

Specifications sheet

KCM522CAL-E512H

Condensing :	Ambient(K) + 12°C / 21.6 °F
Electrical:	400 V, 50 Hz, 3 Phase

Sub-Cooling : (K)	0°C / 0°F
Suction Return :	20 °C / 68°F
Refrigerant :	R404A



A) MODEL DESCRIPTION

Model Name	KCM522CAL- EXXX
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	Medium Temperature (CBP)
Evaporating Temperature Range	-15 °C To 12.8 °C (5 °F To 55 °F)
Refrigerant	R404A
Rated Voltage	400 V, 50 Hz, 3 Phase
Compressor Cooling	Fan : 400 ft ³ / minute
Typical Application	Visi-cooler, Display cabinet, Chillers
Certifications & Approvals	EN60335-2-34

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ASRE / T	ARI
Cooling Capacity	Btu / h	18,300	17,750
	kcal / h	4,610	4,473
	W	5,360	5,202
	Nominal HP	2.28	2.21
Input Power	W	2,600	2,600
Input Current	A	5.2	5.2
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	7.0	6.82
	kcal / W-h	1.77	1.72
	W / W	2.00	2.00

Note : Above performance parameters are nominal values & subject to \pm 5% variation.

C) RATING CONDITIONS

Parameter	Unit	ASRE / T	ARI
Evaporating Temperature	°C (°F)	-6.7 (20)	-6.7 (20)
Condensing Temperature	°C (°F)	54.4 (130)	54.4 (130)
Ambient Temperature	°C (°F)	35 (95)	35 (95)
Sub - cooled Liquid Temperature	°C (°F)	46.1 (115)	46.1 (115)
Return Gas Temperature	°C (°F)	35 (95)	4.4(40)
Test Voltage	V	400	400

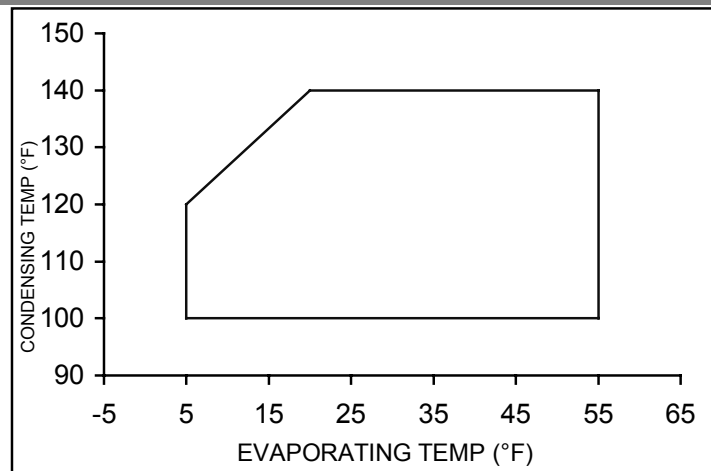
D) MECHANICAL SPECIFICATION

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	72.08 (4.399)
Net Weight	kg	32.7
Approximate Shipping Weight	kg	34
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Polyolester (POE)
IPRV (Pressure Differential)	kg / cm ² (psig)	31.64 / 38.67(450 / 550)
Crank - Case Heater	W @ V	58 @ 240/220

E) ELECTRICAL SPECIFICATION

Parameter	Unit	Value
Operating Voltage Range	V	342 To 460
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	45
Maximum Continuous Current (MCC)	A	8.0
Motor Insulation Class	---	B Class
High Potential Test	(kV / second / mA)	2.3 / 1 / 5.5 ± 0.5

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



PERFORMANCE TABLES

Superheating	11.1 °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)	-	-

A) COOLING CAPACITY (Btu / h)

