

RES SOPzS Advanced Batteries for Renewable Energy Storage



RES SOPzS OVERVIEW

Advanced Low Maintenance Tubular Plate Batteries for Renewable Energy Storage

RES SOPzS is an **advanced cost efficient solution** ideal for energy storage for residential solar installations as well as telecom or other infrastructure systems that demand **long cycle life** and **increased watering intervals**.

Enhanced **tubular plate technology** specially designed for renewable energy applications and SUNLIGHT's solid **experience on industrial batteries** produce an exceptional combination of benefits in a single battery.

APPLICATIONS

- **Residential Installations**

Off-grid or smart grid connected power systems electrifying houses, hotels, hospitals, schools or factories.

- **Infrastructure PV systems**

Remote telecom stations, water pumping, oil & gas distribution, traffic signaling, road lighting, telemetry, security systems.

PRODUCT FEATURES & BENEFITS

- **Long cycle life**

Tubular positive plates and special low-antimony lead alloy composition provide unique advantages in prolonging cycling operation to a 60% DoD cycle life of 2000 cycles at 20°C.

- **Performance and reliability**

Optimum design, exclusive use of high quality materials, robust construction and state of the art European manufacturing facilities ensure high capacity performance, efficiency and reliability.

- **Easy maintenance**

Increased electrolyte volume in large translucent containers and special low antimony alloys ensure rare and easy on site visits for topping up.

- **Operational safety**

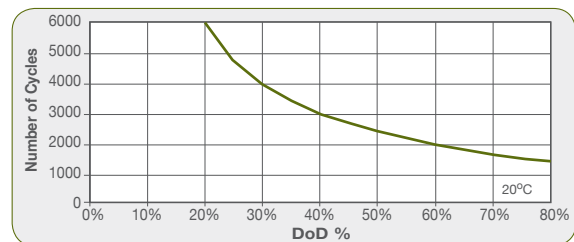
Extensive compliance testing performed under European and Global norms verified by independent 3rd party certification agencies.

- **Complete & flexible energy storage solution**

Fast delivery of modular battery systems with all the necessary accessories for safe installation in trays.

- **Optimum Total Cost of Ownership (TCO)**

Significant benefits in terms of cost per cycle and lifetime value maximization.



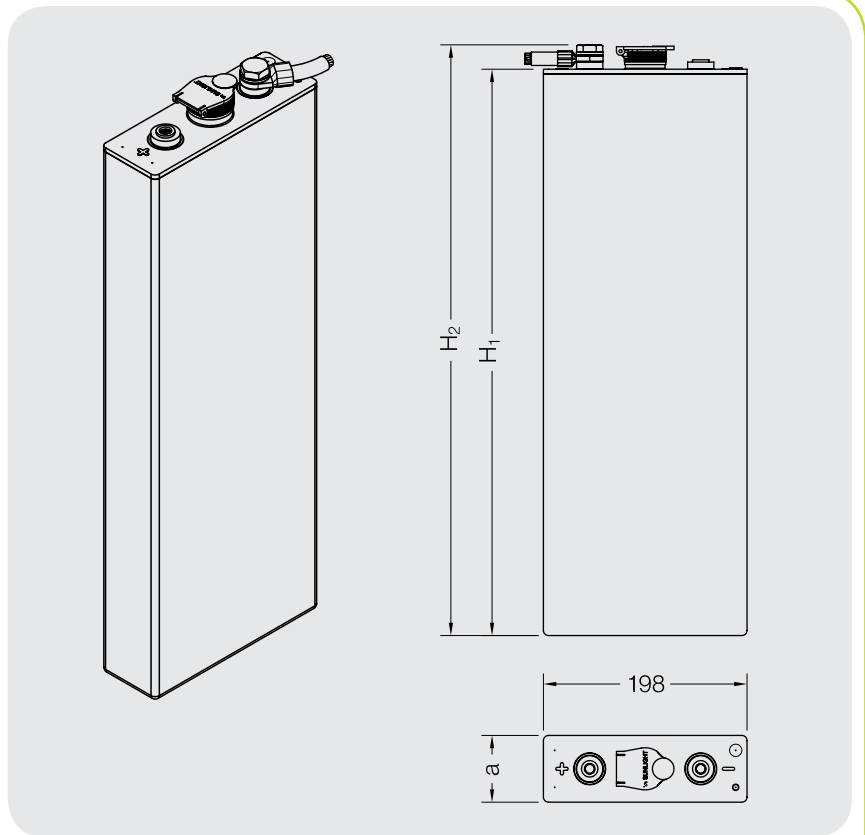
The ideal energy solution for Renewable Energy Storage applications

