

COMPRESSOR DEFINITION

Designation	VNE U213GK
Nominal Voltage/Frequency	100-300 V 33-75 Hz
Engineering Number	950EX71

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	100-300 / 33-75	[V / Hz]	
4 Application type	Low Back Pressure R404A		
4.1 Evaporating temperature range	-40°C to -10°C	(-40°F to 14°F)	
5 Motor type	BPM		
6 Starting torque	HST - Hight starting torque		
7 Expansion device	Capillary tube or Expansion valve		
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	25.2	[kgf/cm ²] (358 psig)	/ °C - °F
9.2 Peak	28.3	[kgf/cm ²] (402 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	13.54	[cm ³] (0.826 cu.in)
2.1 Bore [mm]	29.362	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	500	[ml] (16.91 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.4	[kg] (25.13 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100-300 V 33-75 Hz 3 ~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF10B01 N 0.1 X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MST00LJ	
6 Start winding resistance	3.82	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.53	[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	KC - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V2000RPM			ASHRAELBP32 Fan		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]	
1840	464	539	386	3.56	12.47	4.77	1.20	1.40	

TEST CONDITIONS: @220V2400RPM			ASHRAELBP32 Fan		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]	
2115	533	620	432	3.95	14.34	4.89	1.23	1.43	

TEST CONDITIONS: @220V3000RPM			ASHRAELBP32 Fan		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]	
2600	655	762	531	4.69	17.63	4.90	1.23	1.44	

TEST CONDITIONS: @220V4500RPM			ASHRAELBP32 Fan		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]	
3565	898	1045	783	6.50	24.17	4.55	1.15	1.33	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Fan					(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]
-40	(-40)	828	209	243	199	2.14	5.57	4.16	1.05	1.22
-35	(-31)	1117	281	327	239	2.43	7.53	4.68	1.18	1.37
-30	(-22)	1476	372	432	276	2.70	9.98	5.34	1.35	1.57
-25	(-13)	1905	480	558	312	2.97	12.94	6.11	1.54	1.79
-20	(- 4)	2405	606	705	345	3.22	16.43	6.98	1.76	2.04
-15	(+ 5)	2976	750	872	376	3.46	20.45	7.91	1.99	2.32
-10	(+14)	3616	911	1060	406	3.69	25.02	8.90	2.24	2.61

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Fan			(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]
-40	(-40)	759	191	223	205	2.14	5.09	3.70	0.93	1.08
-35	(-31)	1028	259	301	248	2.48	6.92	4.15	1.05	1.22
-30	(-22)	1368	345	401	290	2.80	9.24	4.71	1.19	1.38
-25	(-13)	1780	448	521	331	3.11	12.07	5.36	1.35	1.57
-20	(- 4)	2262	570	663	371	3.41	15.41	6.09	1.53	1.78
-15	(+ 5)	2815	709	825	410	3.69	19.30	6.87	1.73	2.01
-10	(+14)	3439	867	1008	448	3.96	23.74	7.68	1.94	2.25

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Fan			(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]
-40	(-40)	681	172	200	206	2.16	4.56	3.29	0.83	0.96
-35	(-31)	931	235	273	256	2.57	6.26	3.65	0.92	1.07
-30	(-22)	1253	316	367	305	2.96	8.44	4.10	1.03	1.20
-25	(-13)	1646	415	482	355	3.34	11.14	4.63	1.17	1.36
-20	(- 4)	2112	532	619	405	3.70	14.36	5.21	1.31	1.53
-15	(+ 5)	2648	667	776	455	4.04	18.12	5.82	1.47	1.71
-10	(+14)	3256	821	954	505	4.36	22.44	6.45	1.63	1.89

TEST CONDITIONS: @220V2400RPM		ASHRAE32 Fan			(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]
-40	(-40)	966	243	283	233	2.32	6.49	4.14	1.04	1.21
-35	(-31)	1274	321	373	275	2.61	8.59	4.65	1.17	1.36
-30	(-22)	1673	422	490	316	2.91	11.32	5.29	1.33	1.55
-25	(-13)	2165	546	635	358	3.23	14.71	6.04	1.52	1.77
-20	(- 4)	2750	693	806	400	3.55	18.78	6.87	1.73	2.01
-15	(+ 5)	3426	863	1004	442	3.89	23.54	7.76	1.95	2.27
-10	(+14)	4195	1057	1229	484	4.24	29.02	8.66	2.18	2.54

