

XV5.0KX Variable Speed Drive Compressor R600a 100-127V 50/60Hz



General

Code number	108H5014
Electronic unit (detached) - XV-Frequency Input: Frequency signal (connector cable assembly req'd)	105N5150, 20 pcs: 105N5151
Electronic unit (attached) - XV-AEO/Freq. Inputs: Modbus, thermostat, frequency signal	105N5312, 50 pcs: 105N5313
Approvals	UL 60335-2-34
Compressors on pallet	175



Application

Application		LBP/MBP			
Frequency	Hz	50		60	
Evaporating temperature	°F	-31 to 32		-31 to 32	
Voltage range	V	90 - 135		90 - 135	
Max. condensing temperature continuous (short)	°F	140 (158)		140 (158)	
Max. winding temperature continuous (short)	°F	257 (275)		257 (275)	

Cooling requirements

Frequency	Hz	50			60		
Application		LBP	MBP	HBP	LBP	MBP	HBP
32°C		S	S	-	S	S	-
38°C		S	S	-	S	S	-
43°C		S	S	-	S	S	-

Remarks: HST capable (High starting torque, start against differential pressure)
All measured performance data include losses caused by electronic unit.

Features

Speed range	rpm	1000 - 4000
Protections		current / speed / temperature
External speed control		frequency signal 5V, 0-200Hz

Motor

Motor type		permanent magnet
LRA (rated after 4 sec. UL984)	A	electronic cut off
Maximum current	A	2.5
Resistance, all 3 windings (25°C)	Ω	10.0

Design

Displacement	cu.in	0.31
Oil quantity (type)	fl.oz.	3.9 (5 cSt mineral)
Maximum refrigerant charge	oz.	5.3
Free gas volume in compressor	fl.oz.	30.4
Weight	lbs.	10.6

Dimensions

Height	inch	A	4.17
		B	3.98
Suction connector	location/I.D. in. angle	C	0.252-0.259 11°
	material comment		Copper Rubber plug
Process connector	location/I.D. in. angle	D	0.252-0.259 15°
	material comment		Copper Rubber plug
Discharge connector	location/I.D. in. angle	E	0.191-0.198 0°
	material comment		Copper Rubber plug

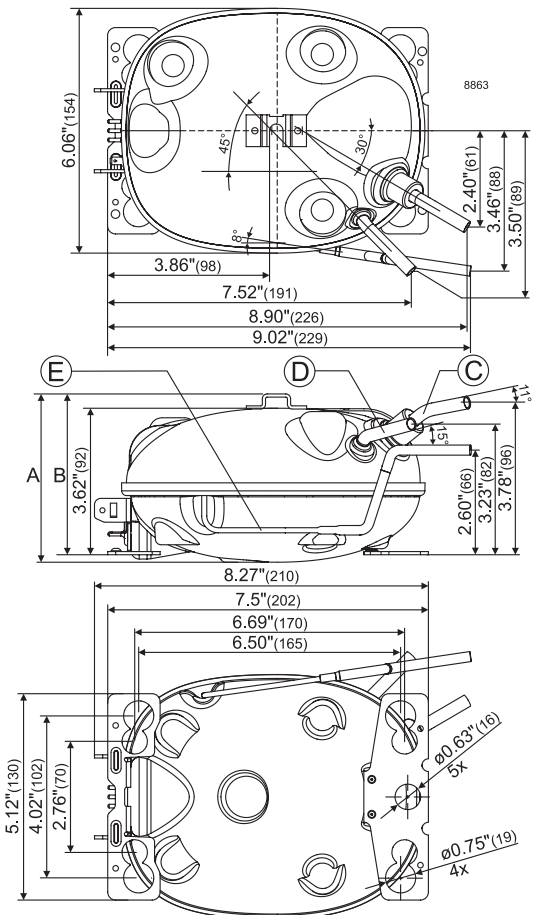
Mounting accessories

		Code number
Bolt joint for one compressor	Ø: 5/8 in	118-1917
Bolt joint in quantities	Ø: 5/8 in	118-1918
Snap-on in quantities	Ø: 5/8 in	118-1919

yellow warning label is placed separately



- S = Static cooling normally sufficient
- O = Oil cooling
- F₁ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



