



OPzS-LC Battery

Tubular Lead Calcium Plate - Flooded



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Advantages

- **Plates:** Lead calcium positive and lead calcium negative plates can effectively prevent shedding of active material. The spines are casted by multi-alloy, of which the crystals are very fine and compact, in order to achieve excellent corrosion resistance and long float life. Negative flat plates are pasted plates with wavy construction, greatly improving the utilization rate of active material and high current discharge property. Also the charging acceptance ability is very good.
- **Container:** SAN transparent container, better corrosion resistance, higher strength, nice appearance. People can directly see the internal construction and actual situation of batteries through SAN containers. Optional flame retardant covers to UL94V-0.
- **Separator:** Imported PVC-SiO₂ separator from Amer-sil, a famous European company. This kind of separator has a large pore rate and lower electrical resistance.
- **Terminal sealing:** Lead pillar with copper insert has better current loading property and better corrosion resistance. Private sealing construction can effectively eliminate the stress caused by plate growth in later period of battery operation. This can prevent any leakage ensuring the reliability of pillar sealing greatly improving the service life of the battery.
- **Anti-acid plug:** Special funneled anti-acid plug can filter acid mist and is flame resistant. This is convenient for direct measuring the density and temperature of electrolyte. It is safe and easy to maintain.

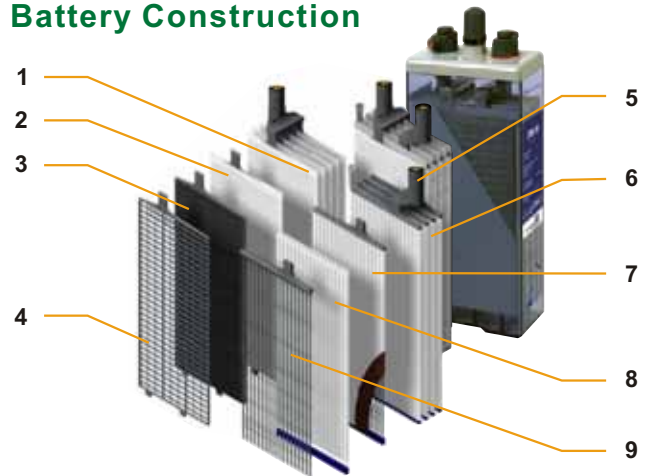
General Features

- Lower self discharge.
- Higher thermal capacity, no thermal runaway will occur.
- Superior float life performance.
- Wide operation temperature range.
- Long service life, designed life 15-20 years.

Main Applications

- Telecommunications.
- Radio and cellular telephone relay stations.
- Emergency lighting systems.
- Power stations, Conventional power stations, alternative power (solar, wind).
- Railway signalling.
- Maritime standby power on ships and ashore.
- Solar and Wind Turbine Energy Storage.
- Buoy lighting.

Battery Construction



- 1 Negative plate group
- 2 Separator
- 3 Negative plate
- 4 Negative flat grid
- 5 Plate group
- 6 Positive plate group
- 7 Positive plate
- 8 Gauntlet
- 9 Positive tubular grid



