

SOLON SOLbond Rail.

PV System for Trapezoidal and Composite Roofs.

- › PV solution with frameless crystalline module and GRP (glass reinforced plastic) rail system
- › Quick and simple installation
- › Minimum static rooftop load – system weight less than 11 kg/m²
- › High-grade silicone adhesive with outstanding weather- and UV-resistance
- › High power density: up to 163 Wp/m²



The Lightweight PV Solution for High Output.

SOLON SOLbond Rail is the ideal PV solution for all common trapezoidal and composite roofs. For assembly, a GRP (glass reinforced plastic) rail will be attached directly to the roof and a frameless SOLON module subsequently glued to this material. Because of a small system weight of only 11 kg/m² SOLON SOLbond Rail is ideally suited for roofs with low load-bearing reserve.

More Watts per Square Metre.

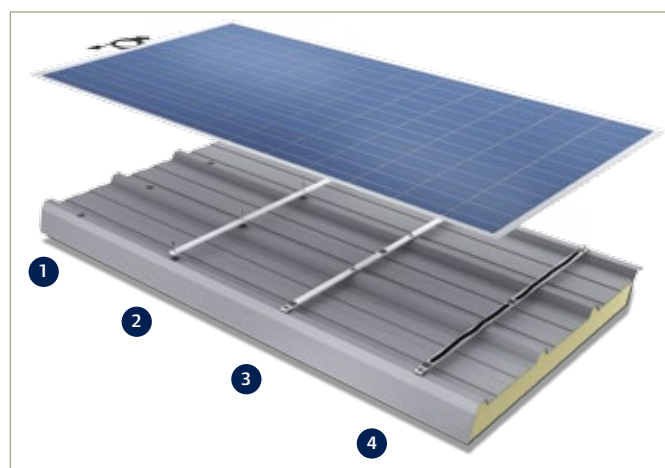
- › High power density: up to 163 Wp/m²
- › No shading caused by mounting systems
- › Ideal self cleaning frameless modules, even with slight roof pitches

Innovative Mounting System.

- › Quick and simple installation on existing roofs
- › Minimal material costs for the substructure (as compared to conventional systems)
- › Ideal sealing of riveting points due to acrylic adhesive pads

For a Long-Lasting and Secure System Operation.

- › No corrosion with other materials
- › Even distribution of the load, thereby protection of the roof
- › Approved according to Eurocode 1 (DIN EN 1991-1-3/NA and DIN EN 1991-1-4/NA (snow and wind))



Simple installation.

1. Attach adhesive pads to roof crowns
2. Put the GRP rail on the adhesive pads and rivet it to the roof
3. Apply adhesive pads to the rails
4. Apply adhesive bead to the rails, place the modules – finished!

SOLON Advantages:

- › 10-year product guarantee ¹⁾
- › 20 years warranty on adhesive bonding ²⁾
- › 5-stage performance guarantee over 25 years ¹⁾
- › Includes photovoltaic insurance ³⁾
- › Positive sorting of power classes (0 to + 4.99 Wp)
- › Free module recycling

¹⁾ According to SOLON Product and Performance Guarantee.

²⁾ According to SOLON SOLbond Rail Terms and Conditions of Warranty and Guarantee. Valid for roofs approved by SOLON.

³⁾ For more information please visit www.solon.com/service.

SOLON SOLbond.

High-performance system components.

SOLON Black 280/12

(monocrystalline)



Electrical data – typical (STC)

STC (Standard Test Conditions): 1,000 W/m², (25 ± 2)°C, AM 1.5 in accordance with EN 60904-3

Power rating	P _{max}	320 Wp ¹⁾	315 Wp	310 Wp	305 Wp	300 Wp	295 Wp
Module efficiency		16.33%	16.08%	15.82%	15.57%	15.31%	15.06%
Rated voltage	V _{mpp}	36.8 V	36.6 V	36.4 V	36.2 V	36.0 V	35.8 V
Rated current	I _{mpp}	8.72 A	8.64 A	8.55 A	8.45 A	8.36 A	8.26 A
Open circuit voltage	V _{OC}	45.8 V	45.5 V	45.2 V	45.0 V	44.8 V	44.5 V
Short circuit current	I _{SC}	8.97 A	8.91 A	8.86 A	8.79 A	8.74 A	8.66 A
Maximum reverse current	I _R	20 A	20 A	20 A	20 A	20 A	20 A
Maximum system voltage		1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V

Measuring tolerance for P_{max}: ± 3 %

Reduction of module efficiency from 1,000 W/m² to 200 W/m²: < 4 %

Electrical data – typical (NOCT)

NOCT (Nominal Operating Cell Temperature): 800 W/m², NOCT, AM 1.5

Power rating	P _{max}	229 Wp	226 Wp	222 Wp	219 Wp	215 Wp	212 Wp
Rated voltage	V _{mpp}	33.0 V	32.8 V	32.7 V	32.5 V	32.3 V	32.1 V
Rated current	I _{mpp}	6.96 A	6.88 A	6.81 A	6.74 A	6.67 A	6.59 A
Open circuit voltage	V _{OC}	41.3 V	41.1 V	40.9 V	40.7 V	40.5 V	40.2 V
Short circuit current	I _{SC}	7.24 A	7.19 A	7.15 A	7.10 A	7.06 A	6.99 A

