

COMPRESSOR DEFINITION

Designation	EM YE70HEP
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513306251

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 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	RSCR		
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	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	198 to 255 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	5.96	[cm ³] (0.364 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.78	[kg] (17.15 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/8EA17E61/8EA17E62/8EA17E63/8EA17E64/QPS2-A	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(450)	[µF(VAC minimum)]
5 Motor protection	4TM232NFBYY-53	
6 Start winding resistance	19.95	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.11/6.51	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.98/0.77	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	1.14/0.96	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - TUV - UKCA	

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]
582	147	171	111	0.59	3.31	5.23	1.32	1.53

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]
691	174	202	126	0.58	3.93	5.48	1.38	1.61

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(Condensing temperature 35°C (+95°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)	343	86	100	76	0.46	1.94	4.50	1.13	1.32
-30 (-22)	472	119	138	88	0.50	2.67	5.36	1.35	1.57
-25 (-13)	631	159	185	101	0.55	3.58	6.25	1.57	1.83
-20 (- 4)	822	207	241	115	0.61	4.68	7.20	1.81	2.11
-15 (+ 5)	1046	264	307	128	0.66	5.97	8.24	2.08	2.41
-10 (+14)	1303	328	382	140	0.71	7.47	9.39	2.37	2.75

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)	306	77	90	77	0.47	1.73	3.99	1.01	1.17
-30 (-22)	427	108	125	89	0.51	2.42	4.78	1.20	1.40
-25 (-13)	581	146	170	104	0.56	3.30	5.57	1.40	1.63
-20 (- 4)	769	194	225	120	0.62	4.38	6.41	1.61	1.88
-15 (+ 5)	993	250	291	136	0.69	5.67	7.30	1.84	2.14
-10 (+14)	1253	316	367	152	0.75	7.18	8.28	2.09	2.43

E - PERFORMANCE - CURVES

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)	268	68	78	78	0.48	1.52	3.45	0.87	1.01	
-30 (-22)	376	95	110	90	0.52	2.13	4.20	1.06	1.23	
-25 (-13)	521	131	153	106	0.57	2.96	4.93	1.24	1.44	
-20 (- 4)	703	177	206	123	0.64	4.00	5.67	1.43	1.66	
-15 (+ 5)	923	233	270	142	0.72	5.27	6.46	1.63	1.89	
-10 (+14)	1182	298	346	161	0.80	6.77	7.31	1.84	2.14	

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)	228	57	67	79	0.49	1.29	2.86	0.72	0.84	
-30 (-22)	321	81	94	91	0.52	1.82	3.59	0.91	1.05	
-25 (-13)	453	114	133	107	0.58	2.57	4.29	1.08	1.26	
-20 (- 4)	625	157	183	126	0.65	3.55	4.97	1.25	1.46	
-15 (+ 5)	837	211	245	147	0.74	4.78	5.67	1.43	1.66	
-10 (+14)	1091	275	320	169	0.84	6.25	6.42	1.62	1.88	

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 35°C (+95°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)	401	101	117	81	0.36	2.27	4.96	1.25	1.45	
-30 (-22)	548	138	160	96	0.44	3.10	5.70	1.44	1.67	
-25 (-13)	724	182	212	111	0.51	4.11	6.51	1.64	1.91	
-20 (- 4)	939	237	275	127	0.58	5.34	7.41	1.87	2.17	
-15 (+ 5)	1200	302	352	143	0.65	6.85	8.39	2.11	2.46	
-10 (+14)	1516	382	444	159	0.73	8.69	9.47	2.39	2.78	

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)	365	92	107	83	0.37	2.07	4.39	1.11	1.28	
-30 (-22)	509	128	149	100	0.45	2.88	5.11	1.29	1.50	
-25 (-13)	678	171	199	116	0.53	3.85	5.86	1.48	1.72	
-20 (- 4)	882	222	258	133	0.61	5.02	6.66	1.68	1.95	
-15 (+ 5)	1129	285	331	150	0.69	6.44	7.50	1.89	2.20	
-10 (+14)	1427	360	418	169	0.78	8.18	8.41	2.12	2.46	

E - PERFORMANCE - CURVES

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)	314	79	92	85	0.38	1.78	3.69	0.93	1.08
-30	(-22)	458	115	134	103	0.46	2.60	4.45	1.12	1.30
-25	(-13)	625	157	183	120	0.55	3.55	5.20	1.31	1.52
-20	(- 4)	822	207	241	139	0.63	4.68	5.95	1.50	1.74
-15	(+ 5)	1059	267	310	158	0.72	6.05	6.71	1.69	1.97
-10	(+14)	1344	339	394	180	0.82	7.70	7.48	1.89	2.19

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)	247	62	72	87	0.39	1.40	2.85	0.72	0.84
-30	(-22)	396	100	116	105	0.48	2.25	3.70	0.93	1.08
-25	(-13)	564	142	165	124	0.56	3.20	4.50	1.13	1.32
-20	(- 4)	759	191	222	144	0.66	4.32	5.26	1.33	1.54
-15	(+ 5)	990	249	290	166	0.76	5.65	5.98	1.51	1.75
-10	(+14)	1265	319	371	190	0.87	7.25	6.68	1.68	1.96

F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
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	Slanted 42° up + 45° to Back		
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 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		