2V Flooded Battery Specifications

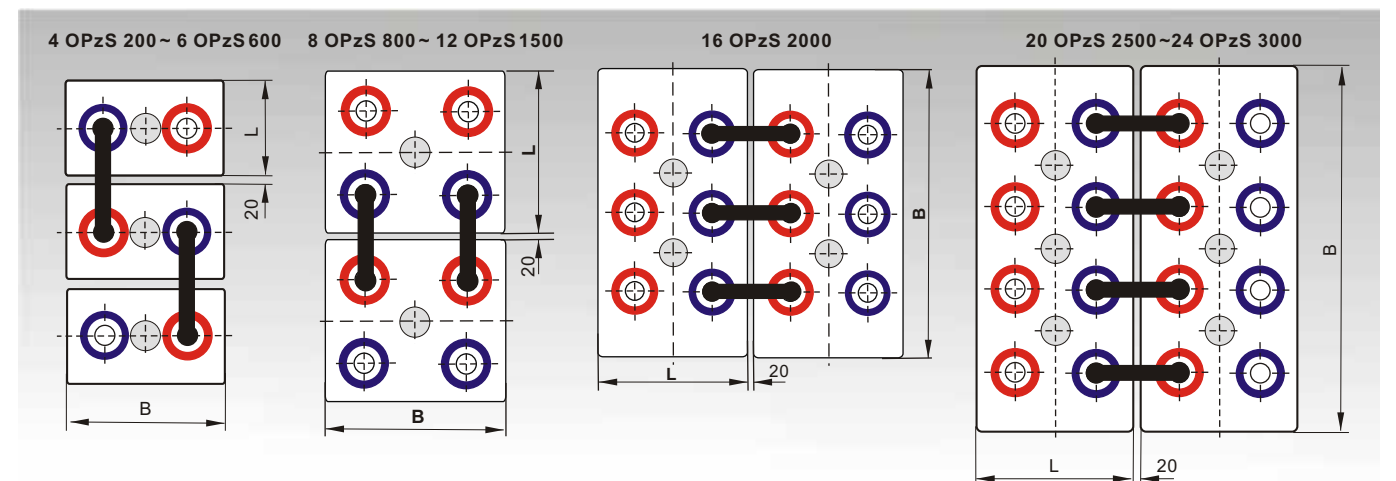
Model Number	Nominal Voltage (V)	Rated Capacity C ₁₀ (Ah)	Dimension (mm/in.)								Approx Weight (Kg)	
			Length		Width		Height		Total Height		Without Electrolyte	With Electrolyte
			mm	in.	mm	in.	mm	in.	mm	In.		
2 OPzS100	2	100	103	4.06	206	8.11	355	13.98	410	16.14	8.1	13.2
3 OPzS150	2	150	103	4.06	206	8.11	355	13.98	410	16.14	10.8	15.3
4 OPzS200	2	200	103	4.06	206	8.11	355	13.98	410	16.14	12.9	17.4
5 OPzS250	2	250	124	4.88	206	8.11	355	13.98	410	16.14	15.4	20.4
6 OPzS300	2	300	145	5.71	206	8.11	355	13.98	410	16.14	18.5	24.5
5 OPzS350	2	350	124	4.88	206	8.11	471	18.54	526	20.71	21.3	28.3
6 OPzS420	2	420	145	5.71	206	8.11	471	18.54	526	20.71	24.5	32.7
7 OPzS490	2	490	166	6.54	206	8.11	471	18.54	526	20.71	28.2	38.0
6 OPzS600	2	600	145	5.71	206	8.11	646	25.43	701	27.60	33.4	45.4
8 OPzS800	2	800	191	7.52	210	8.27	646	25.43	701	27.60	46.9	62.9
10 OPzS1000	2	1000	233	9.17	210	8.27	646	25.43	701	27.60	57.4	77.4
12 OPzS1200	2	1200	275	10.83	210	8.27	646	25.43	701	27.60	67.7	91.7
12 OPzS1500	2	1500	275	10.83	210	8.27	796	31.34	851	33.50	83.8	113.8
14 OPzS1750	2	1750	399	15.77	214	8.42	772	30.40	827	32.56	99.5	140.0
16 OPzS2000	2	2000	399	15.71	214	8.42	772	30.39	827	32.56	110.0	150.0
20 OPzS2500	2	2500	487	19.17	212	8.35	772	30.39	827	32.56	139.4	189.4
24 OPzS3000	2	3000	576	22.68	212	8.35	772	30.39	827	32.56	164.8	224.8

ELECTRICAL SPECIFICATIONS

Floating voltage:	2.22~2.25 V/cell (20°C)
Boost charge:	2.35~2.40 V/cell (20°C)
Charging current(max.):	0.1CA
Temp.Coefficient:	-3mV/ (°C/cell)
Electrolyte density(charged):	1.240±0.01g/cm ³ (20°C)

REASONABLE PRICE
RELIABLE QUALITY
TIMELY DELIVERY
FRIENDLY SERVICE

CONNECTION





CONSTANT CURRENT DISCHARGE TABLE

1.60V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	91.2	75.8	57.1	37.2	27.8	18.9	12.9	10.7	5.80
3 OPzS150	137	114	85.7	55.8	41.7	28.4	19.4	16.0	8.70
4 OPzS200	182	152	114	74.4	55.6	37.8	25.9	21.4	11.6
5 OPzS250	228	190	143	93.0	69.5	47.3	32.4	26.7	14.5
6 OPzS300	274	227	171	112	83.4	56.7	38.8	32.1	17.4
5 OPzS350	319	265	200	130	97.3	66.2	45.3	37.4	20.3
6 OPzS420	383	318	240	156	117	79.4	54.4	44.9	24.4
7 OPzS490	447	371	280	182	136	92.6	63.4	52.4	28.4
6 OPzS600	547	455	343	223	167	113	77.7	64.2	34.8
8 OPzS800	730	606	457	298	222	151	104	85.6	46.4
10 OPzS1000	912	758	571	372	278	189	129	107	58.0
12 OPzS1200	1094	910	685	446	334	227	155	128	69.6
12 OPzS1500	1368	1137	857	558	417	284	194	160	87.0
14 OPzS1750	1536	1264	886	605	473	323	221	183	95.9
16 OPzS2000	1824	1516	1142	744	556	378	259	214	116
20 OPzS2500	2280	1895	1428	930	695	473	324	267	145
24 OPzS3000	2736	2274	1713	1116	834	567	388	321	174

