

# Motive Power Cells & Batteries

PzS DIN, PzB BS



# Motive 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 m<sup>2</sup>. 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, including **Material Handling and Logistics**.

## The complete Motive Power portfolio consists of:

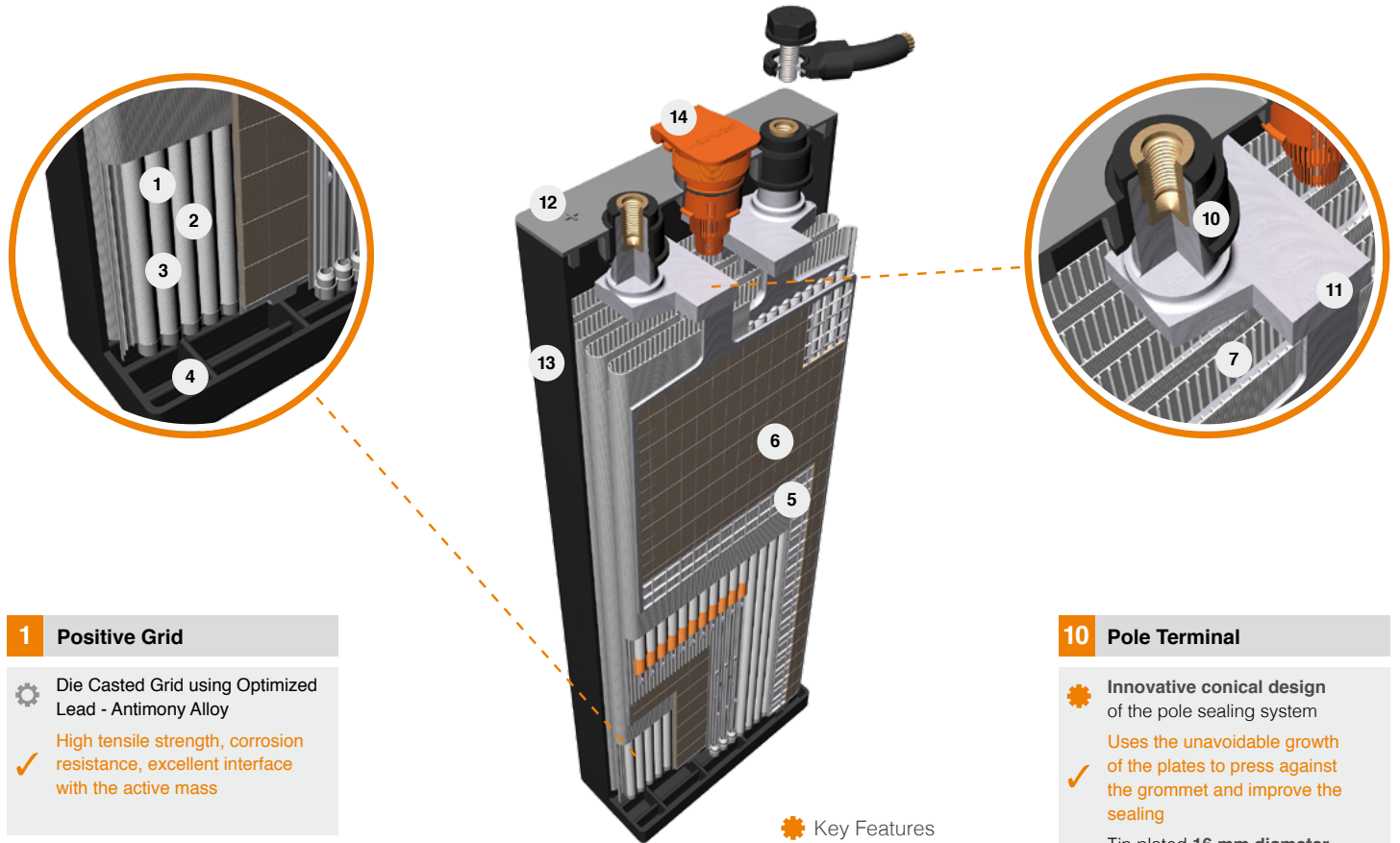
Sunlight PzS, PzB Series	HydroSave Series	MotionGel Series	Xtreme Force Series	Sunlight BCI Series	Full list of accessories
The proven vented solution with excellent reliability and long service life, utilizing premium quality materials	The low-maintenance solution with up to 13 weeks intervals between watering utilizing optimised alloys and increased head space	The maintenance free sealed-type battery with GEL electrolyte ensuring no acid leakage and minimum gas emissions	Based on CSM (Copper Stretch Metal) technology, is suitable for operation under extreme conditions while allowing fast and opportunity charging	The BCI sized cells, combining compatibility with US battery dimensions with all the benefits of Tubular technology	A full list of accessories ranging from small connectors up to large battery chargers and battery monitoring systems

**Sunlight Motive Power Cells & Batteries** is the most representative solution portfolio offered to our customers in the Material Handling industry.

