Motive Power



REVOLUTIONARY INNOVATION INSIDE



1



Availability 24/7



Maintenance Free







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 **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. Advanced technology systems, comprising batteries such as Li-ion and Silver-Zinc with innovative electronics, have been developed and manufactured for over three decades to meet the highest of standards regarding safety and quality.

The increasing demands of Material Handling and Logistics Industry as well as the diversity of applications of modern forklifts/ trucks require batteries capable to operate under extreme conditions and run longer.

SUNLIGHT Li.ON FORCE motive power range incorporates SUNLIGHT's vast know-how and long experience in the design & production of Lithium-Ion batteries for advanced applications into a robust product destined for a broad spectrum of industries, including Material Handling and Logistic.

The complete Motive Power portfolio consists of:

SUNLIGHT PzS, PzB Series

The proven vented solution with excellent reliability and long service life, utilizing premium quality materials

HydroSave Series

The low- maintenance solution with up to 13 weeks intervals between watering utilizing optimised alloys and increased head space

MotionGel Series

The maintenance free sealed-type battery with GEL electrolyte ensuring no acid leakage and minimum gas emissions

Xtreme Force Series

Based on CSM (Copper Stretch Metal) technology, is suitable for operation under extreme conditions while allowing fast and opportunity charging

Li.ON FORCE Batteries

A complete range for motive applications of high safety standards. Designed with quality & reliability based on Innovation.

SUNLIGHT BCI Series

The BCI sized cells, combining compatibility with US battery dimensions with all the benefits of Tubular technology

Full list of accessories

A full list of accessories ranging from small connectors up to large battery chargers and battery monitoring systems



Advantages of Lithium-Ion vs Lead Acid Batteries



Characteristics	Lead Acid Batteries	Li.ON FORCE Batteries
Energy Density	~ 100 Wh/L	> 233 Wh/L
Charging Efficiency [%]	Up to 80%	Up to 95%
Emissions	Environmental unfriendly / Gassing and water loss when charging	Environmental friendly / Emission free
Maintenance	Required / water filling - check points	Not required
Charging Time (Full Charging)	8h	~ 1 - 1.5h
Opportunity Charging	Negative effect on service life	Yes, with NO negative effect on service life
Energy Efficiency	Up to 80%	95%
Operating Temperature	-20°C up to 55°C (-4°F up to 131°F)	-20°C up to 55°C (-4°F up to 131°F)
Temperature during Charge	-10°C up to 55°C (14°F up to 131°F)	0°C up to 45°C (32°F up to 113°F)



Li.ON FORCE Batteries provide lower Cost of Ownership & improved energy efficiency



-35% Annual energy consumption for battery recharging

-81% Annual operating expenses due to maintenance, battery handling / change





SUNLIGHT Li.ON FORCE offers the capability of fast and opportunity charging.

The battery can be fully recharged in 80 minutes per 8-hours shift in heavy duty use (for example, 4 opportunity charges of 20 minutes each, where it is also able to recover up to 25% of its discharged capacity)

The combination of fast and opportunity charging with the battery's outstanding efficiency and charge acceptance enables multi-shift operation.

In addition to this, SUNLIGHT Li.ON FORCE is able to support and utilize the regenerative braking in the most efficient way for its energy recovery.





Quality & Reliability





Quality & Reliability based on Innovation



Battery Interface

SUNLIGHT innovation

- Charging selection button fast_standard_slow
- On-board State of Charge display
- Single power-ON mounted on the battery
- Two integrated power plugs for easier recharging without removing the battery from the forklift

BMS & Power circuit

- Continuous monitoring of crucial operating parameters (voltage, temperature and current)
- Fully regulated charge / discharge procedure and integrated balancing function for maximum protection and enhanced battery cycle life.
- ● Indication of the State of Charge (SoC)
- Industrial design that optimizes cable management and allows easy access to all compartments of the battery.

Modular Design

- Maximum safety
- ➔ Full monitoring and balancing per cell

Battery Housing

- Available in all sizes (standard DIN trays or customized upon request).
- Retrofit in conventional trays of Lead-Acid powered forklifts
- Additional compartment designed for counterweight to meet weight requirements
- Durable housing allowing easy handling

Range: 25.6V / 38.4V / 51.2V / 83.2V

A large variety of batteries can be designed upon customer request fitting in a wide range of battery compartments and various types of electric forklifts.









Technology Advantages

LiFePO₄ one of the safest Lithium - technologies







BMS Battery's DNA

Battery Management System Functions







BMS Innovative Features



Bidirectional communication



COMMUNICATION IN 3 ACCESS LEVELS SUNLIGHT - SUPPLIER - WAREHOUSE

Motive Power | Li.ON FORCE

Technical Features



Full Charge time	Standard 80min, Full charge at 1 hour possible
Standard Charge Current	0.5C
Maximum Charge Current	1C
Opportunity Charge Current	0.75C
Max. Continuous Discharge Current	1C
Temperature during charge	0°C up to 45°C (32°F up to 113°F)
Temperature during discharge	-20°C up to 55°C (-4°F up to 131°F)
Nominal battery voltage range	25.6V - 38.4V - 51.2V - 83.2V
Available Capacities	up to 864Ah
Tray Sizes (Dimensions, weights)	DIN, BS, Customized
State of Charge indicator	Integrated on the battery
Communication Protocol	CAN bus
Intercell connections	Copper Nickel-plated connectors
Electrical Power Connection	REMA, Anderson

Product Range





SUNLIGHT Li.ON FORCE Chargers Filon FuturE

SUNLIGHT Li.ON FORCE Charger series advantages:

- Innovative and worldwide unique multi-resonance converter technology
- High Energy Efficiency up to 97%
- IU charging characteristic
- Fast and opportunity charging modes
- Able to achieve full recharge of the battery within 1 hour
- IP21, higher protection categories up to IP54 upon request
- Fixed connections ready to "plug & charge"
- Small footprint decentralized charging point installed in the area where the vehicle operates
- Touch graphic display
- Integrated CAN interface with established data transfer and communication with Li.ON FORCE BMS offering fully-controlled, advanced charging procedure



Charging Voltage 24V, 36V, 48V, 72V, 80V **Charging current:** 50A up to 400A

Mains voltage: Single Phase: 230V, 50/60 Hz Three Phase: 400V, 50/60Hz

Also available for USA market with ETL certification **Mains voltage:** Three phase 480V, 60Hz







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