

ATLAS18-0444Y4
R134a
24 V DC
VARIABLE SPEED (1800-6000 rpm)



Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	ATLAS00001	3/8" (9.64mm) ID Suction 5/16" (8.15mm) ID Discharge
Compressor Drawing	DCMX45	
Controller (24V)	025F0367	
Controller (12 / 24 / 48V)	025F0407	
Controller Drawing	DGMX0091	
Wiring Diagram	DEMX0060	

Design

Number of Cylinders	1
Total Displacement	0.444 in ³ (7.3 cm ³)
Oil Quantity	210 cc
Oil Type	POE - 68 cSt
Weight	9.48 lb / 4.30 kg

Application Information

HIGH BACK PRESSURE (HBP)	
Evaporator Temperature Range	-13° F to 53.6° F (-25° C to 12° C)
Condenser Temperature Range	82.4° F to 164.3° F (28° C to 73.5° C)
LOW BACK PRESSURE (LBP)	
Evaporator Temperature Range	-40° F to 10° F (-40° C to -12.2° C)
Condenser Temperature Range	100° F to 140° F (37.8° C to 60° C)
Maximum Discharge Temperature	239° F (115° C)
Maximum Compression Ratio	8:1
Minimum Compressor Cooling	1 m/s airflow over compressor

Rating Condition

	HBP		LBP	
Condensing Temperature	130°F	(54.4°C)	130°F	(54.4°C)
Evaporating Temperature	45°F	(7.2°C)	-10°F	(-23.3°C)
Return Gas Temperature	95°F	(35.0°C)	90°F	(32.2°C)
Liquid Temperature	115°F	(46.1°C)	90°F	(32.2°C)
Ambient Temperature	95°F	(35.0°C)	90°F	(32.2°C)
Compressor Cooling	1 m/s air cooling			

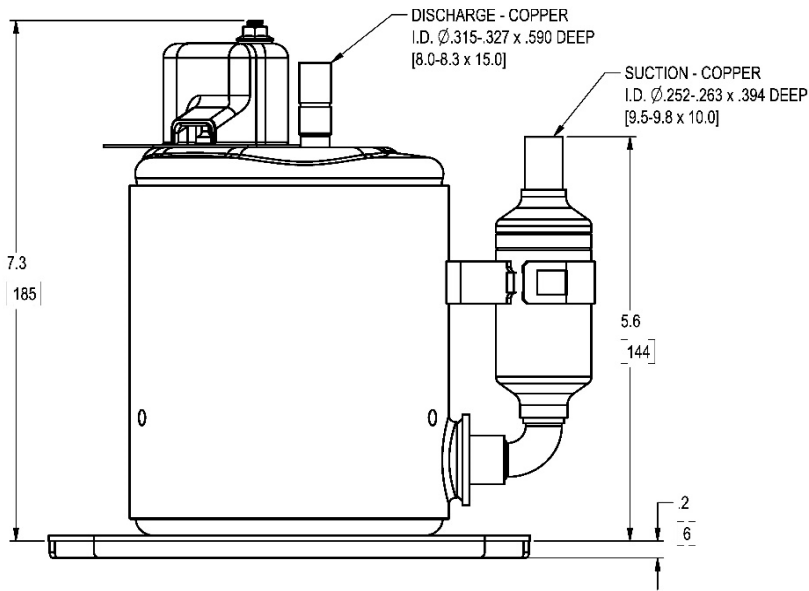
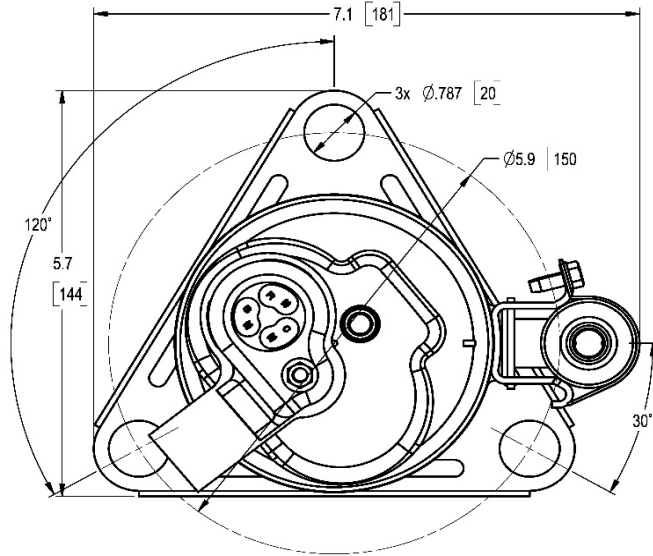
Packaging Options

