

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 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)	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 - CE - TUV - 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]
605	152	177	150	1.16	1.80	4.03	1.02	1.18

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: @220V50Hz			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)	383	97	112	110	1.10	1.13	3.48	0.88	1.02
-30 (-22)	483	122	141	120	1.12	1.43	4.03	1.02	1.18
-25 (-13)	603	152	177	128	1.13	1.79	4.72	1.19	1.38
-20 (- 4)	747	188	219	135	1.15	2.23	5.55	1.40	1.63
-15 (+ 5)	920	232	270	141	1.16	2.76	6.52	1.64	1.91
-10 (+14)	1125	283	330	148	1.17	3.39	7.61	1.92	2.23
-5 (+23)	1366	344	400	155	1.18	4.13	8.82	2.22	2.59

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)	365	92	107	116	1.11	1.08	3.16	0.80	0.92
-30 (-22)	467	118	137	128	1.13	1.39	3.65	0.92	1.07
-25 (-13)	587	148	172	138	1.15	1.75	4.25	1.07	1.25
-20 (- 4)	728	184	213	147	1.16	2.17	4.96	1.25	1.45
-15 (+ 5)	895	226	262	155	1.18	2.68	5.76	1.45	1.69
-10 (+14)	1091	275	320	164	1.20	3.28	6.65	1.68	1.95
-5 (+23)	1320	333	387	173	1.22	3.99	7.64	1.93	2.24

E - PERFORMANCE - CURVES

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)	331	83	97	119	1.11	0.98	2.79	0.70	0.82	
-30 (-22)	436	110	128	134	1.14	1.29	3.25	0.82	0.95	
-25 (-13)	555	140	163	147	1.16	1.65	3.78	0.95	1.11	
-20 (- 4)	692	175	203	158	1.18	2.07	4.38	1.10	1.28	
-15 (+ 5)	852	215	250	169	1.21	2.55	5.04	1.27	1.48	
-10 (+14)	1038	262	304	180	1.24	3.12	5.76	1.45	1.69	
-5 (+23)	1255	316	368	192	1.27	3.79	6.53	1.65	1.91	

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)	282	71	83	119	1.11	0.83	2.37	0.60	0.69	
-30 (-22)	388	98	114	137	1.14	1.15	2.81	0.71	0.82	
-25 (-13)	506	127	148	154	1.17	1.50	3.29	0.83	0.96	
-20 (- 4)	639	161	187	168	1.20	1.90	3.80	0.96	1.11	
-15 (+ 5)	791	199	232	183	1.24	2.37	4.34	1.09	1.27	
-10 (+14)	966	244	283	197	1.28	2.91	4.91	1.24	1.44	
-5 (+23)	1169	295	343	213	1.33	3.53	5.49	1.38	1.61	

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	1.08	3.99	1.01	1.17	
-30 (-22)	607	153	178	129	0.83	1.77	4.71	1.19	1.38	
-25 (-13)	786	198	230	143	0.93	2.76	5.49	1.38	1.61	
-20 (- 4)	995	251	292	158	1.02	3.55	6.34	1.60	1.86	
-15 (+ 5)	1231	310	361	171	1.11	3.66	7.27	1.83	2.13	
-10 (+14)	1494	377	438	182	1.18	2.61	8.28	2.09	2.43	
-5 (+23)	1782	449	522	189	1.23	- 0.11	9.38	2.36	2.75	

E - PERFORMANCE - CURVES

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)	410	103	120	117	0.76	1.28	3.53	0.89	1.03
-30	(-22)	548	138	160	131	0.85	1.53	4.16	1.05	1.22
-25	(-13)	720	181	211	148	0.96	2.25	4.83	1.22	1.42
-20	(- 4)	925	233	271	166	1.07	2.96	5.54	1.40	1.62
-15	(+ 5)	1163	293	341	184	1.19	3.17	6.30	1.59	1.85
-10	(+14)	1431	361	419	202	1.31	2.39	7.10	1.79	2.08
-5	(+23)	1728	435	506	217	1.41	0.13	7.97	2.01	2.33

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)	361	91	106	117	0.76	1.36	3.11	0.78	0.91
-30	(-22)	485	122	142	132	0.86	1.20	3.70	0.93	1.08
-25	(-13)	647	163	190	151	0.98	1.70	4.30	1.08	1.26
-20	(- 4)	846	213	248	172	1.11	2.36	4.90	1.24	1.44
-15	(+ 5)	1081	273	317	195	1.27	2.70	5.53	1.39	1.62
-10	(+14)	1351	341	396	219	1.42	2.24	6.18	1.56	1.81
-5	(+23)	1655	417	485	242	1.57	0.47	6.85	1.73	2.01

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)	300	76	88	114	0.74	- 0.07	2.60	0.66	0.76
-30	(-22)	406	102	119	129	0.83	- 0.60	3.20	0.81	0.94
-25	(-13)	555	140	163	149	0.96	- 0.30	3.77	0.95	1.10
-20	(- 4)	745	188	218	173	1.12	0.35	4.32	1.09	1.27
-15	(+ 5)	975	246	286	200	1.30	0.86	4.86	1.23	1.43
-10	(+14)	1243	313	364	230	1.50	0.74	5.40	1.36	1.58
-5	(+23)	1549	390	454	261	1.70	- 0.49	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		