

COMPRESSOR DEFINITION

Designation	NT 2180U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	843PA09

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	CSIR		
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)	16.6	[kg] (36.60 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	MTRP-59	
3 Start capacitor	43-53(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRA38112-3259	
6 Start winding resistance	7.31	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.87	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	28.00	[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	CCC - UKCA - 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]
3176	800	931	697	4.60	9.45	4.56	1.15	1.34

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)	1621	408	475	417	3.77	4.79	3.87	0.98	1.14
-35	(-31)	2086	526	611	480	3.93	6.17	4.36	1.10	1.28
-30	(-22)	2686	677	787	543	4.11	7.97	4.96	1.25	1.45
-25	(-13)	3420	862	1002	605	4.30	10.17	5.65	1.42	1.66
-20	(- 4)	4287	1080	1256	667	4.51	12.79	6.42	1.62	1.88
-15	(+ 5)	5288	1333	1550	728	4.73	15.84	7.26	1.83	2.13
-10	(+14)	6423	1619	1882	789	4.96	19.33	8.15	2.05	2.39

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)	1445	364	424	425	3.80	4.27	3.39	0.86	0.99
-35	(-31)	1907	481	559	496	3.98	5.64	3.85	0.97	1.13
-30	(-22)	2485	626	728	568	4.19	7.37	4.37	1.10	1.28
-25	(-13)	3180	801	932	641	4.42	9.46	4.95	1.25	1.45
-20	(- 4)	3991	1006	1169	715	4.67	11.91	5.58	1.41	1.64
-15	(+ 5)	4917	1239	1441	789	4.95	14.73	6.23	1.57	1.83
-10	(+14)	5960	1502	1746	865	5.25	17.93	6.90	1.74	2.02

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)	1224	308	359	417	3.79	3.61	2.94	0.74	0.86
-35	(-31)	1689	426	495	498	3.99	5.00	3.39	0.85	0.99
-30	(-22)	2252	568	660	581	4.23	6.68	3.87	0.97	1.13
-25	(-13)	2915	735	854	667	4.50	8.67	4.37	1.10	1.28
-20	(- 4)	3676	926	1077	754	4.81	10.96	4.88	1.23	1.43
-15	(+ 5)	4535	1143	1329	844	5.15	13.58	5.38	1.36	1.58
-10	(+14)	5493	1384	1609	935	5.52	16.52	5.86	1.48	1.72

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