- Single Pack (add -SP suffix to part number when ordering)
- Pallet Pack (30 piece multiples) (add -FP suffix to part number when ordering)

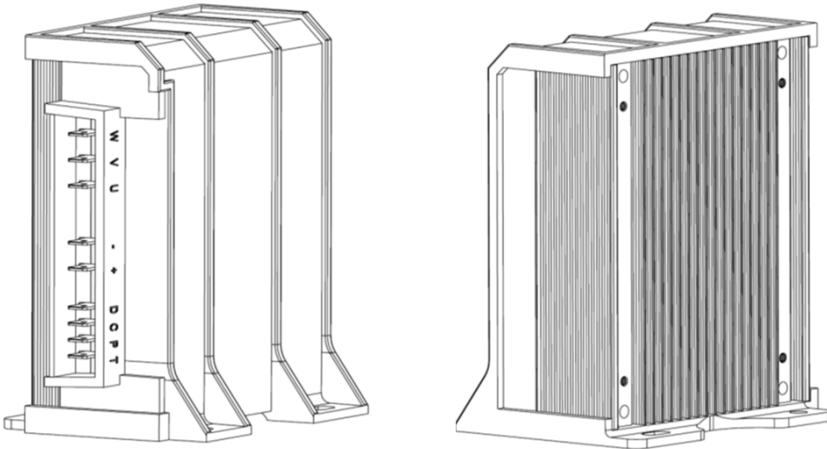
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Compressor Dimensions



Controller Configuration



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Cooling Capacity (12V) - ASHRAE HBP BTU/hr (Watt)

RPM	Evaporator Temperature													
	0°F	(-17.8°C)	10°F	(-12.2°C)	20°F	(-6.7°C)	30°F	(-1.1°C)	45°F	(7.2°C)	55°F	(12.8°C)	68°F	(20°C)
1800	430	(126)	689	(202)	934	(274)	1197	(350)	1692	(496)	2135	(625)	2907	(851)
2100	532	(156)	819	(240)	1103	(323)	1414	(414)	2002	(586)	2520	(738)	3404	(997)
2500	669	(196)	994	(291)	1330	(389)	1707	(500)	2419	(708)	3037	(890)	4072	(1192)
2800	773	(226)	1127	(330)	1502	(440)	1929	(565)	2735	(801)	3428	(1004)	4576	(1340)
3200	912	(267)	1306	(382)	1734	(508)	2227	(652)	3159	(925)	3954	(1158)	5254	(1539)

Power Consumption (12V) - ASHRAE HBP Watt Current (12V) - ASHRAE HBP Amp

RPM	Evaporator Temperature								Evaporator Temperature							
	0°F	10°F	20°F	30°F	45°F	55°F	68°F	0°F	10°F	20°F	30°F	45°F	55°F	68°F		
1800	113	126	138	148	159	164	167	9.40	10.50	11.47	12.30	13.23	13.64	13.89		
2100	129	144	158	169	182	187	190	10.73	12.03	13.16	14.11	15.17	15.62	15.85		
2500	151	170	187	200	215	221	224	12.62	14.19	15.55	16.68	17.92	18.42	18.66		
2800	170	191	209	225	241	248	251	14.13	15.92	17.45	18.72	20.10	20.65	20.90		
3200	195	220	242	259	278	286	289	16.27	18.35	20.13	21.60	23.18	23.81	24.09		

Efficiency (12V) - ASHRAE HBP BTU/hr/W (W/W)

