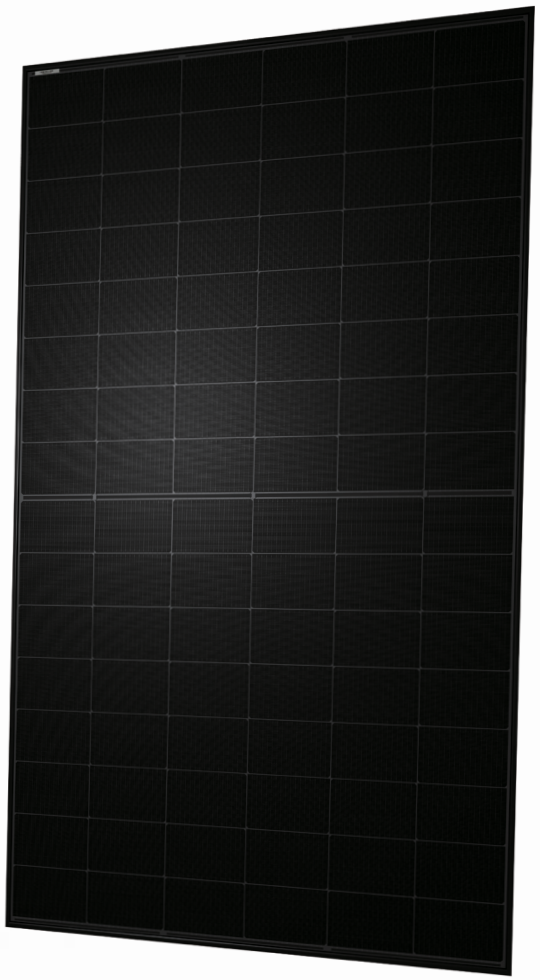
Q.TRON BLK S-G3R+ SERIES

PRELIMINARY

435 - 445 Wp | 96 Cells
22.3 % Maximum Module Efficiency

MODEL Q.TRON BLK 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 22.3 %.

A reliable investment

Double glass module design enables extended lifetime with 25-year product warranty and improved 30-year performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2], 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 (–1500 V, 96 h)

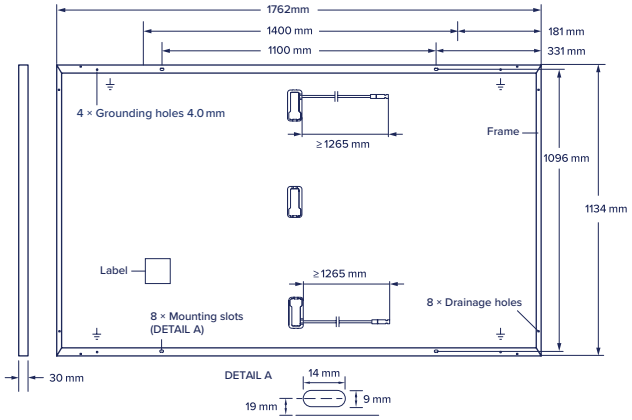
The ideal solution for:

Rooftop arrays on residential buildings

Q.TRON BLK 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 mm² Solar cable; (+) ≥1265mm, (−) ≥1265 mm
Connector	Stäubli MC4-Evo2; IP68



Electrical Characteristics

POWER CLASS | **435** | **440** | **445**

MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)

					BSTC*		BSTC*		BSTC*
Minimum	Power at MPP[1]	P_{MPP}	[W]	435	480.36	440	485.91	445	491.49
	Short Circuit Current[1]	I_{SC}	[A]	15.90	17.55	15.95	17.61	16.00	17.66
	Open Circuit Voltage[1]	V_{OC}	[V]	34.49	34.49	34.67	34.67	34.85	34.85
	Current at MPP	I_{MPP}	[A]	14.73	16.26	14.81	16.35	14.89	16.44
	Voltage at MPP	V_{MPP}	[V]	29.54	29.54	29.72	29.72	29.90	29.90
	Efficiency[1]	η	[%]	≥21.8		≥22.0		≥22.3	

Bifaciality of P_{MPP} and I_{SC} 80 % ±10 % • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

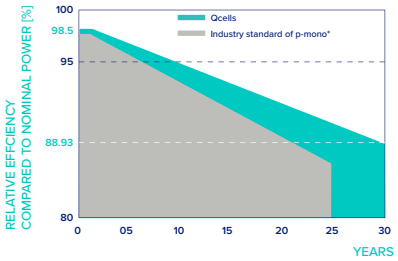
[1]Measurement tolerances P_{MPP} ±3 %; I_{SC}, V_{OC} ±3 % at STC: 1000 W/m²; *at BSTC: 1000 W/m² + φ × 135 W/m², φ = 80 % ±10 %, 25±2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]

Minimum	Power at MPP	P_{MPP}	[W]	327	331	335
	Short Circuit Current	I_{SC}	[A]	12.84	12.88	12.92
	Open Circuit Voltage	V_{OC}	[V]	32.59	32.94	33.11
	Current at MPP	I_{MPP}	[A]	11.83	11.96	12.02
	Voltage at MPP	V_{MPP}	[V]	27.31	27..68	27.88

[1]Measurement tolerances P_{MPP} ±3 %; I_{SC}; V_{OC} ±3 % at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2]800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

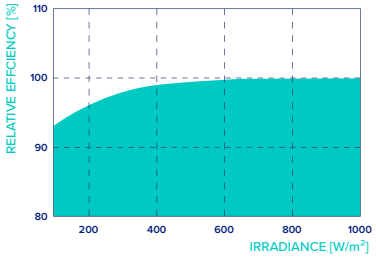


At least 98.5 % of nominal power during first year. Thereafter max. 0.33 % degradation per year. At least 95.53 % of nominal power up to 10 years. At least 88.93 % of nominal power up to 30 years.

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

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.

Hanwha Q CELLS GmbH Sonnenallee 17-21, 06766 Bitterfeld-Wolfen, Germany | TEL +49 (0)3494 66 99-23444 | FAX +49 (0)3494 66 99-23000 | EMAIL sales@q-cells.com | WEB www.qcells.com