

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 ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	11.14	[cm ³] (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 / ISO10	
4 Weight (with oil charge)	8.2	[kg] (18.08 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

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	8EA14C3-02	
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: @115V60Hz			ASHRAELBP32 Fan		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]	
2338	589	685	393	3.93	6.96	5.96	1.50	1.75	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			ASHRAE32 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)	1460	368	428	264	3.07	4.32	5.53	1.39	1.62
-30	(-22)	1857	468	544	299	3.30	5.51	6.22	1.57	1.82
-25	(-13)	2338	589	685	333	3.53	6.95	7.02	1.77	2.06
-20	(- 4)	2904	732	851	367	3.77	8.67	7.92	2.00	2.32
-15	(+ 5)	3554	896	1041	399	4.01	10.65	8.91	2.24	2.61
-10	(+14)	4289	1081	1257	431	4.26	12.91	9.97	2.51	2.92
-5	(+23)	5108	1287	1497	461	4.50	15.45	11.09	2.79	3.25
0	(+32)	6011	1515	1761	490	4.75	18.28	12.26	3.09	3.59

TEST CONDITIONS: @115V60Hz			ASHRAE32 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)	1367	345	401	275	3.15	4.04	4.98	1.25	1.46
-30	(-22)	1759	443	515	315	3.42	5.22	5.59	1.41	1.64
-25	(-13)	2234	563	655	356	3.70	6.64	6.27	1.58	1.84
-20	(- 4)	2791	703	818	396	3.99	8.33	7.03	1.77	2.06
-15	(+ 5)	3431	865	1005	436	4.30	10.28	7.85	1.98	2.30
-10	(+14)	4154	1047	1217	476	4.62	12.50	8.72	2.20	2.56
-5	(+23)	4959	1250	1453	515	4.95	15.00	9.63	2.43	2.82
0	(+32)	5846	1473	1713	554	5.28	17.77	10.56	2.66	3.09

TEST CONDITIONS: @115V60Hz			ASHRAE32 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)	1253	316	367	279	3.19	3.71	4.49	1.13	1.31
-30	(-22)	1637	412	480	326	3.50	4.85	5.03	1.27	1.48
-25	(-13)	2101	529	616	373	3.83	6.25	5.64	1.42	1.65
-20	(- 4)	2647	667	776	421	4.19	7.89	6.29	1.59	1.84
-15	(+ 5)	3273	825	959	469	4.56	9.80	6.98	1.76	2.04
-10	(+14)	3980	1003	1166	518	4.96	11.97	7.68	1.94	2.25
-5	(+23)	4767	1201	1397	568	5.38	14.41	8.40	2.12	2.46
0	(+32)	5635	1420	1651	617	5.81	17.13	9.12	2.30	2.67

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		