

COMPRESSOR DEFINITION

Designation	VEM Y9C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513900021

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 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	9.34	[cm ³] (0.570 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	17.600	
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	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 (53/15 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (53/15 Hz)	2.10/2.10	[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	CCC - VDE	

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]
348	88	102	58	0.44	1.09	6.02	1.52	1.76

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]
389	98	114	66	0.52	1.22	5.89	1.48	1.73

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]
586	148	172	102	0.76	1.84	5.76	1.45	1.69

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]
804	203	236	144	1.10	2.52	5.59	1.41	1.64

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]
-35	(-31)	193	49	57	37	0.27	0.60	5.23	1.32	1.53
-30	(-22)	268	67	78	42	0.33	0.84	6.35	1.60	1.86
-25	(-13)	356	90	104	47	0.35	1.12	7.61	1.92	2.23
-20	(- 4)	461	116	135	52	0.35	1.45	8.93	2.25	2.62
-15	(+ 5)	582	147	171	57	0.38	1.83	10.26	2.58	3.01
-10	(+14)	722	182	212	63	0.46	2.28	11.52	2.90	3.38

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)	189	48	55	36	0.24	0.59	5.35	1.35	1.57
-30	(-22)	257	65	75	43	0.37	0.81	6.00	1.51	1.76
-25	(-13)	339	85	99	50	0.45	1.06	6.81	1.72	1.99
-20	(- 4)	437	110	128	57	0.52	1.37	7.71	1.94	2.26
-15	(+ 5)	551	139	161	64	0.61	1.73	8.65	2.18	2.53
-10	(+14)	683	172	200	71	0.75	2.16	9.55	2.41	2.80

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)	164	41	48	37	0.32	0.51	4.48	1.13	1.31
-30	(-22)	229	58	67	46	0.41	0.72	4.93	1.24	1.44
-25	(-13)	307	77	90	55	0.45	0.97	5.57	1.40	1.63
-20	(- 4)	401	101	118	63	0.47	1.26	6.33	1.59	1.85
-15	(+ 5)	511	129	150	72	0.50	1.61	7.15	1.80	2.09
-10	(+14)	640	161	187	81	0.59	2.02	7.96	2.01	2.33

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)	220	55	64	47	0.40	0.69	4.71	1.19	1.38
-30	(-22)	310	78	91	50	0.44	0.97	6.17	1.56	1.81
-25	(-13)	416	105	122	55	0.46	1.31	7.51	1.89	2.20
-20	(- 4)	539	136	158	62	0.46	1.69	8.74	2.20	2.56
-15	(+ 5)	678	171	199	68	0.47	2.13	9.92	2.50	2.91
-10	(+14)	835	210	245	75	0.49	2.63	11.09	2.79	3.25

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)	230	58	68	46	0.36	0.72	5.04	1.27	1.48
-30	(-22)	307	77	90	51	0.44	0.96	6.01	1.51	1.76
-25	(-13)	400	101	117	58	0.50	1.26	6.89	1.74	2.02
-20	(- 4)	512	129	150	66	0.55	1.61	7.73	1.95	2.26
-15	(+ 5)	642	162	188	75	0.60	2.02	8.56	2.16	2.51
-10	(+14)	791	199	232	84	0.68	2.49	9.41	2.37	2.76

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	198	50	58	46	0.38	0.62	4.35	1.10	1.27	
-30 (-22)	269	68	79	53	0.45	0.84	5.09	1.28	1.49	
-25 (-13)	358	90	105	62	0.50	1.12	5.79	1.46	1.70	
-20 (- 4)	467	118	137	72	0.56	1.47	6.49	1.64	1.90	
-15 (+ 5)	596	150	175	82	0.62	1.88	7.23	1.82	2.12	
-10 (+14)	745	188	218	92	0.70	2.35	8.05	2.03	2.36	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	347	87	102	69	0.56	1.09	5.03	1.27	1.47	
-30 (-22)	477	120	140	79	0.64	1.50	6.06	1.53	1.78	
-25 (-13)	627	158	184	88	0.70	1.97	7.11	1.79	2.08	
-20 (- 4)	799	201	234	98	0.74	2.51	8.15	2.05	2.39	
-15 (+ 5)	998	252	293	109	0.78	3.14	9.13	2.30	2.67	
-10 (+14)	1227	309	360	123	0.83	3.87	10.01	2.52	2.93	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	337	85	99	68	0.53	1.05	4.96	1.25	1.45	
-30 (-22)	450	113	132	80	0.63	1.41	5.67	1.43	1.66	
-25 (-13)	585	147	171	91	0.73	1.84	6.45	1.63	1.89	
-20 (- 4)	746	188	218	103	0.81	2.34	7.27	1.83	2.13	
-15 (+ 5)	936	236	274	116	0.90	2.94	8.09	2.04	2.37	
-10 (+14)	1159	292	339	131	0.99	3.65	8.87	2.23	2.60	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	306	77	90	69	0.55	0.96	4.41	1.11	1.29	
-30 (-22)	410	103	120	83	0.65	1.29	4.92	1.24	1.44	
-25 (-13)	539	136	158	97	0.75	1.69	5.56	1.40	1.63	
-20 (- 4)	696	175	204	111	0.84	2.19	6.28	1.58	1.84	
-15 (+ 5)	885	223	259	125	0.94	2.79	7.07	1.78	2.07	
-10 (+14)	1110	280	325	141	1.06	3.50	7.86	1.98	2.30	

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)	494	124	145	99	0.78	1.55	4.99	1.26	1.46
-30	(-22)	624	157	183	111	0.88	1.95	5.66	1.43	1.66
-25	(-13)	800	202	234	125	0.98	2.51	6.41	1.61	1.88
-20	(- 4)	1011	255	296	140	1.08	3.18	7.22	1.82	2.12
-15	(+ 5)	1245	314	365	153	1.17	3.92	8.11	2.04	2.38
-10	(+14)	1491	376	437	165	1.24	4.70	9.06	2.28	2.65

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)	472	119	138	99	0.78	1.48	4.69	1.18	1.37
-30	(-22)	601	151	176	114	0.89	1.88	5.26	1.33	1.54
-25	(-13)	770	194	226	131	1.00	2.42	5.89	1.48	1.73
-20	(- 4)	968	244	284	148	1.12	3.04	6.56	1.65	1.92
-15	(+ 5)	1183	298	347	163	1.22	3.72	7.27	1.83	2.13
-10	(+14)	1402	353	411	175	1.30	4.42	8.02	2.02	2.35

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)	416	105	122	102	0.78	1.30	4.15	1.04	1.22
-30	(-22)	566	143	166	118	0.91	1.77	4.81	1.21	1.41
-25	(-13)	750	189	220	136	1.03	2.35	5.50	1.39	1.61
-20	(- 4)	956	241	280	153	1.15	3.00	6.21	1.56	1.82
-15	(+ 5)	1172	295	343	169	1.26	3.69	6.92	1.74	2.03
-10	(+14)	1387	350	406	182	1.36	4.38	7.65	1.93	2.24

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	No		
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 28° up + 25° to Back		
3.2 DISCHARGE	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted parallel BP+24°to Back		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 42° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		