

### COMPRESSOR DEFINITION

Designation	EM YS60HEP
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513305005

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 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	RSCR		
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	-	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	198 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/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/5+	[hp]
2 Displacement	5.19	[cm <sup>3</sup> ] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.68	[kg] (16.93 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	MSC34X 220V	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	4(300)/5(300)	[µF(VAC minimum)]
5 Motor protection	MSC34F49C3	
6 Start winding resistance	19.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	17.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	6.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.02	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.24	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

### D - PERFORMANCE - CHECK POINT DATA

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]
603	152	177	122	0.67	3.43	4.95	1.25	1.45

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			ASHRAE32 Static		(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)	343	86	101	84	0.52	1.94	4.04	1.02	1.18
-30	(-22)	457	115	134	95	0.55	2.59	4.85	1.22	1.42
-25	(-13)	604	152	177	106	0.59	3.43	5.71	1.44	1.67
-20	(- 4)	788	199	231	118	0.64	4.49	6.66	1.68	1.95
-15	(+ 5)	1017	256	298	132	0.70	5.80	7.69	1.94	2.25
-10	(+14)	1294	326	379	146	0.76	7.41	8.82	2.22	2.59

TEST CONDITIONS: @220V60Hz			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)	318	80	93	87	0.53	1.80	3.68	0.93	1.08
-30	(-22)	436	110	128	99	0.57	2.47	4.44	1.12	1.30
-25	(-13)	583	147	171	112	0.61	3.31	5.23	1.32	1.53
-20	(- 4)	764	192	224	126	0.67	4.35	6.07	1.53	1.78
-15	(+ 5)	984	248	288	141	0.73	5.62	6.96	1.75	2.04
-10	(+14)	1249	315	366	157	0.79	7.16	7.93	2.00	2.32

TEST CONDITIONS: @220V60Hz			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)	277	70	81	85	0.53	1.57	3.28	0.83	0.96
-30	(-22)	399	100	117	100	0.58	2.26	4.00	1.01	1.17
-25	(-13)	545	137	160	115	0.63	3.09	4.73	1.19	1.39
-20	(- 4)	720	182	211	132	0.69	4.10	5.48	1.38	1.60
-15	(+ 5)	932	235	273	149	0.76	5.32	6.25	1.58	1.83
-10	(+14)	1184	298	347	167	0.84	6.78	7.07	1.78	2.07

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(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)	224	56	66	80	0.51	1.27	2.77	0.70	0.81
-30	(-22)	348	88	102	99	0.57	1.97	3.48	0.88	1.02
-25	(-13)	493	124	144	118	0.64	2.80	4.16	1.05	1.22
-20	(- 4)	663	167	194	137	0.72	3.77	4.83	1.22	1.42
-15	(+ 5)	865	218	253	158	0.80	4.94	5.51	1.39	1.61
-10	(+14)	1103	278	323	179	0.88	6.32	6.20	1.56	1.82

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EG/F/AMEM Version 2		
2 Tray holder	Yes		
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	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		