

SIERRA03-0716Y3
R134a / R513A / R1234yf
24/48 V DC
VARIABLE SPEED



Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	SIERRA00162	1/2" ID Suction - 5/16" ID Discharge
Compressor Drawing	DCMX25-002	#10-32 Threaded Terminal Connection
Compressor Part Number with Fittings	SIERRA00159	#10 MIO Suction - #8 MIO Discharge
Compressor Drawing with Fittings	DCMX38-002	#10-32 Threaded Terminal Connection
Controller Options (24/48V)	025F0149, 025F0349, 025F0129, 025F0350	
Controller Options (48V)	025F0158, 025F0152	
Wiring Diagram Drawing	DEM0010	

Application Information

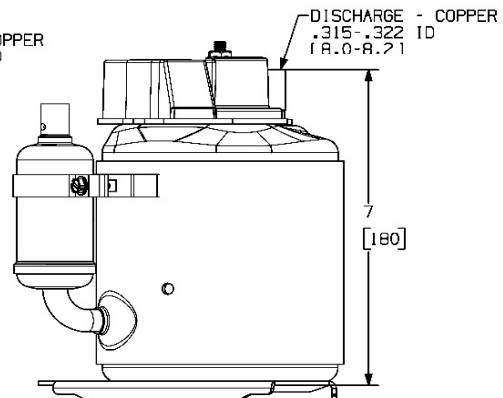
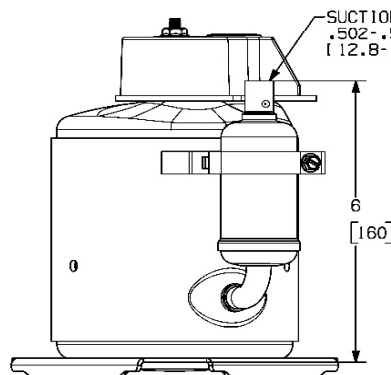
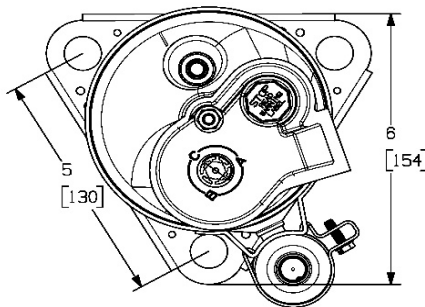
Application	HBP, A/C
Refrigerant	R134a, R513A, R1234yf
Evaporator Temperature Range	-23.3°C to 12.8°C (-10°F to 55°F)
Condenser Temperature Range	26.7°C to 65.6°C (80°F to 150°F)
Maximum Discharge Temperature	130 °C (265 °F)
Maximum Compression Ratio	8:1
Minimum Airflow Over Compressor	425 cfm @ 6" from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

Design

Displacement	11.7 cm ³ (0.716 in ³)
Oil Quantity	355 cc
Oil Type	PVE 68cSt
Compressor Weight	6.6 kg / 14.7 lb
Compressor Weight with Fittings	6.8 kg / 15.0 lb



Compressor Dimensions



SIERRA00162

Packaging Options

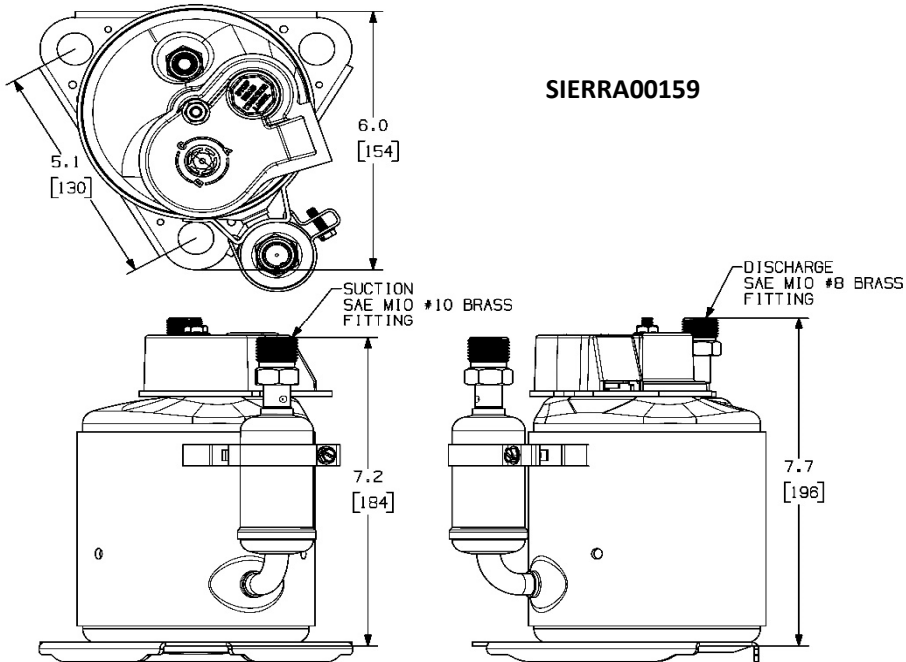
- Single Pack (add -SP suffix to part number when ordering)
- Pallet Pack (25 piece multiples)

