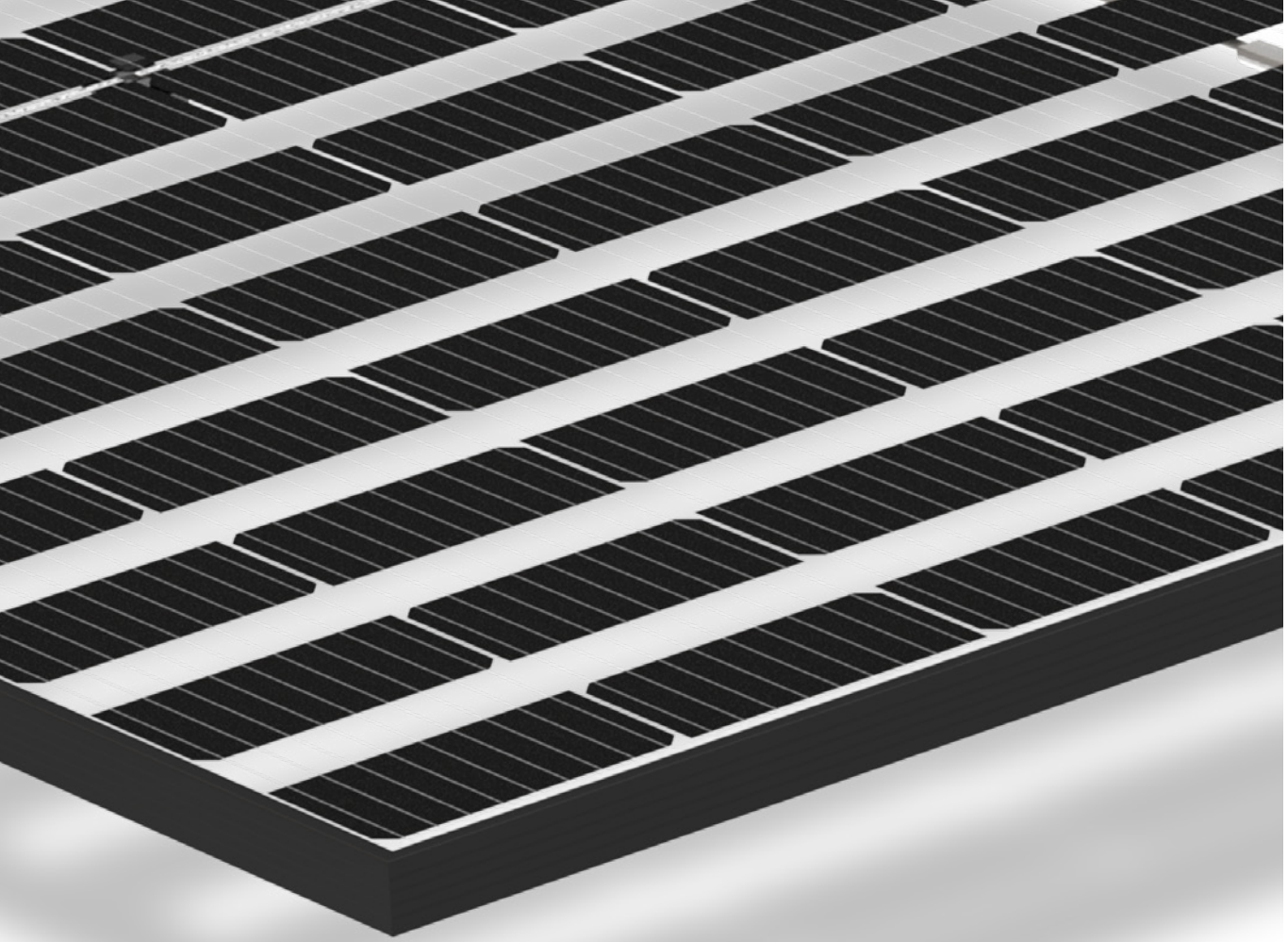
BISOL Lumina

Bifacial PV modules with transparent backsheet
for improved transmittance of natural light.

BISOL
Solar company!

www.bisol.com



BISOL **Lumina**

Bifacial Monocrystalline PV Modules with Transparent Backsheet

BISOL Lumina modules with transparent backsheet are made in the same dimensions as standard PV modules but contain fewer cells and with bigger gaps between them to allow natural light to pass through.

They are suitable for **winter gardens, skylights, greenhouses, sunshades, car canopies** or **other** buildings which require better lighting.

The standard **matrix** offers a perfect **transparent area** to allow enough light to shine through.

The modules can be delivered with a **standard** or **Solrif frame** for building-integrated applications, as well as without frame in the form of laminates.

