

### COMPRESSOR DEFINITION

Designation	EM I90UEX
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513307372

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220 / 60	[ V / Hz ]	
4 Application type	Low-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°F)	
5 Motor type	RSIR		
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	-	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Fan	-	187 to 242 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	4.99	[cm <sup>3</sup> ] (0.305 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	14.400	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO32	
4 Weight (with oil charge)	7.63	[kg] (16.82 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514172	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM757KDBYY-53	
6 Start winding resistance	24.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.90	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	16.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.85	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA	

### D - PERFORMANCE - CHECK POINT DATA

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]	
945	238	277	209	1.56	2.81	4.53	1.14	1.33	

### E - PERFORMANCE - CURVES

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)	651	164	191	148	1.43	1.93	4.40	1.11	1.29
-30	(-22)	803	202	235	164	1.47	2.38	4.91	1.24	1.44
-25	(-13)	1013	255	297	179	1.50	3.01	5.67	1.43	1.66
-20	(- 4)	1273	321	373	192	1.54	3.80	6.62	1.67	1.94
-15	(+ 5)	1578	398	462	205	1.57	4.73	7.69	1.94	2.25
-10	(+14)	1921	484	563	218	1.60	5.78	8.81	2.22	2.58
-5	(+23)	2297	579	673	232	1.64	6.95	9.91	2.50	2.90

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)	588	148	172	157	1.44	1.74	3.74	0.94	1.10
-30	(-22)	728	184	213	176	1.49	2.16	4.15	1.05	1.22
-25	(-13)	927	234	272	193	1.53	2.76	4.80	1.21	1.41
-20	(- 4)	1177	297	345	208	1.57	3.51	5.64	1.42	1.65
-15	(+ 5)	1472	371	431	223	1.61	4.41	6.58	1.66	1.93
-10	(+14)	1807	455	529	239	1.66	5.44	7.57	1.91	2.22
-5	(+23)	2174	548	637	255	1.72	6.57	8.53	2.15	2.50

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)	542	137	159	160	1.45	1.60	3.41	0.86	1.00
-30	(-22)	671	169	197	181	1.50	1.99	3.71	0.94	1.09
-25	(-13)	858	216	252	201	1.55	2.55	4.26	1.07	1.25
-20	(- 4)	1098	277	322	220	1.60	3.28	4.98	1.26	1.46
-15	(+ 5)	1383	349	405	238	1.66	4.14	5.80	1.46	1.70
-10	(+14)	1709	431	501	257	1.72	5.14	6.66	1.68	1.95
-5	(+23)	2067	521	606	276	1.79	6.25	7.48	1.89	2.19

### E - PERFORMANCE - CURVES

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)	515	130	151	160	1.46	1.52	3.21	0.81	0.94
-30	(-22)	632	159	185	186	1.51	1.87	3.42	0.86	1.00
-25	(-13)	808	204	237	209	1.57	2.40	3.86	0.97	1.13
-20	(- 4)	1037	261	304	232	1.63	3.09	4.46	1.12	1.31
-15	(+ 5)	1312	331	384	255	1.70	3.93	5.16	1.30	1.51
-10	(+14)	1628	410	477	277	1.78	4.90	5.88	1.48	1.72
-5	(+23)	1977	498	579	301	1.87	5.98	6.57	1.65	1.92

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Straight		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		