Reserve Power
RES OPzV Batteries

Cyclic applications

SOLAR PV GENSET WIND

SUNLIGHT
Reliable Battery Solutions

Reserve Power

As a member of a strong and developing business ecosystem, SUNLIGHT relies on its modern infrastructure, continuous innovation and its passion for excellence, to develop and supply reliable battery solutions.

Our manufacturing plant, located in Xanthi, Northern Greece, is a core element of our dynamic growth. We have systematically invested in the development of **one of the most modern industrial units,** in accordance with the strictest international standards. It covers **200.000m²**, with indoors areas of more than 60.000m².

The company has consistently invested in developing one of **the most advanced industrial plants in the world**, running highly specialized production and assembly lines. The plant is fully compliant with the strictest international standards and is certified for Quality, Occupational Health & Safety and Environmental management systems.

The products are developed by SUNLIGHT R&D team which constantly designs and evaluates new innovative solutions to better meet market needs based on the latest technological trends, industry developments and market feedback.

SUNLIGHT products and services have gained international recognition by ensuring uninterrupted and reliable operations in a wide range of critical applications for a broad spectrum of industries, such as Telecom and Power networks.

The complete Reserve Power portfolio consists of:

OPzS OPzV	RES OPzS RES OPzV	RES SOPzS RES SOPzV	RES SLT RES SLT GEL	SP SERIES ACCUFORCE SVT/ SVT GEL FRONT ACCESS	OGI

Valve Regulated Tubular Plate GEL Batteries for Renewable Energy Storage Applications

RES OPzV is a **premium battery range**, developed for applications **requiring regular deep cyclic.**

It is a **maintenance-free** energy storage solution that offers significant benefits in terms of **cost per cycle**, combined with the highest level of **reliability** and **performance** even for remote installations where long discharges occur and excellent recharging properties are essential.

Optimum design, exclusive use of high quality materials, robust construction and state-of-the-art manufacturing processes make RES OPzV batteries the **ideal solution for demanding Renewable Energy Storage applications**.


Smart-Grids


Residential

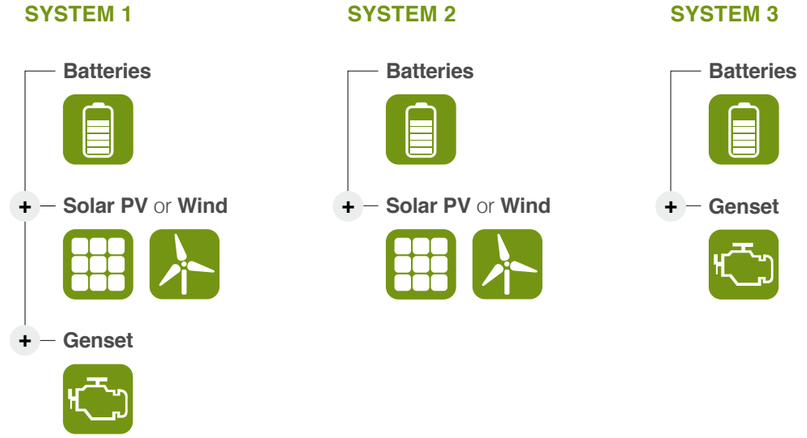

Telecom Networks

Traffic Signalling

Indicative Battery-Based Power Supply Systems

Telecom Networks

Autonomous remote communication hubs such as cellular base stations, repeaters and VSATs.



Smart-Grids

Demand-driven selection of power source providing higher efficiency.

Residential Installations

Off-grid or smart grid connected power systems electrifying homes, hotels, hospitals and schools.

Traffic Systems

Signalling and lighting to roads, railways, airports and marines.

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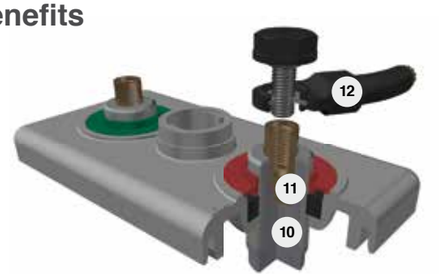
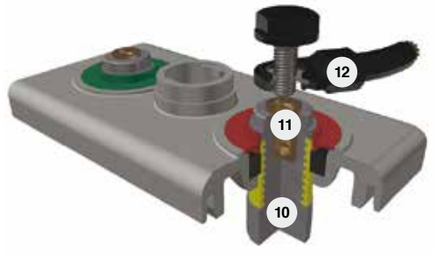
RES OPzV

