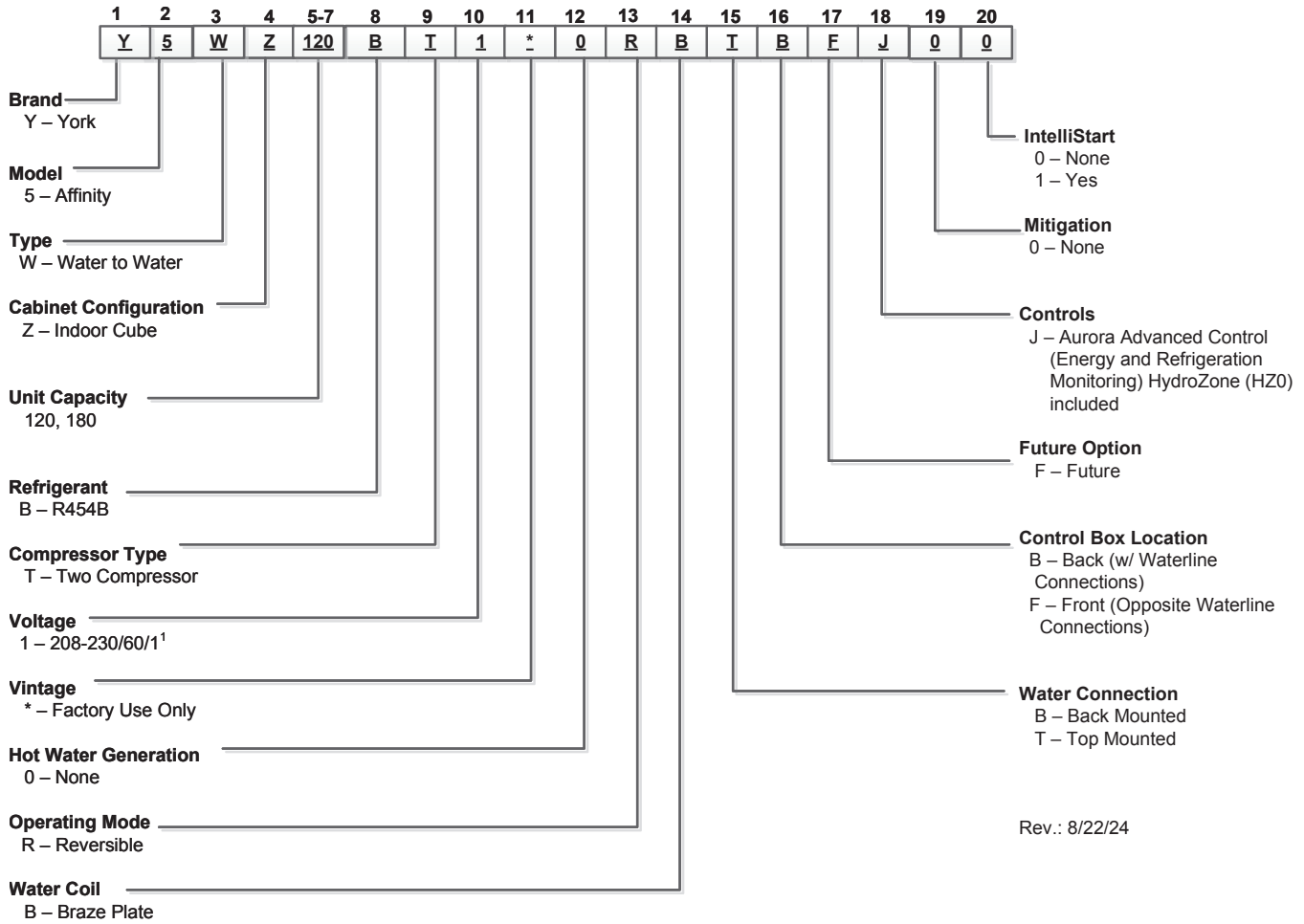
60Hz / R-454B

SDW5-0026Y



Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Nomenclature



Rev.: 8/22/24

NOTES: 1 – Dual power feed required.

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

AHRI/ISO 13256-1 Performance Ratings

Model	Capacity Modulation	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling EST 86°F ELT 53.6°F		Heating EST 68°F ELT 104°F		Cooling EST 59°F ELT 53.6°F		Heating EST 50°F ELT 104°F		Cooling Full EST 77°F Part EST 68°F ELT 53.6°F		Heating Full EST 32°F Part ELT 41°F ELT 104°F	
		Sgpm	Lgpm	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
120	Full	28	28	109,200	13.10	147,400	4.20	115,600	19.90	122,900	3.60	113,600	15.40	93,400	2.90
	Part	28	28	60,700	14.20	75,300	4.30	62,000	20.50	62,400	3.70	62,600	18.10	56,700	3.30
180	Full	36	36	150,400	12.30	209,300	3.90	165,700	18.10	172,200	3.20	156,700	14.20	131,100	2.70
	Part	36	36	78,600	12.60	106,100	4.20	87,200	17.90	87,500	3.60	84,400	16.00	79,900	3.20

All ratings based upon 208V operation

10/14/24

Energy Star Compliance Table

Model	Tier 3	
	Ground Water	Ground Loop
120	Yes	Yes
180	No	No

12/17/10

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.

