

COMPRESSOR DEFINITION

Designation	EM T45HDR
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513306045

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[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	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)	Static	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	Static	187 to 255 V	-
8.4 HBP (43°C Ambient temperature)	Static	187 to 255 V	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[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	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.64	[kg] (16.84 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 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	MTRP-0036	
3 Start capacitor	64-77(280)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	T0043/G5	
6 Start winding resistance	18.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	16.25	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	8.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.18	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	1.37	[A] - Measured according to UL 984
11 Approval boards certification	IMQ	

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]
1633	412	479	168	1.08		9.70	2.44	2.84

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]	[W/W]
-35	(-31)	281	71	82	67	0.00	1.59	4.23	1.06	1.24
-30	(-22)	375	94	110	74	0.00	2.13	4.93	1.24	1.44
-25	(-13)	477	120	140	83	0.00	2.71	5.66	1.43	1.66
-20	(- 4)	594	150	174	91	0.00	3.38	6.45	1.62	1.89
-15	(+ 5)	731	184	214	100	0.00	4.17	7.32	1.84	2.14
-10	(+14)	895	226	262	108	0.00	5.12	8.31	2.09	2.43
-5	(+23)	1093	275	320	117	0.00	6.28	9.44	2.38	2.77
0	(+32)	1329	335	389	125	0.00	7.68	10.75	2.71	3.15
+5	(+41)	1610	406	472	132	0.00	9.37	12.26	3.09	3.59
+10	(+50)	1943	490	569	139	0.00	11.39	14.01	3.53	4.10
+15	(+59)	2332	588	683	145	0.00	13.77	16.01	4.04	4.69

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)	235	59	69	67	0.00	1.33	3.63	0.91	1.06
-30	(-22)	331	83	97	75	0.00	1.88	4.34	1.09	1.27
-25	(-13)	434	109	127	84	0.00	2.47	5.06	1.27	1.48
-20	(- 4)	551	139	162	94	0.00	3.14	5.80	1.46	1.70
-15	(+ 5)	689	174	202	104	0.00	3.93	6.60	1.66	1.93
-10	(+14)	852	215	250	114	0.00	4.87	7.48	1.89	2.19
-5	(+23)	1048	264	307	124	0.00	6.02	8.48	2.14	2.49
0	(+32)	1282	323	376	134	0.00	7.41	9.63	2.43	2.82
+5	(+41)	1561	393	457	143	0.00	9.08	10.94	2.76	3.21
+10	(+50)	1890	476	554	152	0.00	11.08	12.46	3.14	3.65
+15	(+59)	2277	574	667	160	0.00	13.44	14.22	3.58	4.17

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	199	50	58	68	0.00	1.12	3.01	0.76	0.88
-30	(-22)	293	74	86	77	0.00	1.66	3.71	0.94	1.09
-25	(-13)	394	99	115	88	0.00	2.24	4.39	1.11	1.29
-20	(- 4)	508	128	149	99	0.00	2.89	5.06	1.27	1.48
-15	(+ 5)	642	162	188	111	0.00	3.66	5.76	1.45	1.69
-10	(+14)	801	202	235	123	0.00	4.58	6.51	1.64	1.91
-5	(+23)	993	250	291	135	0.00	5.70	7.35	1.85	2.15
0	(+32)	1222	308	358	147	0.00	7.06	8.31	2.09	2.43
+5	(+41)	1495	377	438	159	0.00	8.70	9.41	2.37	2.76
+10	(+50)	1818	458	533	171	0.00	10.65	10.68	2.69	3.13
+15	(+59)	2197	554	644	181	0.00	12.97	12.16	3.06	3.56

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)	178	45	52	66	0.00	1.00	2.71	0.68	0.79
-30	(-22)	267	67	78	77	0.00	1.52	3.38	0.85	0.99
-25	(-13)	362	91	106	89	0.00	2.06	3.99	1.01	1.17
-20	(- 4)	471	119	138	103	0.00	2.68	4.57	1.15	1.34
-15	(+ 5)	598	151	175	117	0.00	3.41	5.15	1.30	1.51
-10	(+14)	750	189	220	132	0.00	4.29	5.75	1.45	1.68
-5	(+23)	933	235	274	147	0.00	5.36	6.41	1.61	1.88
0	(+32)	1154	291	338	162	0.00	6.67	7.15	1.80	2.09
+5	(+41)	1418	357	416	177	0.00	8.25	8.00	2.02	2.35
+10	(+50)	1732	436	507	192	0.00	10.15	9.00	2.27	2.64
+15	(+59)	2101	529	616	206	0.00	12.40	10.18	2.56	2.98

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	Yes		
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		