

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR30K6M-TFM-XXXXX

BILL OF MATERIAL

101, 102, 111, 111DM

Emerson Climate Technologies (India) Private Limited
Karad Dhebewadi Road
Karad - 415 110
INDIA

Note: Sales compressor drawing number and compressor model name are the same.

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PRODUCT SPECIFICATION**MODEL: CR30K6M-TFM-XXXXX****A) MODEL DESCRIPTION**

Model Name	CR30K6M-TFM-XXXXX
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	High Temperature (HBP)
Evaporating Temperature Range	(-) 23.3 °C To 12.8°C Or (-) 10 °F To 55 °F
Refrigerant	R-22
Rated Voltage	380-420 V, 50 Hz, 3 Phase
Compressor Cooling	Fan: 400 ft ³ / minute
Typical Application	Air - Conditioning, Heat Pump
*Certifications & Approvals	---

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ASRE/T	ARI
Cooling Capacity	Btu / hr	24,400	23,700
	kcal / hr	6,161	5,984
	W	7,144	6,939
	Nominal HP	2.44	2.37
Input Power	W	2,275	2,275
Input Current	A	4.2	4.2
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	10.72	10.41
	kcal / W-h	2.70	2.63
	W / W	3.14	3.05

Note: Above Performance Parameters are Nominal Values & subject to $\pm 5\%$ variation.**C) RATING CONDITIONS**

Parameter	Unit	ASRE/T	ARI
Evaporating Temperature	°C (°F)	7.2 \pm 0.5 (45)	7.2 \pm 0.5 (45)
Condensing Temperature	°C (°F)	54.4 \pm 1 (130)	54.4 \pm 1 (130)
Ambient Temperature	°C (°F)	35 \pm 1 (95)	35 \pm 1 (95)
Sub-cooled Liquid Temperature	°C (°F)	46 \pm 1 (115)	46 \pm 1 (115)
Return Gas Temperature	°C (°F)	35 \pm 1 (95)	18.3 \pm 1 (65)
Test Voltage	V	400	400

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D) MECHANICAL SPECIFICATIONS

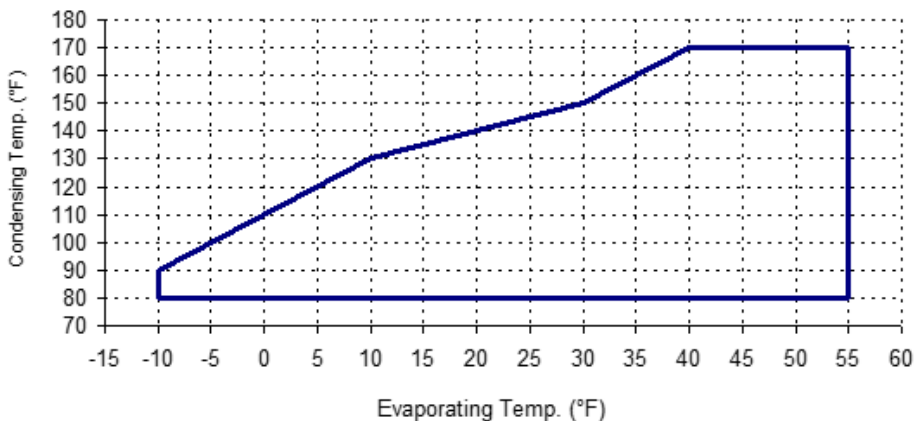
Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	51.47 (3.141)
Net Weight	kg	30.0
Approximate Shipping Weight	kg	30.6
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Mineral
IPRV (Pressure Differential)	kg/cm ² (psig)	31.64 / 38.67 (450 / 550)
** Crank - Case Heater	W @ V	35W @240V Wherever Applicable

** Recommended only for Heat Pump Application.

E) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Operating Voltage Range	V	342 To 462
Motor Circuit	---	3 Phase
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	N/A
➤ Run Capacitor	μF @ V AC	N/A
➤ Relay	---	N/A
➤ Over Load Protector	---	Internal
Locked Rotor Ampere (LRA)	A	28
Maximum Continuous Current (MCC)	A	6.1
High Potential Test	(kV / second / mA)	2.3 / 1 / 5.5 ± 0.5

F) OPERATING ENVELOPE @ 400 V, 50 Hz, 3 Phase



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G) PERFORMANCE TABLES

Superheating	11 °C (20 °F)	Voltage	400 V, 50 Hz, 3 Phase
Sub - cooling	8.3 °C (15 °F)	Compressor Cooling	400 ft ³ / minute
Ambient Temperature	35 °C (95 °F)	-	-

H) COOLING CAPACITY (Btu / hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											C1	C2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	C3	2474.943206501800
	(°F)	-10	0	10	20	30	40	45	50	55	C4	605.254521240884
37.8	100	5160	8400	12200	16800	21800	27700	31100	34900	39100	C5	312.900479052733
43.3	110	-	7470	11100	15300	19200	25500	28700	32300	36400	C6	2.648902002861
48.9	120	-	-	9620	13500	17800	23000	26100	29500	33400	C7	-2.182569131160
54.4	130	-	-	8040	11600	15600	20400	23700	26700	30400	C8	-3.502665283684
60.0	140	-	-	-	9880	13600	18200	20900	24100	27600	C9	0.031026510641
											C10	-0.0058517111076
											C10	-0.003797646250
											C10	0.009737891504

