

Model Series 44VH • Performance Data

GENERAL INFORMATION

Unit Size	CFM	GPM	Cooling		Heating		Compressor		Charge (oz)
			Capacity (Btuh)	EER	Capacity (Btuh)	COP	Qty.	Type	
9	300	2.25	10,000	16	12,000	5	1	Rotary	26.0
12	400	3.00	12,500	16	14,500	5	1	Rotary	28.0
15	500	3.75	15,500	16	17,500	5	1	Rotary	36.0
18	625	4.50	18,500	16	21,000	5	1	Scroll	41.5
24	800	6.00	25,500	16	28,500	5	1	Scroll	63.0
30	1000	7.50	31,500	16	34,000	5	1	Scroll	70.0
36	1200	9.00	36,000	16	40,200	5	1	Scroll	74.0

ELECTRICAL DATA

Unit Size	Voltage	Horsepower - RPM	Blower FLA	Compressor RLA / LRA	Total FLA	MCA	Breaker Size
9	208 / 1	1/4-1600	1.1	3.7 / 29	4.8	5.8	15
	265 / 1	1/4-1600	1.0	3.5 / 22	4.5	5.4	15
12	208 / 1	1/4-1600	1.4	4.7 / 25	6.1	7.6	15
	265 / 1	1/4-1600	1.2	4.2 / 22	5.4	6.5	15
15	208 / 1	1/3-1075	1.8	5.6 / 22	7.4	8.8	15
	265 / 1	1/3-1075	1.6	5.0 / 28	6.6	7.9	15
18	208 / 1	1/3-1075	1.8	9.0 / 47.5	10.8	13.1	20
	265 / 1	1/3-1075	1.6	7.3 / 43.0	8.7	10.5	15
24	208 / 1	1/3-1075	2.4	10.9 / 62.9	13.3	16.1	25
	265 / 1	1/3-1075	2.1	9.0 / 54.0	11.1	13.4	20
30	208 / 1	1/3-1075	3.2	13.5 / 75.5	16.7	20.1	30
	265 / 1	1/3-1075	2.9	11.2 / 60.0	14.1	16.5	25
36	208 / 1	1/2-1075	3.7	14.1 / 72.2	17.8	21.4	30
	265 / 1	1/2-1075	3.3	12.2 / 72.0	15.5	18.6	30

NOTES:

1. Wiring from electrical entry knock-out to controls enclosure is furnished and field installed by others.
2. Risers available from 3/4" (19) to 3" (76) dia. with either 1/2" (13) or 3/4" (19) thick insulation.
3. Max. riser length is 120" (3048), 100" (2540) min.
4. Back riser location shown.
5. For indoor use only.

A SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • ECM Motor Fan Performance Curves

Unit Size	Fan Speed	Unit	Static Pressure (in w.g.)					
			0	0.1	0.2	0.3	0.4	0.5
9	Hi	CFM	405	383	353	320	298	275
		RPM	876	975	1046	1119	1179	1261
		Watts	47	51	55	59	62	66
	Med Hi	CFM	370	343	311	276	255	231
		RPM	800	893	980	1059	1110	1224
		Watts	38	42	45	49	52	56
	Med	CFM	335	302	269	231	211	187
		RPM	723	810	914	998	1041	1186
		Watts	29	33	36	39	42	45
	Med Low	CFM	290	252	215	-	-	-
		RPM	652	736	855	-	-	-
		Watts	22	25	28	-	-	-
	Low	CFM	244	201	160	-	-	-
		RPM	580	662	796	-	-	-
		Watts	15	17	20	-	-	-
12	Hi	CFM	523	499	482	455	435	410
		RPM	1126	1148	1216	1264	1342	1400
		Watts	90	95	100	105	110	114
	Med Hi	CFM	468	442	418	403	372	343
		RPM	953	1028	1097	1159	1257	1318
		Watts	68	72	76	80	85	89
	Med	CFM	437	413	386	362	335	309
		RPM	915	1002	1072	1139	1218	1290
		Watts	58	61	65	69	74	78
	Med Low	CFM	405	383	353	320	298	275
		RPM	876	975	1046	1119	1179	1261
		Watts	47	51	55	59	62	66
	Low	CFM	335	302	269	231	211	187
		RPM	723	810	914	998	1041	1186
		Watts	29	33	36	39	42	45
15	Hi	CFM	594	521	482	424	342	297
		RPM	700	737	756	830	893	959
		Watts	64	66	73	76	79	85
	Med Hi	CFM	585	525	471	412	343	288
		RPM	709	736	761	835	885	960
		Watts	64	66	74	76	79	85
	Med	CFM	518	426	-	-	-	-
		RPM	635	655	-	-	-	-
		Watts	49	48	-	-	-	-
	Med Low	CFM	451	327	-	-	-	-
		RPM	560	573	-	-	-	-
		Watts	34	29	-	-	-	-
	Low	CFM	442	306	-	-	-	-
		RPM	548	559	-	-	-	-
		Watts	32	27	-	-	-	-
18	Hi	CFM	751	696	645	602	544	503
		RPM	857	884	925	964	998	1045
		Watts	119	121	126	131	133	139
	Med Hi	CFM	700	645	593	550	496	449
		RPM	809	843	881	927	962	1018
		Watts	100	102	105	112	114	120
	Med	CFM	585	525	471	412	343	288
		RPM	709	736	761	835	885	960
		Watts	64	66	74	76	79	85
	Med Low	CFM	518	525	471	412	343	288
		RPM	709	736	761	835	885	960
		Watts	64	66	74	76	79	85
	Low	CFM	451	327	-	-	-	-
		RPM	560	573	-	-	-	-
		Watts	34	29	-	-	-	-

