



Solar company!

Colour your **LIFE!**

BISOL Spectrum



Rustic RED

Coloured Cells

BISOL Spectrum

With respect for our natural surroundings and the architectural legacy in mind, we are introducing exclusive **BISOL Spectrum** photovoltaic modules with coloured cells or glass, whereby you no longer have to compromise aesthetics for efficiency when harnessing the endless power of the sun.

BISOL Spectrum modules were designed not only to conform, but also to refine the architectural traits of buildings and roofs of various types and styles. Available in a wide palette of colours, BISOL Spectrum PV modules can now really become an integral part of the building in its natural setting, or by contributing to the manifestation of the building's modern design features. Their unique look allows discreet blending with the scenery, hence preserving the timeless beauty of diverse natural settings. Either way, BISOL Spectrum modules will undoubtedly add a timeless aesthetical value.



RED coloured cells are a good choice for most European roofs, where the panels will be almost invisible, especially if the building is under cultural heritage protection.



Rustic Red



Pine/Marble GREEN

Coloured Cells

Advantages:



Made in EU



Available in variety of colours



A perfect colour match to your roof



On-roof or BIPV



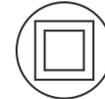
PID free



Module presorting for higher profitability



Excellent low light performance



Double insulation

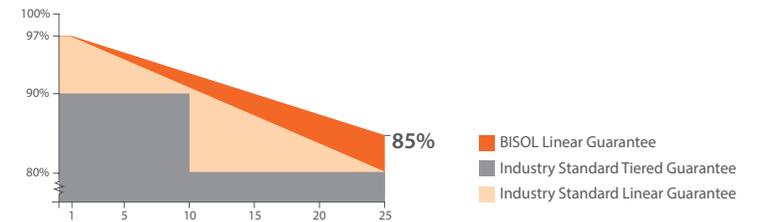
Guarantees:



Product guarantee 15 years



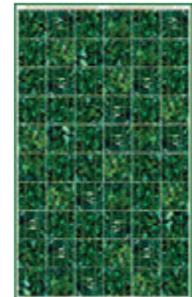
Linear guarantee 85% output in 25th year



PINE/MARBLE GREEN coloured cells can blend perfectly into a landscape full of forests and meadows as well as reduce CO₂ emissions, as about 30% of atmospheric carbon emissions are absorbed by the environment.



Pine Green



Marble Green

Charming PURPLE/Marble PINK

Coloured Cells

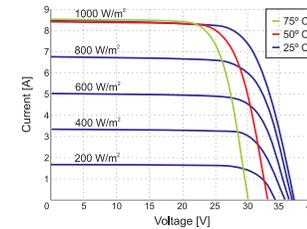


Electrical Specifications @ STC (AM1.5, 1,000 W/m², 25 °C)

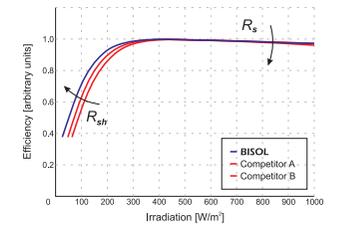
Module Type	BMU/BSU	255
Nominal Power	P_{MPP} [W]	255
Short Circuit Current	I_{SC} [A]	8.85
Open Circuit Voltage	V_{OC} [V]	38.9
MPP Current	I_{MPP} [A]	8.45
MPP Voltage	V_{MPP} [V]	30.2
Solar Cell Efficiency	η_c [%]	17.3
Module Efficiency	η_M [%]	15.3
Power Output Tolerance		0+5 W (Rustic Red) / $\pm 3\%$ (all other colours)
Maximum Reverse Current		18 A
Maximum System Voltage		1,000 V (Application Class A)

Power classes vary depending on colour. Efficiency at irradiation 200 W/m²: 99.3 % of STC efficiency or higher. Power measurement tolerance: $\pm 3\%$.

