



enerG Focus Feature

# PV SOLAR PANELS

## UPSOLAR

Upsolar has now incorporated the Tigo Energy Maximizer into its award-winning PV modules.



The addition of the Tigo Energy Maximizer reduces installation costs and allows Upsolar modules to deliver more energy while providing active management and

enhanced safety for utility, commercial, and residential solar arrays, says the company. The result is an accelerated return on investment and lower cost of ownership.

Besides providing module level monitoring by maximizing the energy output of each individual module, Tigo Energy's solution addresses a number of issues that limit the efficiency, availability, and flexibility of today's solar installations.

[www.upsolar.com](http://www.upsolar.com)

## SCHOTT

SCHOTT PERFORM POLY modules are said to be a proven choice for PV projects due to their industry-leading features such as positive sorting, 25-year linear power warranty, 10-year workmanship warranty, and top tier PTC ratings. These features, combined with proven



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performance, as evidenced by the top rating in the recent TÜV Rheinland Energy Yield test, provide value for clients' investment, the company says.

Features include:

- Positive sorting with narrow output tolerance
- Buy American compliant
- 54 years of solar experience

[www.us.schottsolar.com](http://www.us.schottsolar.com)

## AU OPTRONICS/BENQ SOLAR

BenQ Solar, a division of AU Optronics, is a leading manufacturer of high efficiency, high quality, and technologically advanced solar PV products.

BenQ Solar delivers superior products and services to its residential, commercial, and utility customers while also developing PV power plant projects with local partners in Europe, the United States, Asia, and Africa.

BenQ Solar's flagship product is AC Unison, said to be the industry's first completely integrated AC module. AC Unison is designed for easy plug and play installation, high power and performance, and great aesthetics on a rooftop. As a certified AC PV module, AC Unison provides significant installation advantages, the company says. AC Unison includes a web-based monitoring system and a new mobile device monitoring application.  
[www.benqsolar.com](http://www.benqsolar.com)



## CENTROSOLAR

Manufactured in Canada, the S-series PV module is made with 60 high output polycrystalline cells, some of the highest performance and most reliable solar cells in the industry. The S-series contains top-brand EVA, a chemical resistant and flame retardant back sheet, and high-transparency, impact-resistant glass to ensure efficiency over time.

Engineered to perform in harsh climates like ice, hail, snow, high wind, humidity, and extreme ambient temperatures, the S-series PV module carries a five-year workmanship and materials warranty and a power warranty for 25 years at 80 percent and 12 years at 90 percent of minimum peak power. The S-Series is also



offered as part of Centrosolar Canada's CentroPack System. The CentroPack is the company's 'all in one box' solar system, providing installers with a turn-key system, pre-packaged with all the components needed to install an approved residential or commercial roof-top PV system. [www.centrosolarcanada.com](http://www.centrosolarcanada.com)

## ET SOLAR

ET Solar operates with the philosophy of offering leading technology and high-quality products and services to provide cost efficient turnkey system solutions and services to specialized PV investors. The company's business is divided into manufacturing and turnkey system solutions.

Headquartered in Nanjing, China, the company has three manufacturing bases in Taizhou and Nanjing and maintains a balanced vertically integrated production capacity of over 1 GW per year. ET Solar Group's North American headquarters is in San Francisco.

ET Solar offers a wide variety of BoS component products ranging from tracking systems and residential rooftop kits, to power cabinets for residential, commercial, and utility customers. ET's R&D team is made up of scientists and engineers from the U.S., Germany, and China, who ensure the high quality of products and solutions. [www.etsolar.us](http://www.etsolar.us)



## MAGE SOLAR

High-efficiency modules have always been part of MAGE SOLAR's product portfolio. Leading the market with their 30-year, 80 percent power output guarantee and zero to +5 watts tolerance for maximum power generation, MAGE POWERTEC PLUS modules are some of the most reliable high-performing products in the industry, says the company. Now the Dublin, Georgia-based complete system provider has introduced a new 250 W monocrystalline and a 235 W polycrystalline module. In addition, a black monocrystalline version of the 245 W module completes the new product line as an aesthetically pleasing alternative for dark roofs or historical renovation projects.



MAGE SOLAR's U.S. production facility is expected to roll out a UL-listed and fully ARRA-compliant version of the new wattage-types soon, as well. [www.magesolar.com](http://www.magesolar.com)

## SCHÜCO

Schüco's solar modules are known for their outstanding performance, the company says, making them a popular choice for both commercial and residential projects. Starting with high quality materials, these modules are manufactured to stringent specifications, resulting in a sturdy product with optimized outputs. Schüco has a holistic approach to sustainability by offering energy-efficient solutions for both PV and thermal and, in particular, offers the convenience of a one-stop shop (PV panels, mounting systems, and inverters) for system packages.

