

COMPRESSOR DEFINITION

Designation	EM I50UER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513307259

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	1/6	[hp]
2 Displacement	3.00	[cm ³] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
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 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	213514164/213515241	
3 Start capacitor	88-108(110)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718KFBYY-53	
6 Start winding resistance	43.61	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.95	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.20/8.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.86/0.78	[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 - IMTRO - 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]
434	109	127	99	0.70	1.29	4.38	1.10	1.28

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)	289	73	85	72	0.62	0.86	4.04	1.02	1.18
-30	(-22)	376	95	110	78	0.64	1.11	4.84	1.22	1.42
-25	(-13)	472	119	138	84	0.65	1.40	5.63	1.42	1.65
-20	(- 4)	578	146	169	90	0.67	1.73	6.44	1.62	1.89
-15	(+ 5)	696	175	204	95	0.69	2.09	7.28	1.84	2.13
-10	(+14)	827	208	242	101	0.71	2.49	8.17	2.06	2.39
-5	(+23)	971	245	285	107	0.74	2.94	9.11	2.30	2.67

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)	262	66	77	75	0.63	0.78	3.50	0.88	1.03
-30	(-22)	346	87	102	83	0.65	1.03	4.19	1.05	1.23
-25	(-13)	438	110	128	91	0.67	1.30	4.85	1.22	1.42
-20	(- 4)	538	136	158	98	0.69	1.61	5.50	1.39	1.61
-15	(+ 5)	648	163	190	105	0.71	1.94	6.17	1.55	1.81
-10	(+14)	768	194	225	112	0.73	2.31	6.86	1.73	2.01
-5	(+23)	900	227	264	118	0.75	2.72	7.60	1.91	2.23

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)	226	57	66	76	0.63	0.67	2.98	0.75	0.87
-30	(-22)	312	79	91	86	0.66	0.93	3.62	0.91	1.06
-25	(-13)	404	102	118	96	0.69	1.20	4.21	1.06	1.23
-20	(- 4)	502	127	147	105	0.71	1.50	4.78	1.21	1.40
-15	(+ 5)	608	153	178	114	0.74	1.82	5.34	1.35	1.57
-10	(+14)	722	182	212	122	0.76	2.17	5.91	1.49	1.73
-5	(+23)	846	213	248	130	0.78	2.56	6.50	1.64	1.90

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)	179	45	52	75	0.63	0.53	2.41	0.61	0.71	
-30 (-22)	272	69	80	88	0.67	0.81	3.06	0.77	0.90	
-25 (-13)	369	93	108	100	0.71	1.10	3.65	0.92	1.07	
-20 (- 4)	470	118	138	112	0.74	1.40	4.21	1.06	1.23	
-15 (+ 5)	577	145	169	122	0.78	1.73	4.73	1.19	1.39	
-10 (+14)	690	174	202	132	0.81	2.07	5.24	1.32	1.53	
-5 (+23)	810	204	237	141	0.84	2.45	5.75	1.45	1.68	

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)	336	85	98	80	0.45	0.79	4.20	1.06	1.23	
-30 (-22)	447	113	131	90	0.50	1.30	4.95	1.25	1.45	
-25 (-13)	579	146	170	100	0.56	2.03	5.77	1.45	1.69	
-20 (- 4)	733	185	215	110	0.62	2.61	6.67	1.68	1.96	
-15 (+ 5)	907	229	266	119	0.67	2.69	7.67	1.93	2.25	
-10 (+14)	1100	277	322	126	0.71	1.91	8.78	2.21	2.57	
-5 (+23)	1312	331	384	130	0.74	- 0.08	10.01	2.52	2.93	

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)	297	75	87	81	0.46	0.92	3.68	0.93	1.08	
-30 (-22)	400	101	117	92	0.51	1.11	4.34	1.09	1.27	
-25 (-13)	528	133	155	104	0.58	1.65	5.02	1.27	1.47	
-20 (- 4)	679	171	199	117	0.66	2.17	5.76	1.45	1.69	
-15 (+ 5)	854	215	250	130	0.73	2.33	6.55	1.65	1.92	
-10 (+14)	1051	265	308	142	0.80	1.76	7.42	1.87	2.17	
-5 (+23)	1270	320	372	152	0.85	0.10	8.38	2.11	2.45	

E - PERFORMANCE - CURVES

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)	257	65	75	82	0.46	0.98	3.17	0.80	0.93
-30	(-22)	350	88	103	93	0.52	0.87	3.79	0.96	1.11
-25	(-13)	470	118	138	107	0.60	1.24	4.41	1.11	1.29
-20	(- 4)	617	155	181	122	0.69	1.72	5.03	1.27	1.47
-15	(+ 5)	790	199	231	138	0.78	1.98	5.68	1.43	1.66
-10	(+14)	988	249	290	155	0.87	1.64	6.36	1.60	1.86
-5	(+23)	1211	305	355	171	0.96	0.34	7.09	1.79	2.08

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)	208	52	61	80	0.45	- 0.06	2.58	0.65	0.76
-30	(-22)	288	72	84	91	0.51	- 0.44	3.21	0.81	0.94
-25	(-13)	398	100	117	106	0.60	- 0.22	3.81	0.96	1.12
-20	(- 4)	537	135	157	123	0.70	0.26	4.38	1.10	1.28
-15	(+ 5)	706	178	207	143	0.81	0.63	4.93	1.24	1.44
-10	(+14)	903	228	265	164	0.93	0.55	5.49	1.38	1.61
-5	(+23)	1127	284	330	186	1.05	- 0.36	6.05	1.53	1.77

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		