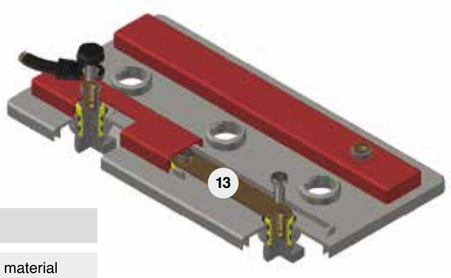
Technical features & product benefits

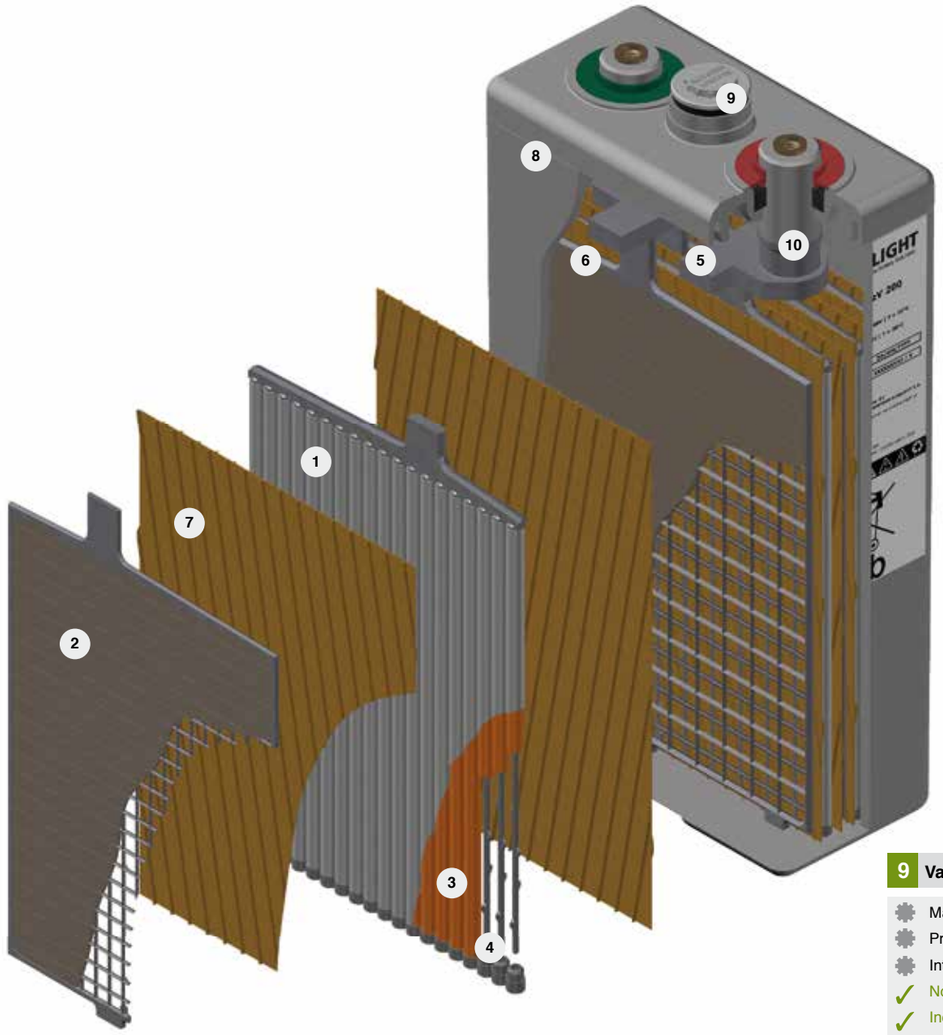


US pole (optional)
(different codes for US pole cells)



Standard pole





1 Positive Plates

- Tubular plate design
- Optimized Lead Calcium Tin Alloy reducing hydrogen evolution
- Red Lead in-house production by 99.99% Primary 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

- Pasted negative plates of grid design
- Paste mixture that ensures high adherence and cohesion
- Optimized corrosion resistant Lead Calcium Tin Alloy
- Robust construction
- Long life expander
- ✓ Stability
- ✓ Increased cyclic performance
- ✓ Long battery life

3 Gauntlet

- Highly porous woven material
- Optimum compression of the active material
- ✓ Eliminates active mass shedding
- ✓ High capacity performance

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 polesbridge-plate block connection

