New energy, a whole new story

Flexible, light and resilient, resisting the harshest environmental conditions. Solbianflex photovoltaic modules are made using cells with up to 24% conversion of sunlight into electricity.

All the energy to live your passions without limits.
Many good reasons for choosing Solbian

Product quality, durability and maximum performance, always.

✓ Because we guarantee the quality of the product and its duration in time.

✓ Because our panels are very resilient, thin and extraordinarily flexible, able to adapt to curved surfaces, such as the deck of a boat.

✓ Because our panels are ultra-lightweight: only 2.1 kg per square meter, compared to 12 kg and more of traditional panels.

✓ Because we manufacture the SP series, with the most efficient solar cells on the market: high power even in very small dimensions.

✓ Because the ease of installation, both permanent and removable, is one of the strengths of Solbian: from structural adhesive to steel eyelets, all the different fixing methods provide easy installation.

✓ Because we offer a wide range of accessories, designed and manufactured for the marine industry.

✓ Because Solbian panels have been tested in extreme conditions by great heroes of sailing: Giovanni Soldini, Ambrogio Beccaria, Boris Herrmann and many others.

✓ Because our products are certified according to IEC 61215, IEC 61730 and IEC 61701 (salt mist). Solbian has also obtained ISO 9001 Quality, OHSAS 18001 Safety and ISO 14001 Environmental certifications.
No task is too hard for Solbianflex, with a wide range of power available. Four different series using four different technologies: SP, SR, SX and SXX. All with crystalline silicon cells, the most efficient and proven on the market, and using lightweight and flexible encapsulation materials.

Four levels of power, all winners
Power at the highest level.

**SP Series**

SP series is at the top of the range, thanks to the use of selected back-contact monocrystalline silicon cells, reaching a record 24% conversion of sunlight into electricity and with a pleasant appearance thanks to the electrical contacts hidden on the back. Back-contact cells represent the most advanced technology on the market, and make the SP Solbian panels the highest-efficiency flexible panels.

**Super Rugged Series.**

**SX Series**

In the SX series the monocrystalline solar cells are electrically connected using ultra-thin copper wires that form a very fine mesh on the cell surface, resulting in thousands of contact points. This alternative to the standard bus-bar method allows a higher module power and increases the energy yield. A technology optimally suited to flexible modules, due to its intrinsic insensitivity to micro-cracks, that are the most common cause of energy loss in solar modules. Another advantage is a reduced sensitiveness to shading, pushed to the extreme in the Guardian (G) models where several bypass diodes are inserted thanks to an innovative cell layout. The new connection technology, together with the use of high efficiency silicon cells, make SX panels especially powerful and reliable.

**Aesthetics, reliability and price.**

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**More power with HJT cells.**

**SXX Series**

The SXX series comes at the same size of standard 6 inches cell panels but generates more power, thanks to its silicon-based heterojunction solar cells (HJT) that offer more than 23% of efficiency. When compared with panels of the same nominal power, the SXX prove to harvest more energy due to HJT cells being intrinsically bifacial, an important feature especially when panels are encapsulated in a transparent sandwich and installed with the back exposed to indirect light. To top it all, HJT cells perform better than others in hot climates, thanks to very low temperature coefficients.
When shading is unavoidable

Guardian layout

Solbianflex SX and SXX panels can be offered with a modified cells topology. Thanks to the way Day4Energy™ solar cells are electrically connected, a larger number of bypass diodes can be integrated in the panel. The result is a panel that is far less sensitive to shading, a clear advantage in all kind of installations but especially on sailing boats, where shadows are unavoidable.

In a standard cell layout, where bypass diodes can be inserted any two strings (columns) of cells, the typical configuration consists of two or three bypass diodes, in the Guardian layout instead, five, seven or even nine diodes can be inserted.

