Technical Datasheet

10/29/2019

Model: TPA9421YXA

Product Description

Type: Reciprocating Compressors
Application: CBP - Commercial Back Pressure
Refrigerant: R-134a/R-513A
Voltage/Frequency: 115V ~ 60Hz 100V ~ 50Hz
Version: N/A

Product Specifications

Performance

		Refrigeration Capacity			Input Power	(E) Efficiency							
Condition	Test Voltage	(R) Btu/h	(R) kcal/h	(R) W	(I) W	(E) Btu/Wh	(E) kcal/Wh	W/W	EVAP TEMP	Condition	AMBIENT TEMP	RETURN GAS	LIQUID TEMP
ARI (R-513A)	115V ~ 60HZ	2119	534	621	463	4.58	1.15	1.34	-6.7°C (20°F)	49°C (120°F)	35°C (95°F)	4.4°C (40°F)	49°C (120°F)
ARI (R-134a)	115V ~ 60HZ	2075	523	608	445	4.66	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)
ASHRAE (R-134a)	115V ~ 60HZ	2340	590	686	445	5.26	1.33	1.54	-23°C (-10°F)	54°C (130°F)	35°C (95°F)	35°C (95°F)	46°C (115°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: 25
Weight Unit of Measure: LB
Displacement (cc): 10.87
Oil Type: Polyolester
Viscosity (cSt): 32
Oil Charge (cc): 247.67

Electrical

Voltage Range (50 Hz): 90-110
Voltage Range (60 Hz): 103-127
Locked Rotor Amps (LRA): 40
Rated Load Amps (RLA 50 Hz): 0
Rated Load Amps (RLA 60 Hz): 6.35

Max. Continuous Current (MCC in Amps):	8.8
Motor Resistance (Ohm) - Main:	.97
Motor Resistance (Ohm) - Start:	5.9
MotorType:	CSIR
Overload Type:	
Relay Type:	

Agency Approval

cURus Recognized

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Performance Data Sheet

TPA9421YXA

General

Model	TPA9421YXA	**Unit of Measure**	Fahrenheit
Condition	ARI (R-134a)	**Voltage/Frequency**	115V~60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	**MotorType**	CSIR

Performance Information

EVAP TEMP (°F)		Condensing Temperature (°F)							
		80	**90**	**100**	**110**	**120**	**130**	**140**	**150**
0	Btu/h	1680	1560	1430	1300	1170	1050	920	793
	Watts	305	310	314	319	324	328	333	338
	Amps	5.99	5.99	5.98	5.98	5.97	5.97	5.97	5.96
	Lb/h	23.8	22.9	21.9	21.0	20.0	19.0	18.1	17.1
5	Btu/h	1960	1810	1660	1510	1360	1220	1070	921
	Watts	321	327	333	339	345	352	358	364
	Amps	6.02	6.02	6.03	6.03	6.03	6.03	6.04	6.04
	Lb/h	27.5	26.4	25.4	24.3	23.2	22.2	21.1	20.0
10	Btu/h	2260	2090	1920	1750	1580	1410	1240	1070
	Watts	337	345	352	360	368	376	383	391
	Amps	6.08	6.09	6.10	6.12	6.13	6.14	6.15	6.16
	Lb/h	31.7	30.5	29.3	28.1	27.0	25.8	24.6	23.4
15	Btu/h	2590	2390	2200	2010	1810	1620	1430	1240
	Watts	354	363	372	382	391	400	410	419
	Amps	6.15	6.18	6.21	6.23	6.25	6.28	6.30	6.32
	Lb/h	36.4	35.1	33.8	32.5	31.2	29.9	28.6	27.3
20	Btu/h	2940	2730	2510	2290	2080	1860	1640	1430
	Watts	372	382	393	404	415	426	437	447
	Amps	6.24	6.28	6.32	6.36	6.40	6.44	6.47	6.50
	Lb/h	41.6	40.1	38.7	37.3	35.9	34.5	33.1	31.6
25	Btu/h	3330	3090	2850	2610	2370	2130	1890	1650
	Watts	390	402	415	427	440	452	464	477
	Amps	6.33	6.39	6.45	6.50	6.56	6.61	6.66	6.71
	Lb/h	47.3	45.7	44.2	42.7	41.1	39.6	38.1	36.5
30	Btu/h	3750	3490	3220	2950	2690	2420	2160	1900
	Watts	409	423	437	451	465	479	493	507
	Amps	6.41	6.49	6.57	6.64	6.72	6.79	6.85	6.92
	Lb/h	53.5	51.8	50.2	48.5	46.9	45.2	43.6	41.9

