

# OPzS Batteries for Stationary Applications

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 **SUNLIGHT**  
Reliable Battery Solutions

## OPzS OVERVIEW

### Vented Tubular Plate Batteries for Stationary Applications

SUNLIGHT's OPzS batteries are characterized by **low maintenance requirements, long service life and excellent capacity performance** while operating in high temperature or unstable power network, thus providing a premium **efficient and cost effective energy solution**.

Optimized design, according to DIN international standards, exclusive use of high quality raw materials, robust construction and state of the art manufacturing processes make this OPzS range the **ideal solution for stationary applications demanding high level of safety and reliability**.



### CERTIFIED QUALITY

- Fully compliant with IEC 60896-11 requirements for vented lead-acid batteries
- Full conformity to DIN 40736-1 specifications for OPzS cells and DIN 40737-3 for OPzS blocks
- Compliant to the safety requirements of EN 50272-2 for stationary batteries
- Manufactured in SUNLIGHT's European production facilities, certified with ISO 9001, ISO 14001, BS OHSAS 18001

### QUALITY FEATURES & PRODUCT BENEFITS

#### Long service life

Tubular positive plates, unique sliding pole design and special alloys composition offer a design life of 20 years for 2V cells and 18 years for 6V & 12V blocks as well as more than 1600 cycles at 80% Depth of Discharge.

#### Outstanding performance and reliability

Products of optimum design with use of high quality raw materials, European state-of-the-art production facilities and cumulative experience on advanced submarine battery manufacturing ensure remarkable performance, exceeding values as defined by the DIN international standards.

#### Minimum maintenance

Low maintenance design with reduced topping up needs. Transparent container for easy visual electrolyte level monitoring.

#### Space optimization

Racks designed for optimal space utilization, quick installation and easy battery maintenance. 6V and 12V blocks available for applications where space is limited.

#### Operational safety

Extensive compliance testing performed under European and Global norms and verified by independent 3rd party certification agency.

#### Complete battery solution

Complete and ready to install systems, batteries in filled and charged or dry charged form with all the necessary accessories. Extensive range of added value services.

#### Flexibility

Design and production of customized products and services, high volume orders handling capability, fast delivery.

#### Peace-of-mind

24x7 experienced pre-sales and after sales support, through SUNLIGHT Global Partners Network.

#### Optimum Total Cost of Ownership (TCO)

Maximum lifetime value and cost efficiency.

**The ideal energy solution for stationary applications**

## TECHNICAL FEATURES & PRODUCT BENEFITS

### 1 Positive Plates

- Tubular plate design
- Special low antimony lead alloy ( $\leq 1.65\%$  Sb)
- Red Lead in-house production by 99,9% Pure Lead
- Dry Filling process

- ✓ Long cycle life
- ✓ Excellent cycling properties
- ✓ Quality and homogeneity
- ✓ High capacity performance
- ✓ Reduced corrosion
- ✓ Reduced self-discharge rate
- ✓ Increased tolerance even in cases of poor charging conditions

### 2 Negative Plates

- Paste mixture ensures high adherence and cohesion
- Pasted negative plates of grid design
- Optimized low antimony lead alloy
- Robust construction
- Long life expander

- ✓ Stability
- ✓ Long battery life

### 3 Gauntlet

- Highly microporous material
- Fine pore structure
- Low electrical resistance

- ✓ Effective active material retention
- ✓ Eliminates active mass shedding

### 4 Bottom Bar

- Ultrasonic welding

- ✓ Secured fit to the gauntlet
- ✓ Long battery life

### 5 Pole bridge

- Welding with high quality alloy
- Optimized design

- ✓ Increased robustness and durability
- ✓ Consistent and uniform poles-bridge-plate block connection

### 6 Electrolyte

- High purity sulphuric acid with nominal density of 1.24 +/- 0,01 kg/l (20°C)

- ✓ Low self discharge rates
- ✓ Excellent performance on deep discharges

### 13 Monoblocks' Internal Intercell Connectors

- Copper bars premium design
- Outside of the container connection

- ✓ High conductivity
- ✓ Safe and long operational life

### 12 External Intercell Connectors

- Flexible
- Copper
- Fully insulated
- Fixed with plastic head bolt safety screw and probe hole on the top