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2400RPM		ASHRAE32 Fan			(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]
-40	(-40)	885	223	259	240	2.30	5.94	3.69	0.93	1.08
-35	(-31)	1181	298	346	287	2.67	7.95	4.12	1.04	1.21
-30	(-22)	1569	395	460	335	3.05	10.59	4.68	1.18	1.37
-25	(-13)	2048	516	600	384	3.45	13.88	5.32	1.34	1.56
-20	(- 4)	2618	660	767	434	3.84	17.84	6.03	1.52	1.77
-15	(+ 5)	3280	827	961	485	4.25	22.49	6.77	1.71	1.98
-10	(+14)	4033	1016	1182	537	4.66	27.85	7.52	1.89	2.20

TEST CONDITIONS: @220V2400RPM		ASHRAE32 Fan			(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]
-40	(-40)	798	201	234	241	2.34	5.34	3.31	0.83	0.97
-35	(-31)	1080	272	317	294	2.80	7.26	3.68	0.93	1.08
-30	(-22)	1453	366	426	349	3.26	9.79	4.16	1.05	1.22
-25	(-13)	1917	483	562	407	3.74	12.97	4.71	1.19	1.38
-20	(- 4)	2472	623	724	466	4.21	16.81	5.31	1.34	1.56
-15	(+ 5)	3117	785	913	527	4.69	21.33	5.92	1.49	1.74
-10	(+14)	3853	971	1129	590	5.17	26.55	6.52	1.64	1.91

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Fan			(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]
-40	(-40)	1202	303	352	295	2.69	8.08	4.07	1.03	1.19
-35	(-31)	1574	397	461	347	3.17	10.61	4.54	1.15	1.33
-30	(-22)	2061	519	604	401	3.66	13.94	5.14	1.30	1.51
-25	(-13)	2664	671	780	456	4.15	18.10	5.84	1.47	1.71
-20	(- 4)	3382	852	991	512	4.64	23.10	6.61	1.66	1.94
-15	(+ 5)	4217	1063	1236	569	5.14	28.97	7.41	1.87	2.17
-10	(+14)	5167	1302	1514	628	5.64	35.75	8.23	2.07	2.41

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V3000RPM		Fan								
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]
-40	(-40)	1087	274	319	298	2.77	7.29	3.66	0.92	1.07
-35	(-31)	1456	367	427	358	3.29	9.80	4.08	1.03	1.20
-30	(-22)	1936	488	567	420	3.81	13.07	4.61	1.16	1.35
-25	(-13)	2528	637	741	484	4.33	17.14	5.22	1.32	1.53
-20	(- 4)	3232	815	947	549	4.85	22.03	5.88	1.48	1.72
-15	(+ 5)	4049	1020	1186	616	5.37	27.76	6.57	1.66	1.93
-10	(+14)	4977	1254	1458	685	5.89	34.36	7.26	1.83	2.13

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V3000RPM		Fan								
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]
-40	(-40)	968	244	284	293	2.82	6.48	3.30	0.83	0.97
-35	(-31)	1330	335	390	362	3.40	8.94	3.68	0.93	1.08
-30	(-22)	1800	454	527	434	3.98	12.13	4.15	1.05	1.22
-25	(-13)	2378	599	697	507	4.55	16.09	4.68	1.18	1.37
-20	(- 4)	3064	772	898	584	5.12	20.84	5.25	1.32	1.54
-15	(+ 5)	3859	972	1131	663	5.68	26.40	5.83	1.47	1.71
-10	(+14)	4762	1200	1395	744	6.24	32.81	6.40	1.61	1.87

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@220V3600RPM		Fan								
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]
-40	(-40)	1377	347	403	351	3.21	9.25	3.92	0.99	1.15
-35	(-31)	1828	461	536	412	3.69	12.33	4.44	1.12	1.30
-30	(-22)	2405	606	705	478	4.21	16.27	5.03	1.27	1.47
-25	(-13)	3108	783	911	548	4.78	21.12	5.66	1.43	1.66
-20	(- 4)	3937	992	1154	624	5.41	26.89	6.31	1.59	1.85
-15	(+ 5)	4892	1233	1433	703	6.07	33.61	6.96	1.75	2.04
-10	(+14)	5972	1505	1750	788	6.79	41.32	7.58	1.91	2.22

