

### COMPRESSOR DEFINITION

Designation	EM 35HNR
Nominal Voltage/Frequency	220 V 50-60 Hz
Engineering Number	513303610

### 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 <sup>2</sup> ] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.29	[cm <sup>3</sup> ] (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 / ISO22	
4 Weight (with oil charge)	6.78	[kg] (14.95 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 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	88	0.85	1.51	3.00	0.76	0.88

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	91	0.70	1.88	3.63	0.91	1.06

### 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	65	0.79	0.68	1.85	0.47	0.54
-30	(-22)	188	47	55	75	0.82	1.06	2.52	0.63	0.74
-25	(-13)	271	68	79	84	0.82	1.54	3.21	0.81	0.94
-20	(- 4)	371	94	109	94	0.80	2.11	3.94	0.99	1.16
-15	(+ 5)	489	123	143	103	0.78	2.79	4.75	1.20	1.39
-10	(+14)	625	157	183	110	0.78	3.58	5.65	1.42	1.66

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	62	0.70	0.48	1.36	0.34	0.40
-30	(-22)	150	38	44	73	0.76	0.85	2.07	0.52	0.61
-25	(-13)	229	58	67	84	0.79	1.30	2.75	0.69	0.81
-20	(- 4)	324	82	95	95	0.80	1.84	3.43	0.86	1.00
-15	(+ 5)	436	110	128	106	0.81	2.49	4.11	1.04	1.21
-10	(+14)	566	143	166	117	0.84	3.24	4.84	1.22	1.42

### 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	55	0.70	0.20	0.64	0.16	0.19	
-30 (-22)	100	25	29	66	0.76	0.57	1.50	0.38	0.44	
-25 (-13)	180	45	53	79	0.79	1.02	2.27	0.57	0.67	
-20 (- 4)	274	69	80	92	0.80	1.56	2.97	0.75	0.87	
-15 (+ 5)	385	97	113	106	0.81	2.20	3.63	0.91	1.06	
-10 (+14)	513	129	150	121	0.84	2.94	4.26	1.07	1.25	

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	65	0.60	0.96	2.61	0.66	0.76	
-30 (-22)	244	61	71	75	0.67	1.38	3.26	0.82	0.95	
-25 (-13)	342	86	100	86	0.71	1.94	3.98	1.00	1.17	
-20 (- 4)	463	117	136	97	0.74	2.64	4.76	1.20	1.40	
-15 (+ 5)	609	153	178	108	0.76	3.47	5.62	1.42	1.65	
-10 (+14)	779	196	228	119	0.79	4.46	6.53	1.65	1.91	

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	62	0.59	0.68	1.93	0.49	0.57	
-30 (-22)	194	49	57	73	0.65	1.10	2.67	0.67	0.78	
-25 (-13)	289	73	85	85	0.69	1.64	3.41	0.86	1.00	
-20 (- 4)	406	102	119	98	0.72	2.31	4.15	1.05	1.22	
-15 (+ 5)	545	137	160	112	0.76	3.11	4.89	1.23	1.43	
-10 (+14)	708	178	208	126	0.80	4.06	5.61	1.41	1.65	

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	55	0.61	0.28	0.92	0.23	0.27	
-30 (-22)	127	32	37	67	0.66	0.72	1.87	0.47	0.55	
-25 (-13)	224	57	66	81	0.70	1.27	2.76	0.69	0.81	
-20 (- 4)	342	86	100	96	0.73	1.95	3.56	0.90	1.04	
-15 (+ 5)	481	121	141	112	0.78	2.75	4.30	1.08	1.26	
-10 (+14)	642	162	188	130	0.84	3.68	4.96	1.25	1.45	

### 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		