

SIERRA04-0434Y3
R134a / R513A / R1234yf
48/100V DC
VARIABLE SPEED



Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	SIERRA00174	3/8" ID Suction - 5/16" ID Discharge
Compressor Drawing	DCMX33-001	#10-32 Threaded Terminal Connections
Compressor Part Number with Fittings	SIERRA00175	#10 MIO Suction - #8 MIO Discharge
Compressor Drawing with Fittings	DCMX27-001	#10-32 Threaded Terminal Connections
Controller Options (37-60V)	025F0158, 025F0152	
Controller Options (60-97V)	025F0139, 025F0164	
Controller Options (55-110V)	025F0140-04, 025F0391	
Controller Options (75-125V)	025F0140-05, 025F0393	
Controller Options (70-145V)	025F0140-07, 025F0394	
Wiring Diagram	See controller section on website	

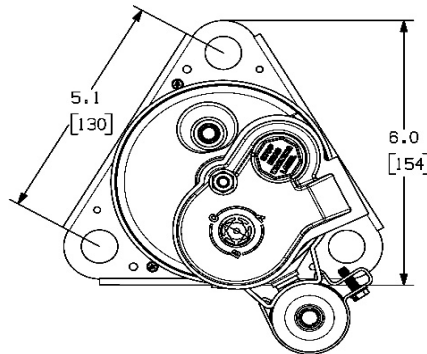
Application Information

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	7.1 cm ³ (0.434 in ³)
Oil Quantity	290 cc
Oil Type	PVE 68cSt
Weight	4.8 kg / 10.5 lb
Weight with Fittings	4.9 kg / 10.8 lb

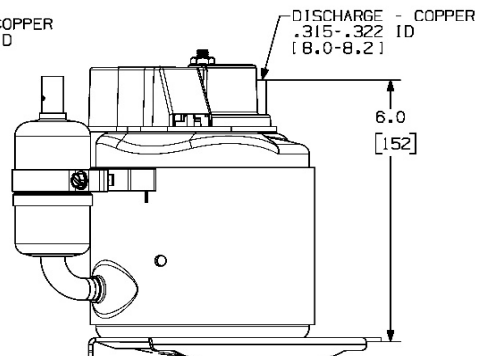
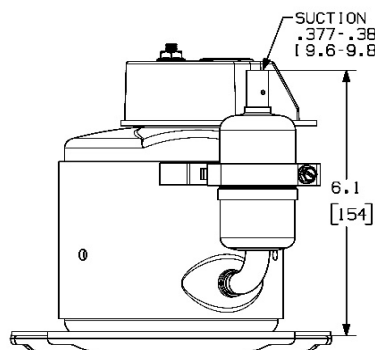
Compressor Dimensions