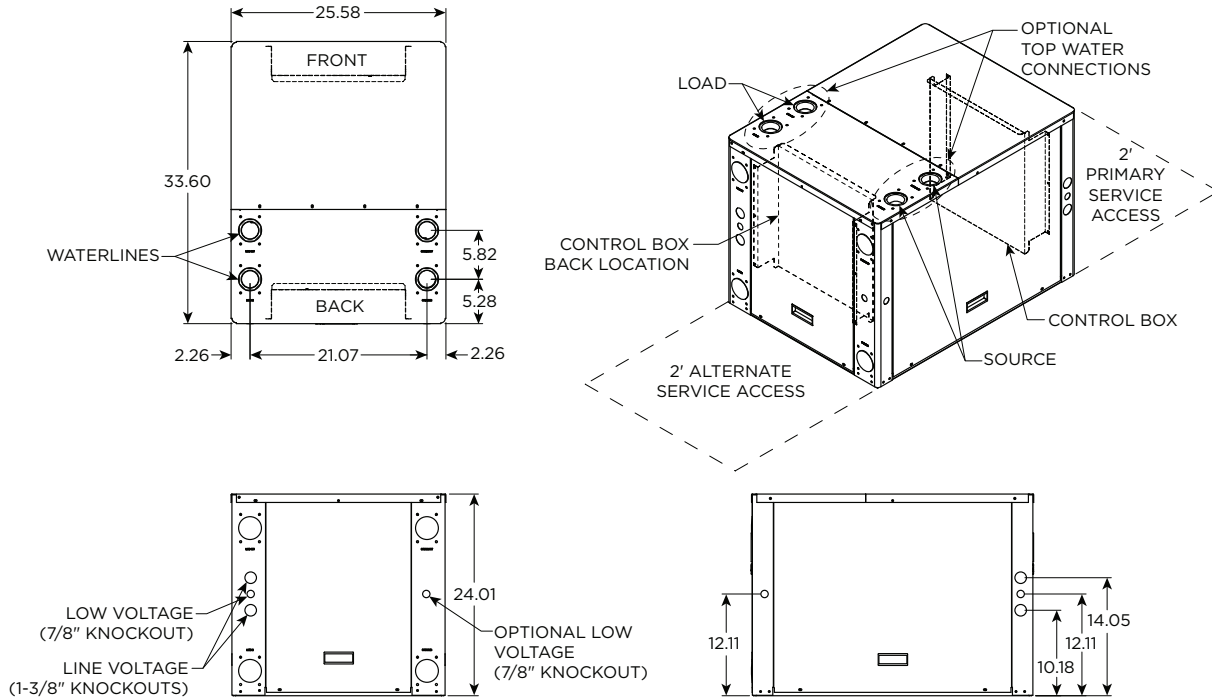
Tier 3: 1/1/2012 - No Effective End Date Published

	EER	COP
Closed loop water-to-air	17.1	3.6
Open loop water-to-air	21.1	4.1
Closed loop water-to-water	16.1	3.1
Open loop water-to-water	20.1	3.5

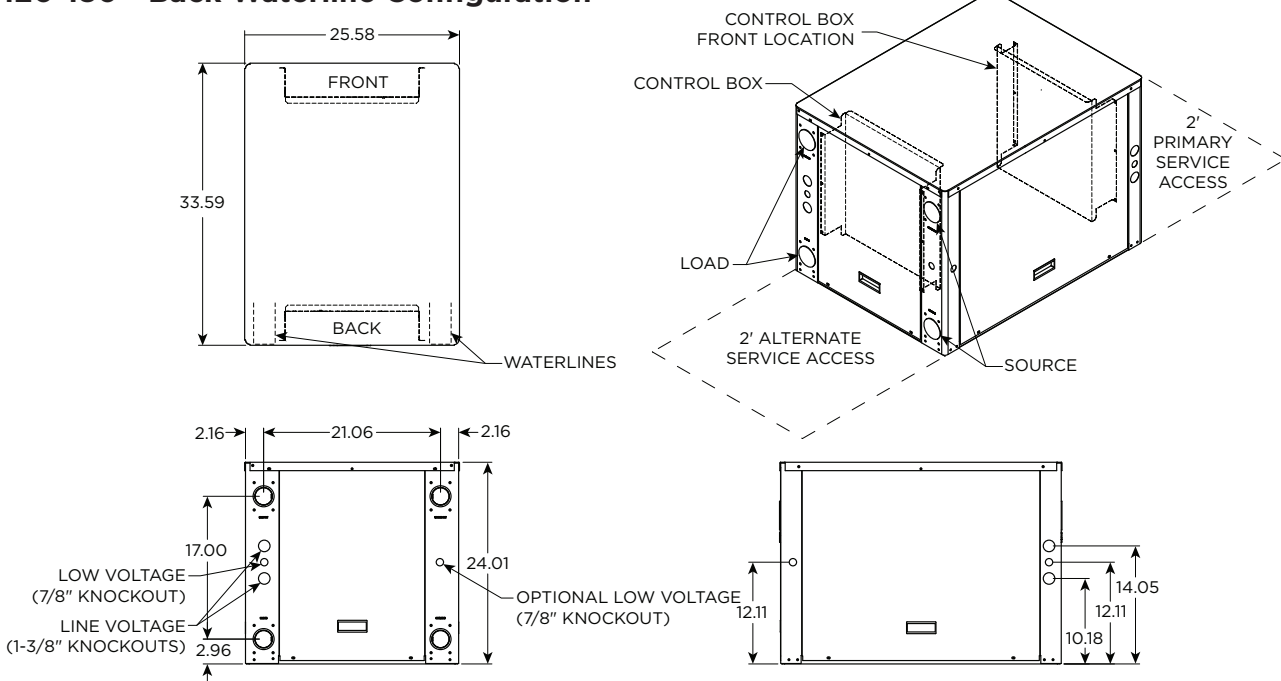
Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Dimensional Data

120-180 - Top Waterline Configuration



120-180 - Back Waterline Configuration



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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

**Affinity Series-
Dual Capacity Hydronic Heat Pump
10-15 Tons 60Hz**



Physical Data

Model	120	180
Compressor (2 each)		
Factory Charge R-454B, oz [kg]	40 [1.13]	46 [1.30]
<i>Load Water Connection</i>		
FPT - in	2	2
<i>Source Water Connection</i>		
FPT - in	2	2
Weight - Operating, lb [kg]	400 [181]	420 [190]
Weight - Packaged, lb [kg]	395 [179]	415 [188]

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

**Affinity Series-
Dual Capacity Hydronic Heat Pump
10-15 Tons 60Hz**



Electrical Data

Model	Supply Circuit	Rated Voltage	Voltage Min/Max	Compressor*				Load Pump FLA	Source Pump FLA	Total Unit FLA	Min Circ Amp	Max Fuse/HACR
				MCC	RLA	LRA	LRA**					
120	L1/L2	208-230/60/1	187/253	47.0	30.1	170.0	59.5			30.1	37.6	70
	L3/L4	208-230/60/1	187/253	47.0	30.1	170.0	59.5	4.2	4.2	38.5	46.0	80
	Single	208-230/60/3	187/253	33.0	21.2	156.5				21.2	26.5	50
	Single	460/60/3	414/506	14.2	9.1	74.8				9.1	11.4	25
	Single	575/60/3	517/633	12.0	7.7	47.8				7.7	9.6	20
180	L1/L2	208-230/60/1	187/253	50.0	32.1	185.0	65.0			32.1	40.1	70
	L3/L4	208-230/60/1	187/253	50.0	32.1	185.0	65.0	4.2	4.2	40.5	48.5	80
	Single	208-230/60/3	187/253	40.6	26.0	190.0				26.0	32.5	60
	Single	460/60/3	414/506	20.3	13.0	100.0				13.0	16.3	30
	Single	575/60/3	517/633	14.5	9.3	72.0				9.3	11.6	25