Advantages:

- Designed and manufactured in EU
- Choice of standard or BIPV frame
- Available with or without frame
- Natural light transmission
- Transparent back foil
- Bifacial module
- Exellent low light performance
- On-roof or BIPV

All BISOL PV modules are designed and manufactured in the heart of European Union in Slovenia. Contact us if you are interested to visit our BISOL Production!

Did you know?

- BISOL Lumina modules offer the best power/transparency ratio.

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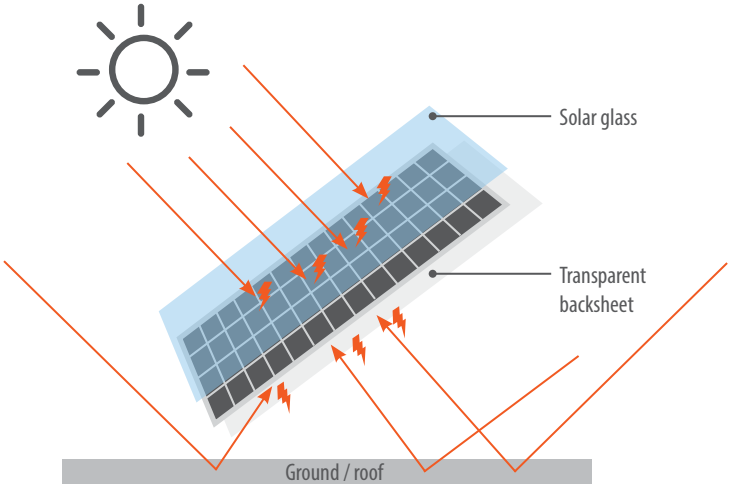
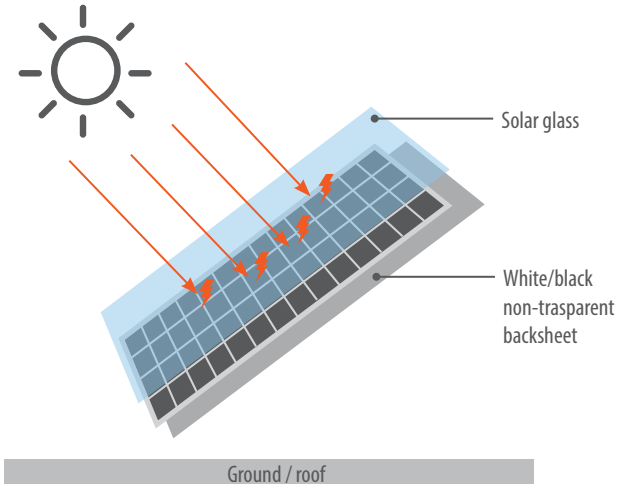
Bifacial Monocrystalline PV Modules with Transparent Backsheet

Since the solar cells in the panels are bifacial, from a few and up to 60 % of the initial output power can be gained from the back side of the module, depending on reflecting properties of the surface behind and the design of the PV system.