1.65V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	85.6	71.2	55.2	36.4	27.3	18.6	12.8	10.6	5.7
3 OPzS150	128	107	82.8	54.5	41.0	28.0	19.2	15.9	8.6
4 OPzS200	171	142	110	72.7	54.7	37.3	25.6	21.1	11.5
5 OPzS250	214	178	138	90.9	68.3	46.6	32.0	26.4	14.4
6 OPzS300	257	214	166	109	82.0	55.9	38.4	31.7	17.2
5 OPzS350	300	249	193	127	95.7	65.3	44.8	37.0	20.1
6 OPzS420	360	299	232	153	115	78.3	53.7	44.4	24.1
7 OPzS490	419	349	270	178	134	91.4	62.7	51.8	28.2
6 OPzS600	514	427	331	218	164	112	76.7	63.4	34.5
8 OPzS800	685	570	442	291	219	149	102	84.6	46.0
10 OPzS1000	856	712	552	364	273	186	128	106	57.5
12 OPzS1200	1027	854	662	436	328	224	153	127	68.9
12 OPzS1500	1284	1068	828	545	410	280	192	159	86.2
14 OPzS1750	1463	1214	861	591	468	318	219	182	95.0
16 OPzS2000	1712	1424	1104	727	547	373	256	211	115
20 OPzS2500	2140	1780	1380	909	683	466	320	264	144
24 OPzS3000	2568	2136	1656	1091	820	559	384	317	172

1.70V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	81.2	67.6	53.1	35.5	26.5	18.2	12.6	10.4	5.7
3 OPzS150	122	101	79.7	53.3	39.8	27.4	18.8	15.6	8.5
4 OPzS200	162	135	106	71.0	53.1	36.5	25.1	20.8	11.3
5 OPzS250	203	169	133	88.8	66.3	45.6	31.4	26.0	14.2
6 OPzS300	244	203	159	107	79.6	54.7	37.7	31.2	17.0
5 OPzS350	284	237	186	124	92.9	63.9	44.0	36.4	19.8
6 OPzS420	341	284	223	149	111	76.6	52.8	43.7	23.8
7 OPzS490	398	331	260	174	130	89.4	61.6	50.9	27.8
6 OPzS600	487	406	319	213	159	109	75.4	62.4	34.0
8 OPzS800	650	541	425	284	212	146	101	83.2	45.3
10 OPzS1000	812	676	531	355	265	182	126	104	56.7
12 OPzS1200	974	811	637	426	318	219	151	125	68.0
12 OPzS1500	1218	1014	797	533	398	274	188	156	85.0
14 OPzS1750	1377	1154	835	571	455	313	216	181	94.5
16 OPzS2000	1624	1352	1062	710	531	365	251	208	113
20 OPzS2500	2030	1690	1328	888	663	456	314	260	142
24 OPzS3000	2436	2028	1593	1065	796	547	377	312	170