HACR circuit breaker in USA only

* - Ratings per each compressor - unit supplied with two

** - With optional IntelliStart

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Definitions

Abbreviations and Definitions

ELT = entering load fluid temperature to heat pump	PSI = pressure drop in pounds per square inch
LLT = leaving load fluid temperature from heat pump	FT HD = pressure drop in feet of head
LGPM = load flow in gallons per minute	KW = kilowatt
LWPD = load heat exchanger water pressure drop	HR = heat rejected in MBTUH
EST = entering source fluid temperature to heat pump	TC = total cooling capacity in MBTUH
LST = leaving source fluid temperature from heat pump	COP = coefficient of performance (HC/KW x 3.413)
SGPM = source flow in gallons per minute	HC = heating capacity in MBTUH
SWPD = source heat exchanger water pressure drop	HE = heat of extraction in MBTUH
EER = cooling energy efficiency (TC/KW)	

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

Heating Calculations: $LWT = EWT - \frac{HE}{GPM \times 500^*}$	Cooling Calculations: $LWT = EWT + \frac{HR}{GPM \times 500^*}$
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NOTE: * When using water. Use 485 for 15% methanol/water or Environol solution.

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Pressure Drop

Model	GPM	Pressure Drop (psi)				
		30°F	50°F	70°F	90°F	110°F
120	18	1.6	1.3	1.1	0.8	0.6
	28	3.4	3.2	2.9	2.7	2.1
	36	4.9	4.7	4.4	4.2	3.3
	40	5.6	5.4	5.1	4.9	3.9
180	24	2.7	2.4	2.2	1.9	1.5
	36	4.9	4.7	4.4	4.2	3.3
	48	7.1	6.9	6.6	6.4	5.1
	60	9.3	9.1	8.8	8.6	7.0

3/9/09

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Performance Data

120 Heating

Source		Load Flow-18 GPM							Load Flow-28 GPM							Load Flow-36 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		
30	28	60	71.2	97.4	5.4	79.1	5.33	23.3	77.0	101.1	5.38	82.7	5.51	23.0	82.8	104.7	5.4	86.3	5.68	22.7		
		80	90.9	95.1	7.5	69.6	3.73	24.1	88.4	98.7	7.34	73.6	3.94	23.8	85.9	102.3	7.2	77.6	4.15	23.5		
		100	110.6	92.7	9.6	60.0	2.84	24.9	108.2	96.3	9.31	64.5	3.03	24.5	105.7	99.8	9.0	69.0	3.24	24.2		
		120	130.4	90.4	11.7	50.5	2.26	25.7	128.0	93.9	11.28	55.4	2.44	25.3	125.6	97.4	10.9	60.3	2.63	24.9		
	36	60	71.6	101.2	5.40	82.8	5.49	25.3	68.9	105.5	5.41	87.1	5.72	25.0	66.3	109.8	5.41	91.3	5.95	24.8		
		80	91.2	97.9	7.50	72.3	3.82	25.9	88.7	102.3	7.39	77.1	4.06	25.6	86.1	106.7	7.27	81.9	4.30	25.3		
		100	110.8	94.5	9.60	61.8	2.89	26.5	108.4	99.1	9.37	67.1	3.10	26.2	105.9	103.6	9.14	72.4	3.32	25.9		
		120	130.4	91.2	11.70	51.3	2.28	27.1	128.1	95.9	11.35	57.1	2.48	26.7	125.8	100.5	11.00	63.0	2.68	26.4		
	50	18	60	72.8	112.2	5.5	93.3	5.91	39.3	78.2	115.9	5.59	96.8	6.04	38.9	83.6	119.6	5.6	100.4	6.18	38.5	
			80	92.6	110.2	7.5	84.5	4.30	40.3	89.7	113.7	7.46	88.2	4.45	39.9	86.7	117.3	7.4	91.9	4.61	39.5	
			100	112.4	108.2	9.5	75.8	3.35	41.3	109.5	111.5	9.33	79.7	3.50	40.9	106.6	114.9	9.2	83.5	3.65	40.4	
			120	132.2	106.2	11.4	67.1	2.73	42.3	129.3	109.4	11.21	71.1	2.86	41.9	126.4	112.6	11.0	75.1	2.99	41.4	
28		60	73.5	118.2	5.6	99.0	6.15	41.7	74.6	122.7	5.62	103.6	6.40	41.3	75.7	127.3	5.6	108.1	6.65	40.9		
		80	93.3	115.7	7.6	89.8	4.47	42.4	90.2	120.2	7.53	94.5	4.68	42.1	87.1	124.7	7.5	99.2	4.89	41.7		
		100	113.0	113.2	9.5	80.7	3.48	43.2	110.0	117.7	9.43	85.5	3.66	42.8	107.0	122.1	9.3	90.3	3.84	42.4		
		120	132.7	110.7	11.5	71.5	2.82	44.0	129.8	115.1	11.34	76.4	2.98	43.6	126.8	119.5	11.2	81.3	3.13	43.2		
36		60	74.2	124.3	5.7	104.7	6.32	44.0	71.0	129.6	5.65	110.3	6.69	43.7	67.7	135.0	5.6	115.9	7.05	43.4		
		80	93.9	121.3	7.7	95.1	4.62	44.6	90.7	126.7	7.59	100.8	4.87	44.2	87.6	132.1	7.5	106.5	5.12	43.9		
		100	113.5	118.3	9.6	85.5	3.61	45.1	110.5	123.8	9.53	91.3	3.80	44.8	107.4	129.3	9.5	97.0	3.98	44.4		
		120	133.2	115.3	11.5	75.9	2.94	45.7	130.2	120.9	11.47	81.8	3.08	45.3	127.2	126.5	11.4	87.6	3.23	45.0		
70	18	60	75.0	130.7	5.77	111.0	6.64	57.3	71.5	135.2	5.83	115.3	6.80	56.8	68.0	139.6	5.88	119.5	6.96	56.3		
		80	94.7	128.0	7.57	102.2	4.96	58.3	91.2	132.4	7.62	106.4	5.09	57.8	87.8	136.7	7.67	110.5	5.22	57.3		
		100	114.4	125.4	9.37	93.4	3.92	59.3	111.0	129.6	9.42	97.4	4.03	58.8	107.7	133.8	9.46	101.5	4.14	58.4		
		120	134.1	122.7	11.17	84.6	3.22	60.3	130.8	126.8	11.21	88.5	3.31	59.9	127.5	130.9	11.25	92.5	3.41	59.4		
	28	60	75.9	139.0	5.9	118.8	6.90	60.0	72.3	144.4	5.86	124.4	7.22	59.6	68.6	149.9	5.8	130.0	7.55	59.1		
		80	95.6	136.4	7.7	110.1	5.19	60.8	92.0	141.7	7.71	115.4	5.39	60.3	88.4	147.1	7.7	120.8	5.59	59.9		
		100	115.3	133.7	9.5	101.3	4.13	61.5	111.8	139.1	9.55	106.5	4.26	61.1	108.3	144.4	9.6	111.6	4.40	60.7		
		120	135.0	131.1	11.3	92.6	3.41	62.3	131.6	136.4	11.40	97.5	3.51	61.9	128.1	141.7	11.5	102.4	3.60	61.5		
	36	60	76.9	147.3	6.04	126.7	7.15	62.7	73.0	153.7	5.90	133.6	7.65	62.3	69.2	160.1	5.75	140.5	8.16	62.0		
		80	96.6	144.7	7.82	118.0	5.42	63.2	92.8	151.1	7.79	124.5	5.68	62.9	89.0	157.6	7.77	131.1	5.94	62.5		
		100	116.3	142.0	9.60	109.3	4.33	63.7	112.6	148.5	9.69	115.5	4.49	63.4	108.9	155.0	9.78	121.6	4.64	63.0		
		120	136.0	139.4	11.38	100.6	3.59	64.2	132.4	146.0	11.59	106.4	3.69	63.9	128.7	152.5	11.80	112.2	3.79	63.6		
90	18	60	77.0	148.1	6.00	127.6	7.23	75.4	73.1	154.6	6.05	133.9	7.48	74.7	69.2	161.0	6.10	140.2	7.73	73.9		
		80	96.7	145.5	8.00	118.2	5.33	76.5	92.9	152.1	8.05	124.6	5.53	75.7	89.1	158.7	8.10	131.1	5.74	75.0		
		100	Operation not recommended																			
		120	Operation not recommended																			
	28	60	78.3	159.9	6.1	138.9	7.63	78.4	74.1	166.4	6.18	145.3	7.88	77.8	69.9	172.9	6.2	151.7	8.14	77.3		
		80	98.0	157.2	8.0	130.0	5.78	79.2	93.9	163.9	8.05	136.4	5.96	78.6	89.8	170.6	8.1	142.8	6.15	78.1		
		100	Operation not recommended																			
		120	Operation not recommended																			
	36	60	79.7	171.6	6.28	150.2	8.01	81.4	75.1	178.2	6.32	156.6	8.27	81.0	70.6	184.8	6.35	163.1	8.53	80.7		
		80	99.4	169.0	7.95	141.8	6.23	81.9	94.9	175.7	8.06	148.2	6.39	81.5	90.4	182.4	8.16	154.5	6.55	81.2		
		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