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3600RPM		ASHRAE32 Fan			(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]
-40	(-40)	1242	313	364	353	3.23	8.33	3.52	0.89	1.03
-35	(-31)	1686	425	494	424	3.82	11.35	3.98	1.00	1.17
-30	(-22)	2255	568	661	500	4.42	15.23	4.51	1.14	1.32
-25	(-13)	2951	744	865	580	5.05	20.01	5.09	1.28	1.49
-20	(- 4)	3772	951	1105	664	5.69	25.71	5.68	1.43	1.66
-15	(+ 5)	4719	1189	1383	753	6.36	32.36	6.28	1.58	1.84
-10	(+14)	5792	1460	1697	846	7.04	39.99	6.84	1.72	2.01

TEST CONDITIONS: @220V3600RPM		ASHRAE32 Fan			(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]
-40	(-40)	1091	275	320	343	3.16	7.30	3.17	0.80	0.93
-35	(-31)	1524	384	446	426	3.88	10.24	3.59	0.90	1.05
-30	(-22)	2083	525	610	512	4.58	14.04	4.06	1.02	1.19
-25	(-13)	2768	697	811	603	5.28	18.73	4.59	1.16	1.34
-20	(- 4)	3579	902	1049	697	5.96	24.34	5.13	1.29	1.50
-15	(+ 5)	4515	1138	1323	796	6.64	30.90	5.68	1.43	1.66
-10	(+14)	5577	1406	1634	899	7.31	38.43	6.20	1.56	1.82

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(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]
-40	(-40)	1608	405	471	436	3.86	10.81	3.68	0.93	1.08
-35	(-31)	2172	547	637	518	4.55	14.65	4.19	1.06	1.23
-30	(-22)	2861	721	838	606	5.25	19.35	4.72	1.19	1.38
-25	(-13)	3674	926	1076	699	5.98	24.96	5.25	1.32	1.54
-20	(- 4)	4611	1162	1351	798	6.71	31.49	5.78	1.46	1.69
-15	(+ 5)	5672	1429	1662	902	7.46	38.97	6.29	1.59	1.84
-10	(+14)	6858	1728	2010	1011	8.22	47.45	6.79	1.71	1.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(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]
-40	(-40)	1424	359	417	433	3.81	9.55	3.29	0.83	0.96
-35	(-31)	1997	503	585	529	4.60	13.44	3.78	0.95	1.11
-30	(-22)	2690	678	788	627	5.39	18.16	4.29	1.08	1.26
-25	(-13)	3501	882	1026	726	6.16	23.74	4.82	1.21	1.41
-20	(- 4)	4431	1117	1298	827	6.92	30.20	5.36	1.35	1.57
-15	(+ 5)	5479	1381	1606	929	7.66	37.57	5.90	1.49	1.73
-10	(+14)	6647	1675	1948	1033	8.39	45.89	6.43	1.62	1.88

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(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]
-40	(-40)	1234	311	362	409	3.75	8.26	3.01	0.76	0.88
-35	(-31)	1802	454	528	524	4.65	12.11	3.44	0.87	1.01
-30	(-22)	2483	626	728	637	5.51	16.74	3.89	0.98	1.14
-25	(-13)	3278	826	960	747	6.33	22.18	4.38	1.10	1.28
-20	(- 4)	4185	1055	1226	856	7.10	28.46	4.89	1.23	1.43
-15	(+ 5)	5206	1312	1525	961	7.84	35.62	5.42	1.37	1.59
-10	(+14)	6340	1598	1858	1065	8.53	43.68	5.95	1.50	1.74

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal
2 Tray holder	No
3 Connectors	
3.1 SUCTION	8.1 +0.10/+0.00 [mm] (0.319" +0.004"/+0.000")
3.1.1 Material	Copper
3.1.2 Shape	Slanted 42°
3.2 DISCHARGE	6.45 +0.10/+0.00 [mm] (0.254" +0.004"/+0.000")
3.2.1 Material	Copper
3.2.2 Shape	Slanted parallel to Base Plate
3.3 PROCESS	6.45 +0.10/+0.00 [mm] (0.254" +0.004"/+0.000")
3.3.1 Material	Copper
3.3.2 Shape	Slanted 42°
3.4 Oil cooler (Copper)	No [mm]
3.5 Connector sealing	Rubber Plugs