

COMPRESSOR DEFINITION

Designation	VEM Y9C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513900048

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 53-150	[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 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	MINERAL / ISO10	
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 53-150 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	21.30	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	21.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (53/15 Hz)	2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (53/15 Hz)	2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (53/15 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

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]
307	77	90	52		0.96	5.93	1.49	1.74

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]
555	140	163	93		1.74	5.95	1.50	1.74

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)	195	49	57	34	0.00	0.61	5.71	1.44	1.67
-30 (-22)	246	62	72	40	0.00	0.77	6.29	1.58	1.84
-25 (-13)	324	82	95	45	0.00	1.02	7.21	1.82	2.11
-20 (- 4)	424	107	124	51	0.00	1.33	8.37	2.11	2.45
-15 (+ 5)	539	136	158	56	0.00	1.70	9.66	2.43	2.83
-10 (+14)	666	168	195	61	0.00	2.10	10.96	2.76	3.21

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)	193	49	57	37	0.00	0.60	5.18	1.31	1.52
-30 (-22)	234	59	69	43	0.00	0.73	5.48	1.38	1.61
-25 (-13)	305	77	89	50	0.00	0.96	6.14	1.55	1.80
-20 (- 4)	400	101	117	57	0.00	1.26	7.05	1.78	2.06
-15 (+ 5)	514	129	151	63	0.00	1.62	8.09	2.04	2.37
-10 (+14)	642	162	188	70	0.00	2.02	9.17	2.31	2.69

E - PERFORMANCE - CURVES

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	156	39	46	37	0.00	0.49	4.27	1.08	1.25	
-30 (-22)	192	49	56	45	0.00	0.60	4.41	1.11	1.29	
-25 (-13)	261	66	76	53	0.00	0.82	4.92	1.24	1.44	
-20 (- 4)	357	90	105	62	0.00	1.12	5.69	1.43	1.67	
-15 (+ 5)	475	120	139	71	0.00	1.49	6.61	1.67	1.94	
-10 (+14)	609	154	179	80	0.00	1.92	7.58	1.91	2.22	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	228	58	67	39	0.00	0.71	5.82	1.47	1.71	
-30 (-22)	297	75	87	46	0.00	0.93	6.52	1.64	1.91	
-25 (-13)	389	98	114	52	0.00	1.22	7.46	1.88	2.19	
-20 (- 4)	501	126	147	59	0.00	1.57	8.56	2.16	2.51	
-15 (+ 5)	629	159	184	65	0.00	1.98	9.73	2.45	2.85	
-10 (+14)	770	194	226	71	0.00	2.43	10.89	2.74	3.19	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	217	55	64	42	0.00	0.68	5.19	1.31	1.52	
-30 (-22)	274	69	80	50	0.00	0.86	5.59	1.41	1.64	
-25 (-13)	360	91	105	58	0.00	1.13	6.28	1.58	1.84	
-20 (- 4)	470	118	138	65	0.00	1.48	7.17	1.81	2.10	
-15 (+ 5)	600	151	176	73	0.00	1.89	8.19	2.06	2.40	
-10 (+14)	747	188	219	81	0.00	2.36	9.25	2.33	2.71	

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)	174	44	51	41	0.00	0.54	4.31	1.09	1.26	
-30 (-22)	224	56	66	51	0.00	0.70	4.49	1.13	1.32	
-25 (-13)	306	77	90	61	0.00	0.96	5.01	1.26	1.47	
-20 (- 4)	418	105	122	71	0.00	1.31	5.78	1.46	1.69	
-15 (+ 5)	553	139	162	81	0.00	1.74	6.73	1.70	1.97	
-10 (+14)	710	179	208	91	0.00	2.24	7.77	1.96	2.28	

E - PERFORMANCE - CURVES

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)	361	91	106	60	0.00	1.13	5.82	1.47	1.71	
-30 (-22)	468	118	137	75	0.00	1.47	6.52	1.64	1.91	
-25 (-13)	623	157	183	87	0.00	1.96	7.56	1.91	2.22	
-20 (- 4)	746	188	218	92	0.00	2.34	8.27	2.09	2.42	
-15 (+ 5)	755	190	221	83	0.00	2.37	7.99	2.01	2.34	
-10 (+14)	569	143	167	58	0.00	1.79	6.03	1.52	1.77	

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)	205	52	60	54	0.00	0.64	4.28	1.08	1.25	
-30 (-22)	338	85	99	71	0.00	1.06	4.95	1.25	1.45	
-25 (-13)	591	149	173	92	0.00	1.86	6.54	1.65	1.92	
-20 (- 4)	884	223	259	112	0.00	2.78	8.37	2.11	2.45	
-15 (+ 5)	1134	286	332	128	0.00	3.57	9.78	2.47	2.87	
-10 (+14)	1262	318	370	134	0.00	3.98	10.10	2.55	2.96	

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)	346	87	101	69	0.00	1.09	4.95	1.25	1.45	
-30 (-22)	251	63	74	69	0.00	0.78	3.79	0.96	1.11	
-25 (-13)	349	88	102	81	0.00	1.09	4.12	1.04	1.21	
-20 (- 4)	557	140	163	101	0.00	1.75	5.27	1.33	1.54	
-15 (+ 5)	796	201	233	122	0.00	2.51	6.57	1.66	1.93	
-10 (+14)	984	248	288	141	0.00	3.10	7.36	1.85	2.16	

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)	588	148	172	107	0.00	1.85	5.58	1.41	1.64	
-30 (-22)	614	155	180	105	0.00	1.92	5.74	1.45	1.68	
-25 (-13)	766	193	224	115	0.00	2.40	6.50	1.64	1.90	
-20 (- 4)	921	232	270	124	0.00	2.89	7.16	1.81	2.10	
-15 (+ 5)	955	241	280	120	0.00	3.00	7.07	1.78	2.07	
-10 (+14)	746	188	219	89	0.00	2.35	5.55	1.40	1.63	

E - PERFORMANCE - CURVES

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)	248	62	73	82	0.00	0.77	3.28	0.83	0.96
-30	(-22)	511	129	150	112	0.00	1.60	4.45	1.12	1.30
-25	(-13)	903	228	265	150	0.00	2.84	6.35	1.60	1.86
-20	(- 4)	1301	328	381	184	0.00	4.09	8.31	2.09	2.43
-15	(+ 5)	1581	399	463	202	0.00	4.98	9.66	2.43	2.83
-10	(+14)	1621	409	475	190	0.00	5.12	9.72	2.45	2.85

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)	525	132	154	115	0.00	1.65	4.62	1.16	1.35
-30	(-22)	548	138	160	127	0.00	1.72	4.21	1.06	1.23
-25	(-13)	702	177	206	145	0.00	2.20	4.67	1.18	1.37
-20	(- 4)	866	218	254	156	0.00	2.72	5.34	1.35	1.57
-15	(+ 5)	915	230	268	147	0.00	2.88	5.55	1.40	1.63
-10	(+14)	725	183	213	106	0.00	2.28	4.61	1.16	1.35

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 12° out + 79° up		
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	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 42° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		