Thermal data

Tc of open circuit voltage	-0.33%/K
Tc of short circuit current	0.04%/K
Tc of power	-0.43%/K
NOCT (according to IEC 61215)	48 °C ± 2 °C

Measuring tolerance for all final data: ± 10 % (except P_{max} (STC) and NOCT)

SOLON Blue 270/12

(polycrystalline)



Electrical data – typical (STC)

STC (Standard Test Conditions): 1,000 W/m², (25 ± 2)°C, AM 1.5 in accordance with EN 60904-3

Power rating	P _{max}	305 Wp ¹⁾	300 Wp	295 Wp	290 Wp	285 Wp	280 Wp
Module efficiency		15.57%	15.31%	15.06%	14.80%	14.55%	14.29%
Rated voltage	V _{mpp}	37.3 V	37.0 V	36.8 V	36.5 V	36.3 V	36.0 V
Rated current	I _{mpp}	8.18 A	8.12 A	8.04 A	7.95 A	7.86 A	7.78 A
Open circuit voltage	V _{OC}	45.2 V	45.0 V	44.8 V	44.5 V	44.3 V	44.1 V
Short circuit current	I _{SC}	8.53 A	8.46 A	8.39 A	8.33 A	8.27 A	8.20 A
Maximum reverse current	I _R	20 A	20 A	20 A	20 A	20 A	20 A
Maximum system voltage		1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V

Measuring tolerance for P_{max}: ± 3 %

Reduction of module efficiency from 1,000 W/m² to 200 W/m²: < 5 %

Electrical data – typical (NOCT)

NOCT (Nominal Operating Cell Temperature): 800 W/m², NOCT, AM 1.5

Power rating	P _{max}	222 Wp	218 Wp	215 Wp	211 Wp	207 Wp	204 Wp
Rated voltage	V _{mpp}	33.9 V	33.7 V	33.5 V	33.2 V	33.0 V	32.7 V
Rated current	I _{mpp}	6.54 A	6.48 A	6.42 A	6.36 A	6.29 A	6.23 A
Open circuit voltage	V _{OC}	41.3 V	41.1 V	40.9 V	40.7 V	40.5 V	40.3 V
Short circuit current	I _{SC}	6.92 A	6,87 A	6,81 A	6,76 A	6,71 A	6,66 A

Thermal data

Tc of open circuit voltage	-0.32%/K
Tc of short circuit current	0.05%/K
Tc of power	-0.41%/K
NOCT (according to IEC 61215)	46 °C ± 2 °C

Measuring tolerance for all final data: ± 10 % (except P_{max} (STC) and NOCT)

¹⁾ Available in limited amounts upon request.

SOLON SOLbond Rail.

SOLON Black 280/12 and SOLON Blue 270/12.

MODULE

Mechanical specifications

Dimensions (H x W x D)	1,973 x 993 x 4.5 mm
Weight	19.5 kg
Junction box	1 box (IP65) with 3 bypass diodes
Cable	Solar cable, length 1,000 mm, 4 mm ² , prefabricated with MC4-combinable plug (IP67)
Front glass	Transparent toughened safety glass, 3.2 mm
Solar cells	72 cells, mono- or polycrystalline Si 6.2" (156 x 156 mm)
Cell encapsulation	EVA (Ethylene Vinyl Acetate)
Back side	Composite film

Permissible operating conditions

Temperature range	-40°C to +85°C
Maximum surface load capacity	Tested up to 2,400 Pa according to IEC 61215
Resistance against hail	Maximum diameter of 25 mm with impact speed of 83 km/h

OTHER COMPONENTS*

Assembly rail

Material	GRP (Class E23 according to DIN 13706)
Dimension (H x W x D)	2,000 x 25 x 9.7 mm

Rivet

Material	Aluminum / stainless steel
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Sikasil® SG-20

Container size	600 ml
Chemical basis	1-component silicone, moisture-curing
Cross-link type	Neutral
Working temperature	+5°C to +40°C
Use	-40°C to +150°C
Hardening time	6 days (at 23° C and 50% air humidity)

SYSTEM

Operating conditions

Permissible roof pitch	3 – 15°
Trapezoidal sheet thickness (min.)	0.5 mm
Static proof	Steel frame must permit additional load of SOLON SOLbond Rail of 11 kg/m ²

Guarantees and certifications

Product guarantee module	10 years ¹⁾
Warranty on adhesive bonding	20 years ²⁾
Performance guarantee module	Guaranteed output of 95 % for 5 years, 90 % for 10 years, 87 % for 15 years, 83 % for 20 years and 80 % for 25 years ¹⁾
Approvals and certificates module	IEC 61215 Edition II, IEC 61730 (incl. Safety Class II), IEC 62716 (Ammonia resistance), IEC 68-2-52 (Salt mist resistance), MCS
Approvals and certificates adhesive	Fulfils requirements of EOTA ETAG 002, EN 13022, ASTM C 1184

This datasheet complies with the requirements of EN 50380:2003. Subject to modifications.

Electrical data without guarantee. SOLON is certified to ISO 9001, ISO 14001 and OHSAS 18001.

^{*)} For other components please refer to the installation manual. All necessary components are being delivered for installation.

¹⁾ According to SOLON Product and Performance Guarantee.

²⁾ According to SOLON SOLbond Rail Terms and Conditions of Warranty and Guarantee. Valid for roofs approved by SOLON.

Drawing

