

COMPRESSOR DEFINITION

Designation	EM US30HEP
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513305031

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 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 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	198 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	3.00	[cm ³] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.86	[kg] (17.33 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 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	4(300)	[µF(VAC minimum)]
5 Motor protection	4TM189KFBYY-53	
6 Start winding resistance	19.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	26.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	3.02	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	0.49	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	0.58	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

D - PERFORMANCE - CHECK POINT DATA

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]
338	85	99	69	0.32	1.92	4.92	1.24	1.44

E - PERFORMANCE - CURVES

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)	218	55	64	50	0.25	1.23	4.37	1.10	1.28
-30 (-22)	288	73	84	56	0.27	1.63	5.19	1.31	1.52
-25 (-13)	378	95	111	62	0.30	2.15	6.09	1.53	1.78
-20 (- 4)	490	124	144	69	0.33	2.79	7.08	1.78	2.07
-15 (+ 5)	626	158	183	76	0.35	3.57	8.21	2.07	2.41
-10 (+14)	786	198	230	83	0.38	4.50	9.52	2.40	2.79

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)	185	47	54	49	0.25	1.05	3.78	0.95	1.11
-30 (-22)	256	64	75	56	0.28	1.45	4.57	1.15	1.34
-25 (-13)	345	87	101	64	0.31	1.96	5.38	1.36	1.58
-20 (- 4)	454	114	133	73	0.34	2.58	6.24	1.57	1.83
-15 (+ 5)	585	148	172	81	0.38	3.34	7.18	1.81	2.10
-10 (+14)	740	187	217	90	0.42	4.24	8.24	2.08	2.41

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)	147	37	43	46	0.24	0.83	3.19	0.80	0.93
-30 (-22)	220	56	65	55	0.27	1.25	4.01	1.01	1.18
-25 (-13)	310	78	91	65	0.31	1.76	4.80	1.21	1.41
-20 (- 4)	419	106	123	75	0.35	2.39	5.59	1.41	1.64
-15 (+ 5)	548	138	161	86	0.40	3.13	6.41	1.61	1.88
-10 (+14)	699	176	205	96	0.44	4.00	7.29	1.84	2.14

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)	92	23	27	41	0.22	0.52	2.34	0.59	0.68
-30	(-22)	170	43	50	52	0.26	0.96	3.26	0.82	0.96
-25	(-13)	263	66	77	63	0.30	1.49	4.10	1.03	1.20
-20	(- 4)	372	94	109	76	0.36	2.12	4.88	1.23	1.43
-15	(+ 5)	501	126	147	89	0.41	2.86	5.63	1.42	1.65
-10	(+14)	650	164	190	102	0.46	3.72	6.40	1.61	1.87

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard 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	Slanted		
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		