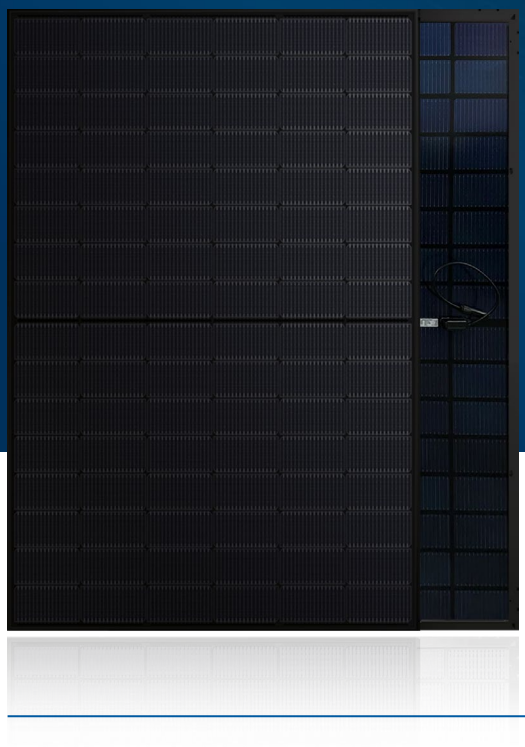
Silk® Nova Duetto All Black

FuturaSun® anticipate tomorrow



n-type | TECHNOLOGY INSIDE

460 W
Maximum power

23.02 %
Maximum efficiency

KEY BENEFITS AND FEATURES

- Power from **450** to **460 Watt**
- 96 G12R MBB **n-type bifacial** cells
- **Black frame** and black-patterned back glass
- for buildings with **high aesthetic value**
- Improved **long-life stability**
- 1762 x 1134 x 30 mm

Performance guarantee

- **30-years** performance warranty with max power decrease from 1st year **0.4%**/year
- **99%** at the end of first year
- **92%** at the end of 20th year
- **87%** at the end of 30th year

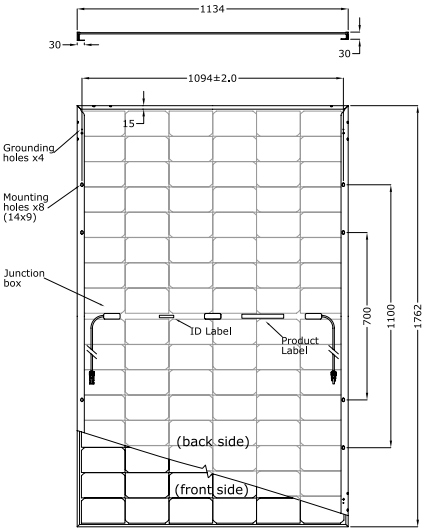
Product guarantees

- **15-year** product and performance warranty
- Third-party product **liability** insurance
- All FuturaSun's modules are designed and guaranteed by the **Italian** headquarters

All images shown are for illustration purpose only, product appearance may vary according to the installation, light and ambient reflection.

Mechanical Specifications

Dimensions	1762 x 1134 x 30 mm
Weight	25.5 kg
Front glass	2.0 mm solar glass with ARC
Cells	96 monocrystalline half-cut MBB n-type bifacial cells 182 x 105 mm
Frame	Black anodized aluminium frame with mounting and drainage holes
Junction boxes	Certified according to IEC 62790, IP 68 approved, 3 bypass diodes
Cables	Solar cable, length 1100 mm or customized assembled with 4mm² compatible connectors
Back glass	2.0 mm heat strengthened glass with black-patterned
Maximum reverse current (Ir)	35 A
Maximum system voltage	1500 V
Mechanical load (snow)	Design load: 3600 Pa, (5400 Pa including safety factor 1.5)
Mechanical load (wind)	Design load: 1600 Pa, (2400 Pa including safety factor 1.5)



Note: dimensions in mm, tolerance +/- 2 mm

Electrical data		FU 450 MV		FU 455 MV		FU 460 MV	
TEST CONDITIONS		STC*	BNPI**	STC*	BNPI**	STC*	BNPI**
Module power (Pmax)	W	450	499	455	504,00	460	509,00
Open circuit voltage (Voc)	V	35,48	35,58	35,66	35,76	35,84	35,94
Short circuit current (Isc)	A	15,97	17,69	16,03	17,76	16,10	17,83
Maximum power voltage (Vmpp)	V	30,03	30,03	30,23	30,23	30,43	30,43
Maximum power current (Impp)	A	14,99	16,62	15,06	16,67	15,13	16,73
Module efficiency	%	22,52	24,97	22,77	25,22	23,02	25,47
Isc at BSI****	A	19,80		19,88		19,96	
Sorting tolerance	W	0/+5					

Electrical data - NOCT***		FU 450 MV	FU 455 MV	FU 460 MV
Module power (Pmax)	W	338,40	342,30	346,20
Open circuit voltage (Voc)	V	33,80	33,99	34,18
Short circuit current (Isc)	A	12,89	12,94	12,98
Maximum power voltage (Vmpp)	V	27,95	28,13	28,32
Maximum power current (Impp)	A	12,11	12,17	12,23

Temperature ratings

Temperature coefficient Isc	%/°C	0.045
Temperature coefficient Voc	%/°C	-0.25
Temperature coefficient Pmax	%/°C	-0.29
NOCT**	°C	45 ± 2
Operating temperature	°C	from -40 to +85

Certifications

Factory	ISO 9001 - 14001 - 45001
Product	IEC EN 61215, IEC EN 61730, Fire Class C EN13501-1 Class E, EN13501-5 Broof (t1)

Packaging

Quantity / Pallet	36 pcs
Container 40' HC	936 pcs / 26 pallets

The information included in this module datasheet is subject to change without notice and is provided for informational purposes only. No contractual rights are established or should be inferred because of user's reliance on the information contained in this module datasheet. Please refer to the appropriate module user guide and module product specification document for more detailed technical information regarding module performance, installation and use.

*Standard Test Conditions (STC): 1000 W/m² - AM 1.5 - 25 °C - tolerance: Pmax (±3%). Voc (±4%). Isc (±5%)
**Bifacial Name Plate Irradiance (BNPI) Front side irradiation 1000 W/m² Back side reflection irradiation 135 W/m² Ambient temperature 25 °C
***Nominal Operating Cell Temperature (NOCT): 800 W/m² - T=45 °C - AM 1.5
****Bifacial Stress Irradiance (BSI): Front side irradiation 1000 W/m², Back side reflection irradiation 300 W/m²

EN_01

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For detailed information, please refer to the installation manual