

COMPRESSOR DEFINITION

Designation	VES G7C
Nominal Voltage/Frequency	230 V 32-150 Hz
Engineering Number	513907430

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)	-	-	-
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	7.23	[cm ³] (0.441 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.000	
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)	6.7	[kg] (14.77 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	VESF 2456 XXX X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	INVERTER VESF 2456 X	
6 Start winding resistance	9.30	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.30	[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 - VDE	

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]
124	31	36	19	0.20	0.39	6.39	1.61	1.87

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]
177	45	52	27	0.25	0.56	6.65	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]
278	70	81	41	0.35	0.87	6.80	1.71	1.99

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]
416	105	122	62	0.50	1.31	6.72	1.69	1.97

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]
556	140	163	85	0.67	1.75	6.53	1.65	1.91

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]
569	143	167	87	0.68	1.79	6.53	1.65	1.91

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]
-35	(-31)	103	26	30	16	0.16	0.32	6.35	1.60	1.86
-30	(-22)	140	35	41	19	0.16	0.44	7.30	1.84	2.14
-25	(-13)	184	46	54	22	0.18	0.58	8.36	2.11	2.45
-20	(- 4)	238	60	70	25	0.20	0.75	9.61	2.42	2.82
-15	(+ 5)	304	77	89	27	0.23	0.96	11.12	2.80	3.26
-10	(+14)	384	97	113	30	0.25	1.21	12.95	3.26	3.79
-5	(+23)	480	121	141	32	0.27	1.52	15.17	3.82	4.45
0	(+32)	594	150	174	33	0.28	1.88	17.86	4.50	5.23

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]
-35	(-31)	89	22	26	16	0.16	0.28	5.48	1.38	1.61
-30	(-22)	127	32	37	20	0.17	0.40	6.40	1.61	1.88
-25	(-13)	171	43	50	23	0.20	0.54	7.33	1.85	2.15
-20	(- 4)	224	57	66	27	0.23	0.71	8.34	2.10	2.44
-15	(+ 5)	289	73	85	30	0.26	0.91	9.50	2.39	2.78
-10	(+14)	367	92	107	34	0.29	1.16	10.87	2.74	3.19
-5	(+23)	460	116	135	37	0.31	1.45	12.53	3.16	3.67
0	(+32)	571	144	167	40	0.32	1.81	14.54	3.66	4.26

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]
-35	(-31)	69	17	20	16	0.16	0.22	4.38	1.10	1.28
-30	(-22)	107	27	31	20	0.18	0.34	5.41	1.36	1.58
-25	(-13)	151	38	44	24	0.21	0.47	6.33	1.59	1.85
-20	(- 4)	203	51	60	28	0.24	0.64	7.22	1.82	2.12
-15	(+ 5)	266	67	78	33	0.28	0.84	8.15	2.05	2.39
-10	(+14)	341	86	100	37	0.31	1.08	9.19	2.31	2.69
-5	(+23)	431	109	126	41	0.33	1.36	10.40	2.62	3.05
0	(+32)	538	135	158	46	0.34	1.70	11.86	2.99	3.47

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]
-35	(-31)	130	33	38	20	0.19	0.41	6.36	1.60	1.86
-30	(-22)	175	44	51	24	0.21	0.55	7.32	1.84	2.15
-25	(-13)	230	58	67	27	0.23	0.72	8.41	2.12	2.46
-20	(- 4)	297	75	87	31	0.25	0.93	9.67	2.44	2.83
-15	(+ 5)	379	96	111	34	0.28	1.19	11.16	2.81	3.27
-10	(+14)	477	120	140	37	0.31	1.51	12.93	3.26	3.79
-5	(+23)	594	150	174	39	0.34	1.88	15.02	3.79	4.40
0	(+32)	731	184	214	42	0.37	2.32	17.50	4.41	5.13

