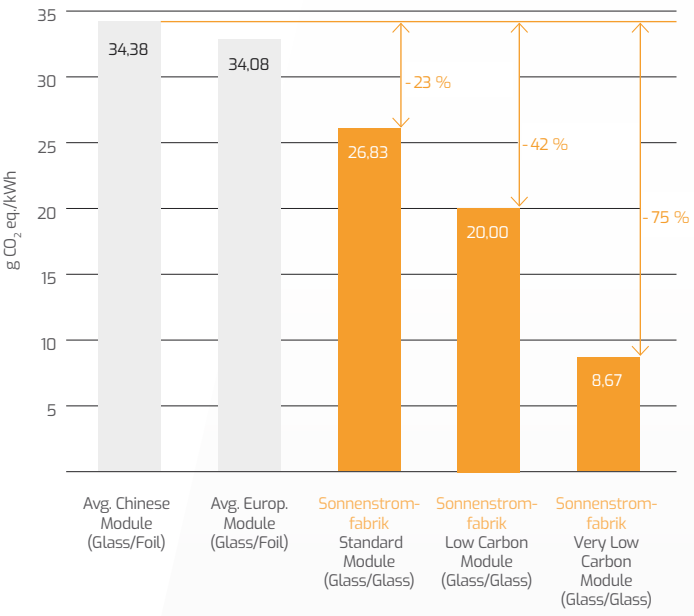

SONNENSTROM
FABRIK

SUSTAINABILITY

In recent years, solar energy systems have offered better and better performance at increasingly affordable prices. Thanks to our improvements in efficiency, our premium, German-manufactured PV modules are no longer reliant on federal subsidies. This achievement was made possible by highly automated processes, environmen-tally compatible logistics and zero-defect production. As a result, affordable photovoltaic systems no longer need to be manufactured at the expense of the environment or underpaid employees in low cost countries.

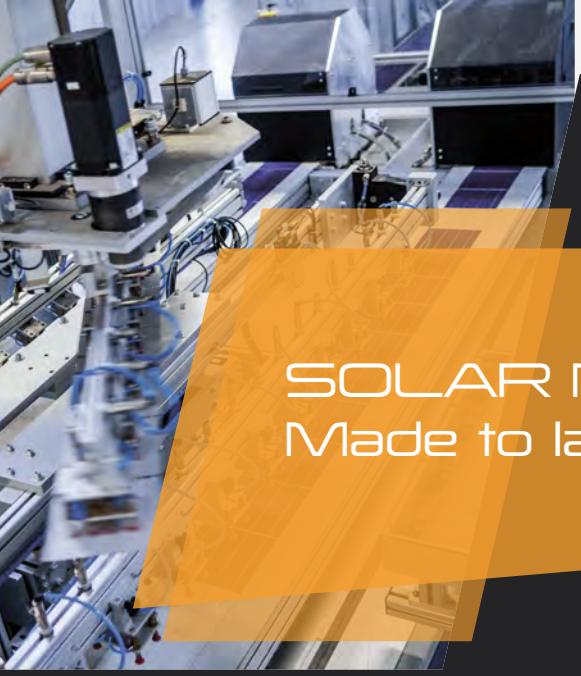
We strive to manufacture our modules as sustainably as possible. Sonnenstromfabrik modules are produced in accordance with the latest methods and technologies in an effort to minimise carbon emissions. To this end, we continuously optimise our production processes with respect to carbon emissions and conduct regular audits. Our machines primarily run on solar power produced by our own PV modules, and employ the latest filter technology. As a result, during our own internal value creation we generate around 40 % less carbon dioxide than conventional, state-of-the-art production and 70 % less than our Chinese competitors. Our Low Carbon product range goes one step further, exclusively using primary materials certified to have a low carbon footprint. This means that carbon emissions generated in the production of our Low Carbon series are up to 40 % lower than those generated in the production of our conventional models and up to 70 % lower than those of our competitors in Asia.

Emission equivalent per kWh
(5 kWp; 5 000 kWh p.a.; Glass/Foil: 25 a; Glass/Glass 30 a)



What does this mean for you?

