

Reserve Power RES OPzV Batteries

Cyclic applications



SOLAR PV



GENSET



WIND

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.

At the core of the company's growth lies its state-of-the-art manufacturing plant in Northern Greece, covering an area of 142.000 m². The company has consistently invested in developing one of the most advanced industrial plants in Europe, 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's 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's 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
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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.

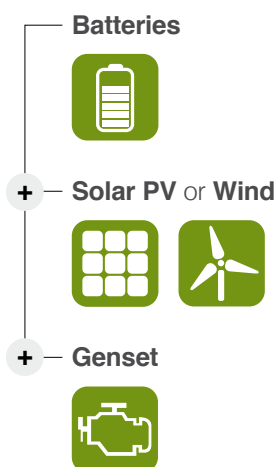
Residential Installations

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

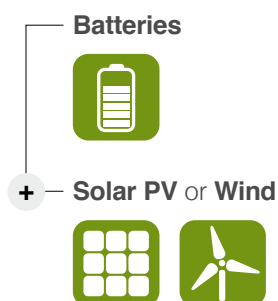
Traffic Systems

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

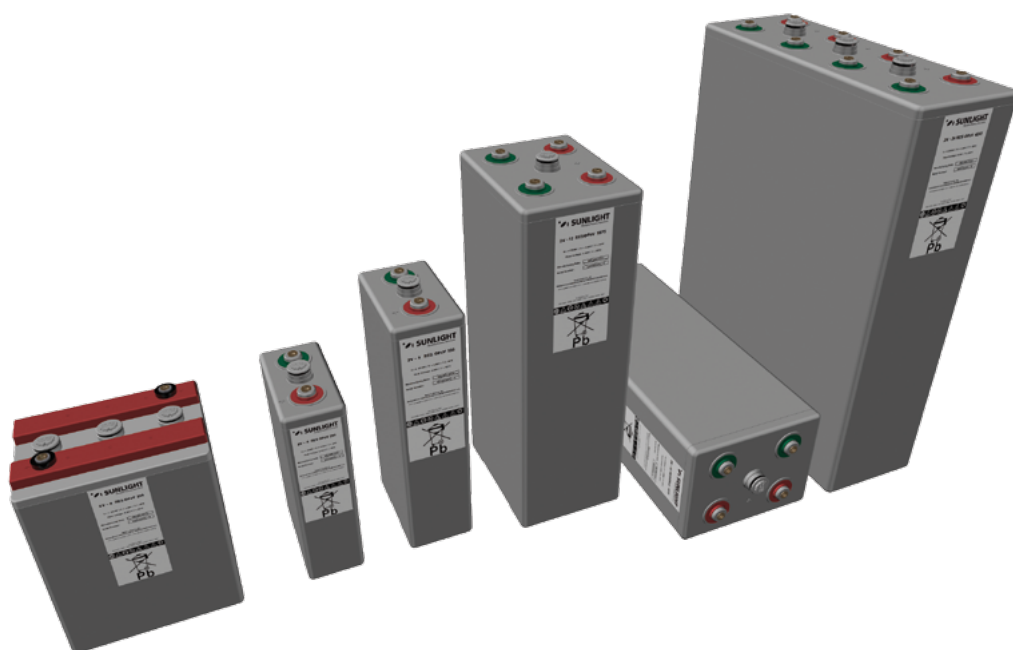
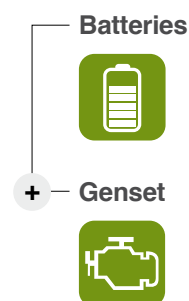
SYSTEM 1



