



VLADAR OPzS

Stationary batteries
with modified
tubular electrodes



VLADAR OPzS – stationary batteries produced in accordance with “Calcium Plus” technology and are intended for wide range of application.



APPLICATION:

VLADAR OPzS batteries are applied as uninterrupted power supply at electric power stations and substations, communications and telegraph centrals and for other types of uninterrupted energy supply equipment at the constant recharge and charge–discharge modes.

DESIGN:

Positive electrode, tubular plate filled with unique active material PLUDERTEC® providing higher cell lifetime along with required electrical characteristics.

Negative electrode – pasted grid plate made of patented lead–calcium–tin alloy providing long battery service life.

Separation: electrodes are separated by special high–porous separator made of polymeric materials.

Container and lid: made of impact plastic that enables easy service and mechanical stability during all service life. Both cell sides have marking of minimal and maximum electrolyte levels.

Advantages of “Calcium Plus” technology (calcium alloying of negative electrode):

- **2,5 times less electrolyte evaporation;**
- **higher corrosion resistance of electrodes;**
- **overcharge resistance;**
- **low battery self–discharge.**

Electrolyte: water solution of sulfuric acid with density of $1.245 \pm 0.005 \text{ g/cm}^3$

Pole terminal: sealed pole terminal with solid brass bush for bolt M10.

Ventilation plugs: plugs design prevents electrolyte splashing even

at charging with higher voltage. Plugs are applied as extra means of ignition prevention (to increase safety) and catalytic recombination (to decrease water loss).

Connectors: flexible or made of solid copper.

Temperature range: from +5 to +45°C (+20°C is preferable).

Installation: all standard installations in vertical position and on isolated racks are acceptable.

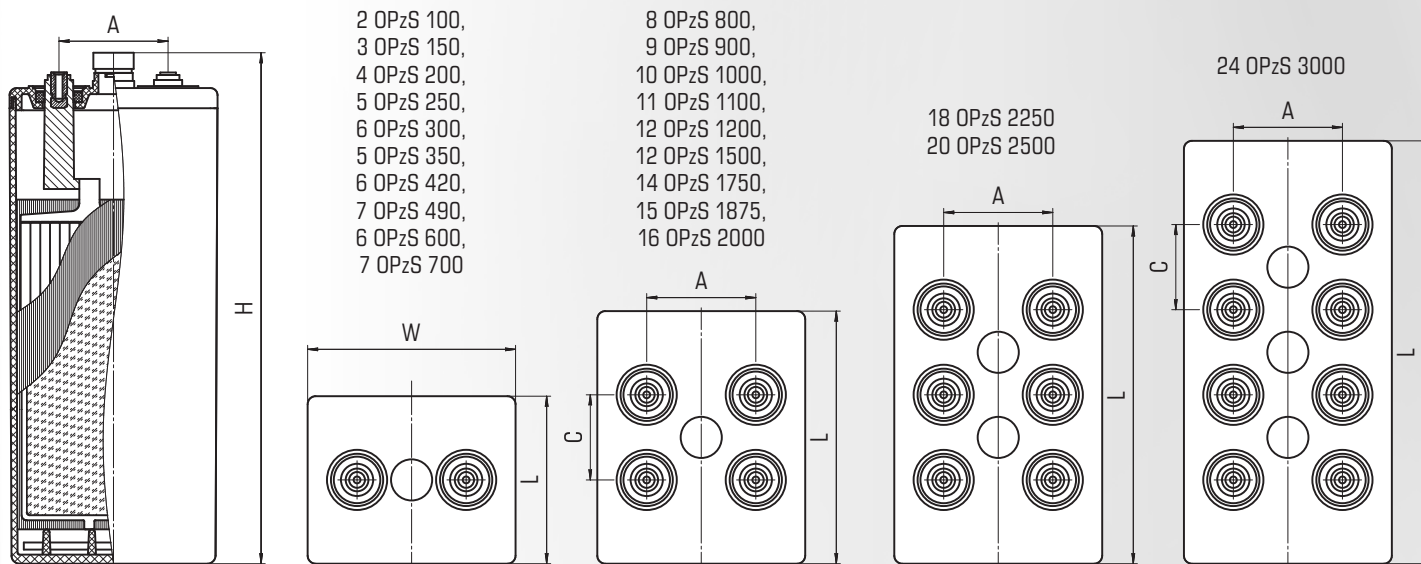
Service life: not less then 20 years at buffer mode and proper operation.