An average 5 kWp system can produce around 5 000 kWh of electricity per year. If we take an energymix similar to that of Germany and France as a basis for comparison, this corresponds to annual savings of 1,5 tonnes of CO_2. If this system were to cover about 50 % of your energy needs, you would reduce CO_2 emmissions by 0,75 tonnes per year. Sonnenstromfabrik's Low Carbon series mo-dules will therefore have generated as much energy as was needed for their production in just two years. By choosing Sonnenstromfabrik, you are making a statement in favour of local production in accordance with the most stringent environmental and labour standards.



SOLAR MODULES
Made to last

Made in Germany

Sonnenstromfabrik is one of the few companies that still produces exclusively in Germany. Thanks to our flexible production structure, we produce exclusively to order.

For you as a partner, that means:

- Highly innovative and powerful module technologies
- Exceptional supply security thanks to short logistics chains
- You always receive what you have ordered

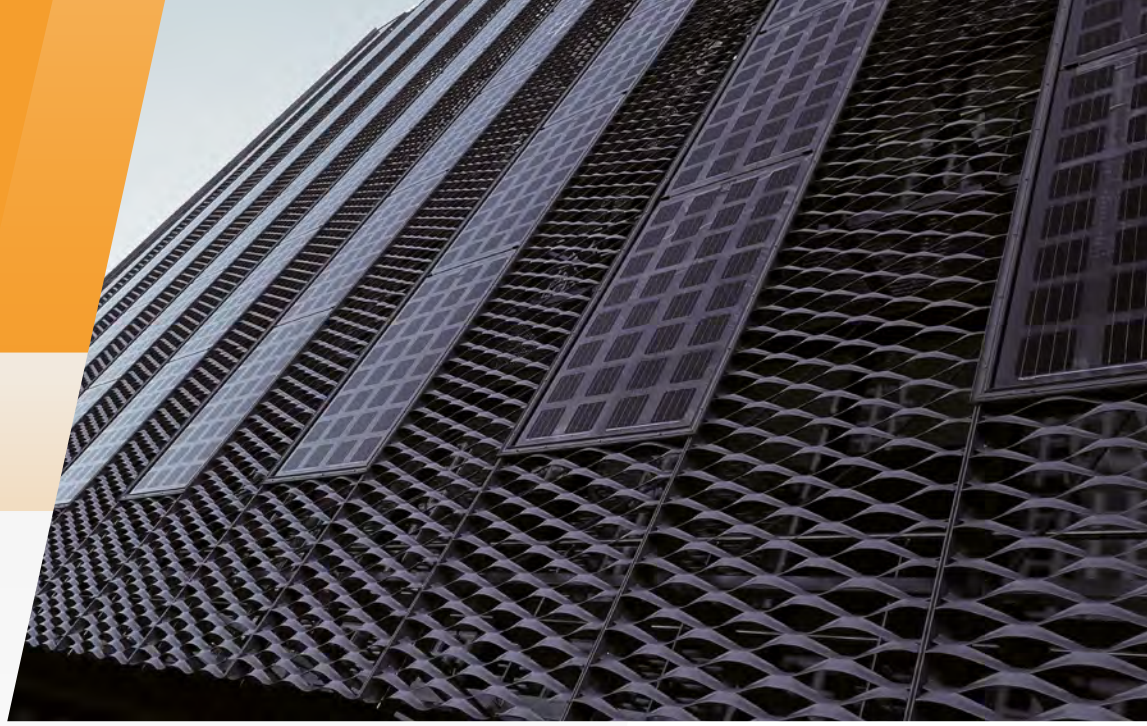
We strive for excellence

Sonnenstromfabrik's particular strengths lies in its Diamond Glass/Glass series modules, which are far more durable than conventional photovoltaic modules.
The Sonnenstromfabrik PV module plant has been audited in compliance with the minimal carbon emission standards. Manufacturing Low Carbon series products involves 70 % lower carbon emissions than Asian PV modules. Brilliant series PV modules are designed for integration on building roofs and façades. These modules combine maximum efficiency, elegant design and controlled sun exposure.

