

COMPRESSOR DEFINITION

Designation	VEM Y4C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513900016

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	1/10	[hp]
2 Displacement	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
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	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 - CE - UKCA - 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]	
108	27	32	22	0.21	0.34	4.98	1.25	1.46	

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]	
141	36	41	27	0.25	0.44	5.22	1.32	1.53	

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]	
216	54	63	43	0.37	0.68	5.06	1.28	1.48	

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]	
356	90	104	69	0.55	1.12	5.18	1.31	1.52	

E - PERFORMANCE - CURVES

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]
-35	(-31)	32	8	9	16	0.15	0.10	2.18	0.55	0.64
-30	(-22)	62	16	18	18	0.17	0.20	3.39	0.86	0.99
-25	(-13)	93	24	27	21	0.19	0.29	4.48	1.13	1.31
-20	(- 4)	129	32	38	23	0.21	0.40	5.57	1.40	1.63
-15	(+ 5)	171	43	50	25	0.22	0.54	6.78	1.71	1.99
-10	(+14)	225	57	66	27	0.24	0.71	8.23	2.07	2.41

E - PERFORMANCE - CURVES

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)	37	9	11	15	0.15	0.12	2.29	0.58	0.67	
-30 (-22)	64	16	19	18	0.17	0.20	3.35	0.85	0.98	
-25 (-13)	91	23	27	21	0.20	0.29	4.26	1.07	1.25	
-20 (- 4)	123	31	36	24	0.22	0.39	5.14	1.29	1.51	
-15 (+ 5)	163	41	48	27	0.24	0.51	6.11	1.54	1.79	
-10 (+14)	215	54	63	29	0.26	0.68	7.30	1.84	2.14	

TEST CONDITIONS: @220V1600RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	16	4	5	13	0.14	0.05	1.27	0.32	0.37	
-30 (-22)	40	10	12	17	0.17	0.12	2.27	0.57	0.66	
-25 (-13)	64	16	19	21	0.20	0.20	3.09	0.78	0.91	
-20 (- 4)	94	24	28	25	0.23	0.30	3.86	0.97	1.13	
-15 (+ 5)	132	33	39	28	0.25	0.42	4.70	1.18	1.38	
-10 (+14)	182	46	53	32	0.28	0.57	5.72	1.44	1.68	

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)	59	15	17	20	0.18	0.19	2.90	0.73	0.85	
-30 (-22)	88	22	26	23	0.21	0.28	3.79	0.95	1.11	
-25 (-13)	126	32	37	26	0.24	0.40	4.83	1.22	1.41	
-20 (- 4)	173	44	51	29	0.26	0.54	6.00	1.51	1.76	
-15 (+ 5)	230	58	67	32	0.27	0.72	7.29	1.84	2.14	
-10 (+14)	296	75	87	34	0.29	0.93	8.69	2.19	2.55	

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)	57	14	17	20	0.18	0.18	2.85	0.72	0.84	
-30 (-22)	84	21	25	23	0.21	0.26	3.67	0.92	1.08	
-25 (-13)	120	30	35	26	0.24	0.38	4.58	1.15	1.34	
-20 (- 4)	164	41	48	29	0.26	0.52	5.56	1.40	1.63	
-15 (+ 5)	216	54	63	33	0.28	0.68	6.61	1.67	1.94	
-10 (+14)	278	70	81	36	0.30	0.88	7.72	1.94	2.26	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	35	9	10	19	0.17	0.11	1.86	0.47	0.55	
-30 (-22)	62	16	18	23	0.20	0.20	2.72	0.69	0.80	
-25 (-13)	96	24	28	26	0.23	0.30	3.61	0.91	1.06	
-20 (- 4)	137	34	40	30	0.26	0.43	4.53	1.14	1.33	
-15 (+ 5)	185	47	54	34	0.29	0.58	5.45	1.37	1.60	
-10 (+14)	241	61	71	38	0.32	0.76	6.38	1.61	1.87	

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)	113	28	33	33	0.29	0.35	3.43	0.86	1.00	
-30 (-22)	153	38	45	38	0.32	0.48	4.03	1.02	1.18	
-25 (-13)	207	52	61	44	0.36	0.65	4.61	1.16	1.35	
-20 (- 4)	276	69	81	51	0.39	0.87	5.32	1.34	1.56	
-15 (+ 5)	360	91	105	57	0.41	1.13	6.32	1.59	1.85	
-10 (+14)	459	116	134	60	0.44	1.45	7.78	1.96	2.28	

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)	98	25	29	32	0.27	0.31	3.05	0.77	0.89	
-30 (-22)	138	35	40	35	0.31	0.43	3.95	1.00	1.16	
-25 (-13)	192	48	56	41	0.36	0.60	4.68	1.18	1.37	
-20 (- 4)	260	66	76	48	0.39	0.82	5.39	1.36	1.58	
-15 (+ 5)	343	87	101	55	0.43	1.08	6.25	1.57	1.83	
-10 (+14)	441	111	129	60	0.47	1.39	7.41	1.87	2.17	

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	56	14	16	32	0.25	0.17	1.68	0.42	0.49	
-30 (-22)	98	25	29	34	0.30	0.31	2.99	0.75	0.88	
-25 (-13)	154	39	45	39	0.35	0.48	3.98	1.00	1.17	
-20 (- 4)	225	57	66	47	0.40	0.71	4.81	1.21	1.41	
-15 (+ 5)	310	78	91	55	0.44	0.98	5.62	1.42	1.65	
-10 (+14)	410	103	120	62	0.49	1.29	6.59	1.66	1.93	

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)	173	44	51	54	0.43	0.54	3.23	0.81	0.95
-30	(-22)	248	63	73	61	0.49	0.78	4.10	1.03	1.20
-25	(-13)	335	84	98	67	0.53	1.05	4.99	1.26	1.46
-20	(- 4)	434	109	127	73	0.57	1.37	5.95	1.50	1.74
-15	(+ 5)	550	139	161	78	0.60	1.73	7.04	1.77	2.06
-10	(+14)	684	172	200	82	0.63	2.16	8.31	2.09	2.43

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)	139	35	41	51	0.42	0.43	2.72	0.69	0.80
-30	(-22)	218	55	64	59	0.49	0.68	3.69	0.93	1.08
-25	(-13)	307	77	90	67	0.55	0.96	4.60	1.16	1.35
-20	(- 4)	407	103	119	74	0.60	1.28	5.50	1.39	1.61
-15	(+ 5)	521	131	153	81	0.64	1.64	6.46	1.63	1.89
-10	(+14)	651	164	191	86	0.68	2.05	7.52	1.89	2.20

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	76	19	22	45	0.35	0.24	1.70	0.43	0.50
-30	(-22)	164	41	48	56	0.45	0.52	2.87	0.72	0.84
-25	(-13)	260	65	76	66	0.53	0.82	3.90	0.98	1.14
-20	(- 4)	365	92	107	75	0.59	1.15	4.86	1.22	1.42
-15	(+ 5)	482	121	141	84	0.65	1.52	5.79	1.46	1.70
-10	(+14)	614	155	180	91	0.70	1.94	6.74	1.70	1.98

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	Yes		
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 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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
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		