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • ECM Motor Fan Performance Curves

Unit Size	Fan Speed	Unit	Static Pressure (in w.g.)					
			0	0.1	0.2	0.3	0.4	0.5
24	Hi	CFM	918	872	821	779	736	688
		RPM	916	962	996	1024	1061	1091
		Watts	173	182	186	189	192	194
	Med Hi	CFM	844	787	750	696	649	601
		RPM	847	895	927	972	1008	1044
		Watts	140	144	147	154	158	161
	Med	CFM	801	752	706	654	597	547
		RPM	809	858	898	937	975	1018
		Watts	121	128	131	136	140	142
	Med Low	CFM	757	717	662	612	545	493
		RPM	770	820	869	902	942	992
		Watts	102	111	114	118	121	124
	Low	CFM	676	650	592	541	481	414
		RPM	686	746	797	838	888	952
		Watts	72	80	83	87	90	94
30	Hi	CFM	1189	1149	1098	1071	1012	970
		RPM	809	836	873	911	942	975
		Watts	244	248	257	266	271	279
	Med Hi	CFM	1053	1007	949	906	859	805
		RPM	719	757	796	836	873	923
		Watts	165	170	180	188	193	201
	Med	CFM	971	926	875	834	773	693
		RPM	668	707	754	790	834	880
		Watts	131	136	145	149	158	163
	Med Low	CFM	880	817	766	706	654	576
		RPM	613	653	703	748	802	850
		Watts	98	102	111	116	125	134
	Low	CFM	753	630	458	181	-	-
		RPM	531	553	576	622	-	-
		Watts	63	56	46	38	-	-
36	Hi	CFM	1357	1335	1288	1246	1206	1159
		RPM	909	933	967	988	1025	1053
		Watts	329	334	343	351	357	366
	Med Hi	CFM	1266	1236	1196	1153	1104	1078
		RPM	849	884	917	954	980	1012
		Watts	268	271	282	294	303	309
	Med	CFM	1173	1129	1093	1038	1022	970
		RPM	793	826	856	893	933	966
		Watts	213	219	227	233	243	254
	Med Low	CFM	1072	1026	982	932	884	840
		RPM	725	757	807	837	883	918
		Watts	159	167	173	183	193	198
	Low	CFM	898	833	762	725	664	598
		RPM	615	651	703	745	796	848
		Watts	97	100	106	114	121	128

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • Sound Power Performance Data