1000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			50.5	72.9	94.8	106	145	191	211	240	291	301	341	365	
Power cons. in W			9.03	10.9	12.3	12.9	15.1	17.2	18.1	19.3	21.3	21.7	23.0	23.8	
Current cons. in A			0.21	0.24	0.27	0.28	0.31	0.35	0.37	0.39	0.42	0.43	0.45	0.46	
EER in BTU/Wh			5.60	6.70	7.70	8.16	9.65	11.1	11.6	12.4	13.7	13.9	14.8	15.3	

1200 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			63.5	90.7	116	129	175	229	251	286	347	359	406	436	
Power cons. in W			11.7	13.9	15.6	16.3	18.6	21.0	22.0	23.4	25.7	26.1	27.9	29.0	
Current cons. in A			0.26	0.29	0.32	0.33	0.38	0.42	0.43	0.46	0.50	0.50	0.53	0.55	
EER in BTU/Wh			5.42	6.51	7.48	7.93	9.42	10.9	11.5	12.3	13.5	13.7	14.6	15.1	

1300 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			70	99.6	127	141	190	248	272	309	374	387	439	472	
Power cons. in W			13.1	15.5	17.2	18.0	20.4	22.9	23.9	25.4	27.9	28.4	30.3	31.6	
Current cons. in A			0.28	0.32	0.35	0.36	0.41	0.45	0.47	0.49	0.54	0.54	0.58	0.60	
EER in BTU/Wh			5.36	6.44	7.40	7.85	9.33	10.8	11.4	12.2	13.4	13.7	14.5	15.0	

1500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			83	117	149	165	221	286	313	355	430	445	505	544	
Power cons. in W			15.8	18.5	20.5	21.3	24	26.7	27.8	29.4	32.3	32.8	35.2	36.7	
Current cons. in A			0.33	0.37	0.41	0.42	0.47	0.51	0.53	0.56	0.61	0.62	0.66	0.68	
EER in BTU/Wh			5.26	6.33	7.29	7.73	9.20	10.7	11.3	12.1	13.3	13.6	14.4	14.8	

1800 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			101	138	173	190	253	327	358	406	491	508	577	620	
Power cons. in W			19	21.7	23.7	24.7	27.7	30.9	32.2	34.1	37.2	37.8	40.2	41.6	
Current cons. in A			0.38	0.43	0.46	0.48	0.53	0.59	0.61	0.64	0.70	0.71	0.75	0.77	
EER in BTU/Wh			5.28	6.34	7.27	7.70	9.13	10.6	11.1	11.9	13.2	13.4	14.4	14.9	

2100 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			118	158	196	215	286	368	403	457	553	572	648	696	
Power cons. in W			22.3	24.9	27	28	31.5	35.2	36.6	38.8	42.2	42.8	45.2	46.4	
Current cons. in A			0.44	0.48	0.52	0.54	0.60	0.66	0.69	0.73	0.79	0.80	0.84	0.86	
EER in BTU/Wh			5.29	6.34	7.26	7.69	9.08	10.5	11.0	11.8	13.1	13.4	14.4	15.0	

2500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			141	185	228	249	329	424	464	526	634	656	743		
Power cons. in W			26.7	29.1	31.4	32.5	36.5	40.8	42.5	45.0	48.8	49.5	51.8		
Current cons. in A			0.51	0.56	0.60	0.62	0.69	0.76	0.79	0.84	0.90	0.91	0.95		
EER in BTU/Wh			5.30	6.35	7.25	7.67	9.03	10.4	10.9	11.7	13.0	13.3	14.3		

3000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			166	218	272	299	398	515	564	639	770	795	896		
Power cons. in W			30.5	34.7	38.3	40.0	45.7	51.5	53.7	56.7	60.9	61.6	63.6		
Current cons. in A			0.58	0.65	0.72	0.75	0.85	0.95	0.99	1.05	1.12	1.13	1.16		
EER in BTU/Wh			5.44	6.29	7.09	7.46	8.71	10.0	10.5	11.3	12.6	12.9	14.1		

