embraco

COMPRESSOR TECHNICAL DATA

COMPRESSOR DEFINITION

Designation	**NT 2178GK**
Nominal Voltage/Frequency	**220-240 V 50 Hz**
Engineering Number	**922EA04**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low Back Pressure R404A		
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 Expantion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	-	-	-
8.2 LBP (43ºC Ambient temperature)	-	-	-
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	25.7	[kgf/cm²] (365 psig)	/ ºC - ºF
9.2 Peak (gauge)	28.7	[kgf/cm²] (408 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1-	[hp]
2 Displacement	17.39	[cm³] (1.061 cu.in)
2.1 Bore [mm]	34.120	
2.2 Stroke [mm]	19.030	
3 Lubricant charge	450	[ml] (15.22 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	17	[kg] (37.48 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm²] (2.84 to 4.27 psig)

C - ELETRICAL 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	RVA4M3C-109	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	15(440)	[µF(VAC minimum)]
5 Motor protection	T0834/G9	
6 Start winding resistance	10.40	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	2.40	[Ω at 25ºC (77ºF)] +/- 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	IMQ - IRAM	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS:	ASHRAELBP32	Evaporating temperature	-23.3°C (-9.94°F)
@220V50Hz	Fan	(Condensing temperature	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]
2738	690	802	564	2.56	18.56	4.85	1.22	1.42

E - PERFORMANCE - CURVES

TEST CONDITIONS:	ASHRAE32	(Condensing temperature 35ºC (+95ºF))
@220V50Hz	Fan	

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)	1203	303	353	355	1.67	8.09	3.39	0.85	0.99
-35	(-31)	1710	431	501	410	1.89	11.53	4.17	1.05	1.22
-30	(-22)	2305	581	676	465	2.12	15.60	4.96	1.25	1.45
-25	(-13)	2989	753	876	520	2.37	20.31	5.75	1.45	1.68
-20	(- 4)	3763	948	1103	575	2.62	25.70	6.55	1.65	1.92
-15	(+ 5)	4627	1166	1356	629	2.89	31.79	7.36	1.85	2.16
-10	(+14)	5581	1406	1635	682	3.17	38.61	8.18	2.06	2.40

TEST CONDITIONS:	ASHRAE32	(Condensing temperature 45ºC (+113ºF))
@220V50Hz	Fan	

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)	1022	258	300	339	1.62	6.85	3.02	0.76	0.88
-35	(-31)	1505	379	441	401	1.86	10.13	3.75	0.94	1.10
-30	(-22)	2082	525	610	465	2.13	14.06	4.47	1.13	1.31
-25	(-13)	2754	694	807	530	2.41	18.67	5.19	1.31	1.52
-20	(- 4)	3521	887	1032	596	2.71	23.99	5.90	1.49	1.73
-15	(+ 5)	4383	1105	1284	664	3.02	30.05	6.60	1.66	1.94
-10	(+14)	5342	1346	1565	732	3.35	36.88	7.31	1.84	2.14

TEST CONDITIONS:	ASHRAE32	(Condensing temperature 55ºC (+131ºF))
@220V50Hz	Fan	

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)	840	212	246	320	1.56	5.63	2.62	0.66	0.77
-35	(-31)	1291	325	378	390	1.84	8.67	3.32	0.84	0.97
-30	(-22)	1841	464	540	462	2.13	12.41	3.99	1.00	1.17
-25	(-13)	2492	628	730	538	2.45	16.86	4.64	1.17	1.36
-20	(- 4)	3244	817	951	616	2.79	22.06	5.27	1.33	1.54
-15	(+ 5)	4097	1032	1201	697	3.15	28.04	5.88	1.48	1.72
-10	(+14)	5052	1273	1480	780	3.52	34.81	6.47	1.63	1.90

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	9.6 +0.07/+0.00	[mm]	(0.378" +0.003"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Vertical		
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		