

n-type

TECHNOLOGY  
INSIDE

**440 W 22.53 %**

Maximum power

Maximum efficiency

## KEY BENEFITS AND FEATURES



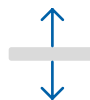
Power from **430 to 440 Watt**



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



**High Hail resistance**, up to 45 mm hailstones diameter at 30 m/s



Increased **glass thickness**



Up to **7000 Pa snow load** resistance thanks to **two extra aluminum bars**



1722 x 1134 x 30 mm

### Performance guarantee

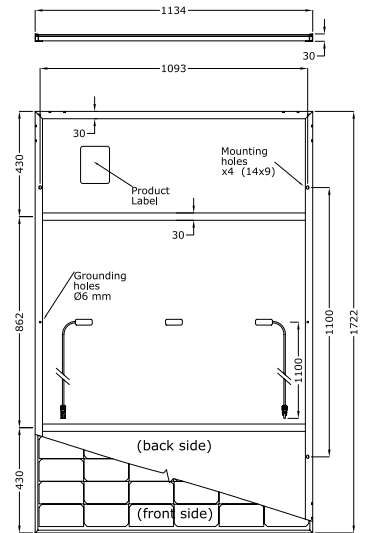
- **25-years** performance warranty with max power decrease from 2<sup>nd</sup> year **0.4%/year**
- **99%** at the end of first year
- **92%** at the end of 20<sup>th</sup> year
- **89%** at the end of 25<sup>th</sup> year

### 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	1722 x 1134 x 30 mm
Weight	26 kg
Glass	High transmission, Low iron, Tempered, ARC, Thickness 4 mm
Cells	108 monocrystalline half-cut MBB n-type cells 182 x 91 mm
Frame	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 4mm <sup>2</sup> compatible connectors
Backsheet	Composite Multilayer film - white
Maximum reverse current (I <sub>r</sub> )	25 A
Maximum system voltage	1000 V (1500 V on request)
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 430 M	FU 435 M	FU 440 M
Sorting tolerance	W		0/+5	
Module power (P <sub>max</sub> )	W	430	435	440
Open circuit voltage (V <sub>oc</sub> )	V	38.44	38.63	38.82
Short circuit current (I <sub>sc</sub> )	A	14.25	14.33	14.41
Maximum power voltage (V <sub>mpp</sub> )	V	31.86	32.05	32.24
Maximum power current (I <sub>mpp</sub> )	A	13.50	13.58	13.66
Module efficiency	%	22.00	22.28	22.53

## Electrical data - NOCT\*\*

		FU 430 M	FU 435 M	FU 440 M
Module power (P <sub>max</sub> )	W	323	327	330
Open circuit voltage (V <sub>oc</sub> )	V	36.54	36.72	36.90
Short circuit current (I <sub>sc</sub> )	A	11.51	11.58	11.65
Maximum power voltage (V <sub>mpp</sub> )	V	29.61	29.74	29.87
Maximum power current (I <sub>mpp</sub> )	A	10.91	10.98	11.05

## Temperature ratings

Temperature coefficient I <sub>sc</sub>	%/°C	0.045
Temperature coefficient V <sub>oc</sub>	%/°C	-0.25
Temperature coefficient P <sub>max</sub>	%/°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	936 pcs / 26 pallets

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\*Standard Test Conditions STC: 1000 W/m<sup>2</sup> - AM 1.5 - 25 °C - tolerance: P<sub>max</sub> (±3%), V<sub>oc</sub> (±4%), I<sub>sc</sub> (±5%)  
 \*\*Nominal Operating Cell Temperature NOCT: 800 W/m<sup>2</sup> - T=45 °C - AM 1.5

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