

COMPRESSOR DEFINITION

Designation	EM 2U3115U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513305569

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Light Commercial)		
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)	Static	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	198 to 255 V
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 / ISO22	
4 Weight (with oil charge)	7.89	[kg] (17.39 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	8EA17C3/8EA17E61/8EA17E62/8EA17E63/QPS2-A22MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(310)	[µF(VAC minimum)]
5 Motor protection	4TM213KFBYY-53	
6 Start winding resistance	18.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	12.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.90/7.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.80/1.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	1.90/1.70	[A] - Measured according to UL 984
11 Approval boards certification	CCC - CE - IMTRO - IRAM - TUV - UKCA - VDE	

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]	
667	168	195	123	0.66	1.99	5.41	1.36	1.59	

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]	
685	173	201	124	0.67	2.04	5.52	1.39	1.62	

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]	
789	199	231	140	0.65	2.35	5.62	1.42	1.65	

TEST CONDITIONS: @220V60Hz			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]	
815	205	239	143	0.66	2.43	5.72	1.44	1.68	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static					(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]
-35	(-31)	423	107	124	90	0.56	1.25	4.71	1.19	1.38
-30	(-22)	551	139	161	99	0.59	1.63	5.54	1.40	1.62
-25	(-13)	692	174	203	108	0.62	2.06	6.41	1.62	1.88
-20	(- 4)	852	215	250	116	0.65	2.54	7.37	1.86	2.16
-15	(+ 5)	1036	261	304	123	0.69	3.10	8.45	2.13	2.48
-10	(+14)	1250	315	366	129	0.72	3.76	9.72	2.45	2.85
-5	(+23)	1498	378	439	134	0.74	4.53	11.21	2.82	3.28
0	(+32)	1787	450	524	137	0.74	5.43	12.96	3.27	3.80

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)	398	100	117	93	0.57	1.18	4.29	1.08	1.26
-30	(-22)	521	131	153	104	0.59	1.55	5.02	1.26	1.47
-25	(-13)	658	166	193	114	0.63	1.96	5.74	1.45	1.68
-20	(- 4)	812	205	238	124	0.68	2.42	6.51	1.64	1.91
-15	(+ 5)	991	250	290	134	0.72	2.97	7.38	1.86	2.16
-10	(+14)	1199	302	351	143	0.76	3.61	8.38	2.11	2.46
-5	(+23)	1442	363	422	151	0.80	4.36	9.57	2.41	2.81
0	(+32)	1724	435	505	157	0.82	5.24	11.00	2.77	3.22

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)	363	91	106	95	0.58	1.07	3.83	0.97	1.12
-30	(-22)	482	121	141	107	0.61	1.43	4.51	1.14	1.32
-25	(-13)	613	155	180	119	0.65	1.82	5.15	1.30	1.51
-20	(- 4)	763	192	224	132	0.70	2.28	5.79	1.46	1.70
-15	(+ 5)	937	236	275	144	0.76	2.81	6.50	1.64	1.90
-10	(+14)	1139	287	334	155	0.81	3.43	7.30	1.84	2.14
-5	(+23)	1377	347	403	166	0.86	4.16	8.25	2.08	2.42
0	(+32)	1653	417	485	176	0.90	5.03	9.40	2.37	2.75

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)	316	80	93	96	0.59	0.93	3.26	0.82	0.95
-30	(-22)	431	108	126	109	0.62	1.28	3.95	0.99	1.16
-25	(-13)	558	141	163	123	0.67	1.66	4.56	1.15	1.34
-20	(- 4)	703	177	206	138	0.73	2.10	5.14	1.30	1.51
-15	(+ 5)	872	220	256	152	0.80	2.61	5.74	1.45	1.68
-10	(+14)	1070	270	314	167	0.86	3.22	6.40	1.61	1.88
-5	(+23)	1302	328	382	181	0.92	3.94	7.18	1.81	2.10
0	(+32)	1574	397	461	194	0.98	4.78	8.10	2.04	2.37

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(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]
-35	(-31)	492	124	144	99	0.37	1.46	4.97	1.25	1.46
-30	(-22)	640	161	188	110	0.32	1.90	5.79	1.46	1.70
-25	(-13)	806	203	236	121	0.42	2.40	6.66	1.68	1.95
-20	(- 4)	999	252	293	131	0.59	2.98	7.62	1.92	2.23
-15	(+ 5)	1223	308	358	141	0.78	3.66	8.72	2.20	2.55
-10	(+14)	1487	375	436	150	0.90	4.48	9.97	2.51	2.92
-5	(+23)	1797	453	527	157	0.91	5.44	11.43	2.88	3.35
0	(+32)	2160	544	633	164	0.72	6.57	13.13	3.31	3.85

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]
-35	(-31)	470	118	138	104	0.76	1.39	4.54	1.14	1.33
-30	(-22)	613	154	180	117	0.66	1.82	5.24	1.32	1.53
-25	(-13)	772	195	226	129	0.69	2.30	5.96	1.50	1.75
-20	(- 4)	955	241	280	142	0.78	2.85	6.73	1.70	1.97
-15	(+ 5)	1168	294	342	154	0.86	3.50	7.60	1.91	2.23
-10	(+14)	1418	357	416	165	0.88	4.27	8.59	2.16	2.52
-5	(+23)	1713	432	502	176	0.75	5.18	9.75	2.46	2.86
0	(+32)	2058	519	603	186	0.42	6.26	11.11	2.80	3.25

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]
-35	(-31)	434	109	127	106	0.40	1.28	4.09	1.03	1.20
-30	(-22)	573	144	168	121	0.35	1.70	4.73	1.19	1.39
-25	(-13)	727	183	213	136	0.40	2.16	5.36	1.35	1.57
-20	(- 4)	902	227	264	150	0.50	2.69	6.00	1.51	1.76
-15	(+ 5)	1106	279	324	165	0.58	3.31	6.70	1.69	1.96
-10	(+14)	1344	339	394	179	0.57	4.04	7.48	1.89	2.19
-5	(+23)	1624	409	476	193	0.41	4.91	8.40	2.12	2.46
0	(+32)	1953	492	572	206	0.02	5.94	9.48	2.39	2.78

E - PERFORMANCE - CURVES

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)	383	97	112	107	0.46	1.13	3.56	0.90	1.04
-30	(-22)	521	131	153	124	0.54	1.55	4.20	1.06	1.23
-25	(-13)	671	169	197	141	0.71	2.00	4.79	1.21	1.40
-20	(- 4)	841	212	246	158	0.91	2.51	5.35	1.35	1.57
-15	(+ 5)	1036	261	304	175	1.08	3.10	5.94	1.50	1.74
-10	(+14)	1264	319	370	192	1.14	3.80	6.58	1.66	1.93
-5	(+23)	1532	386	449	209	1.03	4.63	7.31	1.84	2.14
0	(+32)	1846	465	541	226	0.69	5.61	8.17	2.06	2.39

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 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 30° up + 24° 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 45° up + 45° to Back
3.4 Oil cooler (Copper)	No [mm]
3.5 Connector sealing	Rubber Plugs