

COMPRESSOR DEFINITION

Designation	NE X4160UA
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513308304

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Light Commercial - Curves until T.Evap -		
4.1 Evaporating temperature range	-40°C to 0°C	(-40°F to 32°F)	
5 Motor type	CSCR		
6 Starting torque	HST - Hight 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	1/2	[hp]
2 Displacement	14.28	[cm ³] (0.871 cu.in)
2.1 Bore [mm]	30.157	
2.2 Stroke [mm]	20.000	
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	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVAH7AA3C-571	
3 Start capacitor	243-292(165)	[µF(VAC minimum)]
4 Run capacitor	30(400)	[µF(VAC minimum)]
5 Motor protection	USP-529-83	
6 Start winding resistance	3.81	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	0.96	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	46.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	7.30	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			ARILBP Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 48.9°C (120.02°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]
2273	573	666	491	4.54	9.23	4.63	1.17	1.36

TEST CONDITIONS: @115V60Hz			ARIMBP Fan		Evaporating temperature (Condensing temperature		-6.7°C (19.94°F) 48.9°C (120.02°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]
4590	1157	1345	677	6.18	19.18	6.78	1.71	1.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		ARI4 Fan			(Condensing temperature 35°C (+95°F))					
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	305	3.10	4.23	3.99	1.00	1.17
-35	(-31)	1599	403	469	354	3.48	5.58	4.53	1.14	1.33
-30	(-22)	2078	524	609	401	3.86	7.27	5.19	1.31	1.52
-25	(-13)	2659	670	779	446	4.22	9.34	5.96	1.50	1.75
-20	(- 4)	3341	842	979	490	4.58	11.79	6.82	1.72	2.00
-15	(+ 5)	4124	1039	1208	532	4.94	14.66	7.76	1.96	2.28
-10	(+14)	5009	1262	1468	572	5.28	17.95	8.77	2.21	2.57
-5	(+23)	5995	1511	1757	611	5.62	21.70	9.83	2.48	2.88
0	(+32)	7083	1785	2075	647	5.95	25.91	10.92	2.75	3.20

TEST CONDITIONS: @115V60Hz		ARI4 Fan			(Condensing temperature 45°C (+113°F))					
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)	1002	253	294	308	3.12	3.83	3.28	0.83	0.96
-35	(-31)	1324	334	388	361	3.54	5.09	3.68	0.93	1.08
-30	(-22)	1737	438	509	415	3.97	6.71	4.18	1.05	1.23
-25	(-13)	2244	565	657	468	4.40	8.70	4.77	1.20	1.40
-20	(- 4)	2842	716	833	520	4.84	11.09	5.44	1.37	1.59
-15	(+ 5)	3533	890	1035	572	5.29	13.89	6.15	1.55	1.80
-10	(+14)	4317	1088	1265	624	5.74	17.14	6.92	1.74	2.03
-5	(+23)	5193	1309	1522	675	6.19	20.84	7.71	1.94	2.26
0	(+32)	6161	1553	1805	725	6.65	25.02	8.51	2.14	2.49

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		ARI4 Fan			(Condensing temperature 55°C (+131°F))					
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)	825	208	242	311	3.14	3.54	2.64	0.66	0.77
-35	(-31)	1088	274	319	369	3.60	4.70	2.96	0.75	0.87
-30	(-22)	1434	361	420	428	4.07	6.22	3.36	0.85	0.99
-25	(-13)	1864	470	546	487	4.56	8.13	3.83	0.96	1.12
-20	(- 4)	2377	599	696	547	5.07	10.44	4.34	1.09	1.27
-15	(+ 5)	2973	749	871	609	5.60	13.18	4.89	1.23	1.43
-10	(+14)	3652	920	1070	670	6.15	16.36	5.46	1.38	1.60
-5	(+23)	4415	1113	1294	733	6.71	20.02	6.03	1.52	1.77
0	(+32)	5262	1326	1542	796	7.29	24.15	6.60	1.66	1.93

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		