SIERRA03-0982Y3
R134a / R513A / R1234yf
24/48 V DC
VARIABLE SPEED

MASTERFLUX

Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	SIERRA00186	1/2" ID Suction - 5/16" ID Discharge
Compressor Drawing	DCMX33-002	#10-32 Threaded Terminal Connections
Compressor Part Number with Fittings	SIERRA00120	#10 MIO Suction - #8 MIO Discharge
Compressor Drawing with Fittings	DCMX27-002	#10-32 Threaded Terminal Connections
Compressor Part Number with Fittings	SIERRA00187	M24 Suction - M22 Discharge
Compressor Drawing with Fittings	DCMX35-002	M5 Threaded terminal Connections
Compressor Part Number with Fittings	SIERRA00231	#10 MIO Suction - #8 MIO Discharge
Compressor Drawing with Fittings	DCMX27-002	M5 Threaded Terminal Connections
Controller Options (24/48V)	025F0149, 025F0129, 025F0349, 025F0350	
Controller Options (48V)	025F0158, 025F0152	
Wiring Diagram Drawing	DEMX0010	

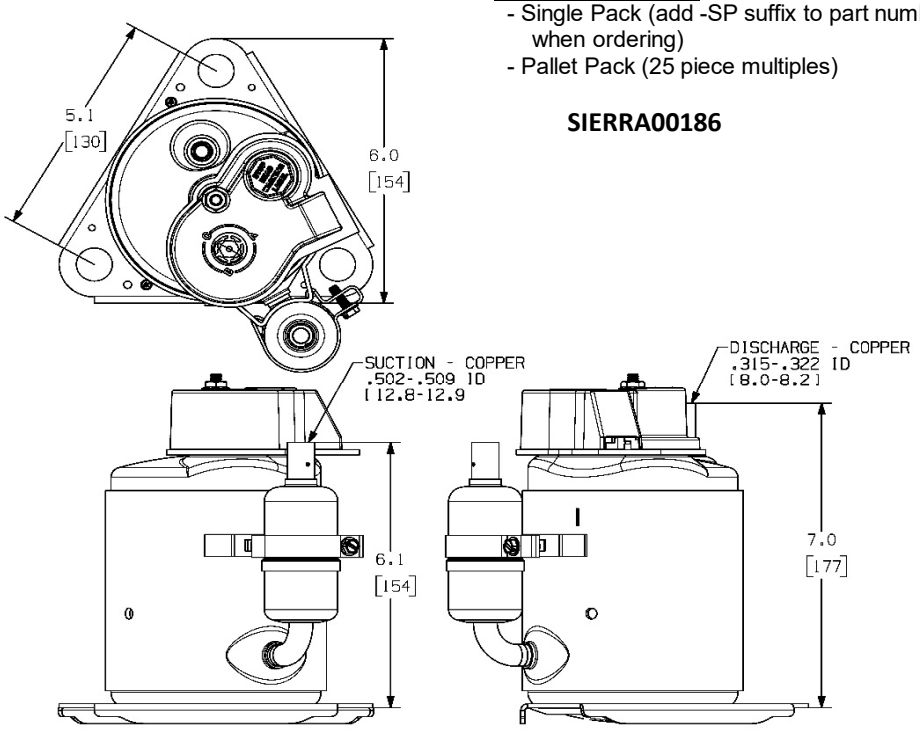
Application Information

Application	HBP, A/C
Refrigerant	R134a, R513A, R1234yf
Evaporator Temperature Range	-23.3°C to 12.8°C (-10°F to 55°F)
Condenser Temperature Range	26.7°C to 65.6°C (80°F to 150°F)
Maximum Discharge Temperature	130 °C (265 °F)
Maximum Compression Ratio	8:1
Minimum Airflow Over Compressor	425 cfm @ 6" from Outside Diameter of Housing

Design

Displacement	16.1 cm^3 (0.982 in^3)
Oil Quantity	290 cc
Oil Type	PVE 68cSt
Weight	6.4 kg / 14.1 lb
Weight with Fittings	6.6 kg / 14.5 lb