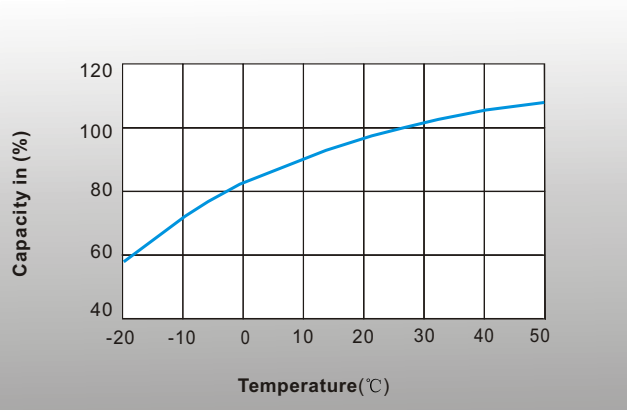
1.75V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	74.7	63.4	50.4	34.0	25.7	17.8	12.4	10.2	5.5
3 OPzS150	112	95.1	75.6	51.0	38.6	26.6	18.5	15.3	8.5
4 OPzS200	149	127	101	68.0	51.4	35.5	24.7	20.4	11.3
5 OPzS250	187	159	126	85.0	64.3	44.4	30.9	25.6	14.2
6 OPzS300	224	190	151	102	77.1	53.3	37.1	30.7	17.0
5 OPzS350	261	222	176	119	90.0	62.2	43.2	35.8	19.8
6 OPzS420	314	266	212	143	108	74.6	51.9	42.9	23.8
7 OPzS490	366	311	247	167	126	87.0	60.5	50.1	27.8
6 OPzS600	448	380	302	204	154	107	74.1	61.3	34.0
8 OPzS800	597	507	403	272	206	142	98.8	81.8	45.3
10 OPzS1000	747	634	504	340	257	178	124	102	56.7
12 OPzS1200	896	761	605	408	308	213	148	123	68.0
12 OPzS1500	1120	951	756	510	386	266	185	153	85.0
14 OPzS1750	1257	1071	798	549	442	305	212	180	93.8
16 OPzS2000	1493	1268	1008	680	514	355	247	204	113
20 OPzS2500	1867	1585	1260	850	643	444	309	256	142
24 OPzS3000	2240	1902	1512	1020	771	533	371	307	170

1.80V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	65.6	56.4	46.4	32.0	24.4	17.0	12.0	10.0	5.5
3 OPzS150	98.4	84.6	69.6	47.9	36.6	25.5	18.0	15.0	8.2
4 OPzS200	131	113	92.8	63.9	48.8	34.1	24.0	20.0	10.9
5 OPzS250	164	141	116	79.9	61.0	42.6	30.0	25.0	13.7
6 OPzS300	197	169	139	95.9	73.2	51.1	36.1	30.0	16.4
5 OPzS350	230	197	162	112	85.4	59.6	42.1	35.0	19.1
6 OPzS420	276	237	195	134	102	71.5	50.5	42.0	23.0
7 OPzS490	321	276	227	157	120	83.4	58.9	49.0	26.8
6 OPzS600	394	338	278	192	146	102	72.1	60.0	32.8
8 OPzS800	525	451	371	256	195	136	96.1	80.0	43.7
10 OPzS1000	656	564	464	320	244	170	120	100	54.7
12 OPzS1200	787	677	557	383	293	204	144	120	65.6
12 OPzS1500	984	846	696	479	366	255	180	150	82.0
14 OPzS1750	1117	978	737	516	419	294	207	175	92.4
16 OPzS2000	1312	1128	928	639	488	341	240	200	109
20 OPzS2500	1640	1410	1160	799	610	426	300	250	137
24 OPzS3000	1968	1692	1392	959	732	511	361	300	164

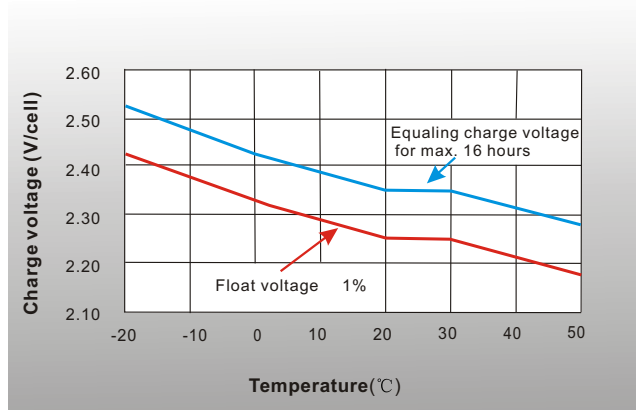
1.85V/cell - Discharge in A(20°C)									
Type	15min	30min	1h	2h	3h	5h	8h	10h	20h
2 OPzS100	45.9	45.0	39.7	29.0	22.3	16.0	11.4	9.6	5.3
3 OPzS150	68.8	67.5	59.6	43.5	33.5	23.9	17.1	14.4	7.9
4 OPzS200	91.7	90.0	79.4	58.0	44.7	31.9	22.8	19.1	10.5
5 OPzS250	115	113	99.3	72.5	55.8	39.9	28.6	23.9	13.1
6 OPzS300	138	135	119	87.0	67.0	47.9	34.3	28.7	15.8
5 OPzS350	161	158	139	102	78.2	55.9	40.0	33.5	18.4
6 OPzS420	193	189	167	122	93.8	67.0	48.0	40.2	22.1
7 OPzS490	225	221	195	142	109	78.2	56.0	46.9	25.8
6 OPzS600	275	270	238	174	134	95.8	68.5	57.4	31.5
8 OPzS800	367	360	318	232	179	128	91.4	76.6	42.0
10 OPzS1000	459	450	397	290	223	160	114	95.7	52.6
12 OPzS1200	550	540	476	348	268	192	137	115	63.1
12 OPzS1500	688	675	596	435	335	239	171	144	78.8
14 OPzS1750	811	778	653	479	392	278	202	172	89.4
16 OPzS2000	917	900	794	580	447	319	228	191	105
20 OPzS2500	1147	1125	993	725	558	399	286	239	131
24 OPzS3000	1376	1350	1191	870	670	479	343	287	158

