

BATTERY SYSTEMSOLUTIONS



The most comprehensive range of VRLA battery systems designed for standby applications that require reliable power and long life



CV High Capacity
Modular Batteries
20 Year Design Life
210 AH to 5040 AH

POWER 
Power for a World of Applications



Applications

- Telecom, wired and wireless.
- UPS.
- Switchgear.
- Renewable Energy.
- Emergency Lighting.

Features and Specifications

- Design Life: 20 years in float service at 77° F (25° C).
- Cell Type: VRLA, with AGM method of electrolyte immobilization.
- Grids: Positive - proprietary, lead calcium.
Negative - lead calcium.
- Container and cover: impact resistant polypropylene, with FR to UL 94 V0 optional.
- Terminals: - 100% copper, threaded for an inserted bolt, size M8.
- Torque value is 150 in.-Lbs. / 16.8 N-m.
- Terminals per cell: CV 210-735; 2 terminals per cell.
CV 840-1365; 4 terminals per cell.
CV 1470-1680; 6 terminals per cell.
- Post Seals: 2 part epoxy, 2 stage application.
- Jar to cover seal: heat bonding method (Hardigg Machine).
- Leak test method: 100% of cells, with pressurized hydrogen.
- Safety Valve: opens at 2.5 psi, closes at 2 psi, with flame arrestor in each valve. The Bunsen design is used.
- Patented catalyst in each cell: improves life by lowering float current, reducing grid corrosion and reducing water loss. It's effects are even more apparent in higher temperatures.
- Separators: microporous glass mat, H&V is standard.
- Plate protection: plate growth without damage is allowed by a collapsible bridge installed in the bottom of the container.
- Electrolyte: sulphuric acid solution, 1.300 s.g, when fully charged.
- Float Voltage: 2.25 volts per cell at 77° F (25° C).
- Self-discharge rate: 2% per month at 77° F (25° C).
- Intercell connectors: plated copper bussbars.
- Modules: - Stackable to 8 high while certified to UBC seismic zone 4.
- Welded steel construction.
- Internal air passages aid heat dissipation, ensure constant cell temperatures.
- Coated with an acid resistant powdered epoxy.
- Cell fronts are protected with a transparent, FR plastic cover.

DISCHARGE RATE IN AMPERES TO FINAL VOLTAGES INDICATED AT 77° F (25° C)