I-V Curve



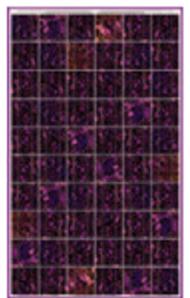
Effective Efficiency



CHARMING/MARBLE PURPLE coloured cells are a perfect solution for Mediterranean countries with lavender fields, which utilize photosynthesis to convert the sun's rays into energy just like solar cells.



Charming Purple



Marble Pink



Olive GREEN/Marble GOLD

Coloured Cells

Thermal Specifications

Current Temperature Coefficient	α	+ 0.049 %/K
Voltage Temperature Coefficient	β	- 0.31 %/K
Power Temperature Coefficient	γ	- 0.40 %/K
NOCT		44 °C
Temperature range		- 40 °C to + 85 °C

Mechanical Specifications

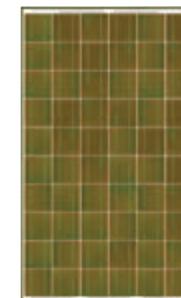
Solar Cells	60 multi c-Si in series / 158.75 x 158.75
Cell Colour Pattern	Single-shade or multi-shade (Marble)
Junction Box / Connectors	Three bypass diodes / MC4 compatible / IP 68
Frame	Standard frame (anodized AL with drainage holes and rigid anchored corners) or BIPV (Solrif®) frame
Frame Colour	Any RAL colour code, black or silver
Back Sheet Colour	Black, white or transparent
Glass	3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Impact resistance	Hailstone / Φ 25 mm / 83 km/h (51 mph)

In compliance with:

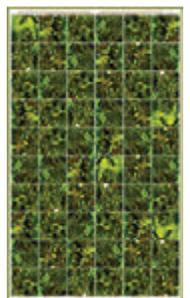


Certificates available upon special request. Additional charges may apply.

OLIVE GREEN/MARBLE GOLD coloured cells can turn the power plant into a decorative addition, therefore are perfect for temples or home accessories such as a fence.



Olive Green



Marble Gold

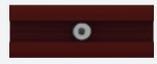
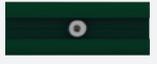
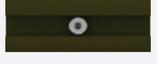
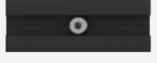
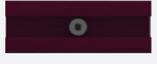


CHARCOAL/MARBLE GREY coloured cells are more efficient than lighter ones since they reflect less light overall and so are better at absorbing solar energy.

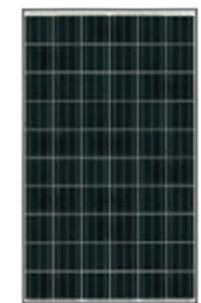
Charcoal GREY/Marble GREY

Coloured Cells

Colour Availability

Solar Cells		Frames, BIPV Flashings, Middle and End Clamps	
	Rustic Red		RAL 8017
	Pine Green		RAL 6009
	Marble Green		RAL 6003
	Olive Green		RAL 1036
	Marble Gold		RAL 7011
	Charcoal Grey		RAL 4007
	Marble Grey		RAL 4004
	Charming Purple		
	Marble Pink		

The actual colour shades may vary from the images shown. Colour inconsistencies of solar cells in a module may appear due to the nature of this product.



Charcoal Grey



Marble Grey



Deep RED

Coloured Glass

Advantages:



Made in EU



Available in variety of colours



A perfect colour match to your roof



On-roof or BIPV



PID free



Module presorting for higher profitability



Excellent low light performance



Double insulation

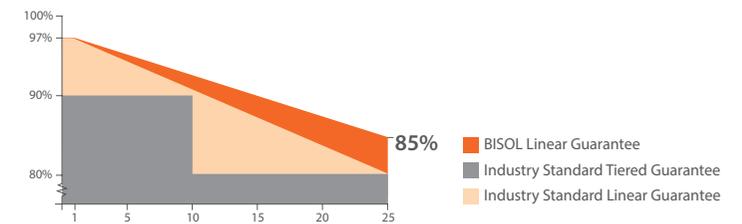
Guarantees:



Product guarantee 15 years



Linear guarantee 85% output in 25th year



RED glass is a good choice for most European roofs, where the panels will be almost invisible, especially if the building is under cultural heritage protection.