About us

Over the past 25 years, Sonnenstrom-fabrik has established itself as one of Europe's state-of-art manufacturers of top-quality photovoltaic modules, employing the latest technologies at its high performance module plant in Wismar, Northern Germany.

Sonnenstromfabrik is part of the CENTROTEC Group.



The most important benefits of Sonnenstromfabrik modules at a glance

CO_2-audited production in Germany

Maximum strength against cell micro cracks, hot spots and snail trails (tested for loads of 825 kg/m²)

Original MC4 connectors

Optimum protection against delamination: **three-chamber lamination process**

Optimal self-cleaning **thanks to flat module frame**

Optional **snow load design**

Best AR coating in the industry

PID-FREE

Service **as scheduled**

Optional **1 500-volt** design

All risk cover – our Total Care guarantee

Sonnenstromfabrik glass/glass modules

60 % higher yield over 40 years of use

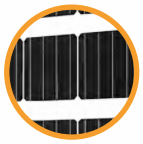
Proven safety against **the most extreme conditions**

Enhanced **hail impact testing**

Improved **fire safety**

Maximum **moisture resistance**

BRILLIANT MODULES



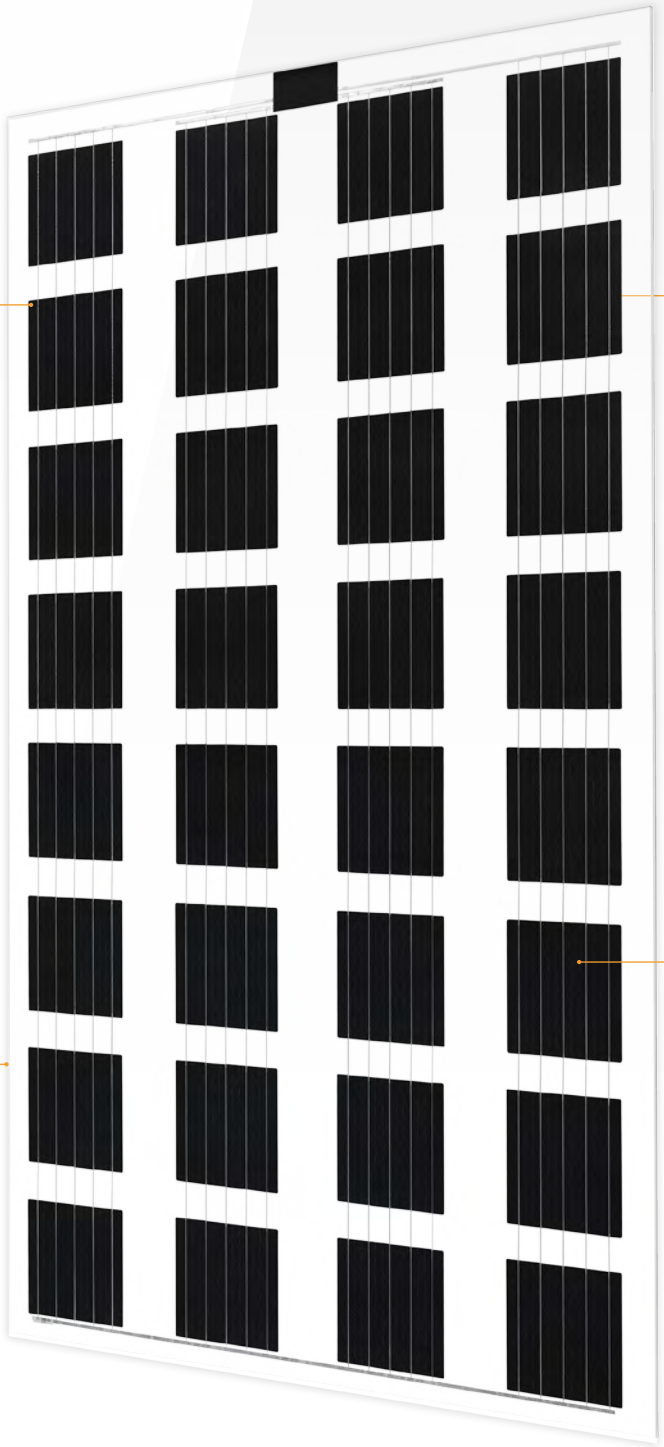
Transparency
This photovoltaic glass solution makes it easier to use solar energy in your projects and opens up versatile applications.

