

COMPRESSOR DEFINITION

Designation	VNE X219U
Nominal Voltage/Frequency	120-240 V 50-60 Hz
Engineering Number	866AX26

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	120-240 / 50-60	[V / Hz]	
4 Application type	Low Back Pressure R290		
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	18.4	[kgf/cm ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	18.70	[cm ³] (1.141 cu.in)
2.1 Bore [mm]	32.186	
2.2 Stroke [mm]	23.000	
3 Lubricant charge	400	[ml] (13.53 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.3	[kg] (24.91 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	120-240 V 50-60 Hz 1~ (Single phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF10B01 N 0.0 X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	USP-102-83	
6 Start winding resistance	1.94	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.94	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (110/250 Hz)	3.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (110/250 Hz)	3.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (110/250 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	KC - UL - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V2200RPM			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
2264	570	663	374	2.76	6.74	6.05	1.52	1.77

TEST CONDITIONS: @220V3000RPM			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3192	804	935	524	3.88	9.50	6.09	1.53	1.78

TEST CONDITIONS: @220V3600RPM			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3835	966	1124	641	4.64	11.41	5.98	1.51	1.75

TEST CONDITIONS: @220V4500RPM			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
4611	1162	1351	805	5.63	13.72	5.73	1.44	1.68

TEST CONDITIONS: @220V5000RPM			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
4988	1257	1462	896	6.25	14.85	5.57	1.40	1.63

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40 (-40)	1103	278	323	197	1.60	3.26	5.61	1.41	1.64	
-35 (-31)	1474	371	432	236	1.86	4.36	6.23	1.57	1.83	
-30 (-22)	1921	484	563	278	2.15	5.70	6.91	1.74	2.03	
-25 (-13)	2452	618	718	319	2.44	7.29	7.70	1.94	2.26	
-20 (- 4)	3075	775	901	357	2.72	9.18	8.63	2.18	2.53	
-15 (+ 5)	3798	957	1113	390	2.96	11.38	9.75	2.46	2.86	
-10 (+14)	4630	1167	1357	417	3.14	13.93	11.09	2.79	3.25	

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40 (-40)	995	251	291	202	1.67	2.94	4.93	1.24	1.45	
-35 (-31)	1347	339	395	243	1.91	3.98	5.54	1.40	1.62	
-30 (-22)	1776	448	520	288	2.20	5.27	6.15	1.55	1.80	
-25 (-13)	2291	577	671	336	2.52	6.81	6.81	1.72	2.00	
-20 (- 4)	2900	731	850	383	2.84	8.65	7.56	1.90	2.21	
-15 (+ 5)	3609	910	1058	428	3.15	10.81	8.43	2.13	2.47	
-10 (+14)	4429	1116	1298	468	3.43	13.32	9.48	2.39	2.78	

TEST CONDITIONS: @220V2200RPM		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40 (-40)	890	224	261	212	1.82	2.63	4.19	1.06	1.23	
-35 (-31)	1217	307	357	251	2.02	3.60	4.85	1.22	1.42	
-30 (-22)	1623	409	476	298	2.29	4.81	5.47	1.38	1.60	
-25 (-13)	2116	533	620	349	2.60	6.29	6.08	1.53	1.78	
-20 (- 4)	2703	681	792	402	2.94	8.06	6.72	1.69	1.97	
-15 (+ 5)	3393	855	994	456	3.30	10.16	7.43	1.87	2.18	
-10 (+14)	4194	1057	1229	508	3.64	12.62	8.26	2.08	2.42	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	1525	384	447	282	2.14	4.50	5.41	1.36	1.58
-35	(-31)	2024	510	593	338	2.51	5.99	5.98	1.51	1.75
-30	(-22)	2625	661	769	397	2.91	7.79	6.61	1.67	1.94
-25	(-13)	3340	842	979	455	3.31	9.93	7.35	1.85	2.15
-20	(- 4)	4179	1053	1225	510	3.69	12.47	8.21	2.07	2.41
-15	(+ 5)	5153	1299	1510	558	4.03	15.44	9.26	2.33	2.71
-10	(+14)	6273	1581	1838	595	4.30	18.88	10.51	2.65	3.08

