

COMPRESSOR DEFINITION

Designation	EM C3145U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513301920

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low-Medium Back Pressure LC Restricted		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	CSCR		
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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	11.14	[cm ³] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
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)	8.2	[kg] (18.08 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	MI2021/V230	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12.5(400)	[µF(VAC minimum)]
5 Motor protection	MRA-38172-3166	
6 Start winding resistance	13.30	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.25	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	10.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.00	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	1.40	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			EN12900LBP Fan		Evaporating temperature (Condensing temperature		-35°C (-31°F) 40°C (104°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1110	280	325	233	1.08	3.72	4.76	1.20	1.39

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			EN12900 Fan		(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1165	294	341	228	1.05	3.73	5.10	1.29	1.50
-30	(-22)	1464	369	429	254	1.17	4.71	5.79	1.46	1.70
-25	(-13)	1839	463	539	279	1.28	5.94	6.61	1.67	1.94
-20	(- 4)	2288	577	670	303	1.39	7.42	7.57	1.91	2.22
-15	(+ 5)	2813	709	824	326	1.49	9.16	8.65	2.18	2.53
-10	(+14)	3413	860	1000	348	1.59	11.19	9.83	2.48	2.88
-5	(+23)	4088	1030	1198	369	1.69	13.50	11.09	2.80	3.25
0	(+32)	4838	1219	1418	389	1.78	16.11	12.43	3.13	3.64

TEST CONDITIONS: @220V50Hz			EN12900 Fan		(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1013	255	297	238	1.10	3.56	4.27	1.08	1.25
-30	(-22)	1281	323	375	268	1.23	4.52	4.80	1.21	1.41
-25	(-13)	1614	407	473	297	1.36	5.71	5.43	1.37	1.59
-20	(- 4)	2012	507	590	326	1.49	7.15	6.15	1.55	1.80
-15	(+ 5)	2476	624	725	355	1.62	8.85	6.95	1.75	2.04
-10	(+14)	3005	757	880	384	1.75	10.81	7.82	1.97	2.29
-5	(+23)	3599	907	1055	413	1.88	13.06	8.72	2.20	2.56
0	(+32)	4258	1073	1248	441	2.01	15.58	9.66	2.44	2.83

TEST CONDITIONS: @220V50Hz			EN12900 Fan		(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	864	218	253	247	1.14	3.37	3.49	0.88	1.02
-30	(-22)	1095	276	321	280	1.29	4.29	3.92	0.99	1.15
-25	(-13)	1381	348	405	313	1.45	5.43	4.41	1.11	1.29
-20	(- 4)	1723	434	505	348	1.61	6.81	4.96	1.25	1.45
-15	(+ 5)	2120	534	621	383	1.77	8.44	5.54	1.40	1.62
-10	(+14)	2573	648	754	420	1.94	10.32	6.14	1.55	1.80
-5	(+23)	3081	776	903	457	2.11	12.46	6.75	1.70	1.98
0	(+32)	3644	918	1068	495	2.28	14.89	7.35	1.85	2.15

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
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		