

Silk[®] Nova All Black



n-type

TECHNOLOGY
INSIDE

470 W **21.78 %**

Maximum power

Maximum efficiency

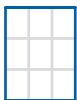
KEY BENEFITS AND FEATURES



Power from **460** to **470 Watt**



120 M10 **n-type** half-cut cells



Elegant **all black** front side design



High efficiency and enhanced low light performance



Excellent temperature coefficient **-0.29%/°C**



1910 x 1134 x 30 mm

Performance guarantee

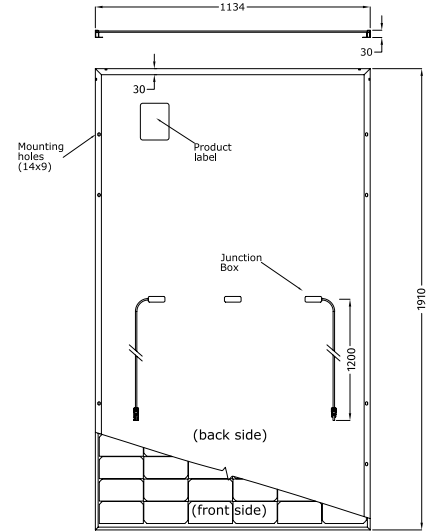
- **25-years** performance warranty with max power decrease from 2nd year **0.4%/year**
- **99%** at the end of first year
- **92%** at the end of 20th year
- **89%** at the end of 25th year

Product guarantees

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

Mechanical Specifications

Dimensions	1910 x 1134 x 30 mm
Weight	22.4 kg
Glass	High transmission, Low iron, Tempered, ARC, transparent, 3.2 mm
Cells	120 monocrystalline half-cut MBB n-type cells 182 x 91 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 1400 mm or customized assembled with 4mm ² compatible connectors
Backsheet	Composite Multilayer film
Maximum reverse current (I _r)	25 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 - STC*

		FU 460 MV	FU 465 MV	FU 470 MV
Sorting tolerance	W		0/+5	
Module power (P _{max})	W	460	465	470
Open circuit voltage (V _{oc})	V	42.34	42.48	42.62
Short circuit current (I _{sc})	A	13.94	14.02	14.10
Maximum power voltage (V _{mpp})	V	35.00	35.15	35.30
Maximum power current (I _{mpp})	A	13.18	13.26	13.34
Module efficiency	%	21.32	21.55	21.78

Electrical data - NOCT**

		FU 460 MV	FU 465 MV	FU 470 MV
Module power (P _{max})	W	346.48	350.35	354.24
Open circuit voltage (V _{oc})	V	40.08	40.28	40.49
Short circuit current (I _{sc})	A	10.95	11.17	11.39
Maximum power voltage (V _{mpp})	V	32.92	33.05	33.17
Maximum power current (I _{mpp})	A	10.52	10.60	10.68

Temperature ratings

Temperature coefficient I _{sc}	%/°C	0.045
Temperature coefficient V _{oc}	%/°C	-0.25
Temperature coefficient P _{max}	%/°C	-0.29
NOCT**	°C	45 ± 2
Operating temperature	°C	from -40 to +85

Certifications

Factory	ISO 9001 - 14001 - 45001
Product	IEC EN 61730 ongoing, IEC EN 61215 ongoing, Fire Class C

Packaging

Quantity / Pallet	36 pcs
Container 40' HC	864 pcs / 24 pallets

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*Standard Test Conditions STC: 1000 W/m² - AM 1.5 - 25 °C - tolerance: P_{max} (±3%), V_{oc} (±4%), I_{sc} (±5%)
 **Nominal Operating Cell Temperature NOCT: 800 W/m² - T=45 °C - AM 1.5

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