

PRODUCT SPECIFICATION

COMPRESSOR MODEL

KCE444HAG-BXXX

BILL OF MATERIALS

B330, B331, B830, B831

Emerson Climate Technologies (India) 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 – KCE444HAG-BXXX****A) MODEL DESCRIPTION**

Model Name	KCE444HAG-BXXX
Compressor Type	Reciprocating ,Connecting Rod Type
Application Group	High / Medium temperature (HBP / CBP)
Evaporating Temperature Range	-17.8°C To 12.8°C (0° To 55°F)
Refrigerant	R-134a
Rated Voltage	230V, 50Hz, 1Phase
Compressor Cooling	FAN : 350 ft ³ / minute
Typical Application	Water Coolers / Bottle Coolers
Certifications & Approvals	ISI, EN60335-2-34

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Specification	Unit	HBP	CBP
Cooling Capacity	Btu / h	3675	1880
	kcal / h	926	474
	W	1077	551
	Nominal HP	0.36	0.28
Input Power	W	475	339
Input Current	A	2.2	1.64
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	7.74	5.54
	kcal / W-h	1.95	1.4
	W / W	2.27	1.62

Note – Above performance parameters are nominal values & subject to $\pm 5\%$ variation**C) RATING CONDITIONS**

Parameter	Unit	HBP @ ASHRAE-T	CBP @ ASHRAE-T
Evaporating Temperature	°C (°F)	7.2 (45)	-6.7 (20)
Condensing Temperature	°C (°F)	54.4 (130)	54.4 (130)
Ambient Temperature	°C (°F)	35 (95)	35 (95)
Sub cooled Liquid Temp.	°C (°F)	46.1 (115)	46.1 (115)
Return Gas Temperature	°C (°F)	35 (95)	35 (95)
Test voltage	V	230	230

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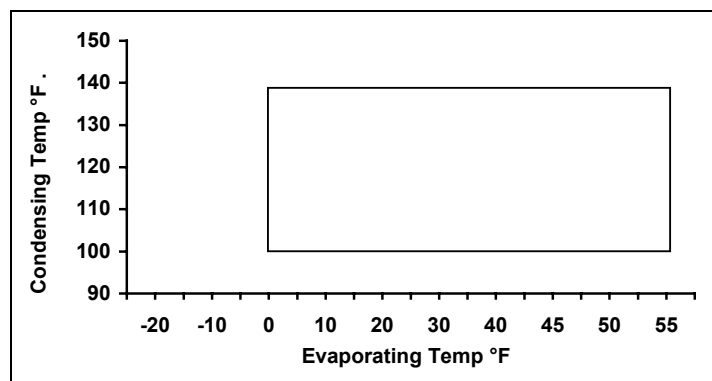
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PRODUCT SPECIFICATION**MODEL – KCE444HAG-B3XX****D) MECHANICAL SPECIFICATION**

Parameter	Unit	Value
Number of Cylinders	Number (s)	One (1)
Displacement	cm ³ (inch ³) / rev	12.05 (0.735)
Net Weight	kg	11.8
Approximate Shipping Weight	kg	12.5
Oil Charge	cm ³ (Oz)	310 (10.5)
Oil Type	Refrigeration Grade	Polyolester (POE)
IPRV (Pressure Differential)	kg / cm ² (psig)	N / A
Crank Case Heater	W / V	N / A

E) ELECTRICAL SPECIFICATION

Parameter	Unit	Value
Operating Voltage Range	V	180 To 260
Motor Circuit	---	CSCR
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	40-60 @ 275
➤ Run Capacitor	μF @ V AC	10 @ 440
➤ Relay	---	LT85002
➤ Over Load Protector	---	KAT0072/K3 OR T0072/K3
Lock Rotor Ampere (LRA)	A	13
Maximum Continuous Current (MCC)	A	3.0
Motor Insulation	---	B Class
High Potential Test	(kV/second/mA)	1.85 / 1 / 5.5

F) OPERATING ENVELOP @ 230V, 50Hz, 1 PhaseS
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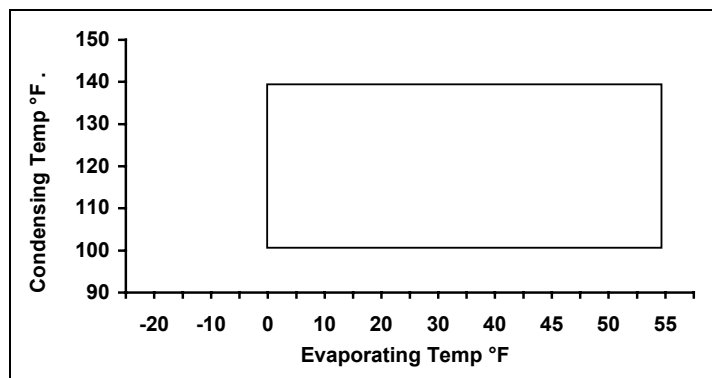
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PRODUCT SPECIFICATION**MODEL – KCE444HAG-B8XX****D) MECHANICAL SPECIFICATION**