**The Motive cell design**, state of the art production equipment and premium quality materials provide high end performance, excellent reliability and long service life.

**Sunlight Motive cell ranges**, fully comply to the DIN/EN 60254-2 standards and are available both in DIN and BS dimensions, ensuring full compatibility and flexibility for all battery applications.

Designed & Manufactured for Ultimate Performance & Longevity



**1 Positive Grid**

- ⚙️ Die Casted Grid using Optimized Lead - Antimony Alloy
- ✓ High tensile strength, corrosion resistance, excellent interface with the active mass

**2 Positive Active Mass**

- ⚙️ 100% Red Lead
- ✓ Efficient formation ensures that full cell capacity is achieved after 3-5 cycles
- ⚙️ Dry filling Process
- ✓ Uniformly filled positive plates, 100% weight controlled
- ⚙️ In house Red Lead production
- ✓ Constant quality, homogeneous tamped density
- ⚙️ Produced by 99,99% Primary Lead
- ✓ Long service life, high conductivity, increased performance

**3 Gauntlet**

- ⚙️ Non woven, high quality polyester
- ✓ Prevents mass shedding, high mechanical stability

**4 Bottom Bar**

- ⚙️ Ultrasonically Welded
- ✓ Provides space for the unavoidable growth of the spine

**5 Negative Grid**

- ⚙️ Gravity Casted Grid using Optimized Lead - Antimony Alloy
- ✓ High tensile strength, corrosion resistance, low water consumption

**6 Negative Active Mass**

- ⚙️ In house production of Lead Oxide
- ✓ Constant quality
- ⚙️ Fully automatic Vacuum Negative Paste Mixing Process
- ✓ Consistency of the Negative Active Mass

**7 Separator**

- ⚙️ Highly porous Polyethylene, enveloped using mechanically crimped sleeve
- ✓ Increased performance preventing short-circuits

**8 Formation & Activation**

- ⚙️ Fully automatic Jar Formation process
- ✓ Constant quality in each and every cell

**9 Electrolyte**

- ⚙️ High Purity
- ✓ Long life performance

**10 Pole Terminal**

- ⚙️ Innovative conical design of the pole sealing system
- ✓ Uses the unavoidable growth of the plates to press against the grommet and improve the sealing
- ⚙️ Tin plated 16 mm diameter inserts

**11 Pole Bridge**

- ⚙️ Cast On Strap manufactured pole bridge
- ✓ Consistent & uniform composition ensures superior connections

**12 Lid**

- ⚙️ Polypropylene reinforced lid thermo-welded to the container

**13 Cell Container**

- ⚙️ Polypropylene container, with sufficient sediment space

**14 Operational Vent Plug**

- ⚙️ Electrolyte level marking, anti-surge baffle, free cell gassing
- ✓ Increased operational safety

- ⚙️ Key Features
- ⚙️ Design Features
- ✓ Benefits

The Foundations of the SUNLIGHT cell

Technology Choices based on Submarine Batteries | Solid Design for Long Life in Tough Conditions

Manufactured on the Best-in-Class Equipment | Uncompromised use of Raw Materials | Fully Controlled Production Process

## Plate Type: 60 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 343	
			h2: 370	
		I		
2 PzS 120	120	47	8.5	
3 PzS 180	180	65	12.0	
4 PzS 240	240	83	15.4	
5 PzS 300	300	101	19.0	
6 PzS 360	360	119	22.5	
7 PzS 420	420	137	26.0	
8 PzS 480	480	155	29.5	
9 PzS 540	540	174	33.0	
10 PzS 600	600	192	36.5	

## Plate Type: 80 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 408	
			h2: 435	
		I		
2 PzS 160	160	47	10.0	
3 PzS 240	240	65	14.2	
4 PzS 320	320	83	18.4	
5 PzS 400	400	101	22.6	
6 PzS 480	480	119	26.7	
7 PzS 560	560	137	31.3	
8 PzS 640	640	155	35.1	
9 PzS 720	720	174	39.3	
10 PzS 800	800	192	43.4	

## Plate Type: 90 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 478	
			h2: 505	
		I		
2 PzS 180	180	47	11.9	
3 PzS 270	270	65	17.0	
4 PzS 360	360	83	22.1	
5 PzS 450	450	101	27.1	
6 PzS 540	540	119	32.2	
7 PzS 630	630	137	37.2	
8 PzS 720	720	155	42.3	
9 PzS 810	810	174	47.4	
10 PzS 900	900	192	52.4	

