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:			ASHRAELBP32			Evaporating temperature		-23.3°C (-9.94°F)
@220V50Hz			Fan			(Condensing temperature		54.4°C (129.92°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]
3087	778	905	594	2.80	9.19	5.20	1.31	1.52

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32					(Condensing temperature 35ºC (+95ºF))			
@220V50Hz		Fan								
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)**	1548	390	453	338	1.70	4.57	4.56	1.15	1.34
-35	**(-31)**	1973	497	578	391	1.92	5.84	5.05	1.27	1.48
-30	**(-22)**	2507	632	735	443	2.15	7.44	5.66	1.43	1.66
-25	**(-13)**	3151	794	923	495	2.38	9.37	6.36	1.60	1.86
-20	**(- 4)**	3904	984	1144	547	2.61	11.65	7.13	1.80	2.09
-15	**(+ 5)**	4767	1201	1397	599	2.84	14.28	7.96	2.01	2.33
-10	**(+14)**	5739	1446	1682	650	3.08	17.27	8.82	2.22	2.58

TEST CONDITIONS:		ASHRAE32					(Condensing temperature 45ºC (+113ºF))			
@220V50Hz		Fan								
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)**	1434	361	420	364	1.81	4.23	3.96	1.00	1.16
-35	**(-31)**	1848	466	541	418	2.04	5.47	4.43	1.12	1.30
-30	**(-22)**	2368	597	694	474	2.28	7.02	4.98	1.26	1.46
-25	**(-13)**	2994	755	877	534	2.54	8.90	5.60	1.41	1.64
-20	**(- 4)**	3727	939	1092	595	2.82	11.12	6.25	1.57	1.83
-15	**(+ 5)**	4566	1151	1338	660	3.11	13.68	6.92	1.74	2.03
-10	**(+14)**	5511	1389	1615	727	3.42	16.58	7.59	1.91	2.22

TEST CONDITIONS:		ASHRAE32					(Condensing temperature 55ºC (+131ºF))			
@220V50Hz		Fan								
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)**	1347	339	395	379	1.87	3.98	3.54	0.89	1.04
-35	**(-31)**	1739	438	509	437	2.11	5.14	3.98	1.00	1.17
-30	**(-22)**	2233	563	654	500	2.39	6.62	4.47	1.13	1.31
-25	**(-13)**	2831	713	830	569	2.70	8.42	4.98	1.26	1.46
-20	**(- 4)**	3532	890	1035	643	3.03	10.53	5.50	1.39	1.61
-15	**(+ 5)**	4335	1093	1270	723	3.39	12.98	6.01	1.51	1.76
-10	**(+14)**	5242	1321	1536	808	3.78	15.77	6.47	1.63	1.90

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		