

### COMPRESSOR DEFINITION

Designation	EM 30BR
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513307001

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	Blend		
3 Nominal voltage and frequency	220 / 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	-	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	187 to 242 V
8.3 HBP (32°C Ambient temperature)	Fan	-	187 to 242 V
8.4 HBP (43°C Ambient temperature)	Fan	-	187 to 242 V
9 Maximum condensing temperature			
9.1 Operating	14.5	[kgf/cm <sup>2</sup> ] (206 psig)	/ °C - °F
9.2 Peak	18.2	[kgf/cm <sup>2</sup> ] (259 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.00	[cm <sup>3</sup> ] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
3 Lubricant charge	200	[ml] (6.76 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	MINERAL / ISO32	
4 Weight (with oil charge)	6.65	[kg] (14.66 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	Current Relay	
2.1 Starting device	213514059	
3 Start capacitor	38-46(240)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM189RHBYY-53	
6 Start winding resistance	47.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	23.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	8.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.10	[A] - Measured according to UL 984
11 Approval boards certification		

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			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]
1270	320	372	156	0.94	9.51	8.14	2.05	2.39

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]
320	81	94	100	0.75	2.34	3.20	0.81	0.94

### E - PERFORMANCE - CURVES

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)	177	45	52	83	0.68	1.29	2.14	0.54	0.63
-30 (-22)	248	62	73	90	0.69	1.81	2.75	0.69	0.81
-25 (-13)	332	84	97	98	0.71	2.43	3.39	0.86	0.99
-20 (- 4)	433	109	127	106	0.73	3.17	4.09	1.03	1.20
-15 (+ 5)	553	139	162	114	0.76	4.06	4.86	1.22	1.42
-10 (+14)	693	175	203	122	0.79	5.11	5.71	1.44	1.67
-5 (+23)	858	216	251	129	0.82	6.34	6.67	1.68	1.95
0 (+32)	1048	264	307	136	0.84	7.79	7.75	1.95	2.27
+5 (+41)	1267	319	371	142	0.87	9.47	8.96	2.26	2.63
+10 (+50)	1516	382	444	147	0.90	11.40	10.33	2.60	3.03
+15 (+59)	1799	453	527	151	0.92	13.60	11.86	2.99	3.48

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)	133	33	39	79	0.68	0.97	1.68	0.42	0.49
-30 (-22)	205	52	60	88	0.69	1.50	2.32	0.59	0.68
-25 (-13)	291	73	85	98	0.72	2.13	2.96	0.75	0.87
-20 (- 4)	391	99	115	107	0.74	2.87	3.62	0.91	1.06
-15 (+ 5)	510	129	149	118	0.78	3.75	4.32	1.09	1.26
-10 (+14)	649	164	190	128	0.81	4.78	5.06	1.28	1.48
-5 (+23)	810	204	237	138	0.85	5.99	5.87	1.48	1.72
0 (+32)	996	251	292	147	0.89	7.41	6.77	1.71	1.98
+5 (+41)	1210	305	355	156	0.93	9.04	7.77	1.96	2.28
+10 (+50)	1453	366	426	164	0.96	10.92	8.88	2.24	2.60
+15 (+59)	1728	436	506	171	0.99	13.07	10.13	2.55	2.97

### 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)	84	21	25	74	0.67	0.61	1.16	0.29	0.34
-30	(-22)	158	40	46	85	0.69	1.16	1.86	0.47	0.55
-25	(-13)	244	61	71	96	0.72	1.79	2.54	0.64	0.74
-20	(- 4)	344	87	101	108	0.75	2.53	3.19	0.80	0.93
-15	(+ 5)	461	116	135	120	0.79	3.39	3.84	0.97	1.13
-10	(+14)	597	151	175	132	0.83	4.40	4.51	1.14	1.32
-5	(+23)	755	190	221	145	0.88	5.59	5.21	1.31	1.53
0	(+32)	937	236	275	157	0.93	6.96	5.96	1.50	1.75
+5	(+41)	1145	289	335	169	0.98	8.56	6.78	1.71	1.99
+10	(+50)	1381	348	405	180	1.02	10.39	7.68	1.93	2.25
+15	(+59)	1649	416	483	190	1.07	12.47	8.67	2.19	2.54

### 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 plated steel		
3.1.2 Shape	Straight		
3.2 DISCHARGE	5 +0.18/-0.06	[mm]	(0.197" +0.007"/-0.002")
3.2.1 Material	Copper plated steel		
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 plated steel		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		