

**Model: AE4456Y-AA1C**
**Product Description**

**Type:** Reciprocating Compressors  
**Application:** HBP/CBP - High/Commercial Back Pressure  
**ProductDescription:** R-134a/R-513A  
**Voltage/Frequency:** 115V ~ 60Hz  
**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					
ASHRAE (R-134a)	115V ~ 60HZ	5950	1499	1744	790	7.53	1.9	2.21	7.2°C (45°F)	54°C (130°F)	35°C (95°F)	35°C (95°F)	46°C (115°F)
ARI (R-134a)	115V ~ 60HZ	5600	1411	1641	796	7.04	1.77	2.06	7.2°C (45°F)	54°C (130°F)	35°C (95°F)	18.3°C (65°F)	46°C (115°F)
ASHRAE (R-513A)	115V ~ 60HZ	6095	1536	1786	814	7.48	1.89	2.19	7.2°C (45°F)	54°C (130°F)	35°C (95°F)	35°C (95°F)	46°C (115°F)

**General**

**Evaporating Temp. Range:** -15°C to 15°C (5°F to 59°F)  
**Motor Torque:** High Start Torque (HST)  
**Compressor Cooling:** Fan

**Mechanical**

**Weight:** 11  
**Weight Unit of Measure:** KG  
**Displacement (cc):** 14.51  
**Oil Type:** Polyolester  
**Viscosity (cSt):** 32  
**Oil Charge (cc):** 387

**Electrical**

**Voltage Range (50 Hz):**  
**Voltage Range (60 Hz):** 103-127  
**Locked Rotor Amps (LRA):** 44.5  
**Rated Load Amps (RLA 50 Hz):** 0  
**Rated Load Amps (RLA 60 Hz):** 8.53  
**Max. Continuous Current (MCC in Amps):** 18  
**Motor Resistance (Ohm) - Main:** .8  
**Motor Resistance (Ohm) - Start:** 4.34  
**Motor Type:** CSIR  
**Overload Type:**  
**Relay Type:**

Agency Approval

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CE Listed, SASO Listed, cURus Recognized



# Performance Data Sheet

## AE4456Y-AA1C

### General

Model	AE4456Y-AA1C	Unit of Measure	Fahrenheit
Condition	ASHRAE (R-513A)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	35°C (95°F) RETURN GAS	MotorType	CSIR

### Performance Information

EVAP TEMP (°F)	Condensing Temperature (°F)								
		80	90	100	110	120	130	140	150
5	Btu/h	2730	2940	2940	2810	2590	2340	2120	1990
	Watts	353	415	457	484	500	508	513	519
	Amps	5.58	5.85	6.06	6.22	6.33	6.41	6.46	6.49
	Lb/h	28.7	35.5	38.7	39.4	38.4	36.8	35.5	35.5
10	Btu/h	3300	3440	3390	3200	2930	2620	2350	2160
	Watts	389	448	489	515	531	541	550	560
	Amps	5.85	6.11	6.31	6.46	6.58	6.67	6.74	6.79
	Lb/h	36.3	42.4	45.1	45.1	43.6	41.4	39.5	39.0
15	Btu/h	3920	4010	3910	3660	3330	2970	2640	2400
	Watts	426	481	520	547	564	576	588	603
	Amps	6.10	6.35	6.54	6.70	6.82	6.93	7.02	7.10
	Lb/h	44.5	50.1	52.2	51.7	49.6	46.9	44.6	43.5
20	Btu/h	4590	4630	4470	4170	3790	3370	2990	2690
	Watts	462	515	553	579	598	613	628	648
	Amps	6.33	6.57	6.76	6.92	7.06	7.19	7.31	7.43
	Lb/h	53.4	58.5	60.1	59.1	56.6	53.4	50.6	49.1
25	Btu/h	5320	5300	5090	4730	4300	3830	3390	3040
	Watts	498	549	586	612	632	650	670	696
	Amps	6.54	6.77	6.97	7.15	7.31	7.45	7.60	7.76
	Lb/h	62.8	67.5	68.7	67.3	64.4	60.8	57.6	55.7
30	Btu/h	6090	6020	5750	5350	4850	4330	3840	3430
	Watts	533	582	619	646	668	690	714	745
	Amps	6.74	6.97	7.18	7.37	7.55	7.73	7.92	8.12
	Lb/h	72.8	77.1	77.9	76.2	72.9	69.1	65.5	63.4
35	Btu/h	6900	6780	6460	6000	5450	4880	4340	3880
	Watts	568	616	652	680	705	730	759	797
	Amps	6.93	7.17	7.40	7.61	7.82	8.03	8.26	8.51
	Lb/h	83.3	87.3	87.9	85.9	82.3	78.2	74.4	72.0
40	Btu/h	7750	7580	7210	6690	6100	5470	4870	4360
	Watts	603	649	686	715	743	772	806	850
	Amps	7.12	7.38	7.62	7.86	8.10	8.35	8.63	8.93
	Lb/h	94.3	98.1	98.4	96.2	92.4	88.1	84.1	81.5
45	Btu/h	8630	8400	7980	7420	6770	6100	5450	4890
	Watts	637	683	719	751	781	814	854	905
	Amps	7.32	7.59	7.85	8.12	8.40	8.70	9.03	9.39