Compressor Dimensions



Packaging Options

- Single Pack (add -SP suffix to part number when ordering)
- Pallet Pack (25 piece multiples)

SIERRA00186

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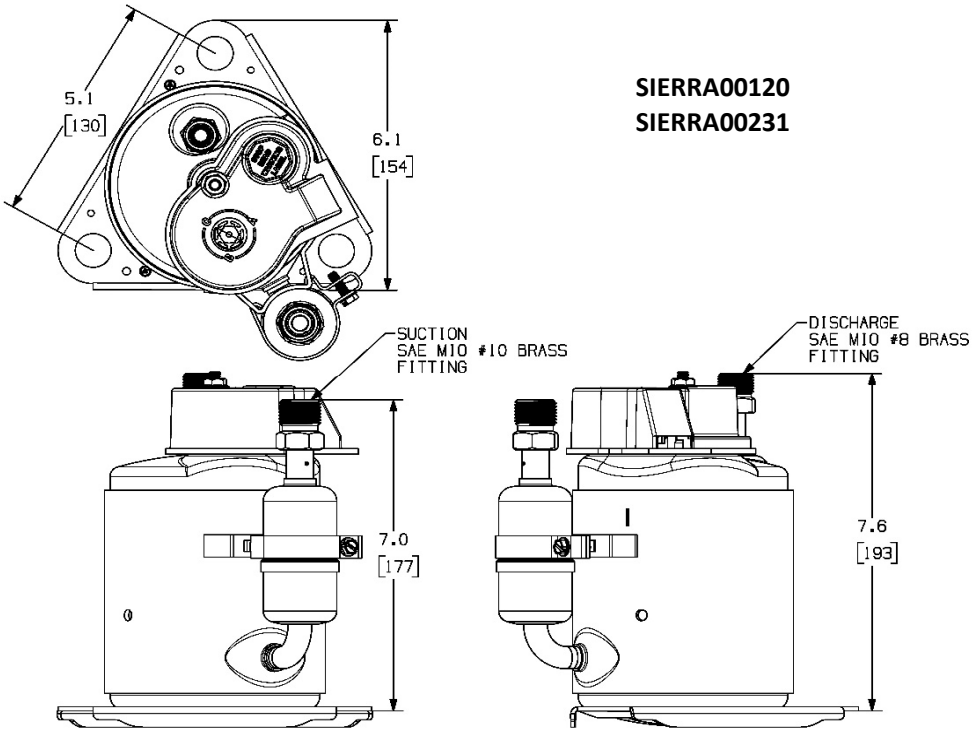
Compressor Dimensions with Fittings



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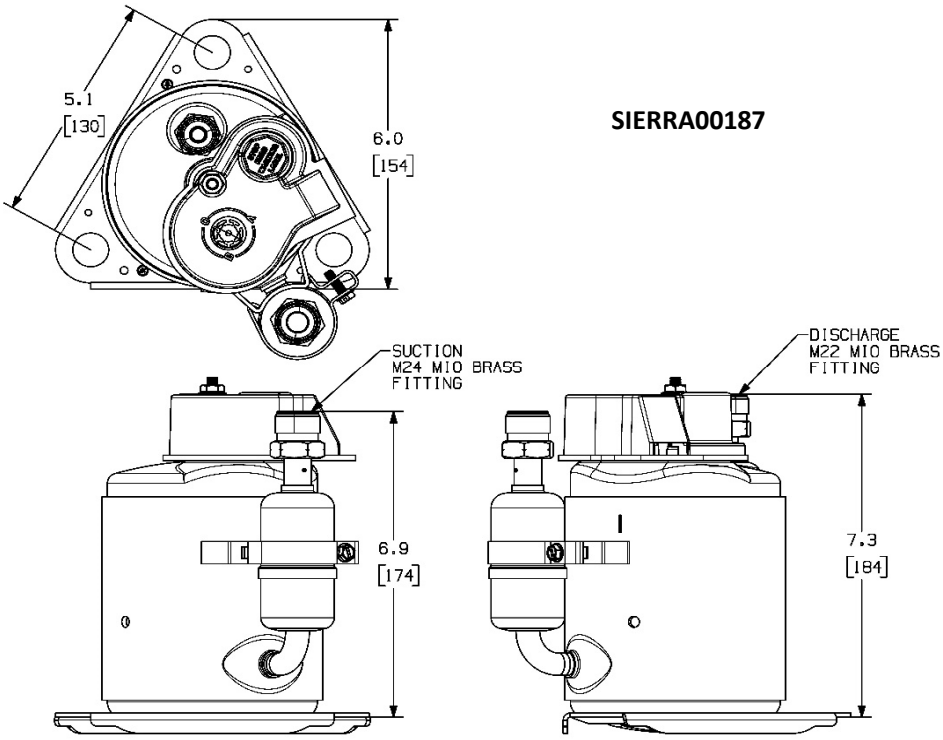

