



MASTERFLUX

SIERRA06-0434Y3

Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

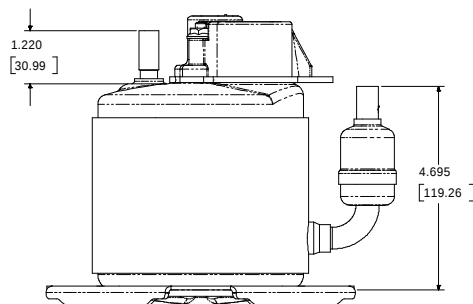
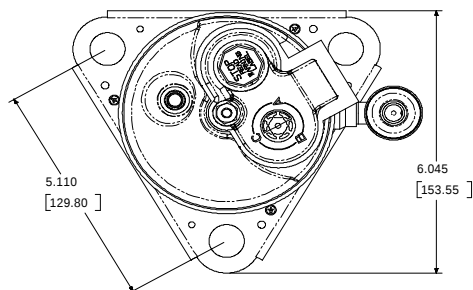
Compressor Part Number - Accumulator Size (14.4 cc)
Sales Compressor Drawing

SIERRA00009
DCMX01-001

Application Information

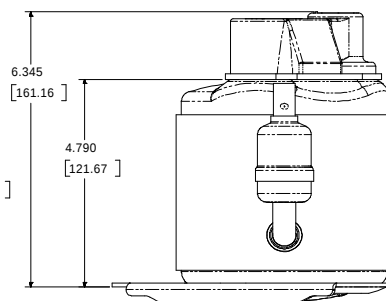
Application	HBP, A/C
Refrigerant	R134a
Voltage Range	119-343V DC
Evaporator Temperature Range	-23.3° C to 12.8° C (-10° F to 55° F)
Condenser Temperature Range	26.7° C to 65.6° C (80° F to 150° F)
Maximum Discharge Temperature	130° C (265° F)
Maximum Compression Ratio	8:1

Compressor Dimensions



Controller Features

- Over/under voltage protection
- Compressor thermal monitoring
- Controller thermal monitoring
- Locked rotor protection



the Sierra

Capacity (54.4° C Condenser) watt

rpm	Evaporator Temperature (° C)														
	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
1500	67	78	91	107	127	149	175	204	235	270	308	348	392	439	489
2000	103	116	133	154	180	210	244	282	324	371	422	477	537	601	669
2800	144	166	194	228	267	313	364	421	484	553	627	708	794	886	984
3200	178	205	238	277	322	372	428	490	557	630	709	793	884	979	1081

Power Consumption (54.4° C Condenser) watt

rpm	Evaporator Temperature (° C)														
	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
1500	135	145	155	164	173	181	188	195	200	206	210	214	217	220	222
2000	165	180	195	208	220	230	239	247	254	259	263	265	267	267	265
2800	190	205	219	231	243	254	263	272	279	286	291	296	299	302	303
3200	226	239	252	264	274	284	293	301	309	315	320	325	328	331	333

Current (54.4° C Condenser) amp

rpm	Evaporator Temperature (° C)														
	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
1500	0.90	0.97	1.03	1.10	1.15	1.21	1.25	1.30	1.34	1.37	1.40	1.43	1.45	1.47	1.48
2000	1.10	1.20	1.30	1.39	1.46	1.53	1.60	1.65	1.69	1.73	1.75	1.77	1.78	1.78	1.77
2800	1.27	1.37	1.46	1.54	1.62	1.69	1.76	1.81	1.86	1.91	1.94	1.97	2.00	2.01	2.02
3200	1.51	1.60	1.68	1.76	1.83	1.90	1.96	2.01	2.06	2.10	2.14	2.17	2.19	2.21	2.22

COP (54.4° C Condenser) watt/watt

rpm	Evaporator Temperature (° C)														
	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
1500	0.50	0.53	0.59	0.65	0.73	0.83	0.93	1.05	1.17	1.31	1.46	1.63	1.81	2.00	2.21
2000	0.63	0.64	0.68	0.74	0.82	0.91	1.02	1.14	1.28	1.43	1.61	1.80	2.01	2.25	2.52
2800	0.76	0.81	0.89	0.98	1.10	1.23	1.38	1.55	1.73	1.93	2.15	2.39	2.65	2.94	3.25
3200	0.79	0.86	0.95	1.05	1.17	1.47	1.49	1.55	1.66	1.83	2.14	2.39	2.65	2.94	3.25