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]
-35	(-31)	112	28	33	20	0.19	0.35	5.52	1.39	1.62
-30	(-22)	158	40	46	25	0.22	0.50	6.41	1.62	1.88
-25	(-13)	213	54	62	29	0.25	0.67	7.34	1.85	2.15
-20	(- 4)	279	70	82	33	0.28	0.88	8.36	2.11	2.45
-15	(+ 5)	359	90	105	38	0.32	1.13	9.52	2.40	2.79
-10	(+14)	454	114	133	42	0.35	1.43	10.87	2.74	3.19
-5	(+23)	567	143	166	46	0.38	1.79	12.46	3.14	3.65
0	(+32)	700	176	205	49	0.41	2.22	14.34	3.61	4.20

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]
-35	(-31)	93	23	27	20	0.18	0.29	4.66	1.17	1.37
-30	(-22)	138	35	41	25	0.22	0.43	5.57	1.40	1.63
-25	(-13)	192	48	56	30	0.26	0.60	6.44	1.62	1.89
-20	(- 4)	256	65	75	35	0.30	0.81	7.30	1.84	2.14
-15	(+ 5)	333	84	98	41	0.34	1.05	8.21	2.07	2.41
-10	(+14)	424	107	124	46	0.38	1.34	9.23	2.33	2.70
-5	(+23)	532	134	156	51	0.42	1.68	10.40	2.62	3.05
0	(+32)	659	166	193	56	0.45	2.09	11.77	2.97	3.45

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		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)	162	41	48	26	0.22	0.51	6.31	1.59	1.85	
-30 (-22)	218	55	64	30	0.26	0.68	7.32	1.85	2.15	
-25 (-13)	288	72	84	34	0.29	0.90	8.43	2.12	2.47	
-20 (- 4)	372	94	109	38	0.32	1.17	9.67	2.44	2.83	
-15 (+ 5)	473	119	139	43	0.34	1.49	11.10	2.80	3.25	
-10 (+14)	594	150	174	47	0.37	1.87	12.76	3.22	3.74	
-5 (+23)	736	185	216	50	0.40	2.33	14.71	3.71	4.31	
0 (+32)	901	227	264	53	0.43	2.86	16.99	4.28	4.98	

TEST CONDITIONS: @220V2000RPM		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)	145	37	42	26	0.23	0.45	5.51	1.39	1.62	
-30 (-22)	201	51	59	31	0.27	0.63	6.42	1.62	1.88	
-25 (-13)	269	68	79	37	0.31	0.84	7.35	1.85	2.15	
-20 (- 4)	351	89	103	42	0.35	1.10	8.36	2.11	2.45	
-15 (+ 5)	450	113	132	47	0.38	1.42	9.48	2.39	2.78	
-10 (+14)	567	143	166	53	0.42	1.79	10.77	2.71	3.16	
-5 (+23)	704	177	206	57	0.46	2.23	12.27	3.09	3.60	
0 (+32)	864	218	253	62	0.51	2.74	14.04	3.54	4.11	

TEST CONDITIONS: @220V2000RPM		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)	117	29	34	25	0.22	0.37	4.67	1.18	1.37	
-30 (-22)	174	44	51	31	0.27	0.54	5.58	1.41	1.64	
-25 (-13)	242	61	71	38	0.31	0.76	6.45	1.63	1.89	
-20 (- 4)	324	82	95	44	0.36	1.02	7.32	1.85	2.15	
-15 (+ 5)	421	106	123	51	0.41	1.32	8.25	2.08	2.42	
-10 (+14)	535	135	157	58	0.46	1.69	9.27	2.34	2.72	
-5 (+23)	669	169	196	64	0.51	2.12	10.44	2.63	3.06	
0 (+32)	825	208	242	70	0.57	2.61	11.80	2.97	3.46	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	243	61	71	40	0.33	0.76	6.08	1.53	1.78
-30	(-22)	328	83	96	47	0.37	1.03	7.03	1.77	2.06
-25	(-13)	430	108	126	53	0.42	1.35	8.07	2.03	2.36
-20	(- 4)	553	139	162	60	0.48	1.74	9.22	2.32	2.70
-15	(+ 5)	701	177	205	67	0.53	2.21	10.53	2.65	3.08
-10	(+14)	879	221	257	73	0.58	2.77	12.00	3.02	3.52
-5	(+23)	1090	275	319	80	0.61	3.45	13.68	3.45	4.01
0	(+32)	1339	337	392	86	0.62	4.24	15.59	3.93	4.57

