

embraco**COMPRESSOR TECHNICAL DATA****COMPRESSOR DEFINITION**

Designation	NJ 2190E
Nominal Voltage/Frequency	230 V 50 Hz
Engineering Number	143NV11

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-22		
3 Nominal voltage and frequency	230 / 50	[V / Hz]	
4 Application type	Low Back Pressure R22		
4.1 Evaporating temperature range	-30°C to -10°C	(-22°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 (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 pressures/temperature			
9.1 Operating (gauge)	21.7	[kgf/cm²] (309 psig)	/ °C - °F
9.2 Peak (gauge)	24.2	[kgf/cm²] (344 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1+	[hp]
2 Displacement	27.16	[cm ³] (1.657 cu.in)
2.1 Bore [mm]	38.087	
2.2 Stroke [mm]	23.850	
3 Lubricant charge	750	[ml] (25.36 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO46	
4 Weight (with oil charge)	21.7	[kg] (47.84 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVA2M3C-111	
3 Start capacitor	130-156(330)	[µF(VAC minimum)]
4 Run capacitor	20(440)	[µF(VAC minimum)]
5 Motor protection	15HM2444-168	
6 Start winding resistance	5.99	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.94	[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	

UPDATE: 23AUG2007

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COMPRESSOR TECHNICAL DATA

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @230V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 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]
3628	914	1063	819	4.06	19.81	4.43	1.12	1.30

E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V50Hz		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
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]
-30	(-22)	2982	752	874	647	3.37	16.23	4.61	1.16	1.35
-25	(-13)	4115	1037	1206	740	3.64	22.46	5.56	1.40	1.63
-20	(- 4)	5399	1360	1582	831	3.92	29.56	6.50	1.64	1.90
-15	(+ 5)	6834	1722	2002	920	4.22	37.56	7.43	1.87	2.18
-10	(+14)	8420	2122	2467	1007	4.53	46.48	8.36	2.11	2.45

TEST CONDITIONS: @230V50Hz		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-30	(-22)	2677	675	784	654	3.41	14.57	4.09	1.03	1.20
-25	(-13)	3688	929	1081	760	3.77	20.13	4.85	1.22	1.42
-20	(- 4)	4879	1229	1430	867	4.17	26.71	5.62	1.42	1.65
-15	(+ 5)	6248	1574	1831	976	4.61	34.33	6.40	1.61	1.88
-10	(+14)	7797	1965	2285	1087	5.08	43.03	7.18	1.81	2.10

TEST CONDITIONS: @230V50Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
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]
-30	(-22)	2383	601	698	661	3.46	12.97	3.60	0.91	1.06
-25	(-13)	3277	826	960	778	3.90	17.88	4.22	1.06	1.24
-20	(- 4)	4377	1103	1283	901	4.41	23.95	4.86	1.22	1.42
-15	(+ 5)	5684	1432	1666	1030	4.98	31.23	5.52	1.39	1.62
-10	(+14)	7198	1814	2109	1164	5.61	39.72	6.19	1.56	1.81



COMPRESSOR TECHNICAL DATA

F - EXTERNAL CHARACTERISTICS

1 Base plate	American Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	12.77 +0.08/+0.00	[mm]	(0.503" +0.003"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Vertical		
3.2 DISCHARGE	8 +0.07/+0.00	[mm]	(0.315" +0.003"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted J		
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		