10/3/24

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data cont.

120 Cooling

Source		Load Flow-18 GPM							Load Flow-28 GPM							Load Flow-36 GPM						
EST	Flow	ELT	LLT	TC	Power	HR	EER	LST	LLT	TC	Power	HR	EER	LST	LLT	TC	Power	HR	EER	LST		
° F	GPM	° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F		
30	18	50	35.9	123.0	5.21	140.8	23.61	46.1	39.2	127.1	5.26	145.1	24.16	46.6	42.5	131.2	5.31	149.3	24.71	47.1		
		70	54.1	138.7	5.39	157.1	25.73	48.0	57.8	143.3	5.44	161.9	26.36	48.5	61.5	147.9	5.48	166.6	26.98	49.1		
		90	72.3	154.4	5.57	173.4	27.72	49.9	76.4	159.5	5.61	178.7	28.42	50.5	80.6	164.7	5.66	184.0	29.11	51.1		
		110	90.5	170.1	5.75	189.7	29.58	51.7	95.1	175.8	5.79	195.5	30.35	52.4	99.6	181.4	5.83	201.3	31.11	53.1		
	28	50	35.5	126.2	5.01	143.3	25.19	42.2	38.9	130.3	5.06	147.5	25.75	42.6	42.3	134.4	5.11	151.8	26.29	43.0		
		70	53.7	142.3	5.15	159.9	27.66	43.7	57.5	147.0	5.20	164.7	28.29	44.1	61.3	151.7	5.25	169.6	28.90	44.5		
		90	71.8	158.5	5.28	176.5	29.99	45.1	76.1	163.7	5.33	181.9	30.70	45.5	80.3	169.0	5.38	187.3	31.38	46.0		
		110	90.0	174.6	5.42	193.1	32.21	46.5	94.7	180.4	5.47	199.1	32.98	47.0	99.3	186.3	5.52	205.1	33.74	47.5		
	36	50	35.2	129.4	4.81	145.8	26.90	38.4	38.7	133.5	4.86	150.0	27.45	38.6	42.1	137.5	4.91	154.3	28.00	38.8		
		70	53.3	146.0	4.90	162.7	29.77	39.3	57.2	150.7	4.96	167.6	30.39	39.6	61.1	155.4	5.01	172.5	31.01	39.9		
		90	71.4	162.5	5.00	179.6	32.53	40.3	75.7	167.9	5.05	185.1	33.21	40.6	80.1	173.2	5.11	190.7	33.90	40.9		
		110	89.5	179.1	5.09	196.5	35.19	41.3	94.3	185.1	5.15	202.7	35.93	41.6	99.1	191.1	5.21	208.9	36.68	42.0		
50	18	50	36.9	114.6	5.96	134.9	19.72	65.5	39.9	119.5	6.02	140.1	20.34	66.0	42.9	124.5	6.07	145.2	20.97	66.6		
		70	55.1	130.1	6.41	152.0	21.05	67.4	58.5	135.3	6.46	157.3	21.69	68.0	62.0	140.4	6.51	162.6	22.32	68.6		
		90	73.3	145.7	6.86	169.1	22.27	69.4	77.2	151.0	6.90	174.6	22.92	70.0	81.0	156.4	6.94	180.1	23.56	70.6		
		110	91.5	161.2	7.31	186.1	23.39	71.3	95.8	166.8	7.34	191.9	24.05	72.0	100.1	172.4	7.38	197.6	24.72	72.6		
	28	50	36.4	118.5	6.10	139.3	19.41	61.8	39.6	122.8	6.15	143.8	19.96	62.2	42.7	127.2	6.21	148.4	20.50	62.7		
		70	54.6	134.6	6.38	156.4	21.11	63.3	58.2	139.4	6.43	161.3	21.69	63.7	61.7	144.2	6.47	166.3	22.27	64.2		
		90	72.7	150.8	6.65	173.5	22.67	64.8	76.7	156.0	6.70	178.8	23.29	65.2	80.8	161.1	6.74	184.1	23.90	65.7		
		110	90.9	167.0	6.93	190.6	24.10	66.2	95.3	172.5	6.97	196.3	24.75	66.7	99.8	178.1	7.01	202.0	25.40	67.2		
	36	50	36.0	122.3	6.25	143.6	20.95	58.2	39.3	126.1	6.29	147.6	21.41	58.5	42.6	130.0	6.34	151.6	21.88	58.7		
		70	54.1	139.1	6.35	160.8	23.37	59.2	57.8	143.5	6.40	165.3	23.90	59.5	61.5	147.9	6.44	169.9	24.42	59.7		
		90	72.1	155.9	6.45	177.9	25.72	60.2	76.3	160.9	6.50	183.1	26.30	60.5	80.5	165.9	6.55	188.2	26.88	60.8		
		110	90.2	172.8	6.55	195.1	27.98	61.2	94.8	178.3	6.60	200.8	28.61	61.5	99.5	183.8	6.65	206.5	29.25	61.8		
70	18	50	37.8	106.2	6.71	129.1	15.83	84.8	40.5	112.0	6.77	135.1	16.53	85.5	43.3	117.7	6.83	141.0	17.23	86.2		
