

COMPRESSOR DEFINITION

Designation	EM I70UER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513307319



A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[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)	Fan	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Fan	198 to 255 V	198 to 255 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	19.1	[kgf/cm²] (272 psig)	/ °C - °F
9.2 Peak (gauge)	21.2	[kgf/cm²] (301 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)	8.09	[kg] (17.84 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514130/213515004	
3 Start capacitor	88-108(140)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM734KDBYY-53	
6 Start winding resistance	41.67	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	18.25	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.70/9.40	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.35/1.13	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - TUV - 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]
605	152	177	150	1.16	1.80	4.03	1.02	1.18

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Static		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]
717	181	210	161	1.03	2.13	4.45	1.12	1.30

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]
717	181	210	161	1.03	2.13	4.45	1.12	1.30

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)	458	115	134	114	0.75	0.00	3.99	1.01	1.17
-30	(-22)	607	153	178	129	0.83	0.00	4.71	1.19	1.38
-25	(-13)	786	198	230	143	0.93	0.00	5.49	1.38	1.61
-20	(- 4)	995	251	292	158	1.02	0.00	6.34	1.60	1.86
-15	(+ 5)	1231	310	361	171	1.11	0.00	7.27	1.83	2.13
-10	(+14)	1494	377	438	182	1.18	0.00	8.28	2.09	2.43
-5	(+23)	1782	449	522	189	1.23	0.00	9.38	2.36	2.75

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V60Hz		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)	410	103	120	117	0.76	0.00	3.53	0.89	1.03
-30	(-22)	548	138	160	131	0.85	0.00	4.16	1.05	1.22
-25	(-13)	720	181	211	148	0.96	0.00	4.83	1.22	1.42
-20	(- 4)	925	233	271	166	1.07	0.00	5.54	1.40	1.62
-15	(+ 5)	1163	293	341	184	1.19	0.00	6.30	1.59	1.85
-10	(+14)	1431	361	419	202	1.31	0.00	7.10	1.79	2.08
-5	(+23)	1728	435	506	217	1.41	0.00	7.97	2.01	2.33

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V60Hz		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)	361	91	106	117	0.76	0.00	3.11	0.78	0.91
-30	(-22)	485	122	142	132	0.86	0.00	3.70	0.93	1.08
-25	(-13)	647	163	190	151	0.98	0.00	4.30	1.08	1.26
-20	(- 4)	846	213	248	172	1.11	0.00	4.90	1.24	1.44
-15	(+ 5)	1081	273	317	195	1.27	0.00	5.53	1.39	1.62
-10	(+14)	1351	341	396	219	1.42	0.00	6.18	1.56	1.81
-5	(+23)	1655	417	485	242	1.57	0.00	6.85	1.73	2.01

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@220V60Hz		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)	300	76	88	114	0.74	0.00	2.60	0.66	0.76
-30	(-22)	406	102	119	129	0.83	0.00	3.20	0.81	0.94
-25	(-13)	555	140	163	149	0.96	0.00	3.77	0.95	1.10
-20	(- 4)	745	188	218	173	1.12	0.00	4.32	1.09	1.27
-15	(+ 5)	975	246	286	200	1.30	0.00	4.86	1.23	1.43
-10	(+14)	1243	313	364	230	1.50	0.00	5.40	1.36	1.58
-5	(+23)	1549	390	454	261	1.70	0.00	5.93	1.49	1.74

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +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		