3500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			191	252	316	348	467	606	664	753	905	935	1050		
Power cons. in W			34.4	40.4	45.3	47.5	55.0	62.2	64.8	68.4	73.1	73.7	75.4		
Current cons. in A			0.64	0.75	0.84	0.88	1.02	1.15	1.19	1.25	1.34	1.35	1.38		
EER in BTU/Wh			5.55	6.25	6.97	7.32	8.50	9.74	10.2	11.0	12.4	12.7	13.9		

4000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			215	286	360	397	536	697	764	867	1041	1074			
Power cons. in W			38.2	46	52.3	55.1	64.2	72.9	76	80.1	85.2	85.9			
Current cons. in A			0.71	0.85	0.97	1.02	1.18	1.34	1.39	1.46	1.55	1.56			
EER in BTU/Wh			5.64	6.21	6.89	7.21	8.35	9.56	10.1	10.8	12.2	12.5			

1000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			14.3	19.8	27.8	31	37.7	49.2	61.7	70.4	74.9	88.3	101	107	
Power cons. in W			8.84	10.5	12.3	12.9	14.2	16.2	18.1	19.3	19.9	21.7	23.2	23.8	
Current cons. in A			0.21	0.24	0.27	0.28	0.30	0.33	0.37	0.39	0.40	0.43	0.45	0.46	
COP in W/W			1.62	1.89	2.26	2.39	2.65	3.04	3.41	3.64	3.76	4.07	4.37	4.49	

1200 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			17.9	24.7	34.1	37.9	45.7	59.1	73.7	83.9	89.2	105	121	128	
Power cons. in W			11.5	13.5	15.6	16.3	17.7	19.8	22	23.4	24.1	26.1	28.1	29	
Current cons. in A			0.25	0.29	0.32	0.33	0.36	0.40	0.43	0.46	0.47	0.50	0.54	0.55	
COP in W/W			1.56	1.83	2.19	2.33	2.59	2.98	3.36	3.59	3.71	4.02	4.30	4.41	

1300 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			19.8	27.2	37.3	41.3	49.7	64	79.7	90.6	96.4	114	131	138	
Power cons. in W			12.8	15	17.2	18	19.4	21.7	23.9	25.4	26.1	28.4	30.6	31.6	
Current cons. in A			0.28	0.31	0.35	0.36	0.39	0.43	0.47	0.49	0.51	0.54	0.58	0.60	
COP in W/W			1.54	1.81	2.17	2.30	2.56	2.96	3.33	3.57	3.69	4.00	4.28	4.38	

1500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			23.4	32.1	43.7	48.2	57.8	73.9	91.7	104	111	130	151	159	
Power cons. in W			15.5	18	20.5	21.3	22.9	25.3	27.8	29.4	30.3	32.8	35.5	36.7	
Current cons. in A			0.32	0.36	0.41	0.42	0.45	0.49	0.53	0.56	0.58	0.62	0.66	0.68	
COP in W/W			1.52	1.79	2.14	2.26	2.52	2.92	3.30	3.54	3.66	3.97	4.24	4.34	

1800 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			28.6	37.8	50.6	55.7	66.4	84.7	105	119	127	149	172	182	
Power cons. in W			18.8	21.1	23.7	24.7	26.5	29.3	32.2	34.1	35.1	37.8	40.5	41.6	
Current cons. in A			0.38	0.42	0.46	0.48	0.51	0.56	0.61	0.64	0.66	0.71	0.75	0.77	
COP in W/W			1.52	1.79	2.13	2.26	2.51	2.89	3.26	3.49	3.61	3.94	4.24	4.37	

2100 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			33.7	43.5	57.5	63.1	75.1	95.5	118	134	142	168	193	204	
Power cons. in W			22.1	24.3	27	28	30.1	33.3	36.6	38.8	39.8	42.8	45.4	46.4	
Current cons. in A			0.43	0.47	0.52	0.54	0.57	0.63	0.69	0.73	0.75	0.80	0.84	0.86	
COP in W/W			1.52	1.79	2.13	2.25	2.50	2.87	3.23	3.46	3.58	3.91	4.24	4.39	

2500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			40.5	51.1	66.7	73.1	86.6	110	136	154	164	192	221		
Power cons. in W			26.5	28.5	31.4	32.5	34.8	38.6	42.5	45	46.2	49.5	52.1		
Current cons. in A			0.51	0.55	0.60	0.62	0.66	0.72	0.79	0.84	0.86	0.91	0.96		
COP in W/W			1.53	1.79	2.13	2.25	2.49	2.85	3.20	3.42	3.54	3.89	4.25		

