

### COMPRESSOR DEFINITION

Designation	T 2140E-
Nominal Voltage/Frequency	208-230 V 60 Hz
Engineering Number	116AD24

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-22		
3 Nominal voltage and frequency	208-230 / 60	[ V / Hz ]	
4 Application type	Low Back Pressure R22		
4.1 Evaporating temperature range	-30°C to -10°C	(-22°F to 14°F)	
5 Motor type	CSIR		
6 Starting torque	HST - High 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)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	21.7	[kgf/cm <sup>2</sup> ] (309 psig)	/ °C - °F
9.2 Peak (gauge)	24.2	[kgf/cm <sup>2</sup> ] (344 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	14.50	[cm <sup>3</sup> ] (0.885 cu.in)
2.1 Bore [mm]	34.120	
2.2 Stroke [mm]	15.870	
3 Lubricant charge	550	[ml] (18.60 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO46	
4 Weight (with oil charge)	16.51	[kg] (36.40 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	208-230 V 60 Hz 1~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	MTRPH-0072	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRP36AK-3001	
6 Start winding resistance	9.00	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	30.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.80	[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: @200V50Hz			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]
1697	428	497	494	3.37	9.27	3.44	0.87	1.01

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @200V50Hz			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]
-30	(-22)	1274	321	373	364	2.81	6.93	3.49	0.88	1.02
-25	(-13)	1773	447	520	414	3.00	9.68	4.29	1.08	1.26
-20	(- 4)	2419	610	709	469	3.24	13.24	5.15	1.30	1.51
-15	(+ 5)	3210	809	941	531	3.53	17.64	6.05	1.52	1.77
-10	(+14)	4147	1045	1215	598	3.88	22.89	6.93	1.75	2.03

TEST CONDITIONS: @200V50Hz			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]
-30	(-22)	1190	300	349	389	2.97	6.48	3.06	0.77	0.90
-25	(-13)	1648	415	483	443	3.15	8.99	3.72	0.94	1.09
-20	(- 4)	2238	564	656	507	3.39	12.25	4.41	1.11	1.29
-15	(+ 5)	2961	746	868	581	3.69	16.27	5.10	1.28	1.49
-10	(+14)	3817	962	1118	664	4.05	21.07	5.75	1.45	1.69

TEST CONDITIONS: @200V50Hz			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]
-30	(-22)	1110	280	325	413	3.12	6.04	2.69	0.68	0.79
-25	(-13)	1527	385	448	471	3.30	8.33	3.24	0.82	0.95
-20	(- 4)	2065	520	605	543	3.53	11.30	3.80	0.96	1.11
-15	(+ 5)	2723	686	798	628	3.84	14.96	4.34	1.09	1.27
-10	(+14)	3500	882	1026	727	4.20	19.31	4.81	1.21	1.41

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @200V60Hz		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]
-30	(-22)	1491	376	437	426	2.87	8.12	3.50	0.88	1.02
-25	(-13)	2075	523	608	484	3.06	11.33	4.29	1.08	1.26
-20	(- 4)	2830	713	829	549	3.31	15.49	5.16	1.30	1.51
-15	(+ 5)	3755	946	1100	621	3.61	20.64	6.05	1.52	1.77
-10	(+14)	4852	1223	1422	700	3.96	26.78	6.93	1.75	2.03

TEST CONDITIONS: @200V60Hz		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]
-30	(-22)	1393	351	408	455	3.03	7.58	3.07	0.77	0.90
-25	(-13)	1928	486	565	518	3.21	10.52	3.72	0.94	1.09
-20	(- 4)	2619	660	767	593	3.46	14.33	4.41	1.11	1.29
-15	(+ 5)	3465	873	1015	679	3.76	19.04	5.10	1.29	1.49
-10	(+14)	4466	1126	1309	777	4.13	24.65	5.75	1.45	1.69

TEST CONDITIONS: @200V60Hz		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]
-30	(-22)	1298	327	380	483	3.18	7.06	2.69	0.68	0.79
-25	(-13)	1787	450	524	551	3.36	9.75	3.24	0.82	0.95
-20	(- 4)	2416	609	708	635	3.61	13.22	3.81	0.96	1.12
-15	(+ 5)	3185	803	933	735	3.92	17.50	4.34	1.09	1.27
-10	(+14)	4095	1032	1200	851	4.29	22.59	4.81	1.21	1.41

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	9.6 +0.07/+0.00	[mm]	(0.378" +0.003"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Vertical		
3.2 DISCHARGE	6.42 +0.08/+0.00	[mm]	(0.253" +0.003"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Vertical		
3.3 PROCESS	9.6 +0.07/+0.00	[mm]	(0.378" +0.003"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Vertical		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		