

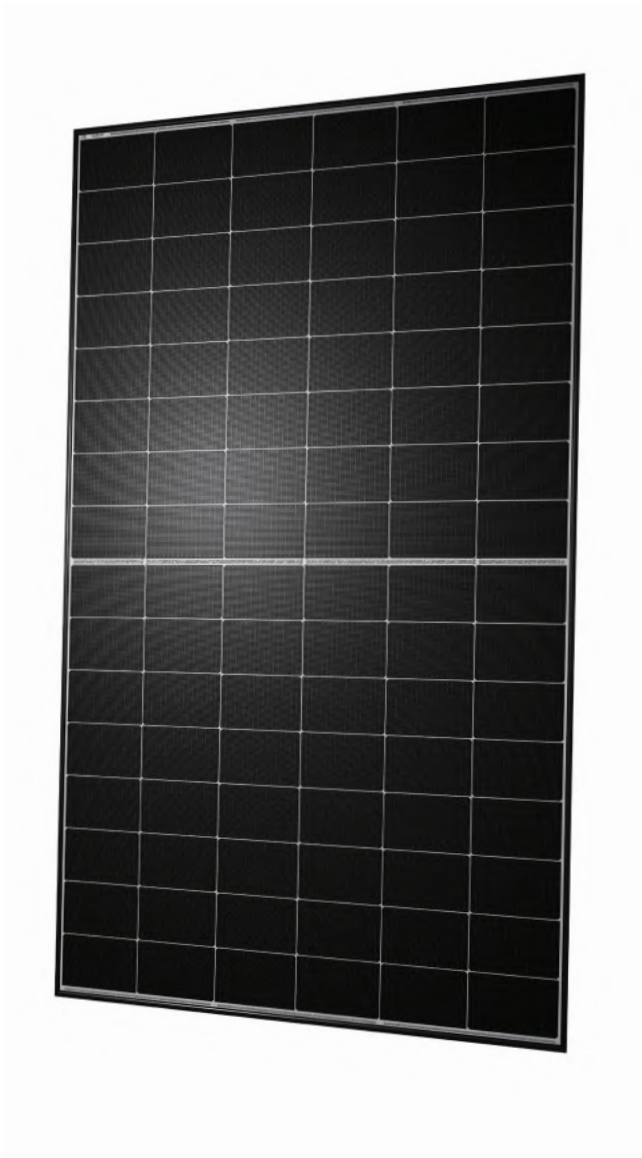
Q.TRON S-G3R+ SERIES



PRELIMINARY

440-450 Wp | 96 Cells
22.5% Maximum Module Efficiency

MODEL Q.TRON S-G3R.12+ / BFG



High performance Qcells N-type solar cells

Q.ANTUM NEO solar cell technology with optimized module layout boosts module efficiency up to 22.5%.



A reliable investment

Double glass module design enables extended lifetime with 25-year product warranty and improved 30-year performance warranty¹.



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology², Hot-Spot Protect.



Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).



Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry:

¹ See data sheet on rear for further information.

² APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 96h)

The ideal solution for:



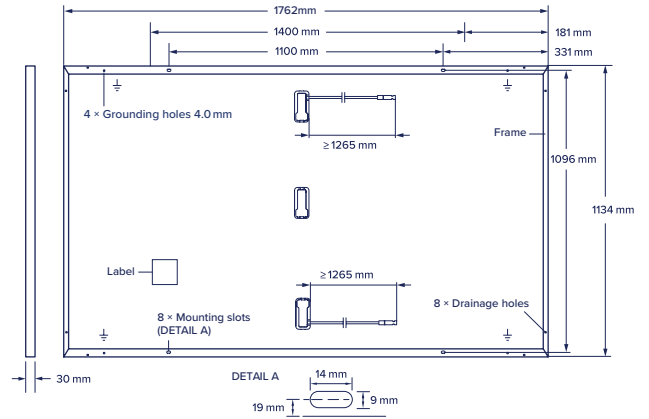
Rooftop arrays on
residential buildings



Q.TRON S-G3R+ SERIES

Mechanical Specification

Format	1762 mm × 1134 mm × 30 mm (including frame)
Weight	20.9 kg
Front Cover	1.6 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	1.6 mm semi-tempered glass
Frame	Black anodised aluminium
Cell	6 × 16 monocrystalline Q.ANTUM NEO solar half cells
Junction box	53-67 × 28 × 17 mm Protection class IP68, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥1265mm, (-) ≥1265 mm
Connector	Stäubli MC4-Evo2; IP68



Electrical Characteristics

POWER CLASS		440	445	450	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)					
Minimum	Power at MPP ¹	P_{MPP} [W]	440	445	450
	Short Circuit Current ¹	I_{SC} [A]	15.95	16.00	16.05
	Open Circuit Voltage ¹	V_{OC} [V]	34.67	34.85	35.03
	Current at MPP	I_{MPP} [A]	14.81	14.89	14.97
	Voltage at MPP	V_{MPP} [V]	29.72	29.90	30.08
	Efficiency ¹	η [%]	≥22.0	≥22.3	≥22.5

Bifaciality of P_{MPP} and I_{SC} 70% ±5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

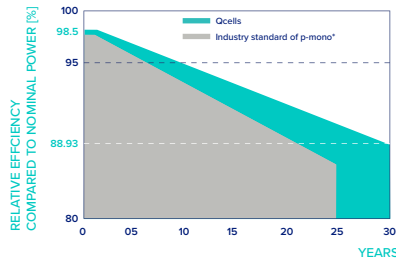
¹Measurement tolerances P_{MPP} ±3%; I_{SC} , V_{OC} ±5% at STC: 1000 W/m²; *at BSTC: 1000 W/m² + ϕ × 135 W/m², ϕ = 70%, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²

Minimum	Power at MPP	P_{MPP} [W]	331.0	335	338
	Short Circuit Current	I_{SC} [A]	12.88	12.92	12.96
	Open Circuit Voltage	V_{OC} [V]	32.94	33.11	33.28
	Current at MPP	I_{MPP} [A]	11.96	12.02	12.09
	Voltage at MPP	V_{MPP} [V]	27.68	27.88	27.96

¹Measurement tolerances P_{MPP} ±3%; I_{SC} , V_{OC} ±5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

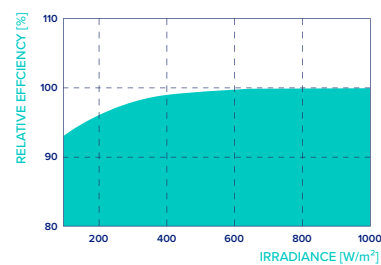


At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 88.93% of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α [%/K]	+0.04	Temperature Coefficient of V_{OC}	β [%/K]	-0.25
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.30	Nominal Module Operating Temperature	NMOT [°C]	45 ± 2

Properties for System Design

Maximum System Voltage	V_{SYS} [V]	1500	PV module classification	Class II
Maximum Reverse Current	I_R [A]	30	Fire Rating based on ANSI/UL 61730	C
Max. Design Load, Push/Pull	[Pa]	3600/1600	Permitted Module Temperature on Continuous Duty	-40 °C - +85 °C
Max. Test Load, Push/Pull	[Pa]	5400/2400		

Qualifications and Certificates

TÜV NORD;
IEC 61215:2016;
IEC 61730:2016.
This data sheet complies with DIN EN 50380.



Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

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