3000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			47.5	60.3	79.6	87.5	104	133	165	187	199	233	267		
Power cons. in W			30.1	33.8	38.3	40	43.4	48.6	53.7	56.7	58.1	61.6	63.8		
Current cons. in A			0.57	0.64	0.72	0.75	0.81	0.90	0.99	1.05	1.07	1.13	1.17		
COP in W/W			1.58	1.78	2.08	2.19	2.41	2.74	3.08	3.31	3.42	3.78	4.18		

3500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			54.6	69.5	92.5	102	122	157	195	221	234	274	312		
Power cons. in W			33.8	39.1	45.3	47.5	52	58.7	64.8	68.4	70	73.7	75.5		
Current cons. in A			0.63	0.73	0.84	0.88	0.96	1.08	1.19	1.25	1.28	1.35	1.38		
COP in W/W			1.62	1.78	2.04	2.14	2.35	2.67	3.00	3.23	3.35	3.72	4.14		

4000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			61.6	78.7	105	116	140	180	224	254	270	315			
Power cons. in W			37.4	44.3	52.3	55.1	60.6	68.7	76	80.1	81.9	85.9			
Current cons. in A			0.69	0.82	0.97	1.02	1.12	1.26	1.39	1.46	1.50	1.56			
COP in W/W			1.65	1.77	2.02	2.11	2.31	2.62	2.95	3.17	3.29	3.67			

CECOMAF LBP

115V, 60Hz, static cooling

p evap = -25°C = -13°F T suc = 32°C = 90°F
 p cond = 55°C = 131°F T liq = 55°C = 131°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	15.9	17.7	21.3	25.0	30.9	36.8	44.7	52.2	59.7	67.2
Capacity [BTU/h]	54.0	60.0	73.0	85.0	105	126	153	178	204	229
Power consumption [W]	11.8	13.1	15.8	18.6	22.6	26.6	31.9	37.5	43.1	48.7
Current consumption [A]	0.26	0.28	0.33	0.37	0.44	0.51	0.61	0.70	0.80	0.90
COP [W/W]	1.35	1.35	1.35	1.35	1.37	1.39	1.40	1.39	1.39	1.38
EER [BTU/Wh]	4.60	4.60	4.59	4.59	4.67	4.73	4.78	4.75	4.72	4.71

ASHRAE LBP

115V, 60Hz, static cooling

p evap = -23.3°C = -10°F T suc = 32.2°C = 90°F
 p cond = 54.4°C = 130°F T liq = 32.2°C = 90°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	21.9	24.6	29.8	35.0	42.5	50.1	60.2	71.1	82.0	92.8
Capacity [BTU/h]	75.0	84.0	102	119	145	171	206	243	280	317
Power consumption [W]	12.6	14.1	17.1	20.1	24.0	28.0	33.3	39.7	46.1	52.5
Current consumption [A]	0.27	0.30	0.35	0.40	0.47	0.54	0.63	0.74	0.86	0.97
COP [W/W]	1.74	1.74	1.74	1.74	1.77	1.79	1.81	1.79	1.78	1.77
EER [BTU/Wh]	5.95	5.95	5.95	5.95	6.04	6.11	6.17	6.11	6.06	6.03

Optimization point

115V, 60Hz, static cooling

p evap = -25°C = -13°F T suc = 32°C = 90°F
 p cond = 35°C = 95°F T liq = 35°C = 95°F