Guardian SX models

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Thickness (mm)</th>
<th>Weight (kg)</th>
<th>Peak Power (W)</th>
<th>Rated Voltage (V)</th>
<th>Rated Current (A)</th>
<th>Number of cells</th>
<th>Number of diodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX 160 G</td>
<td>1075</td>
<td>996</td>
<td>2</td>
<td>2.4</td>
<td>160</td>
<td>18.6</td>
<td>8.6</td>
<td>36</td>
</tr>
<tr>
<td>SX 108 G</td>
<td>754</td>
<td>1016</td>
<td>2</td>
<td>1.7</td>
<td>108</td>
<td>12.6</td>
<td>8.6</td>
<td>24</td>
</tr>
</tbody>
</table>

Guardian SXX models

<table>
<thead>
<tr>
<th>Length (mm)</th>
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<td>2</td>
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<td>120</td>
<td>14</td>
<td>8.6</td>
<td>24</td>
</tr>
</tbody>
</table>
With great versatility, Solbianflex panels are able to meet the most demanding requirements, even in the most unusual installations. They can be mounted and removed with ease, thanks to several accessories, and adapted to various surfaces.
Contents of a photovoltaic kit

Panel
Lightweight and extraordinarily flexible, able to adapt to curved surfaces, such as the deck of a boat.

Cables
For the wiring, provided at required length

Regulator
Perfect combination between the solar generator and the battery to be charged

Connectors
Absolutely waterproof, safe and easily removable electrical connections
JUNCTION BOX
Solbianflex panels can be supplied with the junction box to allow connection to the charge controller. Solbian provides a complete kit with cables and connectors for easy installation.

SURFACE MOUNTING CONNECTION
When gluing panels to a solid surface, the electrical connections can be made by means of the rear-side wires of the panels with the SM option. Holes must be drilled in the support material. Cables are then extended through the holes and routed to the charge controller. The wiring is thus protected and invisible.
Fixing options

STRUCTURAL ADHESIVE
The flexible Solbianflex panels can become an integral part of the boat by means of a special double-sided structural adhesive. The electrical connection can be made via the junction box or by direct connection to the positive and negative poles of the panel (Surface Mounting solution).

STAINLESS STEEL EYELETS
They can be fixed on the edges of the panel to allow easy installation and removal. This solution allows you to fix the panel with ropes or screws.

LOXX SNAP FASTNERS
Snap fastners, a special kind of eyelets, make the attachment and removal of the panel easier. They are suitable for installation on canvas as well as on hard surfaces.

ZIPPER
A zipper can be sewn onto the panel, allowing a removable installation, especially on the bimini.
Charge Controllers and ALLinONE solution

Optimal solar energy management in all conditions.

Solbian offers some of the most advanced charge controllers of the market, for optimal solar power management in all conditions. The golden rule for marine applications suggests "one panel, one controller", but it can be achieved only with a perfect match between the solar generator and the battery to be recharged.

By using our selected DC/DC converters with MPPT optimization system (Maximum Power Point Tracking) you will have all the freedom in choosing panel size and configuration, and no matter what battery you need to charge (12, 24, 48 V... lead acid or lithium), the charge controller will take care of your needs.

CTEK, GENASUN, WESTERN CO. and VICTRON

Four renowned international brands, the same controllers chosen and tested by professional sailors and by several automotive companies, to harvest as much energy as possible from the sun.

Solbian Solar Charge Controller

The Solbian solar charge controller is designed for the transition to hybrid propulsion, both in maritime and land transport. It is therefore a boost regulator, with an MPPT algorithm, capable of raising the voltage even of just one module, to the levels required for electric propulsion, ie at nominal voltages ranging from 96 to 144 V, which are the standard for electric and hybrid vehicles batteries. For a perfect integration in control systems, the solar charge regulator also offers a CAN-bus communication interface.

ALLinONE solution

Solar panel+charge controller. To make solar energy simpler, suitable for the enthusiast as well as the professional user. All the electronics you need are already packed into the rugged waterproof box: a sophisticated MPPT controller capable of boosting the voltage to match with your battery pack. With the ALLinONE solution, panels can be combined simply by connecting them directly to your battery, each one being completely independent from the others, thanks to the integrated charge controller.
In addition to quality, aesthetics are an important feature of Solbian’s products. Customers can choose from three different colours: white, black and transparent.

Customers can choose the finishing that better suits their needs: matte, glossy or antiskid.

A masking layer placed over the solar cells changes the visual appearance of the solar panel, but keeps the cells’ efficiency largely unaffected. Solbian panels, beyond being easy to integrate, powerful and reliable, will also contribute to the elegance of your boat, caravan, house.
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