Unit Size	Mode	Free Ductless Ultra Quiet Construction						
		Octave Band Frequency, Hz.						
		125	250	500	1000	2000	4000	8000
9	FO Low Sp	58	50	47	40	33	33	26
	FO Med. Sp	59	54	49	41	35	35	35
	FO High Sp	61	57	52	49	44	44	34
	Cooling Low Sp	58	51	55	46	38	38	34
	Cooling Med. Sp	59	53	57	50	43	43	34
	Cooling High Sp	60	56	55	50	45	45	42
	Heating Low Sp	58	52	56	48	43	41	39
	Heating Med. Sp	61	54	55	48	42	42	42
	Heating High Sp	61	56	57	51	45	45	39
12	FO Low Sp	59	51	47	40	33	33	26
	FO Med. Sp	61	55	49	41	35	35	35
	FO High Sp	62	57	52	49	44	44	34
	Cooling Low Sp	60	51	55	46	38	38	34
	Cooling Med. Sp	61	55	57	50	43	43	34
	Cooling High Sp	62	57	55	50	45	45	42
	Heating Low Sp	60	52	56	48	43	41	39
	Heating Med. Sp	61	55	55	48	42	42	42
	Heating High Sp	62	57	57	51	45	45	39
15	FO Low Sp	61	58	55	47	43	40	31
	FO Med. Sp	62	59	57	48	45	42	33
	FO High Sp	64	62	58	51	48	46	38
	Cooling Low Sp	61	58	55	48	43	40	31
	Cooling Med. Sp	62	58	56	49	44	42	33
	Cooling High Sp	64	60	58	52	48	45	38
	Heating Low Sp	61	56	54	47	45	40	32
	Heating Med. Sp	62	58	56	48	46	42	34
	Heating High Sp	64	60	59	51	49	46	39
18	FO Low Sp	61	58	55	47	43	40	31
	FO Med. Sp	62	59	57	48	45	41	33
	FO High Sp	65	62	58	51	48	46	38
	Cooling Low Sp	61	58	55	47	43	40	31
	Cooling Med. Sp	62	58	56	49	45	42	33
	Cooling High Sp	65	61	58	51	48	45	38
	Heating Low Sp	62	58	55	48	45	40	32
	Heating Med. Sp	62	59	56	49	46	42	34
	Heating High Sp	65	61	59	52	49	46	39
24	FO Low Sp	61	58	46	40	34	27	25
	FO Med. Sp	62	59	50	44	41	33	26
	FO High Sp	65	62	56	51	49	44	35
	Cooling Low Sp	62	59	49	43	35	27	25
	Cooling Med. Sp	63	60	50	46	39	33	26
	Cooling High Sp	66	62	55	52	48	41	33
	Heating Low Sp	69	60	49	45	42	33	28
	Heating Med. Sp	68	62	51	46	44	36	30
	Heating High Sp	69	62	57	53	52	45	41
30	FO Low Sp	65	62	57	53	50	43	38
	FO Med. Sp	69	66	60	55	54	47	39
	FO High Sp	76	73	63	58	54	52	44
	Cooling Low Sp	65	63	57	50	44	39	30
	Cooling Med. Sp	69	64	58	52	47	44	34
	Cooling High Sp	75	72	63	59	55	51	44
	Heating Low Sp	69	61	57	49	46	41	32
	Heating Med. Sp	70	65	59	51	49	44	37
	Heating High Sp	75	72	64	58	56	52	46
36	FO Low Sp	65	62	57	53	50	43	38
	FO Med. Sp	69	66	60	55	54	47	39
	FO High Sp	76	73	66	62	61	57	51
	Cooling Low Sp	64	62	57	52	49	42	36
	Cooling Med. Sp	70	66	60	56	52	47	37
	Cooling High Sp	74	72	65	61	59	54	48
	Heating Low Sp	67	62	57	51	51	44	36
	Heating Med. Sp	70	66	61	54	55	48	41
	Heating High Sp	75	72	65	61	61	56	50

Model Series 44VH • Performance Data Unit Size 9

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	1.5	0.7	1.6	12259	9190	0.75	377	13650	32.51
	2.3	1.3	3.1	12579	9430	0.75	311	13725	40.43
	3.0	2.2	5.1	12722	9537	0.75	287	13800	44.29
50	1.5	0.7	1.5	11912	9040	0.76	431	13500	27.63
	2.3	1.3	3.0	12148	9219	0.76	377	13500	32.24
	3.0	2.1	4.9	12267	9310	0.76	354	13650	34.62
60	1.5	0.6	1.5	11549	8885	0.77	488	13350	23.69
	2.3	1.2	2.9	11698	8999	0.77	445	13275	26.27
	3.0	2.0	4.7	11793	9072	0.77	424	13350	27.80
70	1.5	0.6	1.4	11172	8723	0.78	546	13125	20.45
	2.3	1.2	2.8	11231	8768	0.78	517	13050	21.74
	3.0	2.0	4.6	11300	8822	0.78	497	13050	22.73
80	1.5	0.6	1.4	10781	8553	0.79	607	12975	17.75
	2.3	1.2	2.7	10745	8524	0.79	591	12825	18.18
	3.0	1.9	4.4	10787	8558	0.79	573	12900	18.83
90	1.5	0.6	1.3	10375	8373	0.81	671	12750	15.47
	2.3	1.1	2.6	10241	8265	0.81	668	12600	15.33
	3.0	1.8	4.3	10256	8277	0.81	652	12600	15.74
100	1.5	0.5	1.3	9954	8181	0.82	736	12600	13.52
	2.3	1.1	2.5	9719	7988	0.82	748	12375	13.00
	3.0	1.8	4.1	9705	7976	0.82	733	12300	13.24
110	1.5	0.5	1.2	9519	7974	0.84	804	12375	11.83
	2.3	1.1	2.4	9179	7690	0.84	830	12150	11.05
	3.0	1.7	4.0	9135	7653	0.84	818	12000	11.17