Bifacial Module with Transparent Backsheet Technology



Standard Module without Transparent Backsheet Technology



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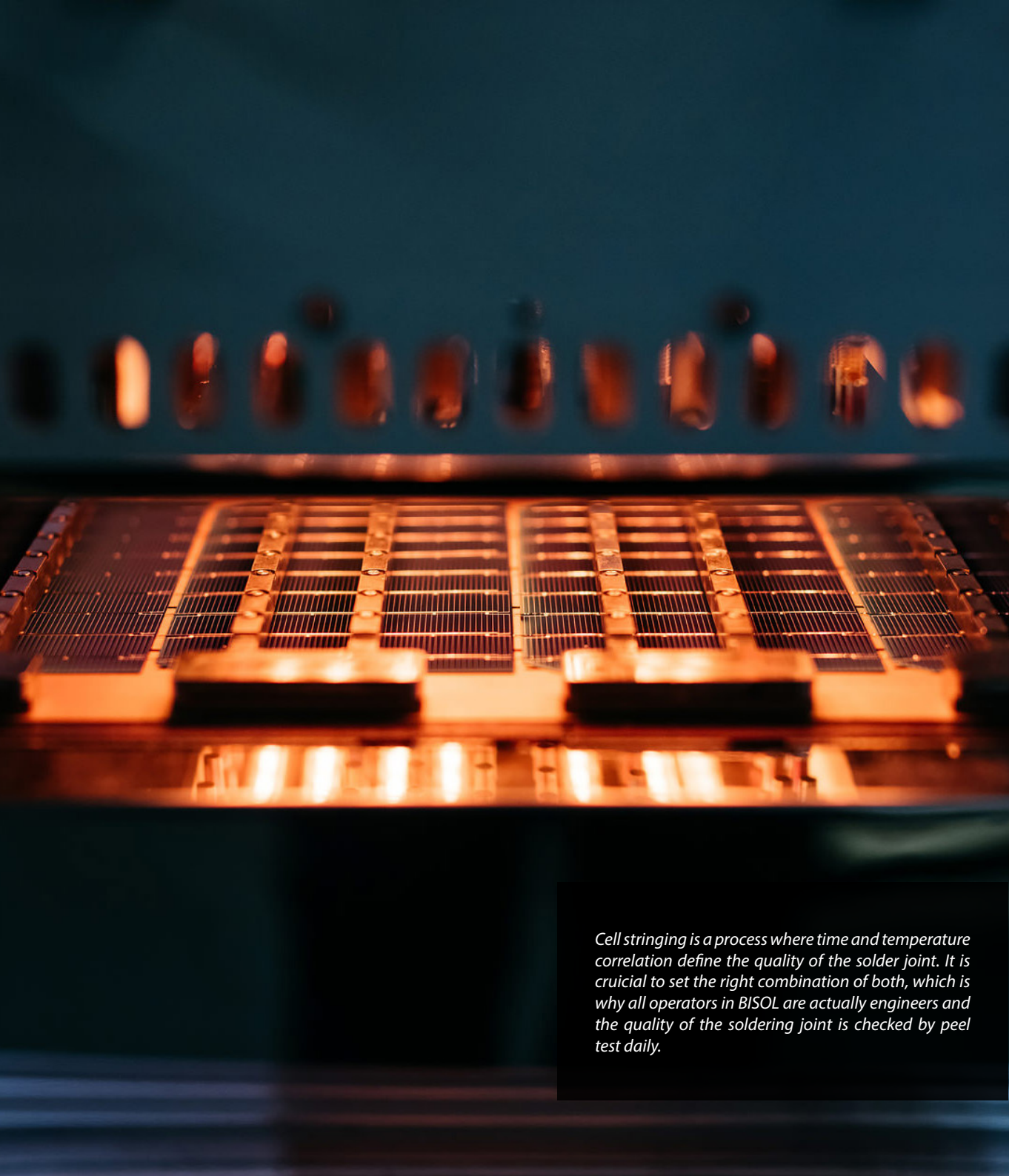
Bifacial Monocrystalline PV Modules with Transparent Backsheet



Cell stringing is a process where time and temperature correlation define the quality of the solder joint. It is cruicial to set the right combination of both, which is why all operators in BISOL are actually engineers and the quality of the soldering joint is checked by peel test daily.

COMING SOON IN M10 TECHNOLOGY

Did you know?

- Unlike many solar manufacturers, BISOL sends every single module through EL test, which can proven by a unique tracking system. It is important to check the module for potential micro-cracks or other irregularities before lamination when all defects can still be repaired. This way, all the final products are 100 % reliable.

BISOL products are thoroughly tested and comply with the principal international standards. In the TÜV-performance-over-time testing which is equivalent to 20 years of module operation, the BISOL modules exhibited the lowest degradation rate of just 0.5 % out of the permitted 5.0 %.

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Thermal Specifications

Current Temperature Coefficient	α	+ 0.05 %/°C
Voltage Temperature Coefficient	β	- 0.26 %/°C
Power Temperature Coefficient	γ	- 0.34 %/°C
NOCT		43 ± 2 °C
Temperature Range		- 40 °C to + 85 °C

In compliance with:

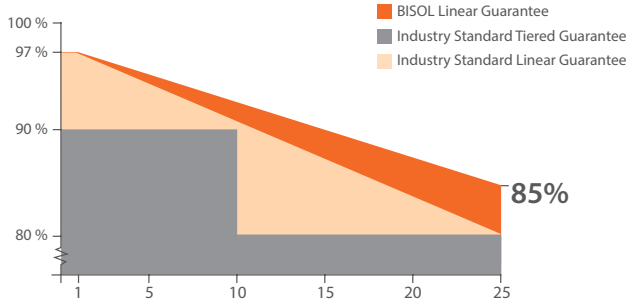
IEC 61730 Ed.1 / 61215 Ed.2 · IEC 62804-1 · IEC 62716 Ammonia resistance · ÖVE · CE · European Recycling Platform · Istituto Giordano · certisolis CRE4 · VKF AEAI HW3 · SGS · SGS · SGS · MCS CERTIFIED · TÜV SÜD · AIT Austrian Institute of Technology

Certificates available upon special request. Additional charges may apply.

