

### COMPRESSOR DEFINITION

Designation	EM 45HHR
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513307450

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°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)	Static/Fan	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static/Fan	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	Fan	198 to 255 V	-
8.4 HBP (43°C Ambient temperature)	Fan	198 to 255 V	-
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	1/8	[hp]
2 Displacement	3.77	[cm <sup>3</sup> ] (0.230 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	13.300	
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)	7.66	[kg] (16.89 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	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514130/213515004	
3 Start capacitor	38-46(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718MFBYY-53	
6 Start winding resistance	38.00	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.50/9.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.05/0.90	[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	CE - IRAM - ISI - TUV - UKCA - VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Fan		Evaporating temperature (Condensing temperature		7.2°C (44.96°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]
1500	378	440	167	1.05		8.96	2.26	2.63

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]
348	88	102	99	0.86	1.98	3.50	0.88	1.03

### 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)	172	43	50	73	0.85	0.97	2.33	0.59	0.68
-30 (-22)	237	60	69	82	0.85	1.35	2.89	0.73	0.85
-25 (-13)	323	81	95	91	0.86	1.84	3.58	0.90	1.05
-20 (- 4)	432	109	126	99	0.87	2.46	4.39	1.11	1.29
-15 (+ 5)	567	143	166	107	0.89	3.23	5.31	1.34	1.56
-10 (+14)	733	185	215	116	0.91	4.19	6.32	1.59	1.85
-5 (+23)	931	235	273	125	0.93	5.35	7.41	1.87	2.17
0 (+32)	1166	294	342	135	0.96	6.75	8.58	2.16	2.51
+5 (+41)	1441	363	422	146	0.99	8.39	9.81	2.47	2.87
+10 (+50)	1759	443	515	158	1.03	10.31	11.08	2.79	3.25
+15 (+59)	2123	535	622	172	1.07	12.53	12.39	3.12	3.63

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)	143	36	42	69	0.84	0.81	2.07	0.52	0.61
-30 (-22)	208	52	61	81	0.85	1.18	2.57	0.65	0.75
-25 (-13)	291	73	85	92	0.86	1.66	3.17	0.80	0.93
-20 (- 4)	396	100	116	103	0.88	2.25	3.86	0.97	1.13
-15 (+ 5)	525	132	154	114	0.91	2.99	4.63	1.17	1.36
-10 (+14)	682	172	200	125	0.93	3.90	5.46	1.38	1.60
-5 (+23)	869	219	255	137	0.96	5.00	6.34	1.60	1.86
0 (+32)	1091	275	320	150	1.00	6.31	7.26	1.83	2.13
+5 (+41)	1351	340	396	164	1.04	7.86	8.21	2.07	2.41
+10 (+50)	1652	416	484	179	1.09	9.68	9.18	2.31	2.69
+15 (+59)	1996	503	585	196	1.14	11.78	10.16	2.56	2.98

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	79	20	23	67	0.83	0.45	1.20	0.30	0.35
-30	(-22)	151	38	44	80	0.85	0.86	1.83	0.46	0.54
-25	(-13)	239	60	70	92	0.87	1.36	2.53	0.64	0.74
-20	(- 4)	345	87	101	104	0.89	1.97	3.28	0.83	0.96
-15	(+ 5)	474	120	139	116	0.92	2.71	4.09	1.03	1.20
-10	(+14)	629	158	184	128	0.95	3.60	4.92	1.24	1.44
-5	(+23)	812	205	238	142	0.99	4.67	5.78	1.46	1.69
0	(+32)	1028	259	301	156	1.03	5.94	6.65	1.68	1.95
+5	(+41)	1279	322	375	171	1.08	7.44	7.52	1.90	2.20
+10	(+50)	1569	395	460	188	1.13	9.19	8.38	2.11	2.45
+15	(+59)	1901	479	557	206	1.19	11.22	9.21	2.32	2.70

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard 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	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		