Transparency options:

51 % (32 cells)
27 % (48 cells)
19 % (54 cells)
10 % (60 cells)

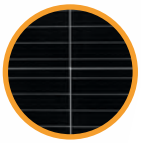
Frame
Special sloped frame allows for water run-off, facilitating self-cleaning processes.

Optional:
- Snow load frame
- Frameless double-glass laminate



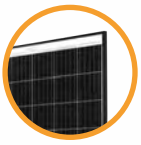
Safe connection
- Original MC4 connectors
- Fire-resistant cables
- Sealed junction box for best protection of bypass diodes
- Waterproof (IP 67)

Optional:
- 1 500-volt design
- Longer cables (1.2 m vs. 1 m)



High-quality cells
The modules are equipped with high-efficiency square mono PERC cells and guarantee the highest yields. Optimised colour sorting ensures a uniform and elegant black design.

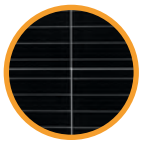
SAPHIRE GLASS/FOLIE



Versatility
High-quality glass-foil module.

Backside options:
· White (smart)

Backsheet
Highly reflective for maximum efficiency. UV-resistant for maximum durability.



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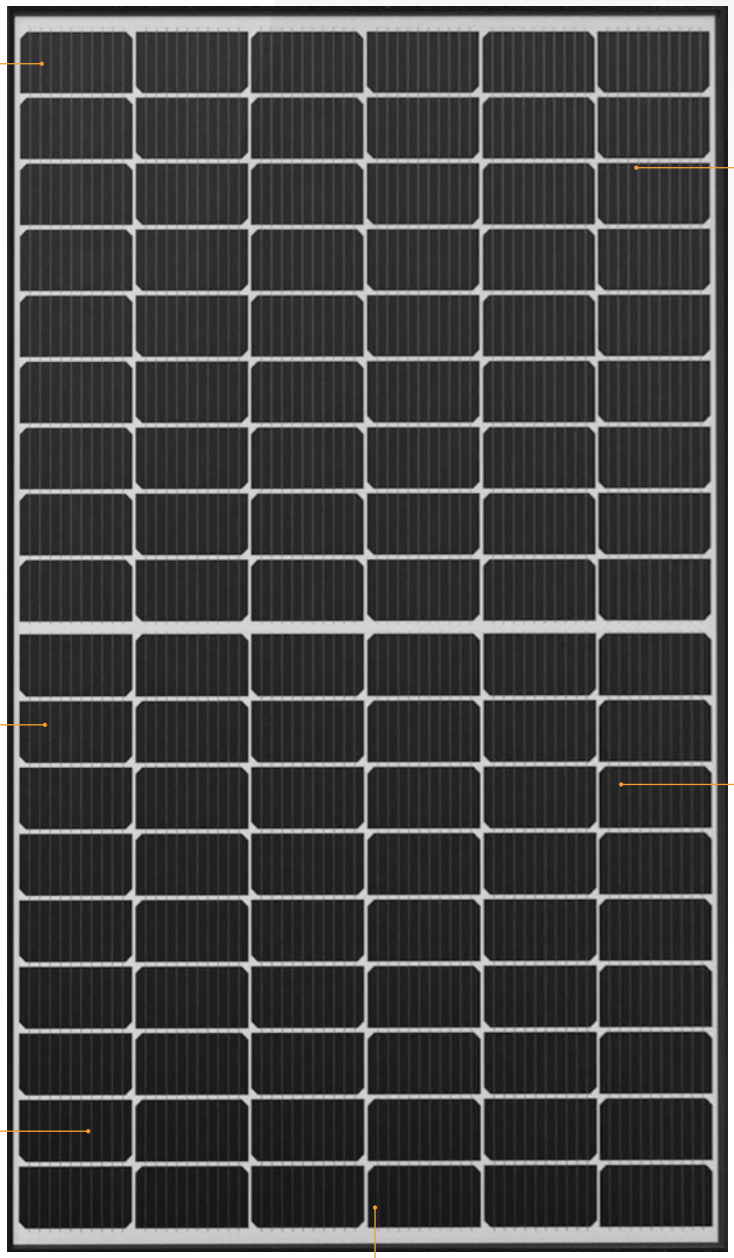
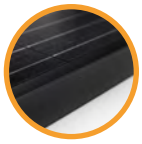