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	2.701919E+03	2.672180E+02	6.032187E+00	3.143549E+01
C2	8.838509E+01	5.606495E-01	-1.271852E-02	8.666074E-01
C3	-1.271248E+01	4.703358E-01	-5.656737E-04	-9.540692E-02
C4	5.321248E-01	1.405498E-02	3.614990E-04	9.970848E-03
C5	-4.498997E-01	3.105099E-02	2.243940E-04	-2.250253E-03
C6	-6.198066E-04	5.681768E-05	8.832423E-07	1.021851E-05

C7	3.269425E-03	3.194112E-06	-1.204227E-05	9.053923E-06
C8	-1.302313E-03	3.499308E-06	4.861035E-06	-2.857291E-06
C9	1.281467E-04	-1.017079E-06	-4.866127E-07	1.781029E-07
C10	3.565353E-06	-4.250078E-07	-1.531409E-09	-8.116553E-08

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

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Performance Data Sheet

TPA9421YXA

General

Model	TPA9421YXA	**Unit of Measure**	Fahrenheit
Condition	ARI (R-134a)	**Voltage/Frequency**	115V~60HZ
RETURN GAS	18.3°C (65°F) RETURN GAS	**MotorType**	CSIR

Performance Information

EVAP TEMP (°F)		Condensing Temperature (°F)				
		100	110	120	130	140
20	Btu/h	2650	2450	2240	2030	1820
	Watts	395	409	421	433	445
	Amps	6.43	6.49	6.55	6.61	6.67
	Lb/h	38.0	36.8	35.5	34.3	33.2
25	Btu/h	3030	2800	2560	2320	2080
	Watts	416	431	446	460	473
	Amps	6.48	6.56	6.63	6.70	6.77
	Lb/h	43.3	42.0	40.6	39.2	37.8
30	Btu/h	3440	3170	2900	2640	2360
	Watts	438	455	471	487	502
	Amps	6.56	6.65	6.74	6.83	6.91
	Lb/h	49.3	47.8	46.2	44.7	43.1
35	Btu/h	3880	3580	3280	2980	2680
	Watts	462	480	497	514	532
	Amps	6.67	6.78	6.88	6.98	7.08
	Lb/h	55.9	54.2	52.5	50.8	49.1
40	Btu/h	4350	4020	3680	3350	3020
	Watts	489	506	525	543	562
	Amps	6.81	6.93	7.05	7.17	7.29
	Lb/h	63.0	61.2	59.4	57.6	55.7
45	Btu/h	4850	4490	4120	3750	3390
	Watts	518	536	555	574	594
	Amps	6.97	7.11	7.25	7.38	7.52
	Lb/h	70.7	68.8	66.9	64.9	62.9
50	Btu/h	5390	4990	4580	4180	3780
	Watts	550	568	587	607	627
	Amps	7.17	7.32	7.47	7.63	7.78
	Lb/h	78.8	76.9	74.8	72.8	70.7

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	2.160090E+03	2.404105E+02	6.557296E+00	2.886343E+01
C2	1.138191E+02	1.092855E-01	-4.744141E-02	8.365702E-01
C3	-7.209774E+00	9.385167E-01	-2.927812E-04	-6.629784E-02
C4	6.141682E-01	4.090144E-02	5.891891E-04	1.161019E-02
C5	-6.557067E-01	2.129707E-02	3.083331E-04	-2.830630E-03
C6	3.872849E-04	-2.019189E-05	8.856411E-07	2.361962E-05

