

### COMPRESSOR DEFINITION

Designation	EM 45HHR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513307221

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[ 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	-	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	98 to 140 V
8.3 HBP (32°C Ambient temperature)	Fan	-	98 to 140 V
8.4 HBP (43°C Ambient temperature)	Fan	-	98 to 140 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	170	[ml] (5.75 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.5	[kg] (16.53 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514105/213515292	
3 Start capacitor	145-175(110)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM757MFBYY-53	
6 Start winding resistance	12.95	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	17.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA - UL - VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			ASHRAEHBP32 Static		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]	
1775	447	520	206	2.20		8.62	2.17	2.53	

TEST CONDITIONS: @115V60Hz			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]	
1775	447	520	206	2.20		8.62	2.17	2.53	

TEST CONDITIONS: @115V60Hz			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]	
420	106	123	107	1.46	2.39	3.93	0.99	1.15	

TEST CONDITIONS: @115V60Hz			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]	
420	106	123	107	1.46	2.39	3.93	0.99	1.15	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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]
-35	(-31)	209	53	61	76	1.30	1.18	2.70	0.68	0.79
-30	(-22)	314	79	92	86	1.35	1.78	3.63	0.92	1.06
-25	(-13)	430	108	126	96	1.41	2.44	4.49	1.13	1.32
-20	(- 4)	562	142	165	108	1.47	3.20	5.29	1.33	1.55
-15	(+ 5)	716	180	210	120	1.55	4.08	6.05	1.52	1.77
-10	(+14)	896	226	263	133	1.64	5.13	6.79	1.71	1.99
-5	(+23)	1108	279	325	147	1.74	6.37	7.53	1.90	2.21
0	(+32)	1357	342	398	163	1.85	7.84	8.29	2.09	2.43
+5	(+41)	1646	415	482	180	1.97	9.58	9.09	2.29	2.66
+10	(+50)	1982	500	581	198	2.10	11.62	9.95	2.51	2.92
+15	(+59)	2370	597	694	218	2.25	13.99	10.89	2.74	3.19

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	162	41	48	76	1.31	0.91	2.17	0.55	0.64
-30	(-22)	269	68	79	87	1.36	1.53	3.07	0.77	0.90
-25	(-13)	386	97	113	99	1.42	2.20	3.88	0.98	1.14
-20	(- 4)	518	130	152	112	1.49	2.95	4.63	1.17	1.36
-15	(+ 5)	670	169	196	127	1.58	3.82	5.33	1.34	1.56
-10	(+14)	846	213	248	142	1.68	4.84	6.00	1.51	1.76
-5	(+23)	1053	265	309	158	1.79	6.05	6.66	1.68	1.95
0	(+32)	1294	326	379	176	1.92	7.48	7.33	1.85	2.15
+5	(+41)	1576	397	462	195	2.07	9.17	8.03	2.02	2.35
+10	(+50)	1902	479	557	215	2.23	11.15	8.79	2.22	2.58
+15	(+59)	2278	574	667	237	2.40	13.45	9.62	2.42	2.82

TEST CONDITIONS: @115V60Hz		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)	137	34	40	65	1.28	0.77	2.07	0.52	0.61
-30	(-22)	239	60	70	81	1.34	1.36	2.85	0.72	0.84
-25	(-13)	351	88	103	97	1.41	2.00	3.54	0.89	1.04
-20	(- 4)	475	120	139	114	1.51	2.71	4.15	1.05	1.22
-15	(+ 5)	618	156	181	133	1.62	3.52	4.71	1.19	1.38
-10	(+14)	784	198	230	152	1.75	4.49	5.22	1.32	1.53
-5	(+23)	979	247	287	173	1.90	5.63	5.72	1.44	1.68
0	(+32)	1207	304	354	195	2.06	6.98	6.22	1.57	1.82
+5	(+41)	1473	371	432	218	2.25	8.57	6.75	1.70	1.98
+10	(+50)	1783	449	522	243	2.45	10.45	7.32	1.84	2.14
+15	(+59)	2141	540	627	269	2.67	12.64	7.95	2.00	2.33

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal AMEM		
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		