the Sierra

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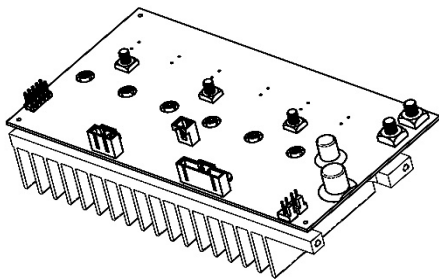


Compressor Dimensions

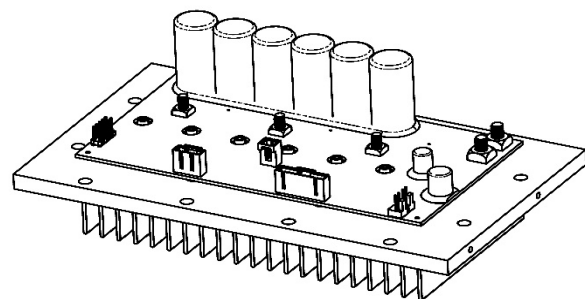


Controller Configurations

Custom controllers and configurations available



025F0129,
025F0350,



025F0149,
025F0349,
& 025F0158

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Cooling Capacity (24V) - ARI HBP - R134a / R513A BTU/hr (Watt)

RPM	Evaporator Temperature												
	-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	762 (223)	1425 (417)	1683 (493)	1987 (582)	2407 (705)	2683 (786)	3411 (999)						
2400	1202 (352)	2059 (603)	2452 (718)	2916 (854)	3521 (1031)	3899 (1142)	4850 (1421)						
3000	1531 (448)	2585 (757)	3113 (912)	3738 (1095)	4530 (1327)	5011 (1467)	6186 (1812)						
3600	1782 (522)	3032 (888)	3698 (1083)	4484 (1313)	5463 (1600)	6046 (1771)	7446 (2181)						

Power Consumption (24V) - ARI HBP - R134a / R513A Watt Current (24V) - ARI HBP - R134a / R513A Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	-10°F	10°F	20°F	30°F	40°F	45°F	55°F	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
1800	181	238	278	311	327	325	294	7.53	9.91	11.58	12.97	13.63	13.54	12.24
2400	266	302	338	372	393	395	376	11.09	12.59	14.10	15.51	16.37	16.46	15.66
3000	350	368	403	439	467	474	469	14.57	15.35	16.78	18.30	19.45	19.76	19.52
3600	433	439	473	514	551	564	574	18.04	18.27	19.70	21.41	22.94	23.50	23.92

Efficiency (24V) - ARI HBP - R134a / R513A BTU/hr/W (W/W)

RPM	Evaporator Temperature												
	-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	4.22 (1.24)	5.99 (1.75)	6.06 (1.77)	6.38 (1.87)	7.36 (2.16)	8.26 (2.42)	11.61 (3.40)						
2400	4.52 (1.32)	6.81 (2.00)	7.25 (2.12)	7.83 (2.29)	8.96 (2.62)	9.87 (2.89)	12.91 (3.78)						
3000	4.38 (1.28)	7.02 (2.05)	7.73 (2.26)	8.51 (2.49)	9.70 (2.84)	10.57 (3.09)	13.20 (3.87)						
3600	4.11 (1.20)	6.91 (2.02)	7.82 (2.29)	8.73 (2.56)	9.92 (2.90)	10.72 (3.14)	12.97 (3.80)						