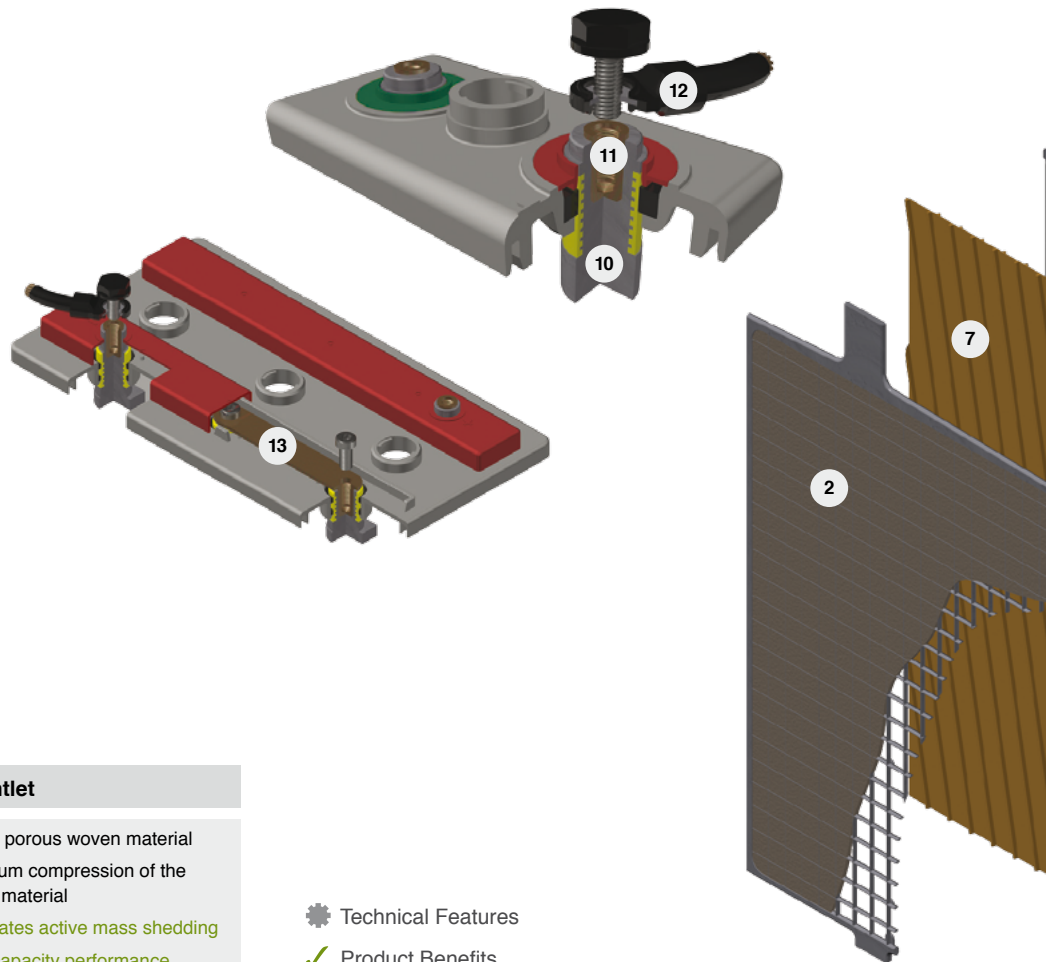
SYSTEM 2



SYSTEM 3



Technical features & product benefits



1 Positive Plates

- ⚙️ Tubular plate design
- ⚙️ Optimized Lead Calcium Tin Alloy reducing hydrogen evolution
- ⚙️ 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

