

R-TG 108n.3 EU30/420-425

R-TG 108n.3 EU40/420-425



Bifacial double-glass module with TOPCon solar cells

Manufactured in Europe



Performance

TOPCon solar cell technology – This technology enables a particularly high cell efficiency of >24 %. It features excellent temperature properties, outstanding low light performance and a high bifacial coefficient.

Optimal peak power – With a nominal power of up to 425 Wp and a module efficiency of 21.8 %, this module is the ideal choice for all roof systems.

Reliability

Certified production facilities – The solar modules are produced in a state-of-the-art factory in Europe that has been completely certified to ISO 45001.

Double-glass composite – The cells are embedded between two glass panes, providing highly effective and permanent protection against weather effects. We use solar safety glass that has been manufactured in Germany and ensures optimal mechanical protection for the solar cells.

EPE embedding material – Premium-quality EPE is used as embedding material. This combines the main advantages offered by EVA and POE materials. EPE has excellent transmission properties, while also being a great barrier against moisture penetration.

Maximum long-term stability – The combination of state-of-the-art cell and module technologies ensures consistently high electricity production. The modules do not suffer any loss of performance due to LID, PID and LeTID, which allows us to offer a significantly longer performance guarantee.

Safety

Electrical safety – 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 tempered glass is resistant to the harshest weather conditions. The module is certified for resistance to salty air (class 5) and approved for use in coastal areas.

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.

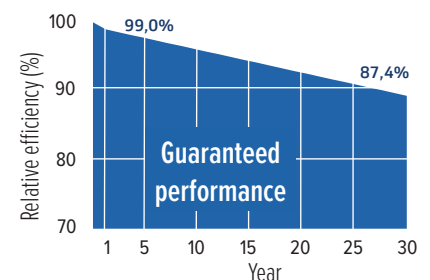
Certifications

- IEC 61215:2016 (module reliability)
- IEC 61730:2016 (module safety)

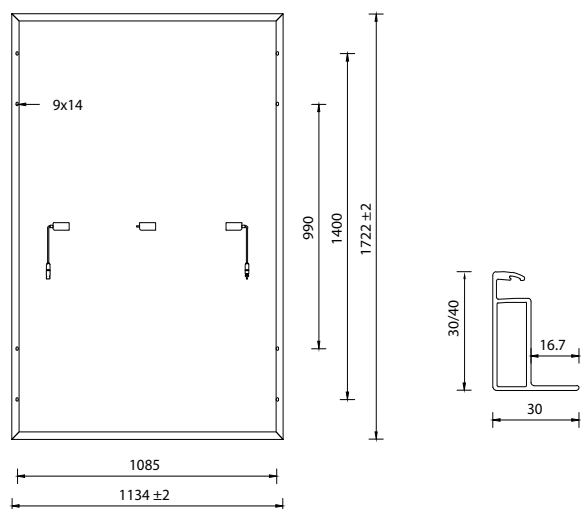
Warranty

- 30-year product warranty¹
- 30-year linear performance guarantee
- Guaranteed positive tolerance

¹If the system is registered. Otherwise, 20 years.



Technical data



General data

Cell technology	TOPCon, monocrystalline
Cell size and quantity	182 mm x 91 mm; 108 pcs
Module dimensions	1722 mm x 1134 mm x 30/40 mm
Module weight	24.3 kg (30 mm); 24.70 kg (40 mm)
Frame	Black anodised aluminium
Front glass	2.0 mm single-pane, fully tempered solar glass with anti-reflective coating
Rear glass	2.0 mm heat-strengthened solar glass
Junction box and IP rating	3 pcs with one bypass diode each, potted in accordance with IP68
Cable and connector	4 mm ² solar cable, length 120 cm, STÄUBLI MC4-Evo 2 connector
Packaging unit	27 modules arranged vertically on a pallet, 756/truck (40 mm frame) 36 modules arranged vertically on a pallet, 1008/truck (30 mm frame)

Electrical data

STC (nominal data under standard test conditions): irradiance 1000 W/m²; AM 1.5 spectrum; module temperature 25 °C; sorting for P_{max} 0 to +5 W

NMOT (nominal data at Nominal Module Operating Temperature): irradiance 800 W/m²; AM 1.5 spectrum; ambient temperature 20 °C; wind velocity 1 m/s

BNPI (Bifacial Nameplate Irradiance): irradiance 1000 W/m² at the front and 135 W/m² at the back; applied according to a method defined in IEC TS 60904-1-2

Conditions	420 Wp			425 Wp		
	STC	NMOT	BNPI	STC	NMOT	BNPI
STC power output P _{max} (Wp)	420	318	462	425	322	468
Nominal power voltage V _{mp} (V)	31.36	29.80	31.36	31.55	30.04	31.55
Nominal power current I _{mp} (A)	13.40	10.67	14.73	13.48	10.73	14.83
Open circuit voltage V _{oc} (V)	37.89	36.05	37.89	38.07	36.21	38.07
Short circuit current I _{sc} (A)	14.15	11.43	15.68	14.67	11.50	16.25
Bifacial coefficient (%)	80 ± 5			80 ± 5		
Module efficiency (%)	21.5			21.8		

P_{max} tolerance: ±3.0 %; V_{oc}, V_{mp}, I_{sc}, I_{mp} tolerances: ±5.0 %

Temperature coefficients

TC of the maximum power (P _{max})	-0.32 %/°C
TC of open circuit voltage (V _{oc})	-0.25 %/°C
TC of short circuit current (I _{sc})	+0.045 %/°C

Connection and operating conditions

Maximum system voltage	1500 V
Operating temperature range	-40 °C to +85 °C
Mechanical resilience ¹	Test pressure load 8100 Pa Test suction load 3600 Pa Test pressure load 5400 Pa Test suction load 2400 Pa
Safety class	II
Reverse current overload	25 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 (Hail Resistance Class HW3)

¹ Specified pressure load resistance: 5400 Pa / 3600 Pa and suction load resistance: 2400 Pa / 1600 Pa; ² for all roof slopes

This data sheet corresponds to DIN EN 50380.

Developed and designed in Germany.

