

COMPRESSOR DEFINITION

Designation	VEM X9C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513903022

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 40-150	[V / Hz]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	BPM		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	103 to 140 V	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	103 to 140 V	103 to 140 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	7.7	[kgf/cm ²] (109 psig)	/ °C - °F
9.2 Peak (gauge)	9.8	[kgf/cm ²] (139 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	9.04	[cm ³] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	220	[ml] (7.44 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.59	[kg] (16.73 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 40-150 Hz 3 ~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	VCC31156XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC31156XXXXX	
6 Start winding resistance	16.07	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	16.07	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	2.10/2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (40/150 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1200RPM			ASHRAELBP32 Static		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]
220	55	64	38	0.30	0.69	5.84	1.47	1.71

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1200RPM			ASHRAE32 Static		(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]
-35 (-31)	123	31	36	21	0.18	0.39	5.77	1.45	1.69
-30 (-22)	168	42	49	25	0.21	0.53	6.62	1.67	1.94
-25 (-13)	220	55	64	29	0.24	0.69	7.54	1.90	2.21
-20 (- 4)	282	71	83	33	0.27	0.88	8.59	2.17	2.52
-15 (+ 5)	355	89	104	36	0.29	1.12	9.83	2.48	2.88
-10 (+14)	441	111	129	39	0.31	1.39	11.32	2.85	3.32

TEST CONDITIONS: @220V1200RPM			ASHRAE32 Static		(Condensing temperature 45°C (+113°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]
-35 (-31)	115	29	34	22	0.18	0.36	5.10	1.29	1.50
-30 (-22)	157	40	46	27	0.22	0.49	5.81	1.46	1.70
-25 (-13)	209	53	61	32	0.26	0.65	6.53	1.65	1.91
-20 (- 4)	270	68	79	37	0.30	0.85	7.34	1.85	2.15
-15 (+ 5)	343	86	101	41	0.33	1.08	8.29	2.09	2.43
-10 (+14)	430	108	126	46	0.37	1.36	9.44	2.38	2.77

TEST CONDITIONS: @220V1200RPM			ASHRAE32 Static		(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]
-35 (-31)	101	25	30	23	0.19	0.32	4.36	1.10	1.28
-30 (-22)	144	36	42	28	0.24	0.45	5.08	1.28	1.49
-25 (-13)	195	49	57	34	0.28	0.61	5.77	1.45	1.69
-20 (- 4)	258	65	75	40	0.33	0.81	6.50	1.64	1.90
-15 (+ 5)	332	84	97	45	0.37	1.05	7.33	1.85	2.15
-10 (+14)	421	106	123	51	0.41	1.33	8.32	2.10	2.44

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1600RPM		ASHRAE32 Static			(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]
-35 (-31)	167	42	49	27	0.22	0.52	6.09	1.54	1.79	
-30 (-22)	226	57	66	33	0.26	0.71	6.91	1.74	2.02	
-25 (-13)	296	75	87	38	0.31	0.93	7.82	1.97	2.29	
-20 (- 4)	381	96	112	43	0.35	1.20	8.88	2.24	2.60	
-15 (+ 5)	481	121	141	48	0.39	1.51	10.14	2.56	2.97	
-10 (+14)	600	151	176	52	0.42	1.89	11.66	2.94	3.42	

TEST CONDITIONS: @220V1600RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°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]
-35 (-31)	151	38	44	29	0.23	0.47	5.30	1.34	1.55	
-30 (-22)	210	53	62	35	0.28	0.66	6.05	1.53	1.77	
-25 (-13)	281	71	82	41	0.34	0.88	6.82	1.72	2.00	
-20 (- 4)	365	92	107	48	0.40	1.15	7.67	1.93	2.25	
-15 (+ 5)	466	117	137	54	0.45	1.47	8.63	2.18	2.53	
-10 (+14)	584	147	171	60	0.50	1.84	9.78	2.47	2.87	

TEST CONDITIONS: @220V1600RPM		ASHRAE32 Static			(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]
-35 (-31)	132	33	39	29	0.24	0.41	4.47	1.13	1.31	
-30 (-22)	191	48	56	36	0.30	0.60	5.29	1.33	1.55	
-25 (-13)	262	66	77	43	0.36	0.82	6.05	1.52	1.77	
-20 (- 4)	347	87	102	51	0.43	1.09	6.80	1.71	1.99	
-15 (+ 5)	447	113	131	59	0.49	1.41	7.60	1.91	2.23	
-10 (+14)	565	142	166	66	0.55	1.78	8.49	2.14	2.49	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42° up + 45° to Back		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted parallel BP+24°to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 43° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		