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	1.5	1.0	2.2	7610	575	5700	86	3.88
	2.3	1.7	4.0	7285	564	5400	85	3.78
	3.0	2.7	6.2	7339	566	5400	85	3.80
40	1.5	0.9	2.0	8575	588	6600	88	4.27
	2.3	1.5	3.6	8486	581	6525	88	4.28
	3.0	2.4	5.5	8612	582	6750	88	4.34
50	1.5	0.8	1.9	9580	602	7575	90	4.66
	2.3	1.4	3.3	9737	597	7763	91	4.78
	3.0	2.2	5.1	9938	599	7950	91	4.86
60	1.5	0.8	1.8	10625	617	8625	93	5.05
	2.3	1.4	3.1	11038	615	9000	94	5.26
	3.0	2.1	4.8	11317	617	9300	94	5.37
70	1.5	0.8	1.8	11710	632	9600	95	5.43
	2.3	1.4	3.1	12389	633	10350	97	5.74
	3.0	2.0	4.7	12748	636	10650	98	5.88
80	1.5	0.8	1.9	12836	647	10725	98	5.81
	2.3	1.4	3.2	13789	652	11700	100	6.20
	3.0	2.1	4.7	14232	655	12150	101	6.37

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • Performance Data Unit Size 12

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	1.8	0.6	1.4	14636	10637	0.73	440	16290	33.29
	2.7	1.2	2.8	14961	10874	0.73	349	16298	42.88
	3.5	1.9	4.5	14928	10850	0.73	326	16100	45.82
50	1.8	0.6	1.4	14274	10485	0.73	517	16200	27.62
	2.7	1.1	2.6	14537	10678	0.73	440	16165	33.03
	3.5	1.9	4.3	14511	10659	0.73	417	16100	34.80
60	1.8	0.6	1.3	13897	10330	0.74	597	16020	23.27
	2.7	1.1	2.5	14094	10476	0.74	535	16033	26.33
	3.5	1.8	4.1	14075	10462	0.74	512	15925	27.48
70	1.8	0.6	1.3	13504	10170	0.75	681	15930	19.83
	2.7	1.1	2.4	13633	10267	0.75	635	15900	21.48
	3.5	1.7	4.0	13621	10257	0.75	611	15750	22.28
80	1.8	0.5	1.2	13096	10003	0.76	768	15840	17.05
	2.7	1.0	2.4	13154	10048	0.76	738	15768	17.83
	3.5	1.7	3.9	13148	10044	0.76	715	15750	18.40
90	1.8	0.5	1.2	12672	9829	0.78	858	15750	14.76
	2.7	1.0	2.3	12656	9817	0.78	845	15635	14.98
	3.5	1.6	3.7	12658	9818	0.78	822	15575	15.41
100	1.8	0.5	1.2	12232	9644	0.79	952	15570	12.85
	2.7	1.0	2.2	12140	9572	0.79	956	15503	12.70
	3.5	1.6	3.6	12150	9580	0.79	933	15400	13.03
110	1.8	0.5	1.1	11776	9448	0.80	1049	15480	11.22
	2.7	0.9	2.2	11605	9311	0.80	1071	15370	10.83
	3.5	1.5	3.5	11623	9325	0.80	1048	15400	11.09

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	1.8	0.7	1.6	9153	722	6750	84.9	3.71
	2.7	1.3	3.1	9013	721	6625	84.7	3.66
	3.5	2.2	5.0	9442	733	7000	85.5	3.78
40	1.8	0.7	1.6	10363	744	7920	87.2	4.08
	2.7	1.3	2.9	10442	746	7950	87.3	4.10
	3.5	2.0	4.7	10864	755	8400	88.1	4.22
50	1.8	0.6	1.5	11623	766	9090	89.5	4.45
	2.7	1.2	2.8	11930	771	9408	90.1	4.54
	3.5	2.0	4.5	12345	779	9800	90.9	4.65
60	1.8	0.6	1.4	12933	789	10350	91.9	4.80
	2.7	1.2	2.7	13477	797	10865	93.0	4.96
	3.5	1.9	4.3	13885	803	11200	93.7	5.07
70	1.8	0.6	1.4	14293	813	11610	94.5	5.15
	2.7	1.1	2.6	15084	824	12323	95.9	5.36
	3.5	1.8	4.2	15483	828	12775	96.7	5.48
80	1.8	0.6	1.3	15704	838	12960	97.1	5.49
	2.7	1.1	2.5	16749	852	13913	99.0	5.76
	3.5	1.7	4.0	17140	854	14350	99.7	5.88