Packaging Options

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

SIERRA00174

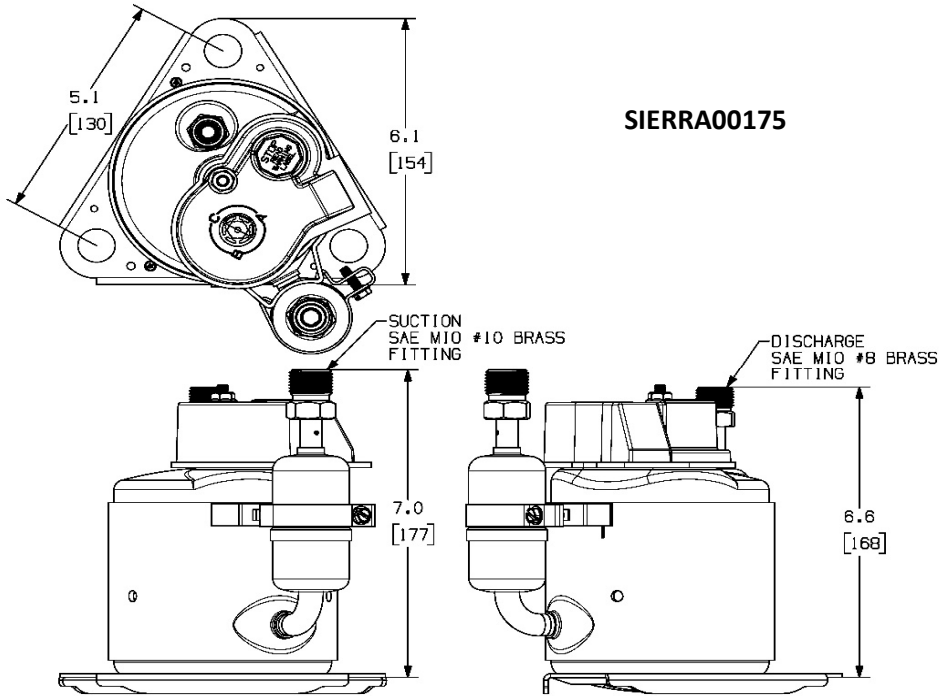


the Sierra

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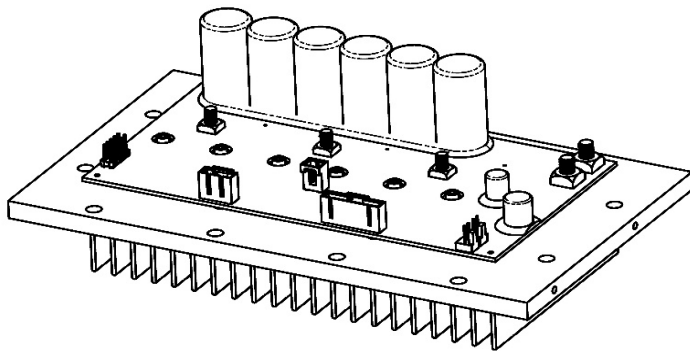


Compressor Dimensions with Fittings

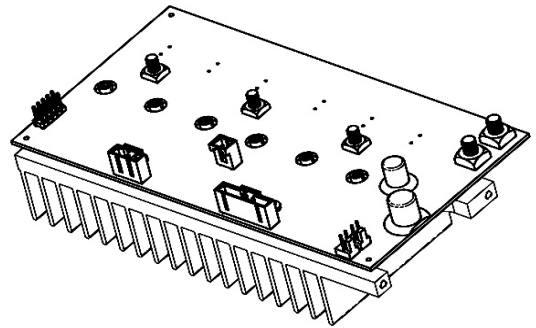


Controller Configurations (37-60V DC)

Custom controllers and configurations available



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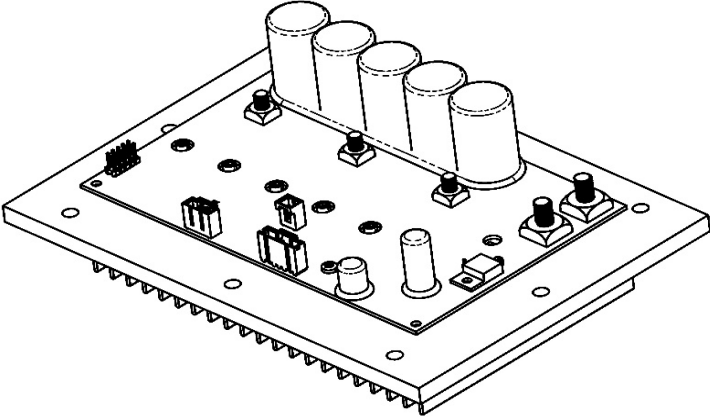
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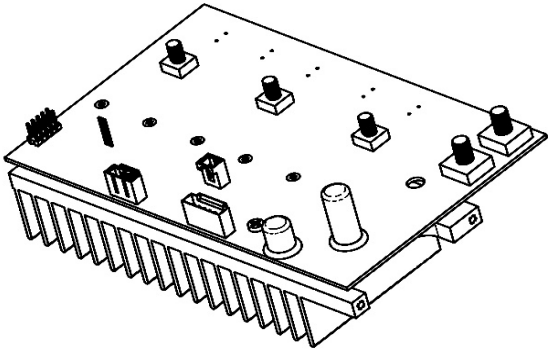


Controller Configurations (60-97 V)

