



SHARP Energy Solutions

Your Solar Partner for Life

Be ahead of your competition with advanced products.

sharp.eu/solar | [@SHARPSolarEMEA](https://twitter.com/SHARPSolarEMEA)

SHARP
Be Original.

Leverage the industry's longest-standing experience and ESG achievements

Long-term partnerships are built on trust, strength, and reliability. When our competitors started entering the market in the late 1990s, SHARP already had about 40 years of experience with a wide range of solar panel applications.

As a company that has been around for over a century, we have demonstrated to generations that we will be around long enough to honor our guarantees.

Secure your customers investment

As part of a corporation whose diverse portfolio includes a broad range of consumer electronics, we rely on a stable financial backbone for our solar PV business. In contrast to pure solar manufacturers, we can withstand the fluctuations of the highly volatile solar markets.



Work with an ESG leader

Our key Achievements:

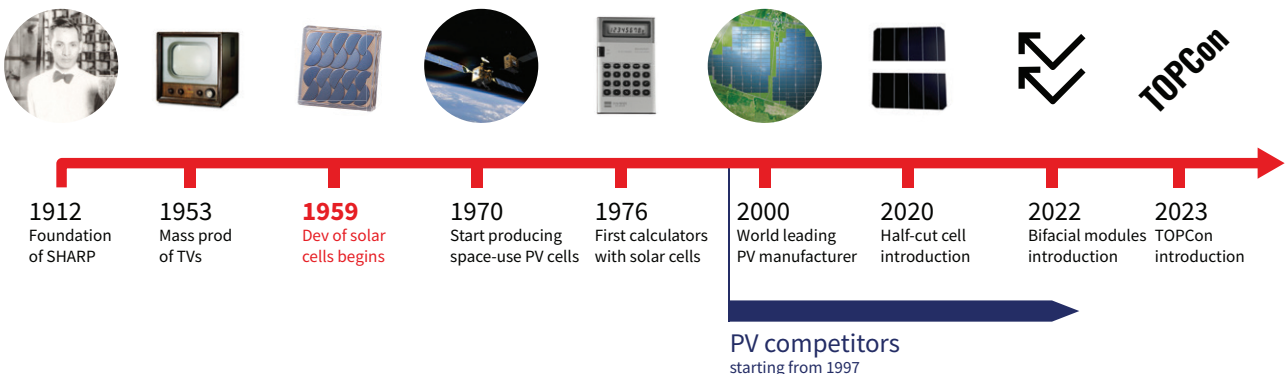
- EcoVadis Gold status achieved by Sharp Electronics GmbH
- inclusion in the FTSE4GOOD stock index 13 times
- AA ESG rating by MSCI for top tier performance in sustainability, social responsibility and governance practices
- we adhere to United Nations (UN) Global Compact and ISO26000

Learn about our corporate sustainability & Environmental Social Governance initiatives.
www.sharp.eu/solar-esg-excellence



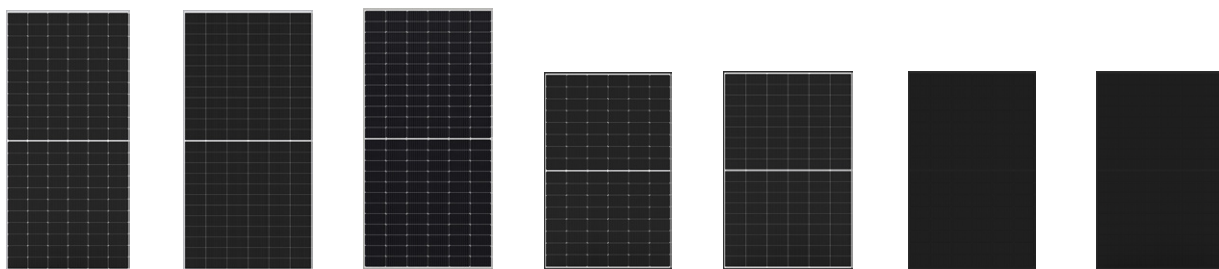
Benefit from a well known consumer brand

