



a Sunlight Group company



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# Providing Energy for a World in Motion



## OUR Group

Facilities worldwide

**35**<sup>+</sup> la

Cells capacity

6mil

Battery technologies

5 Pb Ag Zn

R&D hubs

**5**HB









### High demands of toughest industrial use. The premium choice for heavy duty applications



#### **Modular Design**

for high variances and easy conversion for 2nd life applications



#### **High Efficiency**

Charging factor less than 1.03



#### **Suitable for Coldstore**

Winter outdoor applications

#### **Applications**



Forklifts



Floor cleaning equipment



Material handling equipment



Automated guided vehicles (AGVs)



Aerial work platforms

TRIATHLON lithium-ion battery systems are designed to meet the high demands of tough industrial use. A complete system consists of Li-ion modules of intelligent monitoring and control electronics, various safety components and an HF fast charger.



Voltage range: 24-120V



Data logger & report function via USB



Capacity from 74 to 2,368 Ah in 74 Ah steps



Continuous charging current up to 800A





# A revolutionary "smart" battery solution developed to exceed customer needs on a product, safety, and communication level



#### **Preventive maintenance**

Remote access and service capabilities via Sunlight IoT platforms (Sunlight GLocal)



#### **Parallel Battery Topology**

Uninterrupted battery operations via remote isolation of potential inactive modules through Sunlight GLocal



#### High return on investment

Maintenance-free and battery usage optimization, free after-sales support during the warranty

Incorporating years of success in design, innovation, and production of lithium-ion batteries for advanced applications, the Sunlight Li.ON FORCE product range delivers premium safety, high efficiency, and long life. Ideal across a wide range of industries, in particular industrial mobility.



Fast opportunity charging



Active balancing



Stable performance under harsh operating conditions

#### **Applications**



For klifts



Automated guided vehicles (AGVs)



Floor cleaning equipment



Aerial work platforms



Battery protection & energy efficiency



Charging time: 1~1,5h - 3 shift operation



24/7 operability & serviceability via Sunlight GLocal







## Light and durable. A perfect fit for your Class III applications



## Compact design and easy installation

Narrow width to fit most Class III compartments and no need for lifting machinery



#### **SoC** indicator

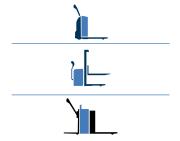
Easy monitoring of the battery State of Charge without opening the battery compartment



## Scalable parallel connections

Multiple parallel connections capability, which increases the capacity of the battery system

#### **Class III Applications**



## Lightweight and standardized lithium-ion battery designed for all Class III vehicles

Lithium-ion battery designed with a robust construction to withstand mechanical and chemical strains for Class III vehicle.



Fast and opportunity charging (1-1.5h)



Protection of cells and battery



Resistant to mechanical and chemical strains



Small size for best fitting



Fully certified batteries according to UN / DOT 38.3, CE



Maintenance-free





## Designed to provide premium power and lifespan, without a premium price tag



## On-board-plug-in fast charger

45A built-in-charger for an optimized charge profile. Effortlessly connects to a standard 110 outlet, ensuring convenient and efficient charging.



## Battery-truck constant connection

Narrow width to fit most Class III compartments



#### 12-90-5 replacement

Battery, charger and requires ballast included

The Lithium Iron phosphate (LFP) battery chemistry is the ultimate choice to last the grueling demands of the workday.



Cloud access Remote connection and bi-directional communication



LFP chemistry Long lasting twice as long as lead-acid

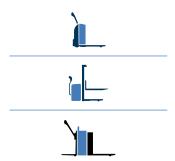


Critical parameters monitoring and protection



Maintenace free Minimize downtime and labor costs with the maintenance free design

#### **Class III Applications**













## A proven solution and nearly "maintenance-free" battery with excellent performance for traction applications



#### **Tubular plate**

Excellent interface, higher power density, high tensile strength, corrosion resistance



#### **Red lead**

99,99% pure lead for extended service life and full capacity within the first 3-5 cycles



#### **Bottom bar**

Ultrasonically welded with gauntlets, an advanced design bottom bar provides space for the unavoidable spine growth during operation

#### **Applications**



**Forklifts** 



Floor cleaning equipment



Electric pallet jacks



Lifting platforms



Automated guided vehicles (AGVs)

Sunlight and Triathlon tubular plates design allows up to 135% more water than standard flooded lead-acid batteries and only requires watering once every 30 to 60 days, depending on application.