		70	56.1	121.6	7.43	146.9	16.37	86.8	59.2	127.3	7.48	152.8	17.02	87.5	62.4	132.9	7.53	158.6	17.66	88.2		
		90	74.3	136.9	8.14	164.7	16.82	88.9	77.9	142.6	8.18	170.5	17.42	89.5	81.5	148.2	8.22	176.2	18.02	90.2		
		110	Operation not recommended																			
	28	50	37.3	110.7	7.20	135.3	15.39	81.4	40.2	115.4	7.25	140.1	15.92	81.9	43.1	120.1	7.30	145.0	16.45	82.3		
		70	55.5	126.9	7.61	152.9	16.68	83.0	58.8	131.8	7.66	157.9	17.22	83.4	62.2	136.7	7.70	163.0	17.75	83.9		
		90	73.6	143.1	8.02	170.5	17.84	84.5	77.4	148.2	8.06	175.7	18.38	84.9	81.2	153.3	8.10	181.0	18.92	85.4		
		110	Operation not recommended																			
	36	50	36.8	115.2	7.68	141.4	15.00	78.1	39.9	118.8	7.73	145.2	15.38	78.3	43.0	122.4	7.77	148.9	15.75	78.5		
		70	54.8	132.3	7.79	158.9	16.98	79.1	58.4	136.4	7.83	163.1	17.40	79.3	62.0	140.4	7.88	167.3	17.83	79.6		
		90	72.9	149.3	7.90	176.3	18.90	80.1	76.9	153.9	7.94	181.0	19.38	80.4	80.9	158.5	7.98	185.7	19.85	80.6		
		110	Operation not recommended																			
90	18	50	38.7	98.5	9.02	129.3	11.92	104.8	41.3	102.7	9.09	133.7	12.36	105.3	43.9	107.0	9.16	138.2	12.81	105.8		
		70	57.0	113.8	9.47	146.1	12.79	106.7	60.0	118.2	9.52	150.7	13.23	107.3	63.0	122.7	9.57	155.3	13.67	107.8		
		90	75.2	129.1	9.92	162.9	13.59	108.7	78.6	133.7	9.96	167.7	14.03	109.2	82.1	138.4	9.99	172.4	14.48	109.8		
		110	Operation not recommended																			
	28	50	38.2	103.4	9.05	134.3	11.43	101.4	40.9	107.3	9.10	138.4	11.78	101.8	43.6	111.2	9.16	142.5	12.14	102.1		
		70	56.3	119.4	14.33	168.4	8.33	103.8	59.5	123.7	11.88	164.3	10.41	103.7	62.7	128.0	9.43	160.2	13.57	103.6		
		90	74.5	135.5	19.61	202.5	6.91	106.3	78.1	140.2	14.66	190.2	9.56	105.7	81.7	144.8	9.71	177.9	14.92	105.1		
		110	Operation not recommended																			
	36	50	37.6	108.3	9.08	139.2	12.34	98.0	40.5	111.9	9.12	143.0	12.68	98.2	43.4	115.5	9.17	146.7	13.01	98.4		
		70	55.7	125.1	19.19	190.6	10.42	100.9	59.0	129.2	14.24	177.8	12.61	100.2	62.4	133.4	9.29	165.1	14.81	99.5		
		90	73.7	142.0	29.31	242.0	10.78	103.9	77.5	146.6	19.36	212.7	13.67	102.2	81.3	151.3	9.42	183.4	16.56	100.5		
		110	Operation not recommended																			
110	18	50	39.6	90.8	11.33	129.5	8.01	124.8	42.0	93.5	11.41	132.4	8.20	125.2	44.5	96.2	11.48	135.4	8.38	125.5		
		70	57.9	106.0	11.52	145.3	9.20	126.6	60.7	109.2	11.57	148.7	9.44	127.0	63.6	112.4	11.62	152.0	9.67	127.4		
		90	Operation not recommended																			
		110	Operation not recommended																			
	28	50	39.0	96.1	10.90	133.3	8.81	121.3	41.6	99.2	10.96	136.6	9.05	121.6	44.1	102.4	11.02	140.0	9.29	121.9		
		70	57.2	112.0	21.05	183.8	5.32	124.7	60.2	115.6	16.11	170.6	7.18	124.0	63.2	119.3	11.16	157.4	10.69	123.4		
		90	Operation not recommended																			
		110	Operation not recommended																			
	36	50	38.4	101.3	10.47	137.0	9.68	117.8	41.1	104.9	10.52	140.8	9.97	118.1	43.8	108.5	10.56	144.5	10.27	118.3		
		70	56.5	117.9	30.59	222.3	3.86	122.7	59.6	122.1	20.65	192.6	7.82	121.0	62.8	126.3	10.71	162.8	11.79	119.3		
		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