RPM	Evaporator Temperature													
	0°F	(-17.8°C)	10°F	(-12.2°C)	20°F	(-6.7°C)	30°F	(-1.1°C)	45°F	(7.2°C)	55°F	(12.8°C)	68°F	(20°C)
1800	3.82	(1.12)	5.47	(1.60)	6.79	(1.99)	8.11	(2.37)	10.65	(3.12)	13.05	(3.82)	17.44	(5.11)
2100	4.13	(1.21)	5.67	(1.66)	6.98	(2.04)	8.35	(2.44)	10.99	(3.22)	13.45	(3.94)	17.89	(5.24)
2500	4.42	(1.29)	5.84	(1.71)	7.13	(2.09)	8.53	(2.50)	11.25	(3.29)	13.74	(4.02)	18.19	(5.33)
2800	4.56	(1.34)	5.90	(1.73)	7.17	(2.10)	8.58	(2.51)	11.34	(3.32)	13.83	(4.05)	18.25	(5.34)
3200	4.67	(1.37)	5.93	(1.74)	7.18	(2.10)	8.59	(2.52)	11.36	(3.33)	13.84	(4.05)	18.18	(5.32)

* all points are at 35°C (95°F) ambient temperature, 35°C (95°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser

Performance Coefficients (12V) - ASHRAE HBP

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-3.105433E+03	-3.785374E+03	-3.154479E+02	
C2	5.902715E-01	-7.747435E-02	-6.456196E-03	
C3	1.139230E-05	-8.231749E-07	-6.859791E-08	
C4	-5.556172E-10	2.365628E-10	1.971357E-11	
C5	8.197826E+00	-5.278857E+00	-4.399047E-01	
C6	-5.571279E-01	2.652502E-02	2.210418E-03	
C7	5.223850E-03	-2.517102E-05	-2.097585E-06	
C8	7.053022E+01	9.206662E+01	7.672218E+00	
C9	-5.632929E-01	-7.373970E-01	-6.144975E-02	
C10	1.501948E-03	1.962771E-03	1.635642E-04	
C11	-1.234899E-04	-6.905713E-06	-5.754761E-07	
C12	-1.039229E-09	1.423182E-09	1.185985E-10	
C13	-7.092560E-07	1.335331E-07	1.112776E-08	
C14	3.056446E-07	1.651046E-08	1.375872E-09	
C15	1.776312E-02	1.319795E-03	1.099829E-04	
C16	-1.700799E-03	1.443594E-03	1.202995E-04	
C17	9.903921E-02	6.150920E-02	5.125767E-03	
C18	3.376720E-07	-1.429440E-07	-1.191200E-08	
C19	2.643885E-04	-2.458552E-05	-2.048793E-06	
C20	-2.161617E-08	3.293762E-08	2.744802E-09	
C21	-3.370505E-06	-4.328346E-06	-3.606955E-07	
C22	1.635495E-04	-1.594373E-04	-1.328644E-05	
C23	-3.831767E-04	-1.607499E-04	-1.339583E-05	

TO BE DETERMINED

Performance Equation

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 X_3 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

X₁ = RPM
 X₂ = E_t (°F)
 X₃ = C_t (°F)

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Cooling Capacity (24 / 48V) - ASHRAE HBP BTU/hr (Watt)

RPM	Evaporator Temperature													
	0°F	(-17.8°C)	10°F	(-12.2°C)	20°F	(-6.7°C)	30°F	(-1.1°C)	45°F	(7.2°C)	55°F	(12.8°C)	68°F	(20°C)
1800	430	(126)	689	(202)	934	(274)	1197	(350)	1692	(496)	2135	(625)	2907	(851)
3000	842	(247)	1216	(356)	1617	(474)	2077	(608)	2946	(863)	3691	(1081)	4915	(1439)
4000	1194	(350)	1668	(489)	2204	(645)	2833	(830)	4020	(1177)	5019	(1470)	6627	(1941)
5000	1550	(454)	2128	(623)	2802	(821)	3604	(1056)	5116	(1498)	6374	(1867)	8370	(2451)
6000	1906	(558)	2592	(759)	3409	(998)	4389	(1285)	6230	(1825)	7752	(2270)	10141	(2970)

Power Consumption (24 / 48V) - ASHRAE HBP Watt Current (24V) - ASHRAE HBP Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	0°F	10°F	20°F	30°F	45°F	55°F	68°F	0°F	10°F	20°F	30°F	45°F	55°F	68°F
1800	113	126	138	148	159	164	167	4.70	5.25	5.74	6.15	6.62	6.82	6.94
3000	182	205	225	242	259	266	270	7.59	8.56	9.38	10.07	10.81	11.10	11.23
4000	252	285	312	335	360	369	374	10.51	11.86	13.01	13.96	14.98	15.39	15.58
5000	335	377	414	443	476	489	496	13.95	15.72	17.23	18.48	19.84	20.39	20.69
6000	431	485	531	569	610	628	639	17.97	20.20	22.11	23.69	25.44	26.18	26.62

