

COMPRESSOR DEFINITION

Designation	NT 2180U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	843AA09

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 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	22.37	[cm ³] (1.365 cu.in)
2.1 Bore [mm]	36.990	
2.2 Stroke [mm]	20.830	
3 Lubricant charge	450	[ml] (15.22 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	AB / ISO32	
4 Weight (with oil charge)	18	[kg] (39.68 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	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVA4AH3C-648	
3 Start capacitor	43-53(330)	[μF(VAC minimum)]
4 Run capacitor	15(440)	[μF(VAC minimum)]
5 Motor protection	MRA38170-3261	
6 Start winding resistance	8.56	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.82	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	-	[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	CCC - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 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]
3192	804	935	642	3.28	9.50	4.97	1.25	1.46

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1701	429	499	401	2.28	5.02	4.24	1.07	1.24
-35	(-31)	2174	548	637	455	2.49	6.43	4.79	1.21	1.40
-30	(-22)	2782	701	815	509	2.72	8.25	5.46	1.38	1.60
-25	(-13)	3524	888	1033	564	2.95	10.48	6.24	1.57	1.83
-20	(- 4)	4400	1109	1289	619	3.18	13.13	7.10	1.79	2.08
-15	(+ 5)	5412	1364	1586	675	3.42	16.21	8.02	2.02	2.35
-10	(+14)	6557	1652	1921	731	3.67	19.73	8.98	2.26	2.63

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1476	372	432	402	2.31	4.36	3.67	0.93	1.08
-35	(-31)	1929	486	565	463	2.55	5.71	4.17	1.05	1.22
-30	(-22)	2508	632	735	526	2.80	7.44	4.77	1.20	1.40
-25	(-13)	3213	810	942	590	3.07	9.55	5.44	1.37	1.59
-20	(- 4)	4044	1019	1185	656	3.35	12.06	6.16	1.55	1.81
-15	(+ 5)	5000	1260	1465	723	3.64	14.98	6.92	1.74	2.03
-10	(+14)	6082	1533	1782	791	3.94	18.30	7.68	1.94	2.25

TEST CONDITIONS: @220V50Hz			ASHRAE32 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)	1245	314	365	399	2.27	3.67	3.12	0.79	0.91
-35	(-31)	1690	426	495	469	2.55	5.00	3.61	0.91	1.06
-30	(-22)	2252	568	660	541	2.85	6.68	4.16	1.05	1.22
-25	(-13)	2931	739	859	615	3.17	8.71	4.76	1.20	1.40
-20	(- 4)	3727	939	1092	692	3.50	11.12	5.39	1.36	1.58
-15	(+ 5)	4639	1169	1359	771	3.85	13.89	6.02	1.52	1.77
-10	(+14)	5668	1428	1661	853	4.21	17.05	6.64	1.67	1.95

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	12.7 +0.25/-0.25	[mm]	(0.500" +0.010"/-0.010")
3.1.1 Material	Steel		
3.1.2 Shape	ROTOLOCK(Ex. thr. 1"-14UNS-2A)		
3.2 DISCHARGE	6.42 +0.08/+0.00	[mm]	(0.253" +0.003"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Vertical		
3.3 PROCESS	6.42 +0.08/+0.00	[mm]	(0.253" +0.003"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Vertical		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		