	Lb/h	106	109	109	107	103	98.7	94.6	91.9
50	Btu/h	9530	9260	8790	8180	7480	6750	6050	5440
	Watts	670	716	753	787	820	858	904	962
	Amps	7.52	7.82	8.11	8.42	8.74	9.09	9.47	9.90
	Lb/h	118	121	121	119	115	110	106	103
55	Btu/h	10500	10100	9630	8960	8220	7440	6690	6020
	Watts	703	748	787	823	860	903	955	1020
	Amps	7.75	8.07	8.40	8.74	9.11	9.51	9.95	10.4
	Lb/h	130	133	133	131	127	122	118	115

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	-1.384306E+04	-1.432777E+03	-6.164069E-01	-2.815982E+02
C2	1.829199E+02	2.240375E+01	1.534323E-01	2.527324E+00
C3	4.249060E+02	4.029951E+01	1.233374E-01	7.657948E+00
C4	1.227901E+00	-5.398464E-02	-1.540900E-03	4.161760E-03
C5	-1.106559E+00	-2.910559E-01	-1.651013E-03	-1.596533E-02
C6	-3.560609E+00	-2.838847E-01	-7.389122E-04	-6.119109E-02
C7	-5.697286E-03	-1.001725E-04	7.405884E-06	-4.575981E-05
C8	1.347371E-03	6.834403E-04	9.481738E-06	1.281572E-04
C9	-1.393300E-04	1.276383E-03	6.931875E-06	9.392246E-06
C10	9.513651E-03	6.682859E-04	1.457925E-06	1.608719E-04

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

Te = Evaporator Temperature

Tc = Condensing Temperature



# Performance Data Sheet

## AE4456Y-AA1C

### General

Model	AE4456Y-AA1C	Unit of Measure	Fahrenheit
Condition	EN12900 (R-134a)	Voltage/Frequency	115V ~ 60HZ
RETURN GAS	20°C (68°F) RETURN GAS	MotorType	CSIR