- ✓ Allow voltage measurements
- ✓ High conductivity
- ✓ Increased safety

### 11 Pole Insert

- Brass insert
- Threaded female M10 terminal posts

- ✓ High conductivity
- ✓ Maximum torque retention

### 10 Sliding Poles

- Premium sliding design with rubber seal in the lid
- Corrosion resistance

- ✓ Effectively prevents top lid cracks and acid leakages
- ✓ Positive plate's expansion is safely absorbed
- ✓ Optimum current conductivity
- ✓ Perfect sealing
- ✓ Allow impedance measurements
- ✓ Safe and long operational life

### 7 Separators

- Manufactured from microporous silica-based PVC material
- Allow migration of ions during charge/discharge
- More acid in the surrounding area of the plates

- ✓ Proof against short circuits
- ✓ High temperature stability
- ✓ Mechanical strength
- ✓ Low internal resistance

### 8 Container / Lid

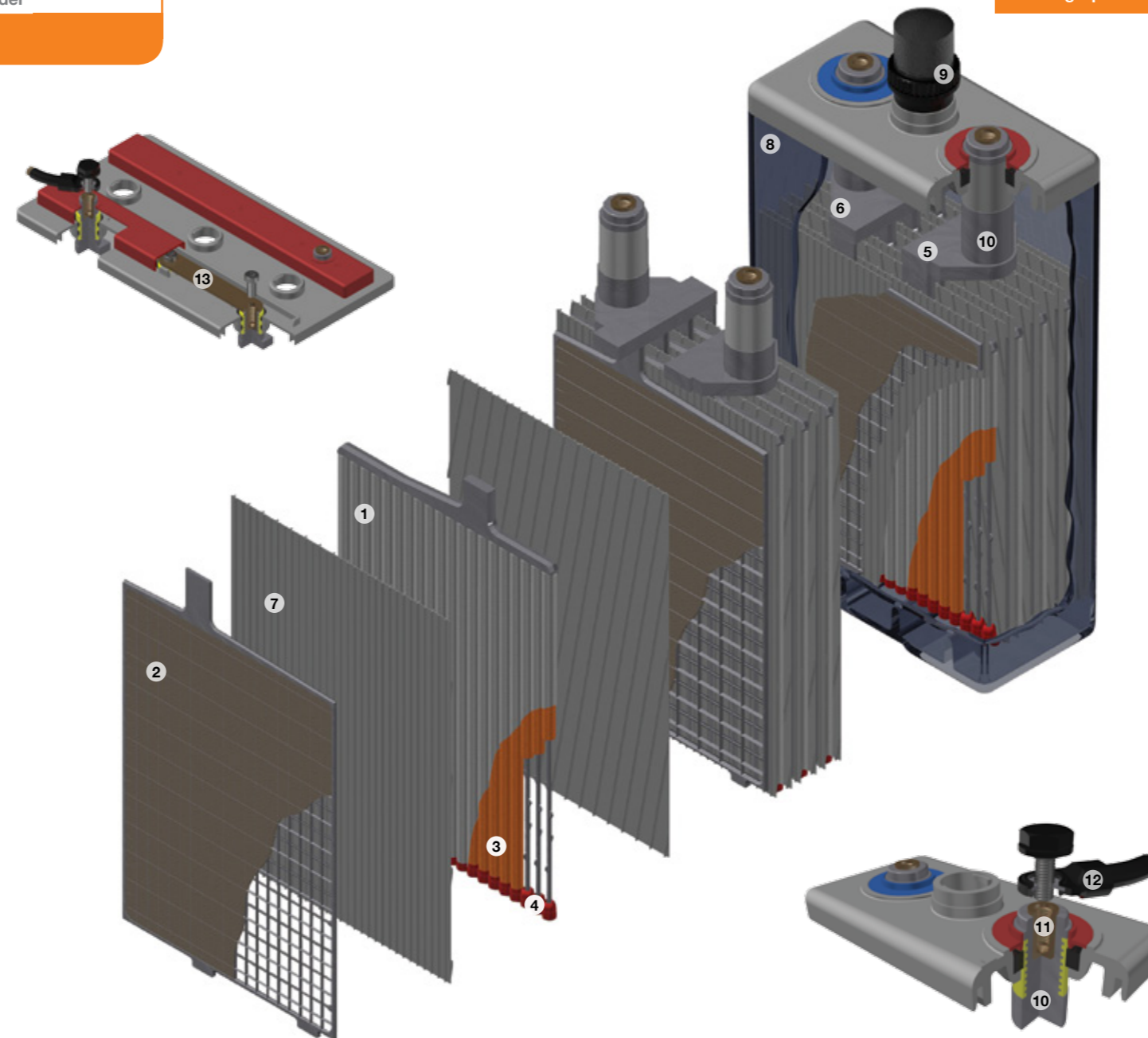
- High impact resistant, transparent SAN (Styrene Acrylonitrile) for the container
- Robust ABS (Acrylonitrile Butadiene Styrene) Material for the lid
- Sealing between container - lid with polyurethane Stobicoll resin
- 100% leakage quality control with high precision froehlich equipment