Parameter	Unit	Value
Number of Cylinders	Number (s)	One (1)
Displacement	cm ³ (inch ³) / rev	12.05 (0.735)
Net Weight	kg	11.8
Approximate Shipping Weight	kg	12.5
Oil Charge	cm ³ (Oz)	310 (10.5)
Oil Type	Refrigeration Grade	Polyolester (POE)
IPRV (Pressure Differential)	kg / cm ² (psig)	N / A
Crank Case Heater	W / V	N / A

E) ELECTRICAL SPECIFICATION

Parameter	Unit	Value
Operating Voltage Range	V	180 To 260
Motor Circuit	---	CSCR
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	40-60 @ 275
➤ Run Capacitor	μF @ V AC	10 @ 440
➤ Relay	---	KCP14PO
➤ Over Load Protector	---	KAT0072/K3 or T0072/K3
Lock Rotor Ampere (LRA)	A	13
Maximum Continuous Current (MCC)	A	3.0
Motor Insulation	---	B Class
High Potential Test	(kV/second/mA)	1.85 / 1 / 5.5

F) OPERATING ENVELOP @ 230V, 50Hz, 1PhaseS
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PRODUCT SPECIFICATION**MODEL - KCE444HAG-BXXX****PERFORMANCE TABLES**

Return Gas Temp	35°C (95°F)	Voltage	230V, 1Ph, 50Hz
Liquid Sub cooling	8.3°C (15°F)	Compressor Cooling	350 ft ³ / minute
Ambient Temp.	35°C (95°F)	---	---

A) COOLING CAPACITY (Btu / h)

Condensing Temperature		Evaporating Temperature							
°C	(°F)	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
		0	10	20	30	40	45	50	55
37.8	100	1640	2050	2520	3180	4230	4970	5860	6950
43.3	110	1400	1860	2290	2910	3870	4540	5370	6380
48.9	120	1190	1660	2080	2830	3500	4110	4870	5790
54.4	130	1000	1490	1880	2380	3150	3675	4380	5220
60.0	140	875	1360	1730	2160	2830	3310	3920	4680

B) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature							
°C	(°F)	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
		0	10	20	30	40	45	50	55
37.8	100	262	284	314	346	381	398	415	432
43.3	110	264	289	321	358	398	419	440	462
48.9	120	266	293	330	370	417	445	467	493
54.4	130	268	298	339	383	437	475	495	525
60.0	140	270	301	344	396	456	490	523	560

C) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature							
°C	(°F)	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8
		0	10	20	30	40	45	50	55
37.8	100	1.33	1.41	1.52	1.65	1.82	1.92	2.04	2.15
43.3	110	1.34	1.43	1.55	1.71	1.90	2.00	2.14	2.25
48.9	120	1.35	1.46	1.60	1.77	1.97	2.09	2.22	2.37
54.4	130	1.36	1.49	1.64	1.83	2.05	2.20	2.31	2.47
60.0	140	1.37	1.51	1.68	1.87	2.11	2.27	2.40	2.55

- Note – 1. Nominal performance values ($\pm 5\%$) based on 24 hours running. Subject to change without notice.
 2. Compressor is intended to be operated in the range of condensing & evaporating temperature where performance values are specified in above tables.

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DESIGN SPECIFICATION

MODEL – KCE444HAG-B8XX

A) MECHANICAL SPECIFICATION

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	2.20 (0.8663)
Crank Shaft Eccentricity	cm (inch)	0.889 (0.350)
Crank Shaft Stroke	cm (inch)	1.778 (0.700)
Approximate Internal Free Volume (without oil)	cm ³ (ounces)	2400 (81.1)
Maximum Residual Moisture	mg	25
Maximum Internal Solid Residue / Impurities	mg	30

B) ELECTRICAL SPECIFICATION

Parameter	Unit	Value	
Motor Type	---	2 Pole, Induction, Single Phase	
Nominal Motor Speed	rev / min	2900	
Nominal Motor Winding Resistance (at 25 °C)	Main	Ω	5.91 To 6.86
	Aux	Ω	21.42 To 24.90
Nominal Motor Output Power	kW	0.36	
Maximum Allowable Motor Winding Temperature	°C	130	
Relay			
Type	---	PTC	
Part Number	---	KCP14PO	
Resistance	Ω	15 ± 30 %	
Maximum Voltage	V	350	
Switch Curie Temp	°C	120	
Maximum Current	A	8	
Over Load Protector			
Type	---	External	
Part Number	---	KAT0072/K3 or T0072/K3	
Disc Opening Temp.	° F (° C)	212 To 230 (100 To 110)	
Disc Closing Temp.	° F (° C)	131 To 158 (55 To 70)	
1 st cycle trip Current	A	9.5	
1 st cycle trip On time	second	7.5 To 14	
Terminal Fused Cluster	---	1/4" 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	

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