Cell model	AH @ C/8	Final end Volts	Hours									
			0.5	1	2	3	4	6	8	10	12	24
CV 210	210	1.75	166	126	79	58	48	33	26	22	18	10
		1.80	161	122	76	56	46	32	25	21	17	10
		1.84	156	118	72	54	45	31	24	20	17	9
CV 315	315	1.75	249	189	118	87	72	50	40	32	27	16
		1.80	241	183	113	84	69	48	38	31	26	15
		1.84	234	117	107	82	68	47	37	30	25	14
CV 420	420	1.75	332	252	158	116	96	66	53	43	36	21
		1.80	321	244	151	112	92	64	51	42	35	20
		1.84	311	236	144	109	91	62	49	40	34	19
CV 525	525	1.75	436	315	197	145	120	83	66	54	45	26
		1.80	422	305	189	141	115	80	64	52	44	25
		1.84	409	296	179	136	114	78	61	51	43	24
CV 630	630	1.75	523	378	237	174	144	100	79	65	56	31
		1.80	506	366	227	169	138	96	76	63	55	30
		1.84	491	355	215	163	137	93	74	62	53	29
CV 735	735	1.75	610	441	276	203	168	117	92	76	65	36
		1.80	590	427	265	197	161	112	89	73	64	35
		1.84	573	414	251	190	160	108	86	72	62	34
CV 840	840	1.75	687	504	316	232	192	133	105	86	75	42
		1.80	673	487	303	225	184	129	102	84	73	41
		1.84	655	474	287	217	182	124	98	82	71	39
CV 945	945	1.75	784	567	355	261	216	150	118	97	84	47
		1.80	758	548	341	253	207	145	114	94	82	46
		1.84	737	533	321	244	205	141	111	92	80	44
CV 1050	1050	1.75	871	630	395	290	240	167	131	108	93	52
		1.80	842	609	379	282	230	161	127	105	91	51
		1.84	819	592	355	271	228	155	123	103	89	49
CV 1155	1155	1.75	958	693	434	319	264	183	144	119	103	57
		1.80	931	673	417	310	253	177	140	115	100	56
		1.84	900	651	395	298	251	171	135	113	98	54
CV 1260	1260	1.75	1045	756	474	348	288	200	157	130	112	62
		1.80	1011	731	455	338	276	193	153	126	109	61
		1.84	983	711	431	325	273	186	148	123	107	59
CV 1365	1365	1.75	1133	819	513	377	312	217	171	140	121	68
		1.80	1095	792	493	366	299	209	165	136	119	66
		1.84	1065	770	467	352	296	202	160	134	116	64
CV 1470	1470	1.75	1220	882	553	405	336	233	184	151	131	73
		1.80	1180	853	531	393	322	225	178	147	128	71
		1.84	1146	829	503	378	319	217	172	144	125	69
CV 1575	1575	1.75	1307	945	592	435	360	250	197	162	140	78
		1.80	1264	914	569	422	345	241	191	157	137	76
		1.84	1228	888	539	407	342	233	185	154	134	73
CV 1680	1680	1.75	1394	1008	632	464	384	267	210	173	149	83
		1.80	1348	975	606	451	369	257	203	168	146	82
		1.84	1310	947	575	434	365	248	195	164	143	78
CV 1890	1890	1.75	1568	1134	711	522	432	300	236	194	168	94
		1.80	1516	1096	682	507	415	289	229	189	164	92
		1.84	1474	1066	647	488	410	280	222	185	160	88
CV 2100	2100	1.75	1742	1260	790	580	480	333	262	216	187	104
		1.80	1684	1218	758	563	461	322	254	210	182	102
		1.84	1637	1184	719	542	456	310	246	207	178	98
CV 2310	2310	1.75	1916	1386	868	638	528	366	288	238	206	114
		1.80	1862	1346	834	620	506	354	280	230	200	112
		1.84	1800	1302	790	596	502	342	270	226	196	108
CV 2520	2520	1.75	2091	1512	948	696	576	400	315	259	224	125
		1.80	2022	1462	910	676	553	386	305	252	219	122
		1.84	1965	1421	882	651	547	373	295	242	214	118
CV 2835	2835	1.75	2352	1701	1066	783	648	450	354	292	252	141
		1.80	2274	1644	1023	760	622	434	343	283	246	138
		1.84	2211	1599	964	732	616	423	332	277	241	132
CV 3150	3150	1.75	2614	1890	1185	870	700	500	394	324	280	156
		1.80	2528	1828	1137	845	691	482	381	315	274	153
		1.84	2457	1777	1078	813	684	466	369	308	268	147
CV 3465	3465	1.75	2875	2079	1304	957	792	550	433	356	308	172
		1.80	2780	2010	1252	929	760	531	420	346	301	168
		1.84	2702	1954	1187	895	752	513	406	339	294	162
CV 3780	3780	1.75	3137	2268	1422	1044	864	600	472	389	336	187
		1.80	3033	2193	1365	1014	829	579	458	377	328	184
		1.84	2948	2132	1294	976	821	559	443	370	321	177
CV 4095	4095	1.75	3398	2457	1540	1131	936	650	512	421	364	203
		1.80	3286	2376	1479	1098	898	627	496	409	356	199
		1.84	3195	2310	1402	1057	889	606	480	401	348	191
CV 4410	4410	1.75	2659	2646	1659	1131	1008	700	551	454	392	219
		1.80	3539	2559	1592	1098	968	675	534	440	383	214
		1.84	3439	2487	1509	1057	957	652	517	432	375	206
CV 4725	4725	1.75	3921	2835	1777	1305	1080	750	591	486	420	234
		1.80	3791	2741	1706	1267	1037	724	572	472	402	230
		1.84	2686	2665	1617	1220	1026	699	554	463	401	221
CV 5040	5040	1.75	4182	3024	1896	1392	1152	800	630	518	448	250
		1.80	4044	2924	1820	1352	1106	772	610	503	438	245
		1.84	3930	2842	1725	1301	1094	746	591	493	428	235

Data is subject to change without notice

DISCHARGE RATE IN WATTS TO FINAL VOLTAGES INDICATED AT 77° F (25° C)