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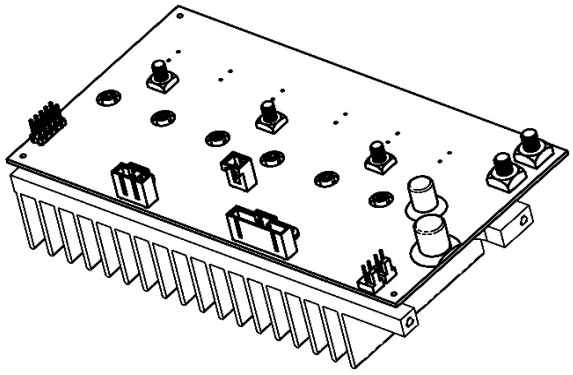
Controller Configurations

Custom controllers and configurations available



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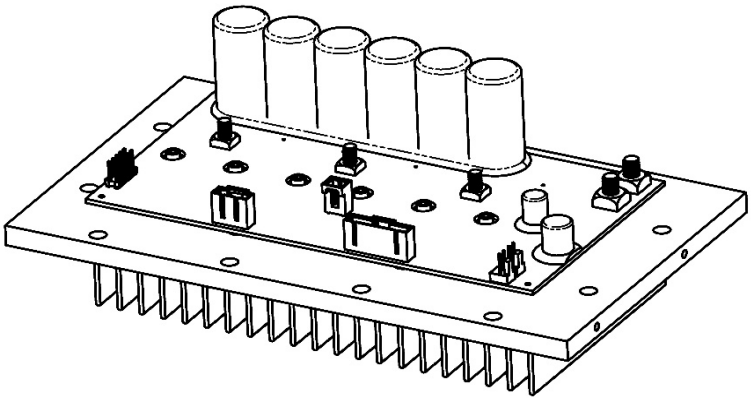

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& 025F0158

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Cooling Capacity (24V) - ARI HBP - R134a / R513A														BTU/hr (Watt)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
1800	1046	(306)	1955	(573)	2309	(676)	2725	(798)	3301	(967)	3680	(1078)	4678	(1370)
2400	1648	(483)	2824	(827)	3363	(985)	3999	(1171)	4830	(1414)	5348	(1566)	6652	(1948)
3000	2100	(615)	3545	(1038)	4270	(1251)	5127	(1502)	6213	(1820)	6872	(2013)	8484	(2485)
3600	2443	(716)	4159	(1218)	5071	(1485)	6150	(1801)	7492	(2194)	8293	(2429)	10212	(2991)

Power Consumption (24V) - ARI HBP - R134a / R513A							Watt
	Evaporator Temperature						
RPM	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
1800	270	355	415	465	488	485	439
2400	397	451	505	556	587	590	561
3000	522	550	601	656	697	708	700
3600	647	655	706	767	822	842	857

Current (24V) - ARI HBP - R134a / R513A							Amp
	Evaporator Temperature						
-10°F	10°F	20°F	30°F	40°F	45°F	55°F	
11.24	14.80	17.30	19.37	20.35	20.22	18.29	
16.56	18.80	21.05	23.16	24.46	24.58	23.38	
21.76	22.93	25.06	27.33	29.06	29.51	29.16	
26.95	27.29	29.43	31.98	34.27	35.10	35.73	