The bolt-on intercell design reduces the time required to change out a cell vs a weld on design by at least 30 minutes and is inherently safer.



Enveloped separator preventing short-circuits



Fully recyclable product, circular economy enabler



High performance & high-power density



Reliability and long service life











### Maintenance-free sealed-type GEL battery ideal for critical environments



#### **Operational flexibility**

Minimum gas emissions and ventilation requirements



#### Sustained performance

GEL electrolyte eliminates acid stratification



#### Maintenance-free

Sealed type battery, no water topping up is required through the entire lifetime

Sunlight MotionGel and Triathlon TPzV series are a proven VRLA (Valve Regulated Lead-Acid) solution to minimize operating costs & maximize operational safety for industrial mobility.

Supreme solution for hygiene-sensitive product storage facilities with limited charging space or where maintenance is difficult. GEL electrolyte prevents acid stratification during daily charge-discharge operation prolonging the battery's life time.



Minimum gas emissions



No water topping up required



99,99% pure lead for extended service life



Fully recyclable product, circular economy enabler



arrestor for increased safety

#### **Applications**



Forklifts



Floor cleaning equipment



Electric pallet jacks



Lifting platforms



Automated guided vehicles (AGVs)



#### **More Power**







## An ideal choice for operations under extreme conditions



#### **Productivity**

One XtremeForce battery can replace two conventional leadacid batteries



#### **High performance**

By using a copper grid in the negative plates, we achieve reduced internal resistance



## Operation under extreme temperatures

Cold storage, outdoor applications and seasonal business with high activity peaks

#### **Applications**



**Forklifts** 



Floor cleaning equipment



Electric pallet jacks



Lifting platforms



Automated guided vehicles (AGVs)

Sunlight XtremeForce and Triathlon More Power product range, based on CSM (Copper Stretch Metal) technology, are able to operate under extreme conditions, offering high energy density for demanding and heavy-duty applications.

They can offer longer operating time through higher energy content as well as faster & opportunity charging through reduced internal resistance, helping to increase productivity.



Fast / Opportunity charging



High energy density (heavy duty applications)



Multiple shift operations



Fully recyclable product, circular economy enabler

## Helping you explore sustainable life experiences



## ElectroLiFe GC2 for golf cart

High-quality plug & play lithium-ion battery with capabilities beyond traditional ways

## ElectroLiFe GROUP 49 for caravan and mobile homes

Designed for outdoor enthusiasts with limitless reliable power that will travel you to unexplored places and escape to nature











## High-quality plug & play lithium-ion batteries for semi-traction applications



## High return on investment

Maintenance-free and battery usage optimization, free after-sales support during the warranty



#### **High performance**

Innovative BMS providing energy savings & extended life cycle



#### Parallel connections kit

Ultimate protection during installation & operation

#### **Applications**



Floor cleaning equipment



Material handling equipment



Aerial work platforms



Recreational vehicles



Marine use



Golf carts

Sunlight ElectroLiFe creates a unique customer experience with user-friendly features and accessories. With a plug & play, tool-less installation with press-to-release terminals offering full protection and ultimate safety during connection of batteries and operation.



Plug & play installation



Scalable parallel connection



SoC indicator on the dashboard



Complete voltage range 25.6V – 38.4V – 51.2V





## Traction batteries GEL technology for industrial cleaning machines







Deep-discharge-proof

Your cleaning machine should always be ready for use in order to cope with the daily tasks. Machine downtime or complete failure significantly restrict the workflow and cause unplanned costs.

Depending on your individual application, you can choose from various the GEL, AGM and Conventional (wet) battery technologies.



