

### COMPRESSOR DEFINITION

Designation	VEM T9C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513903032

### 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	103 to 140 V	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	103 to 140 V	103 to 140 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 <sup>2</sup> ] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm <sup>2</sup> ] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	9.04	[cm <sup>3</sup> ] (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)	7.3	[kg] (16.09 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### 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	VCC31156XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC31156XXXXX	
6 Start winding resistance	22.58	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	22.58	[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 - IMTRO - TUV - UKCA	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: <b>@115V1200RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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]
222	56	65	42	0.77	0.70	5.35	1.35	1.57

TEST CONDITIONS: <b>@115V1600RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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]
290	73	85	51	0.94	0.91	5.69	1.43	1.67

TEST CONDITIONS: <b>@115V2000RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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	63	1.15	1.14	5.82	1.47	1.71

TEST CONDITIONS: <b>@115V3000RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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]
536	135	157	91	1.68	1.68	5.90	1.49	1.73

TEST CONDITIONS: <b>@115V4000RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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]
679	171	199	119	2.18	2.13	5.70	1.44	1.67

TEST CONDITIONS: <b>@115V4500RPM</b>			<b>ASHRAELBP32</b> <b>Static</b>		Evaporating temperature (Condensing temperature)		<b>-23.3°C (-9.94°F)</b> <b>54.4°C (129.92°F)</b>	
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]
749	189	219	136	2.47	2.35	5.51	1.39	1.61

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1600RPM		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	28	0.54	0.52	5.89	1.48	1.73
-30	(-22)	230	58	67	34	0.69	0.72	6.70	1.69	1.96
-25	(-13)	299	75	88	40	0.78	0.94	7.50	1.89	2.20
-20	(- 4)	379	96	111	45	0.83	1.19	8.38	2.11	2.46
-15	(+ 5)	476	120	139	51	0.88	1.50	9.42	2.37	2.76
-10	(+14)	593	150	174	55	0.97	1.87	10.71	2.70	3.14

TEST CONDITIONS: @115V1600RPM		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)	152	38	45	31	0.56	0.48	4.92	1.24	1.44
-30	(-22)	215	54	63	38	0.72	0.67	5.66	1.43	1.66
-25	(-13)	284	72	83	44	0.84	0.89	6.36	1.60	1.86
-20	(- 4)	364	92	107	51	0.95	1.14	7.10	1.79	2.08
-15	(+ 5)	460	116	135	58	1.08	1.45	7.94	2.00	2.33
-10	(+14)	578	146	169	64	1.27	1.82	8.99	2.27	2.63

TEST CONDITIONS: @115V1600RPM		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)	133	33	39	33	0.56	0.42	4.07	1.03	1.19
-30	(-22)	194	49	57	40	0.73	0.61	4.81	1.21	1.41
-25	(-13)	262	66	77	48	0.88	0.82	5.46	1.38	1.60
-20	(- 4)	341	86	100	56	1.04	1.07	6.10	1.54	1.79
-15	(+ 5)	436	110	128	64	1.24	1.37	6.81	1.72	2.00
-10	(+14)	552	139	162	72	1.52	1.74	7.67	1.93	2.25

TEST CONDITIONS: @115V1600RPM		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]
-35	(-31)	110	28	32	34	0.56	0.35	3.23	0.81	0.95
-30	(-22)	169	43	50	42	0.73	0.53	4.02	1.01	1.18
-25	(-13)	235	59	69	51	0.90	0.74	4.68	1.18	1.37
-20	(- 4)	311	78	91	59	1.11	0.98	5.27	1.33	1.55
-15	(+ 5)	404	102	118	69	1.38	1.27	5.89	1.49	1.73
-10	(+14)	518	130	152	78	1.75	1.63	6.62	1.67	1.94

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2000RPM		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)	204	51	60	35	0.63	0.64	5.87	1.48	1.72	
-30 (-22)	280	70	82	43	0.81	0.88	6.57	1.66	1.93	
-25 (-13)	366	92	107	50	0.94	1.15	7.40	1.87	2.17	
-20 (- 4)	468	118	137	56	1.04	1.47	8.37	2.11	2.45	
-15 (+ 5)	591	149	173	62	1.13	1.86	9.50	2.39	2.78	
-10 (+14)	740	187	217	68	1.23	2.33	10.78	2.72	3.16	

TEST CONDITIONS: @115V2000RPM		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	56	38	0.69	0.60	5.07	1.28	1.49	
-30 (-22)	267	67	78	47	0.87	0.84	5.71	1.44	1.67	
-25 (-13)	352	89	103	55	1.02	1.11	6.42	1.62	1.88	
-20 (- 4)	452	114	133	63	1.15	1.42	7.22	1.82	2.11	
-15 (+ 5)	573	144	168	71	1.29	1.80	8.10	2.04	2.37	
-10 (+14)	719	181	211	79	1.46	2.27	9.10	2.29	2.67	

TEST CONDITIONS: @115V2000RPM		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)	170	43	50	40	0.72	0.53	4.30	1.08	1.26	
-30 (-22)	245	62	72	49	0.91	0.77	4.95	1.25	1.45	
-25 (-13)	329	83	96	58	1.07	1.03	5.62	1.42	1.65	
-20 (- 4)	428	108	125	68	1.24	1.34	6.32	1.59	1.85	
-15 (+ 5)	546	138	160	77	1.43	1.72	7.05	1.78	2.07	
-10 (+14)	690	174	202	88	1.66	2.18	7.84	1.97	2.30	