* 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 - ARI HBP (24V) - R134a / R513A

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.033153E+04	-1.433459E+03	-5.972747E+01	-1.483158E+02
C2	2.128011E+00	3.719170E-01	1.549654E-02	2.038798E-02
C3	-2.210105E-04	-2.388568E-05	-9.952366E-07	-2.060251E-06
C4	2.310411E-08	1.426590E-09	5.944123E-11	1.821543E-10
C5	1.857528E+02	1.024771E+01	4.269877E-01	9.347110E-01
C6	-5.239591E-01	5.718700E-01	2.382792E-02	5.487287E-03
C7	1.181775E-02	-1.805231E-03	-7.521798E-05	8.662477E-05
C8	2.335838E+02	2.274834E+01	9.478476E-01	3.473073E+00
C9	-1.848048E+00	-7.774667E-02	-3.239445E-03	-2.799644E-02
C10	4.468548E-03	-1.110696E-04	-4.627900E-06	7.172634E-05
C11	1.106560E-03	1.196952E-05	4.987300E-07	1.045410E-05
C12	2.403155E-08	3.872734E-09	1.613639E-10	3.082013E-10
C13	-1.470773E-07	1.369281E-06	5.705337E-08	1.900305E-08
C14	-5.686612E-06	-4.153602E-07	-1.730667E-08	-5.285688E-08
C15	-3.199045E-02	2.549994E-03	1.062497E-04	-1.996686E-04
C16	-7.536697E-03	-4.373983E-03	-1.822493E-04	-5.578567E-05
C17	-3.254255E+00	-3.939423E-01	-1.641426E-02	-2.101449E-02
C18	-3.019147E-06	-2.297725E-07	-9.573853E-09	-4.133016E-08
C19	2.291952E-04	-1.407981E-04	-5.866588E-06	9.582807E-07
C20	-7.401176E-07	1.053331E-07	4.388879E-09	-2.238540E-09
C21	4.433078E-05	2.020768E-05	8.419866E-07	3.076486E-07
C22	-2.579103E-03	-4.341743E-03	-1.809060E-04	-8.081081E-05
C23	1.423428E-02	2.861734E-03	1.192389E-04	1.030777E-04

Performance Equation

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

$X_1 = \text{RPM}$
 $X_2 = E_t \text{ (°F)}$
 $X_3 = C_t \text{ (°F)}$

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Cooling Capacity (24V) - ARI HBP - R1234yf BTU/hr (Watt)

RPM	Evaporator Temperature												
	-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	716 (210)	1338 (392)	1580 (463)	1865 (546)	2260 (662)	2519 (738)	3202 (938)						
2400	1128 (330)	1933 (566)	2302 (674)	2737 (802)	3306 (968)	3661 (1072)	4553 (1334)						
3000	1438 (421)	2426 (711)	2923 (856)	3509 (1028)	4252 (1245)	4704 (1378)	5807 (1701)						
3600	1672 (490)	2846 (834)	3471 (1017)	4209 (1233)	5128 (1502)	5676 (1662)	6990 (2047)						

Power Consumption (24V) - ARI HBP - R1234yf Watt Current (24V) - ARI HBP - R1234yf Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	-10°F	10°F	20°F	30°F	40°F	45°F	55°F	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
1800	189	249	291	326	342	340	307	7.87	10.37	12.11	13.56	14.25	14.16	12.80
2400	278	316	354	389	411	413	393	11.59	13.16	14.74	16.22	17.12	17.21	16.37
3000	366	385	421	459	488	496	490	15.23	16.05	17.55	19.13	20.34	20.66	20.42
3600	453	459	495	537	576	590	600	18.87	19.11	20.61	22.39	23.99	24.58	25.02

Efficiency (24V) - ARI HBP - R1234yf BTU/hr/W (W/W)

