

COMPRESSOR DEFINITION

Designation	EM 35HNR
Nominal Voltage/Frequency	220 V 50-60 Hz
Engineering Number	513303530

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 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	187 to 255 V	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	187 to 242 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.29	[cm ³] (0.201 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	11.600	
3 Lubricant charge	170	[ml] (5.75 fl.oz)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	6.78	[kg] (14.95 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	213514016	
3 Start capacitor	53-64(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718MFBYY-53	
6 Start winding resistance	34.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	23.55	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.00/8.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.80/0.85	[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		

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]
265	67	78	80	0.75	1.51	3.31	0.83	0.97

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]
330	83	97	86	0.65	1.88	3.85	0.97	1.13

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)	120	30	35	62	0.74	0.68	1.93	0.49	0.56
-30	(-22)	188	47	55	70	0.77	1.06	2.71	0.68	0.79
-25	(-13)	271	68	79	78	0.78	1.54	3.49	0.88	1.02
-20	(- 4)	371	94	109	86	0.80	2.11	4.29	1.08	1.26
-15	(+ 5)	489	123	143	95	0.81	2.79	5.12	1.29	1.50
-10	(+14)	625	157	183	104	0.83	3.58	5.99	1.51	1.76

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)	85	22	25	59	0.75	0.48	1.44	0.36	0.42
-30	(-22)	150	38	44	68	0.77	0.85	2.22	0.56	0.65
-25	(-13)	229	58	67	77	0.78	1.30	2.98	0.75	0.87
-20	(- 4)	324	82	95	88	0.80	1.84	3.72	0.94	1.09
-15	(+ 5)	436	110	128	98	0.81	2.49	4.46	1.12	1.31
-10	(+14)	566	143	166	108	0.83	3.24	5.22	1.31	1.53

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)	35	9	10	52	0.75	0.20	0.68	0.17	0.20	
-30 (-22)	100	25	29	63	0.77	0.57	1.56	0.39	0.46	
-25 (-13)	180	45	53	75	0.78	1.02	2.38	0.60	0.70	
-20 (- 4)	274	69	80	87	0.80	1.56	3.16	0.80	0.92	
-15 (+ 5)	385	97	113	99	0.82	2.20	3.90	0.98	1.14	
-10 (+14)	513	129	150	111	0.84	2.94	4.64	1.17	1.36	

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)	169	43	50	60	0.60	0.96	2.83	0.71	0.83	
-30 (-22)	244	61	71	69	0.62	1.38	3.55	0.90	1.04	
-25 (-13)	342	86	100	80	0.65	1.94	4.27	1.08	1.25	
-20 (- 4)	463	117	136	92	0.68	2.64	5.02	1.26	1.47	
-15 (+ 5)	609	153	178	104	0.72	3.47	5.83	1.47	1.71	
-10 (+14)	779	196	228	115	0.76	4.46	6.75	1.70	1.98	

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)	121	30	35	58	0.60	0.68	2.05	0.52	0.60	
-30 (-22)	194	49	57	68	0.62	1.10	2.89	0.73	0.85	
-25 (-13)	289	73	85	80	0.65	1.64	3.64	0.92	1.07	
-20 (- 4)	406	102	119	94	0.70	2.31	4.35	1.10	1.28	
-15 (+ 5)	545	137	160	108	0.75	3.11	5.06	1.28	1.48	
-10 (+14)	708	178	208	122	0.80	4.06	5.80	1.46	1.70	

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)	50	13	15	50	0.60	0.28	1.02	0.26	0.30	
-30 (-22)	127	32	37	62	0.62	0.72	2.05	0.52	0.60	
-25 (-13)	224	57	66	76	0.65	1.27	2.93	0.74	0.86	
-20 (- 4)	342	86	100	92	0.70	1.95	3.69	0.93	1.08	
-15 (+ 5)	481	121	141	110	0.75	2.75	4.38	1.10	1.28	
-10 (+14)	642	162	188	128	0.80	3.68	5.04	1.27	1.48	

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		