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

Model Series 44VH • Performance Data Unit Size 15

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	2.3	0.7	1.7	18061	13269	0.73	532	20010	33.97
	3.4	1.4	3.2	18630	13687	0.73	421	20230	44.27
	4.5	2.3	5.3	18938	13913	0.73	399	20475	47.46
50	2.3	0.7	1.6	17614	13126	0.75	617	19895	28.53
	3.4	1.3	3.1	18068	13465	0.75	522	20060	34.63
	4.5	2.2	5.1	18324	13655	0.75	498	20250	36.79
60	2.3	0.7	1.5	17148	12981	0.76	707	19665	24.26
	3.4	1.3	3.0	17482	13234	0.76	627	19720	27.88
	4.5	2.1	4.9	17684	13387	0.76	602	19800	29.39
70	2.3	0.6	1.5	16662	12831	0.77	800	19550	20.82
	3.4	1.3	2.9	16871	12992	0.77	737	19550	22.90
	4.5	2.1	4.8	17017	13104	0.77	710	19575	23.98
80	2.3	0.6	1.4	16158	12673	0.78	897	19320	18.01
	3.4	1.2	2.8	16236	12735	0.78	851	19210	19.08
	4.5	2.0	4.6	16324	12804	0.78	822	19350	19.86
90	2.3	0.6	1.4	15634	12506	0.80	998	19205	15.66
	3.4	1.2	2.7	15578	12460	0.80	970	19040	16.07
	4.5	1.9	4.5	15605	12482	0.80	939	18900	16.63
100	2.3	0.6	1.4	15091	12325	0.82	1103	18975	13.68
	3.4	1.1	2.7	14895	12164	0.82	1093	18700	13.63
	4.5	1.9	4.4	14859	12135	0.82	1060	18675	14.02
110	2.3	0.6	1.3	14529	12128	0.83	1211	18860	12.00
	3.4	1.1	2.6	14188	11843	0.83	1220	18530	11.63
	4.5	1.8	4.3	14087	11758	0.83	1185	18225	11.88

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	2.3	0.8	1.9	11010	807	8280	85.0	3.71
	3.4	1.6	3.7	11075	809	8330	85.1	3.66
	4.5	2.6	6.0	11797	824	9000	86.2	3.78
40	2.3	0.8	1.9	12334	827	9545	87.0	4.08
	3.4	1.5	3.5	12603	830	9860	87.4	4.10
	4.5	2.5	5.7	13251	842	10350	88.4	4.22
50	2.3	0.8	1.8	13712	847	10925	89.2	4.45
	3.4	1.5	3.4	14193	853	9010	89.9	4.54
	4.5	2.4	5.5	14764	862	11925	90.8	4.65
60	2.3	0.7	1.7	15144	869	12305	91.4	4.80
	3.4	1.4	3.2	15845	876	12920	92.5	4.96
	4.5	2.3	5.3	16337	882	13500	93.2	5.07
70	2.3	0.7	1.6	16631	891	13685	93.7	5.15
	3.4	1.4	3.1	17561	901	14620	95.1	5.36
	4.5	2.2	5.1	17968	903	15075	95.7	5.48
80	2.3	0.7	1.6	18173	914	15180	96.0	5.49
	3.4	1.3	3.0	19339	926	16320	97.8	5.76
	4.5	2.1	4.9	19659	925	16650	98.3	5.88

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • Performance Data Unit Size 18

