embraco

COMPRESSOR TECHNICAL DATA

COMPRESSOR DEFINITION

Designation	**NE K2121U**
Nominal Voltage/Frequency	**220-240 V 50 Hz**
Engineering Number	**861BA51**

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 Pressuure 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 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)	19.1	[kgf/cm²] (272 psig)	/ ºC - ºF
9.2 Peak (gauge)	21.2	[kgf/cm²] (301 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.20	[cm³] (0.378 cu.in)
2.1 Bore [mm]	20.873	
2.2 Stroke [mm]	18.120	
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)	10.4	[kg] (22.93 lb.)
5 Nitrogen charge	-	[kgf/cm²]

C - ELETRICAL 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-0029	
3 Start capacitor	43-53(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	T0186/G6	
6 Start winding resistance	28.90	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	6.80	[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	VDE	

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]
842	212	247	207	1.63	2.51	4.07	1.03	1.19

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)**	420	106	123	148	1.51	1.24	2.84	0.72	0.83
-35	**(-31)**	542	137	159	163	1.54	1.60	3.32	0.84	0.97
-30	**(-22)**	706	178	207	178	1.57	2.09	3.97	1.00	1.16
-25	**(-13)**	914	230	268	192	1.60	2.72	4.76	1.20	1.40
-20	**(- 4)**	1164	293	341	205	1.63	3.48	5.67	1.43	1.66
-15	**(+ 5)**	1459	368	427	218	1.67	4.37	6.69	1.69	1.96
-10	**(+14)**	1797	453	527	231	1.71	5.41	7.78	1.96	2.28

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)**	363	91	106	143	1.50	1.07	2.55	0.64	0.75
-35	**(-31)**	481	121	141	161	1.53	1.42	3.00	0.76	0.88
-30	**(-22)**	640	161	187	178	1.57	1.90	3.58	0.90	1.05
-25	**(-13)**	840	212	246	196	1.61	2.50	4.28	1.08	1.25
-20	**(- 4)**	1082	273	317	213	1.65	3.23	5.07	1.28	1.49
-15	**(+ 5)**	1366	344	400	230	1.70	4.09	5.94	1.50	1.74
-10	**(+14)**	1691	426	496	247	1.76	5.09	6.85	1.73	2.01

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)**	306	77	90	138	1.49	0.90	2.22	0.56	0.65
-35	**(-31)**	420	106	123	158	1.53	1.24	2.66	0.67	0.78
-30	**(-22)**	574	145	168	179	1.57	1.70	3.20	0.81	0.94
-25	**(-13)**	767	193	225	200	1.62	2.28	3.83	0.97	1.12
-20	**(- 4)**	1000	252	293	221	1.67	2.98	4.53	1.14	1.33
-15	**(+ 5)**	1273	321	373	242	1.74	3.81	5.26	1.33	1.54
-10	**(+14)**	1585	400	465	263	1.81	4.77	6.02	1.52	1.76

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
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	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +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		