

COMPRESSOR DEFINITION

Designation	VEM T7C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513906093

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	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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		[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	210	[ml] (7.10 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.8	[kg] (17.20 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	EU155602B04	
6 Start winding resistance		[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance		[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	-	[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		

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]	
232	58	68	41	0.33	0.73	5.66	1.43	1.66	

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]	
268	68	79	46	0.36	0.84	5.80	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]	
398	100	117	67	0.51	1.25	5.94	1.50	1.74	

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]	
589	148	173	102	0.77	1.85	5.80	1.46	1.70	

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)	42	11	12	24	0.19	0.13	1.75	0.44	0.51
-30	(-22)	58	15	17	29	0.22	0.18	2.01	0.51	0.59
-25	(-13)	75	19	22	33	0.26	0.23	2.25	0.57	0.66
-20	(- 4)	95	24	28	38	0.29	0.30	2.51	0.63	0.74
-15	(+ 5)	121	30	35	43	0.32	0.38	2.83	0.71	0.83
-10	(+14)	153	39	45	47	0.36	0.48	3.23	0.82	0.95

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	37	9	11	25	0.20	0.12	1.51	0.38	0.44	
-30 (-22)	54	14	16	30	0.24	0.17	1.77	0.45	0.52	
-25 (-13)	71	18	21	36	0.28	0.22	1.99	0.50	0.58	
-20 (- 4)	92	23	27	42	0.33	0.29	2.19	0.55	0.64	
-15 (+ 5)	116	29	34	48	0.37	0.37	2.41	0.61	0.71	
-10 (+14)	147	37	43	55	0.42	0.46	2.68	0.68	0.79	

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)	30	8	9	24	0.19	0.09	1.24	0.31	0.36	
-30 (-22)	48	12	14	30	0.24	0.15	1.54	0.39	0.45	
-25 (-13)	66	17	19	37	0.29	0.21	1.76	0.44	0.52	
-20 (- 4)	86	22	25	45	0.34	0.27	1.93	0.49	0.57	
-15 (+ 5)	110	28	32	53	0.40	0.35	2.09	0.53	0.61	
-10 (+14)	139	35	41	61	0.46	0.44	2.27	0.57	0.67	

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)	50	12	15	28	0.23	0.15	1.73	0.44	0.51	
-30 (-22)	68	17	20	34	0.26	0.21	2.01	0.51	0.59	
-25 (-13)	88	22	26	39	0.30	0.27	2.27	0.57	0.67	
-20 (- 4)	111	28	32	44	0.34	0.35	2.55	0.64	0.75	
-15 (+ 5)	138	35	40	48	0.37	0.43	2.87	0.72	0.84	
-10 (+14)	171	43	50	53	0.40	0.54	3.26	0.82	0.96	

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)	43	11	12	29	0.22	0.13	1.49	0.38	0.44	
-30 (-22)	61	15	18	35	0.27	0.19	1.74	0.44	0.51	
-25 (-13)	81	20	24	41	0.32	0.25	1.96	0.49	0.57	
-20 (- 4)	104	26	30	48	0.36	0.33	2.18	0.55	0.64	
-15 (+ 5)	131	33	39	54	0.41	0.41	2.42	0.61	0.71	
-10 (+14)	165	42	48	60	0.46	0.52	2.72	0.68	0.80	

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)	36	9	11	28	0.22	0.11	1.26	0.32	0.37	
-30 (-22)	54	14	16	36	0.27	0.17	1.50	0.38	0.44	
-25 (-13)	73	19	22	43	0.33	0.23	1.70	0.43	0.50	
-20 (- 4)	96	24	28	52	0.40	0.30	1.87	0.47	0.55	
-15 (+ 5)	123	31	36	60	0.46	0.39	2.05	0.52	0.60	
-10 (+14)	156	39	46	68	0.52	0.49	2.27	0.57	0.67	

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)	71	18	21	43	0.33	0.22	1.65	0.41	0.48	
-30 (-22)	97	24	28	52	0.39	0.30	1.86	0.47	0.54	
-25 (-13)	128	32	37	60	0.45	0.40	2.12	0.54	0.62	
-20 (- 4)	164	41	48	68	0.50	0.52	2.44	0.61	0.71	
-15 (+ 5)	208	52	61	75	0.56	0.65	2.79	0.70	0.82	
-10 (+14)	260	65	76	82	0.63	0.82	3.16	0.80	0.93	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	63	16	18	44	0.33	0.20	1.44	0.36	0.42	
-30 (-22)	88	22	26	53	0.40	0.28	1.64	0.41	0.48	
-25 (-13)	118	30	35	62	0.47	0.37	1.89	0.48	0.55	
-20 (- 4)	155	39	45	71	0.54	0.49	2.17	0.55	0.64	
-15 (+ 5)	198	50	58	80	0.61	0.62	2.46	0.62	0.72	
-10 (+14)	250	63	73	90	0.69	0.79	2.75	0.69	0.81	

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)	55	14	16	44	0.33	0.17	1.27	0.32	0.37	
-30 (-22)	80	20	23	53	0.41	0.25	1.50	0.38	0.44	
-25 (-13)	109	27	32	63	0.48	0.34	1.74	0.44	0.51	
-20 (- 4)	144	36	42	73	0.56	0.45	1.99	0.50	0.58	
-15 (+ 5)	187	47	55	83	0.65	0.59	2.24	0.56	0.66	
-10 (+14)	237	60	69	96	0.74	0.75	2.47	0.62	0.72	

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)	105	26	31	68	0.50	0.33	1.56	0.39	0.46	
-30 (-22)	139	35	41	78	0.58	0.44	1.78	0.45	0.52	
-25 (-13)	180	45	53	90	0.67	0.56	2.01	0.51	0.59	
-20 (- 4)	230	58	67	101	0.78	0.72	2.27	0.57	0.66	
-15 (+ 5)	289	73	85	113	0.89	0.91	2.55	0.64	0.75	
-10 (+14)	362	91	106	126	1.01	1.14	2.86	0.72	0.84	

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)	96	24	28	68	0.51	0.30	1.41	0.36	0.41	
-30 (-22)	131	33	38	81	0.60	0.41	1.61	0.41	0.47	
-25 (-13)	172	43	50	94	0.70	0.54	1.82	0.46	0.53	
-20 (- 4)	221	56	65	108	0.81	0.69	2.04	0.52	0.60	
-15 (+ 5)	280	71	82	123	0.94	0.88	2.28	0.58	0.67	
-10 (+14)	352	89	103	138	1.06	1.11	2.54	0.64	0.75	

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)	84	21	25	66	0.51	0.26	1.26	0.32	0.37	
-30 (-22)	118	30	35	81	0.61	0.37	1.46	0.37	0.43	
-25 (-13)	158	40	46	96	0.72	0.50	1.65	0.42	0.48	
-20 (- 4)	206	52	60	112	0.85	0.65	1.85	0.47	0.54	
-15 (+ 5)	264	67	77	128	0.98	0.83	2.06	0.52	0.60	
-10 (+14)	334	84	98	146	1.12	1.05	2.28	0.58	0.67	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 28° up + 25° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		