

R-BG 108h.3/430

Bifacial double glass module with heterojunction solar cells in full-black design



Safety

Electrical safety and mechanical robustness in all weather conditions are important aspects when choosing the right solar module.

Electric security - The module is approved for a system voltage of up to 1500 V. For maximum electrical safety, it is equipped with potted junction boxes rated IP68 and original STÄUBLI MC4-Evo 2 connectors.

Resilient - The specially hardened glass is resistant to the harshest weather conditions. The module is certified for resistance to salty air (class 5) and is therefore approved for use near the coast.

Fire protection – The Module has achieved the classification B_{ROOF} (t1) for all roof slopes in accordance with DIN EN 13501-5:2016. This means a particularly high fire resistance and resistance to fire spread as proven by German standards.

Certifications

- IEC 61215: 2016 (Module reliability)
- IEC 61730: 2016 (Module safety)
- IEC TS 62804-1: 2015 (PID resistance)
- IEC 61701: 2020 (Salt spray resistance)

Warranty

- 30 year product warranty¹
- 30 years of linear benefit commitment
- Guaranteed plus tolerance

¹with system registration. Otherwise, 20 years.

Reliability

A solar system is a long-lasting investment. The durability of the modules is an important quality aspect.

Certified production facilities - All SOLYCO solar modules are produced in the most modern, highly automated factories with the highest manufacturing standards to ensure consistent quality.

Additional sealing – Modules are always sealed to prevent foreign materials from entering between the layers. An additional butyl tape around the glass laminates provides double protection.

Double glass composite – Glass is a particularly durable material and resistant to all weather influences. In the modules, the solar cells are embedded between two glass panels, thus providing particularly effective and permanent protection against weather influences. A black pattern on the back makes the module appear in a completely black design.

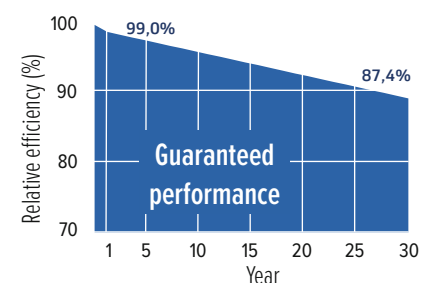
Performance

A high electricity production under all operating conditions - in addition to the longevity – forms the basis for the economic viability of the solar system.

Heterojunction solar cell technology – This technology enables a particularly high cell efficiency of >24 %. It is characterized by very good temperature behaviour, excellent low light properties and a high bifacial coefficient.

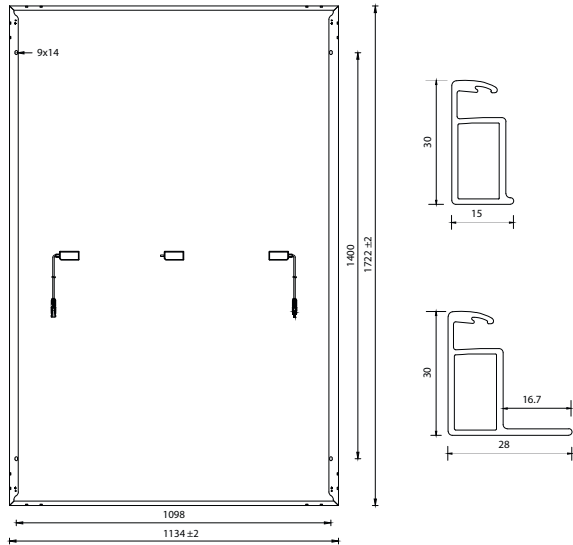
Highest peak power – With a nominal power of 430 Wp and a module efficiency of over 22 %, this module is the ideal choice for all roof systems.

Best long-term stability – The combination of state-of-the-art cell and module technologies is the basis for a permanently high electricity production. The modules are free of any loss of performance due to LID, PID and LeTID, which is reflected in particularly good warranty conditions.



