

PREMIUM

BISOL Duplex

Monocrystalline Half-Cut PV Modules (144 Cells) / BBO 450-460 Wp



Designed & manufactured in EU



Higher power



Lower losses



All relevant certificates



Limited shading



Module presorting for higher profitability



Module efficiency up to 20.8 %

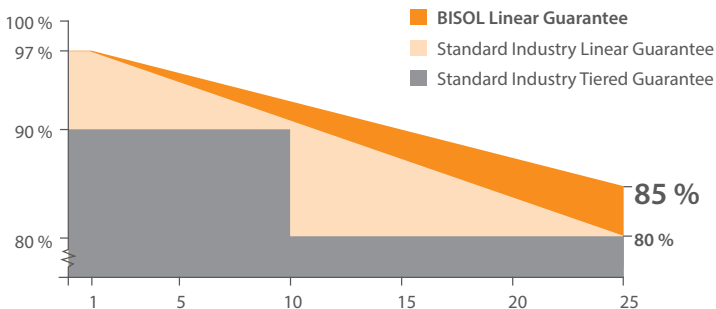


Strictly positive output power tolerances



Excellent low light performance

Guarantees:



25 Linear Guarantee
85% power output in 25th year

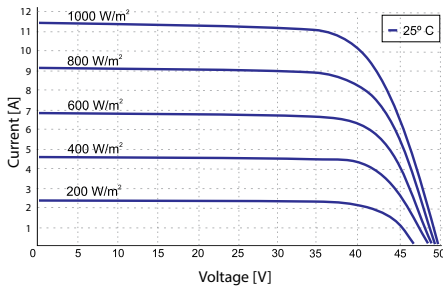
15 Product Guarantee
15 years

In compliance with:

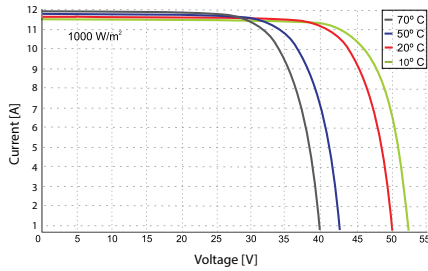


Certificates available upon special request. Additional charges may apply.

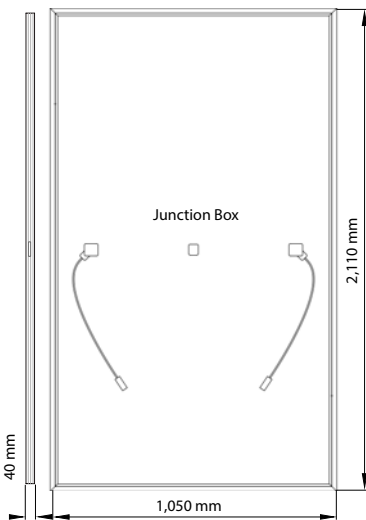
I-V Curve at Various Irradiation Levels



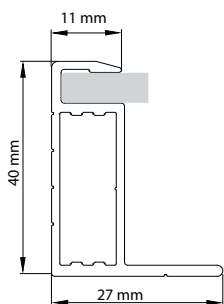
I-V Curve at Various Cell Temperatures



Dimensions



Frame Cross Section



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

Module Type	BBO	450	460
Nominal Power	P_{MPP} [W]	450	460
Short Circuit Current	I_{SC} [A]	11.40	11.5
Open Circuit Voltage	V_{OC} [V]	50.2	50.6
MPP Current	I_{MPP} [A]	10.75	10.9
MPP Voltage	V_{MPP} [V]	41.9	42.2
Module Efficiency	η_M [%]	20.3	20.8
Power Output Tolerance		0/+5 W	
Maximum Reverse Current		20 A	
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 %.

Thermal Specifications:

Current Temperature Coefficient	α	+ 0.06 %/°C
Voltage Temperature Coefficient	β	- 0.27 %/°C
Power Temperature Coefficient	γ	- 0.35 %/°C
NOCT		44 ± 2 °C
Temperature Range		- 40 °C to + 85 °C

Mechanical Specifications:

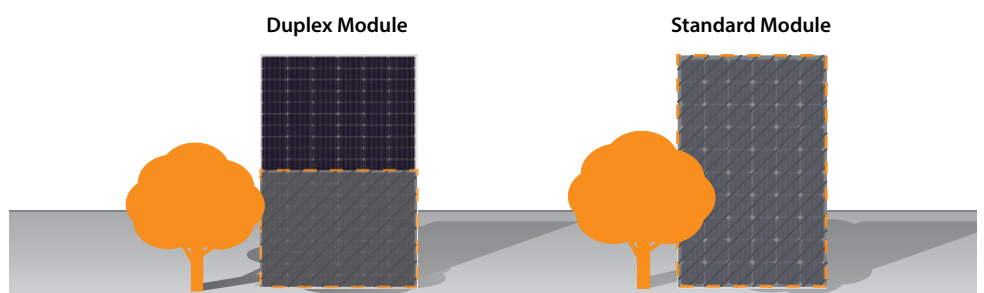
Length x Width x Thickness	2,110 x 1,050 x 40 mm
Weight	24.5 kg
Solar Cells	144 Half-Cut mono PERC c-Si / 166 mm x 166 mm
Junction Box / Connectors / IP	3 bypass diodes / MC4 compatible / IP 68
Cable Length	Default: 1,200 mm On demand (for portrait orientation): 300 mm
Frame	Anodized Al with drainage holes / rigid anchored corners
Glass	3.2 mm AR coating tempered glass / high-transparency / low-iron content
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 Production.

Packaging Information:

Modules per Pallet	Packing Dimension: Length/Width/Height	Stackable	Packing Weight	Tot. Nr. of Pallets/Load
27	214 x 109 x 130 cm	3 pallets	703 kg	24

Higher Yield Due to Better Shading Response:



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

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