

PREMIUM

# BISOL Duplex

Monocrystalline Half-Cut PV Modules (144 cells) / BBO 435-455 Wp



Designed & manufactured in EU



Higher power



Lower losses



All relevant certificates



Limited shading



Module presorting for higher profitability



Module efficiency up to 20.5 %

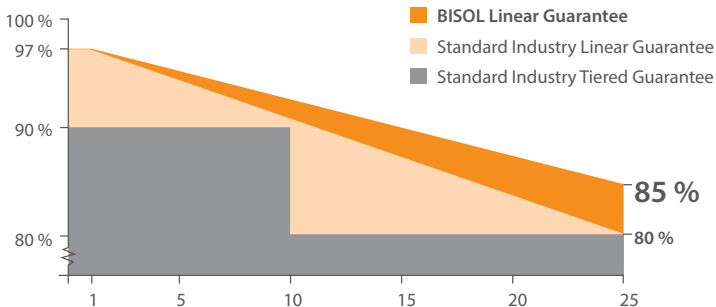


Strictly positive output power tolerances



Excellent low light performance

## Guarantees:



**25** Linear guarantee  
85 % power output in 25<sup>th</sup> year

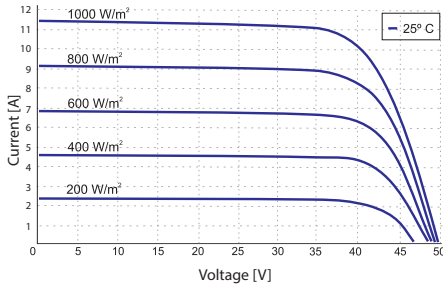
**15** Product guarantee  
15 years

## In compliance with:

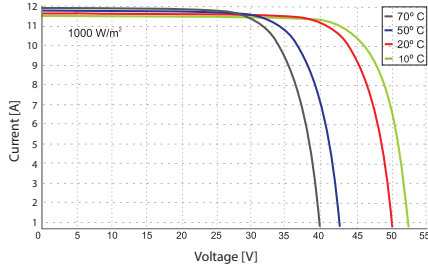


Certificates available upon special request. Additional charges may apply.

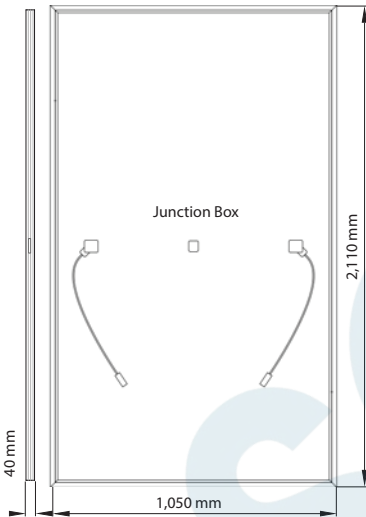
### I-V Curve at Various Irradiation Levels



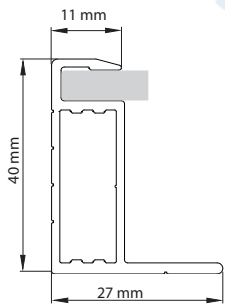
### I-V Curve at Various Cell Temperatures



### Dimensions



### Frame cross section



## Electrical Specifications @ STC (AM1.5, 1,000 W/m<sup>2</sup>, 25 °C):

Module Type	BBO	435	440	445	450	455
Nominal Power	$P_{MPP}$ [W]	435	440	445	450	455
Short Circuit Current	$I_{SC}$ [A]	11.25	11.30	11.35	11.40	11.45
Open Circuit Voltage	$V_{OC}$ [V]	49.4	49.7	50.0	50.2	50.4
MPP Current	$I_{MPP}$ [A]	10.55	10.60	10.70	10.75	10.85
MPP Voltage	$V_{MPP}$ [V]	41.2	41.5	41.6	41.9	41.9
Module Efficiency	$\eta_M$ [%]	19.6	19.9	20.1	20.3	20.5
Power Output Tolerance		0/+5 W				
Maximum Reverse Current		20 A				
Maximum System Voltage		1,500 V (Application Class A)				

Additional power classes available upon request. | Power measurement tolerance:  $\pm 3\%$ .

### Thermal Specifications:

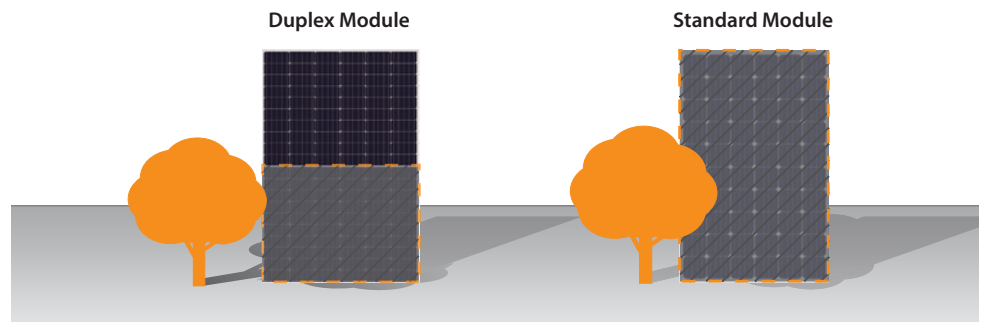
Current Temperature Coefficient	$\alpha$	+ 0.06 %/°C
Voltage Temperature Coefficient	$\beta$	- 0.27 %/°C
Power Temperature Coefficient	$\gamma$	- 0.35 %/°C
NOCT		44 $\pm$ 2 °C
Temperature range		- 40 °C to + 85 °C

### 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 c-Si
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 drainage holes / rigid anchored corners
Glass	3.2 mm AR coating tempered glass / high-transparency / low-iron content
Packaging	27 modules per pallet / stackable 3 pallets high
Certified Nominal Load (snow/wind)	5,400 Pa / 2,400 Pa
Impact resistance	Hailstone / $\Phi$ 25 mm / 83 km/h (51 mph)

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

### Higher Yield Due to Better Shading Response:



### Dealer information

[www.bisol.com](http://www.bisol.com)



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

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