

### COMPRESSOR DEFINITION

Designation	VEM B9C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513906003

### 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	-	-
8.2 LBP (43°C Ambient temperature)	Static	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm <sup>2</sup> ] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm <sup>2</sup> ] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/7	[hp]
2 Displacement	9.04	[cm <sup>3</sup> ] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	210	[ml] (7.10 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.6	[kg] (16.75 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### 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	CF02D01 M 0.0 X/VCC32456XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	INVERTER VCC3 2456	
6 Start winding resistance	8.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	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	CCC - VDE	

### 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]
208	52	61	35	0.28	0.65	5.93	1.49	1.74

### 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)	115	29	34	21	0.14	0.36	5.18	1.31	1.52
-30	(-22)	134	34	39	24	0.19	0.42	6.29	1.59	1.84
-25	(-13)	219	55	64	31	0.26	0.69	7.80	1.97	2.29
-20	(- 4)	308	78	90	38	0.32	0.97	8.81	2.22	2.58
-15	(+ 5)	342	86	100	39	0.32	1.08	8.44	2.13	2.47
-10	(+14)	259	65	76	28	0.22	0.82	5.79	1.46	1.70

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)	14	4	4	2	0.02	0.04	0.55	0.14	0.16
-30	(-22)	67	17	20	15	0.13	0.21	2.71	0.68	0.79
-25	(-13)	180	45	53	30	0.25	0.57	5.19	1.31	1.52
-20	(- 4)	292	73	85	42	0.34	0.92	7.09	1.79	2.08
-15	(+ 5)	341	86	100	44	0.35	1.07	7.52	1.89	2.20
-10	(+14)	266	67	78	33	0.26	0.84	5.58	1.41	1.64

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)	- 6	- 2	- 2	- 1	- 0.01	- 0.02	- 0.12	- 0.03	- 0.03
-30	(-22)	65	16	19	19	0.15	0.20	2.25	0.57	0.66
-25	(-13)	188	47	55	38	0.30	0.59	4.84	1.22	1.42
-20	(- 4)	304	77	89	51	0.40	0.96	6.77	1.71	1.98
-15	(+ 5)	351	89	103	53	0.41	1.11	7.14	1.80	2.09
-10	(+14)	269	68	79	37	0.29	0.85	5.07	1.28	1.48

### 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)	159	40	47	29	0.25	0.50	5.72	1.44	1.68	
-30 (-22)	182	46	53	29	0.24	0.57	6.34	1.60	1.86	
-25 (-13)	293	74	86	38	0.31	0.92	7.75	1.95	2.27	
-20 (- 4)	411	104	121	47	0.37	1.29	8.90	2.24	2.61	
-15 (+ 5)	456	115	134	49	0.38	1.44	8.73	2.20	2.56	
-10 (+14)	348	88	102	36	0.28	1.10	6.20	1.56	1.82	

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)	137	34	40	29	0.23	0.43	4.25	1.07	1.25	
-30 (-22)	174	44	51	36	0.28	0.54	5.19	1.31	1.52	
-25 (-13)	294	74	86	48	0.37	0.92	6.85	1.73	2.01	
-20 (- 4)	417	105	122	58	0.45	1.31	8.19	2.06	2.40	
-15 (+ 5)	462	116	135	59	0.45	1.46	8.15	2.05	2.39	
-10 (+14)	349	88	102	41	0.31	1.10	5.69	1.43	1.67	

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)	8	2	2	2	0.02	0.03	0.39	0.10	0.12	
-30 (-22)	79	20	23	21	0.17	0.25	2.17	0.55	0.64	
-25 (-13)	228	58	67	43	0.33	0.72	4.60	1.16	1.35	
-20 (- 4)	375	95	110	60	0.46	1.18	6.65	1.68	1.95	
-15 (+ 5)	439	111	129	63	0.49	1.38	7.26	1.83	2.13	
-10 (+14)	340	86	100	46	0.35	1.07	5.38	1.36	1.58	

TEST CONDITIONS: @220V2000RPM		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)	203	51	59		0.00	0.63	- 0.15	- 0.04	- 0.04	
-30 (-22)	224	56	66	- 10	0.00	0.70	- 0.93	- 0.23	- 0.27	
-25 (-13)	365	92	107	- 6	0.00	1.15	- 0.45	- 0.11	- 0.13	
-20 (- 4)	520	131	152	4	0.00	1.64	0.56	0.14	0.16	
-15 (+ 5)	582	147	171	13	0.00	1.83	1.34	0.34	0.39	
-10 (+14)	445	112	130	12	0.00	1.40	1.15	0.29	0.34	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		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)	185	47	54	44	0.00	0.58	5.48	1.38	1.61
-30	(-22)	203	51	60	44	0.00	0.64	5.41	1.36	1.59
-25	(-13)	344	87	101	51	0.00	1.08	6.07	1.53	1.78
-20	(- 4)	501	126	147	60	0.00	1.57	6.71	1.69	1.97
-15	(+ 5)	566	143	166	60	0.00	1.78	6.59	1.66	1.93
-10	(+14)	435	110	127	45	0.00	1.37	4.96	1.25	1.45

