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 Expantion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	-	-	-
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	18.4	[kgf/cm²] (262 psig)	/ ºC - ºF
9.2 Peak	20.6	[kgf/cm²] (293 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1	[hp]
2 Displacement	18.70	[cm³] (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/cm²]

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 25ºC (77ºF)] +/- 8%
7 Run winding resistance	1.94	[Ω at 25ºC (77ºF)] +/- 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**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature		**-35°C (-31°F)** **40°C (104°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]
1308	330	383	252	2.01	4.38	5.19	1.31	1.52

TEST CONDITIONS: **@220V3000RPM**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature		**-35°C (-31°F)** **40°C (104°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]
1793	452	525	353	2.70	6.00	5.08	1.28	1.49

TEST CONDITIONS: **@220V3600RPM**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature		**-35°C (-31°F)** **40°C (104°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]
2091	527	613	424	3.18	7.00	4.93	1.24	1.44

TEST CONDITIONS: **@220V4500RPM**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature		**-35°C (-31°F)** **40°C (104°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]
2479	625	726	533	3.88	8.30	4.65	1.17	1.36

TEST CONDITIONS: **@220V5000RPM**			**EN12900LBP** **Fan**		Evaporating temperature (Condensing temperature		**-35°C (-31°F)** **40°C (104°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]
2785	702	816	608	4.39	9.33	4.58	1.15	1.34

E - PERFORMANCE - CURVES

TEST CONDITIONS: **EN12900** (Condensing temperature **35ºC (+95ºF))**
@220V2200RPM **Fan**

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)**	1109	280	325	210	1.72	3.54	5.28	1.33	1.55
-35	**(-31)**	1460	368	428	247	1.93	4.68	5.90	1.49	1.73
-30	**(-22)**	1885	475	552	286	2.18	6.06	6.59	1.66	1.93
-25	**(-13)**	2391	603	701	325	2.43	7.72	7.37	1.86	2.16
-20	**(- 4)**	2985	752	875	362	2.68	9.68	8.28	2.09	2.43
-15	**(+ 5)**	3675	926	1077	393	2.89	11.97	9.36	2.36	2.74
-10	**(+14)**	4466	1125	1309	418	3.05	14.65	10.64	2.68	3.12

TEST CONDITIONS: **EN12900** (Condensing temperature **45ºC (+113ºF))**
@220V2200RPM **Fan**

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)**	904	228	265	214	1.72	3.17	4.26	1.07	1.25
-35	**(-31)**	1207	304	354	251	1.91	4.24	4.81	1.21	1.41
-30	**(-22)**	1578	398	462	293	2.16	5.56	5.36	1.35	1.57
-25	**(-13)**	2021	509	592	339	2.45	7.15	5.95	1.50	1.74
-20	**(- 4)**	2546	642	746	384	2.75	9.05	6.61	1.67	1.94
-15	**(+ 5)**	3157	796	925	427	3.04	11.29	7.39	1.86	2.16
-10	**(+14)**	3863	974	1132	466	3.30	13.90	8.31	2.09	2.44

TEST CONDITIONS: **EN12900** (Condensing temperature **55ºC (+131ºF))**
@220V2200RPM **Fan**

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)**	723	182	212	218	1.83	2.81	3.30	0.83	0.97
-35	**(-31)**	979	247	287	253	2.00	3.82	3.88	0.98	1.14
-30	**(-22)**	1294	326	379	296	2.24	5.06	4.39	1.11	1.29
-25	**(-13)**	1676	422	491	344	2.55	6.59	4.89	1.23	1.43
-20	**(- 4)**	2130	537	624	395	2.89	8.43	5.40	1.36	1.58
-15	**(+ 5)**	2663	671	780	446	3.26	10.60	5.96	1.50	1.75
-10	**(+14)**	3283	827	962	496	3.61	13.16	6.62	1.67	1.94

E - PERFORMANCE - CURVES

TEST CONDITIONS: **EN12900** (Condensing temperature **35ºC (+95ºF))**
@220V3000RPM **Fan**

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)**	1475	372	432	289	2.24	4.71	5.10	1.28	1.49
-35	**(-31)**	1940	489	569	342	2.55	6.22	5.67	1.43	1.66
-30	**(-22)**	2505	631	734	398	2.91	8.06	6.30	1.59	1.85
-25	**(-13)**	3178	801	931	454	3.27	10.26	7.01	1.77	2.06
-20	**(- 4)**	3969	1000	1163	507	3.62	12.86	7.85	1.98	2.30
-15	**(+ 5)**	4886	1231	1432	553	3.93	15.92	8.85	2.23	2.59
-10	**(+14)**	5938	1496	1740	590	4.17	19.47	10.05	2.53	2.94

