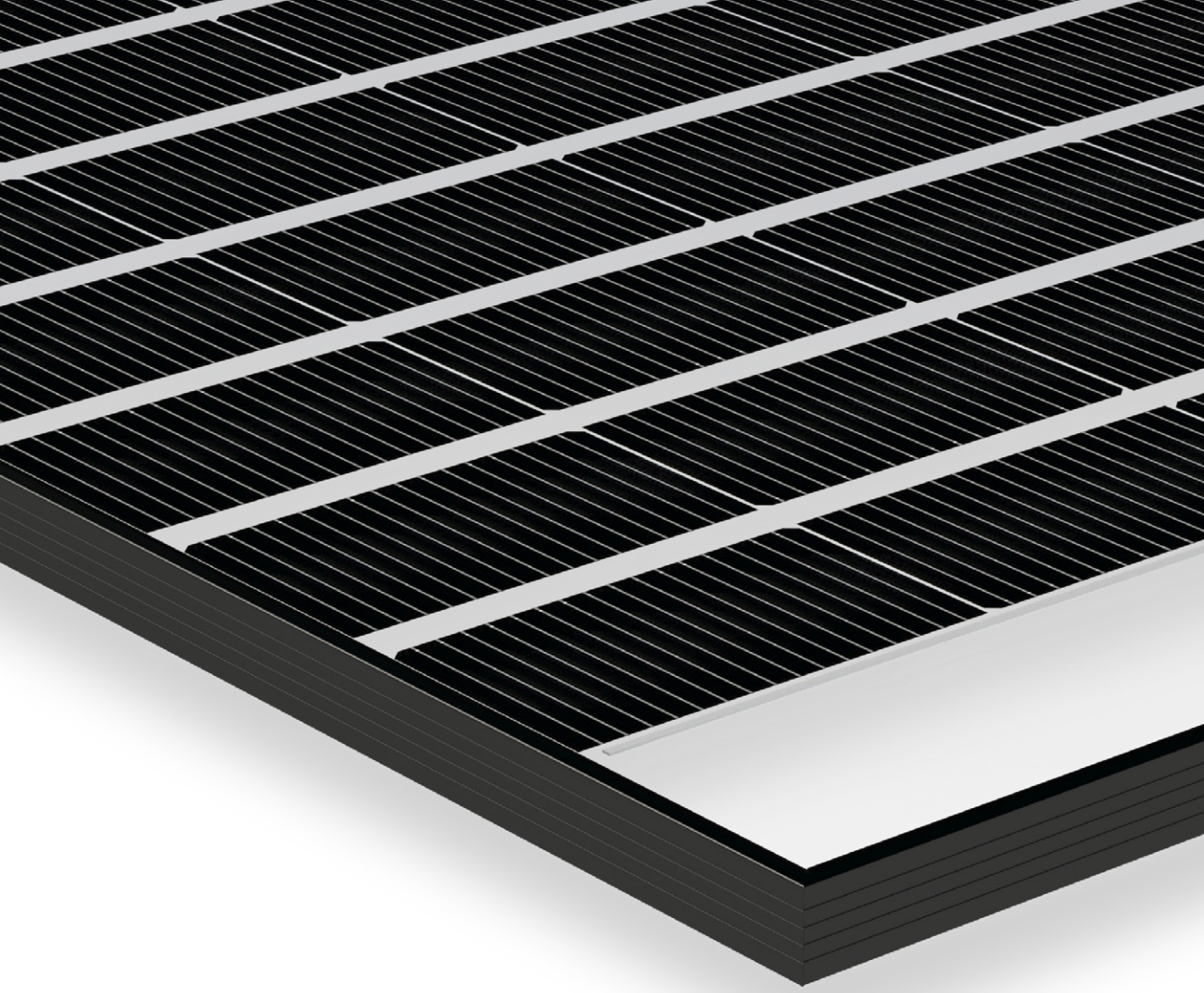


BISOL Lumina

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





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



Excellent 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!

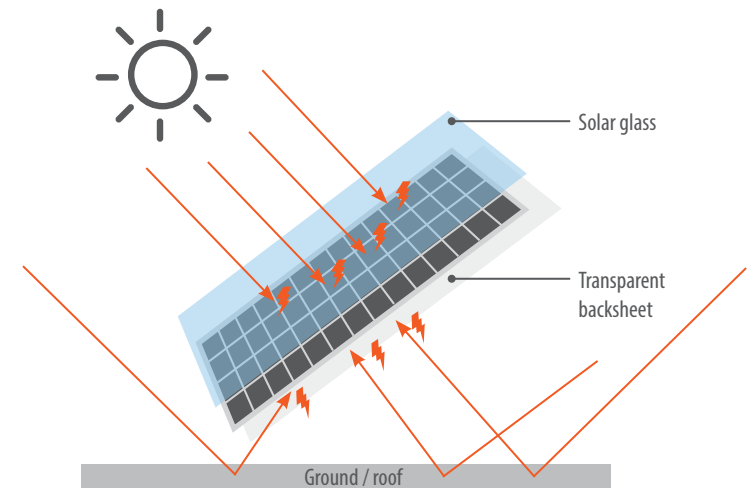
Did you know?