OPzS PERFORMANCE CHARACTERISTICS

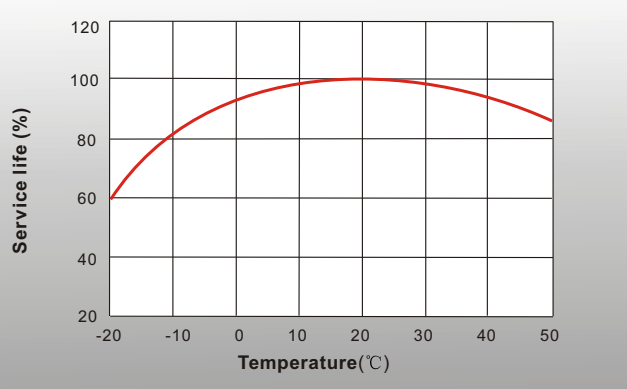
Discharge capacity vs ambient temperature curve (I₁₀A)



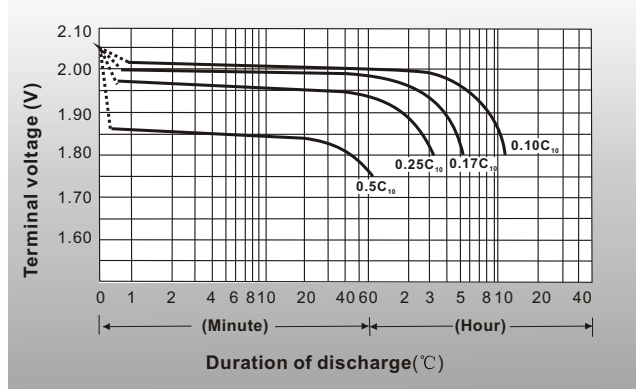
Charge voltage vs ambient temperature curve



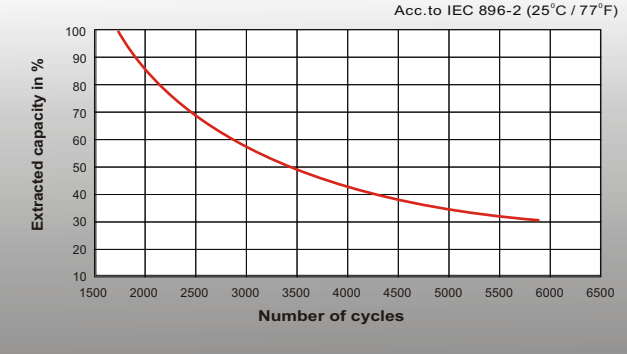
Service life vs ambient temperature



Discharge characteristics 77°F (25°C)



Cycle life in relation to depth of discharge





6V/12V Flooded Battery Specifications

Model Number	Nominal Voltage (V)	Rated Capacity C ₁₀ (Ah)	Dimension (mm/in.)								Approx Weight (Kg)	
			Length		Width		Height		Total Height		Without Electrolyte	With Electrolyte
			mm	In.	mm	In.	mm	In.	mm	In.		
12V 1 OPzS50	12	55	272	10.71	205	8.07	337	13.27	384	15.12	28.2	39.0
12V 2 OPzS100	12	110	272	10.71	205	8.07	337	13.27	384	15.12	38.5	48.7
12V 3 OPzS150	12	165	381	15.00	205	8.07	337	13.27	384	15.12	53.0	67.4
6V 4 OPzS200	6	220	272	10.71	205	8.07	337	13.27	384	15.12	35.0	46.0
6V 5 OPzS250	6	275	381	15.00	205	8.07	337	13.27	384	15.12	45.0	60.0
6V 6 OPzS300	6	330	381	15.00	205	8.07	337	13.27	384	15.12	49.9	65.5

