

### COMPRESSOR DEFINITION

Designation	EM I90UEX
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513307424

### 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		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°F)	
5 Motor type	CSIR		
6 Starting torque	HST - High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	-	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Fan	-	98 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	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)	8.09	[kg] (17.84 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515293	
3 Start capacitor	189-227(180)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MSP36ALK-5590	
6 Start winding resistance	5.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	23.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	4.00	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	4.50	[A] - Measured according to UL 984
11 Approval boards certification	ISI - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
947	239	277	203	2.94	2.82	4.67	1.18	1.37

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			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)	625	157	183	145	2.67	1.85	4.31	1.09	1.26
-30	(-22)	816	206	239	160	2.72	2.42	5.05	1.27	1.48
-25	(-13)	1001	252	293	173	2.77	2.98	5.76	1.45	1.69
-20	(- 4)	1201	303	352	185	2.83	3.58	6.48	1.63	1.90
-15	(+ 5)	1437	362	421	198	2.89	4.31	7.27	1.83	2.13
-10	(+14)	1731	436	507	211	2.96	5.21	8.19	2.06	2.40
-5	(+23)	2103	530	616	227	3.06	6.36	9.28	2.34	2.72

TEST CONDITIONS: @115V60Hz			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)	569	143	167	152	2.72	1.68	3.73	0.94	1.09
-30	(-22)	751	189	220	170	2.78	2.23	4.38	1.10	1.28
-25	(-13)	928	234	272	186	2.84	2.76	4.98	1.25	1.46
-20	(- 4)	1122	283	329	201	2.91	3.35	5.59	1.41	1.64
-15	(+ 5)	1353	341	397	216	2.99	4.05	6.26	1.58	1.84
-10	(+14)	1643	414	481	233	3.08	4.94	7.05	1.78	2.07
-5	(+23)	2013	507	590	252	3.21	6.09	8.00	2.02	2.35

TEST CONDITIONS: @115V60Hz			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)	509	128	149	156	2.74	1.51	3.27	0.82	0.96
-30	(-22)	683	172	200	177	2.81	2.03	3.84	0.97	1.13
-25	(-13)	854	215	250	196	2.88	2.54	4.36	1.10	1.28
-20	(- 4)	1042	263	305	214	2.96	3.11	4.89	1.23	1.43
-15	(+ 5)	1270	320	372	233	3.07	3.80	5.46	1.38	1.60
-10	(+14)	1557	392	456	253	3.19	4.68	6.14	1.55	1.80
-5	(+23)	1926	485	564	276	3.35	5.82	6.98	1.76	2.04

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	455	115	133	159	2.74	1.35	2.86	0.72	0.84
-30	(-22)	623	157	182	183	2.82	1.85	3.39	0.85	0.99
-25	(-13)	788	199	231	205	2.92	2.34	3.85	0.97	1.13
-20	(- 4)	972	245	285	227	3.03	2.90	4.31	1.09	1.26
-15	(+ 5)	1197	302	351	250	3.16	3.58	4.81	1.21	1.41
-10	(+14)	1483	374	435	274	3.32	4.46	5.40	1.36	1.58
-5	(+23)	1852	467	543	301	3.52	5.60	6.15	1.55	1.80

### 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		