

Motive Power

Xtreme Force

More Power Under Any Condition 



Higher
Energy



Faster
Charging



Extreme
Conditions

 **SUNLIGHT**
Reliable Battery Solutions

XtremeForce Series

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, including **Material Handling and Logistics**.

SUNLIGHT based on the vast know-how and experience in designing and producing advanced technology batteries (i.e. submarine and torpedo batteries) has developed the **XtremeForce Product range** based on **CSM (Copper Stretch Metal) technology** that is able to operate **under extreme temperatures** and can offer **longer operating time** through its **higher energy content** as well as **faster charging** through its **reduced internal resistance**.

The complete Motive Power portfolio consists of:

- Motive Power Cells & Batteries**
- HydroSave Series**
- MotionGel Series**
- XtremeForce Series**
- Full list of accessories***

*Including Chargers, Electrolyte Level Indicators and Battery Monitoring Systems

- The increasing demands of Material Handling and Logistics Industry as well as the diversity of applications of modern forklifts/trucks require batteries able to operate under extreme conditions and run longer
- The higher energy content of our XtremeForce series, comparing to conventional lead acid batteries and reduced internal resistance, contributes to increased operating time of material handling trucks
- At the same time the excellent energy efficiency ensures lower operating costs

Designed & Manufactured for Ultimate Performance & Longevity

1 Negative Grid

- ⚙️ Copper grid ensuring more uniform current density distribution over the plate surface.
- ✓ Reducing internal resistance

2 Positive Grid

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

3 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

4 Gauntlet

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

5 Bottom Bar

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

6 Negative Active Mass

- ⚙️ In house production of Lead Oxide
- ✓ Consistent Quality
- ⚙️ Fully automatic Vacuum Negative Paste Mixing process

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



Cold storage / Outdoor applications



Forklifts operating in high rack facilities requiring more lifting



Heavy duty applications with demanding acceleration periods during operation from the forklift



Multi-shift applications with one battery through fast and opportunity charging



Seasonal business with high activity peaks



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

⚙️ Design Features

✓ Benefits

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

6 Automatic Filling System

- Top up of the battery's cells from one central point through an integrated piping system
- ⚙️ The automatic filling plugs ensure the optimum filling level of the cells
- ✓ Minimization of the required maintenance time and cost

7 Airlift System

- A pump is used to circulate low-level compressed air into the cells and create a homogeneous electrolyte concentration throughout them
- ⚙️ Optimum design and installation of tubes in cells for perfect sealing and efficient operation
- ✓ The stratification of the electrolyte is prevented
- ✓ Homogeneous density and temperature is achieved

2 Shift Operation

- Our XtremeForce Batteries equipped with Airlift are able to take full advantage of the fast and opportunity charging capabilities of CSM technology allowing the battery to operate **on 2 shifts with opportunity charging**.

Higher Energy Efficiency

- Negative plates with CSM grid (Copper Stretch Metal) reduces internal resistance resulting in **higher energy efficiency** and **higher energy content**.

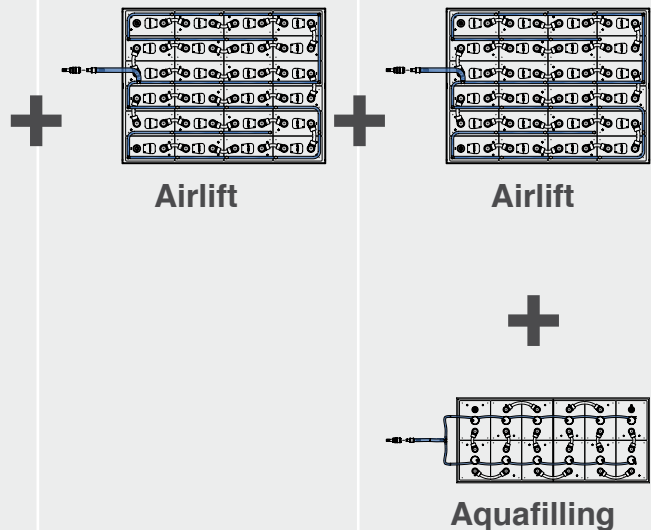
Standard DIN size - Higher Energy Content

- Within the same dimensions with standard cells (fully compatible to IEC 60254-2) offer **higher capacity** and higher energy content especially useful in **high rack facilities and heavy-duty operations**.

Fast and Opportunity Charging

- Our FILON FUTURE chargers enable **fast and opportunity charging** in 4 hours (when equipped with airlift) thus allowing multi-shift operation with one battery.

