

COMPRESSOR DEFINITION

Designation	NE U2178GK
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	9590A51

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low Back Pressure R404A		
4.1 Evaporating temperature range	-40°C to -10°C	(-40°F to 14°F)	
5 Motor type	CSCR		
6 Starting torque	HST - Hight starting torque		
7 Expantion 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)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	25.7	[kgf/cm²] (365 psig)	/ °C - °F
9.2 Peak (gauge)	28.7	[kgf/cm²] (408 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	16.80	[cm ³] (1.025 cu.in)
2.1 Bore [mm]	31.190	
2.2 Stroke [mm]	22.000	
3 Lubricant charge	350	[ml] (11.84 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.6	[kg] (25.57 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVA6M3C-574	
3 Start capacitor	88-108(330)	[μF(VAC minimum)]
4 Run capacitor	15(400)	[μF(VAC minimum)]
5 Motor protection	SPT2970	
6 Start winding resistance	11.03	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.15	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	21.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	4.27	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
3065	772	898	643	3.00	20.78	4.77	1.20	1.40

TEST CONDITIONS: @220V50Hz			EN12900LBP_HH 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]
1709	431	501	441	2.10	12.58	3.88	0.98	1.14

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan				(Condensing temperature 35°C (+95°F))				
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1473	371	432	382	1.81	9.90	3.84	0.97	1.13
-35	(-31)	1925	485	564	434	2.05	12.98	4.44	1.12	1.30
-30	(-22)	2494	629	731	491	2.31	16.88	5.09	1.28	1.49
-25	(-13)	3180	801	932	553	2.59	21.61	5.75	1.45	1.68
-20	(- 4)	3983	1004	1167	621	2.90	27.20	6.42	1.62	1.88
-15	(+ 5)	4904	1236	1437	693	3.24	33.69	7.08	1.78	2.07
-10	(+14)	5941	1497	1741	770	3.60	41.10	7.71	1.94	2.26

TEST CONDITIONS: @220V50Hz			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]
-40	(-40)	1350	340	395	391	1.86	9.05	3.46	0.87	1.01
-35	(-31)	1795	452	526	449	2.12	12.08	4.00	1.01	1.17
-30	(-22)	2353	593	690	514	2.42	15.89	4.57	1.15	1.34
-25	(-13)	3023	762	886	587	2.74	20.50	5.14	1.30	1.51
-20	(- 4)	3805	959	1115	666	3.10	25.93	5.71	1.44	1.67
-15	(+ 5)	4699	1184	1377	753	3.49	32.22	6.25	1.57	1.83
-10	(+14)	5705	1438	1672	846	3.92	39.39	6.75	1.70	1.98

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	1233	311	361	393	1.87	8.25	3.14	0.79	0.92
-35	(-31)	1659	418	486	459	2.17	11.15	3.62	0.91	1.06
-30	(-22)	2193	553	643	533	2.51	14.78	4.11	1.04	1.20
-25	(-13)	2834	714	830	617	2.88	19.18	4.59	1.16	1.34
-20	(- 4)	3582	903	1050	710	3.30	24.36	5.05	1.27	1.48
-15	(+ 5)	4437	1118	1300	812	3.76	30.36	5.47	1.38	1.60
-10	(+14)	5400	1361	1582	923	4.27	37.20	5.84	1.47	1.71

TEST CONDITIONS: @220V50Hz		EN12900HH 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]
-40	(-40)	1390	350	407	370	1.78	9.64	3.74	0.94	1.10
-35	(-31)	1845	465	541	426	2.03	12.84	4.34	1.09	1.27
-30	(-22)	2408	607	706	486	2.30	16.81	4.96	1.25	1.45
-25	(-13)	3079	776	902	550	2.58	21.59	5.60	1.41	1.64
-20	(- 4)	3858	972	1131	618	2.88	27.19	6.24	1.57	1.83
-15	(+ 5)	4746	1196	1391	690	3.21	33.66	6.87	1.73	2.01
-10	(+14)	5742	1447	1683	766	3.55	41.02	7.49	1.89	2.20

TEST CONDITIONS: @220V50Hz		EN12900HH 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]
-40	(-40)	1141	287	334	382	1.82	8.88	2.99	0.75	0.88
-35	(-31)	1524	384	447	443	2.08	11.92	3.45	0.87	1.01
-30	(-22)	2001	504	586	510	2.38	15.70	3.92	0.99	1.15
-25	(-13)	2569	647	753	584	2.71	20.26	4.39	1.11	1.29
-20	(- 4)	3231	814	947	664	3.07	25.63	4.86	1.22	1.42
-15	(+ 5)	3985	1004	1168	751	3.46	31.84	5.31	1.34	1.56
-10	(+14)	4832	1218	1416	844	3.89	38.92	5.73	1.44	1.68

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		EN12900HH 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]
-40	(-40)	890	224	261	386	1.83	8.01	2.30	0.58	0.67
-35	(-31)	1204	304	353	453	2.13	10.89	2.65	0.67	0.78
-30	(-22)	1596	402	468	529	2.47	14.49	3.01	0.76	0.88
-25	(-13)	2064	520	605	614	2.85	18.86	3.36	0.85	0.99
-20	(- 4)	2610	658	765	707	3.28	24.00	3.70	0.93	1.08
-15	(+ 5)	3232	814	947	810	3.75	29.97	4.00	1.01	1.17
-10	(+14)	3932	991	1152	921	4.26	36.79	4.26	1.07	1.25

DEVELOPMENT

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.1 +0.10/+0.00	[mm]	(0.319" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42°		
3.2 DISCHARGE	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 42°		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		

DEVELOPMENT