BATTERIES SPECIFICATIONS

Battery type	Battery dimensions, mm					Weight without electrolyte, not more, kg	Weight with electrolyte, not more, kg
	L	W	H	A	C		
2 OPzS 100	105±1	206±1	420±5	108±1	—	8,5	13,5
3 OPzS 150	105±1	206±1	420±5	108±1	—	11,0	16,0
4 OPzS 200	105±1	206±1	420±5	108±1	—	14,0	19,0
5 OPzS 250	125±1	206±1	420±5	108±1	—	16,5	22,0
6 OPzS 300	145±1	206±1	420±5	108±1	—	20,5	26,5
4 OPzS 280	125±1	206±1	505±5	108±1	—	18,0	27,0
5 OPzS 350	125±1	206±1	505±5	108±1	—	21,0	29,0
6 OPzS 420	145±1	206±1	535±5	108±1	—	24,5	33,5
7 OPzS 490	165±1	206±1	535±5	108±1	—	27,5	38,0
6 OPzS 600	145±1	206±1	710±5	108±1	—	34,0	47,0
7 OPzS 700	193±1	215±1	710±5	108±1	—	42,0	60,0
8 OPzS 800	193±1	215±1	710±5	108±1	80±1	46,5	63,5
9 OPzS 900	235±1	215±1	710±5	108±1	110±1	50,0	74,0
10 OPzS 1000	235±1	215±1	710±5	108±1	110±1	54,5	77,0
11 OPzS 1100	277±1	215±1	710±5	108±1	110±1	61,0	88,0
12 OPzS 1200	277±1	215±1	710±5	108±1	140±1	65,0	91,0
12 OPzS 1500	277±1	215±1	840±5	108±1	140±1	84,0	119,0
14 OPzS 1750	400±1	215±1	840±5	108±1	110±1	96,0	147,0
15 OPzS 1875	400±1	215±1	840±5	108±1	110±1	102,0	152,0
16 OPzS 2000	400±1	215±1	840±5	108±1	110±1	107,0	156,0
18 OPzS 2250	487±1	215±1	840±5	108±1	110±1	125,0	190,0
20 OPzS 2500	487±1	215±1	840±5	108±1	110±1	136,0	200,0
24 OPzS 3000	585±1	215±1	840±5	108±1	140±1	166,0	240,0

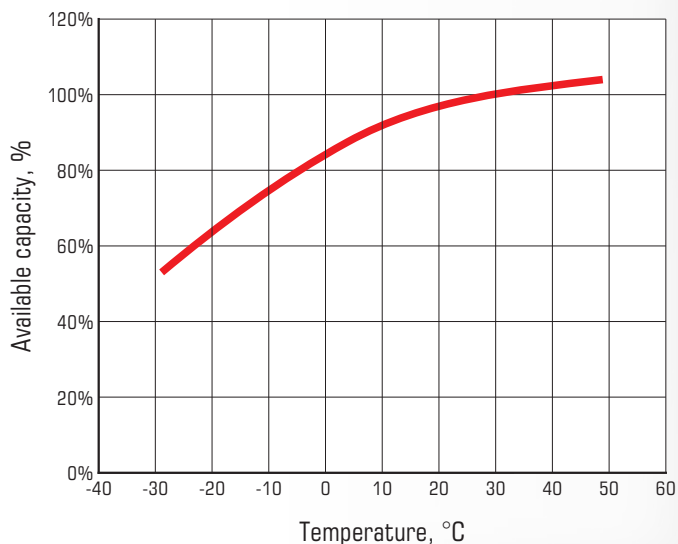
MAIN DIMENSIONS AND TERMINALS LOCATION



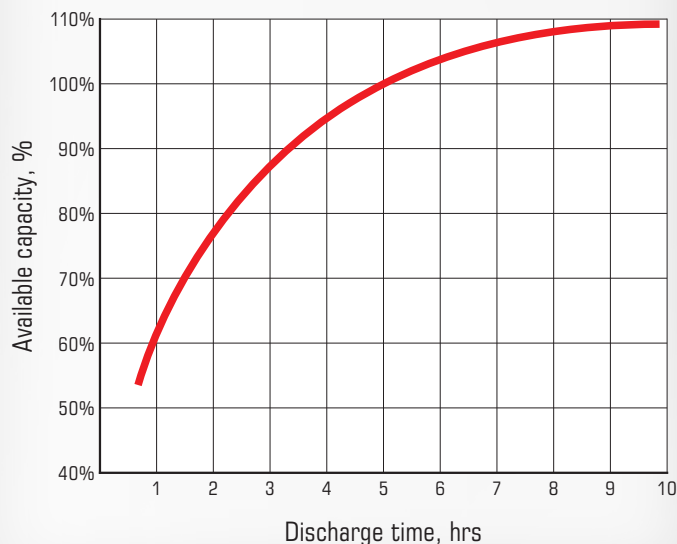
DISCHARGE CHARACTERISTICS OF OPzS SERIES (Constant Current, A)