TEST CONDITIONS: @220V3000RPM		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]
-35	(-31)	217	55	64	40	0.33	0.68	5.40	1.36	1.58
-30	(-22)	300	76	88	48	0.38	0.94	6.24	1.57	1.83
-25	(-13)	401	101	118	56	0.44	1.26	7.14	1.80	2.09
-20	(- 4)	523	132	153	64	0.51	1.64	8.11	2.04	2.38
-15	(+ 5)	671	169	197	73	0.58	2.11	9.20	2.32	2.69
-10	(+14)	848	214	249	81	0.64	2.68	10.42	2.63	3.05
-5	(+23)	1060	267	311	90	0.69	3.35	11.81	2.98	3.46
0	(+32)	1310	330	384	98	0.72	4.15	13.39	3.37	3.92

TEST CONDITIONS: @220V3000RPM		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]
-35	(-31)	193	49	57	40	0.33	0.60	4.76	1.20	1.39
-30	(-22)	272	69	80	49	0.39	0.85	5.53	1.39	1.62
-25	(-13)	369	93	108	58	0.46	1.16	6.33	1.60	1.86
-20	(- 4)	487	123	143	68	0.54	1.53	7.17	1.81	2.10
-15	(+ 5)	632	159	185	78	0.62	1.99	8.09	2.04	2.37
-10	(+14)	807	203	237	89	0.70	2.55	9.10	2.29	2.67
-5	(+23)	1017	256	298	99	0.76	3.22	10.25	2.58	3.00
0	(+32)	1265	319	371	110	0.80	4.01	11.55	2.91	3.38

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)	340	86	100	59	0.46	1.06	5.78	1.46	1.69	
-30 (-22)	454	114	133	68	0.53	1.42	6.72	1.69	1.97	
-25 (-13)	592	149	173	77	0.60	1.86	7.72	1.95	2.26	
-20 (- 4)	756	190	221	86	0.67	2.37	8.82	2.22	2.58	
-15 (+ 5)	948	239	278	95	0.73	2.98	10.02	2.53	2.94	
-10 (+14)	1170	295	343	103	0.80	3.69	11.35	2.86	3.33	
-5 (+23)	1425	359	418	111	0.86	4.51	12.83	3.23	3.76	
0 (+32)	1715	432	502	118	0.91	5.43	14.48	3.65	4.24	

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)	303	76	89	59	0.46	0.95	5.14	1.30	1.51	
-30 (-22)	413	104	121	69	0.54	1.30	5.99	1.51	1.75	
-25 (-13)	548	138	161	80	0.62	1.72	6.88	1.73	2.01	
-20 (- 4)	708	179	208	90	0.70	2.23	7.83	1.97	2.29	
-15 (+ 5)	897	226	263	101	0.78	2.82	8.86	2.23	2.60	
-10 (+14)	1117	281	327	112	0.86	3.52	10.00	2.52	2.93	
-5 (+23)	1369	345	401	122	0.94	4.33	11.26	2.84	3.30	
0 (+32)	1656	417	485	131	1.02	5.25	12.66	3.19	3.71	

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)	263	66	77	58	0.45	0.82	4.57	1.15	1.34	
-30 (-22)	368	93	108	69	0.53	1.16	5.35	1.35	1.57	
-25 (-13)	498	126	146	81	0.62	1.56	6.14	1.55	1.80	
-20 (- 4)	654	165	192	94	0.72	2.06	6.98	1.76	2.05	
-15 (+ 5)	839	211	246	106	0.82	2.64	7.87	1.98	2.31	
-10 (+14)	1054	266	309	119	0.91	3.33	8.84	2.23	2.59	
-5 (+23)	1302	328	382	131	1.01	4.12	9.92	2.50	2.91	
0 (+32)	1585	399	465	143	1.11	5.03	11.10	2.80	3.25	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard VES		
2 Tray holder	Yes		
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 + 15° 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		