

**Model: AKA9438ZXA**
**Product Description**

**Type:** Reciprocating Compressors  
**Application:** CBP - Commercial Back Pressure  
**Refrigerant:** R-404A/R-407A/R-448A/R-449A/R-452A  
**Voltage/Frequency:** 115V ~ 60Hz 100V ~ 50Hz  
**Version:** N/A


**Product Specifications**
**Performance**

Condition	Test Voltage	Refrigeration Capacity			Input Power (I) W	(E) Efficiency			EVAP TEMP	Condition	AMBIENT TEMP	RETURN GAS	LIQUID TEMP
		(R) Btu/h	(R) kcal/h	(R) W		(E) Btu/Wh	(E) kcal/Wh	W/W					
ARI (R-407A)	115V ~ 60HZ	3796	957	1112	756	5.02	1.27	1.47	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)
ARI (R-449A)	115V ~ 60HZ	3735	941	1094	724	5.15	1.3	1.51	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)
ARI (R-452A)	115V ~ 60HZ	3728	940	1092	757	4.92	1.24	1.44	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)
ARI (R-448A)	115V ~ 60HZ	3735	941	1094	724	5.15	1.3	1.51	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)
ARI (R-404A)	115V ~ 60HZ	3750	945	1099	800	4.69	1.18	1.37	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)

**General**

**Evaporating Temp. Range:** -17.8°C to 10°C (0°F to 50°F)  
**Motor Torque:** High Start Torque (HST)  
**Compressor Cooling:** Fan

**Mechanical**

**Weight:** 41  
**Weight Unit of Measure:** LB  
**Displacement (cc):** 15.634  
**Oil Type:** Polyolester  
**Viscosity (cSt):** 32  
**Oil Charge (cc):** 512

**Electrical**

**Voltage Range (50 Hz):** 90-110  
**Voltage Range (60 Hz):** 103-127  
**Locked Rotor Amps (LRA):** 58.8

Rated Load Amps (RLA 50 Hz):	0
Rated Load Amps (RLA 60 Hz):	9.2
Max. Continuous Current (MCC in Amps):	12.4
Motor Resistance (Ohm) - Main:	.59
Motor Resistance (Ohm) - Start:	4.22
Motor Type:	CSIR
Overload Type:	
Relay Type:	

## Agency Approval

cURus Recognized

**AKA9438ZXA**
**General**

Model	AKA9438ZXA	Unit of Measure	Fahrenheit
Condition	ARI (R-404A)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	MotorType	CSIR

**Performance Information**

EVAP TEMP (°F)	Condensing Temperature (°F)					
		100	110	120	130	140
0	Btu/h	2720	2120	1510	915	321
	Watts	603	533	461	389	316
	Amps	7.79	7.48	7.16	6.82	6.48
	Lb/h	57.7	45.7	33.8	21.9	9.96
5	Btu/h	3360	2710	2070	1440	809
	Watts	676	619	562	505	446
	Amps	8.14	7.88	7.61	7.33	7.04
	Lb/h	70.9	59.0	47.1	35.3	23.6
10	Btu/h	3990	3300	2610	1930	1260
	Watts	737	695	653	609	565
	Amps	8.53	8.34	8.13	7.91	7.68
	Lb/h	84.5	72.5	60.6	48.8	37.0
15	Btu/h	4650	3900	3160	2430	1700
	Watts	788	760	732	703	673
	Amps	8.92	8.80	8.67	8.53	8.36
	Lb/h	99.0	86.8	74.7	62.7	50.8
20	Btu/h	5370	4550	3750	2960	2170
	Watts	827	814	800	785	770
	Amps	9.28	9.25	9.20	9.13	9.05
	Lb/h	115	102	89.9	77.6	65.4
25	Btu/h	6180	5290	4420	3550	2700
	Watts	854	856	857	856	855
	Amps	9.57	9.63	9.67	9.70	9.70
	Lb/h	133	120	107	94.1	81.5
30	Btu/h	7110	6140	5190	4250	3320
	Watts	871	887	902	916	929
	Amps	9.75	9.91	10.1	10.2	10.3
	Lb/h	153	139	126	113	99.5

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	8.853253E+03	1.288619E+03	1.073671E+01	1.774179E+02
C2	2.178864E+02	-1.307275E+01	-5.906514E-02	2.663527E+00
C3	-6.090567E+01	-6.900022E+00	-3.017684E-02	-1.193291E+00
C4	9.328983E-01	-2.164997E-01	-3.341349E-04	2.433873E-02
C5	-1.034236E+00	2.854502E-01	1.390038E-03	-2.788149E-03
C6	-1.358336E-02	2.468758E-03	3.095561E-05	-9.261634E-05

