

n-type

TECHNOLOGY
INSIDE

455 W 22.77 %

Maximum power

Maximum efficiency

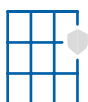
KEY BENEFITS AND FEATURES



Power from 445 to 455 Watt



96 G12R HC **n-type** half-cut cells



The **new standard** in photovoltaic technology



High efficiency and enhanced low light performance



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



1762 x 1134 x 30 mm

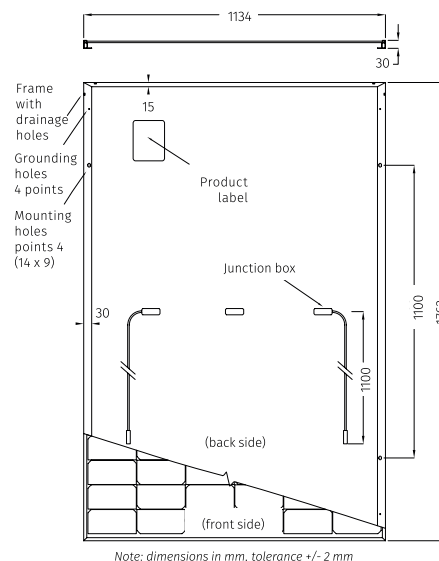
Performance guarantee

- **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

Dimensions	1762 x 1134 x 30 mm
Weight	21.3 kg
Glass	High transmission, Low iron, Tempered, ARC, Thickness 3.2 mm
Cells	96 monocrystalline half-cut MBB n-type cells 182 x105 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 4mm ² compatible connectors
Backsheet	Composite multilayer film - white
Maximum reverse current (Ir)	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)



Sorting tolerance	W	0/+5		
Module power (Pmax)	W	445	450	455
Open circuit voltage (Voc)	V	35.30	35.47	35.63
Short circuit current (Isc)	A	15.91	15.97	16.02
Maximum power voltage (Vmpp)	V	29.81	30.01	30.17
Maximum power current (Impp)	A	14.93	15.00	15.08
Module efficiency	%	22.27	22.52	22.77

Module power (Pmax)	W	335	338	342
Open circuit voltage (Voc)	V	33.56	33.72	33.87
Short circuit current (Isc)	A	12.84	12.90	12.95
Maximum power voltage (Vmpp)	V	27.75	27.89	28.00
Maximum power current (Impp)	A	12.06	12.12	12.19

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

Factory	ISO 9001 - 14001 - 45001
Product	IEC EN 61215, IEC EN 61730, Fire Class C, Class 1 UNI9177

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

EN_04