Mass Flow (54.4° C Condenser) kg/hr

rpm	Evaporator Temperature (° C)														
	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
1500	1.90	2.15	2.48	2.87	3.33	3.86	4.47	5.14	5.89	6.70	7.58	8.54	9.56	10.66	11.83
2000	2.75	3.10	3.55	4.09	4.72	5.44	6.26	7.17	8.17	9.27	10.46	11.74	13.11	14.58	16.14
2800	3.88	4.50	5.23	6.09	7.07	8.18	9.40	10.75	12.22	13.82	15.53	17.37	19.33	21.42	23.62
3200	4.83	5.57	6.43	7.41	8.51	9.73	11.06	12.51	14.08	15.76	17.57	19.49	21.53	23.69	25.97

* all data points are with 11.1° C superheat, 8.3° C subcooling, and 35° C ambient

MASTERFLUX COMPRESSOR PERFORMANCE CHART (150V)
SIERRA06-0434Y3
Capacity (130° F Condenser) BTU/hr

rpm	Evaporator Temperature (° F)														
	-15.0	-10.0	-5.0	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
1500	230	265	311	367	434	510	598	695	804	922	1051	1190	1340	1500	1670
2000	353	397	455	527	614	716	832	963	1108	1268	1442	1630	1834	2051	2284
2800	491	567	662	777	912	1068	1243	1438	1652	1887	2142	2417	2711	3026	3360
3200	607	701	814	947	1099	1271	1462	1673	1903	2152	2421	2710	3017	3345	3692

Power Consumption (130° F Condenser) watt

rpm	Evaporator Temperature (° F)														
	-15.0	-10.0	-5.0	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
1500	135	145	155	164	173	181	188	195	200	206	210	214	217	220	222
2000	165	180	195	208	220	230	239	247	254	259	263	265	267	267	265
2800	190	205	219	231	243	254	263	272	279	286	291	296	299	302	303
3200	226	239	252	264	274	284	293	301	309	315	320	325	328	331	333

Current (130° F Condenser) amp

rpm	Evaporator Temperature (° F)														
	-15.0	-10.0	-5.0	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
1500	0.90	0.97	1.03	1.10	1.15	1.21	1.25	1.30	1.34	1.37	1.40	1.43	1.45	1.47	1.48
2000	1.10	1.20	1.30	1.39	1.46	1.53	1.60	1.65	1.69	1.73	1.75	1.77	1.78	1.78	1.77
2800	1.27	1.37	1.46	1.54	1.62	1.69	1.76	1.81	1.86	1.91	1.94	1.97	2.00	2.01	2.02
3200	1.51	1.60	1.68	1.76	1.83	1.90	1.96	2.01	2.06	2.10	2.14	2.17	2.19	2.21	2.22

EER (130° F Condenser) BTU/h/watt

rpm	Evaporator Temperature (° F)														
	-15.0	-10.0	-5.0	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
1500	1.71	1.83	2.00	2.23	2.51	2.82	3.18	3.57	4.01	4.48	5.00	5.56	6.16	6.82	7.53
2000	2.14	2.20	2.33	2.54	2.80	3.11	3.48	3.89	4.37	4.89	5.48	6.14	6.87	7.69	8.61
2800	2.58	2.77	3.03	3.36	3.75	4.21	4.72	5.29	5.91	6.60	7.35	8.17	9.06	10.03	11.09
3200	2.69	2.93	3.23	3.59	4.01	4.47	4.98	5.55	6.16	6.83	7.56	8.34	9.19	10.10	11.09

Mass Flow (130° F Condenser) lb/hr

rpm	Evaporator Temperature (° F)														
	-15.0	-10.0	-5.0	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
1500	4.19	4.75	5.46	6.32	7.34	8.52	9.85	11.33	12.97	14.77	16.72	18.83	21.09	23.50	26.07
2000	6.07	6.84	7.82	9.01	10.40	12.00	13.80	15.80	18.01	20.43	23.05	25.88	28.91	32.14	35.58
2800	8.56	9.92	11.54	13.43	15.60	18.03	20.73	23.71	26.95	30.46	34.24	38.30	42.62	47.21	52.08
3200	10.65	12.29	14.19	16.34	18.76	21.44	24.38	27.58	31.04	34.76	38.73	42.97	47.47	52.23	57.25

* all data points are with 20° F superheat, 15° F subcooling, and 95° F ambient