COMPRESSOR DEFINITION

Designation	**VES C7C**
Nominal Voltage/Frequency	**230 V 40-150 Hz**
Engineering Number	**513907047**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 40-150	[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 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	Static	-	-
8.2 LBP (43ºC Ambient temperature)	-	-	-
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm²] (98 psig)	/ ºC - ºF
9.2 Peak	7.8	[kgf/cm²] (111 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	7.23	[cm³] (0.441 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	190	[ml] (6.42 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.45	[kg] (14.22 lb.)
5 Nitrogen charge	-	[kgf/cm²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 40-150 Hz 3 ~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	VCC3 1156 XXXXX/VES 2456 XX X X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC32456XXXXX	
6 Start winding resistance	13.40	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	13.40	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (46/133 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (46/133 Hz)	2.10/2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (46/133 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - VDE	

D - PERFORMANCE - CHECK POINT DATA

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]
179	45	52	28	0.23	0.56	6.39	1.61	1.87

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]
223	56	65	34	0.28	0.70	6.56	1.65	1.92

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]
275	69	81	43	0.32	0.86	6.40	1.61	1.88

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]
426	107	125	65	0.49	1.34	6.55	1.65	1.92

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]
628	158	184	103	0.76	1.97	6.10	1.54	1.79

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V1300RPM **Static**

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)**	106	27	31	18	0.12	0.33	5.98	1.51	1.75
-30	**(-22)**	142	36	42	20	0.15	0.45	6.93	1.75	2.03
-25	**(-13)**	186	47	55	24	0.18	0.58	7.92	2.00	2.32
-20	**(- 4)**	240	61	70	27	0.20	0.75	9.05	2.28	2.65
-15	**(+ 5)**	306	77	90	30	0.22	0.96	10.38	2.61	3.04
-10	**(+14)**	386	97	113	32	0.24	1.22	11.99	3.02	3.51

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V1300RPM **Static**

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)**	90	23	27	18	0.14	0.28	5.02	1.27	1.47
-30	**(-22)**	126	32	37	21	0.16	0.39	5.93	1.49	1.74
-25	**(-13)**	169	43	50	25	0.19	0.53	6.80	1.71	1.99
-20	**(- 4)**	222	56	65	29	0.22	0.70	7.72	1.94	2.26
-15	**(+ 5)**	286	72	84	33	0.24	0.90	8.76	2.21	2.57
-10	**(+14)**	364	92	107	36	0.27	1.15	10.01	2.52	2.93

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V1300RPM **Static**

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)**	66	17	19	17	0.14	0.21	3.83	0.97	1.12
-30	**(-22)**	103	26	30	21	0.17	0.32	4.84	1.22	1.42
-25	**(-13)**	148	37	43	26	0.20	0.46	5.73	1.44	1.68
-20	**(- 4)**	201	51	59	30	0.23	0.63	6.59	1.66	1.93
-15	**(+ 5)**	265	67	78	35	0.26	0.83	7.49	1.89	2.19
-10	**(+14)**	342	86	100	40	0.29	1.08	8.51	2.14	2.49

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V1600RPM **Static**

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)**	127	32	37	22	0.16	0.40	5.82	1.47	1.71
-30	**(-22)**	175	44	51	25	0.19	0.55	6.89	1.74	2.02
-25	**(-13)**	232	58	68	29	0.21	0.73	7.96	2.01	2.33
-20	**(- 4)**	300	76	88	33	0.24	0.94	9.12	2.30	2.67
-15	**(+ 5)**	382	96	112	37	0.26	1.20	10.46	2.64	3.06
-10	**(+14)**	480	121	141	40	0.29	1.51	12.05	3.04	3.53

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V1600RPM **Static**

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)**	110	28	32	22	0.17	0.35	5.06	1.27	1.48
-30	**(-22)**	159	40	46	26	0.20	0.50	6.05	1.52	1.77
-25	**(-13)**	215	54	63	31	0.23	0.67	6.97	1.76	2.04
-20	**(- 4)**	281	71	82	36	0.26	0.88	7.89	1.99	2.31
-15	**(+ 5)**	360	91	105	40	0.30	1.13	8.91	2.25	2.61
-10	**(+14)**	454	114	133	45	0.33	1.43	10.11	2.55	2.96

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V1600RPM **Static**

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)**	86	22	25	21	0.15	0.27	4.12	1.04	1.21
-30	**(-22)**	135	34	40	26	0.19	0.42	5.15	1.30	1.51
-25	**(-13)**	191	48	56	32	0.24	0.60	6.04	1.52	1.77
-20	**(- 4)**	257	65	75	38	0.28	0.81	6.85	1.73	2.01
-15	**(+ 5)**	334	84	98	43	0.32	1.05	7.68	1.94	2.25
-10	**(+14)**	425	107	125	49	0.36	1.34	8.61	2.17	2.52