Cell model	Final end Volts	Watts per cell										
		Minutes							Hours			
		5	10	15	20	30	45	60	1.5	2	3	4
CV 210	1.67	562	508	456	394	312	272	240	192			
	1.75	534	484	434	382	304	264	234	188	150	110	92
CV 315	1.67	843	762	684	591	468	408	360	288			
	1.75	801	726	651	573	456	396	351	282	225	165	138
CV 420	1.67	1124	1016	912	788	624	544	480	384			
	1.75	1068	968	868	764	608	528	468	376	300	220	184
CV 525	1.67	1405	1270	1140	985	780	680	600	480			
	1.75	1335	1210	1085	955	760	660	585	470	375	275	230
CV 630	1.67	1686	1524	1368	1182	936	816	720	576			
	1.75	1602	1452	1302	1146	912	792	702	564	450	330	276
CV 735	1.67	1967	1778	1596	1379	1092	952	840	672			
	1.75	1869	1694	1519	1337	1064	924	819	658	525	385	322
CV 840	1.67	2248	2032	1824	1576	1248	1088	960	768			
	1.75	2136	1936	1736	1528	1216	1056	936	752	600	440	368
CV 945	1.67	2529	2286	2052	1773	1404	1220	1080	864			
	1.75	2403	2178	1953	1719	1368	1188	1053	846	675	495	414
CV 1050	1.67	2810	2540	2280	1970	1560	1356	1200	960			
	1.75	2670	2420	2170	1910	1520	1320	1170	940	750	550	460
CV 1155	1.67	3091	2794	2508	2167	1716	1492	1320	1056			
	1.75	2937	2662	2387	2101	1672	1452	1287	1034	825	605	506
CV 1260	1.67	3372	3048	2736	2364	1872	1628	1440	1152			
	1.75	3204	2904	2604	2292	1824	1584	1404	1128	900	660	552
CV 1365	1.67	3653	3302	2964	2561	2028	1764	1560	1248			
	1.75	3471	3146	2821	2483	1976	1716	1521	1222	975	715	598
CV 1470	1.67	3934	3556	3192	2758	2184	1900	1680	1344			
	1.75	3738	3388	3038	2674	2128	1848	1638	1316	1050	770	644
CV 1575	1.67	4215	3810	3420	2955	2340	2036	1800	1440			
	1.75	4005	3630	3255	2865	2280	1980	1755	1410	1125	825	690
CV 1680	1.67	4496	4064	3648	3152	2496	2172	1920	1536			
	1.75	4272	3872	3472	3056	2432	2112	1872	1504	1200	880	736
CV 1890	1.67	5058	4572	4104	3546	2808	2448	2160	1728			
	1.75	4806	4356	3906	3438	2736	2376	2106	1692	1350	990	828
CV 2100	1.67	5620	5080	4560	3940	3120	2720	2400	1920			
	1.75	5340	4840	4340	3820	3040	2640	2340	1880	1500	1100	92
CV 2310	1.67	6182	5588	5016	4334	3432	2992	2640	2112			
	1.75	5874	5324	4774	4202	3344	2904	2574	2068	1650	1210	1012
CV 2520	1.67	6744	6096	5472	4728	3744	3264	2880	2304			
	1.75	6408	5808	5208	4584	3648	3168	2808	2256	1800	1320	1104
CV 2835	1.67	7587	6858	6156	5319	4212	3672	3240	2592			
	1.75	7209	6534	5859	5157	4104	3564	3159	2538	2025	1485	1242
CV 3150	1.67	8430	7620	6840	5910	4680	4080	3600	2880			
	1.75	8010	7260	6510	5730	4560	3960	3510	2820	2250	1650	1380
CV 3465	1.67	9273	8382	7524	6501	5148	4488	3960	3168			
	1.75	8811	7986	7161	6303	5016	4356	3861	3102	2475	1815	1518
CV 3780	1.67	10116	9144	8208	7092	5616	4896	4320	3456			
	1.75	9612	8712	7812	6876	5472	4752	4212	3384	2700	1980	1656
CV 4095	1.67	10959	9906	8892	7683	6084	5304	4680	3744			
	1.75	10413	9438	8463	7449	5928	5148	4563	3666	2925	2145	1794
CV 4410	1.67	11802	10668	9576	8274	6552	5712	5040	4032			
	1.75	11214	10164	9114	8022	6384	5544	4919	3948	3150	2310	1932
CV 4725	1.67	12645	11430	10260	8865	7020	6120	5400	4320			
	1.75	12015	10890	9765	8595	6840	5940	5265	4320	3375	2475	2070
CV 5040	1.67	13488	12192	10944	9456	7488	6528	5760	4608			
	1.75	12816	11616	10416	9168	7296	6336	5616	4512	3600	2640	2208

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POWER CV LINE GENERAL SPECIFICATIONS