10/3/24

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Performance Data

180 Heating

Source		Load Flow-24 GPM							Load Flow-36 GPM							Load Flow-48 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								
30	36	60	72.3	143.6	8.9	113.4	4.75	22.8	69.4	144.7	8.65	115.2	4.90	22.7	66.4	145.9	8.5	117.0	5.06	22.6								
		80	91.7	135.6	11.2	97.5	3.56	23.8	88.8	137.2	11.01	99.6	3.65	23.7	86.0	138.8	10.9	101.8	3.75	23.5								
		100	111.0	127.7	13.5	81.6	2.77	24.8	108.3	129.7	13.37	84.1	2.84	24.6	105.7	131.7	13.3	86.5	2.91	24.5								
		120	130.3	119.7	15.8	65.8	2.22	25.8	127.8	122.2	15.73	68.5	2.28	25.6	125.4	124.7	15.7	71.2	2.33	25.5								
	48	60	72.8	148.6	8.90	118.2	4.89	24.9	69.6	150.0	8.70	120.3	5.05	24.8	66.5	151.3	8.50	122.3	5.22	24.7								
		80	92.0	139.6	11.23	101.2	3.64	25.7	89.1	141.5	11.07	103.7	3.75	25.5	86.2	143.3	10.90	106.1	3.85	25.4								
		100	111.2	130.5	13.57	84.2	2.82	26.4	108.5	133.0	13.43	87.1	2.90	26.3	105.8	135.4	13.30	90.0	2.98	26.1								
		120	130.4	121.5	15.90	67.2	2.24	27.1	128.0	124.5	15.80	70.5	2.31	27.0	125.5	127.4	15.70	73.8	2.38	26.8								
	50	24	60	74.5	169.1	9.3	137.5	5.32	38.2	71.1	171.4	9.08	140.5	5.50	37.9	67.7	173.8	8.9	143.4	5.68	37.7							
			80	93.7	159.8	11.8	119.6	3.95	39.7	90.4	162.4	11.63	122.7	4.06	39.5	87.1	164.9	11.5	125.7	4.18	39.2							
			100	112.9	150.5	14.3	101.7	3.07	41.3	109.8	153.3	14.18	104.9	3.15	41.0	106.7	156.1	14.1	108.1	3.23	40.7							
			120	132.1	141.2	16.8	83.9	2.45	42.8	129.2	144.2	16.73	87.1	2.51	42.5	126.3	147.2	16.7	90.4	2.57	42.2							
36		60	75.0	174.3	9.3	142.6	5.49	40.9	71.4	176.7	9.14	145.5	5.66	40.7	67.8	179.0	9.0	148.4	5.84	40.5								
		80	94.1	164.4	11.8	124.0	4.07	42.1	90.7	167.1	11.68	127.3	4.19	41.9	87.3	169.9	11.5	130.5	4.32	41.7								
		100	113.3	154.5	14.4	105.4	3.15	43.3	110.1	157.6	14.22	109.1	3.25	43.1	106.9	160.7	14.1	112.7	3.35	42.8								
		120	132.4	144.6	16.9	86.9	2.51	44.5	129.5	148.1	16.76	90.8	2.59	44.2	126.5	151.5	16.6	94.8	2.67	44.0								
48		60	75.4	179.6	9.4	147.6	5.59	43.7	71.7	181.9	9.20	150.5	5.76	43.5	67.9	184.3	9.1	153.4	5.92	43.4								
		80	94.5	169.0	11.9	128.4	4.13	44.5	91.0	171.9	11.73	131.9	4.26	44.3	87.5	174.8	11.6	135.3	4.40	44.2								
		100	113.6	158.5	14.5	109.2	3.19	45.3	110.4	161.9	14.27	113.2	3.30	45.1	107.1	165.3	14.1	117.3	3.42	45.0								
		120	132.7	148.0	17.0	89.9	2.53	46.1	129.7	151.9	16.80	94.6	2.63	45.9	126.7	155.9	16.6	99.2	2.73	45.7								
70	24	60	77.1	199.5	9.70	166.4	6.03	55.7	73.0	203.4	9.55	170.8	6.24	55.3	68.9	207.2	9.40	175.1	6.46	55.0								
		80	96.1	187.8	12.43	145.4	4.43	57.5	92.3	191.7	12.30	149.8	4.57	57.1	88.4	195.6	12.17	154.1	4.71	56.8								
		100	115.1	176.2	15.17	124.4	3.40	59.3	111.5	180.1	15.05	128.8	3.51	58.9	107.9	184.1	14.93	133.1	3.61	58.6								
		120	134.1	164.5	17.90	103.4	2.69	61.1	130.8	168.5	17.80	107.7	2.77	60.7	127.4	172.5	17.70	112.1	2.86	60.4								
	36	60	77.6	205.0	9.8	171.7	6.16	59.0	73.4	208.6	9.63	175.7	6.35	58.8	69.1	212.2	9.5	179.8	6.54	58.5								
		80	96.6	193.2	12.5	150.5	4.53	60.4	92.6	197.0	12.35	154.9	4.67	60.1	88.6	200.9	12.2	159.3	4.83	59.8								
		100	115.6	181.3	15.3	129.3	3.48	61.8	111.9	185.5	15.08	134.0	3.61	61.5	108.1	189.7	14.9	138.8	3.73	61.2								
		120	134.6	169.5	18.0	108.0	2.76	63.1	131.1	173.9	17.80	113.2	2.86	62.8	127.7	178.4	17.6	118.3	2.97	62.5								
	48	60	78.1	210.5	9.80	177.1	6.29	62.4	73.7	213.9	9.70	180.7	6.46	62.2	69.3	217.2	9.60	184.4	6.63	62.1								
		80	97.1	198.5	12.57	155.6	4.63	63.3	93.0	202.4	12.40	160.0	4.78	63.1	88.9	206.2	12.23	164.5	4.94	62.9								
		100	116.0	186.4	15.33	134.1	3.56	64.2	112.2	190.9	15.10	139.3	3.71	64.0	108.4	195.3	14.87	144.5	3.85	63.8								
		120	135.0	174.4	18.10	112.6	2.82	65.2	131.4	179.4	17.80	118.6	2.95	64.9	127.9	184.3	17.50	124.6	3.09	64.6								
90	24	60	79.9	231.6	9.90	197.8	6.85	73.0	75.0	234.4	9.80	201.0	7.01	72.7	70.2	237.2	9.70	204.1	7.16	72.5								
		80	99.0	221.0	12.47	178.5	5.19	74.7	94.4	223.9	12.35	181.8	5.31	74.4	89.7	226.9	12.23	185.1	5.43	74.1								
		100								Operation not recommended																		
	36	60	80.7	240.6	10.1	206.1	6.98	76.9	75.6	242.7	9.95	208.7	7.15	76.7	70.5	244.8	9.8	211.4	7.32	76.5								
		80	99.8	230.3	12.9	186.2	5.22	78.2	94.9	232.7	12.78	189.1	5.33	78.0	90.1	235.1	12.7	191.9	5.44	77.8								
		100								Operation not recommended																		
		120								Operation not recommended																		
	48	60	81.4	249.6	10.30	214.4	7.10	80.8	76.1	251.0	10.10	216.5	7.29	80.7	70.8	252.4	9.90	218.6	7.47	80.6								
		80	100.6	239.6	13.37	193.9	5.25	81.7	95.5	241.4	13.22	196.3	5.35	81.6	90.5	243.3	13.07	198.7	5.46	81.5								
		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