Custom controllers and configurations available



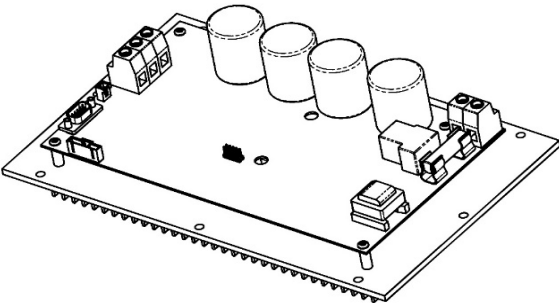
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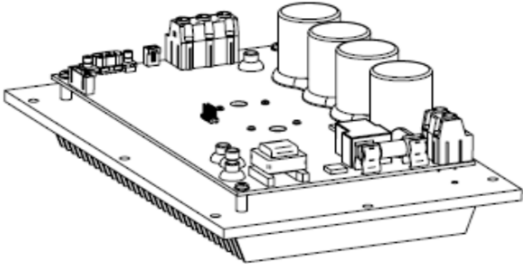
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Controller Configurations (55-110V, 75-125V, & 70-145V)

Custom controllers and configurations available



**025F0140-04,
025F0140-05,
& 025F0140-07**



**025F0391,
025F0393,
& 025F0394**

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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)					
1800	462 (135)	864 (253)	1020 (299)	1204 (353)	1459 (427)	1626 (476)	2068 (606)					
2400	728 (213)	1248 (366)	1486 (435)	1767 (518)	2134 (625)	2364 (692)	2940 (861)					
3000	928 (272)	1567 (459)	1887 (553)	2266 (664)	2746 (804)	3037 (889)	3749 (1098)					
3600	1080 (316)	1838 (538)	2241 (656)	2718 (796)	3311 (970)	3665 (1073)	4513 (1322)					

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
1800	120	158	185	207	217	216	195	2.50	3.29	3.85	4.31	4.53	4.50	4.07
2400	177	201	225	247	261	263	250	3.69	4.18	4.69	5.16	5.44	5.47	5.20
3000	232	245	268	292	310	315	311	4.84	5.10	5.58	6.08	6.47	6.57	6.49
3600	288	292	314	342	366	375	382	6.00	6.07	6.55	7.12	7.63	7.81	7.95

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)					
1800	3.85 (1.13)	5.46 (1.60)	5.52 (1.62)	5.82 (1.70)	6.71 (1.97)	7.53 (2.21)	10.58 (3.10)					
2400	4.12 (1.21)	6.21 (1.82)	6.61 (1.93)	7.14 (2.09)	8.17 (2.39)	9.00 (2.64)	11.77 (3.45)					
3000	3.99 (1.17)	6.40 (1.87)	7.05 (2.06)	7.76 (2.27)	8.85 (2.59)	9.64 (2.82)	12.04 (3.52)					
3600	3.75 (1.10)	6.30 (1.85)	7.13 (2.09)	7.96 (2.33)	9.05 (2.65)	9.77 (2.86)	11.83 (3.46)					

* 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	-6.262409E+03	-9.528699E+02	-1.985146E+01	-8.990093E+01
C2	1.289884E+00	2.472260E-01	5.150542E-03	1.235807E-02
C3	-1.339645E-04	-1.587763E-05	-3.307841E-07	-1.248812E-06
C4	1.400445E-08	9.483034E-10	1.975632E-11	1.104119E-10
C5	1.125932E+02	6.812003E+00	1.419167E-01	5.665706E-01
C6	-3.175953E-01	3.801418E-01	7.919620E-03	3.326093E-03
C7	7.163275E-03	-1.200000E-03	-2.499999E-05	5.250719E-05
C8	1.415857E+02	1.512161E+01	3.150335E-01	2.105187E+00
C9	-1.120186E+00	-5.168089E-02	-1.076685E-03	-1.696991E-02
C10	2.708589E-03	-7.383180E-05	-1.538163E-06	4.347658E-05
C11	6.707360E-04	7.956553E-06	1.657615E-07	6.336705E-06
C12	1.456661E-08	2.574340E-09	5.363209E-11	1.868148E-10
C13	-8.915019E-08	9.102082E-07	1.896267E-08	1.151861E-08
C14	-3.446913E-06	-2.761043E-07	-5.752172E-09	-3.203895E-08
C15	-1.939086E-02	1.695069E-03	3.531394E-05	-1.210281E-04
C16	-4.568333E-03	-2.907538E-03	-6.057370E-05	-3.381422E-05
C17	-1.972551E+00	-2.618671E-01	-5.455564E-03	-1.273783E-02
C18	-1.830042E-06	-1.527377E-07	-3.182035E-09	-2.505208E-08
C19	1.389256E-04	-9.359336E-05	-1.949862E-06	5.808573E-07
C20	-4.486187E-07	7.001855E-08	1.458720E-09	-1.356880E-09
C21	2.687089E-05	1.343274E-05	2.798488E-07	1.864797E-07
C22	-1.563311E-03	-2.886107E-03	-6.012722E-05	-4.898309E-05
C23	8.628039E-03	1.902293E-03	3.963111E-05	6.248005E-05