Efficiency (24V) - ARI HBP - R134a / R513A														BTU/hr/W (W/W)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
1800	3.88	(1.13)	5.50	(1.61)	5.56	(1.63)	5.86	(1.72)	6.76	(1.98)	7.58	(2.22)	10.66	(3.12)
2400	4.15	(1.21)	6.26	(1.83)	6.65	(1.95)	7.19	(2.11)	8.23	(2.41)	9.06	(2.65)	11.85	(3.47)
3000	4.02	(1.18)	6.44	(1.89)	7.10	(2.08)	7.82	(2.29)	8.91	(2.61)	9.70	(2.84)	12.12	(3.55)
3600	3.78	(1.11)	6.35	(1.86)	7.18	(2.10)	8.01	(2.35)	9.11	(2.67)	9.84	(2.88)	11.91	(3.49)

*** all points are at 35°C (95°F) ambient temperature, 18.33°C (65°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser**

Performance Coefficients (24V) - ARI HBP - R134a / R513A

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.416978E+04	-2.140877E+03	-8.920322E+01	-2.034164E+02
C2	2.918585E+00	5.554595E-01	2.314414E-02	2.796228E-02
C3	-3.031178E-04	-3.567336E-05	-1.486390E-06	-2.825652E-06
C4	3.168748E-08	2.130617E-09	8.877572E-11	2.498261E-10
C5	2.547616E+02	1.530499E+01	6.377079E-01	1.281964E+00
C6	-7.186143E-01	8.540902E-01	3.558709E-02	7.525860E-03
C7	1.620815E-02	-2.696120E-03	-1.123384E-04	1.188066E-04
C8	3.203621E+02	3.397474E+01	1.415614E+00	4.763349E+00
C9	-2.534614E+00	-1.161150E-01	-4.838123E-03	-3.839735E-02
C10	6.128652E-03	-1.658829E-04	-6.911788E-06	9.837328E-05
C11	1.517656E-03	1.787652E-05	7.448552E-07	1.433789E-05
C12	3.295947E-08	5.783944E-09	2.409977E-10	4.227007E-10
C13	-2.017177E-07	2.045026E-06	8.520943E-08	2.606284E-08
C14	-7.799236E-06	-6.203421E-07	-2.584759E-08	-7.249366E-08
C15	-4.387516E-02	3.808426E-03	1.586844E-04	-2.738471E-04
C16	-1.033664E-02	-6.532562E-03	-2.721901E-04	-7.651051E-05
C17	-4.463238E+00	-5.883545E-01	-2.451477E-02	-2.882155E-02
C18	-4.140785E-06	-3.431661E-07	-1.429859E-08	-5.668466E-08
C19	3.143432E-04	-2.102825E-04	-8.761772E-06	1.314290E-06
C20	-1.015077E-06	1.573154E-07	6.554809E-09	-3.070176E-09
C21	6.080003E-05	3.018025E-05	1.257510E-06	4.219426E-07
C22	-3.537261E-03	-6.484411E-03	-2.701838E-04	-1.108327E-04
C23	1.952243E-02	4.274011E-03	1.780838E-04	1.413719E-04

Performance Equation

$$Y=C_1+C_2x_1+C_3x_1^2+C_4x_1^3+C_5x_2+C_6x_2^2+C_7x_2^3+C_8x_3+C_9x_3^2+C_{10}x_3^3+C_{11}x_1x_2x_3+C_{12}x_1^2x_2x_3+C_{13}x_1x_2^2x_3+$$
$$C_{14}x_1x_2x_3^2+C_{15}x_1x_2+C_{16}x_1x_3+C_{17}x_2x_3+C_{18}x_1^2x_2+C_{19}x_1x_2^2+C_{20}x_1^2x_3+C_{21}x_1x_3^2+C_{22}x_2^2x_3+C_{23}x_2x_3^2$$

x_1 = RPM
x_2 = E_t (°F)
x_3 = C_t (°F)