Condensing Temperature		Evaporating Temperature							
		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
°C	(°F)	5	10	20	30	40	45	50	55
37.8	100	18500	21500	27550	34550	44100	50150	56200	59000
43.3	110	15700	17900	23500	30300	39100	44100	49700	53900
48.9	120	13500	15000	20500	27500	35700	40250	45450	49000
54.4	130	-	12800	17750	24000	31500	35800	40350	43600
60.0	140	-	-	15250	21000	28000	31900	36100	38900

B) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature							
		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
°C	(°F)	5	10	20	30	40	45	50	55
37.8	100	1910	2050	2295	2455	2540	2560	2575	2600
43.3	110	1970	2130	2435	2655	2800	2855	2895	2910
48.9	120	2050	2200	2530	2825	3040	3120	3180	3200
54.4	130	-	2250	2600	2960	3245	3365	3460	3500
60.0	140	-	-	2650	3040	3385	3545	3695	3750

C) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature							
		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
°C	(°F)	5	10	20	30	40	45	50	55
37.8	100	4.4	4.7	4.9	5.1	5.3	5.3	5.3	5.4
43.3	110	4.4	4.8	5.0	5.3	5.7	5.7	5.7	5.8
48.9	120	4.5	4.9	5.1	5.5	5.9	6.0	6.1	6.3
54.4	130	-	5.0	5.2	5.6	6.1	6.2	6.3	6.5
60.0	140	-	-	5.2	5.7	6.3	6.4	6.6	6.8

- 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.

A) MECHANICAL SPECIFICATION

Parameter	Unit	Value
Cylinder bore diameter	cm (inch)	4.98 (1.960)
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)	8194 (500)
Maximum residual moisture	mg	300
Maximum internal solid residue / impurities	mg	40

B) ELECTRICAL SPECIFICATION

Parameter	Unit	Value	
Motor Type	---	2 Pole, Induction, Three Phase	
Nominal Motor Speed	rpm	2900	
Nominal Motor Winding resistance (@ 25 °C)	Main	Ω	3.34 / 3.72
	Aux.	Ω	---
Nominal Motor Output Power	kW	2.90	
Relay			
Type	---	N / A	
Part Number	---	N / A	
Pick up	V	N / A	
Drop out	V	N / A	
Maximum Voltage Rating of Coils	V	N / A	
Over Load Protector			
Type	---	Internal	
Part Number	---	34HM-251-6	
Disc opening temperature	°C (°F)	120 / 130 (248 / 266)	
Disc closing temperature	°C (°F)	52 / 70 (126 / 158)	
1 st cycle trip Current	A	27	
1 st cycle trip on time	second	3 to 10	
Terminal Fused Cluster	---	¼" Quick connector	
Copper Wire Material	---	Hermetic Grade Round Enameled	
Copper Wire Enamel Designation	---	H Class	
Copper Wire Enamel Construction	---	Base Coat – 65-75% of Polyester Imide Top Coat – 25-35 % of Polyamide Imide	

C) PERFORMANCE SPECIFICATION

Parameter	Unit	Value
Bare compressor sound	dBA	79.0 Maximum
Bare compressor vibration	µm	125 Maximum
Compressor discharge pulse	psi	10.0 Maximum

D) 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)	460, 400	5.13 (73)	31.70 (451)	--	46 (115)
Blocked Fan	400	6.7 (95)	28.4 (404)	--	35 (95)
Low Voltage Start :					
Unequalised	340	8 (114)	25.3 (360)	65 (149)	--
Equalised	340	14.3 (203)	14.3 (203)	65 (149)	--
Low Voltage Run	340	5.13 (73)	31.70 (451)	--	46 (115)

Note : Above test conditions are only for reference and not for customer product qualification.

E) REFERENCE APPLICATION DETAILS

Parameter	Unit	Value
Maximum Allowable Ambient Temperature	°C (°F)	46 (115)
Maximum Permissible Discharge Pressure	Transient	31.7 (451)
	Stabilised	28 (398)
Maximum Discharge Line Temperature	° C (°F)	135 (275)
Maximum Return Gas Temperature	° C (°F)	43 (109)

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