Guarantees:

15 — Product guarantee 15 years

25 — Linear guarantee 85 % output in 25th year



Solar modules can replace a variety of architectural elements, especially if they are tradicionally manufactured from glass. Using solar elements in the buildings results in even more economical buildings and creative architectural designs.

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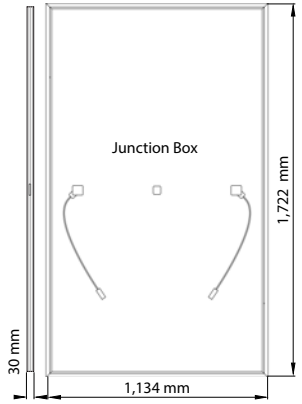
Bifacial Monocrystalline PV Modules with Transparent Backsheet

Mechanical Specifications

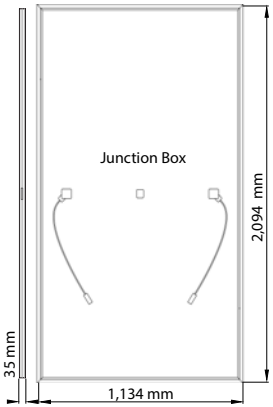
Length x Width x Thickness	BDO: 1,722 x 1,134 x 30 mm BBO: 2,094 x 1,134 x 35 mm
Weight	BDO: 22 kg / BBO: 26 kg
Solar Cells	Half-Cut mono Bifacial c-Si / 182 mm x 91 mm
Junction Box / Connectors / IP	Three bypass diodes / MC4 compatible / IP 68
Cable Lenght	Default: 1,200 mm On demand (for portrait orientation): 300 mm
Frame	Anodized Al with drainage holes / rigid anchored corners
Glass	3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Packaging	BDO: 35 modules per pallet / stackable 3 pallets high BBO: 30 modules per pallet / stackable 3 pallets high
Certified Test Load (snow / wind)	5,400 Pa / 2,400 Pa
Impact resistance	Hailstone / Φ 25 mm / 83 km/h (51 mph)

Tolerances of values are ± 5 %. Unspecified product properties remain under full discretion of BISOL.

Dimensions



BISOL Lumina BDO module



BISOL Lumina BBO module

Agrivoltaic projects are a major trend in solar industry due to their multifunctionality. They produce green electricity, cover the green house's expenses while ensuring that the plants receive homogeneous light distribution and replace the expensive hail constructions.

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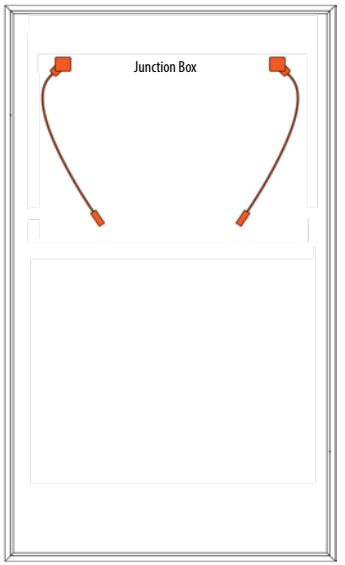
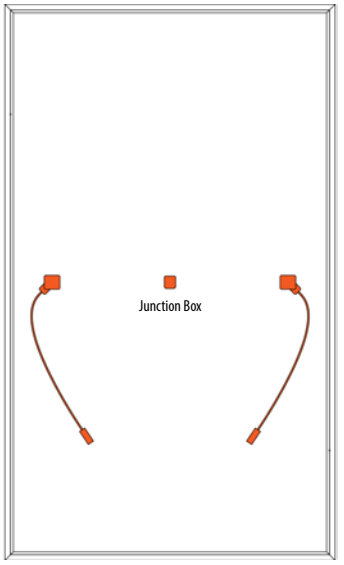
Special design of the junction box to minimize shading



BISOL Lumina PV Module



Standard Duplex PV Module

Did you know?

- To make sure the transparent BISOL Lumina modules offer as much light transmittion as possible, we adjusted the design of the junction-box and placed it in the perfect position to minimise shading.

The use of renewable energy sources dictates the creation of innovative solutions for their placement in the living space. While electric vehicles are slowly becoming a part of everyday life, people are increasingly considering how to integrate e-mobility with the right infrastructure.

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BISOL Lumina modules are extremely lightweight compared to similar products on the market. Simoultaneously, they are remarkably rigid and prone to hail, snow, wind and other demanding weather conditions.

