

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR24K6ME-TFD-XXXCM

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.

DVM				01	F45-0118-0022 EN No.	A1 12.01.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR24K6ME-TFD-XXXCM DOCUMENT No.	

PRODUCT SPECIFICATION**MODEL : CR24K6ME-TFD-XXXCM****A) MODEL DESCRIPTION**

Model Name	CR24K6ME-TFD-XXXCM
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	Medium Temperature (CBP)
Evaporating Temperature Range	(-)23.3 °C To 12.8 °C Or (-)10 °F To 55 °F
Refrigerant	R-404A
Rated Voltage	380 - 420 V, 50 Hz, 3 Phase
Compressor Cooling	Fan : 400 ft ³ / minute
Typical Application	Visi Cooler, Display Cabinet, Chillers

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	CBP	
		ASHRAE-T	ARI
Cooling Capacity	Btu / hr	10,300	9,475
	kcal / hr	2,595	2,387
	W	3,015	2,774
Input Power	W	1,450	1,450
Input Current	A	3.0	3.0
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-hr	7.10	6.32
	kcal / W-hr	1.79	1.59
	W / W	2.08	1.85

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

Parameter	Unit	CBP	
		ASHRAE-T	ARI
Evaporating Temperature	°C (°F)	-6.7 \pm 0.5 (20)	-6.7 \pm 0.5 (20)
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)	4.4 \pm 1 (40)
Test Voltage	V	380	380

DVM				02	F45-0118-0022 EN No.	A1 12.01.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR24K6ME-TFD-XXXCM DOCUMENT No.	

PRODUCT SPECIFICATION

MODEL : CR24K6ME-TFD-XXXCM

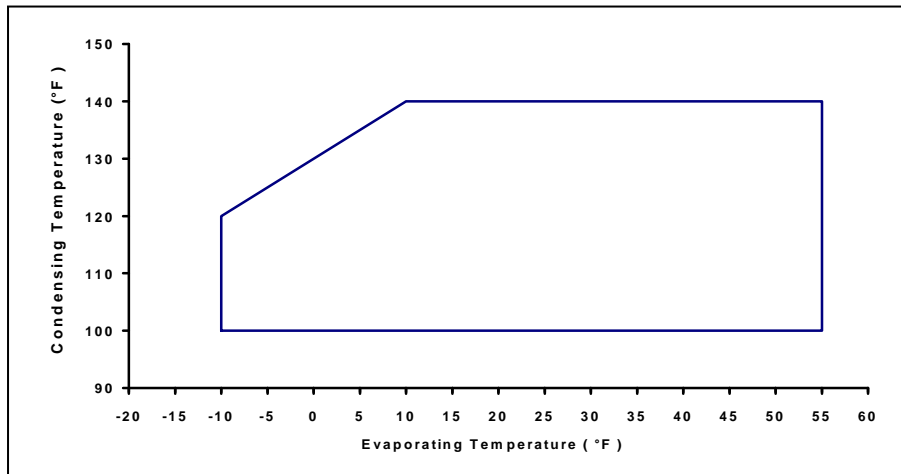
D) MECHANICAL SPECIFICATIONS

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	44.28 (2.702)
Net Weight	kg	29.5
Approximate Shipping Weight	kg	30.0
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	POE
IPRV (Pressure Differential)	kg/cm ² (psig)	31.64 / 38.67 (450 / 550)
Crank - case Heater	W @ V	35 @ 240

E) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Operating Voltage Range	V	342 To 462
Motor Circuit	---	Three Phase
Electrical Accessories	---	
➤ Start Capacitor	μF @ VAC	N/A
➤ Run Capacitor	μF @ VAC	N/A
➤ Relay	---	N/A
➤ Over Load Protector	---	Internal
Lock Rotor Ampere (LRA)	A	28 @ 420 V
Maximum Continuous Current (MCC)	A	5
High Potential Test	(kV/second/mA)	2.3 / 1 / 5.5 ± 0.5

F) OPERATING ENVELOPE @ 380 V, 50 Hz, 3 Phase



S
P
E
C
I
F
I
C
A
T
I
O
N

DVM				03	F45-0118-0022 EN No.	A1 12.01.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR24K6ME-TFD-XXXCM DOCUMENT No.	

PRODUCT SPECIFICATION
MODEL : CR24K6ME-TFD-XXXCM

G) PERFORMANCE TABLES

Superheat	11.1 °C (20 °F)	Voltage	380 V, 50 Hz, 3 Phase
Sub - cooling	8.3 °C (15 °F)	Compressor Cooling	400 ft ³ / minute
Ambient Temperature	35 °C (95 °F)	Refrigerant	R404A

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	12.8	c3	66005.20024
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-68.25459
37.8	100	5995	7460	10130	13930	18785	24615	27875	31350	35030	c5	-1286.96985
43.3	110	4690	6170	8760	12400	17000	22495	25550	28800	32235	c6	10.44205
48.9	120	3650	5080	7545	10960	15255	20350	23175	26170	29330	c7	5.56006
54.4	130	---	---	6315	9475	13385	18030	20595	23310	26165	c8	9.62158
60.0	140	---	---	4925	7730	11240	15380	17655	20060	22585	c9	-0.01270
											c10	-0.04409