TEST CONDITIONS: **EN12900** (Condensing temperature **45ºC (+113ºF))**
@220V3000RPM **Fan**

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)**	1220	307	358	296	2.24	4.27	4.15	1.05	1.22
-35	**(-31)**	1627	410	477	349	2.53	5.71	4.66	1.18	1.37
-30	**(-22)**	2123	535	622	409	2.89	7.48	5.18	1.30	1.52
-25	**(-13)**	2719	685	797	474	3.30	9.61	5.72	1.44	1.68
-20	**(- 4)**	3422	862	1003	539	3.73	12.16	6.33	1.60	1.86
-15	**(+ 5)**	4243	1069	1243	602	4.15	15.17	7.05	1.78	2.07
-10	**(+14)**	5190	1308	1521	658	4.54	18.68	7.91	1.99	2.32

TEST CONDITIONS: **EN12900** (Condensing temperature **55ºC (+131ºF))**
@220V3000RPM **Fan**

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	292	304	2.39	3.87	3.26	0.82	0.95
-35	**(-31)**	1342	338	393	354	2.65	5.23	3.80	0.96	1.11
-30	**(-22)**	1768	446	518	415	3.01	6.92	4.28	1.08	1.25
-25	**(-13)**	2285	576	669	483	3.46	8.99	4.74	1.19	1.39
-20	**(- 4)**	2900	731	850	556	3.96	11.47	5.21	1.31	1.53
-15	**(+ 5)**	3623	913	1062	631	4.48	14.43	5.73	1.45	1.68
-10	**(+14)**	4463	1125	1308	703	4.99	17.89	6.34	1.60	1.86

E - PERFORMANCE - CURVES

TEST CONDITIONS: **EN12900** (Condensing temperature **35ºC (+95ºF))**
@220V3600RPM **Fan**

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)**	1731	436	507	350	2.64	5.52	4.94	1.25	1.45
-35	**(-31)**	2277	574	667	415	3.04	7.31	5.48	1.38	1.61
-30	**(-22)**	2940	741	862	485	3.49	9.46	6.06	1.53	1.78
-25	**(-13)**	3730	940	1093	555	3.95	12.04	6.73	1.70	1.97
-20	**(- 4)**	4658	1174	1365	622	4.40	15.10	7.51	1.89	2.20
-15	**(+ 5)**	5735	1445	1681	680	4.79	18.69	8.44	2.13	2.47
-10	**(+14)**	6972	1757	2043	727	5.09	22.86	9.56	2.41	2.80

TEST CONDITIONS: **EN12900** (Condensing temperature **45ºC (+113ºF))**
@220V3600RPM **Fan**

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)**	1448	365	424	359	2.65	5.07	4.06	1.02	1.19
-35	**(-31)**	1929	486	565	425	3.02	6.77	4.54	1.14	1.33
-30	**(-22)**	2516	634	737	500	3.48	8.86	5.02	1.26	1.47
-25	**(-13)**	3220	811	943	581	4.00	11.38	5.53	1.39	1.62
-20	**(- 4)**	4052	1021	1187	663	4.55	14.40	6.10	1.54	1.79
-15	**(+ 5)**	5023	1266	1472	741	5.08	17.96	6.77	1.71	1.98
-10	**(+14)**	6144	1548	1800	813	5.56	22.11	7.58	1.91	2.22

TEST CONDITIONS: **EN12900** (Condensing temperature **55ºC (+131ºF))**
@220V3600RPM **Fan**

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)**	1198	302	351	370	2.83	4.66	3.22	0.81	0.94
-35	**(-31)**	1610	406	472	432	3.16	6.28	3.73	0.94	1.09
-30	**(-22)**	2118	534	621	508	3.63	8.29	4.18	1.05	1.23
-25	**(-13)**	2733	689	801	594	4.20	10.75	4.61	1.16	1.35
-20	**(- 4)**	3467	874	1016	685	4.83	13.72	5.06	1.27	1.48
-15	**(+ 5)**	4329	1091	1268	779	5.50	17.24	5.55	1.40	1.63
-10	**(+14)**	5331	1343	1562	870	6.15	21.37	6.12	1.54	1.79

E - PERFORMANCE - CURVES

TEST CONDITIONS: **EN12900** (Condensing temperature **35ºC (+95ºF))**
@220V4500RPM **Fan**

