

### COMPRESSOR DEFINITION

Designation	VNE U217U
Nominal Voltage/Frequency	100-300 V 33-75 Hz
Engineering Number	860CX78

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	100-300 / 33-75	[ 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 - High 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 <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	16.80	[cm <sup>3</sup> ] (1.025 cu.in)
2.1 Bore [mm]	31.190	
2.2 Stroke [mm]	22.000	
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)	11.3	[kg] (24.91 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELECTRICAL 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	VCCHP2456XXXXX	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	T0624/07	
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	VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: <b>@220V2000RPM</b>			<b>EN12900LBP_HH</b> <b>Fan</b>		Evaporating temperature (Condensing temperature)		<b>-35°C (-31°F)</b> <b>40°C (104°F)</b>	
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]
1180	297	346	268	1.25	3.73	4.40	1.11	1.29

TEST CONDITIONS: <b>@220V2400RPM</b>			<b>EN12900LBP_HH</b> <b>Fan</b>		Evaporating temperature (Condensing temperature)		<b>-35°C (-31°F)</b> <b>40°C (104°F)</b>	
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]
1347	339	395	303	1.40	4.26	4.45	1.12	1.30

TEST CONDITIONS: <b>@220V3000RPM</b>			<b>EN12900LBP_HH</b> <b>Fan</b>		Evaporating temperature (Condensing temperature)		<b>-35°C (-31°F)</b> <b>40°C (104°F)</b>	
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]
1651	416	484	380	1.75	5.22	4.34	1.09	1.27

TEST CONDITIONS: <b>@220V3600RPM</b>			<b>EN12900LBP_HH</b> <b>Fan</b>		Evaporating temperature (Condensing temperature)		<b>-35°C (-31°F)</b> <b>40°C (104°F)</b>	
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]
1884	475	552	454	2.09	5.96	4.15	1.05	1.22

TEST CONDITIONS: <b>@220V4500RPM</b>			<b>EN12900LBP_HH</b> <b>Fan</b>		Evaporating temperature (Condensing temperature)		<b>-35°C (-31°F)</b> <b>40°C (104°F)</b>	
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]
2384	601	699	583	2.66	7.54	4.09	1.03	1.20

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		EN12900HH 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)	985	248	288	233	1.11	2.98	4.22	1.06	1.24	
-35 (-31)	1273	321	373	264	1.25	3.86	4.82	1.22	1.41	
-30 (-22)	1643	414	481	298	1.40	4.98	5.52	1.39	1.62	
-25 (-13)	2090	527	612	332	1.56	6.36	6.30	1.59	1.85	
-20 (- 4)	2611	658	765	365	1.71	7.98	7.16	1.80	2.10	
-15 (+ 5)	3202	807	938	396	1.85	9.83	8.10	2.04	2.37	
-10 (+14)	3862	973	1132	423	1.98	11.90	9.12	2.30	2.67	

TEST CONDITIONS: @220V2000RPM		EN12900HH 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)	827	208	242	241	1.12	2.72	3.44	0.87	1.01	
-35 (-31)	1094	276	320	279	1.29	3.61	3.93	0.99	1.15	
-30 (-22)	1422	358	417	318	1.47	4.72	4.48	1.13	1.31	
-25 (-13)	1810	456	530	357	1.65	6.02	5.07	1.28	1.49	
-20 (- 4)	2253	568	660	395	1.83	7.52	5.70	1.44	1.67	
-15 (+ 5)	2749	693	805	431	1.99	9.21	6.38	1.61	1.87	
-10 (+14)	3293	830	965	464	2.15	11.09	7.09	1.79	2.08	

TEST CONDITIONS: @220V2000RPM		EN12900HH 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)	667	168	195	250	1.14	2.43	2.68	0.68	0.79	
-35 (-31)	924	233	271	294	1.34	3.38	3.13	0.79	0.92	
-30 (-22)	1224	308	359	340	1.55	4.49	3.59	0.90	1.05	
-25 (-13)	1565	394	459	385	1.76	5.76	4.06	1.02	1.19	
-20 (- 4)	1943	490	569	430	1.96	7.18	4.53	1.14	1.33	
-15 (+ 5)	2355	593	690	472	2.16	8.74	5.00	1.26	1.47	
-10 (+14)	2798	705	820	510	2.33	10.44	5.48	1.38	1.60	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2400RPM		EN12900HH 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)	1075	271	315	255	1.19	3.25	4.22	1.06	1.24	
-35 (-31)	1413	356	414	291	1.36	4.28	4.85	1.22	1.42	
-30 (-22)	1822	459	534	329	1.52	5.54	5.54	1.40	1.62	
-25 (-13)	2307	581	676	366	1.69	7.03	6.30	1.59	1.85	
-20 (- 4)	2869	723	841	403	1.86	8.77	7.13	1.80	2.09	
-15 (+ 5)	3511	885	1029	438	2.02	10.77	8.02	2.02	2.35	
-10 (+14)	4237	1068	1241	471	2.16	13.06	8.98	2.26	2.63	