Lightweight

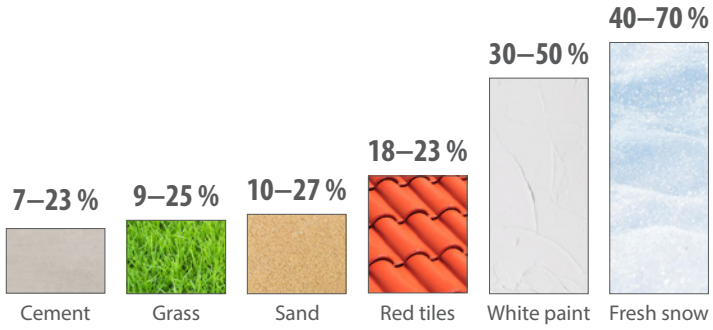
Rigid materials

Simple installation

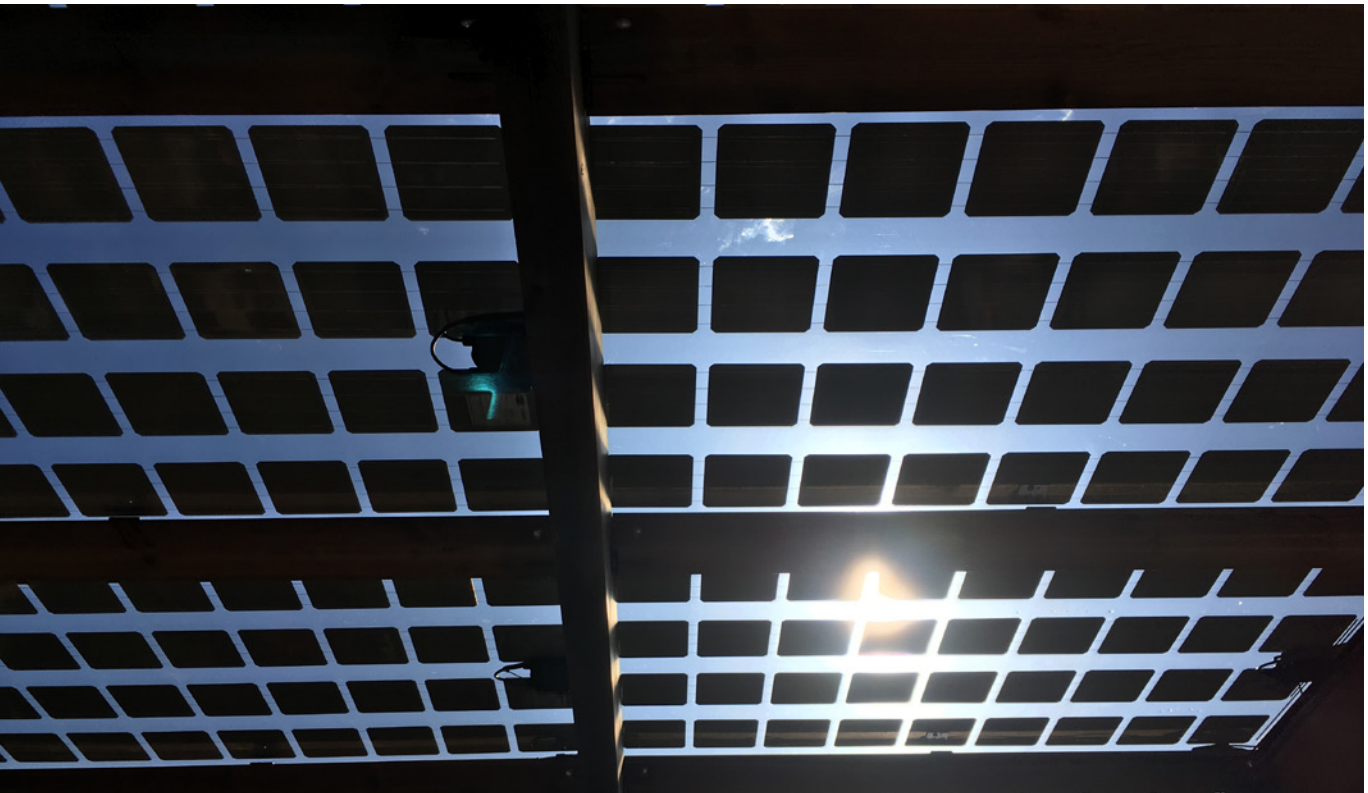
Extreme weather conditions

The albedo responsible for gaining power from the rear side depends on reflecting properties of the surface behind the module.

Approximate percentage of gained power according to different surfaces*:



*The exact number depends on many factors, such as the colour shade of the surface as well as the ammount of diffuse sunlight, the reflected diffuse sunlight and the reflected direct sunlight.



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Dealer information