10/4/24

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

Performance Data cont.

180 Cooling

Source		Load Flow-24 GPM							Load Flow-36 GPM							Load Flow-48 GPM						
EST ° F	Flow GPM	ELT	LLT	TC	Power	HR	EER	LST	LLT	TC	Power	HR	EER	LST	LLT	TC	Power	HR	EER	LST		
		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F	° F	MBTUH	kW	MBTUH		° F		
30	24	50	37.5	145.3	5.83	165.2	24.92	44.2	40.4	152.0	6.04	172.6	25.15	44.8	43.2	158.6	6.25	179.9	25.38	45.5		
		70	54.3	183.0	6.45	205.0	28.36	47.6	57.9	191.0	6.65	213.6	28.73	48.4	61.5	198.9	6.84	222.3	29.10	49.1		
		90	71.0	220.7	7.08	244.9	31.19	51.0	75.4	230.0	7.25	254.7	31.71	51.9	79.7	239.3	7.42	264.6	32.23	52.7		
		110	87.8	258.4	7.70	284.7	33.56	54.5	92.9	269.0	7.86	295.8	34.23	55.4	98.0	279.6	8.01	306.9	34.91	56.4		
	36	50	36.5	156.7	5.53	175.6	28.34	41.1	39.6	163.6	5.69	183.0	28.77	41.6	42.7	170.5	5.84	190.4	29.19	42.0		
		70	53.3	194.0	6.18	215.1	31.39	43.6	57.1	202.3	6.33	223.9	31.97	44.2	61.0	210.7	6.48	232.8	32.52	44.8		
		90	70.1	231.2	6.83	254.5	33.87	46.2	74.7	241.1	6.97	264.9	34.58	46.8	79.2	250.9	7.12	275.2	35.25	47.5		
		110	86.9	268.5	7.48	294.0	35.92	48.7	92.2	279.8	7.62	305.8	36.74	49.5	97.5	291.1	7.76	317.6	37.54	50.2		
	48	50	35.6	168.1	5.23	185.9	32.14	38.0	38.9	175.2	5.33	193.4	32.86	38.3	42.2	182.3	5.43	200.8	33.57	38.6		
		70	52.4	204.9	5.90	225.1	34.71	39.7	56.4	213.7	6.01	234.2	35.53	40.1	60.4	222.4	6.12	243.3	36.34	40.5		
		90	69.2	241.8	6.58	264.2	36.76	41.3	74.0	252.1	6.69	275.0	37.65	41.8	78.7	262.5	6.81	285.7	38.55	42.3		
		110	86.1	278.6	7.25	303.3	38.43	43.0	91.5	290.6	7.38	315.8	39.39	43.6	97.0	302.6	7.50	328.2	40.35	44.1		
50	24	50	38.5	134.1	7.77	160.6	18.80	63.8	41.1	140.7	7.97	167.9	19.11	64.4	43.7	147.3	8.18	175.2	19.42	65.0		
		70	55.7	166.7	8.55	195.9	21.24	66.8	58.9	174.2	8.77	204.1	21.59	67.5	62.2	181.7	8.99	212.4	21.93	68.2		
		90	72.9	199.4	9.34	231.2	23.26	69.9	76.8	207.8	9.57	240.4	23.65	70.7	80.7	216.2	9.80	249.6	24.04	71.4		
		110	90.1	232.0	10.13	266.6	24.96	72.9	94.7	241.3	10.37	276.7	25.40	73.8	99.2	250.6	10.61	286.8	25.84	74.6		
	36	50	37.7	143.4	7.42	168.7	19.34	60.7	40.5	150.2	7.59	176.1	19.78	61.2	43.3	157.0	7.77	183.6	20.20	61.6		
		70	54.8	177.4	8.23	205.5	21.55	63.0	58.2	185.1	8.41	213.8	22.00	63.6	61.7	192.7	8.60	222.1	22.42	64.1		
		90	71.8	211.5	9.05	242.4	23.37	65.4	76.0	219.9	9.23	251.5	23.82	66.0	80.2	228.4	9.42	260.6	24.25	66.6		
		110	88.9	245.5	9.87	279.2	24.89	67.7	93.8	254.8	10.05	289.1	25.35	68.4	98.7	264.1	10.24	299.1	25.78	69.0		
	48	50	36.9	152.7	7.07	176.8	23.78	57.6	39.9	159.7	7.22	184.4	24.35	57.9	42.8	166.8	7.37	192.0	24.91	58.2		
		70	53.8	188.1	7.91	215.1	25.99	59.2	57.5	195.9	8.06	223.4	26.58	59.6	61.2	203.7	8.21	231.7	27.16	60.0		
		90	70.8	223.6	8.76	253.5	27.77	60.9	75.2	232.1	8.90	262.5	28.38	61.3	79.7	240.7	9.04	271.5	28.98	61.7		
		110	87.7	259.1	9.60	291.8	29.23	62.5	92.9	268.3	9.74	301.6	29.86	63.0	98.1	277.6	9.88	311.3	30.48	63.4		
70	24	50	39.4	122.9	9.70	156.0	12.67	83.4	41.8	129.4	9.90	163.2	13.06	84.0	44.2	135.9	10.10	170.4	13.46	84.6		
		70	57.1	150.5	10.65	186.8	14.12	86.1	60.0	157.5	10.90	194.7	14.45	86.7	62.9	164.5	11.14	202.5	14.77	87.4		
		90	74.7	178.0	11.61	217.6	15.34	88.7	78.2	185.5	11.89	226.1	15.60	89.4	81.7	193.0	12.17	234.6	15.86	90.2		