More than 110 years of company history and over six decades of PV experience



Open up every market segment to generate new business

Half-cut cell PERC and N-type TOPCon line-up



	Glass-Glass Bifacial Project Solution	Glass-Glass Bifacial Project Solution	Project Solution	Glass-Glass Bifacial High Performer	High Performer	Glass-Glass Bifacial Design Solution	Design Solution
Power	610 W	590 W / 585 W	550 W	450 W / 445 W	440 W	440 W / 435 W	430 W
Model	NB-JE610	NB-JD590 NB-JD585	NU-JD550	NB-JG450R NB-JG445R	NU-JC440	NB-JG440B NB-JG435B	NU-JC430B
Half-cells / Wafer	132 / G12R	144 / M10R	144 / M10	96 / G12R	108 / M10R	96 / G12R	108 / M10R
Frame color	silver	silver	silver	black	black	black	black
Background color	white	white	white	white	white	black	black
Module efficiency	22.58 %	22.84 % 22.65 %	21.29 %	22.52 % 22.27 %	22.53 %	22.02% 21.77 %	22.02 %
Bifaciality	80(±10) %	80(±10) %	-	80(±10) %	-	80(±10) %	-
System voltage	1,500V	1,500V	1,500V	1,000 V	1,000 V	1,000 V	1,000 V
Size (mm)	2,382 x 1,134 x 30	2,278 x 1,134 x 30	2,278 x 1,134 x 35	1,762 x 1,134 x 30	1,722 x 1,134 x 30	1,762 x 1,134 x 30	1,722 x 1,134 x 30
Weight	34 kg	32.5 kg	27.5 kg	24.1 kg	20.7 kg	24.1 kg	20.7 kg
Pallet	36 pcs	36 pcs	31 pcs	36 pcs	36 pcs	36 pcs	36 pcs
Truck (40 feet)	396 pcs	720 pcs	620 pcs	936 pcs	936 pcs	936 pcs	936 pcs
Rooftop- Product Guarantee*	25 yrs	25 yrs	25 yrs	25 yrs	25 yrs	25 yrs	25 yrs
Non-Rooftop- Product Guarantee*	15 yrs	15 yrs	15 yrs	15 yrs	15 yrs	15 yrs	15 yrs

* These guarantees conditions are valid for modules installed in the EU and select other countries. Check the guarantee conditions for details.



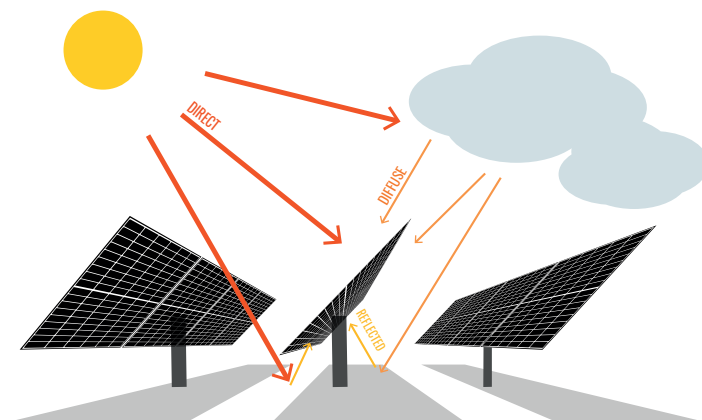
Go Online!

Select a module and see the
datasheets and certificates
www.sharp.eu/solar-panels

Achieve ROIs quickly

Bifacial Technology

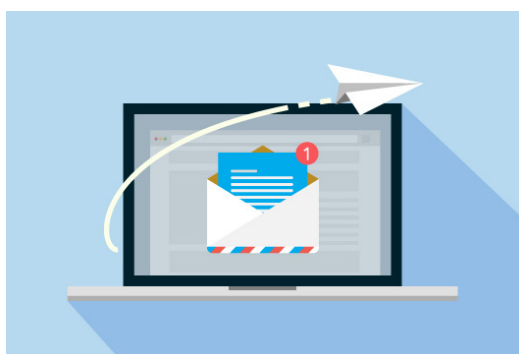
The additional gain of bifacial modules is coming from irradiance received on the back of the module. This can be reflected direct sunlight, reflected diffuse sunlight or diffuse light that is not reflected. Instead of an opaque backsheet on the back of the PV panel the back of our bifacial panels has a glass layer that allows light to reach the back of the cells. This additionally generated energy is the main benefit of bifacial technology over monofacial technology.