3 Gauntlet

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

- ⚙️ Technical Features
- ✓ Product Benefits

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

4 Bottom Bar

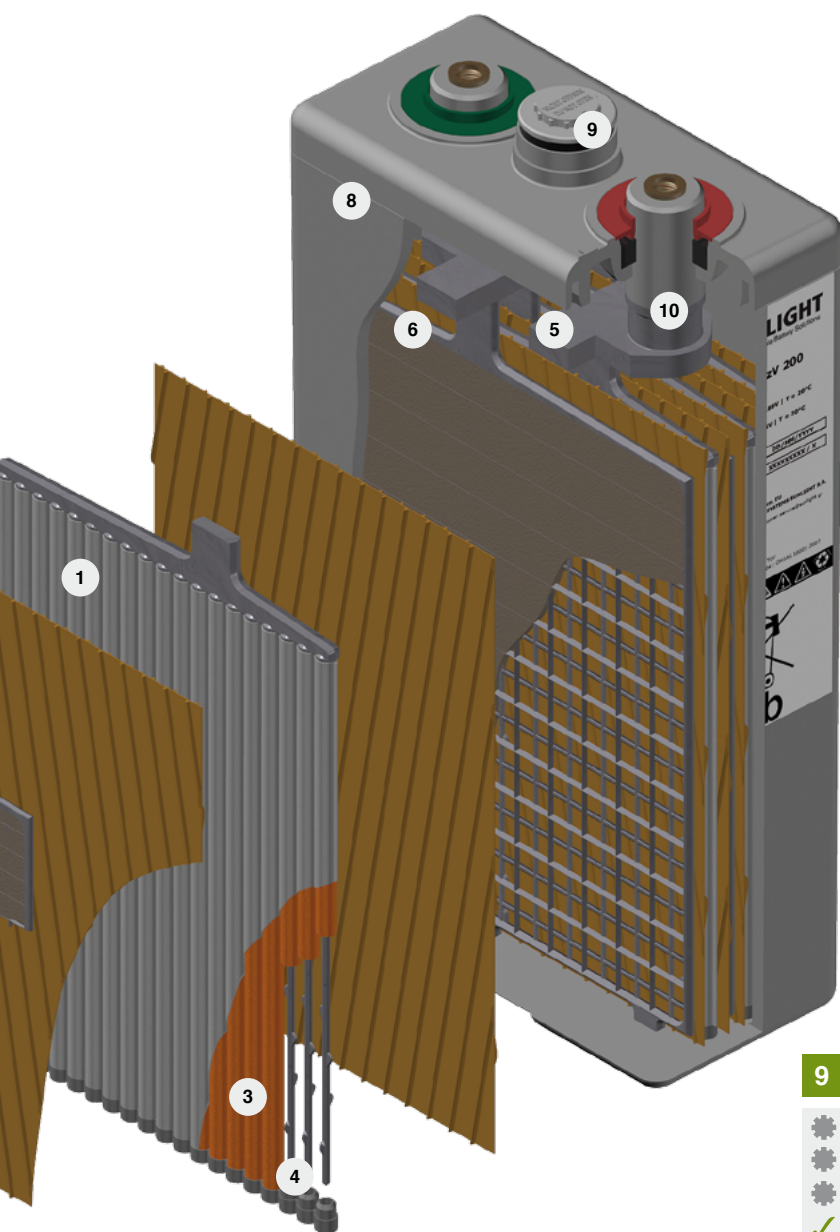
- ⚙️ Ultrasonic welding
- ✓ Secured fit to the gauntlet
- ✓ Long battery life

5 Pole Bridge

- ⚙️ Welding with high quality alloy
- ⚙️ Optimized design
- ✓ Increased robustness and durability
- ✓ Consistent and uniform polesbridge-plate block connection

6 Electrolyte

- ⚙️ Immobilized in GEL form sulphuric acid with nominal density of 1,26 kg/l (20°C)
- ⚙️ 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

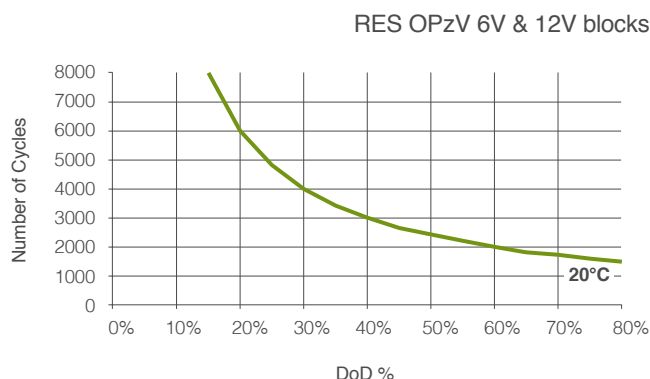
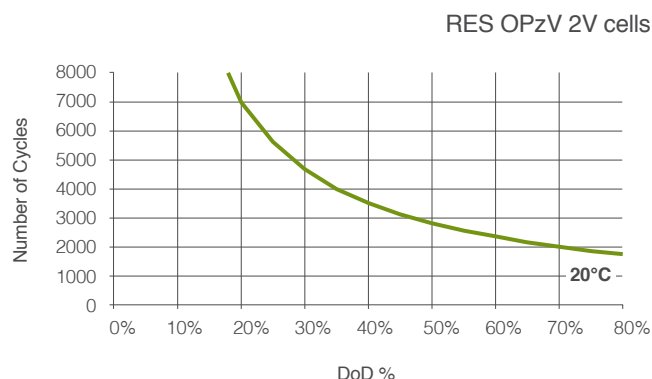
- ⚙ Copper bars premium design
- ⚙ Outside of the container connection
- ✓ High conductivity
- ✓ Safe and long operational life

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.



