

COMPRESSOR DEFINITION

Designation	VEG Z7H
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513802018

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
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	98 to 140 V	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	98 to 140 V	98 to 140 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	7.15	[cm ³] (0.436 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	18.000	
3 Lubricant charge	430	[ml] (14.54 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	10.93	[kg] (24.10 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

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	VCC31156XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC31156XXXXX	
6 Start winding resistance	6.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	3.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	3.30	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - TUV - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V1600RPM			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]	
411	104	120	68	0.92	2.34	6.07	1.53	1.78	

TEST CONDITIONS: @115V2000RPM			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]	
510	129	149	83	1.10	2.90	6.14	1.55	1.80	

TEST CONDITIONS: @115V3000RPM			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]	
794	200	233	129	1.67	4.51	6.16	1.55	1.81	

TEST CONDITIONS: @115V4500RPM			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]	
1066	269	312	180	2.29	6.06	5.93	1.49	1.74	

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	213	54	62	40	0.57	1.21	5.30	1.34	1.55
-30	(-22)	315	79	92	49	0.69	1.79	6.35	1.60	1.86
-25	(-13)	430	108	126	58	0.80	2.44	7.43	1.87	2.18
-20	(- 4)	564	142	165	66	0.90	3.21	8.60	2.17	2.52
-15	(+ 5)	722	182	212	73	0.98	4.12	9.94	2.51	2.91
-10	(+14)	911	230	267	79	1.05	5.22	11.52	2.90	3.37

E - PERFORMANCE - CURVES

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	205	52	60	41	0.53	1.16	5.02	1.26	1.47	
-30 (-22)	301	76	88	51	0.69	1.71	5.86	1.48	1.72	
-25 (-13)	412	104	121	62	0.83	2.34	6.67	1.68	1.95	
-20 (- 4)	543	137	159	72	0.98	3.09	7.51	1.89	2.20	
-15 (+ 5)	701	177	205	83	1.12	4.00	8.46	2.13	2.48	
-10 (+14)	891	224	261	93	1.25	5.10	9.58	2.41	2.81	

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	170	43	50	40	0.52	0.96	4.26	1.07	1.25	
-30 (-22)	262	66	77	51	0.69	1.49	5.09	1.28	1.49	
-25 (-13)	371	93	109	64	0.87	2.11	5.83	1.47	1.71	
-20 (- 4)	501	126	147	77	1.05	2.85	6.54	1.65	1.92	
-15 (+ 5)	660	166	193	90	1.23	3.77	7.29	1.84	2.14	
-10 (+14)	852	215	250	104	1.42	4.88	8.16	2.06	2.39	

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)	274	69	80	50	0.70	1.55	5.52	1.39	1.62	
-30 (-22)	381	96	112	58	0.77	2.16	6.53	1.65	1.91	
-25 (-13)	508	128	149	67	0.85	2.89	7.60	1.91	2.23	
-20 (- 4)	659	166	193	75	0.96	3.75	8.74	2.20	2.56	
-15 (+ 5)	839	211	246	84	1.08	4.79	9.96	2.51	2.92	
-10 (+14)	1052	265	308	93	1.21	6.03	11.28	2.84	3.30	

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)	249	63	73	50	0.70	1.41	4.98	1.26	1.46	
-30 (-22)	355	89	104	61	0.81	2.01	5.80	1.46	1.70	
-25 (-13)	480	121	141	72	0.94	2.72	6.68	1.68	1.96	
-20 (- 4)	629	158	184	83	1.07	3.58	7.63	1.92	2.23	
-15 (+ 5)	807	203	237	93	1.21	4.61	8.65	2.18	2.53	
-10 (+14)	1019	257	299	104	1.37	5.84	9.76	2.46	2.86	