PRODUCT RANGE

2V Cell Type	Capacity (Ah at 20°C)				Dimensions				Weight		Internal Resistance (mOhm)	Short Circuit Current (A)
	C120 Uf=1.85V	C48 Uf=1.80V	C24 Uf=1.80V	C12 Uf=1.75V	Length (mm)	Width (mm)	Height ₁ (mm)	Height ₂ (mm)	Dry (kg)	Wet (kg)		
RES 2 SOPzS 215	215	199	177	156	198	65	408	435	7.4	11.5	1.75	1160
RES 3 SOPzS 310	310	288	257	227	198	83	408	435	10.0	15.4	1.19	1700
RES 3 SOPzS 390	392	365	326	289	198	83	478	505	12.1	18.4	1.02	1980
RES 4 SOPzS 500	503	470	420	375	198	101	478	505	15.4	23.3	0.78	2590
RES 5 SOPzS 605	605	567	508	455	198	119	478	505	18.7	28.0	0.64	3170
RES 4 SOPzS 720	721	688	620	558	198	101	613	640	21.0	30.5	0.63	3190
RES 5 SOPzS 860	860	823	744	673	198	119	613	640	25.6	36.9	0.52	3890
RES 6 SOPzS 965	969	933	846	771	198	137	613	640	30.2	43.4	0.44	4560
RES 7 SOPzS 1270	1271	1206	1084	976	198	174	613	640	35.0	51.6	0.39	5190
RES 8 SOPzS 1380	1382	1318	1188	1075	198	192	613	640	39.6	58.1	0.35	5790

Technical details may be subject to alterations.

DRAWINGS



CERTIFIED QUALITY

- Manufactured at SUNLIGHT's European production facilities, certified with ISO 9001, ISO 14001, BS OHSAS 18001.
- Compliant with IEC 61427 requirements for photovoltaic energy systems and IEC 60896-11 requirements for vented lead-acid batteries.
- Compliant with the safety requirements of EN 50272-2.

TECHNICAL FEATURES AND BENEFITS

1 Positive Plates

- Tubular plate design
- Special low antimony lead alloy
- Red Lead in-house production by 99,9% Pure Lead
- Dry Filling process

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

10 Pole Bridge

- Terminal bridge manufactured with Cast On Strap process

- ✓ Consistent and uniform pole bridge composition
- ✓ Increased robustness and durability
- ✓ Perfect connection for poles-bridge-plate block as a whole

9 Pole Terminal

- Advanced design of pole post and its sealing to the lid. Rubber ring with optimized hardness and acid resistance

- ✓ Operational safety
- ✓ Perfect sealing
- ✓ Low maintenance requirements
- ✓ Better current conductivity
- ✓ Positive plate's expansion is safely absorbed
- ✓ Prevention of top lid cracks and acid leakages

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
- ✓ Increased cyclic performance
- ✓ Long battery life

3 Separators

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

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

4 Gauntlet

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

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

5 Bottom Bar

- Ultrasonic welding

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

6 Electrolyte

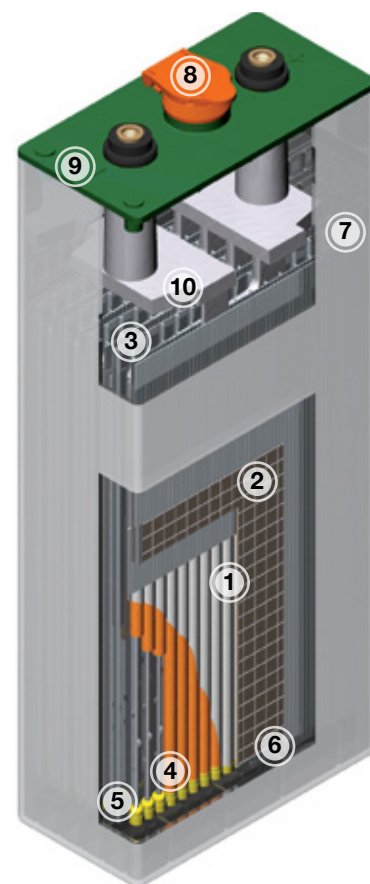
- High purity sulphuric acid with nominal density of 1.24 +/- 0,01 kg/l (20°C)

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

7 Container / Lid

- Large volume container
- High impact resistant, translucent Polypropylene for the container
- Lid welding, trimming and tightness control

- ✓ Reduced on site visits for topping up
- ✓ Easy visual electrolyte level monitoring
- ✓ Long term leakage free operation
- ✓ Unsurpassed mechanical strength
- ✓ Robust and durable battery construction



8 Vent Plug

- Electrolyte basket level marking, specially designed lid, anti-surge baffle

- ✓ Allows optimum cell gassing
- ✓ Electrolyte basket level marking allows visual control of electrolyte level
- ✓ Anti-surge baffle prevents spillage of electrolyte through ventilation openings during operation of the battery



ADDED VALUE SERVICES

Turn-key solutions design and implementation

Installation & maintenance services

360° Technical Support 24x7

Training and consulting

Collection and Recycling Services



Why SUNLIGHT?

30 years of Experience in Battery Business

- **TOP 3** in the global advanced technology battery sector
- **TOP 10** in the global industrial battery sector
- Global design and deployment experience on demanding requirements for Renewable Energy Storage solutions

“One Stop Shop”

- From single components/products to turn-key solutions
- Robust high quality products & services portfolio
- Lifetime value maximization & TCO approach

Extensive Global Know-how

- Strategic co-operation with TOP market players and systems integrators worldwide
- Established global partners network serving active clientele in more than 100 countries
- More than 40 MW of off-grid Power Supply Systems installed worldwide

Exceptional Customer Service

- Peace of mind through worldwide pre-sales & after-sales support
- Highly experienced engineering team for design & development
- Global project management competence

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