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: **@115V2200RPM**			**ARILBP** **Fan**		Evaporating temperature (Condensing temperature		**-23.3°C (-9.94°F)** **48.9°C (120.02°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]
1906	480	559	367	5.27	7.74	5.20	1.31	1.52

TEST CONDITIONS: **@115V3000RPM**			**ARILBP** **Fan**		Evaporating temperature (Condensing temperature		**-23.3°C (-9.94°F)** **48.9°C (120.02°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]
2648	667	776	520	6.88	10.75	5.09	1.28	1.49

TEST CONDITIONS: **@115V3600RPM**			**ARILBP** **Fan**		Evaporating temperature (Condensing temperature		**-23.3°C (-9.94°F)** **48.9°C (120.02°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]
3185	803	933	641	8.06	12.93	4.97	1.25	1.46

TEST CONDITIONS: **@115V4500RPM**			**ARILBP** **Fan**		Evaporating temperature (Condensing temperature		**-23.3°C (-9.94°F)** **48.9°C (120.02°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]
3821	963	1120	810	10.21	15.52	4.72	1.19	1.38

TEST CONDITIONS: **@115V5000RPM**			**ARILBP** **Fan**		Evaporating temperature (Condensing temperature		**-23.3°C (-9.94°F)** **48.9°C (120.02°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]
3969	1000	1163	862	10.86	16.12	4.60	1.16	1.35

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ARI4** (Condensing temperature **35ºC (+95ºF))**
@115V2200RPM **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)**	1024	258	300	207	1.74	3.55	4.94	1.25	1.45
-35	**(-31)**	1357	342	398	246	2.05	4.73	5.52	1.39	1.62
-30	**(-22)**	1757	443	515	286	2.39	6.14	6.13	1.55	1.80
-25	**(-13)**	2230	562	654	327	2.75	7.83	6.83	1.72	2.00
-20	**(- 4)**	2785	702	816	365	3.09	9.83	7.64	1.93	2.24
-15	**(+ 5)**	3428	864	1005	399	3.41	12.19	8.61	2.17	2.52
-10	**(+14)**	4166	1050	1221	425	3.67	14.94	9.77	2.46	2.86

TEST CONDITIONS: **ARI4** (Condensing temperature **45ºC (+113ºF))**
@115V2200RPM **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)**	835	210	245	212	1.69	3.19	3.97	1.00	1.16
-35	**(-31)**	1126	284	330	251	1.95	4.33	4.49	1.13	1.31
-30	**(-22)**	1475	372	432	295	2.28	5.69	5.00	1.26	1.46
-25	**(-13)**	1889	476	553	341	2.64	7.33	5.53	1.39	1.62
-20	**(- 4)**	2375	599	696	387	3.02	9.28	6.13	1.54	1.79
-15	**(+ 5)**	2940	741	862	431	3.40	11.57	6.82	1.72	2.00
-10	**(+14)**	3592	905	1052	471	3.74	14.26	7.66	1.93	2.24

TEST CONDITIONS: **ARI4** (Condensing temperature **55ºC (+131ºF))**
@115V2200RPM **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)**	656	165	192	218	1.70	2.82	3.00	0.76	0.88
-35	**(-31)**	902	227	264	255	1.89	3.89	3.54	0.89	1.04
-30	**(-22)**	1197	302	351	298	2.16	5.19	4.02	1.01	1.18
-25	**(-13)**	1548	390	453	347	2.50	6.75	4.47	1.13	1.31
-20	**(- 4)**	1961	494	575	398	2.88	8.62	4.93	1.24	1.44
-15	**(+ 5)**	2445	616	717	449	3.27	10.84	5.44	1.37	1.59
-10	**(+14)**	3006	758	881	499	3.66	13.45	6.02	1.52	1.77

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ARI4** (Condensing temperature **35ºC (+95ºF))**
@115V3000RPM **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)**	1400	353	410	291	2.25	4.85	4.81	1.21	1.41
-35	**(-31)**	1850	466	542	346	2.66	6.44	5.34	1.35	1.57
-30	**(-22)**	2390	602	700	404	3.11	8.36	5.92	1.49	1.73
-25	**(-13)**	3030	764	888	462	3.57	10.64	6.56	1.65	1.92
-20	**(- 4)**	3781	953	1108	517	4.03	13.35	7.32	1.85	2.15
-15	**(+ 5)**	4650	1172	1363	566	4.44	16.53	8.23	2.07	2.41
-10	**(+14)**	5649	1424	1655	605	4.79	20.25	9.32	2.35	2.73