- ✓ Easy visual electrolyte level monitoring
- ✓ Long term leakage free warranty
- ✓ Unsurpassed mechanical strength
- ✓ Robust and durable battery construction

### 9 Vent Plugs

- Ceramic plugs available
- Low maintenance design
- Flame arresting
- Funnel plugs also available

- ✓ Efficient containment of acid fumes
- ✓ No electrolyte spillage
- ✓ Reduced water evaporation
- ✓ Funnel plugs allow topping-up and electrolyte density measuring without plug removal
- ✓ Increased safety

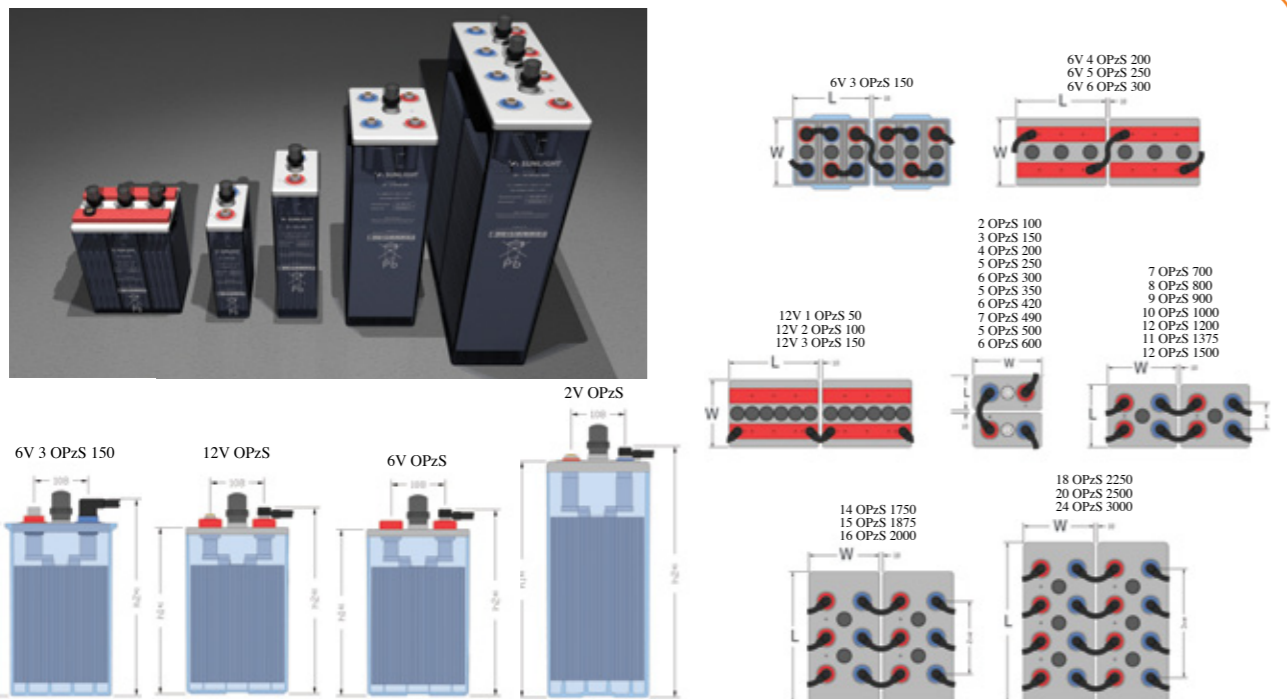


**PRODUCT RANGE**

Type*	Positive Plates Number / Size (Ah)	Number of Poles	Nom. capacity (Ah at 20°C)				Length (mm)	Width (mm)	Height <sub>1</sub> (mm)	Height <sub>2</sub> (mm)	Poles Dist. (mm)	Wet Weight (approx kg)	Dry Weight (approx kg)	Internal Resistance (mOhm)	Short Circuit Current (A)
			C10 (Ah) 1.80 Vpc	C5 (Ah) 1.75 Vpc	C3 (Ah) 1.75 Vpc	C1 (Ah) 1.75 Vpc									
2V 2 OPzS 100	2	2	126	106	91	60	103	206	355	369	-	14	8	1.620	1240
2V 3 OPzS 150	3	2	180	153	131	88	103	206	355	369	-	16	11	1.083	1860
2V 4 OPzS 200	4	2	215	186	161	110	103	206	355	369	-	18	13	0.847	2380
2V 5 OPzS 250	5	2	270	234	203	138	124	206	355	369	-	21	15	0.671	3000
2V 6 OPzS 300	6	2	324	281	243	165	145	206	355	369	-	26	19	0.575	3500
2V 5 OPzS 350	5	2	396	346	298	191	124	206	471	485	-	28	21	0.608	3300
2V 6 OPzS 420	6	70	474	415	356	227	145	206	471	485	-	34	24	0.518	3900
2V 7 OPzS 490	7	2	541	475	408	260	166	206	471	485	-	39	28	0.453	4450
2V 5 OPzS 500	5	2	609	526	441	261	145	206	646	660	-	42	29	0.537	3750
2V 6 OPzS 600	6	2	672	589	499	302	145	206	646	660	-	46	33	0.447	4500
2V 7 OPzS 700	7	4	836	725	610	364	191	210	646	660	80	60	43	0.378	5350
2V 8 OPzS 800	8	100	893	783	665	407	191	210	646	660	80	64	47	0.327	6200
2V 9 OPzS 900	9	4	1028	897	760	461	233	210	646	660	110	73	53	0.292	6950
2V 10 OPzS 1000	10	4	1114	977	830	508	233	210	646	660	110	78	57	0.261	7750
2V 12 OPzS 1200	12	4	1329	1166	988	596	275	210	646	660	140	91	66	0.228	8850
2V 11 OPzS 1375	11	4	1623	1412	1179	669	275	210	797	811	140	111	76	0.238	8500
2V 12 OPzS 1500	12	4	1630	1439	1213	703	275	210	797	811	140	115	81	0.225	9000
2V 14 OPzS 1750	14	6	1978	1726	1445	825	397	212	772	786	110	143	96	0.195	10350