### Performance Information

EVAP TEMP (°F)	Condensing Temperature (°F)								
		80	90	100	110	120	130	140	150
5	Btu/h	2290	2460	2460	2350	2160	1960	1780	1670
	Watts	339	399	440	466	481	489	494	499
	Amps	5.47	5.74	5.94	6.10	6.21	6.28	6.33	6.36
	Lb/h	25.5	31.6	34.5	35.0	34.2	32.8	31.6	31.6
10	Btu/h	2760	2880	2840	2680	2450	2200	1970	1810
	Watts	375	431	470	495	511	521	529	538
	Amps	5.74	5.99	6.19	6.34	6.45	6.54	6.60	6.66
	Lb/h	32.3	37.8	40.1	40.2	38.8	36.8	35.2	34.7
15	Btu/h	3280	3360	3270	3060	2780	2480	2210	2010
	Watts	409	463	501	526	542	554	566	580
	Amps	5.98	6.22	6.41	6.57	6.69	6.79	6.88	6.96
	Lb/h	39.6	44.6	46.5	46.0	44.2	41.8	39.7	38.7
20	Btu/h	3840	3880	3740	3490	3170	2820	2500	2250
	Watts	444	495	532	557	575	589	604	623
	Amps	6.20	6.44	6.63	6.79	6.93	7.05	7.16	7.28
	Lb/h	47.5	52.1	53.5	52.6	50.4	47.6	45.1	43.7
25	Btu/h	4450	4440	4260	3960	3590	3200	2840	2540
	Watts	479	528	563	589	608	626	645	669
	Amps	6.41	6.64	6.84	7.01	7.16	7.31	7.46	7.61
	Lb/h	55.9	60.1	61.1	59.9	57.3	54.1	51.3	49.6
30	Btu/h	5090	5040	4810	4470	4060	3620	3210	2870
	Watts	513	560	595	621	643	663	687	717
	Amps	6.60	6.84	7.04	7.23	7.41	7.58	7.77	7.97
	Lb/h	64.8	68.7	69.4	67.9	64.9	61.5	58.4	56.4
35	Btu/h	5770	5670	5410	5020	4560	4080	3630	3250
	Watts	546	593	627	655	678	702	730	766
	Amps	6.79	7.03	7.25	7.46	7.66	7.87	8.10	8.35
	Lb/h	74.2	77.8	78.2	76.4	73.3	69.6	66.2	64.1
40	Btu/h	6480	6340	6030	5600	5100	4580	4080	3650
	Watts	580	625	660	688	714	742	775	818
	Amps	6.98	7.23	7.47	7.70	7.94	8.19	8.46	8.76
	Lb/h	84.0	87.3	87.6	85.6	82.3	78.4	74.9	72.5
45	Btu/h	7220	7030	6680	6210	5670	5100	4560	4090
	Watts	612	657	692	722	751	783	822	871
	Amps	7.17	7.44	7.70	7.96	8.24	8.53	8.85	9.21

	Lb/h	94.2	97.4	97.5	95.4	91.9	87.9	84.3	81.8
50	Btu/h	7980	7750	7360	6840	6260	5650	5070	4550
	Watts	645	688	724	757	789	826	870	926
	Amps	7.38	7.67	7.95	8.25	8.57	8.91	9.28	9.70
	Lb/h	105	108	108	106	102	98.0	94.3	91.9
55	Btu/h	8760	8490	8060	7500	6870	6220	5600	5040
	Watts	676	720	757	792	828	869	919	982
	Amps	7.60	7.91	8.23	8.57	8.93	9.32	9.76	10.2
	Lb/h	116	119	119	116	113	109	105	103

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	-1.158320E+04	-1.378212E+03	-6.043622E-01	-2.507342E+02
C2	1.530585E+02	2.155054E+01	1.504342E-01	2.250322E+00
C3	3.555407E+02	3.876476E+01	1.209274E-01	6.818615E+00
C4	1.027448E+00	-5.192871E-02	-1.510790E-03	3.705619E-03
C5	-9.259149E-01	-2.799715E-01	-1.618752E-03	-1.421548E-02
C6	-2.979345E+00	-2.730734E-01	-7.244737E-04	-5.448437E-02
C7	-4.767212E-03	-9.635753E-05	7.261171E-06	-4.074440E-05
C8	1.127415E-03	6.574125E-04	9.296463E-06	1.141108E-04
C9	-1.165846E-04	1.227774E-03	6.796425E-06	8.362828E-06
C10	7.960561E-03	6.428352E-04	1.429437E-06	1.432399E-04

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

Te = Evaporator Temperature

Tc = Condensing Temperature