TEST CONDITIONS: **ARI4** (Condensing temperature **45ºC (+113ºF))**
@115V3000RPM **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)**	1157	291	339	297	2.25	4.43	3.91	0.98	1.15
-35	**(-31)**	1553	391	455	353	2.61	5.97	4.40	1.11	1.29
-30	**(-22)**	2028	511	594	415	3.05	7.83	4.88	1.23	1.43
-25	**(-13)**	2592	653	760	481	3.54	10.06	5.37	1.35	1.57
-20	**(- 4)**	3254	820	954	547	4.05	12.71	5.93	1.49	1.74
-15	**(+ 5)**	4024	1014	1179	611	4.55	15.84	6.58	1.66	1.93
-10	**(+14)**	4911	1238	1439	668	5.01	19.50	7.37	1.86	2.16

TEST CONDITIONS: **ARI4** (Condensing temperature **55ºC (+131ºF))**
@115V3000RPM **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)**	928	234	272	309	2.34	3.99	2.99	0.75	0.88
-35	**(-31)**	1265	319	371	361	2.60	5.45	3.51	0.88	1.03
-30	**(-22)**	1669	421	489	422	2.98	7.23	3.96	1.00	1.16
-25	**(-13)**	2149	542	630	491	3.44	9.38	4.39	1.11	1.29
-20	**(- 4)**	2717	685	796	564	3.96	11.95	4.82	1.21	1.41
-15	**(+ 5)**	3380	852	990	637	4.50	14.99	5.30	1.34	1.55
-10	**(+14)**	4149	1046	1216	708	5.04	18.57	5.86	1.48	1.72

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ARI4** (Condensing temperature **35ºC (+95ºF))**
@115V3600RPM **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)**	1662	419	487	355	2.62	5.76	4.68	1.18	1.37
-35	**(-31)**	2194	553	643	423	3.10	7.64	5.18	1.31	1.52
-30	**(-22)**	2832	714	830	495	3.64	9.90	5.72	1.44	1.68
-25	**(-13)**	3589	904	1052	568	4.19	12.60	6.32	1.59	1.85
-20	**(- 4)**	4476	1128	1312	637	4.74	15.80	7.04	1.77	2.06
-15	**(+ 5)**	5504	1387	1613	699	5.23	19.57	7.89	1.99	2.31
-10	**(+14)**	6686	1685	1959	748	5.63	23.97	8.92	2.25	2.61

TEST CONDITIONS: **ARI4** (Condensing temperature **45ºC (+113ºF))**
@115V3600RPM **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)**	1387	350	406	363	2.68	5.31	3.84	0.97	1.12
-35	**(-31)**	1858	468	544	432	3.11	7.14	4.30	1.08	1.26
-30	**(-22)**	2422	610	710	509	3.63	9.35	4.75	1.20	1.39
-25	**(-13)**	3092	779	906	591	4.22	11.99	5.22	1.32	1.53
-20	**(- 4)**	3878	977	1136	673	4.84	15.14	5.75	1.45	1.68
-15	**(+ 5)**	4793	1208	1404	752	5.44	18.86	6.37	1.60	1.87
-10	**(+14)**	5847	1473	1713	824	6.00	23.21	7.11	1.79	2.08

TEST CONDITIONS: **ARI4** (Condensing temperature **55ºC (+131ºF))**
@115V3600RPM **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)**	1126	284	330	378	2.84	4.84	2.97	0.75	0.87
-35	**(-31)**	1528	385	448	441	3.16	6.59	3.46	0.87	1.01
-30	**(-22)**	2010	507	589	517	3.62	8.71	3.90	0.98	1.14
-25	**(-13)**	2584	651	757	602	4.18	11.28	4.30	1.08	1.26
-20	**(- 4)**	3262	822	956	692	4.81	14.34	4.71	1.19	1.38
-15	**(+ 5)**	4054	1022	1188	784	5.48	17.98	5.17	1.30	1.51
-10	**(+14)**	4973	1253	1457	872	6.14	22.25	5.70	1.44	1.67

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ARI4** (Condensing temperature **35ºC (+95ºF))**
@115V4500RPM **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)**	2028	511	594	457	3.22	7.05	4.43	1.12	1.30
-35	**(-31)**	2631	663	771	538	3.75	9.15	4.89	1.23	1.43
-30	**(-22)**	3392	855	994	632	4.41	11.84	5.36	1.35	1.57
-25	**(-13)**	4314	1087	1264	732	5.14	15.14	5.90	1.49	1.73
-20	**(- 4)**	5397	1360	1581	828	5.85	19.06	6.53	1.65	1.91
-15	**(+ 5)**	6643	1674	1946	912	6.49	23.63	7.29	1.84	2.14
-10	**(+14)**	8052	2029	2359	977	6.98	28.87	8.22	2.07	2.41