2V 15 OPzS 1875	15	6	2114	1855	1560	902	397	212	772	786	110	149	103	0.176	11500
2V 16 OPzS 2000	16	6	2186	1930	1635	964	397	212	772	786	110	155	109	0.160	12600
2V 18 OPzS 2250	18	8	2689	2337	1961	1132	487	212	772	786	110	184	125	0.140	14450
2V 20 OPzS 2500	20	8	2926	2553	2150	1253	487	212	772	786	110	201	135	0.125	16200
2V 24 OPzS 3000	24	8	3361	2954	2493	1454	576	212	772	786	140	230	158	0.108	18800
6V 3 OPzS 150	3	2	177	154	133	88	233	224	345	377	-	41	30	1.138	1780
6V 4 OPzS 200	4	50	215	190	165	112	272	205	332	361	-	47	35	0.900	2240
6V 5 OPzS 250	5	2	287	250	216	142	380	205	332	361	-	61	44	0.760	2660
6V 6 OPzS 300	6	2	312	277	242	161	380	205	332	361	-	67	51	0.667	3040
12V 1 OPzS 50	1	2	63	55	48	32	272	205	332	361	-	38	24	3.226	620
12V 2 OPzS 100	2	50	103	93	83	58	272	205	332	361	-	49	38	1.613	1260
12V 3 OPzS 150	3	2	150	137	122	86	380	205	332	361	-	70	53	1.138	1780

\*Cells type according to DIN 40736-1 and monoblocks type according to DIN 40737-3 \*\* Includes installed connectors and shrouds.

**DRAWINGS**



**ADDED VALUE SERVICES**

- Design and implementation of turnkey solutions
- Installation & maintenance services according to EN50272-2 safety requirements (CE compliance)
- 360° Technical Support 24x7 through SUNLIGHT Global Partners Network
- Training and consulting
- Battery Collection and Recycling Services

**WHY SUNLIGHT**

- 30 years of Experience in Battery Business**
  - TOP 3 in the global advanced technology battery sector
  - TOP 5 in the European industrial battery sector
  - 98% of battery production is being exported
  - Design and manufacturing of numerous premium solutions complying to demanding requirements
- “One Stop Solution”**
  - From single components/products to turn-key solutions
  - Robust high quality products & services portfolio
  - Lifetime value maximization & total cost of ownership approach
- Extensive Global Know-how**
  - Co-operation with TOP market players and equipment providers worldwide
  - A fast growing Global Partners Network
- Exceptional Customer Service**
  - Highly experienced engineering team for design & development
  - Pre-Sales & After-Sales Service providing global support
  - Project Management competence

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