

### COMPRESSOR DEFINITION

Designation	EM C3145U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	721LE81

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	115-127 / 60	[ V / Hz ]	
4 Application type	Low-Medium Back Pressure LC Restricted		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	11.14	[cm <sup>3</sup> ] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	200	[ml] (6.76 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	8.2	[kg] (18.08 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 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	17.5(220)	[µF(VAC minimum)]
5 Motor protection	4TM800KDBZZ-53	
6 Start winding resistance	5.34	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.49	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	31.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @127V60Hz			ARILBP Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 48.9°C (120.02°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]
1855	467	544	380	3.90	7.53	4.88	1.23	1.43

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz			ARI4 Fan		(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)	1331	335	390	266	3.04	4.63	5.00	1.26	1.46
-30	(-22)	1707	430	500	302	3.29	5.97	5.67	1.43	1.66
-25	(-13)	2152	542	631	336	3.54	7.56	6.41	1.62	1.88
-20	(- 4)	2667	672	782	370	3.79	9.42	7.22	1.82	2.12
-15	(+ 5)	3252	819	953	402	4.04	11.56	8.09	2.04	2.37
-10	(+14)	3906	984	1145	434	4.30	14.00	9.01	2.27	2.64
-5	(+23)	4630	1167	1357	464	4.55	16.75	9.97	2.51	2.92
0	(+32)	5424	1367	1589	494	4.80	19.85	10.98	2.77	3.22

TEST CONDITIONS: @127V60Hz			ARI4 Fan		(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)	1108	279	325	273	3.11	4.26	4.07	1.02	1.19
-30	(-22)	1449	365	425	316	3.40	5.60	4.60	1.16	1.35
-25	(-13)	1850	466	542	357	3.70	7.18	5.18	1.30	1.52
-20	(- 4)	2311	582	677	398	4.01	9.02	5.80	1.46	1.70
-15	(+ 5)	2832	714	830	438	4.32	11.14	6.46	1.63	1.89
-10	(+14)	3413	860	1000	477	4.64	13.55	7.15	1.80	2.09
-5	(+23)	4054	1022	1188	516	4.96	16.27	7.86	1.98	2.30
0	(+32)	4755	1198	1393	554	5.28	19.31	8.60	2.17	2.52

TEST CONDITIONS: @127V60Hz			ARI4 Fan		(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)	891	225	261	275	3.13	3.85	3.24	0.82	0.95
-30	(-22)	1190	300	349	324	3.47	5.17	3.67	0.92	1.08
-25	(-13)	1540	388	451	373	3.82	6.72	4.13	1.04	1.21
-20	(- 4)	1940	489	569	421	4.18	8.52	4.61	1.16	1.35
-15	(+ 5)	2391	602	701	468	4.56	10.59	5.11	1.29	1.50
-10	(+14)	2892	729	847	515	4.95	12.95	5.62	1.42	1.65
-5	(+23)	3443	868	1009	562	5.34	15.60	6.13	1.54	1.80
0	(+32)	4045	1019	1185	609	5.75	18.58	6.64	1.67	1.94

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal
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 0° up + 45° to Back
3.2 DISCHARGE	6.5 +0.12/-0.08 [mm] (0.256" +0.005"/-0.003")
3.2.1 Material	Copper
3.2.2 Shape	Slanted 42° up + 45° 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 0° up + 45° to Back
3.4 Oil cooler (Copper)	No [mm]
3.5 Connector sealing	Rubber Plugs