ELECTRICAL SPECIFICATIONS

Floating voltage:	2.22~2.25 V/cell (20°C)
Boost charge:	2.35~2.40 V/cell (20°C)
Charging current(max.):	0.1CA
Temp.Coefficient:	-3mV/ (°C/cell)
Electrolyte density(charged):	1.240±0.01g/cm ³ (20°C)



CONSTANT CURRENT DISCHARGE TABLE

Type	1.80V/cell - Discharge in A(20°C)										1.85V/cell - Discharge in A(20°C)							
	15min	30min	1h	2h	3h	5h	8h	10h	20h	15min	30min	1h	2h	3h	5h	8h	10h	20h
1OPzS50	43.4	32.6	22.2	14.4	11.1	7.9	5.86	5.00	2.68	36.8	29.3	20.5	13.3	10.4	7.46	5.47	4.66	2.50
2OPzS100	86.8	65.1	44.3	28.8	22.3	15.9	11.7	10.0	5.35	73.7	58.7	41.0	26.7	20.8	14.9	10.9	9.31	5.01
3OPzS150	130	97.7	66.5	43.2	33.4	23.8	17.6	15.0	8.03	111	88.0	61.5	40.0	31.2	22.4	16.4	14.0	7.51
4OPzS200	174	130	88.6	57.6	44.5	31.8	23.4	20.0	10.7	147	117	82.0	53.3	41.6	29.8	21.9	18.6	10.0
5OPzS250	217	163	111	72.0	55.7	39.7	29.3	25.0	13.4	184	147	103	66.6	52.0	37.3	27.3	23.3	12.5
6OPzS300	261	195	133	86.4	66.8	47.6	35.1	30.0	16.1	221	176	123	80.0	62.4	44.8	32.8	27.9	15.0



CONSTANT CURRENT DISCHARGE TABLE

Type	1.60V/cell - Discharge in A(20°C)										1.65V/cell - Discharge in A(20°C)							
	15min	30min	1h	2h	3h	5h	8h	10h	20h	15min	30min	1h	2h	3h	5h	8h	10h	20h
1OPzS50	61.0	41.2	26.9	16.9	12.7	8.9	6.4	5.3	2.8	57.8	39.6	26.0	16.4	12.4	8.8	6.3	5.3	2.8
2OPzS100	122	82.4	53.7	33.8	25.5	17.8	12.8	10.7	5.6	116	79.2	52.0	32.7	24.9	17.5	12.6	10.5	5.6
3OPzS150	183	124	80.6	50.6	38.2	26.8	19.1	16.0	8.4	173	119	78.0	49.1	37.3	26.3	18.9	15.8	8.3
4OPzS200	244	165	107	67.5	50.9	35.7	25.5	21.4	11.3	231	158	104	65.4	49.7	35.0	25.2	21.0	11.1
5OPzS250	305	206	134	84.4	63.7	44.6	31.9	26.7	14.1	289	198	130	81.8	62.2	43.8	31.5	26.3	13.9
6OPzS300	366	247	161	101	76.4	53.5	38.3	32.0	16.9	347	238	156	98.1	74.6	52.5	37.8	31.6	16.7

CONSTANT CURRENT DISCHARGE TABLE

Type	1.70V/cell - Discharge in A(20°C)										1.75V/cell - Discharge in A(20°C)							
	15min	30min	1h	2h	3h	5h	8h	10h	20h	15min	30min	1h	2h	3h	5h	8h	10h	20h
1OPzS50	54.0	37.7	24.8	15.9	12.2	8.6	6.2	5.2	2.7	49.6	35.2	23.6	15.3	11.8	8.3	6.0	5.1	2.7
2OPzS100	108	75.3	49.6	31.8	24.3	17.1	12.4	10.4	5.5	99.2	70.5	47.1	30.6	23.5	16.5	12.1	10.2	5.4
3OPzS150	162	113	74.4	47.7	36.5	25.7	18.6	15.5	8.2	149	106	70.7	45.8	35.3	24.8	18.1	15.3	8.1
4OPzS200	216	151	99.2	63.6	48.7	34.3	24.8	20.7	11.0	198	141	94.2	61.1	47.0	33.0	24.1	20.4	10.8
5OPzS250	270	188	124	79.5	60.8	42.9	31.0	25.9	13.7	248	176	118	76.4	58.8	41.3	30.1	25.5	13.6
6OPzS300	324	226	149	95.4	73.0	51.4	37.2	31.1	16.5	298	211	141	91.7	70.5	49.6	36.2	30.6	16.3

Dimension