Efficiency (24 / 48V) - ASHRAE HBP BTU/hr/W (W/W)

RPM	Evaporator Temperature													
	0°F	(-17.8°C)	10°F	(-12.2°C)	20°F	(-6.7°C)	30°F	(-1.1°C)	45°F	(7.2°C)	55°F	(12.8°C)	68°F	(20°C)
1800	3.82	(1.12)	5.47	(1.60)	6.79	(1.99)	8.11	(2.37)	10.65	(3.12)	13.05	(3.82)	17.44	(5.11)
3000	4.63	(1.35)	5.92	(1.73)	7.18	(2.10)	8.60	(2.52)	11.36	(3.33)	13.85	(4.06)	18.23	(5.34)
4000	4.74	(1.39)	5.86	(1.72)	7.06	(2.07)	8.46	(2.48)	11.18	(3.27)	13.59	(3.98)	17.72	(5.19)
5000	4.63	(1.36)	5.64	(1.65)	6.78	(1.98)	8.13	(2.38)	10.74	(3.15)	13.02	(3.81)	16.86	(4.94)
6000	4.42	(1.29)	5.35	(1.57)	6.43	(1.88)	7.72	(2.26)	10.21	(2.99)	12.34	(3.61)	15.87	(4.65)

* all points are at 35°C (95°F) ambient temperature, 35°C (95°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser

* 48V capacity, power, & efficiency are same as 24V estimates. 48V current is half of 24V estimates.

Performance Coefficients (24V) - ASHRAE HBP

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-3.105433E+03	-3.785374E+03	-1.577239E+02	
C2	5.902715E-01	-7.747435E-02	-3.228098E-03	
C3	1.139230E-05	-8.231749E-07	-3.429895E-08	
C4	-5.556172E-10	2.365628E-10	9.856785E-12	
C5	8.197826E+00	-5.278857E+00	-2.199524E-01	
C6	-5.571279E-01	2.652502E-02	1.105209E-03	
C7	5.223850E-03	-2.517102E-05	-1.048793E-06	
C8	7.053022E+01	9.206662E+01	3.836109E+00	
C9	-5.632929E-01	-7.373970E-01	-3.072488E-02	
C10	1.501948E-03	1.962771E-03	8.178211E-05	
C11	-1.234899E-04	-6.905713E-06	-2.877380E-07	
C12	-1.039229E-09	1.423182E-09	5.929923E-11	
C13	-7.092560E-07	1.335331E-07	5.563881E-09	
C14	3.056446E-07	1.651046E-08	6.879358E-10	
C15	1.776312E-02	1.319795E-03	5.499145E-05	
C16	-1.700799E-03	1.443594E-03	6.014974E-05	
C17	9.903921E-02	6.150920E-02	2.562884E-03	
C18	3.376720E-07	-1.429440E-07	-5.955998E-09	
C19	2.643885E-04	-2.458552E-05	-1.024397E-06	
C20	-2.161617E-08	3.293762E-08	1.372401E-09	
C21	-3.370505E-06	-4.328346E-06	-1.803478E-07	
C22	1.635495E-04	-1.594373E-04	-6.643220E-06	
C23	-3.831767E-04	-1.607499E-04	-6.697914E-06	

TO BE DETERMINED

Performance Equation

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 X_3 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

X₁ = RPM
 X₂ = E_t (°F)
 X₃ = C_t (°F)

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Cooling Capacity (12V) - ASHRAE LBP BTU/hr (Watt)

RPM	Evaporator Temperature													
	-40°F (-40°C)	-30°F (-34.4°C)	-20°F (-28.9°C)	-10°F (-23.3°C)	0°F (-17.8°C)	5°F (-15°C)	10°F (-12.2°C)							
1800				242	(71)	460	(135)	642	(188)	730	(214)	821	(240)	
2100				301	(88)	555	(163)	776	(227)	884	(259)	997	(292)	
2500			24	(7)	381	(112)	679	(199)	949	(278)	1085	(318)	1226	(359)
2800			57	(17)	442	(129)	770	(226)	1076	(315)	1230	(360)	1392	(408)
3200			103	(30)	521	(153)	888	(260)	1239	(363)	1418	(415)	1605	(470)

