

COMPRESSOR DEFINITION

Designation	EM I70UER
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513307415

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	RSIR-CSIR		
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/Fan	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	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 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	1/5	[hp]
2 Displacement	4.08	[cm ³] (0.249 cu.in)
2.1 Bore [mm]	19.000	
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)	7.4	[kg] (16.31 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

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	213514067/213515250	
3 Start capacitor	145-175(150)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MSP39AMK-5590	
6 Start winding resistance	13.35	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.89	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	19.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.29	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA - 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]
699	176	205	161	1.97	2.08	4.33	1.09	1.27

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)	458	115	134	115	1.80	1.36	3.97	1.00	1.16
-30	(-22)	607	153	178	129	2.01	1.80	4.70	1.18	1.38
-25	(-13)	786	198	230	143	2.23	2.34	5.50	1.39	1.61
-20	(- 4)	995	251	292	157	2.44	2.97	6.38	1.61	1.87
-15	(+ 5)	1231	310	361	169	2.64	3.69	7.34	1.85	2.15
-10	(+14)	1494	377	438	179	2.80	4.50	8.38	2.11	2.46
-5	(+23)	1782	449	522	187	2.92	5.39	9.52	2.40	2.79

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)	410	103	120	117	1.83	1.21	3.51	0.88	1.03
-30	(-22)	548	138	160	131	2.05	1.62	4.16	1.05	1.22
-25	(-13)	720	181	211	147	2.30	2.14	4.85	1.22	1.42
-20	(- 4)	925	233	271	165	2.57	2.76	5.59	1.41	1.64
-15	(+ 5)	1163	293	341	182	2.84	3.48	6.38	1.61	1.87
-10	(+14)	1431	361	419	198	3.09	4.30	7.23	1.82	2.12
-5	(+23)	1728	435	506	213	3.32	5.23	8.14	2.05	2.39

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)	361	91	106	118	1.84	1.07	3.09	0.78	0.91
-30	(-22)	485	122	142	132	2.06	1.44	3.69	0.93	1.08
-25	(-13)	647	163	190	150	2.34	1.92	4.31	1.09	1.26
-20	(- 4)	846	213	248	170	2.65	2.52	4.95	1.25	1.45
-15	(+ 5)	1081	273	317	192	2.99	3.24	5.62	1.42	1.65
-10	(+14)	1351	341	396	214	3.34	4.06	6.32	1.59	1.85
-5	(+23)	1655	417	485	235	3.67	5.00	7.05	1.78	2.07

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)	300	76	88	115	1.79	0.89	2.59	0.65	0.76
-30	(-22)	406	102	119	129	2.02	1.20	3.19	0.80	0.93
-25	(-13)	555	140	163	148	2.31	1.65	3.78	0.95	1.11
-20	(- 4)	745	188	218	171	2.67	2.22	4.37	1.10	1.28
-15	(+ 5)	975	246	286	197	3.07	2.92	4.95	1.25	1.45
-10	(+14)	1243	313	364	224	3.50	3.74	5.54	1.40	1.62
-5	(+23)	1549	390	454	252	3.94	4.68	6.14	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	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		