

### COMPRESSOR DEFINITION

Designation	<b>NE U3140Z</b>
Nominal Voltage/Frequency	<b>100 V 50 Hz 60 Hz</b>
Engineering Number	<b>279BQ21</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	100 / 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	CSCR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
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 temperature			
9.1 Operating	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	16.80	[cm <sup>3</sup> ] (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)	11.8	[kg] (26.01 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100 V 50/60 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVAH7AA3C-571	
3 Start capacitor	340-408(250)	[µF(VAC minimum)]
4 Run capacitor	35(400)	[µF(VAC minimum)]
5 Motor protection	USP-577-83	
6 Start winding resistance		[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance		[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	46.00	[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: @100V50Hz			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]
1619	408	474	341	4.89	9.20	4.75	1.20	1.39

TEST CONDITIONS: @100V60Hz			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]
1876	473	550	377	3.94	10.66	4.97	1.25	1.46

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz			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)	916	231	268	234	4.38	5.18	3.92	0.99	1.15
-30 (-22)	1312	331	385	272	4.57	7.44	4.82	1.21	1.41
-25 (-13)	1756	442	515	308	4.75	9.97	5.70	1.44	1.67
-20 (- 4)	2247	566	658	342	4.92	12.79	6.56	1.65	1.92
-15 (+ 5)	2786	702	816	375	5.09	15.90	7.43	1.87	2.18
-10 (+14)	3372	850	988	406	5.26	19.32	8.30	2.09	2.43
-5 (+23)	4006	1009	1174	435	5.43	23.05	9.20	2.32	2.70
0 (+32)	4687	1181	1374	463	5.59	27.10	10.13	2.55	2.97

TEST CONDITIONS: @100V50Hz			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)	850	214	249	236	4.32	4.81	3.60	0.91	1.05
-30 (-22)	1231	310	361	281	4.58	6.98	4.37	1.10	1.28
-25 (-13)	1661	419	487	324	4.83	9.43	5.13	1.29	1.50
-20 (- 4)	2143	540	628	364	5.07	12.19	5.89	1.48	1.73
-15 (+ 5)	2675	674	784	402	5.30	15.27	6.66	1.68	1.95
-10 (+14)	3257	821	954	437	5.52	18.66	7.46	1.88	2.19
-5 (+23)	3890	980	1140	469	5.72	22.38	8.30	2.09	2.43
0 (+32)	4574	1153	1340	498	5.91	26.44	9.18	2.31	2.69

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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]
-35	(-31)	772	195	226	238	4.38	4.37	3.25	0.82	0.95
-30	(-22)	1138	287	334	291	4.71	6.45	3.90	0.98	1.14
-25	(-13)	1558	393	457	341	5.02	8.85	4.57	1.15	1.34
-20	(- 4)	2031	512	595	387	5.32	11.56	5.24	1.32	1.54
-15	(+ 5)	2558	645	750	430	5.59	14.60	5.95	1.50	1.74
-10	(+14)	3138	791	920	469	5.85	17.98	6.69	1.69	1.96
-5	(+23)	3772	951	1105	504	6.08	21.70	7.48	1.89	2.19
0	(+32)	4460	1124	1307	535	6.29	25.78	8.34	2.10	2.44

TEST CONDITIONS: @100V60Hz		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]
-35	(-31)	1066	269	312	247	2.74	6.03	4.33	1.09	1.27
-30	(-22)	1503	379	440	301	3.25	8.52	5.00	1.26	1.46
-25	(-13)	2002	505	587	350	3.73	11.37	5.71	1.44	1.67
-20	(- 4)	2563	646	751	396	4.20	14.59	6.47	1.63	1.90
-15	(+ 5)	3186	803	934	437	4.63	18.19	7.28	1.84	2.13
-10	(+14)	3871	976	1134	474	5.04	22.18	8.16	2.06	2.39
-5	(+23)	4618	1164	1353	507	5.43	26.57	9.11	2.30	2.67
0	(+32)	5427	1368	1590	536	5.80	31.38	10.13	2.55	2.97

TEST CONDITIONS: @100V60Hz		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]
-35	(-31)	999	252	293	251	2.79	5.65	3.97	1.00	1.16
-30	(-22)	1423	359	417	311	3.40	8.07	4.57	1.15	1.34
-25	(-13)	1910	481	560	367	3.97	10.85	5.20	1.31	1.52
-20	(- 4)	2461	620	721	419	4.50	14.01	5.88	1.48	1.72
-15	(+ 5)	3075	775	901	466	4.99	17.55	6.60	1.66	1.93
-10	(+14)	3752	945	1099	508	5.44	21.49	7.39	1.86	2.16
-5	(+23)	4492	1132	1316	546	5.86	25.84	8.23	2.07	2.41
0	(+32)	5295	1334	1552	579	6.24	30.61	9.15	2.30	2.68

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		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)	894	225	262	248	2.74	5.06	3.61	0.91	1.06
-30	(-22)	1311	330	384	316	3.43	7.43	4.15	1.05	1.22
-25	(-13)	1792	452	525	380	4.08	10.18	4.72	1.19	1.38
-20	(- 4)	2338	589	685	439	4.68	13.30	5.32	1.34	1.56
-15	(+ 5)	2948	743	864	494	5.22	16.83	5.97	1.50	1.75
-10	(+14)	3623	913	1062	543	5.71	20.75	6.67	1.68	1.95
-5	(+23)	4362	1099	1278	587	6.15	25.09	7.43	1.87	2.18
0	(+32)	5165	1301	1513	626	6.54	29.86	8.25	2.08	2.42

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	6.45 +0.10/+0.00	[mm]	(0.254" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.45 +0.10/+0.00	[mm]	(0.254" +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		