TEST CONDITIONS: **ARI4** (Condensing temperature **45ºC (+113ºF))**
@115V4500RPM **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)**	1684	424	494	458	3.31	6.44	3.70	0.93	1.08
-35	**(-31)**	2253	568	660	547	3.85	8.65	4.12	1.04	1.21
-30	**(-22)**	2951	744	865	651	4.54	11.39	4.52	1.14	1.33
-25	**(-13)**	3780	953	1108	763	5.33	14.68	4.94	1.25	1.45
-20	**(- 4)**	4743	1195	1390	874	6.13	18.53	5.41	1.36	1.59
-15	**(+ 5)**	5839	1471	1711	977	6.89	22.99	5.98	1.51	1.75
-10	**(+14)**	7070	1782	2072	1061	7.53	28.05	6.67	1.68	1.95

TEST CONDITIONS: **ARI4** (Condensing temperature **55ºC (+131ºF))**
@115V4500RPM **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)**	1395	352	409	480	3.62	6.00	2.90	0.73	0.85
-35	**(-31)**	1893	477	555	563	4.04	8.16	3.36	0.85	0.98
-30	**(-22)**	2491	628	730	664	4.66	10.80	3.75	0.95	1.10
-25	**(-13)**	3193	805	936	775	5.39	13.93	4.12	1.04	1.21
-20	**(- 4)**	3998	1008	1172	888	6.18	17.58	4.51	1.14	1.32
-15	**(+ 5)**	4908	1237	1438	994	6.94	21.77	4.94	1.24	1.45
-10	**(+14)**	5925	1493	1736	1085	7.62	26.51	5.46	1.38	1.60

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ARI4** (Condensing temperature **35ºC (+95ºF))**
@115V5000RPM **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)**	2192	552	642	513	3.57	7.65	4.27	1.08	1.25
-35	**(-31)**	2793	704	818	593	4.07	9.69	4.71	1.19	1.38
-30	**(-22)**	3641	918	1067	708	4.85	12.68	5.14	1.29	1.51
-25	**(-13)**	4685	1181	1373	834	5.74	16.44	5.61	1.41	1.64
-20	**(- 4)**	5874	1480	1721	950	6.59	20.77	6.20	1.56	1.82
-15	**(+ 5)**	7153	1803	2096	1033	7.23	25.47	6.95	1.75	2.04
-10	**(+14)**	8473	2135	2483	1064	7.49	30.35	7.93	2.00	2.33

TEST CONDITIONS: **ARI4** (Condensing temperature **45ºC (+113ºF))**
@115V5000RPM **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)**	1864	470	546	518	3.73	7.12	3.58	0.90	1.05
-35	**(-31)**	2430	612	712	609	4.27	9.33	4.00	1.01	1.17
-30	**(-22)**	3194	805	936	730	5.07	12.33	4.37	1.10	1.28
-25	**(-13)**	4102	1034	1202	860	5.98	15.94	4.76	1.20	1.40
-20	**(- 4)**	5103	1286	1495	977	6.82	19.96	5.23	1.32	1.53
-15	**(+ 5)**	6144	1548	1800	1058	7.44	24.19	5.82	1.47	1.71
-10	**(+14)**	7173	1807	2102	1083	7.68	28.43	6.62	1.67	1.94

TEST CONDITIONS: **ARI4** (Condensing temperature **55ºC (+131ºF))**
@115V5000RPM **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)**	1510	381	443	530	4.04	6.49	2.86	0.72	0.84
-35	**(-31)**	2051	517	601	626	4.55	8.87	3.30	0.83	0.97
-30	**(-22)**	2738	690	802	749	5.31	11.88	3.66	0.92	1.07
-25	**(-13)**	3518	887	1031	877	6.15	15.34	3.99	1.01	1.17
-20	**(- 4)**	4339	1094	1272	990	6.92	19.05	4.37	1.10	1.28
-15	**(+ 5)**	5150	1298	1509	1064	7.45	22.81	4.84	1.22	1.42
-10	**(+14)**	5897	1486	1728	1078	7.58	26.43	5.48	1.38	1.61

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		