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

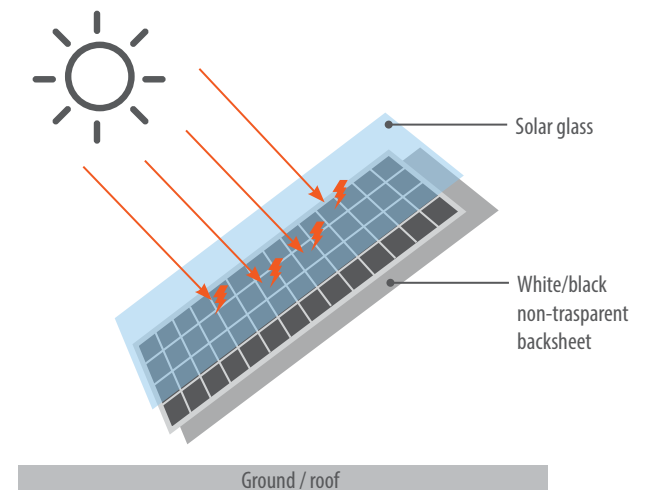
BISOL Lumina

Bifacial Monocrystalline PV Modules with Transparent Backsheet

Bifacial Module with Transparent Backsheet Technology



Standard Module without Transparent Backsheet Technology



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.

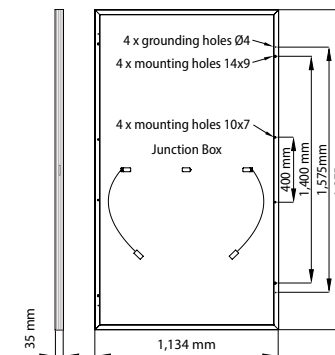
BISOL Lumina

Bifacial Monocrystalline PV Modules with Transparent Backsheet / BBO 430 Wp

Module Type	BBO	400				
Number of Cells		84				
Cell Matrix		6 x 7 + 6 x 7				
Transparent Area	m ²	0.551				
	%	25.3				
		Front	Bifacial Gain			
Light Source	%	100	10	20	30	40
Nominal Power	P_{MPP} [W]	400	440	480	520	560
Short Circuit Current	I_{SC} [A]	16.1	17.6	19.2	20.7	22.2
Open Circuit Voltage	V_{OC} [V]	31.4	31.6	31.6	31.8	31.9
MPP Current	I_{MPP} [A]	15.3	16.8	18.2	19.7	21.1
MPP Voltage	V_{MPP} [V]	26.2	26.2	26.4	26.4	26.6
Module Efficiency	η_M [%]	17.9				
Power Output Tolerance		±3 %				
Maximum Reverse Current		30 A				
Maximum System Voltage		1,500 V				
Protection Class		Class II				

Additional power classes available upon request. | Efficiency at irradiation 200 W/m²: 99.3 % of STC efficiency or higher. | Tolerances for V_{OC} and I_{SC} are 3 %.

Dimensions



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 Lumina

Bifacial Monocrystalline PV Modules with Transparent Backsheet

Thermal Specifications

Current Temperature Coefficient	α	+ 0.05 %/°C
Voltage Temperature Coefficient	β	- 0.25 %/°C
Power Temperature Coefficient	γ	- 0.29 %/°C
NOCT		42 °C (± 3 °C)
Temperature Range		- 40 °C to + 85 °C

In compliance with:



Certificates available upon special request. Additional charges may apply.

Guarantees:

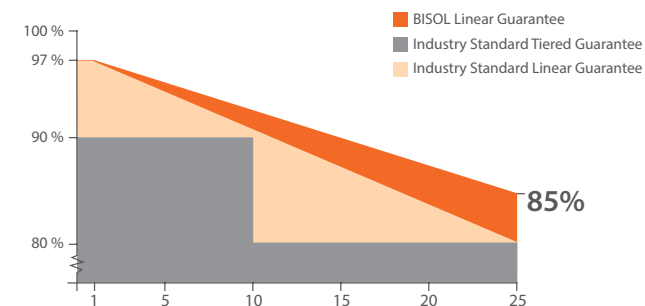


Product Guarantee
Standard: 15 years
Extra: 20 years



Linear guarantee
85 % output in 25th year

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 %.