C7	4.288582E-02	-2.496213E-04	-5.006832E-05	7.088428E-04
C8	-1.675596E-02	2.694436E-05	1.912958E-05	-2.769393E-04
C9	1.560092E-03	8.263338E-06	-1.718886E-06	2.578695E-05
C10	9.502368E-05	-2.017834E-05	-2.343839E-07	5.161402E-07

$$\text{Value} = C1 + C2 * \text{Te} + C4 * \text{Te}^2 + C7 * \text{Te}^3 + (C3 + C5 * \text{Te} + C8 * \text{Te}^2) * \text{Tc} + (C6 + C9 * \text{Te}) * \text{Tc}^2 + C10 * \text{Tc}^3$$

Te = Evaporator Temperature

Tc = Condensing Temperature



# Performance Data Sheet

## AKA9438ZXA

### General

Model	AKA9438ZXA	Unit of Measure	Fahrenheit
Condition	ARI (R-448A)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	Motor Type	CSIR

### Performance Information

EVAP TEMP (°F)	Condensing Temperature (°F)					
		100	110	120	130	140
0	Btu/h	3660	3120	2560		
	Watts	543	479	415		
	Amps	6.22	5.87	5.54		
	Lb/h	52.5	44.8	36.8		
5	Btu/h	3890	3300	2700	2080	
	Watts	610	558	507	456	
	Amps	7.00	6.70	6.43	6.18	
	Lb/h	57.0	49.2	41.2	32.9	
10	Btu/h	4220	3580	2930	2270	
	Watts	667	628	590	551	
	Amps	7.68	7.45	7.24	7.04	
	Lb/h	63.1	55.2	47.1	38.7	
15	Btu/h	4680	3980	3270	2560	1820
	Watts	714	688	662	636	611
	Amps	8.27	8.11	7.96	7.83	7.72
	Lb/h	71.0	62.9	54.6	46.1	37.5
20	Btu/h	5270	4510	3740	2960	2170
	Watts	751	738	725	712	698
	Amps	8.73	8.66	8.59	8.53	8.49
	Lb/h	80.9	72.4	63.9	55.2	46.4
25	Btu/h	6010	5170	4330	3480	2630
	Watts	777	777	777	777	776
	Amps	9.06	9.08	9.10	9.13	9.16
	Lb/h	92.9	84.0	75.1	66.1	57.1
30	Btu/h	6920	5990	5070	4150	3230
	Watts	792	805	818	831	844
	Amps	9.24	9.37	9.49	9.61	9.73
	Lb/h	107	97.7	88.3	79.0	69.6

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	8.166364E+03	1.192124E+03	1.079255E+01	1.198948E+02
C2	1.663718E+02	-1.124234E+01	-9.628085E-04	1.325141E+00
C3	-4.093147E+01	-6.561038E+00	-5.061919E-02	-6.274582E-01
C4	3.585893E+00	-2.205398E-01	-3.402072E-03	4.882512E-02
C5	-1.788608E+00	2.636281E-01	2.193562E-03	-1.121462E-02
C6	-5.593398E-03	4.279614E-04	8.947552E-06	-4.793886E-05

C7	1.668125E-02	-2.821683E-04	-2.015655E-05	1.868327E-04
C8	-1.609840E-02	2.515816E-04	1.931623E-05	-1.812133E-04
C9	4.666194E-03	-6.818974E-05	-5.567842E-06	5.273244E-05
C10	-3.543274E-04	2.291845E-06	4.038452E-07	-4.131372E-06

$$\text{Value} = C1 + C2 * \text{Te} + C4 * \text{Te}^2 + C7 * \text{Te}^3 + (C3 + C5 * \text{Te} + C8 * \text{Te}^2) * \text{Tc} + (C6 + C9 * \text{Te}) * \text{Tc}^2 + C10 * \text{Tc}^3$$

Te = Evaporator Temperature

Tc = Condensing Temperature



# Performance Data Sheet

## AKA9438ZXA

### General

Model	AKA9438ZXA	Unit of Measure	Fahrenheit
Condition	ARI (R-449A)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	Motor Type	CSIR

### Performance Information

EVAP TEMP (°F)	Condensing Temperature (°F)					
		100	110	120	130	140
0	Btu/h	3660	3120	2560		
	Watts	543	479	415		
	Amps	6.22	5.87	5.54		
	Lb/h	52.5	44.8	36.8		
5	Btu/h	3890	3300	2700	2080	
	Watts	610	558	507	456	
	Amps	7.00	6.70	6.43	6.18	
	Lb/h	57.0	49.2	41.2	32.9	
10	Btu/h	4220	3580	2930	2270	
	Watts	667	628	590	551	
	Amps	7.68	7.45	7.24	7.04	
	Lb/h	63.1	55.2	47.1	38.7	
15	Btu/h	4680	3980	3270	2560	1820
	Watts	714	688	662	636	611
	Amps	8.27	8.11	7.96	7.83	7.72
	Lb/h	71.0	62.9	54.6	46.1	37.5
20	Btu/h	5270	4510	3740	2960	2170
	Watts	751	738	725	712	698
	Amps	8.73	8.66	8.59	8.53	8.49
	Lb/h	80.9	72.4	63.9	55.2	46.4
25	Btu/h	6010	5170	4330	3480	2630
	Watts	777	777	777	777	776
	Amps	9.06	9.08	9.10	9.13	9.16
	Lb/h	92.9	84.0	75.1	66.1	57.1
30	Btu/h	6920	5990	5070	4150	3230
	Watts	792	805	818	831	844
	Amps	9.24	9.37	9.49	9.61	9.73
	Lb/h	107	97.7	88.3	79.0	69.6

