

Q.TRON BLACK



450-470 Wp | 96 Cells
23.5 % Maximum Module Efficiency

MODEL Q.TRON BLK S-G3R.12+ / MFG



Q.ANTUM
NEO

High performance Qcells N-type solar cells

Q.ANTUM NEO technology with optimized module layout boosts module efficiency up to 23.5%.



A reliable investment

Inclusive 25-year product warranty and improved 30-year linear 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 (8100 Pa) and wind loads (4000 Pa).



Innovative all-weather technology

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



Far beyond the standard

Qcells' comprehensive quality program ensures high long-term yields and the reliability of your solar system.

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 BLACK

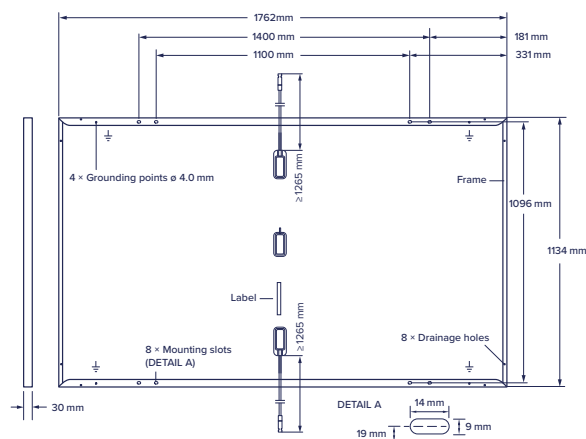
Mechanical Specification

Format	1762 mm × 1134 mm × 30 mm (including frame)
Weight	24.3 kg
Front Cover	2.0 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	2.0 mm semi-tempered glass
Frame	Black anodised aluminium
Cell	6 × 16 monocrystalline Q.ATOM NEO solar half cells
Junction box	53-67 mm × 28 mm × 17 mm Protection class IP68, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 1265 mm, (-) ≥ 1265 mm
Connector	Stäubli MC4-Evo2; IP68

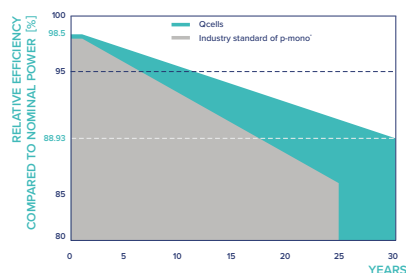
Electrical Characteristics

Power Class			450	455	460	465	470
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/ -0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	450	455	460	465	470
	Short Circuit Current ¹	I _{SC} [A]	15.81	15.85	15.89	15.92	15.95
	Open Circuit Voltage ¹	V _{OC} [V]	35.95	36.10	36.25	36.40	36.55
	Current at MPP	I _{MPP} [A]	15.10	15.14	15.18	15.22	15.26
	Voltage at MPP	V _{MPP} [V]	29.81	30.06	30.31	30.56	30.80
	Efficiency ¹	η [%]	≥ 22.5	≥ 22.8	≥ 23.0	≥ 23.3	≥ 23.5

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



Qcells performance warranty

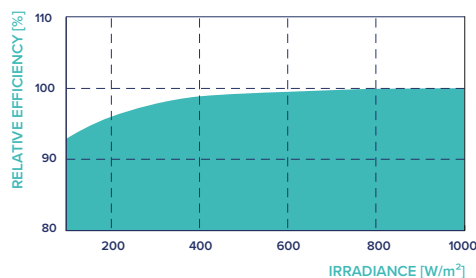


At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 88.93% of nominal power up to 30 years.

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

¹Standard 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]	+0.05	Temperature Coefficient of V _{OC}	β	[%/K]	-0.24
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.28				

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]	5400/2666	Permitted Module Temperature on Continuous Duty	-40 °C - +70 °C
Max. Test Load, Push/Pull	[Pa]	8100/4000		

Qualifications and Certificates

TÜV NORD;
IEC 61215:2021;
IEC 61730:2023.
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.

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

qcells