

COMPRESSOR DEFINITION

Designation	NJ X4219GS
Nominal Voltage/Frequency	400 V 50 Hz / 440 V 60 Hz
Engineering Number	945CS22

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-452A		
3 Nominal voltage and frequency	400 / 50	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	3PHASE		
6 Starting torque	HST - Hight starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	Fan	360 to 424 V	414 to 484 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	25.13	[kgf/cm ²] (357 psig)	/ °C - °F
9.2 Peak	28.19	[kgf/cm ²] (401 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	2	[hp]
2 Displacement	37.88	[cm ³] (2.312 cu.in)
2.1 Bore [mm]	44.980	
2.2 Stroke [mm]	23.850	
3 Lubricant charge	750	[ml] (25.36 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	21.7	[kg] (47.84 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	400 V 50 Hz / 440 V 60 Hz 3 ~ (Three phase)	
2 Starting device type	3PHASE	
2.1 Starting device		
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	34HM294-50	
6 Start winding resistance	7.77	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	7.77	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	23.00/23.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @400V50Hz			EN12900LBP Fan		Evaporating temperature (Condensing temperature		-35°C (-31°F) 40°C (104°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3719	937	1090	951	2.50	29.28	3.91	0.99	1.15

E - PERFORMANCE - CURVES

TEST CONDITIONS: @400V50Hz			EN12900 Fan		(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	4098	1033	1201	940	2.49	30.45	4.35	1.10	1.28
-30	(-22)	5380	1356	1576	1079	2.62	40.25	4.98	1.26	1.46
-25	(-13)	6845	1725	2006	1220	2.77	51.44	5.61	1.41	1.64
-20	(- 4)	8495	2141	2489	1364	2.93	64.11	6.23	1.57	1.83
-15	(+ 5)	10328	2603	3026	1510	3.10	78.39	6.84	1.72	2.01
-10	(+14)	12345	3111	3617	1659	3.28	94.39	7.45	1.88	2.18
-5	(+23)	14546	3666	4262	1810	3.48	112.23	8.04	2.03	2.36
0	(+32)	16932	4267	4961	1963	3.69	132.02	8.62	2.17	2.53

TEST CONDITIONS: @400V50Hz			EN12900 Fan		(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	3326	838	975	972	2.51	27.95	3.43	0.87	1.01
-30	(-22)	4442	1119	1301	1127	2.67	37.42	3.94	0.99	1.16
-25	(-13)	5735	1445	1681	1287	2.84	48.49	4.45	1.12	1.30
-20	(- 4)	7207	1816	2112	1451	3.02	61.25	4.96	1.25	1.45
-15	(+ 5)	8858	2232	2596	1620	3.21	75.82	5.46	1.38	1.60
-10	(+14)	10688	2693	3132	1794	3.42	92.33	5.95	1.50	1.74
-5	(+23)	12696	3199	3720	1973	3.64	110.88	6.44	1.62	1.89
0	(+32)	14884	3751	4361	2156	3.88	131.58	6.91	1.74	2.02

TEST CONDITIONS: @400V50Hz			EN12900 Fan		(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	2530	638	741	964	2.52	24.57	2.62	0.66	0.77
-30	(-22)	3426	863	1004	1148	2.70	33.46	2.99	0.75	0.88
-25	(-13)	4495	1133	1317	1339	2.90	44.15	3.36	0.85	0.99
-20	(- 4)	5738	1446	1681	1536	3.11	56.75	3.74	0.94	1.10
-15	(+ 5)	7153	1803	2096	1741	3.34	71.36	4.11	1.04	1.20
-10	(+14)	8742	2203	2562	1953	3.58	88.12	4.48	1.13	1.31
-5	(+23)	10505	2647	3078	2172	3.83	107.12	4.84	1.22	1.42
0	(+32)	12441	3135	3646	2398	4.09	128.49	5.19	1.31	1.52

E - PERFORMANCE - CURVES

TEST CONDITIONS: @400V60Hz		EN12900 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	4733	1193	1387	1110	2.24	35.14	4.28	1.08	1.25
-30	(-22)	6255	1576	1833	1298	2.48	46.80	4.83	1.22	1.41
-25	(-13)	8050	2029	2359	1491	2.70	60.49	5.40	1.36	1.58
-20	(- 4)	10118	2550	2965	1688	2.92	76.38	5.99	1.51	1.75
-15	(+ 5)	12460	3140	3651	1891	3.15	94.60	6.58	1.66	1.93
-10	(+14)	15074	3799	4417	2099	3.38	115.29	7.18	1.81	2.10
-5	(+23)	17963	4527	5263	2312	3.64	138.61	7.77	1.96	2.28
0	(+32)	21124	5323	6190	2530	3.93	164.69	8.35	2.10	2.45

TEST CONDITIONS: @400V60Hz		EN12900 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	3933	991	1153	1125	2.06	33.04	3.47	0.87	1.02
-30	(-22)	5186	1307	1519	1336	2.37	43.71	3.88	0.98	1.14
-25	(-13)	6683	1684	1958	1553	2.66	56.51	4.31	1.09	1.26
-20	(- 4)	8424	2123	2469	1777	2.95	71.60	4.75	1.20	1.39
-15	(+ 5)	10411	2624	3051	2007	3.25	89.12	5.20	1.31	1.52
-10	(+14)	12642	3186	3704	2243	3.56	109.21	5.65	1.42	1.65
-5	(+23)	15118	3810	4430	2486	3.89	132.02	6.09	1.53	1.78
0	(+32)	17839	4495	5227	2735	4.25	157.69	6.52	1.64	1.91

TEST CONDITIONS: @400V60Hz		EN12900 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	2780	701	815	1078	2.20	27.02	2.59	0.65	0.76
-30	(-22)	3875	977	1136	1326	2.51	37.85	2.93	0.74	0.86
-25	(-13)	5187	1307	1520	1581	2.80	50.92	3.28	0.83	0.96
-20	(- 4)	6715	1692	1968	1844	3.10	66.36	3.63	0.92	1.06
-15	(+ 5)	8458	2132	2479	2114	3.40	84.33	3.99	1.01	1.17
-10	(+14)	10418	2625	3053	2392	3.71	104.97	4.35	1.10	1.28
-5	(+23)	12595	3174	3691	2678	4.05	128.43	4.71	1.19	1.38
0	(+32)	14987	3777	4392	2971	4.42	154.84	5.04	1.27	1.48

F - EXTERNAL CHARACTERISTICS

1 Base plate	American Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	15.85 +0.25/-0.25	[mm]	(0.624" +0.010"/-0.010")
3.1.1 Material	Copper(OD)		
3.1.2 Shape	Vertical		
3.2 DISCHARGE	11.08 +0.25/+0.25	[mm]	(0.436" +0.010"/+0.010")
3.2.1 Material	Copper(OD)		
3.2.2 Shape	Slanted J		
3.3 PROCESS	8.46 +0.20/-0.20	[mm]	(0.333" +0.008"/-0.008")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Vertical		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		