COMPRESSOR DEFINITION

Designation	**NE U2178U**
Nominal Voltage/Frequency	**220-240 V 50 Hz**
Engineering Number	**513308228**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low Back Pressure R290		
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 (32ºC Ambient temperature)	-	-	-
8.2 LBP (43ºC Ambient temperature)	-	-	-
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm²] (262 psig)	/ ºC - ºF
9.2 Peak	20.6	[kgf/cm²] (293 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	18.70	[cm³] (1.141 cu.in)
2.1 Bore [mm]	32.186	
2.2 Stroke [mm]	23.000	
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	-	[kgf/cm²]

C - ELECTRICAL 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-114	
3 Start capacitor	108-130(330)	[µF(VAC minimum)]
4 Run capacitor	12.5(400)	[µF(VAC minimum)]
5 Motor protection	USP-Y01-83	
6 Start winding resistance	10.42	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	5.23	[Ω at 25ºC (77ºF)] +/- 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)	-	[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**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature	**-35°C (-31°F)** **40°C (104°F))**		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1737	438	509	407	1.97	5.82	4.27	1.08	1.25

E - PERFORMANCE - CURVES

TEST CONDITIONS: **@220V50Hz** — **EN12900** **Fan** — (Condensing temperature **35ºC (+95ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	**(-40)**	1412	356	414	338	1.73	4.51	4.16	1.05	1.22
-35	**(-31)**	1823	459	534	391	1.94	5.84	4.67	1.18	1.37
-30	**(-22)**	2335	588	684	443	2.16	7.51	5.27	1.33	1.55
-25	**(-13)**	2949	743	864	495	2.38	9.52	5.95	1.50	1.74
-20	**(- 4)**	3664	923	1074	547	2.60	11.88	6.70	1.69	1.96
-15	**(+ 5)**	4481	1129	1313	599	2.83	14.60	7.48	1.89	2.19
-10	**(+14)**	5399	1361	1582	650	3.07	17.70	8.30	2.09	2.43

TEST CONDITIONS: **@220V50Hz** — **EN12900** **Fan** — (Condensing temperature **45ºC (+113ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	**(-40)**	1222	308	358	364	1.80	4.28	3.37	0.85	0.99
-35	**(-31)**	1579	398	463	418	2.04	5.55	3.79	0.95	1.11
-30	**(-22)**	2026	511	594	474	2.29	7.14	4.26	1.07	1.25
-25	**(-13)**	2562	646	751	534	2.55	9.06	4.79	1.21	1.40
-20	**(- 4)**	3189	804	934	595	2.83	11.33	5.35	1.35	1.57
-15	**(+ 5)**	3905	984	1144	660	3.13	13.96	5.92	1.49	1.73
-10	**(+14)**	4711	1187	1380	727	3.45	16.95	6.49	1.64	1.90

TEST CONDITIONS: **@220V50Hz** — **EN12900** **Fan** — (Condensing temperature **55ºC (+131ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	**(-40)**	1040	262	305	378	1.86	4.04	2.74	0.69	0.80
-35	**(-31)**	1342	338	393	436	2.11	5.23	3.08	0.78	0.90
-30	**(-22)**	1722	434	505	499	2.39	6.74	3.45	0.87	1.01
-25	**(-13)**	2180	549	639	568	2.70	8.57	3.84	0.97	1.13
-20	**(- 4)**	2716	685	796	642	3.03	10.74	4.24	1.07	1.24
-15	**(+ 5)**	3330	839	976	722	3.40	13.26	4.62	1.16	1.35
-10	**(+14)**	4023	1014	1179	807	3.80	16.13	4.97	1.25	1.46

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.15 +0.00/-0.05	[mm]	(0.321" +0.000"/-0.002")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42°		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 42°		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		