

COMPRESSOR DEFINITION

Designation	EM I60HER
Nominal Voltage/Frequency	220 V 50-60 Hz
Engineering Number	513307432

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 50-60	[V / Hz]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSIR/CSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static/Fan	187 to 242 V	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	187 to 242 V	187 to 242 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/6	[hp]
2 Displacement	4.99	[cm ³] (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	ESTER / ISO22	
4 Weight (with oil charge)	7.73	[kg] (17.04 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	220 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514130/213515004	
3 Start capacitor	72-88(210)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718REBY-53	
6 Start winding resistance	27.80	[Ωat 25°C (77°F)] +/- 8%
7 Run winding resistance	13.70	[Ωat 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	12.50/11.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.35/1.15	[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	TUV	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
470	118	138	121	1.05	2.67	3.88	0.98	1.14

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]
570	144	167	133	0.93	3.24	4.28	1.08	1.25

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static			(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)	249	63	73	92	1.00	1.41	2.72	0.69	0.80
-30	(-22)	346	87	101	102	1.03	1.96	3.39	0.85	0.99
-25	(-13)	468	118	137	112	1.04	2.65	4.18	1.05	1.22
-20	(- 4)	616	155	180	123	1.06	3.50	5.02	1.26	1.47
-15	(+ 5)	792	200	232	135	1.08	4.52	5.86	1.48	1.72
-10	(+14)	997	251	292	150	1.10	5.71	6.63	1.67	1.94

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static			(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)	213	54	62	91	1.00	1.20	2.33	0.59	0.68
-30	(-22)	302	76	89	103	1.03	1.71	2.95	0.74	0.86
-25	(-13)	418	105	123	114	1.05	2.37	3.68	0.93	1.08
-20	(- 4)	562	142	165	126	1.07	3.20	4.46	1.12	1.31
-15	(+ 5)	734	185	215	140	1.09	4.19	5.24	1.32	1.53
-10	(+14)	936	236	274	158	1.12	5.36	5.94	1.50	1.74

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
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)	176	44	52	87	1.00	1.00	2.02	0.51	0.59
-30	(-22)	258	65	75	100	1.03	1.46	2.58	0.65	0.75
-25	(-13)	366	92	107	113	1.06	2.08	3.24	0.82	0.95
-20	(- 4)	504	127	148	128	1.08	2.87	3.94	0.99	1.16
-15	(+ 5)	671	169	197	145	1.10	3.83	4.63	1.17	1.36
-10	(+14)	870	219	255	166	1.14	4.98	5.24	1.32	1.54

TEST CONDITIONS:		ASHRAE32				(Condensing temperature 45°C (+113°F))				
@220V60Hz		Static								
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)	303	76	89	95	0.82	1.71	3.19	0.80	0.93
-30	(-22)	423	106	124	111	0.86	2.39	3.85	0.97	1.13
-25	(-13)	576	145	169	125	0.90	3.27	4.62	1.16	1.35
-20	(- 4)	762	192	223	140	0.94	4.34	5.45	1.37	1.60
-15	(+ 5)	979	247	287	156	0.99	5.59	6.28	1.58	1.84
-10	(+14)	1227	309	359	173	1.05	7.03	7.06	1.78	2.07

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V60Hz		Static								
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)	238	60	70	93	0.82	1.35	2.55	0.64	0.75
-30	(-22)	356	90	104	111	0.87	2.02	3.20	0.81	0.94
-25	(-13)	507	128	149	128	0.91	2.88	3.93	0.99	1.15
-20	(- 4)	689	174	202	146	0.96	3.92	4.71	1.19	1.38
-15	(+ 5)	902	227	264	165	1.02	5.15	5.47	1.38	1.60
-10	(+14)	1144	288	335	186	1.10	6.55	6.17	1.55	1.81

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@220V60Hz		Static								
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)	199	50	58	88	0.83	1.12	2.27	0.57	0.67
-30	(-22)	310	78	91	108	0.87	1.76	2.86	0.72	0.84
-25	(-13)	453	114	133	128	0.91	2.57	3.53	0.89	1.03
-20	(- 4)	627	158	184	149	0.96	3.57	4.22	1.06	1.24
-15	(+ 5)	830	209	243	171	1.03	4.73	4.87	1.23	1.43
-10	(+14)	1061	267	311	195	1.13	6.08	5.45	1.37	1.60

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	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-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		