Cell Type	Discharge Time to 1.8 Vpc, min										
	10	15	30	60	90	120	180	240	300	480	600
2 OPzS 100	94,2	92,3	76,3	56,7	40	33,5	25,7	21,4	18,3	12,9	10,8
3 OPzS 150	141	138	114	85	60	50,2	38,5	32,1	27,4	19,4	16,2
4 OPzS 200	188	185	153	113	80	67	51,4	42,8	36,6	25,8	21,6
5 OPzS 250	236	231	191	142	100	83,7	64,2	53,5	45,7	32,3	27
4 OPzS 280	265	259	214	159	112	93	72	60	51,3	36,2	30,3
6 OPzS 300	283	277	229	170	120	100	77,1	64,2	54,9	38,7	32,4
5 OPzS 350	300	294	252	196	140	119	92,7	76,2	65,1	46,4	39
6 OPzS 420	360	353	303	235	168	142	111	91,5	78,1	55,7	46,8
7 OPzS 490	420	412	353	274	195	166	130	107	91,1	64,9	54,6
6 OPzS 600	423	417	377	306	224	193	154	126	107	75,1	62,9
7 OPzS 700	493	486	440	357	262	225	179	147	125	87,6	73,4
8 OPzS 800	564	555	503	408	299	258	205	168	143	100	83,9
9 OPzS 900	634	625	566	460	337	290	230	189	161	113	94,4
10 OPzS 1000	705	694	629	511	374	322	256	210	178	125	105
11 OPzS 1100	775	764	692	562	412	354	282	232	196	137	115
12 OPzS 1200	846	833	755	613	449	386	307	253	214	150	126
12 OPzS 1500	914	896	856	725	542	472	375	312	268	188	157
14 OPzS 1750	1066	1045	998	845	632	551	438	363	312	219	184
15 OPzS 1875	1142	1120	1070	906	677	590	469	389	335	235	197
16 OPzS 2000	1218	1195	1141	966	722	630	500	415	357	250	210
18 OPzS 2250	1370	1344	1284	1087	812	708	563	467	402	282	236
20 OPzS 2500	1523	1493	1426	1208	903	787	626	519	446	313	262
24 OPzS 3000	1827	1792	1712	1449	1083	944	751	623	535	376	315

CAPACITY vs TEMPERATURE



CAPACITY vs DISCHARGE MODE



DISCHARGE CHARACTERISTICS OF OPzS SERIES (Watts per Cell)

Cell Type	Discharge Time to 1.8 Vpc, min										
	10	15	30	60	90	120	180	240	300	480	600
2 OPzS 100	175	172	143	107	76,2	64	49,3	41,1	35,2	24,9	20,9
3 OPzS 150	263	257	214	161	114	96	73,9	61,7	52,8	37,3	31,3
4 OPzS 200	350	343	286	214	152	128	98,6	82,2	70,4	49,8	41,7
5 OPzS 250	438	429	357	268	191	160	123	103	88	62,2	52,1
4 OPzS 280	490	481	401	301	214	179,4	138	115	99	70	58,5
6 OPzS 300	525	515	429	322	229	192	148	123	106	74,7	62,6
5 OPzS 350	555	545	471	369	265	226	177	146	125	89,3	75,2
6 OPzS 420	667	654	565	443	318	271	213	175	150	107	90,2
7 OPzS 490	778	763	659	516	371	316	248	205	175	125	105
6 OPzS 600	789	778	707	578	427	368	294	242	206	145	121
7 OPzS 700	921	908	825	674	498	430	343	283	240	169	142
8 OPzS 800	1052	1037	943	771	569	491	392	323	274	193	162
9 OPzS 900	1184	1167	1061	867	640	553	441	363	309	217	182
10 OPzS 1000	1315	1297	1179	963	711	614	490	404	343	241	202
11 OPzS 1100	1447	1427	1297	1060	782	678	539	444	378	265	222
12 OPzS 1200	1578	1556	1415	1156	853	737	588	484	412	289	243
12 OPzS 1500	1676	1645	1576	1345	1017	890	712	593	511	360	302
14 OPzS 1750	1955	1920	1838	1569	1186	1039	830	692	596	420	353
15 OPzS 1875	2095	2057	1969	1681	1271	1113	890	741	639	450	378
16 OPzS 2000	2234	2194	2101	1793	1356	1187	949	791	681	480	403
18 OPzS 2250	2514	2468	2363	2017	1525	1335	1068	890	767	540	454
20 OPzS 2500	2793	2742	2626	2241	1695	1484	1186	989	852	600	504
24 OPzS 3000	3352	3291	3151	2690	2034	1781	1424	1186	1022	720	605

Unique combination of technology "Calcium Plus" and multi-fractional filling of positive electrode enables improved electrical characteristics and higher service life of the battery.

SERVICE LIFE OF OPzS BATTERY