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)**	2112	532	619	451	3.37	6.77	4.68	1.18	1.37
-35	**(-31)**	2719	685	797	525	3.83	8.71	5.17	1.30	1.51
-30	**(-22)**	3507	884	1028	616	4.43	11.26	5.69	1.43	1.67
-25	**(-13)**	4473	1127	1311	714	5.10	14.43	6.27	1.58	1.84
-20	**(- 4)**	5612	1414	1644	808	5.76	18.19	6.96	1.75	2.04
-15	**(+ 5)**	6919	1744	2028	890	6.33	22.56	7.79	1.96	2.28
-10	**(+14)**	8392	2115	2459	951	6.73	27.52	8.81	2.22	2.58

TEST CONDITIONS: **EN12900** (Condensing temperature **45ºC (+113ºF))**
@220V4500RPM **Fan**

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)**	1757	443	515	452	3.29	6.15	3.91	0.99	1.15
-35	**(-31)**	2338	589	685	539	3.80	8.20	4.34	1.09	1.27
-30	**(-22)**	3071	774	900	644	4.49	10.81	4.76	1.20	1.40
-25	**(-13)**	3952	996	1158	757	5.25	13.98	5.20	1.31	1.53
-20	**(- 4)**	4977	1254	1458	870	6.03	17.70	5.71	1.44	1.67
-15	**(+ 5)**	6141	1548	1800	972	6.74	21.96	6.32	1.59	1.85
-10	**(+14)**	7442	1875	2181	1055	7.31	26.76	7.06	1.78	2.07

TEST CONDITIONS: **EN12900** (Condensing temperature **55ºC (+131ºF))**
@220V4500RPM **Fan**

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)**	1492	376	437	473	3.55	5.80	3.15	0.79	0.92
-35	**(-31)**	2008	506	588	556	4.04	7.83	3.61	0.91	1.06
-30	**(-22)**	2646	667	775	660	4.73	10.36	4.01	1.01	1.18
-25	**(-13)**	3404	858	997	775	5.52	13.39	4.40	1.11	1.29
-20	**(- 4)**	4276	1077	1253	890	6.34	16.92	4.81	1.21	1.41
-15	**(+ 5)**	5258	1325	1541	997	7.12	20.94	5.27	1.33	1.55
-10	**(+14)**	6348	1600	1860	1087	7.77	25.44	5.84	1.47	1.71

E - PERFORMANCE - CURVES

TEST CONDITIONS: **EN12900** (Condensing temperature **35ºC (+95ºF))**
@220V5000RPM **Fan**

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)**	2297	579	673	507	3.82	7.38	4.52	1.14	1.33
-35	**(-31)**	2901	731	850	581	4.27	9.27	5.00	1.26	1.46
-30	**(-22)**	3782	953	1108	691	5.03	12.12	5.46	1.38	1.60
-25	**(-13)**	4883	1231	1431	815	5.92	15.75	5.98	1.51	1.75
-20	**(- 4)**	6149	1550	1802	932	6.76	19.96	6.61	1.67	1.94
-15	**(+ 5)**	7525	1896	2205	1019	7.38	24.56	7.41	1.87	2.17
-10	**(+14)**	8956	2257	2624	1056	7.59	29.35	8.44	2.13	2.47

TEST CONDITIONS: **EN12900** (Condensing temperature **45ºC (+113ºF))**
@220V5000RPM **Fan**

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)**	1964	495	575	515	3.76	6.86	3.79	0.96	1.11
-35	**(-31)**	2553	643	748	607	4.32	8.95	4.22	1.06	1.24
-30	**(-22)**	3356	846	983	728	5.14	11.83	4.61	1.16	1.35
-25	**(-13)**	4315	1088	1265	858	6.05	15.29	5.02	1.27	1.47
-20	**(- 4)**	5377	1355	1576	975	6.87	19.14	5.52	1.39	1.62
-15	**(+ 5)**	6485	1634	1900	1057	7.42	23.19	6.16	1.55	1.80
-10	**(+14)**	7583	1911	2222	1082	7.53	27.25	6.99	1.76	2.05

TEST CONDITIONS: **EN12900** (Condensing temperature **55ºC (+131ºF))**
@220V5000RPM **Fan**

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)**	1621	408	475	524	3.94	6.31	3.11	0.78	0.91
-35	**(-31)**	2212	558	648	628	4.60	8.64	3.54	0.89	1.04
-30	**(-22)**	2953	744	865	756	5.49	11.56	3.90	0.98	1.14
-25	**(-13)**	3788	955	1110	886	6.42	14.89	4.25	1.07	1.25
-20	**(- 4)**	4662	1175	1366	997	7.21	18.41	4.66	1.17	1.37
-15	**(+ 5)**	5518	1390	1617	1068	7.70	21.95	5.18	1.31	1.52
-10	**(+14)**	6301	1588	1846	1076	7.69	25.30	5.87	1.48	1.72

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		