RPM	Evaporator Temperature												
	-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	3.79 (1.11)	5.38 (1.58)	5.44 (1.59)	5.73 (1.68)	6.61 (1.93)	7.41 (2.17)	10.42 (3.05)						
2400	4.05 (1.19)	6.12 (1.79)	6.51 (1.90)	7.03 (2.06)	8.04 (2.36)	8.86 (2.59)	11.59 (3.39)						
3000	3.93 (1.15)	6.30 (1.84)	6.94 (2.03)	7.64 (2.24)	8.71 (2.55)	9.49 (2.78)	11.85 (3.47)						
3600	3.69 (1.08)	6.21 (1.82)	7.02 (2.06)	7.83 (2.29)	8.91 (2.61)	9.62 (2.82)	11.64 (3.41)						

* 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 - ARI HBP (24V) - R1234yf

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-9.698748E+03	-1.499019E+03	-6.245911E+01	-1.802280E+02
C2	1.997675E+00	3.889266E-01	1.620527E-02	2.477472E-02
C3	-2.074741E-04	-2.497809E-05	-1.040754E-06	-2.503542E-06
C4	2.168904E-08	1.491835E-09	6.215978E-11	2.213472E-10
C5	1.743759E+02	1.071638E+01	4.465160E-01	1.135827E+00
C6	-4.918678E-01	5.980245E-01	2.491769E-02	6.667950E-03
C7	1.109394E-02	-1.887794E-03	-7.865808E-05	1.052633E-04
C8	2.192773E+02	2.378874E+01	9.911975E-01	4.220351E+00
C9	-1.734859E+00	-8.130242E-02	-3.387601E-03	-3.402025E-02
C10	4.194860E-03	-1.161494E-04	-4.839558E-06	8.715923E-05
C11	1.038785E-03	1.251695E-05	5.215394E-07	1.270344E-05
C12	2.255967E-08	4.049854E-09	1.687439E-10	3.745150E-10
C13	-1.380691E-07	1.431905E-06	5.966270E-08	2.309181E-08
C14	-5.338319E-06	-4.343567E-07	-1.809820E-08	-6.422975E-08
C15	-3.003110E-02	2.666618E-03	1.111091E-04	-2.426299E-04
C16	-7.075090E-03	-4.574028E-03	-1.905845E-04	-6.778870E-05
C17	-3.054939E+00	-4.119593E-01	-1.716497E-02	-2.553604E-02
C18	-2.834231E-06	-2.402811E-07	-1.001171E-08	-5.022290E-08
C19	2.151575E-04	-1.472375E-04	-6.134896E-06	1.164468E-06
C20	-6.947869E-07	1.101505E-07	4.589605E-09	-2.720192E-09
C21	4.161561E-05	2.113188E-05	8.804949E-07	3.738433E-07
C22	-2.421138E-03	-4.540313E-03	-1.891797E-04	-9.819834E-05
C23	1.336246E-02	2.992615E-03	1.246923E-04	1.252562E-04

Performance Equation

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

$X_1 = \text{RPM}$
 $X_2 = E_t \text{ (°F)}$
 $X_3 = C_t \text{ (°F)}$

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Cooling Capacity (48V) - ARI HBP - R134a / R513A BTU/hr (Watt)

RPM	Evaporator Temperature												
	-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	1782 (522)	3032 (888)	3698 (1083)	4484 (1313)	5463 (1600)	6046 (1771)	7446 (2181)						
4500	2074 (607)	3623 (1061)	4495 (1316)	5525 (1618)	6786 (1987)	7524 (2204)	9263 (2713)						
5500	2390 (700)	4276 (1252)	5379 (1575)	6682 (1957)	8258 (2419)	9170 (2686)	11286 (3306)						
6500	2833 (830)	5059 (1482)	6395 (1873)	7974 (2335)	9867 (2890)	10953 (3208)	13450 (3939)						

Power Consumption (48V) - ARI HBP - R134a / R513A Watt Current (48V) - ARI HBP - R134a / R513A Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	-10°F	10°F	20°F	30°F	40°F	45°F	55°F	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
3600	453	459	495	538	576	590	601	9.44	9.56	10.31	11.20	12.00	12.30	12.52
4500	588	581	621	675	731	757	796	12.25	12.10	12.93	14.05	15.23	15.76	16.58
5500	751	740	790	861	943	984	1060	15.65	15.42	16.45	17.94	19.65	20.51	22.09
6500	936	933	998	1093	1206	1266	1385	19.51	19.44	20.80	22.77	25.13	26.37	28.85