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	2.8	1.1	2.6	21759	16555	0.76	671	24360	32.43
	4.2	2.2	5.0	22369	17019	0.76	528	24693	42.36
	5.5	3.6	8.2	22459	17088	0.76	493	25025	45.54
50	2.8	1.1	2.5	21163	16296	0.77	778	24220	27.22
	4.2	2.1	4.8	21653	16673	0.77	654	24485	33.11
	5.5	3.4	7.9	21731	16733	0.77	618	24750	35.18
60	2.8	1.0	2.4	20542	16031	0.78	889	23940	23.11
	4.2	2.0	4.6	20906	16315	0.78	786	24070	26.61
	5.5	3.3	7.6	20973	16367	0.78	748	24200	28.04
70	2.8	1.0	2.3	19895	15757	0.79	1005	23800	19.80
	4.2	1.9	4.5	20129	15942	0.79	923	23863	21.81
	5.5	3.2	7.4	20183	15985	0.79	884	23925	22.84
80	2.8	1.0	2.2	19222	15470	0.80	1126	23520	17.08
	4.2	1.9	4.3	19320	15549	0.80	1066	23448	18.13
	5.5	3.1	7.1	19362	15583	0.80	1025	23650	18.89
90	2.8	0.9	2.1	18523	15168	0.82	1251	23380	14.81
	4.2	1.8	4.2	18481	15134	0.82	1214	23240	15.22
	5.5	3.0	6.9	18509	15156	0.82	1172	23100	15.80
100	2.8	0.9	2.1	17799	14847	0.83	1381	23100	12.89
	4.2	1.8	4.1	17611	14690	0.83	1368	22825	12.88
	5.5	2.9	6.7	17625	14702	0.83	1324	22825	13.31
110	2.8	0.9	2.0	17049	14503	0.85	1516	22960	11.25
	4.2	1.7	4.0	16710	14214	0.85	1527	22618	10.94
	5.5	2.9	6.6	16709	14213	0.85	1482	22275	11.28

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	2.8	1.3	3.0	13615	1061	10080	86.0	3.76
	4.2	2.5	5.7	13621	1059	10168	86.0	3.77
	5.5	4.0	9.3	14486	1075	11000	87.2	3.95
40	2.8	1.2	2.8	15173	1083	11620	88.1	4.11
	4.2	2.4	5.4	15415	1083	11828	88.4	4.17
	5.5	3.8	8.9	16183	1095	12650	89.4	4.33
50	2.8	1.2	2.7	16796	1105	13160	90.2	4.45
	4.2	2.3	5.2	17284	1108	13695	90.9	4.57
	5.5	3.7	8.5	17949	1116	14300	91.7	4.71
60	2.8	1.1	2.6	18484	1129	14700	92.4	4.80
	4.2	2.2	5.0	19227	1133	15563	93.4	4.97
	5.5	3.5	8.1	19785	1138	15950	94.2	5.09
70	2.8	1.1	2.5	20236	1153	16380	94.8	5.14
	4.2	2.1	4.8	21244	1160	17430	96.1	5.37
	5.5	3.4	7.9	21690	1161	17875	96.7	5.47
80	2.8	1.1	2.4	22052	1179	18200	97.2	5.48
	4.2	2.0	4.7	23335	1188	19505	98.9	5.76
	5.5	3.3	7.6	23664	1185	19800	99.3	5.85

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

Model Series 44VH • Performance Data Unit Size 24

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	4.4	1.8	4.1	29455	21315	0.72	854	32560	34.47
	5.7	2.8	6.4	30137	21809	0.72	753	33060	40.03
	7.0	4.0	9.2	30482	22059	0.72	724	33250	42.11
50	4.4	1.7	4.0	28576	20936	0.73	999	32340	28.59
	5.7	2.7	6.2	29127	21340	0.73	911	32490	31.97
	7.0	3.8	8.8	29401	21540	0.73	882	32550	33.33
60	4.4	1.6	3.8	27658	20545	0.74	1151	31900	24.03
	5.7	2.6	5.9	28073	20853	0.74	1076	31920	26.08
	7.0	3.7	8.5	28273	21001	0.74	1047	32200	26.99
70	4.4	1.6	3.7	26702	20138	0.75	1308	31460	20.41
	5.7	2.5	5.7	26976	20344	0.75	1249	31350	21.60
	7.0	3.5	8.2	27098	20436	0.75	1220	31500	22.22
80	4.4	1.5	3.5	25708	19711	0.77	1473	31020	17.46
	5.7	2.4	5.5	25834	19808	0.77	1428	31065	18.09
	7.0	3.4	7.9	25875	19839	0.77	1399	30800	18.50
90	4.4	1.5	3.4	24675	19258	0.78	1643	30580	15.02
	5.7	2.3	5.4	24649	19237	0.78	1614	30495	15.27
	7.0	3.3	7.7	24606	19204	0.78	1585	30100	15.52
100	4.4	1.4	3.3	23604	18775	0.80	1820	30140	12.97
	5.7	2.3	5.2	23419	18627	0.80	1808	29925	12.96
	7.0	3.2	7.5	23290	18524	0.80	1779	29750	13.09
110	4.4	1.4	3.3	22495	18255	0.81	2003	29480	11.23
	5.7	2.2	5.1	22146	17971	0.81	2008	29355	11.03
	7.0	3.2	7.3	21927	17793	0.81	1979	29050	11.08