## Plate Type: 105 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 514	
			h2: 541	
		I		
2 PzS 210	210	47	13.5	
3 PzS 315	315	65	19.1	
4 PzS 420	420	83	24.6	
5 PzS 525	525	101	30.5	
6 PzS 630	630	119	36.1	
7 PzS 735	735	137	41.8	
8 PzS 840	840	155	47.4	
9 PzS 945	945	174	53.1	
10 PzS 1050	1050	192	58.4	

## Plate Type: 115 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 548	
			h2: 575	
		I		
2 PzS 230	230	47	14.2	
3 PzS 345	345	65	20.3	
4 PzS 460	460	83	26.4	
5 PzS 575	575	101	32.4	
6 PzS 690	690	119	39.0	
7 PzS 805	805	137	44.7	
8 PzS 920	920	155	50.6	
9 PzS 1035	1035	174	56.6	
10 PzS 1150	1150	192	62.7	

## Plate Type: 125 Ah

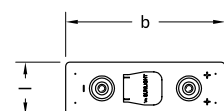
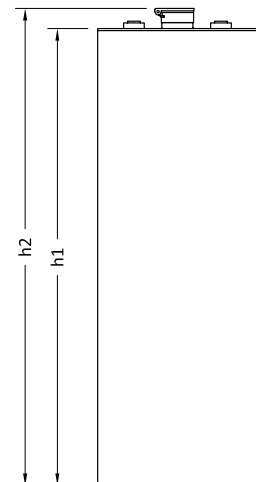
Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 568	
			h2: 595	
		I		
2 PzS 250	250	47	15.0	
3 PzS 375	375	65	21.2	
4 PzS 500	500	83	27.4	
5 PzS 625	625	101	33.9	
6 PzS 750	750	119	40.3	
7 PzS 875	875	137	46.5	
8 PzS 1000	1000	155	53.1	
9 PzS 1125	1125	174	59.4	
10 PzS 1250	1250	192	66.0	

## Plate Type: 140 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 688	
			h2: 715	
		I		
2 PzS 280	280	47	17.5	
3 PzS 420	420	65	24.7	
4 PzS 560	560	83	31.8	
5 PzS 700	700	101	39.3	
6 PzS 840	840	119	46.7	
7 PzS 980	980	137	53.9	
8 PzS 1120	1120	155	61.3	
9 PzS 1260	1260	174	68.6	
10 PzS 1400	1400	192	76.0	

## Plate Type: 155 Ah

Type Designation	Nominal Capacity Ah (C <sub>20</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 198	h1: 713	
			h2: 740	
		I		
2 PzS 310	310	47	18.9	
3 PzS 465	465	65	26.7	
4 PzS 620	620	83	34.6	
5 PzS 775	775	101	42.6	
6 PzS 930	930	119	50.5	
7 PzS 1085	1085	137	58.5	
8 PzS 1240	1240	155	66.4	
9 PzS 1395	1395	174	74.4	
10 PzS 1550	1550	192	82.4	



\* According to IEC 60254- Part 1

\*\* Filled and charged cell weights  $\pm$  5%

\*\*\* Cells' dimensions according to IEC 60254-Part 2

## Plate Type: 55 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 401	
			h2: 428	
		I		
2 PzB 110	110	45	7.9	
3 PzB 165	165	61	11.0	
4 PzB 220	220	77	14.0	
5 PzB 275	275	93	17.1	
6 PzB 330	330	109	20.1	
7 PzB 385	385	125	23.2	
8 PzB 440	440	141	26.2	
9 PzB 495	495	157	29.2	
10 PzB 550	550	173	32.3	

## Plate Type: 65 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 457	
			h2: 484	
		I		
2 PzB 130	130	45	9.1	
3 PzB 195	195	61	12.5	
4 PzB 260	260	77	16.1	
5 PzB 325	325	93	19.5	
6 PzB 390	390	109	23.0	
7 PzB 455	455	125	26.5	
8 PzB 520	520	141	30.1	
9 PzB 585	585	157	33.5	
10 PzB 650	650	173	37.0	

## Plate Type: 75 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 514	
			h2: 541	
		I		
2 PzB 150	150	45	10.3	
3 PzB 225	225	61	14.2	
4 PzB 300	300	77	18.2	
5 PzB 375	375	93	22.2	
6 PzB 450	450	109	26.2	
7 PzB 525	525	125	30.2	
8 PzB 600	600	141	34.2	
9 PzB 675	675	157	38.2	
10 PzB 750	750	173	42.2	