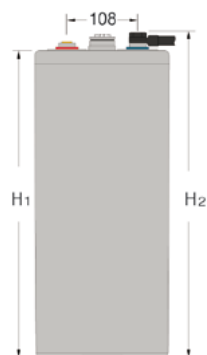
- “**Very Long Life**” according to Eurobat 2015 classification
- Compliant with **IEC 61427** requirements for photovoltaic energy systems
- Tested according to **IEC 60896-21** and fully compliant with **IEC 60896-22** requirements for valve regulated batteries
- Full conformity to **DIN 40742** specifications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

	Type	Positive Plates		Number of Poles	Rated Capacity (Ah at 20°C)					Dimensions (mm)				Poles Distance (mm)	Weight (kg)	Internal Resistance (mOhm)	Short Circuit Current (A)
		Number	Size (Ah)		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	2	50	2	150	145	141	129	116	103	206	354	382	-	13.6	1.650	1240
	2V 3 RES OPzV 215	3		2	225	218	211	194	174	103	206	354	382	-	15.7	1.110	1840
	2V 4 RES OPzV 290	4		2	301	290	281	258	232	103	206	354	382	-	18.3	0.830	2460
	2V 5 RES OPzV 360	5		2	376	363	352	323	290	124	206	354	382	-	21.8	0.670	3040
	2V 6 RES OPzV 435	6	70	2	452	435	423	388	347	145	206	354	382	-	26.4	0.565	3620
	2V 5 RES OPzV 535	5		2	561	536	517	472	420	124	206	471	499	-	30.0	0.570	3580
	2V 6 RES OPzV 640	6		2	675	644	622	567	504	145	206	471	499	-	35.3	0.485	4200
	2V 7 RES OPzV 750	7		2	789	753	727	662	588	166	206	471	499	-	40.8	0.430	4740
	2V 5 RES OPzV 780	5	100	2	822	781	744	674	597	145	206	643	671	-	43.8	0.530	3850
	2V 6 RES OPzV 935	6		2	986	937	892	809	716	145	206	643	671	-	48.2	0.445	4600
	2V 7 RES OPzV 1090	7		4	1147	1091	1039	942	835	191	210	644	672	80	61.2	0.365	5600
	2V 8 RES OPzV 1245	8		4	1311	1247	1187	1077	954	191	210	644	672	80	65.5	0.325	6300
	2V 9 RES OPzV 1400	9	125	4	1477	1404	1337	1212	1074	233	210	646	674	110	75.9	0.295	6900
	2V 10 RES OPzV 1560	10		4	1641	1560	1485	1347	1193	233	210	646	674	110	80.4	0.265	7700
	2V 11 RES OPzV 1720	11		4	1811	1720	1637	1483	1313	275	210	645	673	140	90.8	0.245	8350
	2V 12 RES OPzV 1875	12		4	1976	1877	1786	1618	1432	275	210	645	673	140	95.1	0.225	9050
	2V 11 RES OPzV 1940	11	125	4	2029	1943	1879	1722	1538	275	210	796	824	140	105.0	0.230	8850
	2V 12 RES OPzV 2120	12		4	2214	2120	2050	1878	1678	275	210	796	824	140	110.1	0.210	9700
	2V 14 RES OPzV 2470	14		6	2580	2471	2390	2190	1957	399	214	771	799	2x110	146.0	0.180	11350
	2V 15 RES OPzV 2645	15		6	2764	2647	2561	2346	2097	399	214	771	799	2x110	151.0	0.167	12200
	2V 16 RES OPzV 2820	16		6	2949	2824	2731	2503	2237	399	214	771	799	2x110	156.1	0.157	13000
	2V 18 RES OPzV 3170	18		8	3310	3171	3071	2814	2516	487	212	769	797	3x110	185.2	0.137	14900
	2V 20 RES OPzV 3520	20		8	3678	3523	3412	3127	2796	487	212	769	797	3x110	195.3	0.123	16600
	2V 22 RES OPzV 3890	22		8	4068	3894	3764	3447	3077	576	212	771	799	3x140	221.2	0.115	17750
	2V 24 RES OPzV 4245	24		8	4438	4248	4106	3760	3357	576	212	771	799	3x140	231.4	0.108	18900
	2V 26 RES OPzV 4535	26		8	4747	4536	4405	4026	3586	576	212	771	799	3x140	241.5	0.103	19800
Blocks	6V 4 RES OPzV 250	4	50	2	263	253	250	233	212	272	205	332	372	-	55.2	2.70	2270
	6V 5 RES OPzV 315	5		2	330	317	313	292	265	380	205	332	372	-	62.8	2.22	2760
	6V 6 RES OPzV 380	6		2	397	381	377	350	318	380	205	332	372	-	69.0	1.89	3240
	12V 1 RES OPzV 65	1	50	2	65	63	62	58	52	272	205	332	372	-	43.8	19.01	640
	12V 2 RES OPzV 125	2		2	130	125	124	115	105	272	205	332	372	-	50.5	9.50	1290
12V 3 RES OPzV 185	3	2		196	188	186	173	158	380	205	332	372	-	73.3	6.80	1800	

