

COMPRESSOR DEFINITION

Designation	VEG Z8H
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513802001

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	7.95	[cm ³] (0.485 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	20.000	
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)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[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	IMTRO - 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]	
472	119	138	77	1.04	2.68	6.12	1.54	1.79	

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]	
579	146	170	93	1.26	3.29	6.23	1.57	1.83	

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]	
895	226	262	144	1.85	5.09	6.20	1.56	1.82	

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]	
1094	276	321	179	2.25	6.22	6.13	1.54	1.80	

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)	264	67	77	47	0.62	1.49	5.63	1.42	1.65
-30	(-22)	368	93	108	55	0.71	2.09	6.69	1.68	1.96
-25	(-13)	487	123	143	63	0.82	2.77	7.70	1.94	2.26
-20	(- 4)	625	158	183	72	0.94	3.56	8.76	2.21	2.57
-15	(+ 5)	785	198	230	80	1.05	4.48	9.91	2.50	2.90
-10	(+14)	971	245	285	87	1.14	5.57	11.24	2.83	3.29

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@115V1600RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	251	63	74	49	0.67	1.42	5.16	1.30	1.51	
-30 (-22)	345	87	101	58	0.79	1.96	5.97	1.50	1.75	
-25 (-13)	459	116	134	68	0.94	2.60	6.73	1.70	1.97	
-20 (- 4)	596	150	175	79	1.10	3.39	7.53	1.90	2.21	
-15 (+ 5)	760	192	223	90	1.25	4.34	8.43	2.12	2.47	
-10 (+14)	956	241	280	100	1.39	5.48	9.51	2.40	2.79	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@115V1600RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	244	61	71	51	0.70	1.38	4.82	1.21	1.41	
-30 (-22)	325	82	95	61	0.86	1.84	5.39	1.36	1.58	
-25 (-13)	431	109	126	73	1.03	2.45	5.93	1.49	1.74	
-20 (- 4)	565	142	166	87	1.22	3.22	6.49	1.64	1.90	
-15 (+ 5)	731	184	214	101	1.41	4.18	7.16	1.81	2.10	
-10 (+14)	933	235	273	116	1.59	5.35	8.01	2.02	2.35	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@115V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	342	86	100	58	0.78	1.94	5.91	1.49	1.73	
-30 (-22)	445	112	130	65	0.86	2.52	6.78	1.71	1.99	
-25 (-13)	579	146	170	75	0.97	3.29	7.73	1.95	2.26	
-20 (- 4)	745	188	218	85	1.10	4.24	8.77	2.21	2.57	
-15 (+ 5)	944	238	276	95	1.22	5.39	9.95	2.51	2.91	
-10 (+14)	1175	296	344	105	1.34	6.73	11.28	2.84	3.31	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@115V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	305	77	89	59	0.84	1.72	5.20	1.31	1.52	
-30 (-22)	414	104	121	70	0.98	2.35	5.96	1.50	1.75	
-25 (-13)	553	139	162	82	1.13	3.14	6.77	1.71	1.98	
-20 (- 4)	721	182	211	94	1.30	4.11	7.65	1.93	2.24	
-15 (+ 5)	921	232	270	107	1.46	5.26	8.63	2.18	2.53	
-10 (+14)	1151	290	337	118	1.60	6.60	9.75	2.46	2.86	

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@115V2000RPM		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)	285	72	84	59	0.83	1.62	4.78	1.20	1.40	
-30 (-22)	396	100	116	73	1.03	2.24	5.39	1.36	1.58	
-25 (-13)	534	135	156	89	1.23	3.03	6.03	1.52	1.77	
-20 (- 4)	700	176	205	104	1.44	3.98	6.71	1.69	1.97	
-15 (+ 5)	894	225	262	120	1.63	5.10	7.47	1.88	2.19	
-10 (+14)	1118	282	328	134	1.79	6.40	8.34	2.10	2.44	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@115V3000RPM		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)	517	130	152	92	1.22	2.93	5.55	1.40	1.63	
-30 (-22)	641	162	188	103	1.35	3.63	6.32	1.59	1.85	
-25 (-13)	834	210	244	117	1.52	4.73	7.17	1.81	2.10	
-20 (- 4)	1086	274	318	133	1.70	6.18	8.16	2.06	2.39	
-15 (+ 5)	1386	349	406	148	1.87	7.91	9.33	2.35	2.73	
-10 (+14)	1724	435	505	161	2.01	9.88	10.72	2.70	3.14	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@115V3000RPM		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)	483	122	142	93	1.20	2.73	5.23	1.32	1.53	
-30 (-22)	651	164	191	110	1.43	3.69	5.95	1.50	1.74	
-25 (-13)	861	217	252	128	1.67	4.89	6.71	1.69	1.97	
-20 (- 4)	1103	278	323	145	1.88	6.28	7.56	1.91	2.22	
-15 (+ 5)	1367	344	401	160	2.06	7.80	8.55	2.15	2.50	
-10 (+14)	1642	414	481	170	2.19	9.41	9.71	2.45	2.84	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@115V3000RPM		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)	462	117	135	97	1.29	2.61	4.80	1.21	1.41	
-30 (-22)	641	162	188	118	1.57	3.64	5.42	1.37	1.59	
-25 (-13)	836	211	245	137	1.82	4.75	6.04	1.52	1.77	
-20 (- 4)	1036	261	304	154	2.03	5.90	6.70	1.69	1.96	
-15 (+ 5)	1231	310	361	166	2.16	7.03	7.44	1.88	2.18	
-10 (+14)	1411	356	413	171	2.22	8.08	8.32	2.10	2.44	

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)	740	187	217	144	1.86	4.19	5.13	1.29	1.50	
-30 (-22)	1032	260	302	169	2.13	5.85	6.08	1.53	1.78	
-25 (-13)	1268	320	372	180	2.24	7.20	7.08	1.78	2.07	
-20 (- 4)	1471	371	431	182	2.25	8.37	8.12	2.05	2.38	
-15 (+ 5)	1662	419	487	179	2.22	9.49	9.25	2.33	2.71	
-10 (+14)	1864	470	546	176	2.19	10.68	10.48	2.64	3.07	

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)	653	165	191	141	1.80	3.69	4.64	1.17	1.36	
-30 (-22)	955	241	280	170	2.16	5.41	5.58	1.41	1.63	
-25 (-13)	1185	299	347	182	2.33	6.73	6.52	1.64	1.91	
-20 (- 4)	1365	344	400	184	2.36	7.77	7.49	1.89	2.20	
-15 (+ 5)	1516	382	444	178	2.31	8.66	8.53	2.15	2.50	
-10 (+14)	1663	419	487	171	2.23	9.53	9.64	2.43	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)	595	150	174	134	1.73	3.36	4.44	1.12	1.30	
-30 (-22)	880	222	258	167	2.16	4.99	5.16	1.30	1.51	
-25 (-13)	1077	271	316	182	2.36	6.12	5.87	1.48	1.72	
-20 (- 4)	1207	304	354	184	2.38	6.87	6.59	1.66	1.93	
-15 (+ 5)	1292	326	379	177	2.29	7.37	7.34	1.85	2.15	
-10 (+14)	1356	342	397	166	2.13	7.76	8.15	2.05	2.39	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-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		