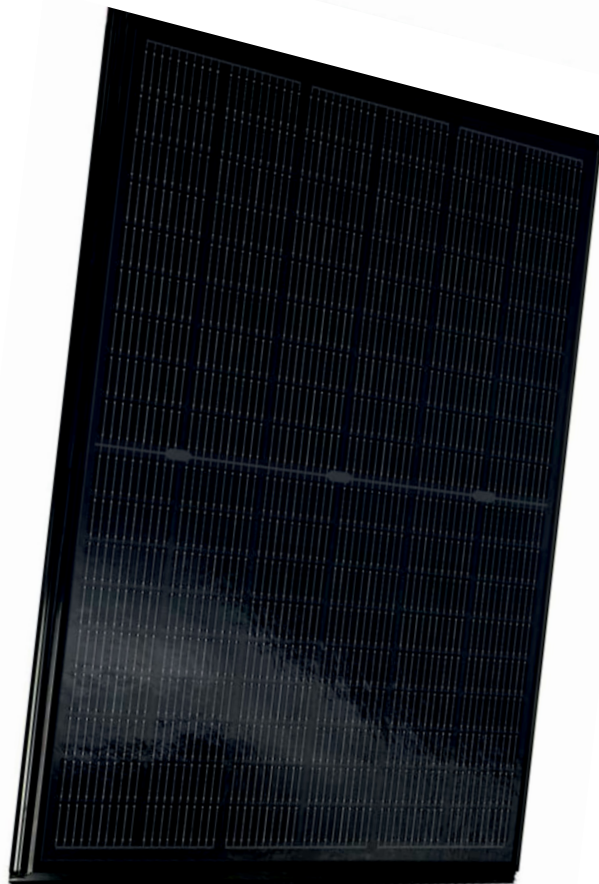


SolarRoof Solrif Glass/Foil FullBlack N-Typ 445 W - 465 W



Integrated in-roof solar solution

- Powerful because of TOPCon cell technology High
- module efficiency up to 24.02 %
- 3.2 mm tempered and highly transparent solar glass
- Mechanical load capacity of 5400 Pa
- Hail class 4
- Aesthetic design
- Easy assembly
- Rainproof like a tiled roof
- Full cost coverage in the event of a warranty claim

Certificates

- Power increase 0 Wp - 4.99 Wp
- Excellent temperature behavior
- PID free
- LID free

- ISO 9001: 2015: Quality management system
- ISO 14001: 2015: Environmental management system
- ISO 45001: 2018: Management system for health and safety
- IEC 61215, IEC 61730

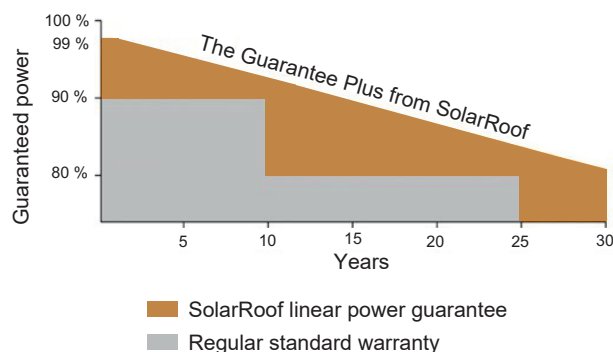


Solrif made by **Schweizer**



Guarantee from Germany

- 20 years product warranty
- 30 years performance warranty



ELECTRICAL DATA @ STC

Max. power P _{mpp} / W _p	445	450	455	460	465
Voltage open circuit, V _{oc} / V	38,6	38,8	39,0	39,2	39,4
Short circuit current, I _{sc} / A	14,54	14,59	14,65	14,71	14,77
Max. voltage, V _{mpp} / V	32,3	32,5	32,7	32,9	33,1
Max. current, I _{mpp} / A	13,78	13,85	13,92	13,99	14,06
Module efficiency up to / %	22,99	23,25	23,51	23,76	24,02
Temperature range	-40 °C to +85 °C				
Max. system voltage	1000 VDC / 1500 VDC				
Fire protection class	Class C				
Max. return current I _r	30 A				

Technical data according to STC (Standard Test Conditions) Irradiation 1000 W/m² | Module temperature 25 °C | Air Mass 1.5