Performance Equation

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

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

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Cooling Capacity (48V) - ARI HBP - 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	434 (127)	811 (238)	958 (281)	1131 (331)	1370 (401)	1527 (447)	1941 (568)					
2400	684 (200)	1172 (343)	1395 (409)	1659 (486)	2004 (587)	2219 (650)	2760 (808)					
3000	871 (255)	1471 (431)	1772 (519)	2127 (623)	2578 (755)	2851 (835)	3520 (1031)					
3600	1014 (297)	1725 (505)	2104 (616)	2552 (747)	3108 (910)	3440 (1008)	4237 (1241)					

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
1800	126	165	193	216	227	226	204	2.62	3.45	4.03	4.51	4.74	4.70	4.26
2400	185	210	235	259	273	275	261	3.85	4.38	4.90	5.39	5.69	5.72	5.44
3000	243	256	280	305	325	330	326	5.06	5.34	5.83	6.36	6.76	6.87	6.79
3600	301	305	329	357	383	392	399	6.27	6.35	6.85	7.44	7.97	8.17	8.31

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)					
1800	3.45 (1.01)	4.90 (1.44)	4.96 (1.45)	5.23 (1.53)	6.03 (1.76)	6.76 (1.98)	9.50 (2.78)					
2400	3.70 (1.08)	5.58 (1.63)	5.93 (1.74)	6.41 (1.88)	7.33 (2.15)	8.08 (2.37)	10.57 (3.09)					
3000	3.59 (1.05)	5.74 (1.68)	6.33 (1.85)	6.97 (2.04)	7.94 (2.33)	8.65 (2.53)	10.81 (3.16)					
3600	3.37 (0.99)	5.66 (1.66)	6.40 (1.87)	7.14 (2.09)	8.12 (2.38)	8.77 (2.57)	10.62 (3.11)					

* 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	-5.878850E+03	-9.964495E+02	-2.075936E+01	-1.092443E+02
C2	1.210881E+00	2.585329E-01	5.386103E-03	1.501708E-02
C3	-1.257594E-04	-1.660380E-05	-3.459125E-07	-1.517510E-06
C4	1.314671E-08	9.916741E-10	2.065988E-11	1.341686E-10
C5	1.056971E+02	7.123551E+00	1.484073E-01	6.884759E-01
C6	-2.981433E-01	3.975276E-01	8.281824E-03	4.041746E-03
C7	6.724540E-03	-1.254882E-03	-2.614337E-05	6.380482E-05
C8	1.329139E+02	1.581320E+01	3.294416E-01	2.558146E+00
C9	-1.051577E+00	-5.404452E-02	-1.125928E-03	-2.062121E-02
C10	2.542694E-03	-7.720851E-05	-1.608511E-06	5.283115E-05
C11	6.296549E-04	8.320446E-06	1.733426E-07	7.700132E-06
C12	1.367443E-08	2.692078E-09	5.608495E-11	2.270105E-10
C13	-8.368993E-08	9.518366E-07	1.982993E-08	1.399699E-08
C14	-3.235797E-06	-2.887319E-07	-6.015248E-09	-3.893256E-08
C15	-1.820321E-02	1.772593E-03	3.692902E-05	-1.470690E-04
C16	-4.288532E-03	-3.040514E-03	-6.334404E-05	-4.108980E-05
C17	-1.851737E+00	-2.738436E-01	-5.705075E-03	-1.547855E-02
C18	-1.717955E-06	-1.597232E-07	-3.327566E-09	-3.044237E-08
C19	1.304167E-04	-9.787386E-05	-2.039039E-06	7.058365E-07
C20	-4.211418E-07	7.322085E-08	1.525434E-09	-1.648831E-09
C21	2.522511E-05	1.404709E-05	2.926477E-07	2.266033E-07
C22	-1.467562E-03	-3.018103E-03	-6.287715E-05	-5.952246E-05
C23	8.099590E-03	1.989295E-03	4.144364E-05	7.592346E-05