Safe connection
· Original MC4 connectors
· Fire-resistant cables
· Sealed junction box for best protection of bypass diodes
· Waterproof (IP65/IP68)

Optional:
· 1 500-volt design
· Longer cables (1.2 m vs. 1 m)

High-resistent, anti-reflective glass
3.2 mm low-iron solar glass with high-quality anti-reflective coating

Optional:
Special glass with light trap for use on highways and at airports.



Frame
Special sloped frame allows for water run-off, facilitating self-cleaning processes.

Optional:
· Snow load frame

QUALITY

If you buy cheaply,
you pay dearly!

Top quality

In order to deliver top quality products, we push our suppliers and our own production processes to the highest quality standards. In addition to implementing comprehensive quality control measures at each individual step of the production process, we have also developed a special three-chamber process for laminating the modules, which takes three times as long as conventional 15-minute production methods. This ensures that our double-glass laminates are especially well protected against delamination.

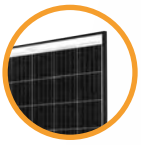
For you as a partner and for your customers, that means:

- a very low claim rate of 0,025 %
- satisfied customers and positive references over the past 25 years
- time and capacity to pursue new business rather than processing complaints

Industry-leading warranties

	Industry standard	Excellent Glass/Glass	Excellent
Product warranty	max. 10 years	20 years	12 years
Optional extension of the product warranty	no	yes, 30-year option	yes, 25-year option
Power warranty	in stages	linear	linear
Power warranty after 1 year	none	97 %	97 %
Power warranty max.	20 years	30 years, 87 %	26 years, 80 %
Max. annual power decline from 2nd year	n/a	0,35 %	0,68 %
Total care protection	no	yes, optional	yes, optional