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Cooling Capacity (48V) - ARI HBP - R134a / R513A														BTU/hr (Watt)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
3600	2443	(716)	4159	(1218)	5071	(1485)	6150	(1801)	7492	(2194)	8293	(2429)	10212	(2991)
4500	2844	(833)	4969	(1455)	6164	(1805)	7578	(2219)	9307	(2726)	10320	(3022)	12704	(3721)
5500	3278	(960)	5865	(1718)	7377	(2160)	9165	(2684)	11326	(3317)	12577	(3683)	15479	(4534)
6500	3885	(1138)	6938	(2032)	8770	(2569)	10936	(3203)	13532	(3963)	15022	(4400)	18446	(5402)

Power Consumption (48V) - ARI HBP - R134a / R513A							Watt
	Evaporator Temperature						
RPM	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
3600	689	698	753	818	876	898	914
4500	894	883	944	1026	1112	1151	1210
5500	1142	1125	1201	1310	1434	1497	1613
6500	1424	1419	1518	1662	1834	1925	2106

Current (48V) - ARI HBP - R134a / R513A							Amp
	Evaporator Temperature						
-10°F	10°F	20°F	30°F	40°F	45°F	55°F	
14.36	14.54	15.68	17.04	18.25	18.70	19.03	
18.64	18.40	19.67	21.37	23.16	23.97	25.21	
23.80	23.45	25.02	27.29	29.88	31.19	33.60	
29.66	29.56	31.63	34.63	38.21	40.10	43.87	

Efficiency (48V) - ARI HBP - R134a / R513A														BTU/hr/W (W/W)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
3600	3.55	(1.04)	5.96	(1.74)	6.74	(1.97)	7.52	(2.20)	8.55	(2.50)	9.24	(2.71)	11.18	(3.27)
4500	3.18	(0.93)	5.63	(1.65)	6.53	(1.91)	7.39	(2.16)	8.37	(2.45)	8.97	(2.63)	10.50	(3.07)
5500	2.87	(0.84)	5.21	(1.53)	6.14	(1.80)	7.00	(2.05)	7.90	(2.31)	8.40	(2.46)	9.60	(2.81)
6500	2.73	(0.80)	4.89	(1.43)	5.78	(1.69)	6.58	(1.93)	7.38	(2.16)	7.80	(2.29)	8.76	(2.56)

*** all points are at 35°C (95°F) ambient temperature, 18.33°C (65°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser**

Performance Coefficients (48V) - ARI HBP - R134a / R513A

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.416978E+04	-2.281009E+03	-4.752103E+01	-2.034164E+02
C2	2.918585E+00	5.918173E-01	1.232953E-02	2.796228E-02
C3	-3.031178E-04	-3.800837E-05	-7.918410E-07	-2.825652E-06
C4	3.168748E-08	2.270078E-09	4.729329E-11	2.498261E-10
C5	2.547616E+02	1.630678E+01	3.397246E-01	1.281964E+00
C6	-7.186143E-01	9.099950E-01	1.895823E-02	7.525860E-03
C7	1.620815E-02	-2.872596E-03	-5.984575E-05	1.188066E-04
C8	3.203621E+02	3.619857E+01	7.541369E-01	4.763349E+00
C9	-2.534614E+00	-1.237153E-01	-2.577402E-03	-3.839735E-02
C10	6.128652E-03	-1.767408E-04	-3.682101E-06	9.837328E-05
C11	1.517656E-03	1.904664E-05	3.968050E-07	1.433789E-05
C12	3.295947E-08	6.162534E-09	1.283861E-10	4.227007E-10
C13	-2.017177E-07	2.178884E-06	4.539342E-08	2.606284E-08
C14	-7.799236E-06	-6.609468E-07	-1.376973E-08	-7.249366E-08
C15	-4.387516E-02	4.057708E-03	8.453559E-05	-2.738471E-04
C16	-1.033664E-02	-6.960153E-03	-1.450032E-04	-7.651051E-05
C17	-4.463238E+00	-6.268654E-01	-1.305970E-02	-2.882155E-02
C18	-4.140785E-06	-3.656282E-07	-7.617254E-09	-5.668466E-08
C19	3.143432E-04	-2.240467E-04	-4.667639E-06	1.314290E-06
C20	-1.015077E-06	1.676125E-07	3.491928E-09	-3.070176E-09
C21	6.080003E-05	3.215571E-05	6.699106E-07	4.219426E-07
C22	-3.537261E-03	-6.908851E-03	-1.439344E-04	-1.108327E-04
C23	1.952243E-02	4.553768E-03	9.487016E-05	1.413719E-04