Performance Equation

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

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

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Cooling Capacity (100V) - 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	1080	(316)	1838	(538)	2241	(656)	2718	(796)	3311	(970)	3665	(1073)	4513	(1322)
4500	1257	(368)	2196	(643)	2724	(798)	3349	(981)	4113	(1205)	4561	(1336)	5615	(1644)
5500	1449	(424)	2592	(759)	3260	(955)	4050	(1186)	5006	(1466)	5558	(1628)	6841	(2004)
6500	1717	(503)	3066	(898)	3876	(1135)	4833	(1416)	5981	(1752)	6639	(1944)	8152	(2388)

Power Consumption (100V) - ARI HBP - R134a / R513A Watt Current (100V) - 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	290	294	317	344	369	378	384	2.90	2.94	3.17	3.44	3.69	3.78	3.84
4500	376	372	397	432	468	484	509	3.76	3.72	3.97	4.32	4.68	4.84	5.09
5500	481	474	505	551	604	630	679	4.81	4.74	5.05	5.51	6.04	6.30	6.79
6500	599	597	639	699	772	810	886	5.99	5.97	6.39	6.99	7.72	8.10	8.86

Efficiency (100V) - 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	3.72	(1.09)	6.26	(1.83)	7.08	(2.07)	7.90	(2.31)	8.98	(2.63)	9.70	(2.84)	11.74	(3.44)
4500	3.34	(0.98)	5.91	(1.73)	6.86	(2.01)	7.76	(2.27)	8.79	(2.57)	9.42	(2.76)	11.03	(3.23)
5500	3.01	(0.88)	5.47	(1.60)	6.45	(1.89)	7.35	(2.15)	8.29	(2.43)	8.82	(2.58)	10.08	(2.95)
6500	2.87	(0.84)	5.14	(1.50)	6.07	(1.78)	6.91	(2.02)	7.75	(2.27)	8.20	(2.40)	9.20	(2.69)

* 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 (100V) - ARI HBP - R134a / R513A

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-6.262409E+03	-9.598442E+02	-9.598442E+00	-8.990093E+01
C2	1.289884E+00	2.490356E-01	2.490356E-03	1.235807E-02
C3	-1.339645E-04	-1.599385E-05	-1.599385E-07	-1.248812E-06
C4	1.400445E-08	9.552443E-10	9.552443E-12	1.104119E-10
C5	1.125932E+02	6.861862E+00	6.861862E-02	5.665706E-01
C6	-3.175953E-01	3.829241E-01	3.829241E-03	3.326093E-03
C7	7.163275E-03	-1.208783E-03	-1.208783E-05	5.250719E-05
C8	1.415857E+02	1.523229E+01	1.523229E-01	2.105187E+00
C9	-1.120186E+00	-5.205916E-02	-5.205916E-04	-1.696991E-02
C10	2.708589E-03	-7.437220E-05	-7.437220E-07	4.347658E-05
C11	6.707360E-04	8.014789E-06	8.014789E-08	6.336705E-06
C12	1.456661E-08	2.593182E-09	2.593182E-11	1.868148E-10
C13	-8.915019E-08	9.168703E-07	9.168703E-09	1.151861E-08
C14	-3.446913E-06	-2.781251E-07	-2.781251E-09	-3.203895E-08
C15	-1.939086E-02	1.707476E-03	1.707476E-05	-1.210281E-04
C16	-4.568333E-03	-2.928819E-03	-2.928819E-05	-3.381422E-05
C17	-1.972551E+00	-2.637838E-01	-2.637838E-03	-1.273783E-02
C18	-1.830042E-06	-1.538556E-07	-1.538556E-09	-2.505208E-08
C19	1.389256E-04	-9.427840E-05	-9.427840E-07	5.808573E-07
C20	-4.486187E-07	7.053103E-08	7.053103E-10	-1.356880E-09
C21	2.687089E-05	1.353106E-05	1.353106E-07	1.864797E-07
C22	-1.563311E-03	-2.907231E-03	-2.907231E-05	-4.898309E-05
C23	8.628039E-03	1.916217E-03	1.916217E-05	6.248005E-05

