

COMPRESSOR DEFINITION

Designation	EM C3134U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513301853

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	RSCR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Fan	198 to 255 V	198 to 255 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/2-	[hp]
2 Displacement	7.95	[cm ³] (0.485 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO22	
4 Weight (with oil charge)	7.8	[kg] (17.20 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/QPS2-A22MD3	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	5(350)	[μF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
6 Start winding resistance	13.76	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	7.62	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature	-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1387	350	406	232	1.33	4.13	5.97	1.50	1.75

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature	-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1678	423	492	272	1.30	4.99	6.18	1.56	1.81

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(Condensing temperature 35°C (+95°F))				
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	893	225	262	159	1.09	2.64	5.58	1.41	1.64
-30 (-22)	1139	287	334	181	1.15	3.38	6.30	1.59	1.85
-25 (-13)	1425	359	418	200	1.21	4.24	7.15	1.80	2.09
-20 (- 4)	1758	443	515	217	1.27	5.25	8.14	2.05	2.39
-15 (+ 5)	2146	541	629	232	1.33	6.43	9.29	2.34	2.72
-10 (+14)	2595	654	761	245	1.38	7.81	10.60	2.67	3.11
-5 (+23)	3114	785	913	258	1.43	9.42	12.09	3.05	3.54
0 (+32)	3710	935	1087	269	1.48	11.28	13.76	3.47	4.03

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(Condensing temperature 45°C (+113°F))				
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	824	208	241	168	1.10	2.44	4.95	1.25	1.45
-30 (-22)	1069	269	313	190	1.18	3.17	5.62	1.42	1.65
-25 (-13)	1351	340	396	212	1.25	4.02	6.36	1.60	1.86
-20 (- 4)	1677	423	491	233	1.33	5.00	7.18	1.81	2.10
-15 (+ 5)	2054	518	602	253	1.41	6.15	8.08	2.04	2.37
-10 (+14)	2490	627	730	273	1.50	7.49	9.09	2.29	2.66
-5 (+23)	2992	754	877	293	1.58	9.05	10.20	2.57	2.99
0 (+32)	3568	899	1045	313	1.66	10.85	11.43	2.88	3.35

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	763	192	223	171	1.12	2.26	4.44	1.12	1.30
-30	(-22)	1000	252	293	196	1.20	2.96	5.09	1.28	1.49
-25	(-13)	1270	320	372	221	1.29	3.78	5.75	1.45	1.68
-20	(- 4)	1582	399	463	247	1.39	4.72	6.41	1.62	1.88
-15	(+ 5)	1941	489	569	273	1.49	5.81	7.10	1.79	2.08
-10	(+14)	2356	594	690	301	1.59	7.09	7.82	1.97	2.29
-5	(+23)	2835	714	831	330	1.70	8.57	8.58	2.16	2.52
0	(+32)	3383	853	991	360	1.81	10.28	9.40	2.37	2.75

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@220V60Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1052	265	308	181	0.89	3.11	5.93	1.49	1.74
-30	(-22)	1455	367	426	202	0.99	4.32	6.99	1.76	2.05
-25	(-13)	1797	453	527	224	1.09	5.35	7.83	1.97	2.29
-20	(- 4)	2128	536	624	247	1.19	6.35	8.58	2.16	2.51
-15	(+ 5)	2496	629	731	268	1.29	7.48	9.38	2.36	2.75
-10	(+14)	2952	744	865	287	1.38	8.88	10.39	2.62	3.04
-5	(+23)	3543	893	1038	304	1.45	10.72	11.74	2.96	3.44
0	(+32)	4320	1089	1266	317	1.52	13.14	13.58	3.42	3.98

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V60Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1011	255	296	190	0.93	2.99	5.37	1.35	1.57
-30	(-22)	1384	349	406	217	1.06	4.11	6.23	1.57	1.83
-25	(-13)	1696	427	497	244	1.18	5.05	6.84	1.72	2.01
-20	(- 4)	1997	503	585	272	1.31	5.96	7.34	1.85	2.15
-15	(+ 5)	2336	589	685	299	1.43	6.99	7.86	1.98	2.30
-10	(+14)	2763	696	810	325	1.55	8.31	8.56	2.16	2.51
-5	(+23)	3326	838	975	348	1.66	10.06	9.57	2.41	2.80
0	(+32)	4075	1027	1194	368	1.76	12.39	11.04	2.78	3.24

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	930	234	273	190	0.94	2.75	4.87	1.23	1.43
-30	(-22)	1288	325	377	223	1.09	3.82	5.64	1.42	1.65
-25	(-13)	1586	400	465	257	1.24	4.72	6.13	1.54	1.80
-20	(- 4)	1873	472	549	292	1.40	5.58	6.47	1.63	1.90
-15	(+ 5)	2198	554	644	326	1.56	6.58	6.81	1.72	2.00
-10	(+14)	2611	658	765	360	1.72	7.85	7.30	1.84	2.14
-5	(+23)	3162	797	927	391	1.87	9.56	8.07	2.03	2.36
0	(+32)	3899	983	1143	420	2.01	11.85	9.27	2.34	2.72

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		