

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			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°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]
1909	481	559	319	1.50	5.68	5.98	1.51	1.75

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1251	315	367	226	1.05	3.70	5.53	1.39	1.62
-30	(-22)	1556	392	456	252	1.16	4.61	6.19	1.56	1.81
-25	(-13)	1942	490	569	277	1.27	5.78	7.02	1.77	2.06
-20	(- 4)	2411	608	707	301	1.38	7.20	8.01	2.02	2.35
-15	(+ 5)	2963	747	868	325	1.48	8.88	9.12	2.30	2.67
-10	(+14)	3596	906	1054	348	1.59	10.82	10.36	2.61	3.03
-5	(+23)	4312	1087	1263	369	1.69	13.04	11.68	2.94	3.42
0	(+32)	5109	1288	1497	390	1.80	15.53	13.08	3.30	3.83

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1215	306	356	237	1.10	3.59	5.13	1.29	1.50
-30	(-22)	1512	381	443	266	1.23	4.48	5.70	1.44	1.67
-25	(-13)	1888	476	553	295	1.35	5.61	6.39	1.61	1.87
-20	(- 4)	2342	590	686	325	1.48	6.99	7.20	1.81	2.11
-15	(+ 5)	2875	724	842	355	1.62	8.61	8.09	2.04	2.37
-10	(+14)	3485	878	1021	385	1.75	10.49	9.05	2.28	2.65
-5	(+23)	4174	1052	1223	415	1.89	12.62	10.05	2.53	2.95
0	(+32)	4942	1245	1448	446	2.03	15.02	11.09	2.79	3.25

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1105	278	324	245	1.12	3.27	4.51	1.14	1.32
-30	(-22)	1397	352	409	277	1.27	4.14	5.06	1.27	1.48
-25	(-13)	1763	444	517	310	1.42	5.24	5.68	1.43	1.66
-20	(- 4)	2204	555	646	346	1.59	6.57	6.37	1.61	1.87
-15	(+ 5)	2719	685	797	383	1.75	8.14	7.11	1.79	2.08
-10	(+14)	3308	834	969	421	1.93	9.95	7.86	1.98	2.30
-5	(+23)	3972	1001	1164	461	2.11	12.01	8.63	2.17	2.53
0	(+32)	4710	1187	1380	502	2.30	14.32	9.37	2.36	2.75

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		