belinus

BELGIAN DESIGN AND QUALITY

HELIOS
Glass-Glass | TOPCon technology

EUPD RESEARCH TOP BRAND PV MODULES BELGIUM 2022

440 Wp - 225 W/m²

The perfect blend of performance, design and price

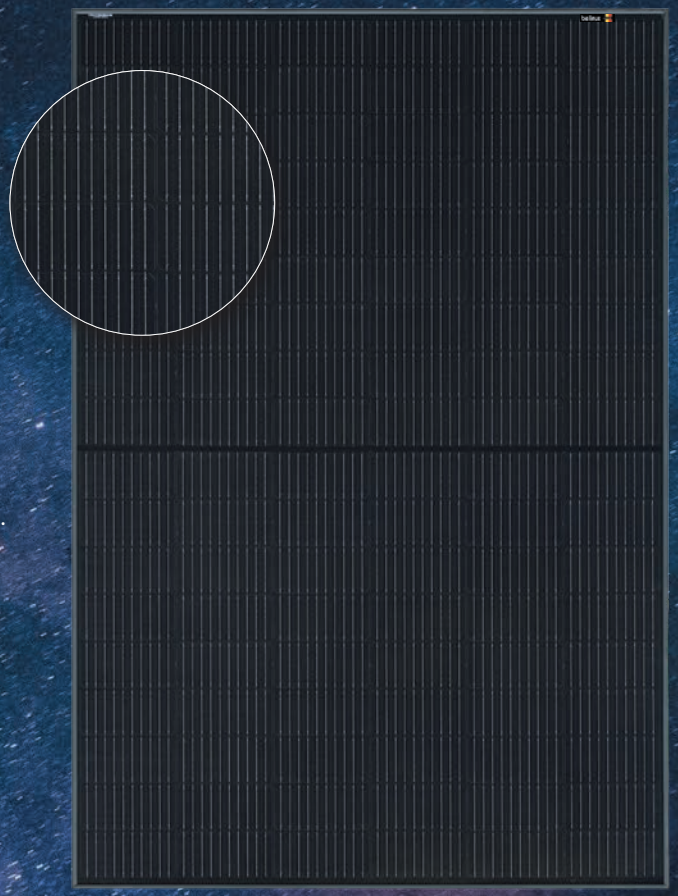
Improved longevity
The TOPCon cell technology is based on a homogenous passivation layer which improves the efficiency and the longevity of your solar panel.

Bifacial module
Bifacial modules not only generate electricity from sunlight on their front sides but also from reflected light on their rear sides, increasing overall energy yield.

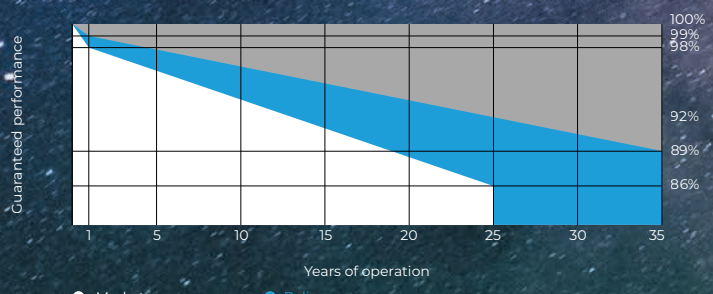
Ultra black
The black cells, black frame, black spacings and matt finish make this panel a true aesthetic enhancement for your roof. Only the darkest cells are selected to use in our panels.

Glass-Glass
Glass at the front and at the rear for a longer longevity, lower degradation and less chance of micro-cracks. They are also more weather-, water- and fire-resistant and contain no PFAS.

Belgian quality
Designed and engineered in the heart of Europe using only parts that meet the highest European requirements for quality and safety.



