

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 ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	18.70	[cm ³] (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 ²]

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: @230V60Hz			ARILBP Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 48.9°C (120.02°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]	
2886	727	846	699	3.30	11.72	4.13	1.04	1.21	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V60Hz		ARI4 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)	1486	374	435	439	2.44	5.14	3.38	0.85	0.99
-35	(-31)	1962	494	575	496	2.62	6.83	3.96	1.00	1.16
-30	(-22)	2550	643	747	556	2.82	8.92	4.59	1.16	1.35
-25	(-13)	3250	819	952	618	3.04	11.42	5.26	1.33	1.54
-20	(- 4)	4061	1023	1190	682	3.29	14.34	5.96	1.50	1.75
-15	(+ 5)	4982	1256	1460	747	3.55	17.72	6.67	1.68	1.95
-10	(+14)	6014	1515	1762	814	3.82	21.56	7.40	1.86	2.17
-5	(+23)	7154	1803	2096	881	4.11	25.88	8.12	2.05	2.38

TEST CONDITIONS: @230V60Hz		ARI4 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)	1269	320	372	454	2.48	4.86	2.79	0.70	0.82
-35	(-31)	1675	422	491	517	2.69	6.44	3.25	0.82	0.95
-30	(-22)	2185	551	640	583	2.92	8.43	3.75	0.94	1.10
-25	(-13)	2798	705	820	653	3.18	10.85	4.28	1.08	1.25
-20	(- 4)	3513	885	1029	726	3.46	13.71	4.83	1.22	1.42
-15	(+ 5)	4329	1091	1269	801	3.77	17.03	5.40	1.36	1.58
-10	(+14)	5247	1322	1538	879	4.09	20.84	5.98	1.51	1.75
-5	(+23)	6265	1579	1836	958	4.44	25.14	6.54	1.65	1.92

TEST CONDITIONS: @230V60Hz		ARI4 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)	1037	261	304	461	2.52	4.45	2.25	0.57	0.66
-35	(-31)	1381	348	405	531	2.75	5.96	2.61	0.66	0.76
-30	(-22)	1819	459	533	606	3.01	7.89	3.00	0.76	0.88
-25	(-13)	2352	593	689	686	3.30	10.26	3.43	0.86	1.00
-20	(- 4)	2978	751	873	769	3.63	13.09	3.87	0.98	1.13
-15	(+ 5)	3697	932	1083	856	3.98	16.39	4.32	1.09	1.27
-10	(+14)	4509	1136	1321	946	4.37	20.19	4.77	1.20	1.40
-5	(+23)	5412	1364	1586	1039	4.77	24.51	5.20	1.31	1.53

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		