## Plate Type: 85 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 570	
			h2: 597	
		I		
2 PzB 170	170	45	11.5	
3 PzB 255	255	61	16.2	
4 PzB 340	340	77	20.5	
5 PzB 425	425	93	25.0	
6 PzB 510	510	109	29.4	
7 PzB 595	595	125	33.8	
8 PzB 680	680	141	38.4	
9 PzB 765	765	157	42.6	
10 PzB 850	850	173	47.2	

## Plate Type: 100 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 606	
			h2: 633	
		I		
2 PzB 200	200	45	12.3	
3 PzB 300	300	61	16.8	
4 PzB 400	400	77	21.5	
5 PzB 500	500	93	26.1	
6 PzB 600	600	109	30.8	
7 PzB 700	700	125	35.4	
8 PzB 800	800	141	40.1	
9 PzB 900	900	157	44.5	
10 PzB 1000	1000	173	48.9	

## Plate Type: 105 Ah

Type Designation	Nominal Capacity Ah (C <sub>5</sub> )*	max cell dimensions mm***		Weight in kg**
		b: 158	h1: 686	
			h2: 713	
		I		
2 PzB 210	210	45	14.1	
3 PzB 315	315	61	19.4	
4 PzB 420	420	77	24.8	
5 PzB 525	525	93	30.1	
6 PzB 630	630	109	35.4	
7 PzB 735	735	125	40.9	
8 PzB 840	840	141	46.3	
9 PzB 945	945	157	52.5	
10 PzB 1050	1050	173	58.4	

\* According to IEC 60254- Part 1

\*\* Filled and charged cell weights ± 5%

\*\*\* Cells' dimensions ± 2 mm, according to IEC 60254- Part 2

- Motive Power batteries can be used in all kinds of forklift trucks, cleaning machines and other electric vehicles.
- They are available in all kinds of voltage configuration and forms.



## 1 Inter-cell Connector

- Fully insulated flexible bolt-on cable connectors
- Allows fast and easy cell replacement
- Reduces time & cost

## 2 Bolt

- Plastic-head connector bolt
- Touch proof insulated with voltage measurement point

## 3 Battery Connectors (Plugs & Sockets)

- Available in the following types:
  - DIN Type connectors according to DIN 43589
  - Flat pole connectors with color coding

## 4 Exit Cables

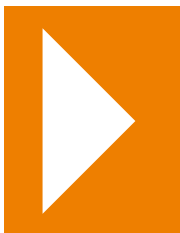
- Insulated color marked cables
- Prevent short circuit and allow correct and fast installation

## 5 Tray

- Made of steel
- Protected with plastic powder coating (standard configuration)
- Durability
- Corrosion protection
- Available in various sizes and colors

- Design Features
- Benefits

# Complete Battery Features



- Available in every voltage and cell arrangement configuration

- Fully plastic coated steel containers in many dimensions

- Insulated bolts and connectors increasing the user safety and simplifying maintenance and repair

- A complete range of accessories covering practically every need

- Suitable for all applications from light duty to heavy duty

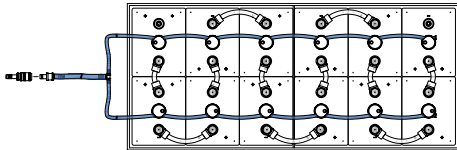
## Chargers



### Sunlight chargers

An innovative wide range of battery chargers offering safe, reliable and fast recharging to your motive batteries combined with excellent energy efficiency and serviceability.

## Automatic Filling System



A centralized piping system permanently fixed on the battery which quickly distributes the necessary water quantity to all the battery cells ensuring optimum electrolyte level and density.

## Airlift system



A centralized piping system permanently fixed on the battery cells, delivers to them low pressure air (requires an airlift configured charger). This air is mixing the electrolyte solution with many and significant benefits for the battery life and its related costs:

- Lower recharge times
- Lower water consumption because of the significantly less energy required (down to 1,07 recharge factor) for the recharge causing up to a 60% water consumption saving.
- Lower battery temperatures during recharge
- An overall decrease in energy costs because of the less energy used.

## Electrolyte Level Indicator



A simple yet extremely efficient monitoring system for the electrolyte level of the cells available in two versions: Blinky & Smart Blinky.

## Battery Monitoring System



### Sunlight eGO3 series

A highly advanced data collection system permanently fixed on your battery. This information can be stored remotely and can be used to help the user understand and improve the usage of his battery.

Headquarters in Athens, Greece, EU

Manufacturing Plant in Xanthi, Greece, EU



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



[www.systems-sunlight.com](http://www.systems-sunlight.com)

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