ELECTRICAL DATA @ NOCT

Module power, P _{mpp} / W _p	332	336	339	343	347
Open circuit voltage, V _{oc} / V	35.5	35.7	35.9	36.1	36.3
Short circuit current, I _{sc} / A	11.78	11.82	11.87	11.92	11.97
Maximum power voltage, V _{mpp} / V	29.5	29.7	29.9	30.1	30.3
Maximum power current, I _{mpp} / A	11.30	11.36	11.41	11.47	11.53

Technical data for NOCT (Nominal Operating Cell Temperature) Irradiance 800 W/m² | Wind speed 1 m/s | Ambient temperature 20 °C | Cell operating temperature 43 +/- 2 °C | Air Mass 1.5

TECHNICAL DATA

Cell / Type	Monocrystalline N-type TopCon / half cells
Number of cells	108 (6 x 18)
Dimensions	1766 x 1160 x 17 mm
Weight	23 kg
Front	3.2 mm tempered glass with anti-reflective coating
Back	black Tedlar film
Junction box / diodes	IP68, 3 diodes
Cable	4 mm ² solar cable, 1200 mm long
Connector	MC4

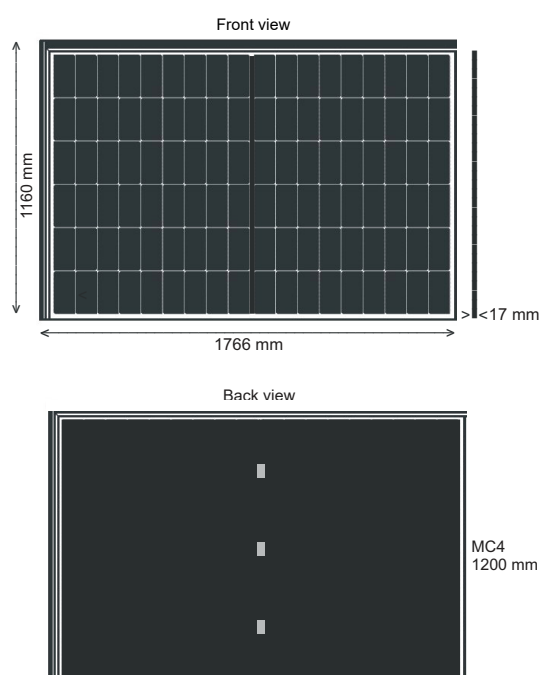
TEMPERATURE COEFFICIENTS

Nominal Operating Cell Temperature NOCT	43 ± 2 °C
Temp. Coefficient, (P)	-0.30%/°C
Temp. Coefficient, (V)	-0.25%/°C
Temp. Coefficient, (I)	0.045%/°C

PACKAGING

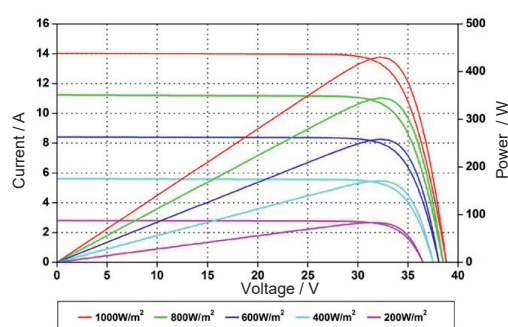
Modules / Euro pallet	23 pieces
Modules / Shipping container	598 pieces

DRAWING

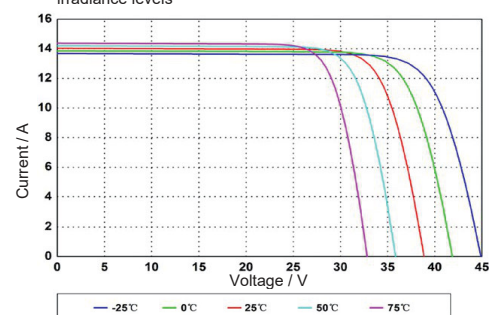


Technical data are average values and may vary slightly.
Measuring tolerance of the nominal power depending on the measuring apparatus +/- 3 % and other values +/- 10 %

DIAGRAMS



Current-voltage-power-voltage curves at different irradiance levels



Voltage curves at different temperatures