TEST CONDITIONS: @115V2000RPM		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)	137	35	40	40	0.72	0.43	3.42	0.86	1.00	
-30 (-22)	213	54	62	50	0.91	0.67	4.17	1.05	1.22	
-25 (-13)	297	75	87	61	1.10	0.93	4.87	1.23	1.43	
-20 (- 4)	395	99	116	71	1.30	1.24	5.55	1.40	1.63	
-15 (+ 5)	512	129	150	83	1.53	1.61	6.21	1.56	1.82	
-10 (+14)	653	165	191	95	1.83	2.06	6.86	1.73	2.01	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V3000RPM		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)	299	75	88	53	0.96	0.94	5.60	1.41	1.64	
-30 (-22)	409	103	120	65	1.19	1.28	6.27	1.58	1.84	
-25 (-13)	539	136	158	76	1.39	1.69	7.09	1.79	2.08	
-20 (- 4)	693	175	203	87	1.58	2.18	8.03	2.02	2.35	
-15 (+ 5)	875	221	256	96	1.75	2.75	9.07	2.29	2.66	
-10 (+14)	1088	274	319	106	1.92	3.43	10.21	2.57	2.99	

TEST CONDITIONS: @115V3000RPM		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)	284	72	83	57	1.08	0.89	4.97	1.25	1.46	
-30 (-22)	392	99	115	70	1.30	1.23	5.61	1.41	1.64	
-25 (-13)	520	131	152	82	1.51	1.63	6.35	1.60	1.86	
-20 (- 4)	673	170	197	94	1.72	2.11	7.16	1.80	2.10	
-15 (+ 5)	854	215	250	106	1.93	2.69	8.03	2.02	2.35	
-10 (+14)	1067	269	313	119	2.14	3.36	8.95	2.25	2.62	

TEST CONDITIONS: @115V3000RPM		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)	252	64	74	59	1.14	0.79	4.26	1.07	1.25	
-30 (-22)	357	90	105	72	1.36	1.12	4.94	1.25	1.45	
-25 (-13)	484	122	142	85	1.58	1.52	5.67	1.43	1.66	
-20 (- 4)	636	160	186	99	1.81	2.00	6.42	1.62	1.88	
-15 (+ 5)	816	206	239	113	2.05	2.57	7.19	1.81	2.11	
-10 (+14)	1029	259	302	129	2.31	3.25	7.95	2.00	2.33	

TEST CONDITIONS: @115V3000RPM		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)	202	51	59	60	1.15	0.63	3.38	0.85	0.99	
-30 (-22)	305	77	89	73	1.37	0.96	4.17	1.05	1.22	
-25 (-13)	430	108	126	87	1.60	1.35	4.95	1.25	1.45	
-20 (- 4)	581	146	170	102	1.85	1.83	5.72	1.44	1.67	
-15 (+ 5)	761	192	223	119	2.12	2.40	6.44	1.62	1.89	
-10 (+14)	974	245	285	137	2.43	3.07	7.12	1.79	2.09	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4000RPM		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)	388	98	114	75	1.37	1.21	5.20	1.31	1.52	
-30 (-22)	521	131	153	88	1.58	1.63	5.95	1.50	1.74	
-25 (-13)	681	172	200	102	1.82	2.14	6.72	1.69	1.97	
-20 (- 4)	878	221	257	116	2.08	2.76	7.53	1.90	2.21	
-15 (+ 5)	1120	282	328	132	2.36	3.52	8.42	2.12	2.47	
-10 (+14)	1415	357	415	150	2.65	4.46	9.40	2.37	2.75	

TEST CONDITIONS: @115V4000RPM		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)	367	92	108	79	1.45	1.15	4.63	1.17	1.36	
-30 (-22)	499	126	146	93	1.70	1.56	5.37	1.35	1.57	
-25 (-13)	654	165	192	108	1.96	2.05	6.08	1.53	1.78	
-20 (- 4)	841	212	247	124	2.24	2.64	6.79	1.71	1.99	
-15 (+ 5)	1070	270	314	142	2.54	3.37	7.54	1.90	2.21	
-10 (+14)	1348	340	395	161	2.84	4.25	8.34	2.10	2.44	

TEST CONDITIONS: @115V4000RPM		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)	326	82	96	81	1.49	1.02	4.01	1.01	1.17	
-30 (-22)	462	116	135	96	1.77	1.45	4.78	1.21	1.40	
-25 (-13)	618	156	181	112	2.06	1.94	5.50	1.39	1.61	
-20 (- 4)	802	202	235	130	2.36	2.52	6.17	1.55	1.81	
-15 (+ 5)	1022	258	300	150	2.66	3.22	6.83	1.72	2.00	
-10 (+14)	1288	325	378	172	2.97	4.07	7.50	1.89	2.20	

TEST CONDITIONS: @115V4000RPM		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)	266	67	78	82	1.49	0.83	3.28	0.83	0.96	
-30 (-22)	412	104	121	98	1.79	1.29	4.15	1.05	1.22	
-25 (-13)	573	144	168	115	2.10	1.80	4.92	1.24	1.44	
-20 (- 4)	759	191	222	135	2.41	2.38	5.61	1.41	1.65	
-15 (+ 5)	977	246	286	157	2.72	3.08	6.25	1.57	1.83	
-10 (+14)	1236	312	362	181	3.03	3.90	6.85	1.73	2.01	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
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 42° 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 42° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +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		