

COMPRESSOR DEFINITION

Designation	EM C3117U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	711VA52

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
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	1/4	[hp]
2 Displacement	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	8.22	[kg] (18.12 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	TSD	
2.1 Starting device	TSD2-220V/TSD2-220V1.2/TSD2-D-220V	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	5(350)	[μF(VAC minimum)]
5 Motor protection	DRB230K52A*	
6 Start winding resistance	14.75	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	19.97	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	4.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
671	169	197	107		2.00	6.25	1.58	1.83

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	441	111	129	73	0.34	1.31	6.02	1.52	1.76
-30 (-22)	555	140	163	82	0.38	1.65	6.75	1.70	1.98
-25 (-13)	696	175	204	91	0.42	2.07	7.67	1.93	2.25
-20 (- 4)	865	218	254	99	0.46	2.58	8.77	2.21	2.57
-15 (+ 5)	1062	268	311	106	0.49	3.18	10.01	2.52	2.93
-10 (+14)	1287	324	377	113	0.52	3.87	11.39	2.87	3.34
-5 (+23)	1540	388	451	120	0.55	4.66	12.87	3.24	3.77
0 (+32)	1821	459	533	126	0.57	5.54	14.44	3.64	4.23

TEST CONDITIONS: @220V50Hz			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)	416	105	122	75	0.35	1.23	5.55	1.40	1.63
-30 (-22)	523	132	153	86	0.40	1.55	6.06	1.53	1.78
-25 (-13)	659	166	193	97	0.45	1.96	6.75	1.70	1.98
-20 (- 4)	822	207	241	108	0.50	2.45	7.58	1.91	2.22
-15 (+ 5)	1014	256	297	118	0.54	3.04	8.55	2.16	2.51
-10 (+14)	1235	311	362	128	0.59	3.72	9.63	2.43	2.82
-5 (+23)	1484	374	435	137	0.63	4.49	10.80	2.72	3.17
0 (+32)	1761	444	516	147	0.67	5.35	12.04	3.03	3.53

TEST CONDITIONS: @220V50Hz			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)	396	100	116	75	0.35	1.17	5.27	1.33	1.54
-30 (-22)	494	125	145	89	0.41	1.47	5.61	1.41	1.64
-25 (-13)	621	157	182	102	0.47	1.85	6.11	1.54	1.79
-20 (- 4)	777	196	228	115	0.53	2.32	6.74	1.70	1.97
-15 (+ 5)	962	242	282	128	0.59	2.88	7.48	1.89	2.19
-10 (+14)	1176	296	345	141	0.65	3.54	8.32	2.10	2.44
-5 (+23)	1419	358	416	154	0.70	4.29	9.23	2.33	2.70
0 (+32)	1691	426	496	166	0.76	5.14	10.18	2.57	2.98

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42° up + 45° to Back		
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 0° up + 45° to Back		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		