

COMPRESSOR DEFINITION

Designation	VES F11C
Nominal Voltage/Frequency	230 V 32-150 Hz
Engineering Number	513907477

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 32-150	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Fullmotion Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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	187 to 255 V	187 to 255 V
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	1/5	[hp]
2 Displacement	11.14	[cm ³] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	205	[ml] (6.93 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.21	[kg] (13.69 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 31.7-150 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF02F22 M 0.0 X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CF02F22 M 0.0 XX F X	
6 Start winding resistance	15.60	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (32/150 Hz)	2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (32/150 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (32/150 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V950RPM			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	34	0.29	0.67	6.41	1.62	1.88

TEST CONDITIONS: @220V1300RPM			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]
293	74	86	44	0.37	0.92	6.62	1.67	1.94

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]
365	92	107	55	0.43	1.15	6.66	1.68	1.95

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]
457	115	134	68	0.52	1.44	6.72	1.69	1.97

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]
686	173	201	105	0.78	2.15	6.56	1.65	1.92

TEST CONDITIONS: @220V4000RPM			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]
881	222	258	143	1.04	2.76	6.18	1.56	1.81

D - PERFORMANCE - CHECK POINT DATA

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]
938	236	275	153	1.10	2.95	6.15	1.55	1.80

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V950RPM			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)	129	32	38	20	0.18	0.40	6.58	1.66	1.93
-30 (-22)	171	43	50	23	0.19	0.53	7.29	1.84	2.14
-25 (-13)	222	56	65	27	0.21	0.70	8.19	2.06	2.40
-20 (- 4)	286	72	84	31	0.23	0.90	9.30	2.34	2.72
-15 (+ 5)	363	91	106	34	0.25	1.14	10.63	2.68	3.12
-10 (+14)	456	115	134	37	0.26	1.44	12.22	3.08	3.58
-5 (+23)	566	143	166	40	0.27	1.79	14.08	3.55	4.13
0 (+32)	697	176	204	42	0.27	2.21	16.24	4.09	4.76

TEST CONDITIONS: @220V950RPM			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)	117	30	34	20	0.18	0.37	5.79	1.46	1.70
-30 (-22)	158	40	46	25	0.20	0.49	6.42	1.62	1.88
-25 (-13)	209	53	61	29	0.22	0.65	7.16	1.80	2.10
-20 (- 4)	272	68	80	34	0.25	0.85	8.03	2.02	2.35
-15 (+ 5)	349	88	102	38	0.27	1.10	9.05	2.28	2.65
-10 (+14)	444	112	130	43	0.30	1.40	10.25	2.58	3.00
-5 (+23)	557	140	163	48	0.32	1.76	11.65	2.93	3.41
0 (+32)	690	174	202	52	0.33	2.19	13.25	3.34	3.88

TEST CONDITIONS: @220V950RPM			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)	101	25	30	20	0.18	0.32	4.93	1.24	1.44
-30 (-22)	140	35	41	25	0.20	0.44	5.57	1.40	1.63
-25 (-13)	191	48	56	31	0.23	0.60	6.24	1.57	1.83
-20 (- 4)	255	64	75	37	0.26	0.80	6.97	1.76	2.04
-15 (+ 5)	334	84	98	43	0.30	1.05	7.78	1.96	2.28
-10 (+14)	430	108	126	49	0.34	1.36	8.68	2.19	2.54
-5 (+23)	546	138	160	56	0.37	1.73	9.70	2.44	2.84
0 (+32)	683	172	200	63	0.40	2.17	10.86	2.74	3.18

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	179	45	52	27	0.25	0.56	6.62	1.67	1.94	
-30 (-22)	237	60	69	32	0.28	0.74	7.37	1.86	2.16	
-25 (-13)	307	77	90	37	0.31	0.96	8.30	2.09	2.43	
-20 (- 4)	393	99	115	42	0.34	1.23	9.42	2.37	2.76	
-15 (+ 5)	496	125	145	46	0.37	1.56	10.74	2.71	3.15	
-10 (+14)	619	156	181	51	0.40	1.95	12.25	3.09	3.59	
-5 (+23)	765	193	224	55	0.43	2.42	13.95	3.52	4.09	
0 (+32)	936	236	274	59	0.46	2.97	15.86	4.00	4.65	

