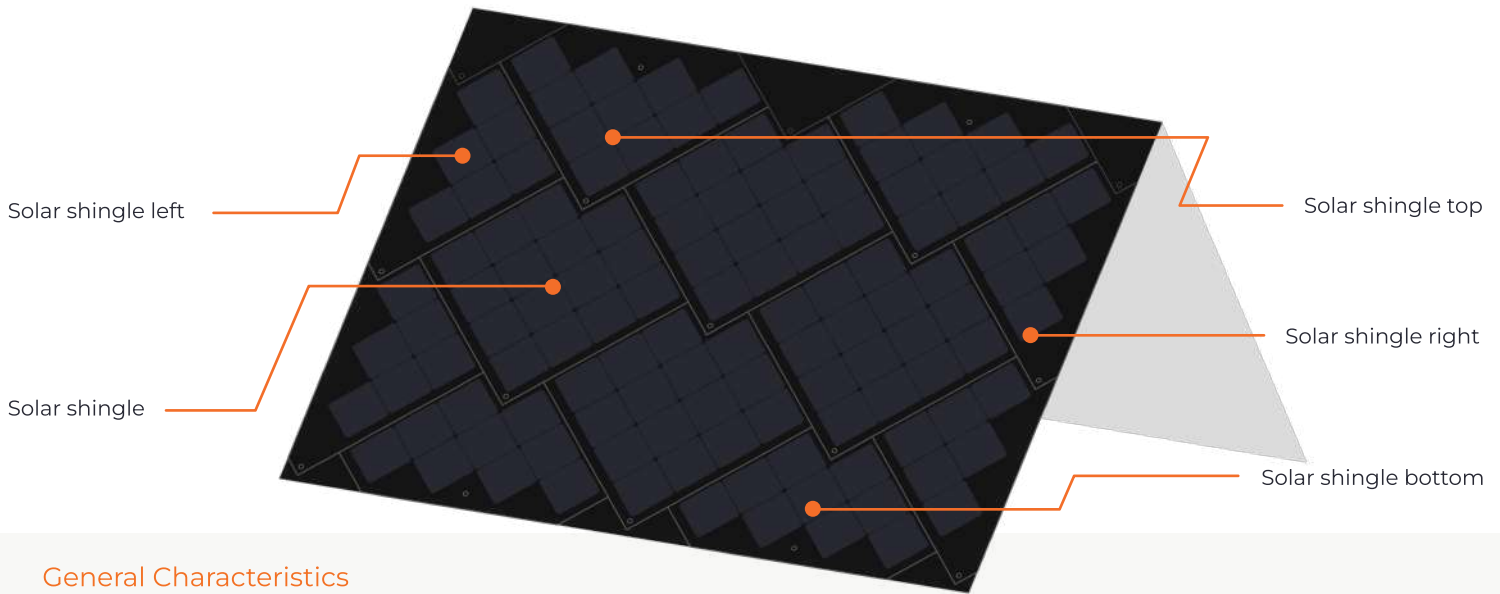


# Solar Roof Technical Data



## General Characteristics

Dimension solar shingles	745 x 745 x 7.5 mm
Laminate structure	Glass   EVA   Cells   EVA   Glass
Front Glass	Transmission optimized solar glass with structured, matt surface 3.2mm, thermally toughened
Back Glass	3.0mm with screen printing black, thermally toughened
Solar cell type	Monocrystalline silicon PERC cells
Junction box	According to IEC 62790
Bypass diodes	2 Diodes per shingle
Connection cable	Solar cable 4 mm <sup>2</sup> , 800 mm length
Connector	Original Stäubli Multi-Contact (MC4)
System weight	20.5 kg / m <sup>2</sup>
Substructure	Wooden slats with M6 inlets
Tested temperature range	-40°C bis +85°C
System power	Up to 172 W <sub>p</sub> / m <sup>2</sup>

## Quality and Warranty

Product guarantee	12 years
Performance guarantee	10 years at 90 % of the nominal output 30 years at 80 % of the nominal output
Performance certificate	IEC 61215
Safety certificate	IEC 61730 (protection class II)
Fire safety	DIN-EN 13501-5: B <sub>ROOF</sub> (t1)/(t2)/(t3) DIN 4102-7: class B1
Hail resistance class	HW 4 (withstands 40 mm Ø hailstones)
Tested Pressure load w/o support battens	12'750 Pa
Permitted snow load with support battens	8'500 Pa   higher pressure on request
Accessibility	Dry roof can be accessed without any warranty restrictions
Water tightness	Min. slope 4° (cf. notice sheet: requirement roof-buildup)

## Electrical Properties at Standard Test Conditions (1000 W/m<sup>2</sup>, 25°C and AM 1.5)

Type of solar shingle	Solar shingle	Solar shingle bottom	Solar shingle top	Solar shingle left	Solar shingle right
Nominal output	84 W <sub>p</sub>	50 W <sub>p</sub>	50 W <sub>p</sub>	33 W <sub>p</sub>	33 W <sub>p</sub>
Voltage V <sub>MPP</sub>	8.4 V	5.0 V	5.0 V	3.3 V	3.3 V
Current I <sub>MPP</sub>	10.0 A	10.0 A	10.0 A	10.0 A	10.0 A
Open circuit voltage V <sub>OC</sub>	10.5 V	6.0 V	6.0 V	4.0 V	4.0 V
Short circuit current I <sub>SC</sub>	10.4 A	10.4 A	10.4 A	10.4 A	10.4 A
Maximum system voltage	1000 V DC	1000 V DC	1000 V DC	1000 V DC	1000 V DC
Reverse current overload	18 A	18 A	18 A	18 A	18 A
Tolerance nominal output	+/- 3%	+/- 3%	+/- 3%	+/- 3%	+/- 3%

## Temperature Coefficients

Temperature coefficient α	for short circuit current (I <sub>SC</sub> )	+0,07 %/K
Temperature coefficient β	for open circuit voltage (V <sub>OC</sub> )	-0,36 %/K
Temperature coefficient γ	for nominal output (P <sub>MPP</sub> )	-0,38 %/K

## System Enhancements

Complementary shingle fixed size Customizable shingle	Laminated safety glass, black SunStyle®-compound material
Snow hook	Stainless steel, black
Alpine support laths from 3600 Pa	Wood