BAE SECURA OPzV-V0

Technical Specification for Stationary VRLA - Cells

UL file no. MH65082

1. Application

The BAE OPzV-V0 Series VRLA tubular plate gel batteries belong to the best EUROBAT classification for maintenance free lead-acid batteries. These are classified as >12 years, long life, the highest classification according to EUROBAT. They are ideally suited for standby operations with high requirement of operational safety. They perfectly meet requirements for bridging times between 1h to more than 10h.
*The batteries are **UL 1973 Component Level Listed** and marked!*

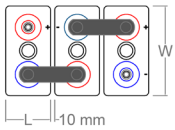
Application Uses:
Telecommunications
Microwave radio systems
Emergency lighting
Power generation plants
Electrical utilities applications
Outdoor enclosures
Photovoltaic applications

2. Types, capacities, dimensions, weight

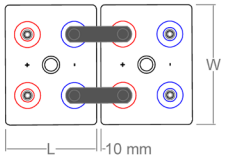
Type	1 min 25°C	C_1 25°C	C_4 25°C	C_8 25°C	C_{12} 25°C	R_i 1)	I_k 2)	Length (L)	Width (W)	Height (H)	Weight filled	Lead mass
U_e V/cell	Amps 1.75	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.75	mΩ	kA	inch	inch	inch	lbs	lbs
2 OPzV 100-V0	190	64	100	120	127	1.65	1.30	4.06	8.11	15.95	27.4	17.2
3 OPzV 150-V0	269	96	152	176	192	1.15	1.86	4.06	8.11	15.95	37.6	23.2
4 OPzV 200-V0	342	128	204	232	256	0.89	2.40	4.06	8.11	15.95	42.7	29.2
5 OPzV 250-V0	408	161	256	296	320	0.73	2.91	4.88	8.11	15.95	51.4	35.2
6 OPzV 300-V0	468	192	304	352	384	0.63	3.39	5.71	8.11	15.95	60.4	41.3
5 OPzV 350-V0	429	214	356	416	476	0.68	3.14	4.88	8.11	20.47	69.3	47.7
6 OPzV 420-V0	491	257	424	504	564	0.58	3.64	5.71	8.11	20.47	81.4	56.0
7 OPzV 490-V0	547	300	496	584	650	0.52	4.12	6.54	8.11	20.47	93.5	64.4
6 OPzV 600-V0	610	358	616	720	780	0.47	4.63	5.71	8.11	27.44	112.4	78.6
7 OPzV 700-V0	800	418	716	840	917	0.36	5.81	8.27	7.52	27.44	136.4	93.5
8 OPzV 800-V0	895	478	820	960	1037	0.32	6.54	8.27	7.52	27.44	151.6	105.2
9 OPzV 900-V0	1022	538	920	1072	1172	0.34	6.29	8.27	9.17	27.44	169.7	117.0
10 OPzV 1000-V0	1166	598	1020	1192	1284	0.28	7.50	8.27	9.17	27.44	185.0	128.6
11 OPzV 1100-V0	1174	657	1124	1312	1416	0.28	7.56	8.27	10.83	27.44	203.4	140.5
12 OPzV 1200-V0	1306	717	1228	1432	1536	0.24	8.63	8.27	10.83	27.44	218.6	152.1
11 OPzV 1375-V0	1212	710	1248	1536	1680	0.27	7.86	8.27	10.83	33.27	238.6	160.7
12 OPzV 1500-V0	1347	775	1364	1672	1824	0.23	9.18	8.27	10.83	33.27	256.8	174.5
13 OPzV 1625-V0	1613	839	1480	1808	2016	0.18	11.91	8.43	15.71	32.36	289.8	191.0
14 OPzV 1750-V0	1698	904	1592	1944	2208	0.17	13.63	8.43	15.71	32.36	311.4	204.3
15 OPzV 1875-V0	1780	969	1708	2088	2304	0.16	13.25	8.43	15.71	32.36	326.0	217.8
16 OPzV 2000-V0	1863	1033	1820	2224	2448	0.15	13.94	8.43	15.71	32.36	344.3	231.7
17 OPzV 2125-V0	2080	1098	1932	2368	2640	0.14	15.32	8.35	19.17	32.36	382.6	254.3
18 OPzV 2250-V0	2212	1162	2048	2504	2784	0.13	16.03	8.35	19.17	32.36	400.0	267.6
19 OPzV 2375-V0	2253	1227	2160	2648	2916	0.12	16.70	8.35	19.17	32.36	418.0	281.1
20 OPzV 2500-V0	2482	1292	2276	2784	3060	0.12	17.37	8.35	19.17	32.36	436.2	294.9
22 OPzV 2750-V0	2637	1421	2504	3056	3420	0.14	18.43	8.35	22.68	32.36	453.4	322.2
24 OPzV 3000-V0	2788	1550	2732	3336	3696	0.10	19.76	8.35	22.68	32.36	489.5	349.3
26 OPzV 3250-V0	2935	1679	2960	3616	3876	0.10	21.02	8.35	22.68	32.36	518.3	376.3

1) Internal resistance from IEC 60896-11; 2) Short circuit current from IEC 60896-11; All data is subject to change.
Height (H) is the maximum distance between container bottom and top of the bolts in assembled condition.