TEST CONDITIONS: @220V2400RPM		EN12900HH 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)	920	232	270	267	1.24	3.04	3.46	0.87	1.01	
-35 (-31)	1217	307	357	309	1.43	4.02	3.93	0.99	1.15	
-30 (-22)	1581	398	463	353	1.63	5.24	4.46	1.13	1.31	
-25 (-13)	2015	508	590	398	1.83	6.70	5.05	1.27	1.48	
-20 (- 4)	2523	636	739	443	2.04	8.42	5.69	1.43	1.67	
-15 (+ 5)	3106	783	910	488	2.24	10.41	6.37	1.61	1.87	
-10 (+14)	3768	950	1104	531	2.44	12.70	7.11	1.79	2.08	

TEST CONDITIONS: @220V2400RPM		EN12900HH 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)	818	206	240	272	1.27	2.98	2.99	0.75	0.88	
-35 (-31)	1060	267	311	321	1.48	3.88	3.31	0.83	0.97	
-30 (-22)	1366	344	400	372	1.71	5.01	3.68	0.93	1.08	
-25 (-13)	1738	438	509	426	1.95	6.39	4.08	1.03	1.20	
-20 (- 4)	2178	549	638	482	2.20	8.05	4.52	1.14	1.33	
-15 (+ 5)	2690	678	788	538	2.46	9.99	5.00	1.26	1.47	
-10 (+14)	3276	826	960	593	2.71	12.23	5.52	1.39	1.62	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		EN12900HH 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)	1314	331	385	322	1.49	3.97	4.09	1.03	1.20	
-35 (-31)	1729	436	507	368	1.70	5.24	4.70	1.18	1.38	
-30 (-22)	2235	563	655	416	1.92	6.79	5.37	1.35	1.57	
-25 (-13)	2837	715	831	466	2.14	8.64	6.08	1.53	1.78	
-20 (- 4)	3539	892	1037	517	2.36	10.81	6.84	1.72	2.01	
-15 (+ 5)	4347	1096	1274	569	2.59	13.33	7.64	1.93	2.24	
-10 (+14)	5266	1327	1543	622	2.81	16.23	8.46	2.13	2.48	

TEST CONDITIONS: @220V3000RPM		EN12900HH 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)	1157	292	339	333	1.53	3.82	3.48	0.88	1.02	
-35 (-31)	1519	383	445	387	1.78	5.02	3.93	0.99	1.15	
-30 (-22)	1967	496	576	443	2.03	6.52	4.43	1.12	1.30	
-25 (-13)	2506	632	734	502	2.30	8.33	4.98	1.26	1.46	
-20 (- 4)	3141	791	920	563	2.58	10.48	5.57	1.40	1.63	
-15 (+ 5)	3876	977	1136	625	2.86	12.99	6.20	1.56	1.82	
-10 (+14)	4717	1189	1382	688	3.15	15.89	6.86	1.73	2.01	

TEST CONDITIONS: @220V3000RPM		EN12900HH 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)	1035	261	303	340	1.56	3.77	3.03	0.76	0.89	
-35 (-31)	1324	334	388	400	1.84	4.84	3.31	0.84	0.97	
-30 (-22)	1693	427	496	464	2.13	6.21	3.66	0.92	1.07	
-25 (-13)	2148	541	629	532	2.44	7.90	4.05	1.02	1.19	
-20 (- 4)	2693	679	789	601	2.76	9.95	4.48	1.13	1.31	
-15 (+ 5)	3334	840	977	673	3.09	12.38	4.95	1.25	1.45	
-10 (+14)	4076	1027	1194	747	3.42	15.21	5.45	1.37	1.60	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3600RPM		EN12900HH 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)	1536	387	450	385	1.77	4.64	3.98	1.00	1.17	
-35 (-31)	2017	508	591	444	2.03	6.11	4.55	1.15	1.33	
-30 (-22)	2616	659	767	504	2.30	7.95	5.19	1.31	1.52	
-25 (-13)	3332	840	976	566	2.58	10.15	5.89	1.48	1.72	
-20 (- 4)	4166	1050	1221	630	2.87	12.73	6.62	1.67	1.94	
-15 (+ 5)	5117	1290	1499	695	3.17	15.70	7.37	1.86	2.16	
-10 (+14)	6186	1559	1813	761	3.48	19.06	8.12	2.05	2.38	