Deep Red

Terracotta ORANGE

Coloured Glass

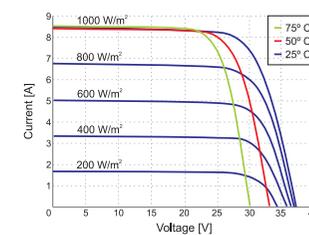
Electrical Specifications @ STC (AM1.5, 1,000 W/m², 25 °C)



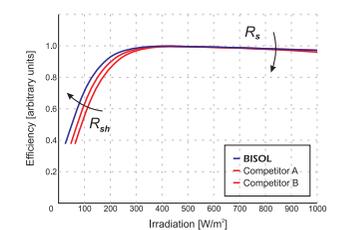
Module Type	BMO/BSO	290	200	190
Nominal Power	P_{MPP} [W]	290	200	190
Short Circuit Current	I_{SC} [A]	8.75	6.20	6.00
Open Circuit Voltage	V_{OC} [V]	43.5	40.6	40.3
MPP Current	I_{MPP} [A]	8.10	5.75	5.40
MPP Voltage	V_{MPP} [V]	35.9	34.8	35.2
Power Output Tolerance		±3 %		
Maximum Reverse Current		18 A		
Maximum System Voltage		1,000 V (Application Class A)		

Power classes vary depending on colour. Efficiency at irradiation 200 W/m²: 99.3 % of STC efficiency or higher. Power measurement tolerance: ±3 %.

I-V Curve



Effective Efficiency



ORANGE glass matches the shades of Dutch buildings and brick roofs all around the world, and maintains the colour recognition of the environment.



Terracotta Orange



Alabaster WHITE

Coloured Glass

Thermal Specifications

Current Temperature Coefficient	α	+ 0.060 %/K
Voltage Temperature Coefficient	β	- 0.30 %/K
Power Temperature Coefficient	γ	- 0.37 %/K
NOCT		44 °C
Temperature range		- 40 °C to + 85 °C

Mechanical Specifications

Solar Cells		60 mono c-Si in series / 158.75 mm x 158.75 mm
Junction Box / Connectors		Three bypass diodes / MC4 compatible / IP 68
Frame		Standard frame (anodized AL with drainage holes and rigid anchored corners) or BIPV (Solrif®) frame
Frame Colour		Any RAL colour code, black or silver
Back Sheet Colour		Black
Glass		3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Impact resistance		Hailstone / Φ 25 mm / 83 km/h (51 mph)

In compliance with:



Certificates available upon special request. Additional charges may apply.

WHITE glass is a great solution for easy blend in with large surface buildings. White colour versatility is not the only advantage, but it will keep buildings cooler.

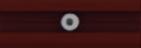
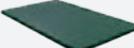


Alabaster White

Forest GREEN

Coloured Glass

Colour Availability

Spectrum PV module	Frames, BIPV Flashings, Middle and End Clamps	Solar Glass
 Deep Red	 RAL 8017	RAL 8015
 Forest Green	 RAL 6009	RAL 6007
 Terracotta Orange	 RAL 8023	RAL 8023
 Alabaster White	 RAL 9016	RAL 9016

The actual colour shades may vary from the images shown. Colour inconsistencies of solar cells in a module may appear due to the nature of this product.

GREEN glass goes well with the natural environment and is the greenest solution for the planet.



Forest Green



Roofs represent 20-25% of the total urban area and with photovoltaics, they present an opportunity for sustainable building designs.