E - PERFORMANCE - CURVES

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)	224	57	66	50	0.68	1.27	4.44	1.12	1.30	
-30 (-22)	326	82	95	64	0.86	1.85	5.09	1.28	1.49	
-25 (-13)	447	113	131	77	1.04	2.54	5.79	1.46	1.70	
-20 (- 4)	593	149	174	91	1.21	3.37	6.56	1.65	1.92	
-15 (+ 5)	768	194	225	104	1.39	4.38	7.40	1.86	2.17	
-10 (+14)	977	246	286	118	1.57	5.60	8.32	2.10	2.44	

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)	433	109	127	85	1.13	2.45	5.02	1.26	1.47	
-30 (-22)	574	145	168	93	1.22	3.25	6.21	1.56	1.82	
-25 (-13)	756	191	222	104	1.36	4.29	7.30	1.84	2.14	
-20 (- 4)	975	246	286	117	1.52	5.55	8.35	2.10	2.45	
-15 (+ 5)	1228	309	360	131	1.69	7.01	9.40	2.37	2.75	
-10 (+14)	1509	380	442	144	1.84	8.65	10.48	2.64	3.07	

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)	371	94	109	83	1.09	2.10	4.57	1.15	1.34	
-30 (-22)	550	139	161	98	1.27	3.12	5.61	1.41	1.65	
-25 (-13)	759	191	223	115	1.48	4.31	6.59	1.66	1.93	
-20 (- 4)	996	251	292	131	1.68	5.67	7.55	1.90	2.21	
-15 (+ 5)	1257	317	368	147	1.88	7.18	8.54	2.15	2.50	
-10 (+14)	1537	387	450	160	2.03	8.81	9.60	2.42	2.81	

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)	353	89	103	82	1.10	2.00	4.28	1.08	1.26	
-30 (-22)	525	132	154	103	1.35	2.97	5.07	1.28	1.49	
-25 (-13)	718	181	210	122	1.60	4.08	5.83	1.47	1.71	
-20 (- 4)	930	234	272	141	1.84	5.29	6.60	1.66	1.93	
-15 (+ 5)	1155	291	338	156	2.03	6.59	7.43	1.87	2.18	
-10 (+14)	1389	350	407	167	2.17	7.96	8.37	2.11	2.45	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4500RPM		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)	579	146	170	124	1.59	3.27	4.71	1.19	1.38	
-30 (-22)	913	230	268	159	2.00	5.18	5.70	1.44	1.67	
-25 (-13)	1209	305	354	177	2.22	6.86	6.82	1.72	2.00	
-20 (- 4)	1482	373	434	184	2.32	8.44	8.06	2.03	2.36	
-15 (+ 5)	1748	441	512	184	2.34	9.98	9.43	2.38	2.76	
-10 (+14)	2023	510	593	184	2.33	11.60	10.90	2.75	3.19	

TEST CONDITIONS: @115V4500RPM		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)	585	147	172	129	1.67	3.31	4.48	1.13	1.31	
-30 (-22)	860	217	252	160	2.05	4.87	5.32	1.34	1.56	
-25 (-13)	1090	275	319	175	2.24	6.19	6.25	1.58	1.83	
-20 (- 4)	1293	326	379	179	2.31	7.36	7.29	1.84	2.14	
-15 (+ 5)	1483	374	434	177	2.29	8.46	8.41	2.12	2.46	
-10 (+14)	1676	422	491	173	2.25	9.60	9.61	2.42	2.82	

TEST CONDITIONS: @115V4500RPM		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)	522	131	153	131	1.67	2.95	3.99	1.01	1.17	
-30 (-22)	774	195	227	161	2.05	4.38	4.75	1.20	1.39	
-25 (-13)	976	246	286	175	2.25	5.54	5.58	1.41	1.63	
-20 (- 4)	1144	288	335	178	2.31	6.51	6.47	1.63	1.90	
-15 (+ 5)	1295	326	380	174	2.29	7.39	7.43	1.87	2.18	
-10 (+14)	1445	364	423	170	2.24	8.28	8.44	2.13	2.47	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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	Straight		
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	Straight		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		