Efficiency (48V) - ARI HBP - R134a / R513A BTU/hr/W (W/W)

RPM	Evaporator Temperature												
	-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	3.93 (1.15)	6.61 (1.93)	7.47 (2.19)	8.34 (2.44)	9.48 (2.78)	10.24 (3.00)	12.39 (3.63)						
4500	3.53 (1.03)	6.24 (1.83)	7.24 (2.12)	8.19 (2.40)	9.28 (2.72)	9.94 (2.91)	11.64 (3.41)						
5500	3.18 (0.93)	5.78 (1.69)	6.81 (1.99)	7.76 (2.27)	8.76 (2.56)	9.32 (2.73)	10.64 (3.12)						
6500	3.03 (0.89)	5.42 (1.59)	6.41 (1.88)	7.29 (2.14)	8.18 (2.40)	8.65 (2.53)	9.71 (2.84)						

* 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 - ARI HBP (48V) - R134a / R513A

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-1.033153E+04	-1.499919E+03	-3.124832E+01	-1.483158E+02
C2	2.128011E+00	3.891602E-01	8.107505E-03	2.038798E-02
C3	-2.210105E-04	-2.499310E-05	-5.206895E-07	-2.060251E-06
C4	2.310411E-08	1.492731E-09	3.109856E-11	1.821543E-10
C5	1.857528E+02	1.072282E+01	2.233921E-01	9.347110E-01
C6	-5.239591E-01	5.983838E-01	1.246633E-02	5.487287E-03
C7	1.181775E-02	-1.888928E-03	-3.935267E-05	8.662477E-05
C8	2.335838E+02	2.380303E+01	4.958965E-01	3.473073E+00
C9	-1.848048E+00	-8.135126E-02	-1.694818E-03	-2.799644E-02
C10	4.468548E-03	-1.162192E-04	-2.421233E-06	7.172634E-05
C11	1.106560E-03	1.252447E-05	2.609264E-07	1.045410E-05
C12	2.403155E-08	4.052287E-09	8.442264E-11	3.082013E-10
C13	-1.470773E-07	1.432765E-06	2.984927E-08	1.900305E-08
C14	-5.686612E-06	-4.346177E-07	-9.054534E-09	-5.285688E-08
C15	-3.199045E-02	2.668220E-03	5.558792E-05	-1.996686E-04
C16	-7.536697E-03	-4.576776E-03	-9.534949E-05	-5.578567E-05
C17	-3.254255E+00	-4.122068E-01	-8.587642E-03	-2.101449E-02
C18	-3.019147E-06	-2.404255E-07	-5.008864E-09	-4.133016E-08
C19	2.291952E-04	-1.473260E-04	-3.069291E-06	9.582807E-07
C20	-7.401176E-07	1.102167E-07	2.296181E-09	-2.238540E-09
C21	4.433078E-05	2.114457E-05	4.405119E-07	3.076486E-07
C22	-2.579103E-03	-4.543041E-03	-9.464669E-05	-8.081081E-05
C23	1.423428E-02	2.994413E-03	6.238361E-05	1.030777E-04

Performance Equation

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

$X_1 = \text{RPM}$
 $X_2 = E_t \text{ (°F)}$
 $X_3 = C_t \text{ (°F)}$

SIERRA03-0716Y3



Cooling Capacity (48V) - ARI HBP - R1234yf BTU/hr (Watt)

RPM	Evaporator Temperature												
	-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	1672 (490)	2846 (834)	3471 (1017)	4209 (1233)	5128 (1502)	5676 (1662)	6990 (2047)						
4500	1947 (570)	3401 (996)	4219 (1236)	5187 (1519)	6370 (1866)	7064 (2069)	8695 (2547)						
5500	2244 (657)	4014 (1176)	5049 (1479)	6273 (1837)	7752 (2270)	8608 (2521)	10595 (3103)						
6500	2659 (779)	4749 (1391)	6003 (1758)	7485 (2192)	9262 (2713)	10282 (3011)	12626 (3698)						

