

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR24K6ME-PFZ-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	F45-0118-0014 EN No.	A1 12.01.2018
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PRODUCT SPECIFICATION**MODEL : CR24K6ME-PFZ-XXXCM****A) MODEL DESCRIPTION**

Model Name	CR24K6ME-PFZ-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	220-240V, 50 Hz, 1 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	2,596	2,387
	W	3,016	2,774
Input Power	W	1,500	1,500
Input Current	A	7.6	7.6
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-hr	6.87	6.32
	kcal / W-hr	1.73	1.59
	W / W	2.01	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	220	220

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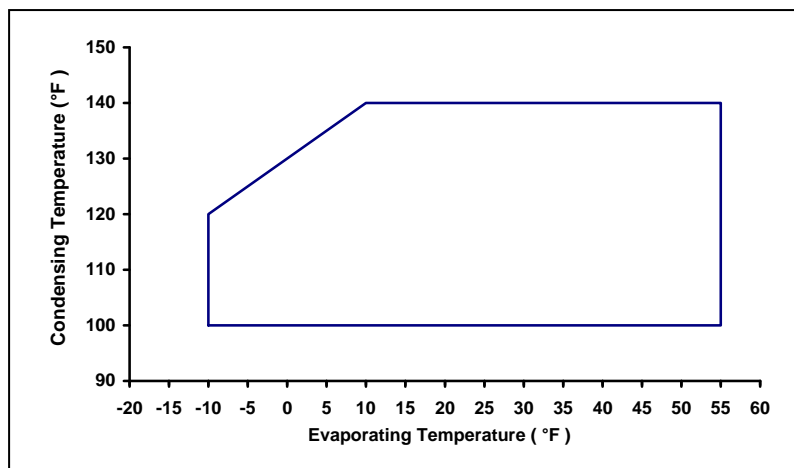
D) MECHANICAL SPECIFICATIONS

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	44.28 (2.702)
Net Weight	kg	29.8
Approximate Shipping Weight	kg	31.5
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	198 To 264
Motor Circuit	---	CSCR
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	150 - 200 @ 230
➤ Run Capacitor	μF @ V AC	36 @ 370
➤ Relay	---	Potential
➤ Over Load Protector	---	Internal
Locked Rotor Ampere (LRA)	A	61
Maximum Continuous Current (MCC)	A	13.5
High Potential Test	(kV / second / mA)	1.85 / 1 / 5.5 ± 0.5

F) OPERATING ENVELOPE @ 220 V, 50 Hz, 1 Phase



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G) PERFORMANCE TABLES

Superheat	11.1 °C (20 °F)	Voltage	220 V, 50 Hz, 1 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	
		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c1	c2
°C	(°F)	-10	0	10	20	30	40	45	50	55	c3	c4
37.8	100	5995	7460	10130	13930	18785	24615	27875	31350	35030	c5	5.56005
43.3	110	4690	6170	8760	12400	17000	22495	25550	28800	32235	c6	9.62157
48.9	120	3650	5080	7545	10960	15255	20350	23175	26170	29330	c7	-0.01269
54.4	130	---	---	6315	9475	13385	18030	20595	23310	26165	c8	-0.04409
60.0	140	---	---	4925	7730	11240	15380	17655	20060	22585	c9	-0.02798
											c10	-0.02606

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients	
		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c1	c2
°C	(°F)	-10	0	10	20	30	40	45	50	55	c3	c4
37.8	100	845	995	1140	1290	1425	1545	1600	1645	1680	c5	-0.13852
43.3	110	925	1060	1205	1355	1505	1645	1710	1770	1825	c6	0.75362
48.9	120	1010	1135	1275	1430	1595	1755	1835	1910	1980	c7	-0.00105
54.4	130	---	---	1345	1500	1680	1860	1955	2045	2135	c8	0.00394
60.0	140	---	---	1400	1565	1750	1955	2060	2170	2275	c9	0.00029
											c10	-0.00215

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients	
		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c1	c2
°C	(°F)	-10	0	10	20	30	40	45	50	55	c3	c4
37.8	100	4.1	5.6	6.6	7.2	7.6	8.0	8.2	8.5	8.9	c5	0.00116
43.3	110	4.2	5.5	6.5	7.1	7.6	8.1	8.4	8.9	9.2	c6	0.02004
48.9	120	4.5	5.8	6.7	7.3	7.8	8.4	8.8	9.3	9.8	c7	0.00002
54.4	130	---	---	7.0	7.6	8.1	8.8	9.2	9.7	10.4	c8	0.00002
60.0	140	---	---	6.8	7.4	7.9	8.7	9.2	9.7	10.5	c9	-0.000008
											c10	-0.00005

L) MASS FLOW RATE (lbs/hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c1	c2
°C	(°F)	-10	0	10	20	30	40	45	50	55	c3	c4
37.8	100	117	142	187	250	329	421	471	524	578	c5	0.05398
43.3	110	100	128	175	240	320	413	463	516	571	c6	0.19159
48.9	120	86	116	165	232	312	406	456	509	563	c7	-0.00039
54.4	130	---	---	153	221	302	395	446	498	552	c8	-0.00023
60.0	140	---	---	136	204	286	379	429	481	535	c9	-0.00014
											c10	-0.00055

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.

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Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	0.80 (0.314)
Crank - Shaft Stroke	cm (inch)	1.59 (0.627)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	6500 (397)
Maximum Residual Moisture	mg	300
Maximum Internal Solid Residue / Impurities	mg	40

M) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Motor Type	---	2 Pole, Induction, Single Phase
Nominal Motor Speed	rpm	2,900
Nominal Motor Winding Resistance (@ 25 °C)	Main	Ω 1.46 To 1.68
	Aux.	Ω 3.91 To 4.49
Nominal Motor Output Power	kW	1.57
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation
Relay		
Type	---	Potential
Part Number	---	HLR 3800-3F3C-4
Pick Up (Maximum)	V	165 To 185
Drop Out (Minimum)	V	65 To 95
Maximum Voltage Rating of Coils	V	330
Over Load Protector		
Type	---	Internal
Part Number		5DN-0793-78
Disc Opening Temperature	°F (°C)	239 To 257 (115 To 125)
Disc Closing Temperature	°F (°C)	140 To 170 (60 To 77)
1 st Cycle Trip Current	A	44
1 st Cycle Trip On Time	second	1 To 10
Terminal Fused Cluster	---	¼" Quick connector
Copper Wire Material	---	Hermetic Grade Round Enameled
Copper Wire Enamel Designation & Construction	---	H Class, Dual Coated

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PRODUCT SPECIFICATION**MODEL : CR24K6ME-PFZ-XXXCM****N) PERFORMANCE SPECIFICATIONS**

Parameter	Unit	Value
Bare Compressor Sound	dBA	72.0 Maximum
Bare Compressor Vibration	µm	75.0 Maximum
Compressor Discharge Pulse	psi	2.5 Maximum

P) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Test	V	kg/cm ² (psig)	kg/cm ² (psig)	°C (°F)	°C (°F)
Overload (High Load)	264 220	5.13 (73)	31.70 (451)	--	46 (115)
Blocked Fan	220	6.7 (95)	28.4 (404)	--	35 (95)
Low Voltage Start : Equalised	198	8 (114) 14.3 (203)	25.3 (360) 14.3 (203)	65 (149) 65 (149)	-- --
Low Voltage Run	198	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.

Q) 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.

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