TOPCon Technology

TOPCon (Tunnel Oxide Passivated Contact) technology offers distinct advantages over P-Type PERC solar cells.

- 1. Enhanced Efficiency:** TOPCon panels are highly efficient because they use special layers to prevent the loss of electric charge. This means they convert sunlight into electricity very effectively, resulting in more power output.
- 2. Better Performance in Heat:** The temperature coefficient measures how much a solar panel's power output drops when it gets hot. TOPCon panels have a lower temperature coefficient, which means they perform better in hot climates, delivering more electricity compared to PERC panels under high temperatures.
- 3. Higher Bifaciality:** TOPCon panels are ideal for bifacial modules, efficiently capturing energy from both the front and back sides. Their innovative design, including a high open-circuit voltage, low internal resistance, and extended charge lifespan, offers an impressive bifaciality of 80% under Standard Test Conditions (STCs). In comparison, PERC panels typically achieve 70% bifaciality.
- 4. Long-Lasting Panel Performance:** TOPCon panels maintain their efficiency for a long time. They do this by reducing the loss of electric charge and minimizing the impact of light-induced degradation (LID). This means the panels themselves will continue to work at their best for an extended period.



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for business customers



Register here!

www.sharpsolar.eu/newsletter

Industry leading guarantees

Start the guarantee period with the handover to the end customer

SHARP offers a product guarantee and linear power output guarantee. These guarantees to the end user start at the point when the product actually arrives at the end user. All customer guarantees are managed from our offices in Hamburg, Germany.

Up to 25 years product guarantee

**25
YEARS**

Rooftop guarantee

25 years is valid in the EU and selected other countries, for rooftop installed solar panels for our current line up.

Non-rooftop guarantee

15 years is valid in the EU and selected other countries, for non-rooftop installations.

Up to 30 years linear power output guarantee

**30
YEARS**

TOPCon Panels

The 30 years power output guarantee for TOPCon panels installed in the EU and selected other countries starts 99% in the first year and ends at 87.5% in year 30.

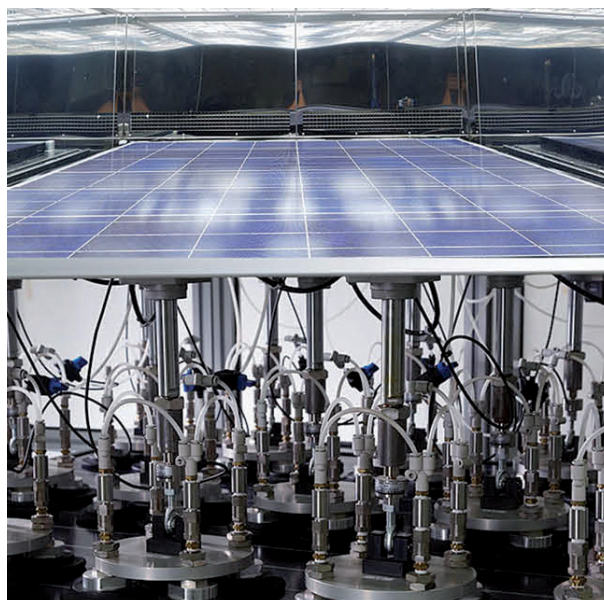
PERC Monofacial Panels

The 25 years power output guarantee for PERC Monofacial panels starts at 98% and ends at 85%.

Proven quality

Provide reliable products which passed the hardest tests

Our extensive, discerning tests are based on decades of industry experience and are up to five times stricter than IEC standards demand. We know the typical module failures and can test new production materials accordingly to ensure our modules' top quality. From compliance with international standards to endurance under extreme conditions: our PV modules have been tested, certified and awarded by a number of independent institutions. Please check the current specific data sheet and related documents for available certificates for each product.



Guarantee Terms

www.sharp.eu/solar-guarantee

Refer to the linked guarantee terms to see the product and linear power output guarantees.