Performance Equation

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

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

SIERRA04-0434Y3



Cooling Capacity (100V) - 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	1014 (297)	1725 (505)	2104 (616)	2552 (747)	3108 (910)	3440 (1008)	4237 (1241)					
4500	1180 (346)	2062 (604)	2558 (749)	3144 (921)	3861 (1131)	4282 (1254)	5271 (1544)					
5500	1360 (398)	2433 (713)	3061 (896)	3802 (1114)	4699 (1376)	5218 (1528)	6422 (1881)					
6500	1612 (472)	2879 (843)	3639 (1066)	4537 (1329)	5614 (1644)	6232 (1825)	7653 (2241)					

Power Consumption (100V) - ARI HBP - R1234yf Watt Current (100V) - 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	303	307	331	360	386	395	402	3.03	3.07	3.31	3.60	3.86	3.95	4.02
4500	394	389	415	451	489	506	532	3.94	3.89	4.15	4.51	4.89	5.06	5.32
5500	503	495	529	576	631	659	710	5.03	4.95	5.29	5.76	6.31	6.59	7.10
6500	627	624	668	731	807	847	927	6.27	6.24	6.68	7.31	8.07	8.47	9.27

Efficiency (100V) - 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	3.34 (0.98)	5.62 (1.65)	6.35 (1.86)	7.09 (2.08)	8.06 (2.36)	8.71 (2.55)	10.54 (3.09)					
4500	3.00 (0.88)	5.30 (1.55)	6.16 (1.80)	6.96 (2.04)	7.89 (2.31)	8.46 (2.48)	9.90 (2.90)					
5500	2.71 (0.79)	4.91 (1.44)	5.79 (1.70)	6.60 (1.93)	7.45 (2.18)	7.92 (2.32)	9.05 (2.65)					
6500	2.57 (0.75)	4.61 (1.35)	5.45 (1.59)	6.20 (1.82)	6.96 (2.04)	7.36 (2.15)	8.26 (2.42)					

* 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 (100V) - ARI HBP - R1234yf

Coefficient	Capacity (BTU/Hr)	Power (Watts)	Current (Amperes)	Mass Flow (Lbs/Hr)
C1	-5.878850E+03	-1.003743E+03	-1.003743E+01	-1.092443E+02
C2	1.210881E+00	2.604252E-01	2.490356E-03	1.501708E-02
C3	-1.257594E-04	-1.672533E-05	-1.599385E-07	-1.517510E-06
C4	1.314671E-08	9.989324E-10	9.552443E-12	1.341686E-10
C5	1.056971E+02	7.175690E+00	6.861862E-02	6.884759E-01
C6	-2.981433E-01	4.004372E-01	3.829241E-03	4.041746E-03
C7	6.724540E-03	-1.264067E-03	-1.208783E-05	6.380482E-05
C8	1.329139E+02	1.592894E+01	1.523229E-01	2.558146E+00
C9	-1.051577E+00	-5.444009E-02	-5.205916E-04	-2.062121E-02
C10	2.542694E-03	-7.777362E-05	-7.437220E-07	5.283115E-05
C11	6.296549E-04	8.381346E-06	8.014789E-08	7.700132E-06
C12	1.367443E-08	2.711782E-09	2.593182E-11	2.270105E-10
C13	-8.368993E-08	9.588034E-07	9.168703E-09	1.399699E-08
C14	-3.235797E-06	-2.908452E-07	-2.781251E-09	-3.893256E-08
C15	-1.820321E-02	1.785567E-03	1.707476E-05	-1.470690E-04
C16	-4.288532E-03	-3.062769E-03	-2.928819E-05	-4.108980E-05
C17	-1.851737E+00	-2.758479E-01	-2.637838E-03	-1.547855E-02
C18	-1.717955E-06	-1.608922E-07	-1.538556E-09	-3.044237E-08
C19	1.304167E-04	-9.859023E-05	-9.427840E-07	7.058365E-07
C20	-4.211418E-07	7.375677E-08	7.053103E-10	-1.648831E-09
C21	2.522511E-05	1.414990E-05	1.353106E-07	2.266033E-07
C22	-1.467562E-03	-3.040193E-03	-2.907231E-05	-5.952246E-05
C23	8.099590E-03	2.003855E-03	1.916217E-05	7.592346E-05

Performance Equation

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

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