

### COMPRESSOR DEFINITION

Designation	EM R80U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513400022

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	115-127 / 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	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	-	103 to 140 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	1/4	[hp]
2 Displacement	3.97	[cm <sup>3</sup> ] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
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)	7.89	[kg] (17.39 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14C1/8EA14C3/8EA14E63/QPS2-A4R7MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)	[µF(VAC minimum)]
5 Motor protection	4TM757MFBYY-53	
6 Start winding resistance		[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance		[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	11.87	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.80	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.12	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - TUV - UKCA	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			ASHRAELBP32 Static		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]	
772	195	226	141	1.33	2.30	5.49	1.38	1.61	

TEST CONDITIONS: @115V60Hz			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]	
800	202	234	142	1.34	2.38	5.63	1.42	1.65	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	520	131	152	105	1.02	1.54	4.97	1.25	1.46
-30	(-22)	670	169	196	115	1.10	1.99	5.77	1.45	1.69
-25	(-13)	836	211	245	126	1.19	2.49	6.61	1.67	1.94
-20	(- 4)	1029	259	301	137	1.28	3.07	7.52	1.90	2.20
-15	(+ 5)	1253	316	367	147	1.37	3.75	8.56	2.16	2.51
-10	(+14)	1517	382	445	156	1.45	4.57	9.76	2.46	2.86
-5	(+23)	1828	461	536	164	1.52	5.53	11.17	2.81	3.27
0	(+32)	2194	553	643	170	1.57	6.67	12.83	3.23	3.76

TEST CONDITIONS: @115V60Hz		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)	495	125	145	109	1.05	1.46	4.56	1.15	1.34
-30	(-22)	642	162	188	121	1.15	1.90	5.26	1.33	1.54
-25	(-13)	804	203	236	135	1.26	2.39	5.94	1.50	1.74
-20	(- 4)	990	250	290	148	1.38	2.95	6.67	1.68	1.95
-15	(+ 5)	1207	304	354	161	1.50	3.62	7.47	1.88	2.19
-10	(+14)	1461	368	428	174	1.62	4.40	8.39	2.11	2.46
-5	(+23)	1761	444	516	186	1.72	5.33	9.49	2.39	2.78
0	(+32)	2113	532	619	196	1.81	6.42	10.80	2.72	3.17

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	457	115	134	111	1.08	1.35	4.13	1.04	1.21
-30	(-22)	601	151	176	126	1.19	1.78	4.77	1.20	1.40
-25	(-13)	759	191	222	142	1.32	2.26	5.36	1.35	1.57
-20	(- 4)	939	237	275	158	1.46	2.80	5.95	1.50	1.74
-15	(+ 5)	1147	289	336	174	1.61	3.44	6.58	1.66	1.93
-10	(+14)	1391	351	408	190	1.76	4.19	7.30	1.84	2.14
-5	(+23)	1679	423	492	206	1.90	5.08	8.14	2.05	2.39
0	(+32)	2017	508	591	220	2.03	6.13	9.16	2.31	2.68

TEST CONDITIONS: @115V60Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°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)	407	103	119	113	1.09	1.20	3.58	0.90	1.05
-30	(-22)	548	138	161	129	1.22	1.63	4.23	1.07	1.24
-25	(-13)	702	177	206	147	1.36	2.09	4.79	1.21	1.40
-20	(- 4)	875	220	256	166	1.53	2.61	5.31	1.34	1.56
-15	(+ 5)	1074	271	315	185	1.70	3.22	5.83	1.47	1.71
-10	(+14)	1308	330	383	205	1.87	3.93	6.39	1.61	1.87
-5	(+23)	1583	399	464	224	2.05	4.78	7.05	1.78	2.06
0	(+32)	1906	480	559	243	2.22	5.79	7.84	1.97	2.30

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +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		