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients	
											C1	C2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	C3	1925.678202790000
	(°F)	-10	0	10	20	30	40	45	50	55	C4	-38.582361308302
37.8	100	1050	1180	1330	1490	1640	1760	1800	1830	1850	C5	-460.201847584200
43.3	110	-	1120	1310	1520	1710	1870	1940	1990	2030	C6	0.075129375774
48.9	120	-	-	1350	1600	1830	2030	2120	2200	2260	C7	0.633372424801
54.4	130	-	-	1380	1660	1930	2180	2275	2380	2460	C8	3.888459462877
60.0	140	-	-	-	1640	1950	2240	2360	2480	2580	C9	-0.002785492063
											C10	0.000364472235
											C10	-0.001029905555
											C10	-0.010942934670

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients	
											C1	C2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	C3	-17.861102708885
	(°F)	-10	0	10	20	30	40	45	50	55	C4	-0.006269745966
37.8	100	2.7	2.9	3.2	3.4	3.5	3.6	3.7	3.8	3.8	C5	0.521545886551
43.3	110	-	3.0	3.2	3.5	3.7	3.8	3.9	4.0	4.1	C6	-0.000136136663
48.9	120	-	-	3.2	3.5	3.8	4.0	4.1	4.2	4.2	C7	0.000166429680
54.4	130	-	-	3.2	3.5	3.8	4.1	4.2	4.3	4.4	C8	-0.004289962304
60.0	140	-	-	-	3.6	3.9	4.2	4.4	4.5	4.7	C9	0.000000659002
											C10	-0.000000562425
											C10	0.000001380488
											C10	0.000011552874

L) MASS FLOW RATE (lbs/hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											C1	C2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	C3	Under Evolution
	(°F)	-10	0	10	20	30	40	45	50	55	C4	
37.8	100	Under Evolution									C5	
43.3	110										C6	
48.9	120										C7	
54.4	130										C8	
60.0	140										C9	
											C10	

Note: 1. Nominal Performance Values (± 5%) based on 24 h of 'run in'. Subject to change without notice.
 2. Compressor is intended to be operated in the range of condensing & evaporating temperatures where performance values are specified in above tab

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PRODUCT SPECIFICATION**MODEL: CR30K6M-TFM-XXXXX****M) MECHANICAL SPECIFICATIONS**

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	0.93 (0.365)
Crank - Shaft Stroke	cm (inch)	1.85 (0.729)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	7,000 (427)
Maximum Residual Moisture	mg	300
Maximum Internal Solid Residue / Impurities	mg	40

N) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Motor Type	---	2 Pole, Induction, Single Phase
Nominal Motor Speed	rpm	2,850
Nominal Motor Winding Resistance (@ 25 °C)	Ω	4.54 To 5.22
Nominal Motor Output Power	kW	2.06
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation
Relay		
Type	---	N/A
Part Number	---	N/A
Pick Up (Maximum)	V	N/A
Drop Out (Minimum)	V	N/A
Maximum Voltage Rating of Coils	V	N/A
Over Load Protector		
Type	---	Internal
Part Number		34HM-220-56
Disc Opening Temperature	°F (°C)	212 To 230 (100 To 110)
Disc Closing Temperature	°F (°C)	126 To 158 (52 To 70)
1 st Cycle Trip Current	A	24
1 st Cycle Trip On Time	second	2 To 10
Terminal Fused Cluster	---	¼" Quick connector
Wire Material		Hermetic Grade Round Enameled
Wire Enamel designation & Construction	---	H Class, Dual Coated

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PRODUCT SPECIFICATION**MODEL : CR30K6M-TFM-XXXXX****P) PERFORMANCE SPECIFICATIONS**

Parameter	Unit	Value
Bare Compressor Sound	dB(A)	72.0 Maximum
Bare Compressor Vibration	µm	120.0 Maximum
Compressor Discharge Pulse	psi	2.75 Maximum

Q) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Unit	V	kg/cm ² (psig)	kg/cm ² (psig)	°C (°F)	°C (°F)
Overload (High Load)	400	6.50 (92.43)	30 (426.6)	--	55 (131)
Blocked Fan	400	6.33 (90)	28.12 (400)	--	--
Low Voltage Start: Equalised Unequilised	342	11.9 (169)	11.9 (169)	62 (143.6)	--
Low Voltage Run	342	6.50 (92.43)	30 (426.6)	--	55 (131)

Note: Above test conditions are only for reference. Refer operating envelop and maximum allowable discharge line temperature for safe operation of compressor.

R) REFERENCE APPLICATION DETAIL CONDITIONS

Parameter	Unit	Value
Maximum Allowable Ambient Temperature	°C (°F)	55 (131)
Maximum Discharge Line Temperature	°C (°F)	129.4 (265)
Maximum Return Gas Temperature	°C (°F)	27 (80.6)

Note: Application details are the guidelines for safe operation of compressor.

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