Power Consumption (12V) - ASHRAE LBP Watt Current (12V) - ASHRAE LBP Amp

RPM	Evaporator Temperature								Evaporator Temperature					
	-40°F	-30°F	-20°F	-10°F	0°F	5°F	10°F	-40°F	-30°F	-20°F	-10°F	0°F	5°F	10°F
1800			95	98	107	112	117			7.90	8.17	8.89	9.31	9.72
2100			109	115	125	131	137			9.11	9.55	10.42	10.91	11.38
2500		130	129	137	149	156	163		10.81	10.72	11.38	12.45	13.03	13.59
2800		142	143	153	168	175	183		11.83	11.93	12.76	13.97	14.62	15.24
3200		158	162	175	192	201	209		13.18	13.53	14.58	15.99	16.73	17.43

Efficiency (12V) - ASHRAE LBP BTU/hr/W (W/W)

RPM	Evaporator Temperature													
	-40°F (-40°C)	-30°F (-34.4°C)	-20°F (-28.9°C)	-10°F (-23.3°C)	0°F (-17.8°C)	5°F (-15°C)	10°F (-12.2°C)							
1800				2.55	(0.75)	4.70	(1.38)	6.02	(1.76)	6.53	(1.91)	7.03	(2.06)	
2100				2.76	(0.81)	4.84	(1.42)	6.21	(1.82)	6.76	(1.98)	7.30	(2.14)	
2500			0.18	(0.05)	2.96	(0.87)	4.97	(1.46)	6.35	(1.86)	6.94	(2.03)	7.52	(2.20)
2800			0.40	(0.12)	3.08	(0.90)	5.03	(1.47)	6.42	(1.88)	7.01	(2.05)	7.61	(2.23)
3200			0.65	(0.19)	3.21	(0.94)	5.08	(1.49)	6.45	(1.89)	7.06	(2.07)	7.67	(2.25)

* all points are at 35°C (95°F) ambient temperature, 35°C (95°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser

Performance Coefficients (12V) - ASHRAE LBP

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-6.252895E+03	-4.800896E+02	-4.000746E+01	
C2	7.395048E-01	2.534866E-02	2.112388E-03	
C3	-6.056295E-06	8.872542E-07	7.393785E-08	
C4	-2.502885E-09	-6.495490E-11	-5.412908E-12	
C5	-8.258790E+01	-2.356231E+00	-1.963526E-01	
C6	1.162955E-01	-1.948092E-03	-1.623410E-04	
C7	5.521708E-03	-6.820388E-04	-5.683657E-05	
C8	1.626969E+02	1.256288E+01	1.046906E+00	
C9	-1.460600E+00	-1.088612E-01	-9.071770E-03	
C10	4.366782E-03	3.109725E-04	2.591438E-05	
C11	8.472870E-04	9.238676E-06	7.698897E-07	
C12	-3.418041E-09	4.917878E-11	4.098232E-12	
C13	1.065786E-06	-7.983661E-08	-6.653051E-09	
C14	-3.368272E-06	-9.556392E-09	-7.963660E-10	
C15	-3.607884E-02	-4.696141E-04	-3.913451E-05	
C16	-3.301109E-03	5.817272E-05	4.847727E-06	
C17	1.312639E+00	4.166666E-02	3.472222E-03	
C18	-4.408118E-07	-9.714582E-09	-8.095485E-10	
C19	-6.873987E-05	6.539642E-06	5.449701E-07	
C20	5.124582E-08	-5.102906E-09	-4.252421E-10	
C21	9.501861E-06	1.662456E-06	1.385380E-07	
C22	-2.004383E-03	1.189047E-04	9.908727E-06	
C23	-5.833719E-03	-1.819432E-04	-1.516194E-05	

TO BE DETERMINED

Performance Equation

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 X_3 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

X₁ = RPM
 X₂ = E_t (°F)
 X₃ = C_t (°F)

Cooling Capacity (24 / 48V) - ASHRAE LBP BTU/hr (Watt)