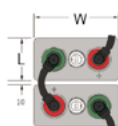
Height 2 includes installed connectors and bolts.

All dimensions and weights shown are subject to manufacturing tolerances.

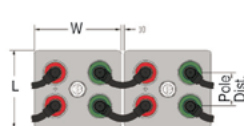
2V RES OPzV



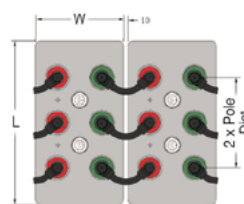
2V 2 RES OPzV 145
2V 3 RES OPzV 215
2V 4 RES OPzV 290
2V 5 RES OPzV 360
2V 6 RES OPzV 435
2V 5 RES OPzV 535
2V 6 RES OPzV 640
2V 7 RES OPzV 750
2V 5 RES OPzV 780
2V 6 RES OPzV 935



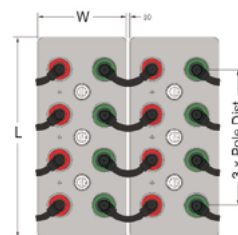
2V 7 RES OPzV 1090
2V 8 RES OPzV 1245
2V 9 RES OPzV 1400
2V 10 RES OPzV 1560
2V 11 RES OPzV 1720
2V 12 RES OPzV 1875
2V 11 RES OPzV 1940
2V 12 RES OPzV 2120



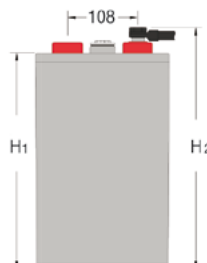
2V 14 RES OPzV 2470
2V 15 RES OPzV 2645
2V 16 RES OPzV 2820



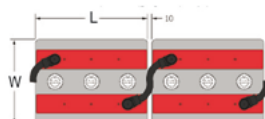
2V 18 RES OPzV 3170
2V 20 RES OPzV 3520
2V 22 RES OPzV 3890
2V 24 RES OPzV 4245
2V 26 RES OPzV 4535



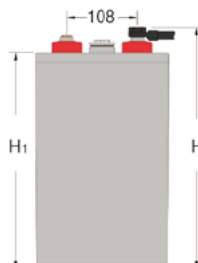
6V RES OPzV



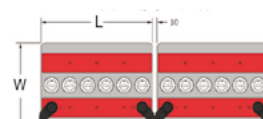
6V 4 RES OPzV 250
6V 5 RES OPzV 315
6V 6 RES OPzV 380



12V RES OPzV



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





Manufactured in Europe
delivered in more than **100** countries



Manufacturing Plant in Xanthi, Northern Greece

SYSTEMS SUNLIGHT reserves the right to change or revise without notice any information or detail given in this publication

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