

COMPRESSOR DEFINITION

Designation	VEM X9C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513903015

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	187 to 255 V	187 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	187 to 255 V
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 ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 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	VCC32456XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC32456XXXXX	
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	CE - IRAM - NOM - UKCA - 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]
220	55	64	38	0.30	0.69	5.84	1.47	1.71

TEST CONDITIONS: @220V1600RPM			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]
287	72	84	47	0.36	0.90	6.15	1.55	1.80

TEST CONDITIONS: @220V2000RPM			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]
364	92	107	57	0.43	1.14	6.41	1.62	1.88

TEST CONDITIONS: @220V3000RPM			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]
556	140	163	84	0.63	1.75	6.59	1.66	1.93

TEST CONDITIONS: @220V4500RPM			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]
757	191	222	120	0.87	2.38	6.30	1.59	1.85

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]
-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]
-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]
-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

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]
-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

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V1600RPM		Static								
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]
-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:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V1600RPM		Static								
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]
-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

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@220V2000RPM		Static								
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]
-35	(-31)	210	53	62	34	0.28	0.66	6.19	1.56	1.81
-30	(-22)	284	71	83	41	0.33	0.89	6.98	1.76	2.05
-25	(-13)	372	94	109	47	0.38	1.17	7.86	1.98	2.30
-20	(- 4)	478	120	140	54	0.43	1.50	8.87	2.24	2.60
-15	(+ 5)	604	152	177	60	0.47	1.90	10.08	2.54	2.95
-10	(+14)	752	189	220	65	0.51	2.37	11.53	2.90	3.38

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V2000RPM		Static								
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]
-35	(-31)	191	48	56	35	0.29	0.60	5.41	1.36	1.59
-30	(-22)	264	67	77	43	0.34	0.83	6.15	1.55	1.80
-25	(-13)	353	89	103	51	0.40	1.11	6.90	1.74	2.02
-20	(- 4)	459	116	134	59	0.46	1.44	7.70	1.94	2.26
-15	(+ 5)	584	147	171	68	0.52	1.84	8.63	2.17	2.53
-10	(+14)	732	185	215	75	0.57	2.31	9.72	2.45	2.85

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	168	42	49	36	0.30	0.53	4.60	1.16	1.35	
-30 (-22)	242	61	71	45	0.36	0.76	5.41	1.36	1.59	
-25 (-13)	330	83	97	54	0.42	1.04	6.15	1.55	1.80	
-20 (- 4)	436	110	128	64	0.49	1.37	6.88	1.73	2.02	
-15 (+ 5)	562	142	165	73	0.56	1.77	7.64	1.93	2.24	
-10 (+14)	710	179	208	83	0.63	2.24	8.50	2.14	2.49	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@220V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	321	81	94	50	0.40	1.00	6.46	1.63	1.89	
-30 (-22)	432	109	127	60	0.47	1.35	7.17	1.81	2.10	
-25 (-13)	565	142	166	71	0.54	1.77	7.93	2.00	2.32	
-20 (- 4)	724	182	212	82	0.62	2.27	8.81	2.22	2.58	
-15 (+ 5)	913	230	268	93	0.69	2.87	9.87	2.49	2.89	
-10 (+14)	1135	286	333	102	0.75	3.58	11.16	2.81	3.27	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	294	74	86	52	0.41	0.92	5.72	1.44	1.68	
-30 (-22)	405	102	119	63	0.48	1.27	6.43	1.62	1.88	
-25 (-13)	538	136	158	76	0.57	1.69	7.10	1.79	2.08	
-20 (- 4)	697	176	204	89	0.66	2.19	7.81	1.97	2.29	
-15 (+ 5)	886	223	260	103	0.76	2.79	8.61	2.17	2.52	
-10 (+14)	1108	279	325	116	0.84	3.50	9.57	2.41	2.81	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	262	66	77	53	0.42	0.82	4.89	1.23	1.43	
-30 (-22)	372	94	109	65	0.50	1.17	5.71	1.44	1.67	
-25 (-13)	505	127	148	79	0.59	1.59	6.43	1.62	1.88	
-20 (- 4)	664	167	195	94	0.69	2.09	7.09	1.79	2.08	
-15 (+ 5)	853	215	250	110	0.80	2.69	7.76	1.96	2.28	
-10 (+14)	1075	271	315	126	0.91	3.39	8.51	2.15	2.49	

E - PERFORMANCE - CURVES

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)	466	117	137	77	0.59	1.46	6.03	1.52	1.77	
-30 (-22)	618	156	181	92	0.70	1.94	6.68	1.68	1.96	
-25 (-13)	801	202	235	109	0.81	2.51	7.38	1.86	2.16	
-20 (- 4)	1020	257	299	125	0.92	3.21	8.20	2.07	2.40	
-15 (+ 5)	1281	323	375	140	1.03	4.03	9.18	2.31	2.69	
-10 (+14)	1587	400	465	153	1.12	5.01	10.39	2.62	3.04	

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)	436	110	128	82	0.62	1.37	5.37	1.35	1.57	
-30 (-22)	589	148	172	98	0.73	1.84	6.00	1.51	1.76	
-25 (-13)	772	194	226	116	0.86	2.42	6.62	1.67	1.94	
-20 (- 4)	991	250	290	136	1.00	3.11	7.27	1.83	2.13	
-15 (+ 5)	1251	315	367	156	1.14	3.94	8.02	2.02	2.35	
-10 (+14)	1557	392	456	175	1.28	4.91	8.91	2.25	2.61	

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)	400	101	117	86	0.65	1.25	4.62	1.17	1.35	
-30 (-22)	553	139	162	103	0.77	1.73	5.36	1.35	1.57	
-25 (-13)	736	185	216	123	0.91	2.31	6.01	1.51	1.76	
-20 (- 4)	955	241	280	145	1.06	3.00	6.62	1.67	1.94	
-15 (+ 5)	1215	306	356	168	1.23	3.83	7.24	1.82	2.12	
-10 (+14)	1521	383	446	192	1.40	4.80	7.93	2.00	2.32	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° 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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted parallel BP+45°to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		