A low-angle photograph of a modern building with multiple balconies. The balconies are enclosed with solar modules, which serve as railings. The building has a light-colored facade and large windows. The sky is clear and blue.

BISOL Lumina

Bifacial Monocrystalline PV Modules with Transparent Backsheet

Mechanical Specifications

Length x Width x Thickness	BBO: 1,975 x 1,134 x 35 mm
Weight	BBO: 23,5 kg
Solar Cells	Half-Cut mono c-Si / 182 mm x 91 mm
Junction Box / Connectors / IP	Three bypass diodes / MC4 compatible / IP 68
Cable Length	Default: 1,200 mm On demand (for portrait orientation): 300 mm
Frame	Anodized Al with mounting and drainage holes / rigid anchored corners
Glass	3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Packaging	BBO: 30 modules per pallet / stackable 3 pallets high
Certified Test Load (snow / wind)	7,000 Pa / 2,400 Pa
Impact resistance	Hailstone / Ø 35 mm / 83 km/h (51 mph)

Tolerances of values are $\pm 5\%$. Unspecified product properties remain under full discretion of BISOL.

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



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.

BISOL Lumina

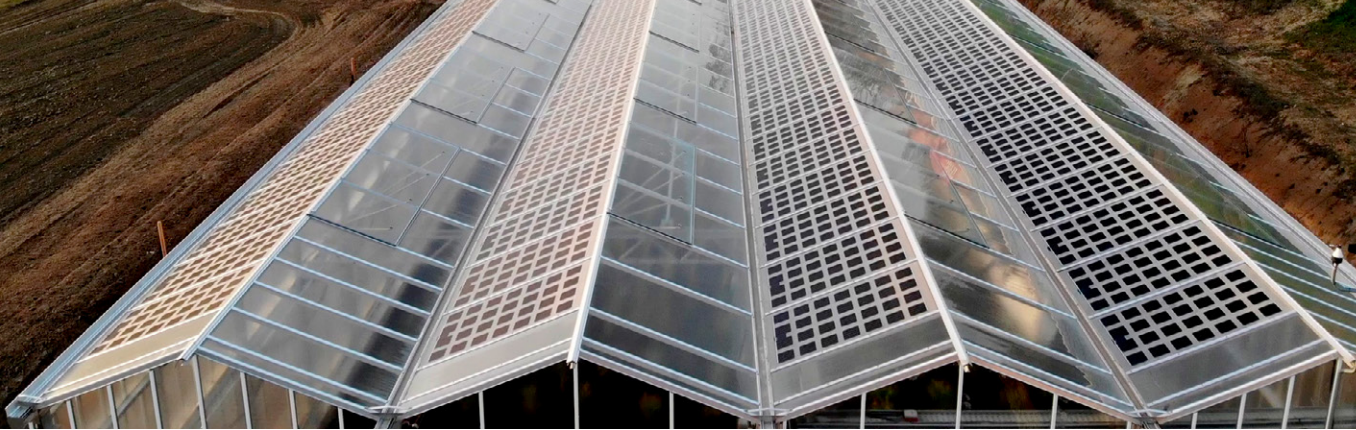
Bifacial Monocrystalline PV Modules with Transparent Backsheet

Matrixes available

BISOL Lumina BBO module

Did you know?

- ▶ To meet the diverse needs of solar energy consumers, BISOL offers two special matrixes providing aesthetically pleasing and cost-effective solutions for various residential and commercial projects.



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.

BISOL Lumina

Bifacial Monocrystalline PV Modules with Transparent Backsheet

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



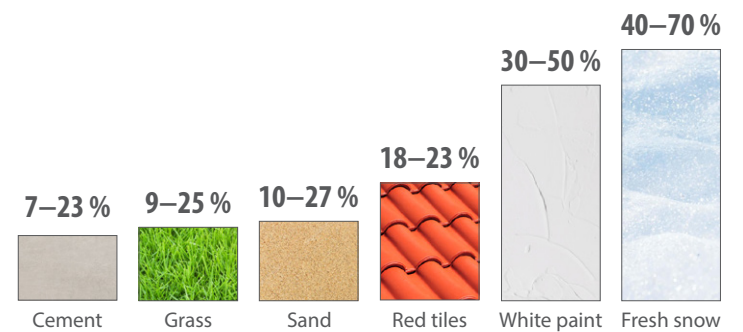
Simple installation



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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Scan the QR code to watch our beautiful
promo video *Power & Elegance!*

Dealer information



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