

### COMPRESSOR DEFINITION

Designation	EM U30HER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513308092

### 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-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 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 <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 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	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.64	[kg] (16.84 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514016	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM718KFBYY-53	
6 Start winding resistance	39.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	24.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	8.20/7.90	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.76/0.68	[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	TUV	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>		
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]
275	69	81	65	0.55	1.56	4.23	1.07	1.24

TEST CONDITIONS: <b>@220V60Hz</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>		
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]
323	81	95	70	0.50	1.84	4.63	1.17	1.36

### E - PERFORMANCE - CURVES

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAE32</b> <b>Static</b>		(Condensing temperature <b>45°C (+113°F)</b> )				
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]
<b>-35 (-31)</b>	148	37	43	48	0.51	0.84	3.11	0.78	0.91
<b>-30 (-22)</b>	210	53	62	54	0.53	1.19	3.88	0.98	1.14
<b>-25 (-13)</b>	286	72	84	62	0.54	1.62	4.64	1.17	1.36
<b>-20 (- 4)</b>	376	95	110	69	0.56	2.14	5.45	1.37	1.60
<b>-15 (+ 5)</b>	485	122	142	76	0.58	2.77	6.33	1.60	1.85
<b>-10 (+14)</b>	614	155	180	84	0.60	3.52	7.31	1.84	2.14

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAE32</b> <b>Static</b>		(Condensing temperature <b>55°C (+131°F)</b> )				
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]
<b>-35 (-31)</b>	106	27	31	45	0.51	0.60	2.36	0.59	0.69
<b>-30 (-22)</b>	169	43	50	53	0.53	0.96	3.17	0.80	0.93
<b>-25 (-13)</b>	244	62	72	62	0.55	1.39	3.94	0.99	1.15
<b>-20 (- 4)</b>	334	84	98	71	0.57	1.90	4.70	1.19	1.38
<b>-15 (+ 5)</b>	441	111	129	80	0.59	2.52	5.49	1.38	1.61
<b>-10 (+14)</b>	567	143	166	89	0.62	3.25	6.33	1.59	1.85

### E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@220V50Hz		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	76	19	22	42	0.50	0.43	1.79	0.45	0.52	
-30 (-22)	138	35	41	52	0.52	0.78	2.66	0.67	0.78	
-25 (-13)	211	53	62	61	0.54	1.20	3.44	0.87	1.01	
-20 (- 4)	297	75	87	72	0.56	1.69	4.17	1.05	1.22	
-15 (+ 5)	399	101	117	83	0.59	2.28	4.86	1.23	1.43	
-10 (+14)	521	131	153	94	0.63	2.98	5.57	1.40	1.63	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V60Hz		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	182	46	53	53	0.45	1.03	3.41	0.86	1.00	
-30 (-22)	260	65	76	63	0.48	1.47	4.14	1.04	1.21	
-25 (-13)	351	88	103	72	0.51	1.99	4.89	1.23	1.43	
-20 (- 4)	458	115	134	81	0.54	2.61	5.65	1.42	1.66	
-15 (+ 5)	584	147	171	91	0.58	3.33	6.46	1.63	1.89	
-10 (+14)	730	184	214	100	0.62	4.18	7.32	1.84	2.15	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V60Hz		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	142	36	42	51	0.44	0.80	2.78	0.70	0.82	
-30 (-22)	218	55	64	62	0.47	1.24	3.53	0.89	1.03	
-25 (-13)	308	78	90	72	0.51	1.75	4.25	1.07	1.24	
-20 (- 4)	414	104	121	83	0.55	2.36	4.95	1.25	1.45	
-15 (+ 5)	537	135	157	95	0.59	3.07	5.67	1.43	1.66	
-10 (+14)	681	172	200	106	0.64	3.90	6.40	1.61	1.88	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@220V60Hz		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	108	27	32	47	0.44	0.61	2.33	0.59	0.68	
-30 (-22)	181	45	53	59	0.47	1.02	3.06	0.77	0.90	
-25 (-13)	266	67	78	71	0.51	1.51	3.73	0.94	1.09	
-20 (- 4)	366	92	107	84	0.55	2.08	4.35	1.10	1.28	
-15 (+ 5)	484	122	142	98	0.61	2.76	4.95	1.25	1.45	
-10 (+14)	622	157	182	112	0.67	3.56	5.53	1.39	1.62	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate 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		
3.1.2 Shape	Slanted parallel to Base Plate		
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 parallel to Base Plate		
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 parallel to Base Plate		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		