

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: @440V60Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°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]
7651	1928	2242	1654	2.83	54.06	4.63	1.17	1.36

E - PERFORMANCE - CURVES

TEST CONDITIONS: @440V50Hz			ASHRAE32 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)	4127	1040	1209	939	2.48	23.40	4.40	1.11	1.29
-30 (-22)	5420	1366	1588	1075	2.61	39.38	5.04	1.27	1.48
-25 (-13)	6932	1747	2031	1213	2.75	52.32	5.71	1.44	1.67
-20 (- 4)	8659	2182	2537	1353	2.90	63.87	6.39	1.61	1.87
-15 (+ 5)	10596	2670	3105	1495	3.07	75.70	7.08	1.78	2.07
-10 (+14)	12741	3211	3733	1639	3.25	89.48	7.77	1.96	2.28
-5 (+23)	15089	3802	4421	1783	3.44	106.87	8.47	2.13	2.48
0 (+32)	17636	4444	5168	1927	3.65	129.53	9.15	2.31	2.68

TEST CONDITIONS: @440V50Hz			ASHRAE32 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)	3901	983	1143	970	2.52	22.53	4.02	1.01	1.18
-30 (-22)	5159	1300	1512	1129	2.66	37.78	4.57	1.15	1.34
-25 (-13)	6636	1672	1944	1290	2.82	50.11	5.14	1.30	1.51
-20 (- 4)	8326	2098	2440	1454	3.00	61.19	5.73	1.44	1.68
-15 (+ 5)	10227	2577	2997	1620	3.20	72.68	6.32	1.59	1.85
-10 (+14)	12334	3108	3614	1787	3.42	86.25	6.91	1.74	2.02
-5 (+23)	14643	3690	4291	1956	3.65	103.56	7.50	1.89	2.20
0 (+32)	17150	4322	5025	2125	3.90	126.27	8.07	2.03	2.36

TEST CONDITIONS: @440V50Hz			ASHRAE32 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)	3453	870	1012	975	2.51	20.46	3.55	0.89	1.04
-30 (-22)	4695	1183	1376	1160	2.69	35.02	4.04	1.02	1.18
-25 (-13)	6154	1551	1803	1349	2.89	46.80	4.55	1.15	1.33
-20 (- 4)	7826	1972	2293	1540	3.11	57.47	5.08	1.28	1.49
-15 (+ 5)	9707	2446	2845	1734	3.35	68.67	5.60	1.41	1.64
-10 (+14)	11795	2972	3456	1929	3.61	82.09	6.12	1.54	1.79
-5 (+23)	14083	3549	4127	2125	3.90	99.37	6.63	1.67	1.94
0 (+32)	16569	4175	4855	2322	4.20	122.19	7.13	1.80	2.09

E - PERFORMANCE - CURVES

TEST CONDITIONS: @440V60Hz		ASHRAE32 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]
-35	(-31)	4915	1238	1440	1117	2.27	34.44	4.41	1.11	1.29
-30	(-22)	6446	1624	1889	1299	2.46	45.34	4.97	1.25	1.46
-25	(-13)	8226	2073	2411	1489	2.67	58.05	5.53	1.39	1.62
-20	(- 4)	10257	2585	3005	1686	2.89	72.67	6.08	1.53	1.78
-15	(+ 5)	12536	3159	3673	1890	3.13	89.29	6.62	1.67	1.94
-10	(+14)	15065	3796	4414	2102	3.38	107.99	7.16	1.80	2.10
-5	(+23)	17843	4496	5228	2322	3.65	128.86	7.68	1.94	2.25
0	(+32)	20871	5259	6116	2548	3.94	151.98	8.20	2.07	2.40

TEST CONDITIONS: @440V60Hz		ASHRAE32 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]
-35	(-31)	4579	1154	1342	1123	2.26	32.09	4.05	1.02	1.19
-30	(-22)	6096	1536	1786	1341	2.49	42.88	4.54	1.15	1.33
-25	(-13)	7849	1978	2300	1563	2.73	55.40	5.03	1.27	1.47
-20	(- 4)	9838	2479	2883	1789	3.00	69.71	5.51	1.39	1.61
-15	(+ 5)	12062	3040	3535	2020	3.27	85.91	5.98	1.51	1.75
-10	(+14)	14522	3660	4255	2254	3.57	104.09	6.45	1.63	1.89
-5	(+23)	17218	4339	5045	2492	3.88	124.33	6.91	1.74	2.02
0	(+32)	20149	5077	5904	2735	4.21	146.72	7.36	1.86	2.16

TEST CONDITIONS: @440V60Hz		ASHRAE32 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]
-35	(-31)	3845	969	1127	1092	2.25	26.94	3.53	0.89	1.04
-30	(-22)	5386	1357	1578	1346	2.51	37.89	4.00	1.01	1.17
-25	(-13)	7148	1801	2095	1600	2.79	50.45	4.46	1.12	1.31
-20	(- 4)	9133	2301	2676	1856	3.08	64.72	4.92	1.24	1.44
-15	(+ 5)	11339	2857	3323	2112	3.40	80.76	5.37	1.35	1.57
-10	(+14)	13767	3469	4034	2368	3.72	98.68	5.82	1.47	1.70
-5	(+23)	16417	4137	4811	2626	4.07	118.55	6.26	1.58	1.83
0	(+32)	19289	4861	5652	2883	4.43	140.47	6.69	1.69	1.96

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		