Performance Equation

$$Y=C_1+C_2x_1+C_3x_1^2+C_4x_1^3+C_5x_2+C_6x_2^2+C_7x_2^3+C_8x_3+C_9x_3^2+C_{10}x_3^3+C_{11}x_1x_2x_3+C_{12}x_1^2x_2x_3+C_{13}x_1x_2^2x_3+$$
$$C_{14}x_1x_2x_3^2+C_{15}x_1x_2+C_{16}x_1x_3+C_{17}x_2x_3+C_{18}x_1^2x_2+C_{19}x_1x_2^2+C_{20}x_1^2x_3+C_{21}x_1x_3^2+C_{22}x_2^2x_3+C_{23}x_2x_3^2$$

x_1 = RPM

$x_2 = E_t$ (°F)

$x_3 = C_t$ (°F)

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Cooling Capacity (24V) - ARI HBP - R1234yf														BTU/hr (Watt)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
1800	982	(288)	1835	(537)	2167	(635)	2558	(749)	3099	(908)	3455	(1012)	4392	(1286)
2400	1547	(453)	2651	(776)	3157	(925)	3754	(1099)	4534	(1328)	5021	(1470)	6245	(1829)
3000	1972	(577)	3328	(975)	4008	(1174)	4813	(1410)	5832	(1708)	6451	(1889)	7964	(2332)
3600	2294	(672)	3904	(1143)	4761	(1394)	5773	(1691)	7033	(2060)	7785	(2280)	9587	(2808)

Power Consumption (24V) - ARI HBP - R1234yf							Watt
	Evaporator Temperature						
RPM	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
1800	282	372	434	486	511	507	459
2400	416	472	528	581	614	617	587
3000	546	575	629	686	729	741	732
3600	676	685	739	803	860	881	897

Current (24V) - ARI HBP - R1234yf							Amp
	Evaporator Temperature						
-10°F	10°F	20°F	30°F	40°F	45°F	55°F	
11.76	15.48	18.09	20.26	21.28	21.14	19.12	
17.32	19.66	22.02	24.22	25.57	25.71	24.45	
22.75	23.97	26.21	28.58	30.38	30.86	30.49	
28.18	28.54	30.77	33.44	35.83	36.70	37.36	

Efficiency (24V) - ARI HBP - R1234yf														BTU/hr/W (W/W)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
1800	3.48	(1.02)	4.94	(1.45)	4.99	(1.46)	5.26	(1.54)	6.07	(1.78)	6.81	(1.99)	9.57	(2.80)
2400	3.72	(1.09)	5.62	(1.64)	5.97	(1.75)	6.46	(1.89)	7.39	(2.16)	8.14	(2.38)	10.64	(3.12)
3000	3.61	(1.06)	5.78	(1.69)	6.37	(1.87)	7.02	(2.05)	8.00	(2.34)	8.71	(2.55)	10.88	(3.19)
3600	3.39	(0.99)	5.70	(1.67)	6.45	(1.89)	7.19	(2.11)	8.18	(2.39)	8.84	(2.59)	10.69	(3.13)

*** all points are at 35°C (95°F) ambient temperature, 18.33°C (65°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser**