TEST CONDITIONS: @220V2000RPM		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)	164	41	48	34	0.00	0.51	3.63	0.91	1.06
-30	(-22)	180	45	53	49	0.00	0.56	4.97	1.25	1.46
-25	(-13)	321	81	94	66	0.00	1.01	6.50	1.64	1.91
-20	(- 4)	479	121	140	77	0.00	1.51	7.48	1.89	2.19
-15	(+ 5)	550	138	161	75	0.00	1.73	7.16	1.81	2.10
-10	(+14)	425	107	124	51	0.00	1.34	4.80	1.21	1.41

TEST CONDITIONS: @220V3000RPM		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)	303	76	89	55	0.43	0.95	5.62	1.42	1.65
-30	(-22)	341	86	100	53	0.42	1.07	6.14	1.55	1.80
-25	(-13)	561	141	164	72	0.56	1.76	7.66	1.93	2.24
-20	(- 4)	800	202	234	94	0.72	2.52	8.98	2.26	2.63
-15	(+ 5)	895	226	262	101	0.76	2.82	8.94	2.25	2.62
-10	(+14)	683	172	200	75	0.57	2.15	6.35	1.60	1.86

TEST CONDITIONS: @220V3000RPM		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)	285	72	83	59	0.46	0.89	4.80	1.21	1.41
-30	(-22)	311	78	91	60	0.47	0.97	5.11	1.29	1.50
-25	(-13)	526	133	154	80	0.61	1.65	6.55	1.65	1.92
-20	(- 4)	766	193	224	102	0.77	2.41	7.94	2.00	2.33
-15	(+ 5)	868	219	254	107	0.81	2.73	8.10	2.04	2.37
-10	(+14)	668	168	196	79	0.59	2.10	5.86	1.48	1.72

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	252	64	74	58	0.46	0.79	4.30	1.08	1.26	
-30 (-22)	268	68	79	63	0.49	0.84	4.32	1.09	1.27	
-25 (-13)	478	120	140	86	0.65	1.50	5.62	1.42	1.65	
-20 (- 4)	719	181	211	108	0.81	2.26	7.00	1.76	2.05	
-15 (+ 5)	827	208	242	113	0.85	2.60	7.30	1.84	2.14	
-10 (+14)	640	161	188	83	0.62	2.02	5.34	1.34	1.56	

TEST CONDITIONS: @220V4500RPM		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)	433	109	127	82	0.65	1.35	5.29	1.33	1.55	
-30 (-22)	491	124	144	82	0.64	1.54	5.69	1.43	1.67	
-25 (-13)	741	187	217	104	0.80	2.33	7.06	1.78	2.07	
-20 (- 4)	1001	252	293	128	0.97	3.15	8.28	2.09	2.43	
-15 (+ 5)	1086	274	318	132	1.00	3.42	8.25	2.08	2.42	
-10 (+14)	813	205	238	96	0.73	2.56	5.87	1.48	1.72	

TEST CONDITIONS: @220V4500RPM		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)	421	106	123	93	0.70	1.32	4.53	1.14	1.33	
-30 (-22)	470	118	138	95	0.71	1.47	4.78	1.20	1.40	
-25 (-13)	715	180	210	118	0.88	2.24	6.10	1.54	1.79	
-20 (- 4)	974	245	285	140	1.05	3.06	7.38	1.86	2.16	
-15 (+ 5)	1063	268	312	142	1.06	3.35	7.53	1.90	2.21	
-10 (+14)	800	201	234	102	0.76	2.52	5.44	1.37	1.59	

TEST CONDITIONS: @220V4500RPM		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)	363	92	106	90	0.68	1.14	4.04	1.02	1.18	
-30 (-22)	410	103	120	97	0.73	1.28	4.08	1.03	1.20	
-25 (-13)	658	166	193	123	0.92	2.07	5.31	1.34	1.56	
-20 (- 4)	925	233	271	147	1.10	2.91	6.61	1.67	1.94	
-15 (+ 5)	1027	259	301	149	1.11	3.23	6.89	1.74	2.02	
-10 (+14)	780	197	229	107	0.80	2.46	5.04	1.27	1.48	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° up + 0° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		