



### General Characteristics

Dimension PV slates	1'200 x 770 x 8 mm
Solar cell type	Monocrystalline silicon cells G12R
Laminate structure	Glass   POE   Cells   POE   Glass
Junction box	IP68 or better
Bypass diode	Two diodes per shingle
Connection cable	Solar cable 4 mm <sup>2</sup>
Connector	Stäubli MC4-Evo2A
Glass thickness	3.2 mm (front glass) + 3 mm (back glass)
Glass properties	Tempered solar safety glass (ESG)
Weight	3.9 lbs/ft <sup>2</sup> or 19.0 kg/m <sup>2</sup>
Temperature range	-40°C to +85°C

### Electrical Properties at STC

Type of module	White shingle
Nominal output (P <sub>mpp</sub> )	90 Wp
Voltage (V <sub>mpp</sub> )	25.20 V
Current (I <sub>mpp</sub> )	3.63 A
Open circuit voltage (V <sub>oc</sub> )	28.80 V
Short circuit current (I <sub>sc</sub> )	3.80 A
Maximum system voltage	1'000 V DC
Reverse current overload	20 A
Tolerance nominal output	±5 %

STC (Standard Testing Conditions) = 1'000 W/m<sup>2</sup>, 25°C and AM1.5

### Temperature coefficients

Temperature coefficient voltage (V <sub>oc</sub> )	-0.19 %/K
Temperature coefficient nominal output (P <sub>mpp</sub> )	-0.39 %/K
Temperature coefficient short circuit current (I <sub>sc</sub> )	+0.05 %/K

### Quality and Warranty

Product guarantee	10 years
Performance guarantee	10 years at 90% of the nominal output 25 years at 80% of the nominal output
Quality and Certification	IEC 61215:2021 IEC 61730:2021 Fire rating class C Fire rating class 1 (UNI 9177)

Certified pressure load	4'800 N/m <sup>2</sup>
Accessibility	Can be accessed without any guarantee restrictions
Color stability	Long-term stability with UV filter technology

#### Remark:

The temperature of a PV module during operation at sunlight can reach up to 80°C. The increase of temperature reduces the power output of the PV cells (see temperature coefficient above).

As the operating temperature of a white PV module is lower than that of a black PV module, the efficiency loss of a white module due to temperature increase is significantly lower.