embraco

COMPRESSOR TECHNICAL DATA

COMPRESSOR DEFINITION

Designation	**EM YE70HEP**
Nominal Voltage/Frequency	**220-240 V 50-60 Hz**
Engineering Number	**513306539**

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	RSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	Static	198 to 255 V	198 to 255 V
8.2 LBP (43ºC Ambient temperature)	Static	198 to 255 V	198 to 255 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm²] (230 psig)	/ ºC - ºF
9.2 Peak (gauge)	20.6	[kgf/cm²] (293 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	5.96	[cm³] (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/cm²] (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	7M220MC1/8EA17C1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM232RFBYY-53	
6 Start winding resistance	19.95	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	13.30	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.30/6.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.30/1.20	[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	IMTRO - IRAM - TUV - VDE	

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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]
574	145	168	117	0.92	3.26	4.89	1.23	1.43

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]
688	173	202	133	0.84	3.91	5.18	1.31	1.52

E - PERFORMANCE - CURVES

TEST CONDITIONS: **@220V60Hz**				**ASHRAE32** **Static**			(Condensing temperature **45ºC (+113ºF))**			
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)**	394	99	115	89	0.71	2.23	4.41	1.11	1.29
-30	**(-22)**	514	129	151	103	0.75	2.91	5.01	1.26	1.47
-25	**(-13)**	651	164	191	117	0.80	3.70	5.57	1.40	1.63
-20	**(- 4)**	822	207	241	134	0.85	4.68	6.15	1.55	1.80
-15	**(+ 5)**	1041	262	305	152	0.92	5.94	6.80	1.71	1.99
-10	**(+14)**	1324	334	388	174	1.01	7.59	7.57	1.91	2.22

TEST CONDITIONS: **@220V60Hz**				**ASHRAE32** **Static**			(Condensing temperature **55ºC (+131ºF))**			
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)**	339	85	99	88	0.71	1.92	3.84	0.97	1.13
-30	**(-22)**	478	120	140	107	0.77	2.71	4.45	1.12	1.30
-25	**(-13)**	625	158	183	125	0.83	3.55	5.00	1.26	1.46
-20	**(- 4)**	796	200	233	144	0.90	4.53	5.53	1.39	1.62
-15	**(+ 5)**	1005	253	295	165	0.97	5.74	6.10	1.54	1.79
-10	**(+14)**	1269	320	372	187	1.06	7.27	6.76	1.70	1.98

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E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF)**)
@220V60Hz **Static**

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	79	81	0.66	1.52	3.32	0.84	0.97
-30	**(-22)**	424	107	124	105	0.75	2.41	3.94	0.99	1.15
-25	**(-13)**	579	146	170	129	0.84	3.29	4.46	1.12	1.31
-20	**(- 4)**	747	188	219	152	0.93	4.25	4.93	1.24	1.45
-15	**(+ 5)**	945	238	277	175	1.02	5.39	5.42	1.36	1.59
-10	**(+14)**	1187	299	348	199	1.11	6.80	5.96	1.50	1.75

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F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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 42º 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 42° up + 24° to Back		
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	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		

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