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Schüco's newest modules, the MS08 and PS08, embody Schüco's principles and quality approach to solar. With its 60 monocrystalline cells, black tedlar and frame, and solid black flush mount racking system, the MS08 system is a residential favorite for matching or complementing any rooftop. Its high power density maximizes module performance with outputs of up to 260 watts.

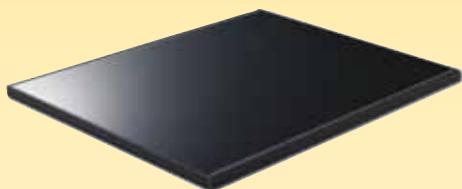
The PS08, a popular choice and competitively priced, is a 60-cell polycrystalline module

offering the same rigorous standards of quality and reliability.

Both the MS08 and PS08 are compatible with common inverters and mounting systems and have positive power tolerances of -0/+5% for guaranteed output. [www.schuco-usa.com](http://www.schuco-usa.com)

## SOLAR FRONTIER

Solar Frontier's SF140-155 module series offers the highest conversion efficiency of any mass-produced thin-film module, up to 12.6 percent, says the company. Solar Frontier's CIS modules feature the light soaking effect, which provides higher output than initially speci-



fied. All modules are RoHS compliant and cadmium- and lead-free. Fewer production steps and raw materials also mean an industry-leading energy payback time of less than one year. All of the company's modules are

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shipped in cardboard-free packaging and use recyclable corner pieces.

Product and technology highlights include:

- High efficiency mass-production thin-film module, up to 12.6 percent
  - World record 16.3 percent achieved in laboratory (30 cm x 30 cm module)
  - Up to 10 percent extra kWh/kWp vs. crystalline modules
  - Light soaking effect boosts output after installation
  - Based on proprietary R&D since 1978
  - Energy payback time under one year
- [www.solar-frontier.com](http://www.solar-frontier.com)

## MOTECH

The modules in Motech's newest series are high-efficiency monocrystalline solar modules using XS LEO cells. As a world leading solar cell producer, Motech understands solar modules inside-out. The best of its cells are used to create one of the most reliable modules on the market.

The 60-cell and 72-cell XS module series have average powers of 255 W and 305 W, respectively, and are Motech's highest powered modules to date. For projects where aesthetics are important, the SX60 is available in three configurations. The XS modules are built to the same rugged, high quality standards of all Motech products, thus ensuring long term clean reliable energy for years to come, the company says. [www.motechsolar.com](http://www.motechsolar.com)



## SOLARWORLD

SolarWorld is a worldwide leader in offering brand-name, high quality, crystalline solar-power technology. The company's strength is its fully integrated solar production. From silicon as the raw material, through wafers, cells, and modules all the way to turnkey solar systems of all sizes, the group combines all stages of the solar value chain.



SolarWorld's central business activity is selling quality modules to the installation and distribution trades and crystalline wafers to the international solar cell industry. Its group headquarters are located in Bonn, Germany, with sales sites in Singapore, South Africa, Spain, France, and California. The group's largest production facilities operate in Freiberg, Germany, and Hillsboro, Oregon. Sustainability is the basis of the group strategy. Under the name Solar2World, the group supports care projects using off-grid solar-power solutions in developing countries, exemplifying sustainable economic development. [www.solarworld-usa.com](http://www.solarworld-usa.com)

## TRINA

Trinamount III combines Trina Solar's high-quality panels with a fast and easy racking system. Its innovative frame design allows for installations in a quarter of the time versus traditional installations, the company says. The Trinamount system is sleek, beautiful, and cost-effective, according to the company.

Trinamount offers fast and easy installations because of its low parts count. This means reduced inventory, faster and less intensive engineering and freight costs. It has a theft resistant design and auto-grounding. These features are designed to help solar installers increase profits while offering the best panels on the market. [www.trinasolar.com](http://www.trinasolar.com)



## CONERGY

Conergy delivers solar energy systems from a single source, offering all components and services for a solar installation under one roof.

With its modules, inverters, and mounting systems, the company creates Conergy System Technology, efficient and synchronized solar energy systems for private or commercial rooftops, as well as for multi-megawatt parks.

Conergy is scheduled to soon release its new aerodynamic mounting system for weight-limited industrial flat roofs, the Conergy SolarFamulus Air.

