

## Hybrid Energy Solutions for Surveillance and Data Applications

Our hybrid solutions open up new possibilities for surveillance by using leading-edge technology to offer up to 448 Watt peak solar power. The solar and wind power (as an option) solutions can supply the energy required by most CCTV camera and transmission combinations using abundant solar and wind energy. Our solutions store energy during daylight hours enabling the system to operate throughout the night. This is very relevant in those areas or applications where power is scarce or difficult to provide and therefore expensive.

Besides using leading edge engineering skills and components from Germany and Europe the design is unique. The vertically mounted solar panels are designed to store energy during the day and protect access to the batteries within a well designed and engineered package. Dirt and dust slides off the vertically mounted panels resulting in low maintenance. The alignment of the panels to the sunlight provides greater efficiency and output (than conventional panels), whilst existing electric poles can also be used in the deployment.

Our hybrid solutions are customized to solve the specific challenges faced by our clients. Even with simple surveillance in remote locations, our hybrid solutions are customized to ensure that the camera and transmission devices remain operational 24-7 providing the protection and comfort needed by our customers.

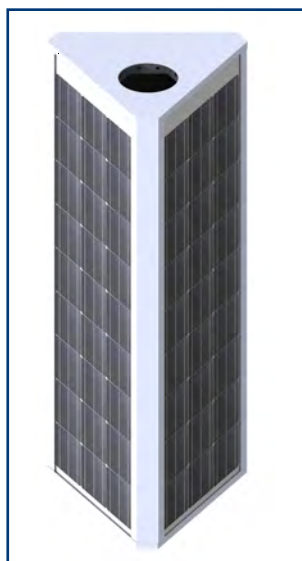


MADE IN GERMANY

### UNIQUE FEATURES

- » 2 or 4 X 112 watt panels vertically mounted
- » 1 X 1250 watt LIFE Po4 battery contained within vertically mounted panels
- » Premium components designed and developed in Germany
- » Intelligent Battery Management System optimizing energy usage
- » Automated management and control system via the Cloud ensuring autonomy
- » Deployed on existing electric poles measuring from 80 mm – 200 mm diameter
- » Weather resistant IP 66 rated connection and controller boxes.
- » Easy to maintain
- » Easy to deploy as a consequence of the pre-assembly of various components

## TECHNICAL DATA



### SOLAR-Module | 12Wp

Solar Cells	27 polycrystalline silicon cells	Front sheet	High transmission polymeric film
Cell Characteristics	156mm x 156mm, with 3 bus bars	Core material	Proprietary fibre reinforced plastic
Power (Wp)	112	Encapsulate	EVA
Isc (A)	8.41	Back Cover	Weather resistant back sheet Junction Box TÜV certified (IP 65) with 3 bypass diodes (12 A)
Imp (A)	8.02	Output Cables	Two 4mm <sup>2</sup> cables; 1 metre in length
Voc (V)	16.09	Connector Type	Matching MC4 compatible connectors
Vmp (V)	14.27		

The world's first fully-certified non-glass silicon solar cell based semi-flexible lightweight module certified by IEC 1215/61730/61701

## Technical Power Systems Management GSM

### Smart Hybrid Controller

The hybrid controller harvests energy from solar panels to power off-grid applications such as street lights, security and mobile signage. It is designed to be easily integrated into a variety of products and solutions to deliver highly reliable off-grid alternatives.

### Real Time Intelligence over the Internet

Configuration, multiple lighting profiles & power optimization can all be done remotely via PC or smartphone. Motion detection can be enabled remotely in all 4 adjustable light profile stages. Real time event settings combined with motion detection ensures the required light at the right time, while optimizing system availability and the life cycle of the system.

Customizable system alarms and automatic alerts, weather data history and forecasting and multi-level reporting provide unmatched intelligence.

### Remote and Proactive Maintainability

Full remote control and monitoring of all system components via PC or smartphone. Functions include the ability to change lighting profiles, check solar panels, perform short circuit test, adjust battery level, reboot system remotely and much more. Proactive versus reactive maintenance can determine when batteries or solar panels need to be replaced. Remote troubleshooting and control slashes maintenance time and cost.



### Reliability and Optimized Performance

Individual systems are managed to deliver 100% up time with site specific solar and wind performance. Maximum battery life is ensured through optimized charge profiles and life cycle management.

### Protection

Redundant protection for reverse connections, battery overcharge and over discharge.

## Battery 1000W

Type	Lithium Yttrium High Power Battery
Nominal Voltage	13.5V
Capacity	100Ah +/- 5%
Operation Voltage	11.8-15V at 80%DoD
Max. operating temperature	-25 - +50°

**Very safe technology**  
**No memory effect**  
**No Self-discharging effect**



This is the ultimate power storage system designed for today's challenging solar requirements. giving unparalleled levels of performance and reliability.