

COMPRESSOR DEFINITION

Designation	EM T4130U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513306264

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 (Light Commercial - Curves until T.Evap -		
4.1 Evaporating temperature range	-40°C to 0°C	(-40°F to 32°F)	
5 Motor type	CSIR		
6 Starting torque	HST - Hight starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	Fan	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	1/2-	[hp]
2 Displacement	6.76	[cm ³] (0.413 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	17.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO22	
4 Weight (with oil charge)	8	[kg] (17.64 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515000	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM743LDBYY-53	
6 Start winding resistance	17.22	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	10.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	15.13	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.80	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	3.05	[A] - Measured according to UL 984
11 Approval boards certification		

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 (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1160	292	340	240	1.64	3.45	4.83	1.22	1.42

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan				(Condensing temperature 35°C (+95°F))				
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	639	161	187	151	1.46	1.89	4.22	1.06	1.24
-35	(-31)	801	202	235	170	1.49	2.37	4.71	1.19	1.38
-30	(-22)	996	251	292	189	1.53	2.96	5.29	1.33	1.55
-25	(-13)	1228	310	360	206	1.57	3.65	5.97	1.50	1.75
-20	(- 4)	1500	378	440	223	1.61	4.48	6.75	1.70	1.98
-15	(+ 5)	1816	458	532	239	1.66	5.44	7.63	1.92	2.24
-10	(+14)	2178	549	638	254	1.71	6.56	8.60	2.17	2.52
-5	(+23)	2590	653	759	268	1.75	7.84	9.67	2.44	2.83
0	(+32)	3056	770	896	281	1.79	9.29	10.83	2.73	3.17

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan				(Condensing temperature 45°C (+113°F))				
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	591	149	173	158	1.48	1.74	3.75	0.94	1.10
-35	(-31)	752	190	220	179	1.51	2.23	4.20	1.06	1.23
-30	(-22)	945	238	277	200	1.55	2.80	4.72	1.19	1.38
-25	(-13)	1174	296	344	220	1.60	3.49	5.31	1.34	1.56
-20	(- 4)	1441	363	422	240	1.66	4.30	5.98	1.51	1.75
-15	(+ 5)	1750	441	513	260	1.72	5.24	6.72	1.69	1.97
-10	(+14)	2104	530	616	279	1.78	6.33	7.52	1.90	2.20
-5	(+23)	2507	632	735	299	1.85	7.58	8.40	2.12	2.46
0	(+32)	2962	747	868	318	1.91	9.01	9.35	2.36	2.74

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	541	136	159	162	1.49	1.60	3.35	0.84	0.98
-35	(-31)	699	176	205	185	1.52	2.07	3.78	0.95	1.11
-30	(-22)	888	224	260	208	1.57	2.63	4.26	1.07	1.25
-25	(-13)	1111	280	325	232	1.63	3.30	4.78	1.20	1.40
-20	(- 4)	1371	345	402	255	1.70	4.09	5.35	1.35	1.57
-15	(+ 5)	1671	421	490	279	1.78	5.00	5.97	1.50	1.75
-10	(+14)	2015	508	590	303	1.86	6.06	6.63	1.67	1.94
-5	(+23)	2407	607	705	328	1.95	7.28	7.33	1.85	2.15
0	(+32)	2849	718	835	353	2.04	8.66	8.08	2.04	2.37

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	491	124	144	164	1.49	1.45	2.98	0.75	0.87
-35	(-31)	644	162	189	189	1.53	1.91	3.40	0.86	1.00
-30	(-22)	827	208	242	215	1.58	2.45	3.85	0.97	1.13
-25	(-13)	1042	262	305	242	1.65	3.10	4.32	1.09	1.27
-20	(- 4)	1292	326	379	269	1.74	3.85	4.81	1.21	1.41
-15	(+ 5)	1581	399	463	298	1.84	4.74	5.32	1.34	1.56
-10	(+14)	1914	482	561	327	1.95	5.76	5.86	1.48	1.72
-5	(+23)	2292	577	671	358	2.06	6.93	6.41	1.61	1.88
0	(+32)	2719	685	797	389	2.18	8.26	6.98	1.76	2.04

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
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		