Module			Dimensions inches / millimeters			Weight
Model	AH @ C/8	Voltage	Width	Depth*	Height**	lbs / kgs
6 CV 210	210	12	22.5 / 572	23.7 / 602	10.9 / 277	315 / 144
6 CV 315	315	12	22.5 / 572	23.7 / 602	10.9 / 277	421 / 192
6 CV 420	420	12	27.0 / 686	23.7 / 602	10.9 / 277	528 / 240
6 CV 525	525	12	31.5 / 801	23.7 / 602	10.9 / 277	648 / 295
6 CV 630	630	12	36.0 / 915	23.7 / 602	10.9 / 277	755 / 343
6 CV 735	735	12	40.5 / 1029	23.7 / 602	10.9 / 277	849 / 386
4 CV 840	840	8	31.2 / 793	23.7 / 602	10.9 / 277	639 / 291
4 CV 945	945	8	34.2 / 869	23.7 / 602	10.9 / 277	684 / 311
4 CV 1050	1050	8	37.2 / 945	23.7 / 602	10.9 / 277	755 / 343
4 CV 1155	1155	8	40.2 / 1022	23.7 / 602	10.9 / 277	827 / 376
4 CV 1260	1260	8	43.2 / 1098	23.7 / 602	10.9 / 277	898 / 408
3 CV 1365	1365	6	36.8 / 935	23.7 / 602	10.9 / 277	751 / 260
3 CV 1470	1470	6	39.0 / 991	23.7 / 602	10.9 / 277	805 / 366
3 CV 1575	1575	6	41.2 / 1047	23.7 / 602	10.9 / 277	858 / 390
3 CV 1680	1680	6	43.5 / 1105	23.7 / 602	10.9 / 277	912 / 415
2 CV 1890	1890	4	36.0 / 915	23.7 / 602	10.9 / 277	755 / 343
2 CV 2100	2100	4	37.2 / 945	23.7 / 602	10.9 / 277	755 / 343
2 CV 2310	2310	4	40.2 / 1022	23.7 / 602	10.9 / 277	827 / 376
2 CV 2520	2520	4	43.2 / 1098	23.7 / 602	10.9 / 277	898 / 408
1 CV 2835	2835	2	27.7 / 704	23.7 / 602	10.9 / 277	537 / 244
1 CV 3150	3150	2	30.0 / 762	23.7 / 602	10.9 / 277	591 / 269
1 CV 3465	3465	2	32.2 / 818	23.7 / 602	10.9 / 277	644 / 293
1 CV 3780	3780	2	34.5 / 877	23.7 / 602	10.9 / 277	698 / 317
1 CV 4095	4095	2	36.7 / 933	23.7 / 602	10.9 / 277	751 / 341
1 CV 4410	4410	2	39.0 / 991	23.7 / 602	10.9 / 277	805 / 366
1 CV 4725	4724	2	41.2 / 1047	23.7 / 602	10.9 / 277	858 / 390
1 CV 5040	5040	2	43.5 / 1105	23.7 / 602	10.9 / 277	912 / 415

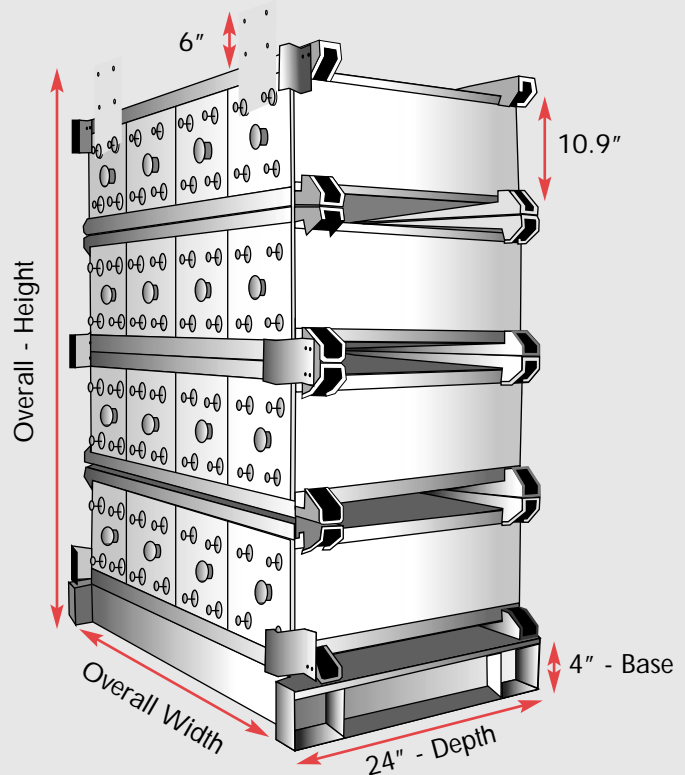
* **Overall depth:** The module depth includes the module cover. The overall depth including the base assembly is 24" / 610 mm.

** **Overall height:** To determine the overall height of a stack, add the total number of module heights plus 4" / 102 mm for the base assembly and 6" / 152.4 mm for the terminal assembly.

