

### COMPRESSOR DEFINITION

Designation	EM C3125U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513301719

### 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 (Light Commercial)		
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)	Static	-	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	-	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 <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	5.89	[cm <sup>3</sup> ] (0.359 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	17.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	6.8	[kg] (14.99 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (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	4TM232NFBYY-53	
6 Start winding resistance	19.05	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	12.47	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	7.25	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.37	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

### 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]
979	247	287	161	0.76	2.91	6.08	1.53	1.78

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]
1167	294	342	195	0.88	3.47	6.00	1.51	1.76

### 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)	595	150	174	203	1.57	1.76	2.93	0.74	0.86
-30	(-22)	759	191	222	217	1.62	2.25	3.47	0.87	1.02
-25	(-13)	944	238	277	227	1.64	2.81	4.17	1.05	1.22
-20	(- 4)	1177	297	345	234	1.66	3.51	5.07	1.28	1.49
-15	(+ 5)	1489	375	436	240	1.68	4.46	6.21	1.57	1.82
-10	(+14)	1908	481	559	249	1.70	5.74	7.63	1.92	2.24
-5	(+23)	2462	621	722	261	1.74	7.45	9.35	2.36	2.74
0	(+32)	3182	802	932	280	1.80	9.68	11.43	2.88	3.35

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)	568	143	166	215	1.59	1.68	2.63	0.66	0.77
-30	(-22)	731	184	214	230	1.64	2.17	3.13	0.79	0.92
-25	(-13)	893	225	262	241	1.67	2.65	3.70	0.93	1.08
-20	(- 4)	1084	273	318	249	1.69	3.23	4.39	1.11	1.29
-15	(+ 5)	1332	336	390	257	1.72	3.98	5.23	1.32	1.53
-10	(+14)	1666	420	488	266	1.75	5.01	6.26	1.58	1.83
-5	(+23)	2115	533	620	280	1.79	6.40	7.52	1.90	2.20
0	(+32)	2709	683	794	301	1.86	8.23	9.04	2.28	2.65

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	535	135	157	218	1.60	1.58	2.45	0.62	0.72
-30	(-22)	729	184	214	235	1.64	2.17	3.04	0.77	0.89
-25	(-13)	902	227	264	247	1.68	2.69	3.62	0.91	1.06
-20	(- 4)	1082	273	317	257	1.71	3.23	4.23	1.07	1.24
-15	(+ 5)	1299	327	381	266	1.74	3.89	4.91	1.24	1.44
-10	(+14)	1581	398	463	278	1.78	4.75	5.70	1.44	1.67
-5	(+23)	1957	493	573	294	1.83	5.92	6.63	1.67	1.94
0	(+32)	2457	619	720	317	1.90	7.47	7.74	1.95	2.27

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°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)	380	96	111	221	1.60	1.12	1.77	0.45	0.52
-30	(-22)	638	161	187	239	1.65	1.89	2.58	0.65	0.76
-25	(-13)	854	215	250	253	1.69	2.54	3.31	0.83	0.97
-20	(- 4)	1056	266	309	265	1.73	3.15	3.98	1.00	1.17
-15	(+ 5)	1273	321	373	277	1.77	3.81	4.64	1.17	1.36
-10	(+14)	1536	387	450	291	1.81	4.62	5.32	1.34	1.56
-5	(+23)	1872	472	548	309	1.87	5.66	6.06	1.53	1.78
0	(+32)	2310	582	677	335	1.96	7.02	6.90	1.74	2.02

TEST CONDITIONS: @220V60Hz		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)	770	194	226	129	0.60	2.28	5.94	1.50	1.74
-30	(-22)	998	251	292	148	0.67	2.96	6.71	1.69	1.97
-25	(-13)	1233	311	361	165	0.75	3.66	7.50	1.89	2.20
-20	(- 4)	1512	381	443	181	0.83	4.51	8.43	2.12	2.47
-15	(+ 5)	1874	472	549	196	0.91	5.61	9.64	2.43	2.83
-10	(+14)	2355	594	690	209	0.97	7.09	11.28	2.84	3.31
-5	(+23)	2994	754	877	221	1.02	9.06	13.48	3.40	3.95
0	(+32)	3827	964	1121	232	1.03	11.63	16.38	4.13	4.80

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	709	179	208	134	0.62	2.10	5.29	1.33	1.55
-30	(-22)	933	235	273	156	0.70	2.77	5.93	1.50	1.74
-25	(-13)	1142	288	335	177	0.80	3.39	6.46	1.63	1.89
-20	(- 4)	1373	346	402	197	0.90	4.09	6.99	1.76	2.05
-15	(+ 5)	1664	419	487	217	1.00	4.98	7.69	1.94	2.25
-10	(+14)	2052	517	601	237	1.09	6.17	8.67	2.18	2.54
-5	(+23)	2575	649	754	256	1.16	7.79	10.08	2.54	2.95
0	(+32)	3270	824	958	274	1.21	9.94	12.06	3.04	3.53

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)	665	168	195	133	0.62	1.97	4.87	1.23	1.43
-30	(-22)	925	233	271	158	0.72	2.75	5.63	1.42	1.65
-25	(-13)	1147	289	336	184	0.83	3.42	6.14	1.55	1.80
-20	(- 4)	1370	345	401	209	0.96	4.09	6.52	1.64	1.91
-15	(+ 5)	1630	411	478	234	1.08	4.88	6.93	1.75	2.03
-10	(+14)	1966	495	576	260	1.20	5.91	7.50	1.89	2.20
-5	(+23)	2413	608	707	286	1.31	7.30	8.37	2.11	2.45
0	(+32)	3011	759	882	312	1.39	9.15	9.67	2.44	2.83

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°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)	445	112	130	131	0.60	1.31	3.67	0.92	1.07
-30	(-22)	781	197	229	160	0.72	2.32	4.78	1.21	1.40
-25	(-13)	1058	266	310	189	0.85	3.15	5.51	1.39	1.62
-20	(- 4)	1312	331	384	219	1.00	3.92	5.99	1.51	1.76
-15	(+ 5)	1582	399	463	250	1.16	4.74	6.36	1.60	1.86
-10	(+14)	1904	480	558	282	1.31	5.73	6.76	1.70	1.98
-5	(+23)	2317	584	679	315	1.45	7.00	7.32	1.85	2.15
0	(+32)	2857	720	837	349	1.57	8.68	8.19	2.06	2.40

### 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		