PID
PID tested



5,400 Pa
Tested Snow Load
(IEC 61215)



Ammonia Test
(IEC62716)



Salt Mist Test
(IEC61701)



Hail Resistance
Class 4



Sand / Dust Test
(IEC60068)

Trust in over 50 million SHARP panels installed in every environment

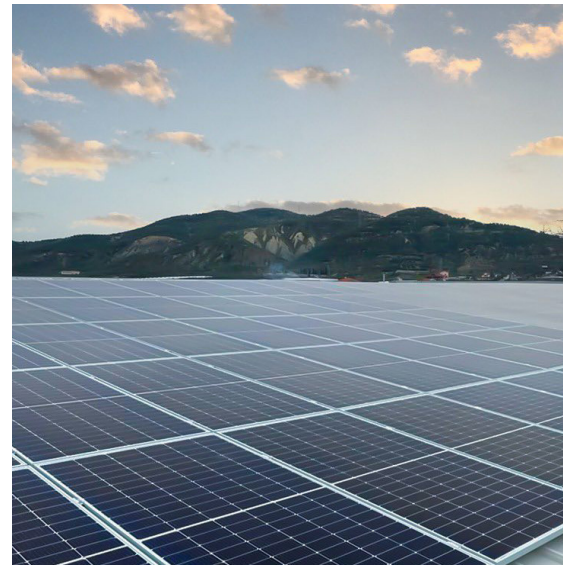
SHARP PV products are being used around the world, in a wide range of applications and environments. From the mountains to the desert, from icy climates to extreme humidity and heat, our PV modules have proven robust and reliable, contributing to a better energy future everywhere.



Mountain installations
(strong wind pressure)



Desert installations (up to 50° C)



Large scale projects



Solar car parks



Seafront installations



Residential installations



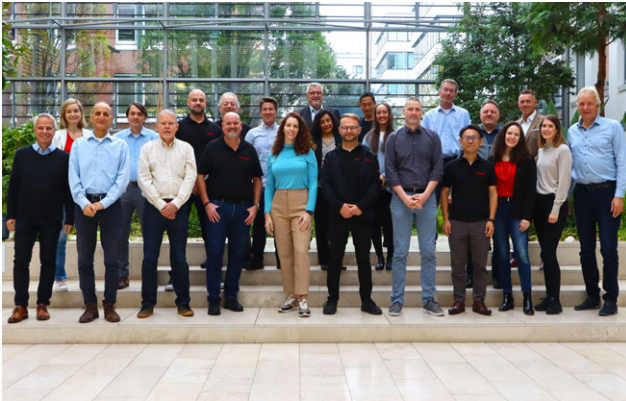
Industrial installations

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And use the #sharpsolar



Contact us and we will be happy to assist



Superior service based in Europe

Our solar service, sales, and support teams are based in Hamburg, Germany for more than 20 years. We like to be close to our customers and partners and have our stock close, too. That is why we operate from offices in Europe and have a warehouse here.



Go Online!

Get in touch with us now and meet the team.

www.sharp.eu/contact-solar



See what our clients have to say:

"We chose SHARP for the sake of product quality, performance and guarantee. Its performance in our demanding and harsh weather conditions in Finland guarantees the best possible energy production compared to any other product we have used so far."

Antti Kostainen
PlayGreen, Finland

"SHARP modules have proved highly dependable in the past, with a very good price-performance ratio. Over the almost seven years of our partnership with SHARP, they have been consistently reliable and supportive. It is clearly a win-win situation."

Sándor Harcsa-Pintér
3comm, Hungary

» *"We've done more than 70 projects with SHARP modules so far. Their high quality and reliable guarantees give us great peace of mind."* «

Joan Grifé Singla
Seine Tech, Spain

"Our relationship with SHARP Service can be described best by the number of issues we have had with SHARP products in the past 18 years: ZERO! This is statistically impossible and yet, true!"

Christos Pronios
Eurosol

"All panels were delivered on time, which helped adhering our time schedule a lot and is required when installing 43,000 modules. Furthermore, the SHARP modules have exceeded our expectations in terms of quality and reliability. This was also confirmed by the great yields we generated so far."

Aldo Enerji
Akin Yalçın, Turkey

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