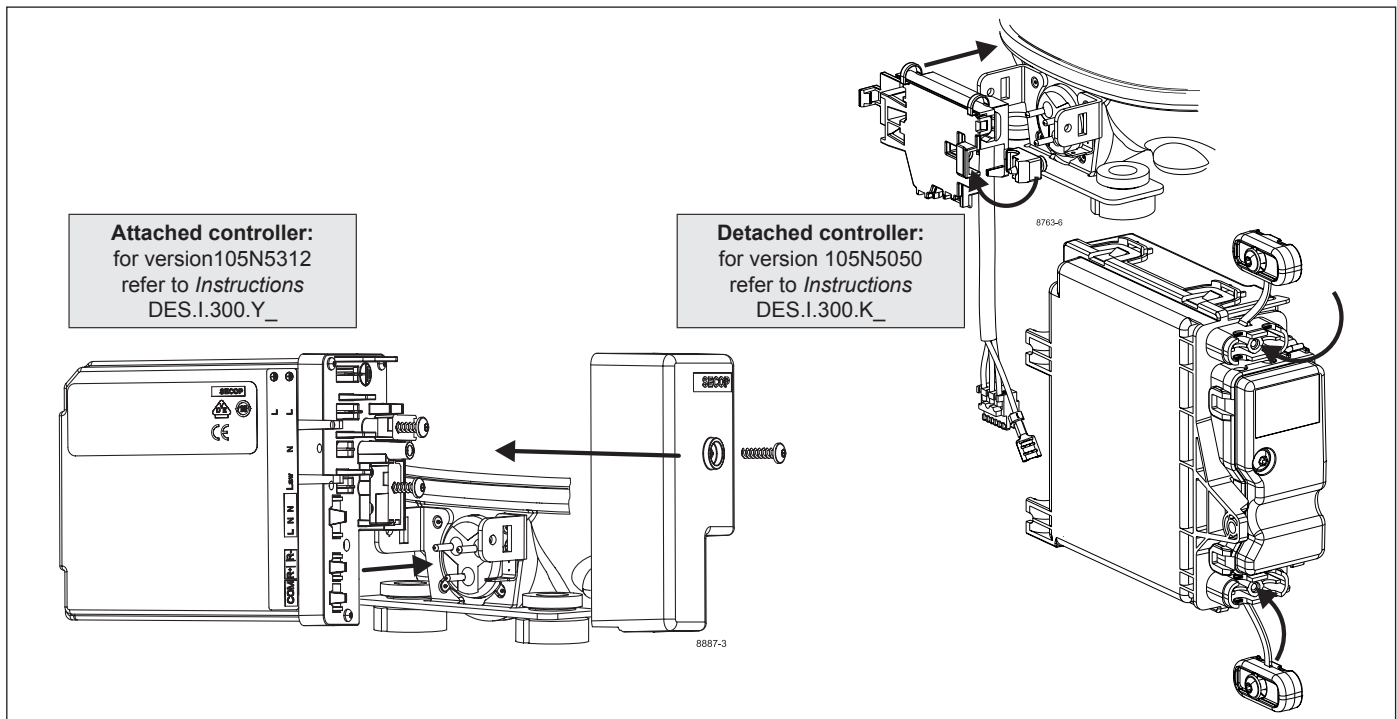
Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	27.8	31.0	37.3	43.7	50.6	57.5	66.7	79.6	92.5	105.5
Capacity [BTU/h]	95.0	106	127	149	173	196	228	272	316	360
Power consumption [W]	12.3	13.9	17.2	20.5	23.7	27.0	31.4	38.3	45.3	52.3
Current consumption [A]	0.27	0.29	0.35	0.41	0.46	0.52	0.60	0.72	0.84	0.97
COP [W/W]	2.26	2.22	2.17	2.14	2.13	2.13	2.13	2.08	2.04	2.02
EER [BTU/Wh]	7.70	7.58	7.40	7.29	7.27	7.26	7.25	7.09	6.97	6.89

Optimization point

115V, 60Hz, static cooling

p evap = -10°C = 14°F T suc = 32°C = 90°F
 p cond = 45°C = 113°F T liq = 45°C = 113°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	51.7	56.9	67.2	77.6	89.1	101	116	142	167	193
Capacity [BTU/h]	176	194	229	265	304	343	396	483	571	658
Power consumption [W]	19.4	21.4	25.5	29.6	34.0	38.4	44.4	55.4	66.3	77.3
Current consumption [A]	0.39	0.42	0.49	0.56	0.64	0.72	0.82	1.02	1.22	1.41
COP [W/W]	2.66	2.65	2.64	2.62	2.62	2.62	2.62	2.56	2.52	2.50
EER [BTU/Wh]	9.09	9.05	8.99	8.95	8.94	8.93	8.93	8.73	8.61	8.51



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