- Technical Features
- ✓ Product Benefits

6 Electrolyte

- Immobilized in GEL form sulphuric acid with nominal density of 1,26 kg/l (20°C/68°F)
- State of the art GEL filling equipment
- High purity silica for GEL formation
- Effective diffusion of GEL
- ✓ Operation without acid stratification or dendrite growth
- ✓ High performance on deep discharges
- ✓ Low self discharge

7 Separators

- High porosity grade 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

8 Container / Lid

- Heavy Duty ABS (Acrylonitrile Butadien Styrene) Material
- Optionally flame retardant (Class V0) ABS material
- Sealing between container - lid with polyurethane resin
- 100% leakage quality control with high precision equipment
- ✓ Long term leakage free operation
- ✓ Unsurpassed mechanical strength
- ✓ Robust and durable battery construction

9 Valve

- Maintenance-free design
- Pressure relief
- Integral flame arrestor
- ✓ No water topping-up required
- ✓ Increased safety

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
- ✓ Available also with taller poles with extra space for measurements

11 Pole Insert

- Brass insert
- Threaded female M10 terminal posts
- ✓ High conductivity
- ✓ Maximum torque retention

12 External Intercell Connectors

- Flexible
- Copper
- Fully insulated
- Fixed with plastic head safety bolt and probe hole on the top
- ✓ Allow voltage measurements
- ✓ High conductivity
- ✓ Increased safety

13 Monoblocks' Internal Intercell Connectors

- Copper bars premium design
- Outside of the container connection
- ✓ High conductivity
- ✓ Safe and long operational life

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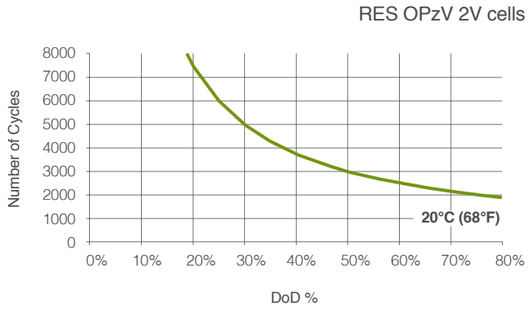
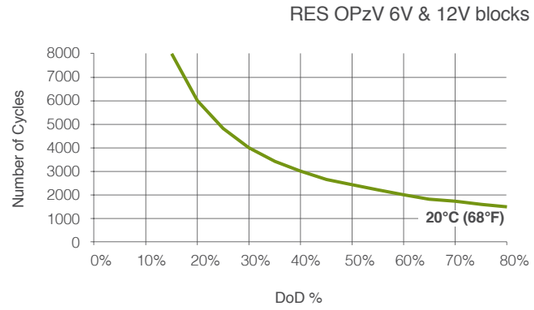
The ideal energy solution for Renewable Energy Storage applications

Long cycle life

Tubular positive plates, GEL form electrolyte, unique sliding pole design and special alloys composition offer a 60% DoD cycle life of up to 2500 cycles for 2V cells and 2000 cycles for 6V & 12V blocks.

Number of Cycles vs. DoD





Outstanding performance and reliability

Products of optimum design made of high quality raw materials in European state-of-the-art production facilities and cumulative experience on advanced submarine battery manufacturing, ensure reliability in applications requiring high performance.

Reduced maintenance cost

Maintenance-free design without water topping-up requirements.

Space optimization

Vertical and horizontal installation. Racks designed for optimal space utilization, quick installation and easy battery maintenance.

Operational safety

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

Complete battery solution

Complete and ready to install systems with all the necessary accessories. Extensive range of adding value products and 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)

Low cost per cycle. Lifetime value is maximized especially at hybrid systems where using batteries can greatly reduce the Genset daily run time resulting on fuel savings and less CO2 emission.

Certified Quality

- "**Very Long Life**" according to Eurobat 2015 classification
- Compliant with **IEC 61427** requirements for photovoltaic energy systems
- Tested according to **IEC 60896-21** and fully compliant with I**EC 60896-22** requirements for valve regulated batteries
- Full conformity to **DIN 40742** specifications for OPzV cells and **DIN 40744** for OPzV blocks
- Compliant with the safety requirements of **IEC 62485-2** for stationary batteries
- Manufactured in SUNLIGHT European production facilities, certified with **ISO 9001**, **ISO 14001**, **BS OHSAS 18001**