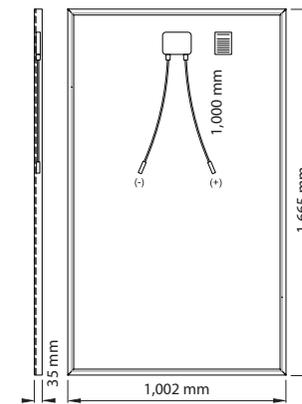
On-Roof Solution



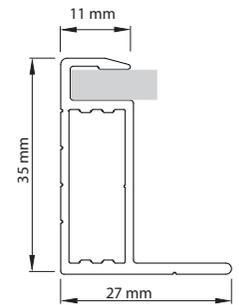
Detail of standard frame

Mechanical Specifications	
Length x Width x Thickness	1,665 mm x 1,002 mm x 35 mm
Weight	18.8 kg
Frame	Standard frame (anodized AL with drainage holes and rigid anchored corners)
Glass	3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Packaging	30 modules per pallet / stackable 3 pallets high
Certified Nominal Load (snow/wind)	5,400 Pa / 2,400 Pa

Dimensions



BISOL Spectrum module with standard frame



Cross section of standard frame



Roof-Integrated Solution

BISOL Spectrum PV modules are also available as a BIPV solution used in roof-integrated applications, that can be more cost effective simply because their composition and location replaces a number of conventional components. The overlapping of the specially framed BIPV modules produces an elegant PV array that completely replaces the conventional roofing. Maximum visual conformity and an unobtrusive appearance of the PV system are achieved by fully matching the colour of the end flashings, making it especially appealing to the eye. Coloured PV modules teamed up with building-integrated trim allow the PV system to fully blend in with even the most particular roof types, offering new possibilities of applying photovoltaic to most delicate historic and listed buildings in conservation areas.

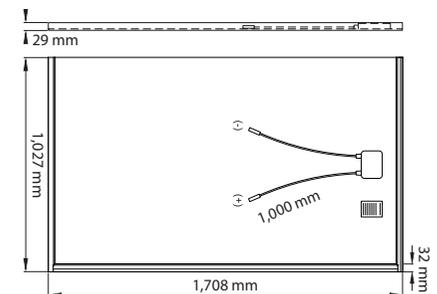


Detail of special BIPV (Solrif®) frame

Mechanical Specifications

Length x Width x Thickness	1,708 mm x 1,027 mm x 29 mm
Weight	18.8 kg
Frame	Solrif®
Glass	3.2 mm glass with anti-reflective coating / tempered / high-transparency / low-iron content
Packaging	24 modules per pallet / Stackable 2 pallets high
Certified Nominal Load (snow/wind)	2,400 Pa / 2,400 Pa

Dimensions



BISOL Spectrum module with BIPV frame

BIPV removes any distinction between energy systems and building materials. It is aesthetic, multi-functional, eco-friendly, and signals a step into the future.





"Thanks to the BISOL Spectrum, we now have the possibility to please all our customer concerns. Some of them dislike solar panels because of their aesthetic appearance, while for the majority the return on investment (ROI) is of the highest importance. Now we have the solution that meets both needs – BISOL Spectrum!"

Zonnepanelen Volendam, the Netherlands

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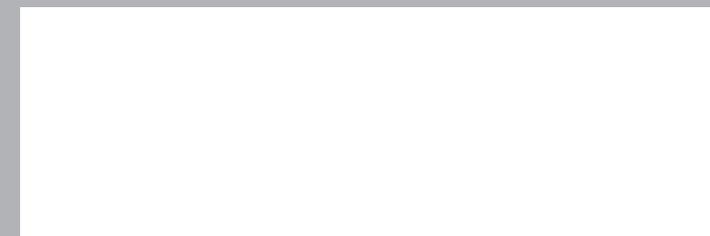
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Dealer information



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

Additional terms & conditions apply. Please see Standard Limited Guarantee and General Terms and Conditions.

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