

COMPRESSOR DEFINITION

Designation	VEM Y4H
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513900017

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	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	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
3 Lubricant charge	220	[ml] (7.44 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.5	[kg] (16.53 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	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)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (53/15 Hz)	-	[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	CE - UKCA - 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]	
215	54	63	39	0.54	1.22	5.58	1.41	1.64	

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]	
266	67	78	47	0.68	1.51	5.67	1.43	1.66	

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]	
396	100	116	73	1.00	2.25	5.40	1.36	1.58	

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]	
580	146	170	110	1.44	3.30	5.28	1.33	1.55	

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)	126	32	37	24	0.38	0.71	5.18	1.30	1.52
-30	(-22)	168	42	49	28	0.44	0.95	5.96	1.50	1.75
-25	(-13)	226	57	66	33	0.50	1.28	6.96	1.75	2.04
-20	(- 4)	299	75	88	37	0.55	1.70	8.14	2.05	2.38
-15	(+ 5)	387	97	113	41	0.60	2.21	9.47	2.39	2.77
-10	(+14)	489	123	143	45	0.65	2.80	10.92	2.75	3.20

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	107	27	31	25	0.39	0.61	4.28	1.08	1.25	
-30 (-22)	149	38	44	30	0.46	0.85	5.03	1.27	1.47	
-25 (-13)	208	52	61	35	0.53	1.18	5.92	1.49	1.74	
-20 (- 4)	281	71	82	40	0.60	1.60	6.93	1.75	2.03	
-15 (+ 5)	369	93	108	46	0.67	2.11	8.03	2.02	2.35	
-10 (+14)	472	119	138	51	0.74	2.70	9.18	2.31	2.69	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	93	24	27	26	0.38	0.53	3.58	0.90	1.05	
-30 (-22)	134	34	39	31	0.47	0.76	4.36	1.10	1.28	
-25 (-13)	192	48	56	37	0.56	1.09	5.21	1.31	1.53	
-20 (- 4)	264	67	77	43	0.65	1.50	6.12	1.54	1.79	
-15 (+ 5)	352	89	103	50	0.74	2.01	7.05	1.78	2.07	
-10 (+14)	454	114	133	57	0.83	2.60	7.97	2.01	2.33	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	158	40	46	31	0.47	0.89	5.08	1.28	1.49	
-30 (-22)	211	53	62	35	0.54	1.20	5.93	1.49	1.74	
-25 (-13)	280	71	82	40	0.60	1.59	6.93	1.75	2.03	
-20 (- 4)	366	92	107	45	0.66	2.08	8.06	2.03	2.36	
-15 (+ 5)	469	118	137	50	0.72	2.68	9.33	2.35	2.73	
-10 (+14)	591	149	173	55	0.78	3.39	10.74	2.71	3.15	

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%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	141	36	41	32	0.48	0.80	4.49	1.13	1.32	
-30 (-22)	193	49	57	37	0.56	1.10	5.22	1.32	1.53	
-25 (-13)	261	66	76	43	0.64	1.48	6.06	1.53	1.77	
-20 (- 4)	345	87	101	49	0.71	1.97	7.00	1.76	2.05	
-15 (+ 5)	448	113	131	56	0.79	2.56	8.05	2.03	2.36	
-10 (+14)	569	143	167	62	0.87	3.26	9.19	2.32	2.69	

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)	126	32	37	31	0.48	0.71	4.02	1.01	1.18	
-30 (-22)	174	44	51	37	0.57	0.99	4.66	1.17	1.37	
-25 (-13)	238	60	70	44	0.66	1.35	5.37	1.35	1.57	
-20 (- 4)	319	80	94	52	0.75	1.82	6.15	1.55	1.80	
-15 (+ 5)	418	105	123	60	0.85	2.39	7.00	1.76	2.05	
-10 (+14)	536	135	157	68	0.95	3.07	7.92	2.00	2.32	

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)	245	62	72	51	0.80	1.39	4.81	1.21	1.41	
-30 (-22)	331	83	97	58	0.88	1.87	5.69	1.43	1.67	
-25 (-13)	436	110	128	65	0.97	2.47	6.65	1.68	1.95	
-20 (- 4)	564	142	165	73	1.07	3.21	7.70	1.94	2.25	
-15 (+ 5)	718	181	210	81	1.16	4.10	8.84	2.23	2.59	
-10 (+14)	901	227	264	89	1.26	5.16	10.10	2.54	2.96	

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)	211	53	62	51	0.79	1.19	4.17	1.05	1.22	
-30 (-22)	294	74	86	59	0.89	1.67	4.98	1.25	1.46	
-25 (-13)	398	100	117	68	1.00	2.26	5.84	1.47	1.71	
-20 (- 4)	526	133	154	77	1.12	3.00	6.76	1.70	1.98	
-15 (+ 5)	681	172	200	87	1.24	3.89	7.77	1.96	2.28	
-10 (+14)	866	218	254	98	1.37	4.96	8.86	2.23	2.60	

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)	190	48	56	51	0.80	1.08	3.72	0.94	1.09	
-30 (-22)	264	66	77	60	0.90	1.50	4.42	1.11	1.30	
-25 (-13)	359	90	105	70	1.02	2.04	5.16	1.30	1.51	
-20 (- 4)	479	121	140	81	1.16	2.72	5.93	1.49	1.74	
-15 (+ 5)	626	158	184	93	1.30	3.58	6.76	1.70	1.98	
-10 (+14)	805	203	236	105	1.45	4.61	7.66	1.93	2.24	

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)	326	82	96	76	1.10	1.84	4.30	1.08	1.26	
-30 (-22)	456	115	133	89	1.26	2.58	5.11	1.29	1.50	
-25 (-13)	615	155	180	101	1.41	3.49	6.04	1.52	1.77	
-20 (- 4)	803	202	235	114	1.55	4.57	7.08	1.78	2.07	
-15 (+ 5)	1021	257	299	125	1.69	5.83	8.18	2.06	2.40	
-10 (+14)	1268	320	372	136	1.83	7.27	9.34	2.35	2.74	

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)	302	76	88	77	1.11	1.71	3.95	1.00	1.16	
-30 (-22)	418	105	122	90	1.28	2.37	4.65	1.17	1.36	
-25 (-13)	566	143	166	104	1.44	3.21	5.46	1.38	1.60	
-20 (- 4)	746	188	219	117	1.60	4.25	6.36	1.60	1.86	
-15 (+ 5)	959	242	281	131	1.77	5.47	7.32	1.85	2.15	
-10 (+14)	1204	303	353	145	1.94	6.90	8.32	2.10	2.44	

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)	262	66	77	76	1.11	1.48	3.41	0.86	1.00	
-30 (-22)	363	91	106	90	1.28	2.06	4.06	1.02	1.19	
-25 (-13)	498	126	146	104	1.45	2.83	4.81	1.21	1.41	
-20 (- 4)	669	169	196	119	1.62	3.81	5.64	1.42	1.65	
-15 (+ 5)	874	220	256	134	1.81	4.99	6.51	1.64	1.91	
-10 (+14)	1114	281	327	151	2.00	6.38	7.41	1.87	2.17	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
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	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		