

COMPRESSOR DEFINITION

Designation	EM T30HHR
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513306064

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50-60	[V / Hz]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°F)	
5 Motor type	RSIR-CSIR		
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	187 to 255 V	187 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	187 to 255 V
8.3 HBP (32°C Ambient temperature)	Fan	187 to 255 V	187 to 255 V
8.4 HBP (43°C Ambient temperature)	Fan	187 to 255 V	187 to 255 V
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	2.83	[cm ³] (0.173 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.24	[kg] (15.96 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	Current Relay	
2.1 Starting device	213514164	
3 Start capacitor	53-64(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718KFBYY-53	
6 Start winding resistance	33.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	23.70	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	8.80/8.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.85/0.95	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - TUV - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Static		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]	
1122	283	329	118	0.81		9.51	2.40	2.79	

TEST CONDITIONS: @220V60Hz			ASHRAEHBP32 Static		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]	
1337	337	392	139	0.81		9.64	2.43	2.82	

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]	
257	65	75	71	0.70	1.46	3.60	0.91	1.05	

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]	
312	79	91	77	0.61	1.77	4.04	1.02	1.18	

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]
-35	(-31)	141	36	41	50	0.69	0.80	2.80	0.70	0.82
-30	(-22)	185	47	54	60	0.69	1.05	3.13	0.79	0.92
-25	(-13)	245	62	72	68	0.69	1.39	3.61	0.91	1.06
-20	(- 4)	323	81	95	76	0.70	1.84	4.26	1.07	1.25
-15	(+ 5)	422	106	124	83	0.71	2.41	5.09	1.28	1.49
-10	(+14)	546	137	160	89	0.72	3.12	6.11	1.54	1.79
-5	(+23)	695	175	204	95	0.73	3.99	7.34	1.85	2.15
0	(+32)	873	220	256	100	0.75	5.05	8.79	2.22	2.58
+5	(+41)	1082	273	317	103	0.76	6.30	10.48	2.64	3.07
+10	(+50)	1325	334	388	107	0.78	7.77	12.41	3.13	3.64
+15	(+59)	1604	404	470	109	0.79	9.47	14.60	3.68	4.28

E - PERFORMANCE - CURVES

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]
-35	(-31)	102	26	30	52	0.68	0.57	1.98	0.50	0.58
-30	(-22)	159	40	47	60	0.69	0.91	2.66	0.67	0.78
-25	(-13)	229	58	67	68	0.70	1.30	3.37	0.85	0.99
-20	(- 4)	313	79	92	76	0.72	1.78	4.12	1.04	1.21
-15	(+ 5)	413	104	121	83	0.73	2.36	4.94	1.24	1.45
-10	(+14)	533	134	156	91	0.75	3.05	5.83	1.47	1.71
-5	(+23)	675	170	198	98	0.77	3.88	6.80	1.71	1.99
0	(+32)	841	212	247	106	0.79	4.87	7.87	1.98	2.31
+5	(+41)	1035	261	303	113	0.81	6.02	9.06	2.28	2.66
+10	(+50)	1257	317	368	121	0.83	7.37	10.38	2.61	3.04
+15	(+59)	1512	381	443	129	0.84	8.92	11.83	2.98	3.47

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]
-35	(-31)	46	12	13	47	0.67	0.26	0.98	0.25	0.29
-30	(-22)	110	28	32	56	0.68	0.63	1.91	0.48	0.56
-25	(-13)	181	46	53	65	0.70	1.03	2.74	0.69	0.80
-20	(- 4)	263	66	77	75	0.71	1.50	3.51	0.88	1.03
-15	(+ 5)	357	90	104	85	0.73	2.03	4.21	1.06	1.23
-10	(+14)	466	117	136	97	0.75	2.66	4.87	1.23	1.43
-5	(+23)	592	149	174	109	0.77	3.40	5.49	1.38	1.61
0	(+32)	739	186	217	122	0.79	4.27	6.09	1.54	1.79
+5	(+41)	909	229	266	136	0.80	5.29	6.69	1.69	1.96
+10	(+50)	1104	278	323	151	0.82	6.47	7.29	1.84	2.14
+15	(+59)	1326	334	389	167	0.83	7.83	7.91	1.99	2.32

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)	139	35	41	50	0.55	0.79	2.82	0.71	0.83
-30	(-22)	223	56	65	63	0.57	1.27	3.42	0.86	1.00
-25	(-13)	314	79	92	75	0.59	1.79	4.07	1.03	1.19
-20	(- 4)	415	105	122	86	0.61	2.36	4.81	1.21	1.41
-15	(+ 5)	534	135	157	95	0.63	3.05	5.65	1.42	1.66
-10	(+14)	676	170	198	103	0.66	3.87	6.63	1.67	1.94
-5	(+23)	847	213	248	110	0.68	4.87	7.78	1.96	2.28
0	(+32)	1052	265	308	116	0.70	6.08	9.12	2.30	2.67
+5	(+41)	1297	327	380	122	0.73	7.55	10.67	2.69	3.13
+10	(+50)	1587	400	465	127	0.75	9.31	12.47	3.14	3.66
+15	(+59)	1929	486	565	132	0.77	11.39	14.55	3.67	4.26

E - PERFORMANCE - CURVES

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	117	29	34	55	0.55	0.66	2.18	0.55	0.64
-30	(-22)	195	49	57	64	0.57	1.11	3.02	0.76	0.89
-25	(-13)	279	70	82	73	0.60	1.59	3.82	0.96	1.12
-20	(- 4)	374	94	110	81	0.63	2.13	4.61	1.16	1.35
-15	(+ 5)	487	123	143	90	0.66	2.77	5.40	1.36	1.58
-10	(+14)	621	157	182	100	0.69	3.55	6.23	1.57	1.82
-5	(+23)	784	198	230	109	0.73	4.51	7.12	1.79	2.09
0	(+32)	981	247	288	120	0.76	5.67	8.11	2.04	2.38
+5	(+41)	1218	307	357	131	0.80	7.09	9.21	2.32	2.70
+10	(+50)	1500	378	440	143	0.84	8.79	10.46	2.64	3.07
+15	(+59)	1833	462	537	156	0.87	10.82	11.89	3.00	3.48

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)	71	18	21	48	0.53	0.40	1.47	0.37	0.43
-30	(-22)	145	37	43	57	0.56	0.83	2.44	0.61	0.71
-25	(-13)	225	57	66	68	0.59	1.28	3.26	0.82	0.96
-20	(- 4)	316	80	93	80	0.62	1.80	3.97	1.00	1.16
-15	(+ 5)	423	107	124	94	0.66	2.41	4.58	1.15	1.34
-10	(+14)	552	139	162	109	0.70	3.16	5.14	1.29	1.51
-5	(+23)	710	179	208	127	0.74	4.08	5.66	1.43	1.66
0	(+32)	901	227	264	146	0.79	5.21	6.17	1.55	1.81
+5	(+41)	1131	285	331	168	0.83	6.58	6.70	1.69	1.96
+10	(+50)	1406	354	412	192	0.88	8.24	7.28	1.83	2.13
+15	(+59)	1732	436	508	218	0.94	10.22	7.93	2.00	2.32

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
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 parallel BP+24°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		