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	4.4	0.8	1.9	11010	807	13420	79.3	3.71
	5.7	1.6	3.7	11075	809	13680	79.4	3.66
	7.0	2.6	6.0	11797	824	14350	80.1	3.78
40	4.4	0.8	1.9	12334	827	15620	80.7	4.08
	5.7	1.5	3.5	12603	830	15960	81.0	4.10
	7.0	2.5	5.7	13251	842	16800	81.6	4.22
50	4.4	0.8	1.8	13712	847	17820	82.1	4.45
	5.7	1.5	3.4	14193	853	18525	82.6	4.54
	7.0	2.4	5.5	14764	862	18900	83.2	4.65
60	4.4	0.7	1.7	15144	869	20240	83.6	4.80
	5.7	1.4	3.2	15845	876	20805	84.3	4.96
	7.0	2.3	5.3	16337	882	21350	84.8	5.07
70	4.4	0.7	1.6	16631	891	22660	85.1	5.15
	5.7	1.4	3.1	17561	901	23370	86.1	5.36
	7.0	2.2	5.1	17968	903	23800	86.5	5.48
80	4.4	0.7	1.6	18173	914	25080	86.7	5.49
	5.7	1.3	3.0	19339	926	25935	87.9	5.76
	7.0	2.1	4.9	19659	925	26250	88.2	5.88

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS

Model Series 44VH • Performance Data
Unit Size 30

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	5.5	1.5	3.5	36657	27594	0.75	1074	40700	34.14
	6.8	2.0	4.7	37371	28132	0.75	981	41175	38.08
	8.0	2.6	6.1	37823	28472	0.75	930	41200	40.66
50	5.5	1.4	3.3	35491	27020	0.76	1236	40150	28.71
	6.8	1.9	4.5	36069	27461	0.76	1158	40500	31.14
	8.0	2.6	5.9	36432	27737	0.76	1113	40400	32.73
60	5.5	1.3	3.1	34275	26427	0.77	1406	39325	24.38
	6.8	1.9	4.3	34711	26763	0.77	1343	39488	25.85
	8.0	2.5	5.7	34981	26972	0.77	1304	39600	26.83
70	5.5	1.3	3.0	33008	25809	0.78	1583	38775	20.86
	6.8	1.8	4.2	33296	26034	0.78	1535	38813	21.69
	8.0	2.4	5.5	33470	26170	0.78	1503	38800	22.27
80	5.5	1.2	2.8	31690	25160	0.79	1767	37950	17.94
	6.8	1.7	4.0	31824	25266	0.79	1735	38138	18.34
	8.0	2.3	5.4	31898	25325	0.79	1709	38000	18.66
90	5.5	1.2	2.7	30322	24474	0.81	1957	37400	15.49
	6.8	1.7	3.9	30296	24453	0.81	1943	37125	15.59
	8.0	2.3	5.2	30265	24428	0.81	1924	37200	15.73
100	5.5	1.1	2.6	28903	23743	0.82	2155	36575	13.41
	6.8	1.6	3.8	28711	23586	0.82	2158	36450	13.30
	8.0	2.2	5.1	28573	23472	0.82	2147	36000	13.31
110	5.5	1.1	2.6	27434	22962	0.84	2360	35750	11.62
	6.8	1.6	3.7	27070	22657	0.84	2382	35438	11.37
	8.0	2.1	4.9	26820	22448	0.84	2378	35200	11.28

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	5.5	1.7	3.8	21388	1669	15950	90.0	3.75
	6.8	2.3	5.4	21362	1688	15863	86.0	3.71
	8.0	3.1	7.2	21778	1697	16000	86.3	3.76
40	5.5	1.6	3.7	24088	1716	18425	88.3	4.11
	6.8	2.2	5.1	24247	1738	18563	88.4	4.09
	8.0	3.0	6.8	24691	1748	18800	88.8	4.14
50	5.5	1.5	3.5	26900	1764	21175	90.6	4.47
	6.8	2.1	4.9	27253	1790	21263	90.9	4.46
	8.0	2.8	6.5	27726	1801	21600	91.3	4.51
60	5.5	1.4	3.3	29825	1814	23925	93.1	4.82
	6.8	2.0	4.7	30379	1843	24300	93.6	4.83
	8.0	2.7	6.2	30881	1856	24800	94.0	4.88
70	5.5	1.4	3.2	32863	1866	26675	95.7	5.16
	6.8	1.9	4.5	33625	1899	27338	96.3	5.19
	8.0	2.6	6.0	34156	1912	28000	96.8	5.23
80	5.5	1.3	3.1	36013	1919	29700	98.3	5.50
	6.8	1.9	4.3	36990	1956	30713	99.1	5.54
	8.0	2.5	5.8	37552	1971	31200	99.6	5.58