RPM	Evaporator Temperature												
	-40°F (-40°C)	-30°F (-34.4°C)	-20°F (-28.9°C)	-10°F (-23.3°C)	0°F (-17.8°C)	5°F (-15°C)	10°F (-12.2°C)						
1800					242 (71)	460 (135)	642 (188)	730 (214)	821 (240)				
2800					442 (129)	770 (226)	1076 (315)	1230 (360)	1392 (408)				
3800			173 (51)	636 (186)	1057 (309)	1468 (430)	1681 (492)	1904 (558)					
4800			287 (84)	810 (237)	1305 (382)	1805 (529)	2067 (605)	2343 (686)					
6000			398 (117)	971 (284)	1531 (449)	2114 (619)	2424 (710)	2752 (806)					

Power Consumption (24 / 48V) - ASHRAE LBP Watt Current (24V) - ASHRAE LBP Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	-40°F	-30°F	-20°F	-10°F	0°F	5°F	10°F	-40°F	-30°F	-20°F	-10°F	0°F	5°F	10°F
1800			95	98	107	112	117			3.95	4.08	4.45	4.66	4.86
2800			143	153	168	175	183			5.96	6.38	6.99	7.31	7.62
3800		182	191	208	228	238	248		7.60	7.96	8.65	9.50	9.93	10.34
4800		222	238	261	287	300	313		9.25	9.91	10.88	11.97	12.51	13.03
6000		268	293	323	357	373	388		11.16	12.19	13.48	14.86	15.53	16.16

Efficiency (24 / 48V) - ASHRAE LBP BTU/hr/W (W/W)

RPM	Evaporator Temperature												
	-40°F (-40°C)	-30°F (-34.4°C)	-20°F (-28.9°C)	-10°F (-23.3°C)	0°F (-17.8°C)	5°F (-15°C)	10°F (-12.2°C)						
1800					2.55 (0.75)	4.70 (1.38)	6.02 (1.76)	6.53 (1.91)	7.03 (2.06)				
2800					3.08 (0.90)	5.03 (1.47)	6.42 (1.88)	7.01 (2.05)	7.61 (2.23)				
3800			0.95 (0.28)	3.33 (0.97)	5.09 (1.49)	6.44 (1.89)	7.05 (2.06)	7.67 (2.25)					
4800			1.29 (0.38)	3.40 (1.00)	5.00 (1.46)	6.28 (1.84)	6.88 (2.02)	7.50 (2.19)					
6000			1.49 (0.44)	3.32 (0.97)	4.73 (1.39)	5.93 (1.74)	6.50 (1.90)	7.10 (2.08)					

* all points are at 35°C (95°F) ambient temperature, 35°C (95°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser

* 48V capacity, power, & efficiency are same as 24V estimates. 48V current is half of 24V estimates.

Performance Coefficients (24V) - ASHRAE LBP

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-6.252895E+03	-4.800896E+02	-2.000373E+01	
C2	7.395048E-01	2.534866E-02	1.056194E-03	
C3	-6.056295E-06	8.872542E-07	3.696892E-08	
C4	-2.502885E-09	-6.495490E-11	-2.706454E-12	
C5	-8.258790E+01	-2.356231E+00	-9.817630E-02	
C6	1.162955E-01	-1.948092E-03	-8.117049E-05	
C7	5.521708E-03	-6.820388E-04	-2.841828E-05	
C8	1.626969E+02	1.256288E+01	5.234532E-01	
C9	-1.460600E+00	-1.088612E-01	-4.535885E-03	
C10	4.366782E-03	3.109725E-04	1.295719E-05	
C11	8.472870E-04	9.238676E-06	3.849448E-07	
C12	-3.418041E-09	4.917878E-11	2.049116E-12	
C13	1.065786E-06	-7.983661E-08	-3.326525E-09	
C14	-3.368272E-06	-9.556392E-09	-3.981830E-10	
C15	-3.607884E-02	-4.696141E-04	-1.956726E-05	
C16	-3.301109E-03	5.817272E-05	2.423863E-06	
C17	1.312639E+00	4.166666E-02	1.736111E-03	
C18	-4.408118E-07	-9.714582E-09	-4.047743E-10	
C19	-6.873987E-05	6.539642E-06	2.724851E-07	
C20	5.124582E-08	-5.102906E-09	-2.126211E-10	
C21	9.501861E-06	1.662456E-06	6.926899E-08	
C22	-2.004383E-03	1.189047E-04	4.954364E-06	
C23	-5.833719E-03	-1.819432E-04	-7.580968E-06	

TO BE DETERMINED

Performance Equation

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 X_3 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

X₁ = RPM
 X₂ = E_t (°F)
 X₃ = C_t (°F)