	Standard Version	Advanced Version	Advanced+ Version
Airlift	no	yes	yes
Aquafilling	no	no	yes
Fast Charge	no	yes	yes
Energy Content	higher*	higher*	higher*
Internal Resistance	up to -15%	up to -15%	up to -15%
Watering time	Normal	Normal	up to 5 times faster



*vs the equivalent PzS

XtremeForce Cell Range

Plate Type: 130 Ah

Type Designation	Nominal Capacity Ah (C ₅)	Nominal Energy Content Wh	max cell dimensions mm**		Weight in kg*
			b: 198	h1: 568	
				h2: 595	
I					
2 PzSCSM 260	260	507	47		14,3
3 PzSCSM 390	390	761	65		20,1
4 PzSCSM 520	520	1014	83		26,0
5 PzSCSM 650	650	1268	101		31,9
6 PzSCSM 780	780	1521	119		37,8
7 PzSCSM 910	910	1775	137		43,7
8 PzSCSM 1040	1040	2028	155		49,7
9 PzSCSM 1170	1170	2282	174		55,5
10 PzSCSM 1300	1300	2535	192		61,4

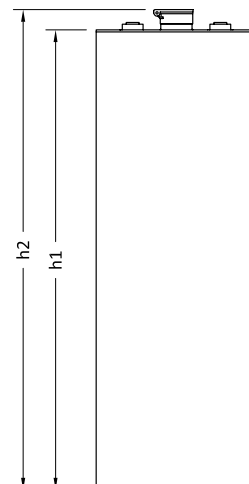
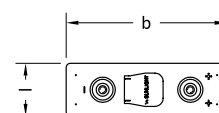


Plate Type: 160 Ah

Type Designation	Nominal Capacity Ah (C ₅)	Nominal Energy Content Wh	max cell dimensions mm**		Weight in kg*
			b: 198	h1: 713	
				h2: 740	
I					
2 PzSCSM 320	320	624	47		17,7
3 PzSCSM 480	480	936	65		25,0
4 PzSCSM 640	640	1248	83		32,3
5 PzSCSM 800	800	1560	101		39,6
6 PzSCSM 960	960	1872	119		46,9
7 PzSCSM 1120	1120	2184	137		54,3
8 PzSCSM 1280	1280	2496	155		61,6
9 PzSCSM 1440	1140	2808	174		68,8
10 PzSCSM 1600	1600	3120	192		76,0



* Filled and charged cell weights ± 5%

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

XtremeForce Battery Range*

Plate Type	24V Battery	48V Battery	80V Battery
130Ah	24V-260AH (2 PzSCSM 260)	48V-260AH (2 PzSCSM 260)	80V-260AH (2 PzSCSM 260)
	24V-390AH (3 PzSCSM 390)	48V-390AH (3 PzSCSM 390)	80V-390AH (3 PzSCSM 390)
	24V-520AH (4 PzSCSM 520)	48V-520AH (4 PzSCSM 520)	80V-520AH (4 PzSCSM 520)
	24V-650AH (5 PzSCSM 650)	48V-650AH (5 PzSCSM 650)	80V-650AH (5 PzSCSM 650)
	24V-780AH (6 PzSCSM 780)	48V-780AH (6 PzSCSM 780)	80V-780AH (6 PzSCSM 780)
	24V-910AH (7 PzSCSM 910)	48V-910AH (7 PzSCSM 910)	80V-910AH (7 PzSCSM 910)
	24V-1040AH (8 PzSCSM 1040)	48V-1040AH (8 PzSCSM 1040)	80V-1040AH (8 PzSCSM 1040)
	24V-1170AH (9 PzSCSM 1170)	48V-1170AH (9 PzSCSM 1170)	80V-1170AH (9 PzSCSM 1170)
	24V-1300AH (10 PzSCSM 1300)	48V-1300AH (10 PzSCSM 1300)	80V-1300AH (10 PzSCSM 1300)
	160Ah	24V-320AH (2 PzSCSM 320)	48V-320AH (2 PzSCSM 320)
24V-480AH (3 PzSCSM 480)		48V-480AH (3 PzSCSM 480)	80V-480AH (3 PzSCSM 480)
24V-640AH (4 PzSCSM 640)		48V-640AH (4 PzSCSM 640)	80V-640AH (4 PzSCSM 640)
24V-800AH (5 PzSCSM 800)		48V-800AH (5 PzSCSM 800)	80V-800AH (5 PzSCSM 800)
24V-960AH (6 PzSCSM 960)		48V-960AH (6 PzSCSM 960)	80V-960AH (6 PzSCSM 960)
24V-1220AH (7 PzSCSM 1220)		48V-1220AH (7 PzSCSM 1220)	80V-1220AH (7 PzSCSM 1220)
24V-1280AH (8 PzSCSM 1280)		48V-1280AH (8 PzSCSM 1280)	80V-1280AH (8 PzSCSM 1280)
24V-1440AH (9 PzSCSM 1440)		48V-1440AH (9 PzSCSM 1440)	80V-1440AH (9 PzSCSM 1440)
24V-1600AH (10 PzSCSM 1600)		48V-1600AH (10 PzSCSM 1600)	80V-1600AH (10 PzSCSM 1600)

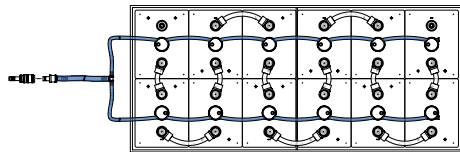
* The Range presented is indicative. In the case you request a different Battery Type, please contact SUNLIGHT.



Chargers

Sunlight FILON FUTURE Charger Series

High frequency chargers with specialized charging profile, airlift system and sensor for temperature compensation suitable for fast and opportunity charging.



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 for the recharge (recharge factor as low as 1,07) 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 eGO! 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.



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



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