Power Consumption (48V) - ARI HBP - R1234yf Watt Current (48V) - ARI HBP - R1234yf Amp

RPM	Evaporator Temperature							Evaporator Temperature						
	-10°F	10°F	20°F	30°F	40°F	45°F	55°F	-10°F	10°F	20°F	30°F	40°F	45°F	55°F
3600	474	480	517	562	603	617	628	9.87	10.00	10.78	11.71	12.55	12.86	13.09
4500	615	607	649	705	764	791	832	12.81	12.65	13.52	14.70	15.93	16.48	17.33
5500	785	774	826	901	986	1029	1109	16.36	16.12	17.21	18.76	20.55	21.44	23.10
6500	979	976	1044	1143	1261	1324	1448	20.40	20.33	21.75	23.81	26.27	27.58	30.17

Efficiency (48V) - ARI HBP - R1234yf BTU/hr/W (W/W)

RPM	Evaporator Temperature												
	-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	3.53 (1.03)	5.93 (1.74)	6.71 (1.96)	7.49 (2.19)	8.51 (2.49)	9.20 (2.69)	11.13 (3.26)						
4500	3.16 (0.93)	5.60 (1.64)	6.50 (1.90)	7.35 (2.15)	8.33 (2.44)	8.93 (2.61)	10.45 (3.06)						
5500	2.86 (0.84)	5.19 (1.52)	6.11 (1.79)	6.97 (2.04)	7.86 (2.30)	8.36 (2.45)	9.55 (2.80)						
6500	2.72 (0.80)	4.87 (1.43)	5.75 (1.68)	6.55 (1.92)	7.34 (2.15)	7.77 (2.27)	8.72 (2.55)						

* 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 - ARI HBP (48V) - R1234yf

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-9.698748E+03	-1.568518E+03	-3.267746E+01	-1.802280E+02
C2	1.997675E+00	4.069585E-01	8.478302E-03	2.477472E-02
C3	-2.074741E-04	-2.613616E-05	-5.445033E-07	-2.503542E-06
C4	2.168904E-08	1.561001E-09	3.252086E-11	2.213472E-10
C5	1.743759E+02	1.121323E+01	2.336090E-01	1.135827E+00
C6	-4.918678E-01	6.257509E-01	1.303648E-02	6.667950E-03
C7	1.109394E-02	-1.975318E-03	-4.115246E-05	1.052633E-04
C8	2.192773E+02	2.489166E+01	5.185763E-01	4.220351E+00
C9	-1.734859E+00	-8.507187E-02	-1.772331E-03	-3.402025E-02
C10	4.194860E-03	-1.215345E-04	-2.531968E-06	8.715923E-05
C11	1.038785E-03	1.309727E-05	2.728599E-07	1.270344E-05
C12	2.255967E-08	4.237619E-09	8.828372E-11	3.745150E-10
C13	-1.380691E-07	1.498293E-06	3.121443E-08	2.309181E-08
C14	-5.338319E-06	-4.544949E-07	-9.468644E-09	-6.422975E-08
C15	-3.003110E-02	2.790251E-03	5.813023E-05	-2.426299E-04
C16	-7.075090E-03	-4.786095E-03	-9.971031E-05	-6.778870E-05
C17	-3.054939E+00	-4.310591E-01	-8.980398E-03	-2.553604E-02
C18	-2.834231E-06	-2.514214E-07	-5.237945E-09	-5.022290E-08
C19	2.151575E-04	-1.540639E-04	-3.209665E-06	1.164468E-06
C20	-6.947869E-07	1.152575E-07	2.401197E-09	-2.720192E-09
C21	4.161561E-05	2.211162E-05	4.606588E-07	3.738433E-07
C22	-2.421138E-03	-4.750817E-03	-9.897536E-05	-9.819834E-05
C23	1.336246E-02	3.131363E-03	6.523672E-05	1.252562E-04

Performance Equation

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

$x_1 = \text{RPM}$
 $x_2 = E_t \text{ (}^\circ\text{F)}$
 $x_3 = C_t \text{ (}^\circ\text{F)}$