

Specifications sheet

KCM519CAL-E512H

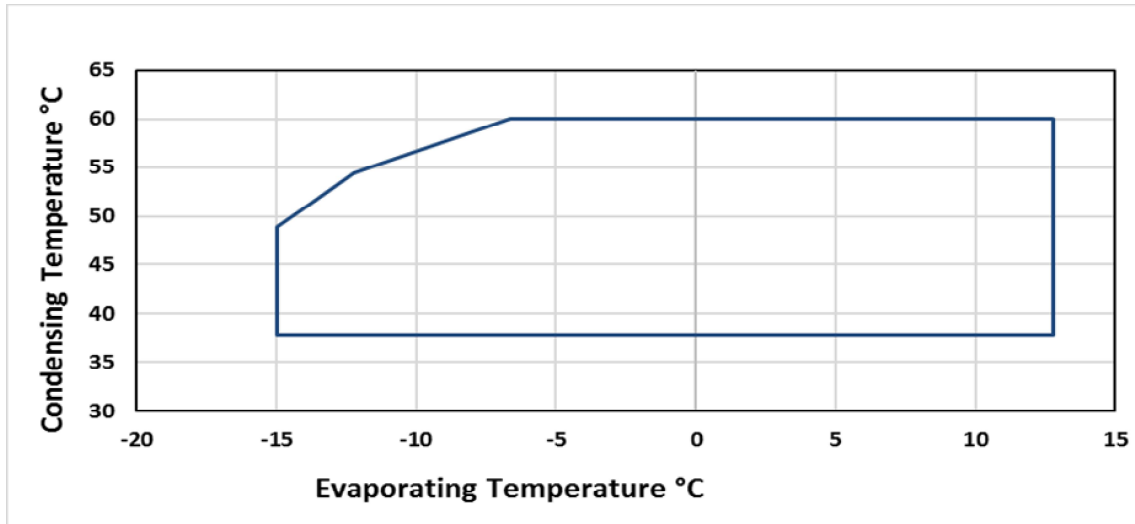
Condensing :	Ambient(K) + 12°C / 21.6 °F
Electrical:	400 V, 50 Hz, 3 Phase

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



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Operating Envelope



Capacity W

Ambient Condition		Suction Temp							
°C		5	0	-5	-10	-15	-20	-25	-30
	°F	41	32	23	14	5	-4	-13	-22
28	82	9964	8118	6477	5085	4074			
31	88	9437	7678	6096	4792	3839			
34	93	8880	7210	5715	4484	3605			
37	99	8323	6741	5334	4176				
40	104	7766	6272	4953	3869				

Power Consumption W

Ambient Condition		Suction Temp							
°C		5	0	-5	-10	-15	-20	-25	-30
	°F	41	32	23	14	5	-4	-13	-22
28	82	2280	2190	2070	1910	1720			
31	88	2380	2290	2150	1980	1780			
34	93	2490	2380	2230	2040	1820			
37	99	2590	2460	2290	2090				
40	104	2690	2540	2360	2130				
Out Of Envelop									

A) MODEL DESCRIPTION

Model Name	KCM519CAL- 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	15,800	15,325
	kcal / h	3,981	3,861
	W	4,630	4,491
	Nominal HP	1.975	1.915
Input Power	W	2,325	2,325
Input Current	A	4.7	4.7
$\text{EER} = \frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	6.79	6.59
	kcal / W-h	1.71	1.66
	W / W	1.99	1.93

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

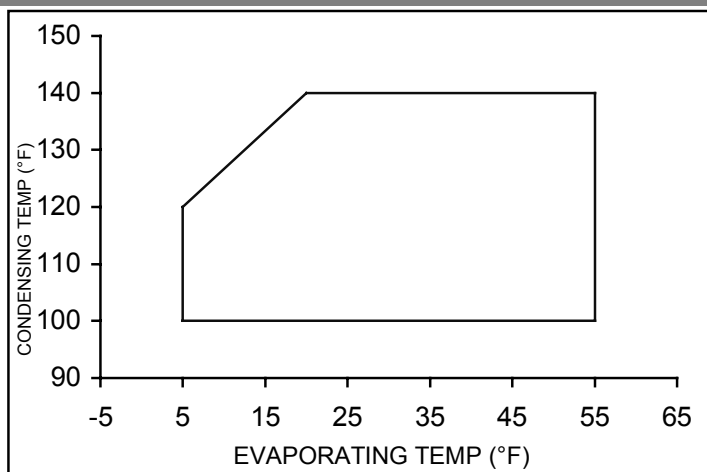
D) MECHANICAL SPECIFICATION

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	59.65 (3.640)
Net Weight	kg	31.0
Approximate Shipping Weight	kg	32.1
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Polyolester (POE)
IPRV (Pressure Differential)	kg / cm ² (psig)	31.65/38.68 (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 @ V AC	N / A
Run Capacitor	μF @ V AC	N / A
➤ Relay	---	N / A
➤ Over Load Protector	---	Internal
Lock Rotor Ampere (LRA)	A	41
Maximum Continuous Current (MCC)	A	7.3
Motor Insulation	---	B Class
High Potential Test	(kV / second / mA)	2.30 / 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							
°C		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
	(°F)	5	10	20	30	40	45	50	55
37.8	100	14200	16500	22100	29000	37250	41500	46000	50000
43.3	110	12600	14800	19800	26175	33650	37700	42400	45900
48.9	120	11200	12800	17650	23400	30200	34200	39700	41700
54.4	130	-	11000	15325	20500	26900	30450	34425	37350
60.0	140	-	-	12900	17300	23450	27300	30400	33000

B) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature							
°C		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
	(°F)	5	10	20	30	40	45	50	55
37.8	100	1675	1785	1975	2125	2200	2235	2260	2275
43.3	110	1800	1910	2120	2275	2400	2430	2460	2475
48.9	120	1875	1990	2235	2440	2610	2660	2700	2735
54.4	130	-	2055	2325	2585	2800	2895	2805	3005
60.0	140	-	-	2415	2715	2975	3075	3175	3275

C) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature							
°C		-15	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
	(°F)	5	10	20	30	40	45	50	55
37.8	100	4.0	4.2	4.4	4.6	4.7	4.7	4.7	4.7
43.3	110	4.1	4.3	4.5	4.8	5.0	5.0	5.1	5.1
48.9	120	4.1	4.4	4.6	5.0	5.2	5.3	5.4	5.5
54.4	130	-	4.4	4.7	5.1	5.5	5.6	5.7	5.8
60.0	140	-	-	4.7	5.2	5.7	5.9	6.1	6.2

Note : 1. Nominal Performance Values ($\pm 5\%$) 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)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	1.07 (0.423)
Crank - Shaft Stroke	cm (inch)	2.15 (0.846)
Approximate Internal Free Volume (without oil)	cm ³ (inch ³)	8030 (490)
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	2,900
Nominal Motor Winding Resistance (@ 25 °C)	Main	Ω 4.08 To 4.63
	Aux	Ω ---
Nominal Motor Output Power	kW	2.35
Maximum Allowable Motor Winding Temperature	°F (°C)	266 (130)
Relay		
Type	---	---
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-252-6
Disc opening temperature	°C (°F)	105.0 / 115.0 (221 / 239)
Disc closing temperature	°C (°F)	52.0 / 70.0 (126 / 158)
1 st cycle trip Current	A	24
1 st cycle trip on time	second	3 to 10
Terminal Fused Cluster	---	¼ inch 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	142 Maximum
Compressor discharge pulse	psi	6.0 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.