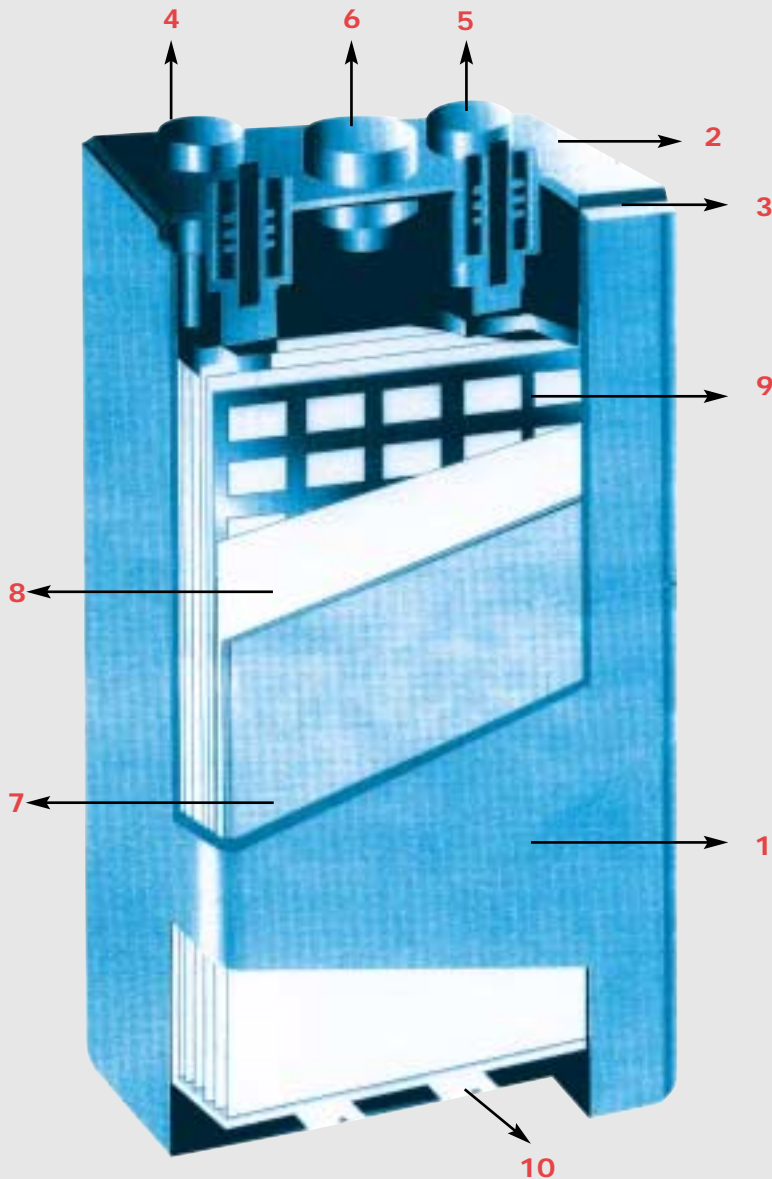
Battery Systems Include:

- Cells
- Modules
- Connectors
- Mounting Base
- Module Covers
- Terminal Assembly
- Lifting Strap
- No Oxide Grease
- Cell Numbers
- Layout Drawing/BOM
- Operating Manual

Modules are shipped 4 per pallet, with connectors and accessories on top of the pallets



CELL DETAILS



- 1- Container, high impact polypropylene, FR optional
- 2- Cover, high impact polypropylene, FR optional
- 3- Thermal welded container-to-cover seal
- 4- Positive post, sealed with epoxy
- 5- Negative post, sealed with epoxy
- 6- Catalyst valve
- 7- Negative plate, lead calcium grid alloy
- 8- Separator, H&V AGM
- 9- Positive plate, proprietary lead calcium
- 10- Plate support, collapsible, 0.77 inches high

ABOUT THE CATALYST VALVE

- Patented by Philadelphia Scientific
- Effect on the cells/battery
 - Lowers the float current draw
 - Reduces the rate of positive grid corrosion
 - Converts gases created inside the cell back to water, thus enabling the recombination process to function at maximum efficiency
 - Prevents the negative plate from becoming discharged while on float charge thus maintaining full cell capacity
 - Greatly reduces the loss of water through the valve, preventing early failure from cell dryout
- It will not allow excessive heat to build if the battery is charged at too high a rate. It will allow the gases to bypass the catalyst if the temperature reaches a set level
- The catalyst active material will last the lifetime of the battery under normal operating conditions



Solid rack construction



The latest in production equipment is used for constant reliability.



Post seals consist of a two-stage application of epoxy.



Cells are given high rate and cycle tests in the labs, using large capacity equipment.