TEST CONDITIONS: @220V1300RPM		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)	162	41	48	28	0.25	0.51	5.86	1.48	1.72	
-30 (-22)	219	55	64	34	0.29	0.69	6.51	1.64	1.91	
-25 (-13)	288	73	84	39	0.33	0.90	7.30	1.84	2.14	
-20 (- 4)	372	94	109	45	0.37	1.17	8.22	2.07	2.41	
-15 (+ 5)	473	119	139	51	0.41	1.49	9.28	2.34	2.72	
-10 (+14)	595	150	174	57	0.45	1.88	10.49	2.64	3.07	
-5 (+23)	739	186	217	63	0.49	2.34	11.84	2.98	3.47	
0 (+32)	908	229	266	69	0.54	2.88	13.34	3.36	3.91	

TEST CONDITIONS: @220V1300RPM		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)	145	36	42	28	0.26	0.45	5.11	1.29	1.50	
-30 (-22)	199	50	58	35	0.30	0.62	5.70	1.44	1.67	
-25 (-13)	265	67	78	42	0.35	0.83	6.37	1.61	1.87	
-20 (- 4)	346	87	102	49	0.39	1.09	7.13	1.80	2.09	
-15 (+ 5)	445	112	130	56	0.44	1.40	7.98	2.01	2.34	
-10 (+14)	563	142	165	63	0.50	1.78	8.92	2.25	2.61	
-5 (+23)	704	177	206	71	0.56	2.23	9.96	2.51	2.92	
0 (+32)	871	219	255	79	0.62	2.76	11.09	2.80	3.25	

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]	[W/W]
-35 (-31)	218	55	64	34	0.29	0.68	6.49	1.63	1.90	
-30 (-22)	291	73	85	40	0.33	0.91	7.33	1.85	2.15	
-25 (-13)	378	95	111	45	0.38	1.19	8.30	2.09	2.43	
-20 (- 4)	483	122	141	51	0.42	1.52	9.41	2.37	2.76	
-15 (+ 5)	609	154	179	57	0.46	1.92	10.68	2.69	3.13	
-10 (+14)	762	192	223	63	0.50	2.40	12.14	3.06	3.56	
-5 (+23)	943	238	276	68	0.54	2.98	13.79	3.48	4.04	
0 (+32)	1157	292	339	74	0.59	3.67	15.68	3.95	4.59	

TEST CONDITIONS: @220V1600RPM		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)	201	51	59	35	0.30	0.63	5.79	1.46	1.70	
-30 (-22)	271	68	80	42	0.35	0.85	6.51	1.64	1.91	
-25 (-13)	356	90	104	49	0.40	1.12	7.31	1.84	2.14	
-20 (- 4)	458	115	134	56	0.44	1.44	8.21	2.07	2.41	
-15 (+ 5)	582	147	170	63	0.49	1.83	9.23	2.33	2.70	
-10 (+14)	731	184	214	70	0.55	2.31	10.39	2.62	3.04	
-5 (+23)	909	229	266	78	0.61	2.88	11.72	2.95	3.43	
0 (+32)	1121	282	328	85	0.68	3.55	13.23	3.33	3.88	

TEST CONDITIONS: @220V1600RPM		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)	184	46	54	35	0.30	0.58	5.23	1.32	1.53	
-30 (-22)	250	63	73	43	0.35	0.78	5.85	1.47	1.71	
-25 (-13)	330	83	97	51	0.41	1.04	6.51	1.64	1.91	
-20 (- 4)	429	108	126	59	0.47	1.35	7.23	1.82	2.12	
-15 (+ 5)	549	138	161	68	0.53	1.73	8.04	2.02	2.35	
-10 (+14)	694	175	203	78	0.60	2.19	8.94	2.25	2.62	
-5 (+23)	869	219	255	87	0.68	2.75	9.96	2.51	2.92	
0 (+32)	1076	271	315	97	0.77	3.41	11.13	2.80	3.26	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard VES		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up + 49° 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	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 47° up + 59° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		