		110	Operation not recommended																			
	36	50	38.8	130.1	9.30	161.8	13.98	80.3	41.3	136.8	9.50	169.3	14.40	80.8	43.8	143.6	9.71	176.7	14.80	81.3		
		70	56.2	160.9	10.29	196.0	15.64	82.4	59.3	167.8	10.50	203.7	15.98	82.9	62.5	174.8	10.71	211.3	16.31	83.4		
		90	73.5	191.7	11.27	230.2	17.01	84.6	77.3	198.8	11.50	238.1	17.30	85.1	81.2	205.9	11.72	245.9	17.57	85.6		
		110	Operation not recommended																			
	48	50	38.2	137.2	8.90	167.6	15.42	77.2	40.9	144.3	9.11	175.3	15.83	77.5	43.5	151.3	9.31	183.1	16.25	77.9		
		70	55.3	171.3	9.92	205.1	17.27	78.8	58.7	178.2	10.10	212.7	17.63	79.1	62.1	185.1	10.29	220.2	17.99	79.5		
		90	72.4	205.4	10.93	242.7	18.79	80.4	76.5	212.1	11.10	250.0	19.10	80.7	80.6	218.8	11.27	257.3	19.42	81.1		
		110	Operation not recommended																			
90	24	50	40.3	113.4	11.67	153.2	10.14	103.2	42.4	119.3	11.92	160.0	10.45	103.7	44.6	125.3	12.17	166.8	10.76	104.3		
		70	58.1	138.3	12.64	181.4	11.37	105.6	60.8	144.5	12.91	188.6	11.63	106.2	63.5	150.7	13.18	195.7	11.88	106.8		
		90	76.0	163.2	13.60	209.6	12.42	108.0	79.2	169.7	13.90	217.1	12.63	108.7	82.4	176.2	14.20	224.6	12.84	109.3		
		110	Operation not recommended																			
	36	50	39.6	120.6	11.17	158.7	10.79	100.1	42.0	126.8	11.39	165.7	11.13	100.6	44.3	133.0	11.61	172.6	11.46	101.0		
		70	57.3	147.5	12.22	189.2	12.07	102.0	60.2	153.9	12.46	196.4	12.35	102.5	63.1	160.2	12.71	203.6	12.61	102.9		
		90	75.0	174.5	13.27	219.8	13.15	103.9	78.5	181.0	13.54	227.2	13.37	104.4	81.9	187.4	13.80	234.5	13.58	104.9		
		110	Operation not recommended																			
	48	50	39.0	127.8	10.68	164.2	12.46	97.1	41.5	134.3	10.87	171.3	12.84	97.4	44.0	140.8	11.06	178.5	13.21	97.7		
		70	56.5	156.8	11.81	197.1	13.83	98.5	59.6	163.3	12.02	204.3	14.14	98.8	62.7	169.7	12.23	211.5	14.44	99.1		
		90	74.0	185.8	12.94	230.0	14.95	99.9	77.8	192.3	13.17	237.2	15.21	100.2	81.5	198.7	13.40	244.5	15.46	100.5		
		110	Operation not recommended																			
110	24	50	41.1	103.8	13.64	150.4	7.61	122.9	43.1	109.3	13.94	156.8	7.84	123.5	45.1	114.7	14.23	163.3	8.06	124.0		
		70	59.2	126.1	14.62	176.0	8.62	125.1	61.6	131.5	14.93	182.5	8.81	125.7	64.1	137.0	15.23	189.0	9.00	126.2		
		90	Operation not recommended																			
		110	Operation not recommended																			
	36	50	40.5	111.1	13.05	155.6	8.51	119.9	42.6	116.8	13.28	162.1	8.79	120.3	44.7	122.5	13.52	168.6	9.06	120.7		
		70	58.5	134.2	14.16	182.5	9.48	121.6	61.1	139.9	14.43	189.2	9.70	122.0	63.7	145.7	14.70	195.9	9.91	122.5		
		90	Operation not recommended																			
		110	Operation not recommended																			
	48	50	39.8	118.3	12.45	160.8	9.50	116.9	42.1	124.3	12.63	167.3	9.84	117.2	44.4	130.2	12.80	173.9	10.17	117.5		
		70	57.8	142.3	13.70	189.0	10.38	118.1	60.6	148.3	13.93	195.9	10.64	118.4	63.4	154.4	14.17	202.8	10.90	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

10/4/24

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Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

**Affinity Series-
Dual Capacity Hydronic Heat Pump
10-15 Tons 60Hz**



Revision Guide

Pages:	Description:	Date:	By:
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