Recyclable

#### **Applications**



Floor cleaning equipment



Lifting platforms



**Forklifts** 





### Sunlight PowerBox Chargers - Product Families





#### **SLC Series** 50Hz/Conventional Chargers



Options for charging profiles (Wa profile 10-12h / Pulse profile 7-8h)

User Interface with 3 status Leds

US version of conventional chargers with UL certification

Optimized charging profiles for Sunlight Batteries High quality materials for high durability and performance

LLC fully controlled pcb board

#### **SLH Series**

HF (High Frequency) Chargers









Selectable charging profiles (Up to 10 different options)

Lithium-Ion available models

Energy-efficient (efficiency up to 95%)

US version available with UL certification (selected models)

Optimized charging profiles for Sunlight Batteries Multifunctional LCD that displays the charging profile in real time with 4 status LED



## **Lithium Chargers**



Fast charging systems of the TriCOM ion series are the ideal complement for the 5-Star Li-Ion TC-Range



Power & voltage downward compatible (24 to 80 V)



Maximum Power for heavy duty appl. : Up to 800A charging current possible



Modular design: power scalable in 50A steps



Efficiency Champion: Up to 97 % efficiency!







### **Energy Management Solution**

MD LOADManagement considerably reduces high peak demand through intelligent load management. Ensures optimum availability of your fleet while at the same time significantly reduces available mains connection power requirements.







The innovative MD LOADmanagement enables smart energy management aiming at a significant reduction of the grid connection capacity.

An intelligent real-time algorithm controls the individual chargers and optimizes the power or current output.



Mapping of charging stations for electric trucks and cars possible



Live view of individual chargers & SoC via TriVIEW



Integration of PV systems and stationary storage possible as energy sources



As a technology-agnostic company, we combine data-driven insights and Industry 4.0 tools, such as cloud computing and analytics, AI and Machine Learning. We participate actively in the digital transformation journey of your business, offering technological solutions, optimizing processes, and adding new capabilities in your operation cycles.





**Real-time monitoring:** Integration and connection to Sunlight GLocal



**Li-ion transition:** Our Al and Machine Learning algorithms developed for our Lthium calculator in Sunlight Glocal, enables you to make data-driven decisions for your application based on battery and forklift usage, and evaluate a switch to lithium batteries



**Cost control:** Make confident and data-driven decisions and achieve high productivity while protecting your investment and equipment



**Live alarms:** Pro-actively amend procedures avoiding unnoticed threats that would reduce your battery performance and lifespan



Sunlight GLocal integration: Data logged from Knowi are automatically uploaded in Sunlight's cloud platform. GLocal is a user-friendly application that encompasses all your Sunlight Lead-acid and Lithium-ion battery data in a single platform







**Real-time monitoring:** Monitor your batteries and forklift fleet status from anywhere in the world



**Live alarms:** Early warning signs to avoid battery failure and lost productivity



**Preventive maintenance:** Uninterrupted operations via 24/7 battery monitoring, real-time notifications and instant intervention



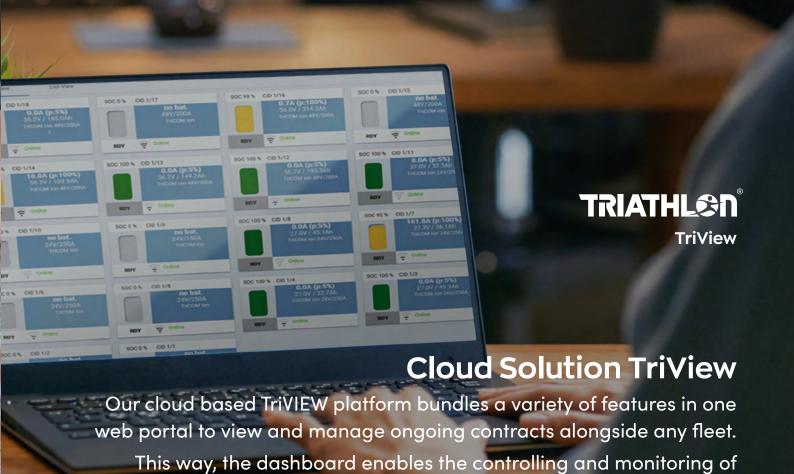
**Remote serviceability:** Remote troubleshooting for service cost optimization. Up to 90% of issues repaired via GLocal



**User-friendly:** Easy and enhanced communication. Effective fleet management. Enhanced productivity



**Data capture & analytics:** Optimizing battery performance and lifespan for your systems/ fleet



various applications.



Overview on the complete fleet



Maintenance interval overview



Cloud-based data storage



Minimizing energy & investment costs



View & order service jobs



Statistics-based analysis & management tools



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