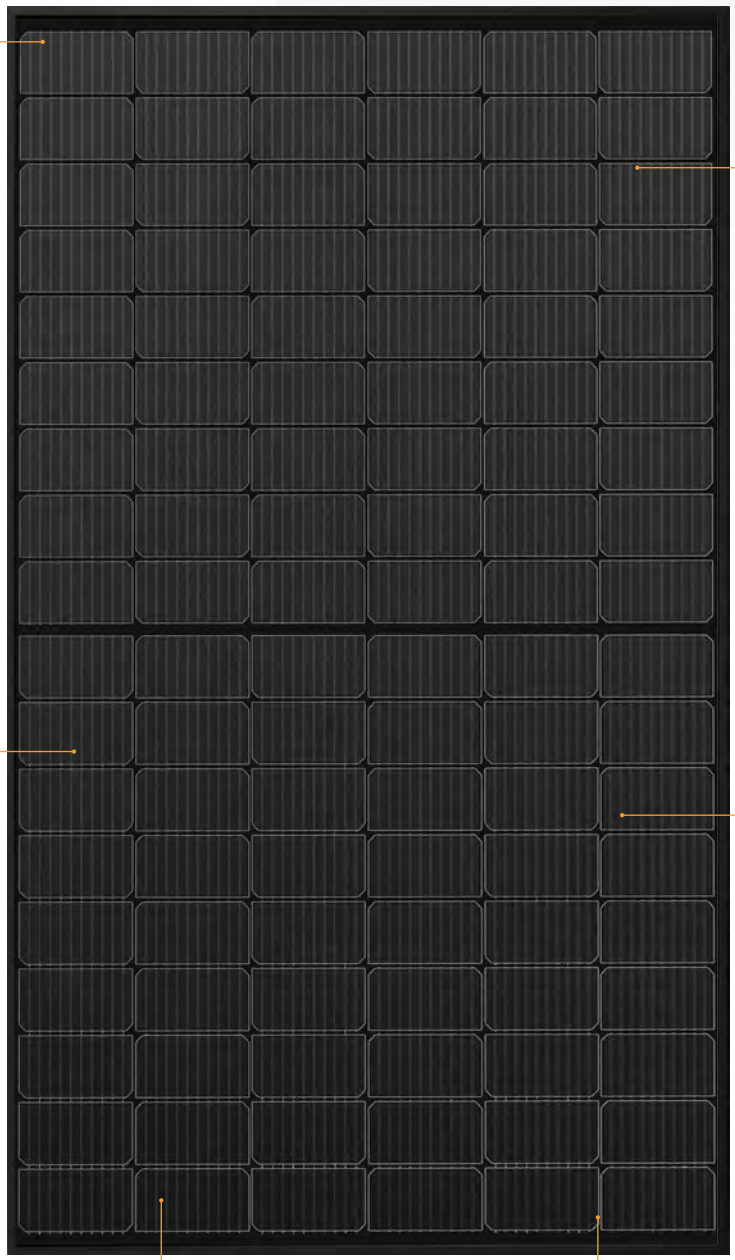
DIAMOND-GLASS/GLASS



Versatility
High-quality glass/glass module.

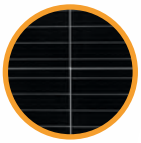
Backside options:
- Transparent (balance)
- Black (black)
- All black (full black)

High-resistent, anti-reflective glass
Highly transparent, low-iron solar glass with anti-reflective coating. Identical glass panes on the front and back sides prevent tension cracks. Extremely thin 2 mm glass on the front and back sides reduces weight.



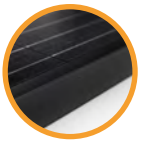
Safe connection
- Original MC4 connectors
- Fire-resistant cables
- Sealed junction box for best protection of bypass diodes
- Waterproof (IP65/IP68)

Optional:
- 1 500-volt design
- Longer cables (1.2 m vs. 1 m)



High-quality cells
The modules are equipped with high-efficiency square mono PERC cells and guarantee the highest yields. Optimised colour sorting ensures a uniform and elegant black design.

The strongest double-glass laminate
High-quality three-chamber lamination process provides optimum protection against delamination. While the industry standard lamination process takes 15 minutes, we devote a full 45 minutes to the process.



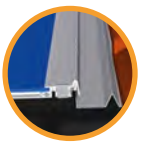
Frame
Special sloped frame allows for water run-off, facilitating self-cleaning processes.

Optional:
- Snow load frame
- Frameless double-glass laminate

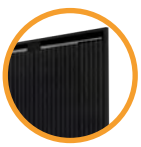
INTEGRATION

Solrif® profile
Solrif®, the patented in-roof photovoltaic mounting system developed by Ernst Schweizer AG, turns solar modules into solar roof tiles, replacing the traditional tile work typically seen on sloped roofs.

Optimum rain protection
The lateral frame elements interlock and the modules are placed so that they overlap on the top and bottom surfaces – similar to roof tiles.



Simple installation
The **Solrif®** modules are held in place by metal brackets – similar to storm clips – which are attached to the roof battens.



Flexible design
Three models are available, allowing for various roof layout options. All models are also available in a glass/glass or glass/foil design.

Model options:
- 1 743 x 1 025 mm
- 1 593 x 1 025 mm
- 1 443 x 1 025 mm

Safe connection
- Original MC4 connectors
- Fire-resistant cables
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- Waterproof (IP 67)

Optional:
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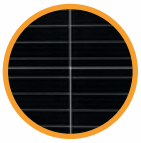

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