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	8.166364E+03	1.192124E+03	1.079255E+01	1.198948E+02
C2	1.663718E+02	-1.124234E+01	-9.628085E-04	1.325141E+00
C3	-4.093147E+01	-6.561038E+00	-5.061919E-02	-6.274582E-01
C4	3.585893E+00	-2.205398E-01	-3.402072E-03	4.882512E-02
C5	-1.788608E+00	2.636281E-01	2.193562E-03	-1.121462E-02
C6	-5.593398E-03	4.279614E-04	8.947552E-06	-4.793886E-05

C7	1.668125E-02	-2.821683E-04	-2.015655E-05	1.868327E-04
C8	-1.609840E-02	2.515816E-04	1.931623E-05	-1.812133E-04
C9	4.666194E-03	-6.818974E-05	-5.567842E-06	5.273244E-05
C10	-3.543274E-04	2.291845E-06	4.038452E-07	-4.131372E-06

$$\text{Value} = C1 + C2 * \text{Te} + C4 * \text{Te}^2 + C7 * \text{Te}^3 + (C3 + C5 * \text{Te} + C8 * \text{Te}^2) * \text{Tc} + (C6 + C9 * \text{Te}) * \text{Tc}^2 + C10 * \text{Tc}^3$$

Te = Evaporator Temperature

Tc = Condensing Temperature



# Performance Data Sheet

## AKA9438ZXA

### General

Model	AKA9438ZXA	Unit of Measure	Fahrenheit
Condition	ARI (R-452A)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	Motor Type	CSIR

### Performance Information

EVAP TEMP (°F)	Condensing Temperature (°F)					
		100	110	120	130	140
0	Btu/h	3660	3120	2560		
	Watts	567	500	434		
	Amps	6.38	6.02	5.68		
	Lb/h	71.2	60.7	49.8		
5	Btu/h	3880	3300	2690	2070	
	Watts	637	584	530	477	
	Amps	7.17	6.87	6.59	6.33	
	Lb/h	77.2	66.7	55.8	44.6	
10	Btu/h	4210	3580	2930	2260	
	Watts	697	657	616	576	
	Amps	7.88	7.64	7.42	7.22	
	Lb/h	85.5	74.8	63.8	52.5	
15	Btu/h	4670	3970	3270	2550	1820
	Watts	747	719	692	665	638
	Amps	8.47	8.31	8.16	8.03	7.91
	Lb/h	96.3	85.2	74.0	62.5	50.8
20	Btu/h	5260	4500	3730	2950	2160
	Watts	785	771	757	744	730
	Amps	8.95	8.87	8.81	8.75	8.70
	Lb/h	110	98.2	86.6	74.8	62.9
25	Btu/h	6000	5160	4320	3480	2630
	Watts	812	812	812	812	811
	Amps	9.28	9.31	9.33	9.36	9.39
	Lb/h	126	114	102	89.6	77.4
30	Btu/h	6900	5980	5060	4140	3220
	Watts	828	842	855	869	882
	Amps	9.47	9.60	9.73	9.85	9.97
	Lb/h	145	132	120	107	94.3

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	8.150904E+03	1.245993E+03	1.106286E+01	1.625086E+02
C2	1.660568E+02	-1.175035E+01	-9.869837E-04	1.796132E+00
C3	-4.085399E+01	-6.857516E+00	-5.188696E-02	-8.504738E-01
C4	3.579103E+00	-2.305056E-01	-3.487277E-03	6.617887E-02
C5	-1.785221E+00	2.755408E-01	2.248500E-03	-1.520060E-02
C6	-5.582804E-03	4.473008E-04	9.171658E-06	-6.497817E-05

C7	1.664966E-02	-2.949181E-04	-2.066138E-05	2.532378E-04
C8	-1.606791E-02	2.629493E-04	1.980002E-05	-2.456211E-04
C9	4.657356E-03	-7.127084E-05	-5.707290E-06	7.147489E-05
C10	-3.536563E-04	2.395381E-06	4.139596E-07	-5.599761E-06

$$\text{Value} = C1 + C2 * \text{Te} + C4 * \text{Te}^2 + C7 * \text{Te}^3 + (C3 + C5 * \text{Te} + C8 * \text{Te}^2) * \text{Tc} + (C6 + C9 * \text{Te}) * \text{Tc}^2 + C10 * \text{Tc}^3$$

Te = Evaporator Temperature

Tc = Condensing Temperature