

COMPRESSOR DEFINITION

Designation	EM U45HSC
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513308034

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	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 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	1/6	[hp]
2 Displacement	3.77	[cm ³] (0.230 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	13.300	
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)	7.74	[kg] (17.06 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	7M220MD3/8EA17C3/8EA5B3/8M220MD3/QPS2-A22MD3/QPS	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(300)	[µF(VAC minimum)]
5 Motor protection	4TM189KFBYY-53	
6 Start winding resistance	19.00	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	27.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	3.60/3.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.60/0.60	[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	IRAM	

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]
373	94	109	78	0.36	2.12	4.78	1.20	1.40

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]
448	113	131	91	0.44	2.55	4.93	1.24	1.44

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)	193	49	56	57	0.28	1.09	3.40	0.86	1.00
-30 (-22)	293	74	86	64	0.30	1.66	4.56	1.15	1.34
-25 (-13)	390	98	114	71	0.34	2.21	5.48	1.38	1.61
-20 (- 4)	496	125	145	79	0.38	2.82	6.30	1.59	1.84
-15 (+ 5)	623	157	183	87	0.42	3.56	7.12	1.79	2.09
-10 (+14)	783	197	229	97	0.47	4.49	8.07	2.03	2.37

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)	154	39	45	55	0.25	0.87	2.78	0.70	0.81
-30 (-22)	247	62	72	63	0.29	1.40	3.87	0.98	1.13
-25 (-13)	337	85	99	72	0.34	1.91	4.69	1.18	1.38
-20 (- 4)	435	110	127	81	0.39	2.47	5.37	1.35	1.57
-15 (+ 5)	552	139	162	92	0.45	3.15	6.03	1.52	1.77
-10 (+14)	702	177	206	103	0.50	4.02	6.79	1.71	1.99

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)	114	29	33	56	0.29	0.65	2.01	0.51	0.59	
-30 (-22)	204	51	60	64	0.33	1.15	3.12	0.79	0.91	
-25 (-13)	288	73	84	74	0.37	1.64	3.93	0.99	1.15	
-20 (- 4)	380	96	111	84	0.41	2.16	4.56	1.15	1.34	
-15 (+ 5)	491	124	144	96	0.45	2.80	5.14	1.30	1.51	
-10 (+14)	632	159	185	109	0.48	3.62	5.80	1.46	1.70	

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)	237	60	69	64	0.34	1.34	3.71	0.93	1.09	
-30 (-22)	348	88	102	73	0.38	1.97	4.73	1.19	1.39	
-25 (-13)	460	116	135	82	0.42	2.61	5.57	1.40	1.63	
-20 (- 4)	581	146	170	92	0.46	3.30	6.32	1.59	1.85	
-15 (+ 5)	721	182	211	102	0.51	4.11	7.05	1.78	2.07	
-10 (+14)	889	224	261	113	0.55	5.09	7.84	1.98	2.30	

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)	181	46	53	61	0.33	1.03	2.93	0.74	0.86	
-30 (-22)	286	72	84	72	0.37	1.62	3.91	0.98	1.15	
-25 (-13)	395	100	116	84	0.42	2.24	4.71	1.19	1.38	
-20 (- 4)	517	130	151	95	0.47	2.94	5.43	1.37	1.59	
-15 (+ 5)	660	166	193	108	0.52	3.77	6.13	1.55	1.80	
-10 (+14)	835	211	245	121	0.58	4.79	6.90	1.74	2.02	

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)	146	37	43	59	0.31	0.83	2.51	0.63	0.73	
-30 (-22)	246	62	72	72	0.36	1.39	3.41	0.86	1.00	
-25 (-13)	352	89	103	85	0.42	2.00	4.15	1.05	1.22	
-20 (- 4)	475	120	139	99	0.48	2.70	4.81	1.21	1.41	
-15 (+ 5)	623	157	183	114	0.55	3.56	5.45	1.37	1.60	
-10 (+14)	806	203	236	130	0.61	4.62	6.17	1.56	1.81	

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	Slanted		
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		