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	12.8	c3	2798.97161
	(°F)	-10	0	10	20	30	40	45	50	55	c4	9.05239
37.8	100	1065	1110	1210	1355	1500	1620	1665	1690	1695	c5	-50.63114
43.3	110	1090	1130	1235	1385	1550	1700	1765	1810	1840	c6	-0.18032
48.9	120	1115	1145	1250	1415	1600	1780	1860	1930	1980	c7	0.01387
54.4	130	---	---	1260	1450	1635	1845	1945	2030	2110	c8	0.48890
60.0	140	---	---	1275	1470	1650	1885	2005	2115	2215	c9	-0.00466
											c10	0.00483

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	12.8	c3	0.92554
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-0.01355
37.8	100	2.2	2.2	2.5	2.8	3.2	3.5	3.7	3.8	3.9	c5	0.04299
43.3	110	2.2	2.3	2.5	2.8	3.2	3.6	3.7	3.9	4.0	c6	0.00087
48.9	120	2.2	2.3	2.5	2.9	3.3	3.6	3.8	3.9	4.0	c7	0.00045
54.4	130	---	---	2.6	3.0	3.3	3.7	3.9	4.0	4.1	c8	-0.00048
60.0	140	---	---	2.7	3.1	3.5	3.8	4.0	4.1	4.2	c9	-0.00001
											c10	0.00000

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	12.8	c3	1108.38607
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-0.39851
37.8	100	117	142	187	250	329	421	471	524	578	c5	-23.28905
43.3	110	100	128	175	240	320	413	463	516	571	c6	0.12475
48.9	120	86	116	165	232	312	406	456	509	563	c7	0.05398
54.4	130	---	---	153	221	302	395	446	498	552	c8	0.19159
60.0	140	---	---	136	204	286	379	429	481	535	c9	-0.00039
											c10	-0.00023

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 tables.

DVM				04	F45-0118-0022	A1
Prepared by	Checked by	Verified by	Approved by	Page No.	EN No.	12.01.2018
					CR24K6ME-TFD-XXXCM DOCUMENT No.	

PRODUCT SPECIFICATION**MODEL : CR24K6ME-TFD-XXXCM****M) MECHANICAL SPECIFICATIONS**

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	0.796 (0.313)
Crank - Shaft Stroke	cm (inch)	1.593 (0.627)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	6,700 (409)
Maximum Residual Moisture	mg	300
Maximum Internal Solid Residue / Impurities	mg	40

N) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Motor Type	---	2 Pole, Induction, Three Phase
Nominal Motor Speed	rpm	2,850
Nominal Motor Winding Resistance (@ 25 °C)	Main	Ω 7.3 To 8.5
	Aux.	Ω -----
Nominal Motor Output Power	kW	1.85
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation
Relay		
Type	---	N/A
Make - 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-200-56
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	18
1 st Cycle Trip On Time	second	2 To 10
Terminal Fused Cluster	---	¼" Quick connector
Copper Wire Material	---	Hermetic Grade Round Enameled
Copper Wire Enamel Designation & Construction	---	H Class, Dual Coated

S
P
E
C
I
F
I
C
A
T
I
O
N

DVM				05	F45-0118-0022 EN No.	A1 12.01.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR24K6ME-TFD-XXXCM DOCUMENT No.	

PRODUCT SPECIFICATION**MODEL : CR24K6ME-TFD-XXXCM****P) SOUND & VIBRATION SPECIFICATIONS**

Parameter	Unit	Value
Bare Compressor Sound	dBA	72.0 Maximum
Bare Compressor Vibration	µm	120.0 Maximum
Compressor Discharge Pulse	psi	3.0 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)
Test					
Overload (High Load)	380	5.13 (73)	31.70 (451)	--	46 (115)
Blocked Fan	380	6.7 (95)	28.4 (404)	--	35 (95)
Low Voltage Start : Equalised	342	8 (114) 14.3 (203)	25.3 (360) 14.3 (203)	65 (149) 65 (149)	-- --
Low Voltage Run	342	5.13 (73)	31.70 (451)	--	46 (115)

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)
**System Refrigerant Charge Limit	Kg (lbs)	2.72 (6)

** For system Charge more than 6 lbs, use of appropriate sized Accumulator is recommended. Selected Accumulator shall be validated with suitable tests such as Low Ambient tests etc.

Crankcase Heater

* The Crankcase heater must be switched on 12 Hrs before first start

* Crankcase heater should be kept continuously energized even during shut down period, irrespective of duration of shut down. Refer Page No 3 for Voltage Rating.

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

DVM				06	F45-0118-0022 EN No.	A1 12.01.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR24K6ME-TFD-XXXCM DOCUMENT No.	

S
P
E
C
I
F
I
C
A
T
I
O
N