Degradation



ONE WARRANTY
35 yr
Belinus Complete Guarantee
ZERO WORRIES

Ariel Re

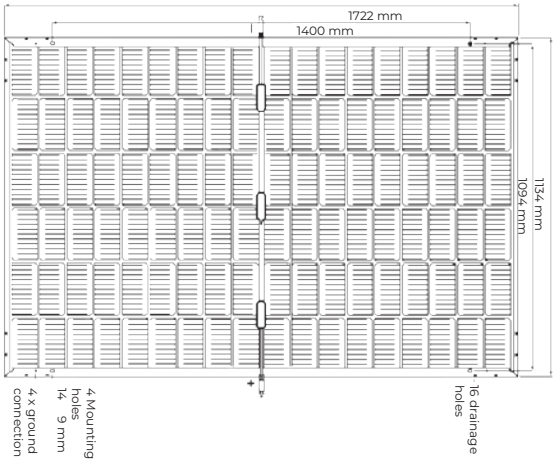
LLOYD'S Underwriters

For more information visit www.belinus.com/warranty

Mechanical characteristics

Dimensions	1722 x 1134 x 30 mm ± 1.5 mm (1.95 m²)
Weight	23 kg
Cell technology	TOPCon
N° of cells	108 (6 substrings of 18 half-cut cells)
Cell size	182 x 182 mm
Bifaciality factor	80% (± 5%)
Front cover	2.0 mm tempered solar glass with DLAR coating
Back cover	2.0 mm tempered solar glass
Spacings transparency	Not transparent, full black
Frame	Black anodized aluminium alloy
Junction boxes	3 with 1 bypass diode per box, IP 68
Output cables	4 mm² 1200 mm
Connectors	Stäubli MC4 Evo-2

Technical characteristics



Electrical characteristics[1]

Power (P_{max})[2]		425 Wp	430 Wp	435 Wp	440 Wp
Module power density		218 W/m²	220 W/m²	223 W/m²	225 W/m²
Module efficiency %		21.8 %	22.0 %	22.3 %	22.5 %
Voltage at max. power [V_{mpp}]		31.7 V	31.9 V	32.1 V	32.3 V
Current at max. power [I_{mpp}]		13.4 A	13.5 A	13.6 A	13.7 A
Open circuit voltage [V_{oc}]		38.3 V	38.5 V	38.7 V	38.9 V
Short circuit current [I_{sc}]		14.1 A	14.2 A	14.3 A	14.4 A
Bifaciality performance increase	10% (P_{mpp})	459.0 Wp	464.4 Wp	469.8 Wp	475.2 Wp
	20% (P_{mpp})	493.0 Wp	498.8 Wp	504.6 Wp	510.4 Wp
	30% (P_{mpp})	527.0 Wp	533.2 Wp	539.4 Wp	545.6 Wp

[1]Measured under standard test conditions (STC): 1000 W/m² irradiance, 25°C cell temperature, AM=1,5 and rear side covered for monofacial measurement.
[2]Power class sorting tolerance: 0 to +5W.

Specifications for system design

Maximum system voltage	1500 V
Maximum reverse current	20 A
Max. test load snow/wind	5400 Pa/-2400 Pa
Impact resistance	Ø 45 mm hail at 23 m/s
Safety class	II
Fire class	Class A according to UL790
Operating temperature	-40 to 85°C

Warranty	Belinus	Market Average
Product	35 years	12-15 years
Performance	35 years	25 years
Service	35 years	0 years

Temperature characteristics

Nominal Operating Cell Temperature (NOCT)	45°C ± 2°C	Temperature coefficient of V_{oc}	-0.25%/C°
Temperature coefficient of P_{max}	-0.29%/C°	Temperature coefficient of I_{sc}	+0.04%/C°

Packaging information

Container	40'HC
Pieces per pallet	36
Pallets per container	26
Pieces per container	936

Certificates and tests

IEC 61215*, IEC 61730*

*Certificates are pending.

Residential Commercial Industrial

Product reference: BE-Helios-UB-GG-xxx

Publication date and version: 2023-12-20 GLv1

BELINUS SOLAR BV | THOR PARK 8300, 3600 GENK, BELGIUM | TEL +32 89 27 19 99 | EMAIL INFO@BELINUS.COM | WEB WWW.BELINUS.COM