COP = coefficient of performance **HR** = heat rejection **TC** = total cooling capacity
EER = energy efficiency ratio **LAT** = leaving air temp **W** = power unit
HA = heat absorption **S/T** = sensible/cooling capacity
HC = heating capacity **SC** = sensible capacity

Model Series 44VH • Performance Data Unit Size 36

EWT [°F]	GPM	WPD		COOLING - EAT 80.6 / 66.2 °F					
		PSI	FT	TC (Btu/Hr)	SC (Btu/Hr)	S/T	W (Watts)	HR (Btu/Hr)	EER
40	6.0	1.6	3.6	42184	31825	0.75	1162	46500	36.31
	7.5	2.3	5.3	41742	31491	0.75	1070	45750	39.01
	9.0	3.1	7.2	41828	31557	0.75	1058	45900	39.54
50	6.0	1.5	3.5	41320	31590	0.76	1403	46500	29.46
	7.5	2.2	5.1	40778	31175	0.76	1324	45750	30.81
	9.0	3.0	7.0	40812	31201	0.76	1306	45450	31.26
60	6.0	1.5	3.4	40428	31364	0.78	1654	46500	24.45
	7.5	2.2	5.0	39783	30864	0.78	1588	45375	25.05
	9.0	3.0	6.9	39761	30847	0.78	1564	45450	25.42
70	6.0	1.4	3.3	39508	31144	0.79	1915	46500	20.63
	7.5	2.1	4.9	38756	30551	0.79	1864	45375	20.79
	9.0	2.9	6.7	38676	30489	0.79	1833	45450	21.10
80	6.0	1.4	3.2	38559	30925	0.80	2187	46500	17.63
	7.5	2.0	4.7	37696	30234	0.80	2150	45375	17.53
	9.0	2.8	6.6	37557	30122	0.80	2113	45000	17.78
90	6.0	1.3	3.1	37581	30703	0.82	2469	46500	15.22
	7.5	2.0	4.6	36605	29905	0.82	2448	45375	14.95
	9.0	2.8	6.4	36405	29741	0.82	2403	45000	15.15
100	6.0	1.3	3.0	36576	30472	0.83	2762	46500	13.24
	7.5	1.9	4.4	35482	29561	0.83	2756	45375	12.87
	9.0	2.7	6.2	35218	29340	0.83	2704	45000	13.02
110	6.0	1.2	2.8	35541	30227	0.85	3065	46500	11.60
	7.5	1.9	4.3	34327	29195	0.85	3076	45000	11.16
	9.0	2.6	6.1	33997	28914	0.85	3016	44550	11.27

EWT [°F]	GPM	WPD		HEATING - EAT 68 °F				
		PSI	FT	HC (Btu/Hr)	W	HA (Btu/Hr)	LAT	COP
30	6.0	1.9	4.3	26292	2117	19200	86.7	3.64
	7.5	2.7	6.2	26207	2115	19125	86.7	3.63
	9.0	3.7	8.5	26947	2136	19800	87.2	3.70
40	6.0	1.8	4.1	29362	2177	22200	88.9	3.95
	7.5	2.6	5.9	29500	2177	22125	89.0	3.97
	9.0	3.5	8.1	30248	2195	22950	89.5	4.04
50	6.0	1.7	3.9	32561	2240	25200	91.2	4.26
	7.5	2.4	5.6	32933	2242	25500	91.5	4.31
	9.0	3.3	7.7	33687	2256	26100	92.0	4.38
60	6.0	1.6	3.7	35890	2305	28200	93.6	4.56
	7.5	2.3	5.4	36505	2309	28875	94.0	4.63
	9.0	3.2	7.4	37265	2320	29700	94.5	4.71
70	6.0	1.6	3.6	39349	2373	31500	96.0	4.86
	7.5	2.3	5.2	40215	2379	32250	96.6	4.95
	9.0	3.1	7.1	40982	2387	33300	97.2	5.03
80	6.0	1.5	3.5	42938	2443	34800	98.6	5.15
	7.5	2.2	5.0	44065	2452	21000	99.4	5.27
	9.0	3.0	6.9	44837	2456	35100	99.9	5.35

COP = coefficient of performance
EER = energy efficiency ratio
HA = heat absorption
HC = heating capacity

HR = heat rejection
LAT = leaving air temp
S/T = sensible/cooling capacity
SC = sensible capacity

TC = total cooling capacity
W = power unit

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SERENITY VERTICAL HI-RISE WATER SOURCE HEAT PUMP UNITS