Performance Coefficients (24V) - ARI HBP - R1234yf

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.330191E+04	-2.238790E+03	-9.328293E+01	-2.471842E+02
C2	2.739828E+00	5.808634E-01	2.420264E-02	3.397874E-02
C3	-2.845525E-04	-3.730488E-05	-1.554370E-06	-3.433629E-06
C4	2.974669E-08	2.228061E-09	9.283589E-11	3.035795E-10
C5	2.391580E+02	1.600496E+01	6.668735E-01	1.557796E+00
C6	-6.746008E-01	8.931520E-01	3.721467E-02	9.145150E-03
C7	1.521543E-02	-2.819428E-03	-1.174762E-04	1.443694E-04
C8	3.007406E+02	3.552858E+01	1.480357E+00	5.788247E+00
C9	-2.379374E+00	-1.214255E-01	-5.059395E-03	-4.665905E-02
C10	5.753285E-03	-1.734696E-04	-7.227899E-06	1.195396E-04
C11	1.424703E-03	1.869411E-05	7.789212E-07	1.742288E-05
C12	3.094077E-08	6.048473E-09	2.520197E-10	5.136504E-10
C13	-1.893629E-07	2.138556E-06	8.910649E-08	3.167061E-08
C14	-7.321550E-06	-6.487135E-07	-2.702973E-08	-8.809164E-08
C15	-4.118791E-02	3.982605E-03	1.659419E-04	-3.327690E-04
C16	-9.703546E-03	-6.831329E-03	-2.846387E-04	-9.297277E-05
C17	-4.189874E+00	-6.152629E-01	-2.563595E-02	-3.502289E-02
C18	-3.887171E-06	-3.588608E-07	-1.495253E-08	-6.888112E-08
C19	2.950903E-04	-2.198998E-04	-9.162492E-06	1.597077E-06
C20	-9.529061E-07	1.645102E-07	6.854593E-09	-3.730766E-09
C21	5.707616E-05	3.156054E-05	1.315023E-06	5.127292E-07
C22	-3.320612E-03	-6.780976E-03	-2.825407E-04	-1.346798E-04
C23	1.832672E-02	4.469483E-03	1.862285E-04	1.717900E-04

Performance Equation

$$Y=C_1+C_2x_1+C_3x_1^2+C_4x_1^3+C_5x_2+C_6x_2^2+C_7x_2^3+C_8x_3+C_9x_3^2+C_{10}x_3^3+C_{11}x_1x_2x_3+C_{12}x_1^2x_2x_3+C_{13}x_1x_2^2x_3+$$
$$C_{14}x_1x_2x_3^2+C_{15}x_1x_2+C_{16}x_1x_3+C_{17}x_2x_3+C_{18}x_1^2x_2+C_{19}x_1x_2^2+C_{20}x_1^2x_3+C_{21}x_1x_3^2+C_{22}x_2^2x_3+C_{23}x_2x_3^2$$

x_1 = RPM
x_2 = E_t (°F)
x_3 = C_t (°F)

SIERRA03-0982Y3

MASTERFLUX

Cooling Capacity (48V) - ARI HBP - R1234yf														BTU/hr (Watt)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
3600	2294	(672)	3904	(1143)	4761	(1394)	5773	(1691)	7033	(2060)	7785	(2280)	9587	(2808)
4500	2670	(782)	4665	(1366)	5787	(1695)	7114	(2083)	8737	(2559)	9688	(2837)	11926	(3493)
5500	3077	(901)	5505	(1612)	6925	(2028)	8603	(2520)	10632	(3114)	11806	(3458)	14531	(4256)
6500	3647	(1068)	6513	(1908)	8233	(2411)	10266	(3007)	12703	(3720)	14102	(4130)	17316	(5072)

Power Consumption (48V) - ARI HBP - R1234yf							Watt
	Evaporator Temperature						
RPM	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
3600	721	730	787	855	916	939	955
4500	935	924	987	1073	1162	1203	1265
5500	1195	1177	1256	1370	1500	1565	1686
6500	1489	1484	1588	1738	1918	2013	2202

Current (48V) - ARI HBP - R1234yf							Amp
	Evaporator Temperature						
-10°F	10°F	20°F	30°F	40°F	45°F	55°F	
15.01	15.20	16.39	17.81	19.09	19.55	19.90	
19.49	19.24	20.57	22.35	24.22	25.07	26.36	
24.89	24.52	26.17	28.53	31.25	32.61	35.14	
31.02	30.91	33.07	36.21	39.96	41.94	45.88	

