

### COMPRESSOR DEFINITION

Designation	NE U2178U
Nominal Voltage/Frequency	208-230 V 60 Hz
Engineering Number	863OD45

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	208-230 / 60	[ V / Hz ]	
4 Application type	Low Back Pressure R290 Extended		
4.1 Evaporating temperature range	-40°C to -5°C	(-40°F to 23°F)	
5 Motor type	CSCR		
6 Starting torque	HST - High 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)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	18.70	[cm <sup>3</sup> ] (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/cm <sup>2</sup> ]

### C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	208-230 V 60 Hz 1~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVA4AH3C-648	
3 Start capacitor	108-130(330)	[µF(VAC minimum)]
4 Run capacitor	12.5(400)	[µF(VAC minimum)]
5 Motor protection	USP-Y02-83	
6 Start winding resistance	9.42	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.38	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	29.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @208V60Hz			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]
3589	904	1052	703	3.46	10.68	5.11	1.29	1.50

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @208V60Hz			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]
-40	(-40)	1712	431	502	404	2.10	5.06	4.23	1.07	1.24
-35	(-31)	2238	564	656	463	2.37	6.62	4.83	1.22	1.42
-30	(-22)	2882	726	844	525	2.66	8.55	5.49	1.38	1.61
-25	(-13)	3646	919	1068	589	2.96	10.84	6.19	1.56	1.81
-20	(- 4)	4532	1142	1328	655	3.27	13.52	6.92	1.74	2.03
-15	(+ 5)	5541	1396	1624	722	3.59	16.60	7.68	1.94	2.25
-10	(+14)	6673	1682	1955	790	3.93	20.08	8.45	2.13	2.48
-5	(+23)	7931	1999	2324	860	4.27	23.99	9.22	2.32	2.70

TEST CONDITIONS: @208V60Hz			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)	1596	402	468	417	2.18	4.71	3.83	0.97	1.12
-35	(-31)	2108	531	618	483	2.47	6.24	4.37	1.10	1.28
-30	(-22)	2736	690	802	553	2.80	8.12	4.94	1.25	1.45
-25	(-13)	3484	878	1021	627	3.14	10.36	5.55	1.40	1.63
-20	(- 4)	4352	1097	1275	703	3.51	12.98	6.18	1.56	1.81
-15	(+ 5)	5342	1346	1565	783	3.90	16.00	6.82	1.72	2.00
-10	(+14)	6455	1627	1891	866	4.31	19.42	7.46	1.88	2.19
-5	(+23)	7691	1938	2254	952	4.73	23.26	8.09	2.04	2.37

TEST CONDITIONS: @208V60Hz			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)	1473	371	432	423	2.20	4.35	3.48	0.88	1.02
-35	(-31)	1964	495	576	497	2.53	5.81	3.95	1.00	1.16
-30	(-22)	2572	648	754	577	2.90	7.63	4.46	1.12	1.31
-25	(-13)	3297	831	966	661	3.30	9.80	4.98	1.26	1.46
-20	(- 4)	4142	1044	1214	751	3.73	12.35	5.52	1.39	1.62
-15	(+ 5)	5107	1287	1497	845	4.19	15.29	6.05	1.52	1.77
-10	(+14)	6194	1561	1815	944	4.68	18.63	6.57	1.66	1.93
-5	(+23)	7404	1866	2170	1047	5.19	22.39	7.07	1.78	2.07

### 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		