C7	1.585105E-03	6.717546E-04	-1.145357E-06	-4.357078E-05
C8	-1.605484E-03	-6.526473E-04	1.006650E-06	3.988442E-05
C9	5.125883E-04	1.997683E-04	-2.743587E-07	-1.142332E-05
C10	-5.421137E-05	-1.896295E-05	1.598544E-08	8.297629E-07

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

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Performance Data Sheet

TPA9421YXA

General

Model	TPA9421YXA	**Unit of Measure**	Fahrenheit
Condition	ARI (R-513A)	**Voltage/Frequency**	115V~60HZ
RETURN GAS	4.4°C (40°F) RETURN GAS	**MotorType**	CSIR

Performance Information

EVAP TEMP (°F)		Condensing Temperature (°F)						
		80	90	100	110	120	130	140
0	Btu/h	1710	1580	1450	1330	1200	1070	937
	Watts	340	345	351	356	361	366	371
	Amps	6.46	6.46	6.45	6.45	6.44	6.44	6.43
	Lb/h	29.1	27.9	26.7	25.6	24.4	23.2	22.0
5	Btu/h	2000	1840	1690	1540	1390	1240	1090
	Watts	357	364	371	378	385	392	399
	Amps	6.49	6.49	6.50	6.50	6.50	6.51	6.51
	Lb/h	33.6	32.3	31.0	29.6	28.3	27.0	25.7
10	Btu/h	2300	2130	1950	1780	1610	1430	1260
	Watts	376	384	393	402	410	419	428
	Amps	6.55	6.57	6.58	6.59	6.61	6.62	6.63
	Lb/h	38.7	37.2	35.8	34.3	32.9	31.4	30.0
15	Btu/h	2640	2440	2240	2040	1850	1650	1450
	Watts	395	405	415	426	436	446	457
	Amps	6.63	6.66	6.69	6.72	6.74	6.77	6.79
	Lb/h	44.4	42.8	41.2	39.6	38.0	36.4	34.8
20	Btu/h	3000	2780	2560	2330	2110	1890	1670
	Watts	414	426	439	451	463	475	487
	Amps	6.73	6.77	6.82	6.86	6.90	6.94	6.98
	Lb/h	50.7	49.0	47.2	45.5	43.8	42.1	40.3
25	Btu/h	3390	3150	2900	2650	2410	2170	1920
	Watts	435	449	463	476	490	504	518
	Amps	6.82	6.89	6.95	7.01	7.07	7.12	7.18
	Lb/h	57.6	55.8	53.9	52.0	50.2	48.3	46.4
30	Btu/h	3820	3550	3280	3010	2740	2470	2200
	Watts	456	472	487	503	519	534	550
	Amps	6.91	6.99	7.08	7.16	7.24	7.32	7.39
	Lb/h	65.2	63.2	61.2	59.2	57.2	55.2	53.1

COEFFICIENTS	CAPACITY	POWER	CURRENT	MASS FLOW
C1	2.752450E+03	2.979964E+02	6.503452E+00	3.834429E+01
C2	9.003806E+01	6.252255E-01	-1.371215E-02	1.057068E+00
C3	-1.295023E+01	5.245094E-01	-6.098670E-04	-1.163752E-01
C4	5.420766E-01	1.567384E-02	3.897411E-04	1.216221E-02
C5	-4.583137E-01	3.462747E-02	2.419248E-04	-2.744807E-03
C6	-6.313982E-04	6.336198E-05	9.522456E-07	1.246431E-05

C7	3.330570E-03	3.562012E-06	-1.298307E-05	1.104377E-05
C8	-1.326669E-03	3.902361E-06	5.240803E-06	-3.485258E-06
C9	1.305433E-04	-1.134227E-06	-5.246293E-07	2.172458E-07
C10	3.632032E-06	-4.739605E-07	-1.651050E-09	-9.900386E-08

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