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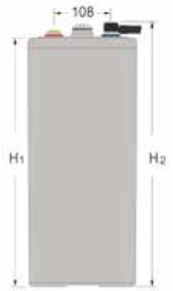
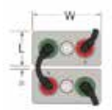
	RES OPzV model	Rated Capacity (Ah) at 20°C (68°F)					Dimensions mm (in)				Weight kg (lb)	Internal Resistance (mOhm)	Short Circuit Current (A)
		C240 1.85 Vpc	C120 1.85 Vpc	C48 1.80 Vpc	C24 1.80 Vpc	C12 1.80 Vpc	Length	Width	Height$_1$	Height$_2$			
Cells	2V 2 RES OPzV 145	150	145	141	129	116	103 (4.06)	206 (8.11)	354 (13.94)	382 (15.04)	13.6 (30.0)	1.650	1240
	2V 3 RES OPzV 215	225	218	211	194	174	103 (4.06)	206 (8.11)	354 (13.94)	382 (15.04)	15.7 (34.6)	1.110	1840
	2V 4 RES OPzV 290	301	290	281	258	232	103 (4.06)	206 (8.11)	354 (13.94)	382 (15.04)	18.3 (40.3)	0.830	2460
	2V 5 RES OPzV 360	376	363	352	323	290	124 (4.88)	206 (8.11)	354 (13.94)	382 (15.04)	21.8 (48.1)	0.670	3040
	2V 6 RES OPzV 435	452	435	423	388	347	145 (5.71)	206 (8.11)	354 (13.94)	382 (15.04)	26.4 (58.2)	0.565	3620
	2V 5 RES OPzV 535	561	536	517	472	420	124 (4.88)	206 (8.11)	471 (18.54)	499 (19.65)	30.0 (66.1)	0.570	3580
	2V 6 RES OPzV 640	675	644	622	567	504	145 (5.71)	206 (8.11)	471 (18.54)	499 (19.65)	35.3 (77.8)	0.485	4200
	2V 7 RES OPzV 750	789	753	727	662	588	166 (6.54)	206 (8.11)	471 (18.54)	499 (19.65)	40.8 (89.9)	0.430	4740
	2V 5 RES OPzV 780	822	781	744	674	597	145 (5.71)	206 (8.11)	643 (25.31)	671 (26.42)	43.8 (96.6)	0.530	3850
	2V 6 RES OPzV 935	986	937	892	809	716	145 (5.71)	206 (8.11)	643 (25.31)	671 (26.42)	48.2 (106.3)	0.445	4600
	2V 7 RES OPzV 1090	1147	1091	1039	942	835	191 (7.52)	210 (8.27)	644 (25.35)	672 (26.46)	61.2 (134.9)	0.365	5600
	2V 8 RES OPzV 1245	1311	1247	1187	1077	954	191 (7.52)	210 (8.27)	644 (25.35)	672 (26.46)	65.5 (144.4)	0.325	6300
	2V 9 RES OPZV 1400	1477	1404	1337	1212	1074	233 (9.17)	210 (8.27)	646 (25.43)	674 (26.54)	75.9 (167.3)	0.295	6900
	2V 10 RES OPzV 1560	1641	1560	1485	1347	1193	233 (9.17)	210 (8.27)	646 (25.43)	674 (26.54)	80.4 (177.3)	0.265	7700
	2V 11 RES OPzV 1720	1811	1720	1637	1483	1313	275 (10.83)	210 (8.27)	645 (25.39)	673 (26.50)	90.8 (200.2)	0.245	8350
	2V 12 RES OPzV 1875	1976	1877	1786	1618	1432	275 (10.83)	210 (8.27)	645 (25.39)	673 (26.50)	95.1 (209.7)	0.225	9050
	2V 11 RES OPzV 1940	2029	1943	1879	1722	1538	275 (10.83)	210 (8.27)	796 (31.34)	824 (32.44)	105.0 (231.5)	0.230	8850
	2V 12 RES OPzV 2120	2214	2120	2050	1878	1678	275 (10.83)	210 (8.27)	796 (31.34)	824 (32.44)	110.1 (242.7)	0.210	9700
	2V 14 RES OPzV 2470	2580	2471	2390	2190	1957	399 (15.71)	214 (8.43)	771 (30.35)	799 (31.46)	146.0 (321.9)	0.180	11350
	2V 15 RES OPzV 2645	2764	2647	2561	2346	2097	399 (15.71)	214 (8.43)	771 (30.35)	799 (31.46)	151.0 (332.9)	0.167	12200
	2V 16 RES OPzV 2820	2949	2824	2731	2503	2237	399 (15.71)	214 (8.43)	771 (30.35)	799 (31.46)	156.1 (344.1)	0.157	13000
	2V 18 RES OPzV 3170	3310	3171	3071	2814	2516	487 (19.17)	212 (8.35)	769 (30.28)	797 (31.38)	185.2 (408.3)	0.137	14900
	2V 20 RES OPzV 3520	3678	3523	3412	3127	2796	487 (19.17)	212 (8.35)	769 (30.28)	797 (31.38)	195.3 (430.6)	0.123	16600
	2V 22 RES OPzV 3890	4068	3894	3764	3447	3077	576 (22.68)	212 (8.35)	771 (30.35)	799 (31.46)	221.2 (487.7)	0.115	17750
	2V 24 RES OPzV 4245	4438	4248	4106	3760	3357	576 (22.68)	212 (8.35)	771 (30.35)	799 (31.46)	231.4 (510.1)	0.108	18900
	2V 26 RES OPzV 4535	4747	4536	4405	4026	3586	576 (22.68)	212 (8.35)	771 (30.35)	799 (31.46)	241.5 (532.4)	0.103	19800
Blocks	6V 4 RES OPzV 250	263	253	250	233	212	272 (10.71)	205 (8.07)	332 (13.07)	372 (14.65)	55.2 (121.7)	2.70	2270
	6V 5 RES OPzV 315	330	317	313	292	265	380 (14.96)	205 (8.07)	332 (13.07)	372 (14.65)	62.8 (138.5)	2.22	2760
	6V 6 RES OPzV 380	397	381	377	350	318	380 (14.96)	205 (8.07)	332 (13.07)	372 (14.65)	69.0 (152.1)	1.89	3240
	12V 1 RES OPzV 65	65	63	62	58	52	272 (10.71)	205 (8.07)	332 (13.07)	372 (14.65)	43.8 (96.6)	19.01	640
	12V 2 RES OPzV 125	130	125	124	115	105	272 (10.71)	205 (8.07)	332 (13.07)	372 (14.65)	50.5 (111.3)	9.50	1290
	12V 3 RES OPzV 185	196	188	186	173	158	380 (14.96)	205 (8.07)	332 (13.07)	372 (14.65)	73.3 (161.6)	6.80	1800

