

### COMPRESSOR DEFINITION

Designation	EM I90UEX
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513307148

### 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		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°F)	
5 Motor type	CSIR		
6 Starting torque	HST - Hight starting torque		
7 Expantion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Fan	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/cm²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm²] (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	170	[ml] (5.75 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO32	
4 Weight (with oil charge)	8.1	[kg] (17.86 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515005	
3 Start capacitor	88-108(250)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM734LFBYY-53	
6 Start winding resistance	21.35	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	11.65	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	11.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.90	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	2.20	[A] - Measured according to UL 984
11 Approval boards certification	CCC - CE - UKCA - 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  +/- 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]
780	197	229	178	1.34	2.32	4.38	1.10	1.28

### E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32				(Condensing temperature 35°C (+95°F) )				
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	515	130	151	127	1.22	1.53	4.08	1.03	1.20
-30	(-22)	748	189	219	138	1.24	2.22	5.23	1.32	1.53
-25	(-13)	849	214	249	150	1.27	2.52	5.61	1.41	1.64
-20	(- 4)	909	229	266	161	1.30	2.71	5.71	1.44	1.67
-15	(+ 5)	1020	257	299	172	1.32	3.05	6.03	1.52	1.77
-10	(+14)	1274	321	373	181	1.35	3.84	7.06	1.78	2.07
-5	(+23)	1762	444	516	189	1.37	5.33	9.29	2.34	2.72

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)	450	113	132	129	1.23	1.33	3.49	0.88	1.02
-30	(-22)	684	172	200	144	1.25	2.03	4.61	1.16	1.35
-25	(-13)	784	198	230	158	1.29	2.33	4.92	1.24	1.44
-20	(- 4)	843	212	247	173	1.32	2.51	4.92	1.24	1.44
-15	(+ 5)	952	240	279	187	1.36	2.85	5.10	1.29	1.50
-10	(+14)	1203	303	353	200	1.39	3.62	5.96	1.50	1.75
-5	(+23)	1688	425	495	211	1.43	5.10	7.99	2.01	2.34

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)	394	99	116	131	1.23	1.17	3.01	0.76	0.88
-30	(-22)	628	158	184	149	1.26	1.86	4.12	1.04	1.21
-25	(-13)	728	183	213	166	1.30	2.16	4.39	1.11	1.29
-20	(- 4)	785	198	230	184	1.35	2.34	4.32	1.09	1.27
-15	(+ 5)	891	225	261	201	1.40	2.67	4.40	1.11	1.29
-10	(+14)	1138	287	334	218	1.44	3.43	5.12	1.29	1.50
-5	(+23)	1618	408	474	233	1.49	4.89	6.97	1.76	2.04

### E - PERFORMANCE - CURVES

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)	330	83	97	133	1.23	0.98	2.47	0.62	0.72
-30	(-22)	563	142	165	153	1.27	1.67	3.61	0.91	1.06
-25	(-13)	661	167	194	173	1.32	1.97	3.87	0.98	1.13
-20	(- 4)	715	180	210	194	1.37	2.13	3.75	0.95	1.10
-15	(+ 5)	818	206	240	215	1.43	2.45	3.75	0.95	1.10
-10	(+14)	1061	267	311	235	1.50	3.19	4.36	1.10	1.28
-5	(+23)	1535	387	450	254	1.56	4.64	6.06	1.53	1.78

## F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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	Slanted		
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		