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Connection and working conditions

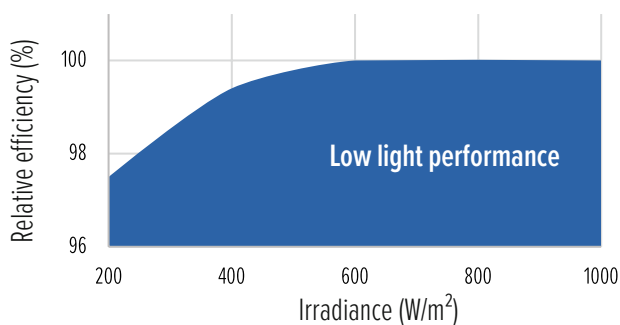
Maximum system voltage	1500 V
Temperature range	-40 °C ... +85 °C
Mechanical resilience ¹	Pressure resistance tested at 5400 Pa Wind suction load capacity tested at 2400 Pa
Safety class	II
Reverse current overload	20 A
Fire classes ²	A (UL 790) B _{ROOF} (t1) according to DIN EN 13501-5: 2016
Hail resistance	Hailstones up to 30 mm in size and at a speed of 23.9 m/s (HW3)

¹Specified pressure load resistance: 3600 Pa and suction load resistance: 1600 Pa;

²For all roof slopes

Temperature coefficients

TC of the maximum power (P _{max})	-0.26 %/°C
TC of open circuit voltage (V _{oc})	-0.24 %/°C
TC of short circuit current (I _{sc})	+0.004 %/°C



This data sheet corresponds to DIN EN 50380.
Developed and designed in Germany.



General data

Cell technology	HJT, monocrystalline
Cell size and number	182 mm x 91 mm; 108 pcs.
Module dimensions	1722 mm x 1134 mm x 30 mm
Module weight	24.5 kg
Frame	Aluminium anodized (black)
Glass	2 x 2.0 mm tempered solar glass with anti-reflective coating
Junction box and IP rating	3 pcs. with one bypass diode each potted junction box, IP68
Connectors	4 mm ² solar cable, length 120 cm, original STÄUBLI MC4-Evo 2
Packing	36 modules vertical on pallet, 936/40ft.

Electrical data (STC)

Nominal data at standard testing conditions (STC): Irradiance 1000 W/m²; Spectrum AM 1.5; module temperature 25 °C; sorting for P_{max} 0 to +5 W

Module type	R-BG 108h.3/430
STC power output P _{max} (W _p)	430
Nominal power voltage V _{mp} (V)	34.60
Nominal power current I _{mp} (A)	12.43
Open circuit voltage V _{oc} (V)	40.87
Short circuit current I _{sc} (A)	12.95
Module efficiency (%)	22.02
Bifacial coefficient (%)	90 ± 5

Tolerance P_{max}: ±3,0 %; V_{oc}, V_{mp}, I_{sc}, I_{mp} tolerances: ±5,0 %

Electrical data (NMOT)

Nominal data at NMOT (Nominal Module Operation Temperature): Irradiation intensity 800 W/m²; spectral distribution AM 1.5; ambient temperature 20 °C; wind velocity 1 m/s

Module type	R-BG 108h.3/430
Solar cell temperature (°C)	45 ± 2
Power output (W _p)	328
Nominal power voltage V _{mp} (V)	29.92
Nominal power current I _{mp} (A)	10.97
Open circuit voltage V _{oc} (V)	38.35
Short circuit current I _{sc} (A)	11.49

Tolerance P_{max}: ±3,0 %; V_{oc}, V_{mp}, I_{sc}, I_{mp} tolerances: ±5,0 %

Electrical data when power is increased by bifaciality (e.g. 430 W_p)

Power gain	±10 %	±20 %	±30 %
Power output (W _p)	473	516	559
Nominal power voltage V _{mp} (V)	34.82	35.11	35.56
Nominal power current I _{mp} (A)	13.58	14.69	15.71
Open circuit voltage V _{oc} (V)	41.21	41.32	41.35
Short circuit current I _{sc} (A)	14.42	15.86	16.87