TEST CONDITIONS: @220V3600RPM		EN12900HH 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)	1321	333	387	402	1.85	4.36	3.29	0.83	0.97	
-35 (-31)	1746	440	512	467	2.14	5.77	3.74	0.94	1.10	
-30 (-22)	2281	575	668	535	2.45	7.56	4.26	1.07	1.25	
-25 (-13)	2927	738	858	606	2.77	9.73	4.82	1.22	1.41	
-20 (- 4)	3683	928	1079	680	3.10	12.29	5.42	1.36	1.59	
-15 (+ 5)	4550	1147	1333	756	3.45	15.25	6.02	1.52	1.76	
-10 (+14)	5527	1393	1620	835	3.81	18.62	6.62	1.67	1.94	

TEST CONDITIONS: @220V3600RPM		EN12900HH 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)	1134	286	332	409	1.89	4.13	2.76	0.70	0.81	
-35 (-31)	1489	375	436	481	2.21	5.44	3.10	0.78	0.91	
-30 (-22)	1948	491	571	557	2.55	7.14	3.50	0.88	1.02	
-25 (-13)	2511	633	736	638	2.91	9.24	3.94	0.99	1.15	
-20 (- 4)	3177	801	931	722	3.30	11.74	4.40	1.11	1.29	
-15 (+ 5)	3947	995	1156	811	3.70	14.65	4.87	1.23	1.43	
-10 (+14)	4820	1215	1412	903	4.12	17.99	5.33	1.34	1.56	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4500RPM		EN12900HH 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)	1904	480	558	487	2.23	5.77	3.89	0.98	1.14	
-35 (-31)	2455	619	719	559	2.56	7.44	4.40	1.11	1.29	
-30 (-22)	3148	793	923	636	2.91	9.56	4.96	1.25	1.45	
-25 (-13)	3984	1004	1168	717	3.28	12.13	5.56	1.40	1.63	
-20 (- 4)	4964	1251	1454	803	3.66	15.16	6.18	1.56	1.81	
-15 (+ 5)	6086	1534	1783	892	4.06	18.67	6.82	1.72	2.00	
-10 (+14)	7351	1852	2154	984	4.47	22.66	7.47	1.88	2.19	

TEST CONDITIONS: @220V4500RPM		EN12900HH 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)	1606	405	471	504	2.31	5.29	3.20	0.81	0.94	
-35 (-31)	2139	539	627	587	2.69	7.07	3.65	0.92	1.07	
-30 (-22)	2784	702	816	675	3.09	9.23	4.12	1.04	1.21	
-25 (-13)	3543	893	1038	766	3.50	11.79	4.62	1.16	1.35	
-20 (- 4)	4415	1112	1294	861	3.93	14.74	5.13	1.29	1.50	
-15 (+ 5)	5399	1361	1582	958	4.36	18.10	5.64	1.42	1.65	
-10 (+14)	6497	1637	1904	1057	4.81	21.87	6.14	1.55	1.80	

TEST CONDITIONS: @220V4500RPM		EN12900HH 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)	1381	348	405	510	2.34	5.04	2.71	0.68	0.79	
-35 (-31)	1864	470	546	606	2.77	6.82	3.06	0.77	0.90	
-30 (-22)	2430	612	712	706	3.21	8.91	3.43	0.86	1.01	
-25 (-13)	3079	776	902	809	3.67	11.33	3.81	0.96	1.12	
-20 (- 4)	3811	960	1117	914	4.14	14.08	4.18	1.05	1.22	
-15 (+ 5)	4627	1166	1356	1021	4.62	17.17	4.54	1.14	1.33	
-10 (+14)	5526	1392	1619	1129	5.10	20.62	4.89	1.23	1.43	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	8.1 +0.10/+0.00	[mm]	(0.319" +0.004"/+0.000")
3.1.1 Material	Copper(OD)		
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		