Efficiency (48V) - ARI HBP - R1234yf														BTU/hr/W (W/W)
	Evaporator Temperature													
RPM	-10°F	(-23°C)	10°F	(-12°C)	20°F	(-7°C)	30°F	(-1°C)	40°F	(4°C)	45°F	(7°C)	55°F	(13°C)
3600	3.18	(0.93)	5.35	(1.57)	6.05	(1.77)	6.75	(1.98)	7.68	(2.25)	8.29	(2.43)	10.03	(2.94)
4500	2.85	(0.84)	5.05	(1.48)	5.86	(1.72)	6.63	(1.94)	7.52	(2.20)	8.05	(2.36)	9.42	(2.76)
5500	2.58	(0.75)	4.68	(1.37)	5.51	(1.61)	6.28	(1.84)	7.09	(2.08)	7.54	(2.21)	8.62	(2.52)
6500	2.45	(0.72)	4.39	(1.29)	5.19	(1.52)	5.91	(1.73)	6.62	(1.94)	7.01	(2.05)	7.86	(2.30)

*** all points are at 35°C (95°F) ambient temperature, 18.33°C (65°F) suction, 8.33°C (15°F) subcooling, 54.4°C (130°F) condenser**

Performance Coefficients (48V) - ARI HBP - R1234yf

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.330191E+04	-2.385331E+03	-4.969440E+01	-2.471842E+02
C2	2.739828E+00	6.188841E-01	1.289342E-02	3.397874E-02
C3	-2.845525E-04	-3.974669E-05	-8.280559E-07	-3.433629E-06
C4	2.974669E-08	2.373900E-09	4.945625E-11	3.035795E-10
C5	2.391580E+02	1.705257E+01	3.552620E-01	1.557796E+00
C6	-6.746008E-01	9.516137E-01	1.982529E-02	9.145150E-03
C7	1.521543E-02	-3.003974E-03	-6.258280E-05	1.443694E-04
C8	3.007406E+02	3.785412E+01	7.886274E-01	5.788247E+00
C9	-2.379374E+00	-1.293734E-01	-2.695280E-03	-4.665905E-02
C10	5.753285E-03	-1.848241E-04	-3.850502E-06	1.195396E-04
C11	1.424703E-03	1.991774E-05	4.149529E-07	1.742288E-05
C12	3.094077E-08	6.444378E-09	1.342579E-10	5.136504E-10
C13	-1.893629E-07	2.278536E-06	4.746949E-08	3.167061E-08
C14	-7.321550E-06	-6.911753E-07	-1.439949E-08	-8.809164E-08
C15	-4.118791E-02	4.243288E-03	8.840183E-05	-3.327690E-04
C16	-9.703546E-03	-7.278476E-03	-1.516349E-04	-9.297277E-05
C17	-4.189874E+00	-6.555352E-01	-1.365698E-02	-3.502289E-02
C18	-3.887171E-06	-3.823502E-07	-7.965629E-09	-6.888112E-08
C19	2.950903E-04	-2.342934E-04	-4.881114E-06	1.597077E-06
C20	-9.529061E-07	1.752783E-07	3.651632E-09	-3.730766E-09
C21	5.707616E-05	3.362635E-05	7.005490E-07	5.127292E-07
C22	-3.320612E-03	-7.224828E-03	-1.505172E-04	-1.346798E-04
C23	1.832672E-02	4.762035E-03	9.920906E-05	1.717900E-04

Performance Equation

$$Y=C_1+C_2x_1+C_3x_1^2+C_4x_1^3+C_5x_2+C_6x_2^2+C_7x_2^3+C_8x_3+C_9x_3^2+C_{10}x_3^3+C_{11}x_1x_2x_3+C_{12}x_1^2x_2x_3+C_{13}x_1x_2^2x_3+C_{14}x_1x_2x_3^2+C_{15}x_1x_2+C_{16}x_1x_3+C_{17}x_2x_3+C_{18}x_1^2x_2+C_{19}x_1x_2^2+C_{20}x_1^2x_3+C_{21}x_1x_3^2+C_{22}x_2^2x_3+C_{23}x_2x_3^2$$

x_1 = RPM

$x_2 = E_t$ (°F)

$x_3 = C_t$ (°F)