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V2000RPM **Static**

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)**	158	40	46	27	0.20	0.49	5.78	1.46	1.69
-30	**(-22)**	216	54	63	32	0.23	0.68	6.75	1.70	1.98
-25	**(-13)**	288	73	84	37	0.26	0.90	7.80	1.97	2.29
-20	**(- 4)**	375	95	110	42	0.30	1.18	8.98	2.26	2.63
-15	**(+ 5)**	479	121	140	47	0.33	1.51	10.32	2.60	3.02
-10	**(+14)**	600	151	176	51	0.36	1.89	11.88	2.99	3.48

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V2000RPM **Static**

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)**	137	35	40	27	0.21	0.43	5.05	1.27	1.48
-30	**(-22)**	195	49	57	33	0.24	0.61	5.95	1.50	1.74
-25	**(-13)**	266	67	78	39	0.28	0.83	6.87	1.73	2.01
-20	**(- 4)**	353	89	103	45	0.32	1.11	7.84	1.98	2.30
-15	**(+ 5)**	456	115	134	51	0.36	1.44	8.91	2.25	2.61
-10	**(+14)**	577	145	169	57	0.40	1.82	10.13	2.55	2.97

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V2000RPM **Static**

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)**	116	29	34	27	0.21	0.36	4.27	1.08	1.25
-30	**(-22)**	171	43	50	33	0.24	0.54	5.21	1.31	1.53
-25	**(-13)**	241	61	71	40	0.28	0.76	6.08	1.53	1.78
-20	**(- 4)**	326	82	95	47	0.33	1.02	6.95	1.75	2.04
-15	**(+ 5)**	427	108	125	54	0.39	1.35	7.85	1.98	2.30
-10	**(+14)**	547	138	160	62	0.44	1.72	8.84	2.23	2.59

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V3000RPM **Static**

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)**	233	59	68	42	0.31	0.73	5.60	1.41	1.64
-30	**(-22)**	326	82	95	50	0.35	1.02	6.54	1.65	1.92
-25	**(-13)**	439	111	129	58	0.41	1.38	7.55	1.90	2.21
-20	**(- 4)**	574	145	168	66	0.47	1.80	8.67	2.18	2.54
-15	**(+ 5)**	735	185	215	74	0.52	2.31	9.90	2.50	2.90
-10	**(+14)**	921	232	270	82	0.58	2.91	11.28	2.84	3.31

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V3000RPM **Static**

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	42	0.32	0.66	5.03	1.27	1.47
-30	**(-22)**	297	75	87	51	0.37	0.93	5.84	1.47	1.71
-25	**(-13)**	404	102	118	60	0.43	1.27	6.71	1.69	1.97
-20	**(- 4)**	536	135	157	70	0.50	1.69	7.65	1.93	2.24
-15	**(+ 5)**	695	175	204	80	0.57	2.19	8.68	2.19	2.54
-10	**(+14)**	882	222	259	90	0.63	2.78	9.84	2.48	2.88

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V3000RPM **Static**

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)**	193	49	56	43	0.31	0.60	4.52	1.14	1.32
-30	**(-22)**	268	67	78	51	0.37	0.84	5.25	1.32	1.54
-25	**(-13)**	367	92	108	61	0.44	1.15	6.01	1.51	1.76
-20	**(- 4)**	493	124	144	72	0.52	1.55	6.81	1.72	2.00
-15	**(+ 5)**	647	163	190	84	0.60	2.04	7.69	1.94	2.25
-10	**(+14)**	832	210	244	96	0.68	2.63	8.65	2.18	2.54

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V4500RPM **Static**

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)**	372	94	109	69	0.49	1.16	5.39	1.36	1.58
-30	**(-22)**	497	125	146	79	0.56	1.56	6.25	1.57	1.83
-25	**(-13)**	634	160	186	89	0.62	1.99	7.12	1.79	2.09
-20	**(- 4)**	797	201	234	99	0.68	2.50	8.06	2.03	2.36
-15	**(+ 5)**	1001	252	293	110	0.74	3.15	9.12	2.30	2.67
-10	**(+14)**	1260	318	369	121	0.81	3.97	10.35	2.61	3.03

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V4500RPM **Static**

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)**	331	83	97	68	0.49	1.04	4.87	1.23	1.43
-30	**(-22)**	469	118	137	82	0.58	1.47	5.70	1.44	1.67
-25	**(-13)**	615	155	180	95	0.66	1.93	6.49	1.64	1.90
-20	**(- 4)**	784	198	230	107	0.73	2.46	7.31	1.84	2.14
-15	**(+ 5)**	989	249	290	120	0.80	3.11	8.21	2.07	2.41
-10	**(+14)**	1246	314	365	135	0.87	3.93	9.23	2.33	2.71

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V4500RPM **Static**

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	63	0.46	0.86	4.35	1.10	1.27
-30	**(-22)**	420	106	123	80	0.58	1.32	5.17	1.30	1.52
-25	**(-13)**	570	144	167	96	0.68	1.79	5.93	1.49	1.74
-20	**(- 4)**	739	186	216	111	0.76	2.32	6.67	1.68	1.95
-15	**(+ 5)**	940	237	276	127	0.85	2.96	7.44	1.87	2.18
-10	**(+14)**	1189	300	348	143	0.93	3.75	8.29	2.09	2.43

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	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 47° up + 24° to Back		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +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		