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	1393	351	408	290	2.24	4.11	4.81	1.21	1.41
-35	(-31)	1867	470	547	347	2.59	5.52	5.38	1.36	1.58
-30	(-22)	2445	616	716	410	3.00	7.25	5.95	1.50	1.74
-25	(-13)	3139	791	920	477	3.44	9.33	6.57	1.66	1.92
-20	(- 4)	3959	998	1160	544	3.89	11.81	7.27	1.83	2.13
-15	(+ 5)	4916	1239	1440	607	4.32	14.73	8.10	2.04	2.37
-10	(+14)	6020	1517	1764	664	4.72	18.11	9.08	2.29	2.66

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	1268	320	372	306	2.47	3.74	4.13	1.04	1.21
-35	(-31)	1708	430	501	360	2.76	5.05	4.76	1.20	1.39
-30	(-22)	2255	568	661	423	3.14	6.69	5.34	1.35	1.56
-25	(-13)	2920	736	856	494	3.58	8.68	5.92	1.49	1.73
-20	(- 4)	3713	936	1088	569	4.06	11.08	6.53	1.64	1.91
-15	(+ 5)	4644	1170	1361	644	4.56	13.91	7.21	1.82	2.11
-10	(+14)	5725	1443	1678	716	5.05	17.22	7.99	2.01	2.34

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3600RPM		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	1822	459	534	348	2.53	5.38	5.24	1.32	1.53
-35	(-31)	2409	607	706	416	2.98	7.13	5.79	1.46	1.70
-30	(-22)	3116	785	913	488	3.47	9.24	6.39	1.61	1.87
-25	(-13)	3956	997	1159	559	3.96	11.77	7.08	1.78	2.07
-20	(- 4)	4943	1246	1449	627	4.44	14.75	7.90	1.99	2.31
-15	(+ 5)	6089	1534	1784	686	4.85	18.24	8.89	2.24	2.60
-10	(+14)	7407	1867	2170	733	5.18	22.29	10.08	2.54	2.95

TEST CONDITIONS: @220V3600RPM		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	1678	423	492	358	2.66	4.95	4.70	1.19	1.38
-35	(-31)	2235	563	655	426	3.08	6.61	5.25	1.32	1.54
-30	(-22)	2915	735	854	502	3.58	8.64	5.79	1.46	1.70
-25	(-13)	3731	940	1093	584	4.12	11.10	6.38	1.61	1.87
-20	(- 4)	4697	1184	1376	665	4.68	14.01	7.05	1.78	2.07
-15	(+ 5)	5823	1467	1706	743	5.22	17.44	7.84	1.97	2.30
-10	(+14)	7124	1795	2088	813	5.70	21.43	8.78	2.21	2.57

TEST CONDITIONS: @220V3600RPM		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	1544	389	452	377	2.95	4.56	4.08	1.03	1.20
-35	(-31)	2061	519	604	440	3.29	6.10	4.69	1.18	1.37
-30	(-22)	2705	682	793	517	3.76	8.02	5.25	1.32	1.54
-25	(-13)	3486	879	1022	602	4.31	10.36	5.80	1.46	1.70
-20	(- 4)	4420	1114	1295	692	4.90	13.18	6.38	1.61	1.87
-15	(+ 5)	5517	1390	1617	784	5.52	16.52	7.03	1.77	2.06
-10	(+14)	6791	1711	1990	872	6.12	20.43	7.79	1.96	2.28