Height$_2$ includes installed connectors and bolts.
All dimensions and weights shown are subject to manufacturing tolerances.

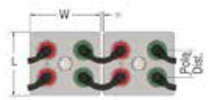
2V RES OPzV



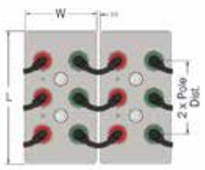
2V 2 RES OPzV 145
2V 3 RES OPzV 215
2V 4 RES OPzV 290
2V 5 RES OPzV 360
2V 6 RES OPzV 435
2V 5 RES OPzV 535
2V 6 RES OPzV 640
2V 7 RES OPzV 750
2V 5 RES OPzV 780
2V 6 RES OPzV 935



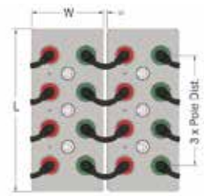
2V 7 RES OPzV 1090
2V 8 RES OPzV 1245
2V 9 RES OPzV 1400
2V 10 RES OPzV 1560
2V 11 RES OPzV 1720
2V 12 RES OPzV 1875
2V 11 RES OPzV 1940
2V 12 RES OPzV 2120



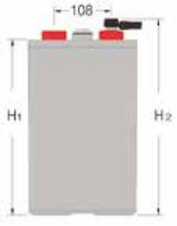
2V 14 RES OPzV 2470
2V 15 RES OPzV 2645
2V 16 RES OPzV 2820



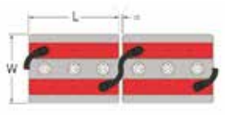
2V 18 RES OPzV 3170
2V 20 RES OPzV 3520
2V 22 RES OPzV 3890
2V 24 RES OPzV 4245
2V 26 RES OPzV 4535



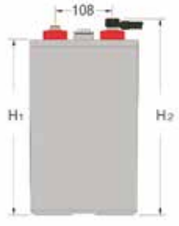
6V RES OPzV



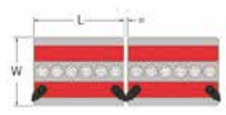
6V 4 RES OPzV 250
6V 5 RES OPzV 315
6V 6 RES OPzV 380



12V RES OPzV



12V 1 RES OPzV 65
12V 2 RES OPzV 125
12V 3 RES OPzV 185



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