

COMPRESSOR DEFINITION

Designation	VEM Y7C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513900039

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	198 to 265 V	198 to 265 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 265 V	198 to 265 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	7.23	[cm ³] (0.441 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.000	
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]	
243	61	71	43	0.34	0.76	5.72	1.44	1.68	

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]	
289	73	85	50	0.41	0.91	5.81	1.46	1.70	

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]	
435	110	127	76	0.60	1.37	5.70	1.44	1.67	

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]	
598	151	175	110	0.85	1.88	5.44	1.37	1.59	

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)	145	37	43	27	0.24	0.45	5.31	1.34	1.56
-30	(-22)	193	49	57	31	0.28	0.61	6.30	1.59	1.85
-25	(-13)	246	62	72	34	0.30	0.77	7.26	1.83	2.13
-20	(- 4)	309	78	91	37	0.33	0.97	8.29	2.09	2.43
-15	(+ 5)	390	98	114	41	0.35	1.23	9.53	2.40	2.79
-10	(+14)	497	125	146	44	0.37	1.57	11.09	2.80	3.25

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]	[W/W]
-35	(-31)	107	27	31	27	0.24	0.33	3.98	1.00	1.17
-30	(-22)	161	41	47	31	0.28	0.50	5.06	1.28	1.48
-25	(-13)	217	55	64	36	0.32	0.68	6.00	1.51	1.76
-20	(- 4)	282	71	83	41	0.35	0.89	6.92	1.74	2.03
-15	(+ 5)	363	92	106	46	0.38	1.14	7.94	2.00	2.33
-10	(+14)	467	118	137	51	0.42	1.47	9.18	2.31	2.69

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)	83	21	24	27	0.23	0.26	3.03	0.76	0.89
-30	(-22)	143	36	42	34	0.28	0.45	4.17	1.05	1.22
-25	(-13)	202	51	59	40	0.33	0.64	5.07	1.28	1.49
-20	(- 4)	269	68	79	46	0.37	0.84	5.84	1.47	1.71
-15	(+ 5)	349	88	102	53	0.42	1.10	6.61	1.67	1.94
-10	(+14)	449	113	132	60	0.48	1.42	7.50	1.89	2.20

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)	167	42	49	34	0.30	0.52	4.91	1.24	1.44
-30	(-22)	241	61	71	39	0.35	0.75	6.13	1.54	1.80
-25	(-13)	314	79	92	43	0.38	0.99	7.27	1.83	2.13
-20	(- 4)	395	100	116	47	0.40	1.24	8.43	2.12	2.47
-15	(+ 5)	490	123	144	51	0.43	1.54	9.66	2.43	2.83
-10	(+14)	606	153	178	55	0.45	1.91	11.05	2.78	3.24

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)	143	36	42	34	0.29	0.45	4.20	1.06	1.23
-30	(-22)	213	54	62	40	0.34	0.67	5.27	1.33	1.55
-25	(-13)	283	71	83	45	0.38	0.89	6.25	1.58	1.83
-20	(- 4)	361	91	106	50	0.42	1.13	7.22	1.82	2.11
-15	(+ 5)	455	115	133	55	0.45	1.43	8.23	2.07	2.41
-10	(+14)	571	144	167	61	0.49	1.80	9.38	2.36	2.75

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)	120	30	35	34	0.29	0.38	3.59	0.90	1.05	
-30 (-22)	185	47	54	41	0.34	0.58	4.51	1.14	1.32	
-25 (-13)	252	63	74	47	0.39	0.79	5.32	1.34	1.56	
-20 (- 4)	327	82	96	54	0.44	1.03	6.09	1.54	1.79	
-15 (+ 5)	419	106	123	61	0.49	1.32	6.89	1.74	2.02	
-10 (+14)	535	135	157	68	0.55	1.69	7.80	1.97	2.29	

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)	258	65	76	52	0.44	0.81	4.94	1.25	1.45	
-30 (-22)	351	88	103	60	0.50	1.10	5.89	1.48	1.73	
-25 (-13)	463	117	136	67	0.55	1.45	6.97	1.76	2.04	
-20 (- 4)	599	151	176	74	0.59	1.88	8.16	2.06	2.39	
-15 (+ 5)	765	193	224	81	0.64	2.41	9.46	2.38	2.77	
-10 (+14)	967	244	283	89	0.69	3.05	10.86	2.74	3.18	

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)	215	54	63	52	0.42	0.67	4.10	1.03	1.20	
-30 (-22)	303	76	89	60	0.49	0.95	5.01	1.26	1.47	
-25 (-13)	408	103	120	68	0.55	1.28	5.99	1.51	1.75	
-20 (- 4)	534	135	157	76	0.61	1.68	7.03	1.77	2.06	
-15 (+ 5)	687	173	201	84	0.68	2.16	8.12	2.05	2.38	
-10 (+14)	872	220	256	94	0.75	2.75	9.26	2.33	2.71	

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)	193	49	57	53	0.44	0.61	3.63	0.92	1.06	
-30 (-22)	284	72	83	63	0.51	0.89	4.50	1.13	1.32	
-25 (-13)	388	98	114	72	0.57	1.22	5.38	1.35	1.58	
-20 (- 4)	510	129	150	82	0.64	1.60	6.26	1.58	1.84	
-15 (+ 5)	657	165	192	92	0.71	2.07	7.15	1.80	2.09	
-10 (+14)	832	210	244	104	0.81	2.63	8.01	2.02	2.35	

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)	374	94	110	79	0.63	1.17	4.72	1.19	1.38	
-30 (-22)	498	126	146	88	0.69	1.56	5.66	1.43	1.66	
-25 (-13)	653	165	191	97	0.76	2.05	6.72	1.69	1.97	
-20 (- 4)	837	211	245	106	0.82	2.63	7.88	1.99	2.31	
-15 (+ 5)	1050	265	308	115	0.89	3.30	9.10	2.29	2.67	
-10 (+14)	1289	325	378	124	0.96	4.07	10.36	2.61	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)	337	85	99	80	0.62	1.05	4.20	1.06	1.23	
-30 (-22)	451	114	132	91	0.70	1.41	5.00	1.26	1.47	
-25 (-13)	594	150	174	101	0.79	1.86	5.90	1.49	1.73	
-20 (- 4)	763	192	224	111	0.87	2.40	6.87	1.73	2.01	
-15 (+ 5)	958	241	281	122	0.96	3.02	7.88	1.99	2.31	
-10 (+14)	1177	297	345	132	1.04	3.71	8.90	2.24	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)	296	75	87	79	0.63	0.93	3.75	0.95	1.10	
-30 (-22)	413	104	121	92	0.72	1.29	4.48	1.13	1.31	
-25 (-13)	555	140	163	105	0.81	1.74	5.29	1.33	1.55	
-20 (- 4)	720	182	211	117	0.90	2.26	6.14	1.55	1.80	
-15 (+ 5)	909	229	266	130	0.99	2.86	7.01	1.77	2.05	
-10 (+14)	1120	282	328	143	1.09	3.53	7.86	1.98	2.30	

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		