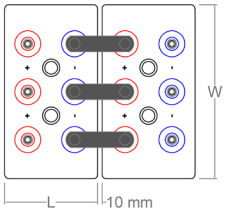
3. Terminal position



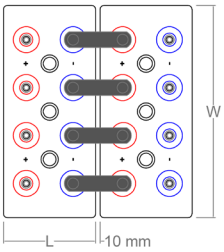
2 OPzV 100-V0 to
6 OPzV 600-V0



7 OPzV 700-V0 to
12 OPzV 1500-V0



13 OPzV 1625-V0 to
16 OPzV 2000-V0



17 OPzV 2125-V0 to
26 OPzV 3250-V0

BAE USA Reliable Energy

Technical Specification for BAE *SECURA OPzV-V0*

4. Design

Positive electrode	Tubular plate with a polyester gauntlet and solid grids in a corrosion-resistant PbCaSn alloy
Negative electrode	Round-grid flat plate in a PbCaSn alloy with long-life expander material
Separation	Microporous separator
Electrolyte	Sulphuric acid with a density of 1.24 kg/l, fixed as a GEL by fumed silica
Container and lid	High impact ABS (Acrylonitrile-Butadiene-Styrene), UL 94 V-0 rating, grey
Valve	Valve with flame arrestor, opening pressure approx. 120 mbar, closing pressure approx. 50 mbar
Pole - bushing	100% gas and electrolyte tight, sliding, injection moulded “Panzerpol”
Kind of pole	M10 brass insertion
Intercell connectors	Insulated solid copper connectors with cross-sections of 90, 150 or 300 mm² depending upon application. Optional flexible connectors.
Inter-tier connectors	Flexible insulated copper cables
Connector screw	M10 stainless steel with insulated cap
Kind of protection	IP 25 regarding DIN 40050, touch protected according VBG 4
Horizontal operation	Please use BAE special type OPzV-V0 “horizontal”. The construction and production of this type is adapted to the horizontal operation.

5. Charging

IU - characteristic	Recommended: $I_{max} = 2 \times I_{10}$ U = 2.25 V/cell +- 1%, between 10°C and 45°C (50°F to 113°F) $\Delta U/\Delta T$ = -0.003 V/K below 10°C in the monthly average
Float current	20 to 30 mA/100 Ah
Boost charge	U = 2.33 to 2.40 V/cell, time limited
Charging time up to 90%	6h with 1.5 x I_{10} initial current, 2.25 V/cell, 50% C10 discharged

6. Discharge characteristics

reference temperature	25°C (77°F)
initial capacity	95% or better at time of delivery
depth of discharge (DOD)	Normally up to 80%
deep discharges	More than 80% DOD or discharges beyond final discharge voltages (dependent on discharge current) have to be avoided

7. Maintenance

Every 6 months	Check and record battery voltage, pilot cell voltages and temperatures
Every 12 months	Check and record battery voltage, cell voltages and temperatures

8. Operational data

Classification - EUROBAT	> 12 years, Long life
Operational life	20 years in standby operation, float at 20°C to 25°C (68°F to 77°F)
Maintenance-free	No topping off water during life
IEC 60 896-2 cycles	>1500
Self-discharge	Approx. 2% per month at 20°C (68°F)
Operational temperature	-20°C to 45°C (-4°F to 113°F), recommended 10°C to 30°C (50°F to 86°F), short periods at 45°C to 52°C (113°F to 126°F) up to OPzV 600-V0 and 45°C to 50°C (113°F to 122°F) for OPzV 700-V0 to OPzV 3250-V0
Standard	DIN 40742 part 1
Tests according to	IEC 60896-21, -22
Safety standard, ventilation	DIN EN 50272-2, Ventilation requirements are reduced to 20% compared to those for vented batteries of the same capacity
Transport	Subject to DOT Regulations – See SDS for details.
UL Safety Listing/Recognition	UL 1973 Component Level Listed, UL File No. MH65082 UL 1989 Recognized, UL File No. MH64832 UL 9540A LA Cell Battery Test Report, Proj. No 4790338189, (OPzV 100-V0 to OPzV 600-V0) UL 9540A LA Cell Battery Test Report, Project No. 4790483086, (OPzV 700-V0 to OPzV 3250-V0)

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