Developed by an aircraft construction engineer to leverage aerodynamic forces, the SolarFamulus Air reduces ballast requirements for an entire array. This lightweight mounting system benefits from aerodynamic principles similar to the spoiler on a racing car, as the



baffles help to significantly reduce vertical lifting forces caused by wind. The SolarFamulus Air's aerodynamic shape, together with its own weight and the use of minimal additional ballasting, secure it to the roof without any roof penetrations. [www.conergy.us](http://www.conergy.us)

## CANADIAN SOLAR

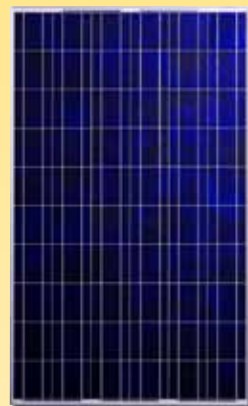
Canadian Solar's Efficient, Long-Term, Photovoltaic Solution (ELPS) solar cell technology allows solar cells to collect more light, achieving cell efficiencies of up to 19.5 percent for monocrystalline and 18 percent for polycrystalline cells.

With ELPS, the company's R&D team simplified the manufacturing process by building on its existing production technologies and using similar equipment and materials to reduce capital investments and production costs.

ELPS cells feature a Metal Wrap Through (MWT) design that moves the front busbars to the back of the cells, allowing for three percent more light absorption per cell and generating 6.3 percent more electricity than conventional solar modules.

ELPS modules, powered by 60 (156 x 156 mm) high-efficiency solar cells, offer an industry leading power-only tolerance and boast excellent low light performance to maximize morning, evening, and cloudy day performance. By generating more watts in less space, ELPS modules enable increased cell energy efficiency and a significant reduction in production costs.

Fully integratable with Canadian Solar's existing product lines, ELPS technology allows residential and commercial customers to seamlessly achieve one of the highest returns on solar investment in the industry and maintain a higher ratio of power output per investment. [www.canadiansolar.com](http://www.canadiansolar.com)



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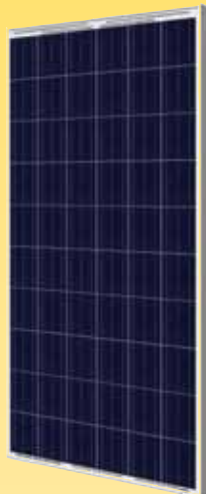
## HANWHA SOLAR

Hanwha Solar's Enphase Energized AC Module is a combination of Hanwha Solar high-performance solar modules and Enphase's highly efficient third-generation microinverters, allowing installers to sell an advanced solar solution to customers.

Hanwha Solar is experienced in both commercial and residential PV and has designed its modules so that Enphase's microinverters easily attach to the frame of a Hanwha Solar 60-cell module, meaning that each module can generate grid-compliant alternating current (AC) power.

With vertically integrated manufacturing of silicon ingots, wafers, PV cells, and modules, Hanwha Solar's modules are crafted to be reliable and efficient. The combination of Hanwha Solar's field-proven modules with Enphase microinverters allows the AC Module to deliver maximum energy harvest on PV solar installations.

[www.hanwha-solarone.com](http://www.hanwha-solarone.com)



In addition, JA Solar has developed a number of new products, such as double-sided glass modules for BIPV projects, frameless modules for rooftop projects, and small modules for off-grid system sets. [www.jasolar.com](http://www.jasolar.com)



## SOLON

The SOLON SOLquick rooftop system offers an innovative solution for flat roofs by integrating the solar module and mount into one unit for fast, easy, and tool-free installation, according to the company.

Designed with a simple plug-and-play concept, the lightweight system allows for flexible installation on various roof surfaces—self-ballasted, ballasted, and roof penetrating. Weighing less than 2.8 psf, SOLquick combines a frameless laminate with a racking system made of Fibrex material, a patented composite material made out of reclaimed wood fiber and a special thermoplastic polymer.

With no metal racking, no framed module, and no additional metal parts, SOLquick requires no grounding. SOLquick arrives on-site preassembled with wind deflector, junction box, and wire leads pulled through laminate and racking. [www.solon.com](http://www.solon.com)



## JA SOLAR

JA Solar is a leading manufacturer of high-performance solar products, with a high supply capability and strong innovation technology. JA Solar shipped 1.69 GW of solar products, including cells and modules, globally in 2011, which underlined its credibility and advantages even in a lackluster market, the company says.

JA Solar's strong R&D ability provides the company with a competitive advantage. The power output range of its solar panels in mass production has allowed the company to achieve market share and cost competitiveness.

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-- Matthew Alestra  
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