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	2223	560	651	445	3.10	6.57	4.98	1.26	1.46
-35	(-31)	2899	731	849	528	3.65	8.58	5.49	1.38	1.61
-30	(-22)	3737	942	1095	619	4.27	11.08	6.03	1.52	1.77
-25	(-13)	4744	1196	1390	712	4.91	14.11	6.66	1.68	1.95
-20	(- 4)	5929	1494	1737	801	5.54	17.69	7.41	1.87	2.17
-15	(+ 5)	7299	1839	2139	879	6.08	21.87	8.31	2.09	2.44
-10	(+14)	8862	2233	2597	940	6.51	26.67	9.41	2.37	2.76

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	2050	517	601	452	3.24	6.05	4.55	1.15	1.33
-35	(-31)	2709	683	794	537	3.78	8.02	5.05	1.27	1.48
-30	(-22)	3526	889	1033	634	4.43	10.46	5.55	1.40	1.63
-25	(-13)	4509	1136	1321	739	5.14	13.41	6.09	1.54	1.78
-20	(- 4)	5665	1427	1660	843	5.87	16.90	6.71	1.69	1.96
-15	(+ 5)	7001	1764	2051	942	6.56	20.97	7.43	1.87	2.18
-10	(+14)	8525	2148	2498	1027	7.16	25.65	8.31	2.09	2.44

TEST CONDITIONS: @220V4500RPM		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[W]	[A]
-40	(-40)	1916	483	562	477	3.60	5.66	4.01	1.01	1.17
-35	(-31)	2533	638	742	555	4.06	7.49	4.57	1.15	1.34
-30	(-22)	3303	832	968	650	4.67	9.79	5.09	1.28	1.49
-25	(-13)	4235	1067	1241	756	5.38	12.59	5.60	1.41	1.64
-20	(- 4)	5334	1344	1563	867	6.14	15.91	6.15	1.55	1.80
-15	(+ 5)	6611	1666	1937	976	6.90	19.80	6.77	1.71	1.98
-10	(+14)	8071	2034	2365	1077	7.61	24.28	7.49	1.89	2.20

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V5000RPM		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	2440	615	715	502	3.44	7.21	4.83	1.22	1.41
-35	(-31)	3067	773	899	577	3.92	9.07	5.33	1.34	1.56
-30	(-22)	3969	1000	1163	680	4.63	11.77	5.85	1.47	1.71
-25	(-13)	5101	1285	1495	794	5.43	15.17	6.42	1.62	1.88
-20	(- 4)	6420	1618	1881	904	6.21	19.16	7.11	1.79	2.08
-15	(+ 5)	7883	1986	2310	991	6.83	23.62	7.97	2.01	2.34
-10	(+14)	9444	2380	2767	1040	7.17	28.42	9.05	2.28	2.65

TEST CONDITIONS: @220V5000RPM		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	2244	565	658	504	3.56	6.62	4.44	1.12	1.30
-35	(-31)	2901	731	850	589	4.10	8.58	4.94	1.25	1.45
-30	(-22)	3792	956	1111	700	4.86	11.25	5.41	1.36	1.59
-25	(-13)	4874	1228	1428	822	5.71	14.50	5.92	1.49	1.74
-20	(- 4)	6103	1538	1788	936	6.52	18.21	6.51	1.64	1.91
-15	(+ 5)	7434	1873	2178	1028	7.17	22.27	7.25	1.83	2.12
-10	(+14)	8825	2224	2586	1079	7.52	26.55	8.18	2.06	2.40

TEST CONDITIONS: @220V5000RPM		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-40	(-40)	2067	521	606	523	3.90	6.10	3.97	1.00	1.16
-35	(-31)	2740	690	803	610	4.44	8.11	4.50	1.13	1.32
-30	(-22)	3606	909	1057	722	5.19	10.69	4.99	1.26	1.46
-25	(-13)	4623	1165	1355	842	6.02	13.75	5.47	1.38	1.60
-20	(- 4)	5747	1448	1684	955	6.80	17.14	6.01	1.51	1.76
-15	(+ 5)	6932	1747	2031	1042	7.41	20.76	6.66	1.68	1.95
-10	(+14)	8137	2051	2384	1089	7.71	24.48	7.48	1.89	2.19

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