Q.TRON BLACK

435 - 450 Wp | 96 Cells
22.5 % 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 22.5 %.

A reliable investment

Inclusive 25-year product warranty and improved 30-year linear 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.

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)

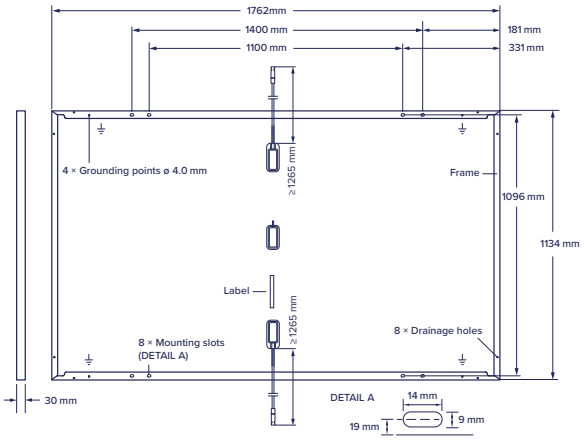
THE IDEAL SOLUTION FOR:

Rooftop arrays on residential buildings

Q.TRON BLACK

Mechanical Specification

Format	1762 mm × 1134 mm × 30 mm (including frame)
Weight	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 mm × 28 mm × 17 mm Protection class IP68, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥1265 mm, (–) ≥1265 mm
Connector	Stäubli MC4-Evo2A; IP68



Electrical Characteristics

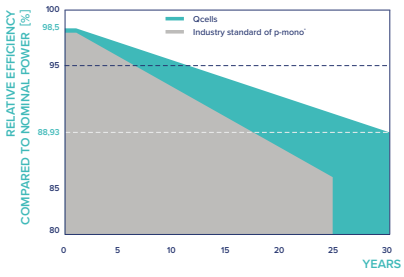
Power Class			**435**	**440**	**445**	**450**
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)						
Minimum	**Power at MPP[1]**	P_{MPP} [W]	435	440	445	450
	Short Circuit Current[1]	I_{SC} [A]	15.86	15.89	15.92	15.95
	Open Circuit Voltage[1]	V_{OC} [V]	35.15	35.35	35.55	35.75
	Current at MPP	I_{MPP} [A]	14.79	14.83	14.87	14.91
	Voltage at MPP	V_{MPP} [V]	29.42	29.67	29.93	30.19
	Efficiency[1]	η [%]	≥21.8	≥22.0	≥22.3	≥22.5

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}, I_{SC}, V_{OC} ±3 % at STC: 1000 W/m², 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]	329	332	336	340
	Short Circuit Current	I_{SC} [A]	12.80	12.83	12.85	12.88
	Open Circuit Voltage	V_{OC} [V]	33.46	33.65	33.84	34.03
	Current at MPP	I_{MPP} [A]	11.94	11.97	12.01	12.04
	Voltage at MPP	V_{MPP} [V]	27.56	27.74	27.98	28.24

[2]800 W/m², NMOT, spectrum AM 1,5

Qcells performance warranty

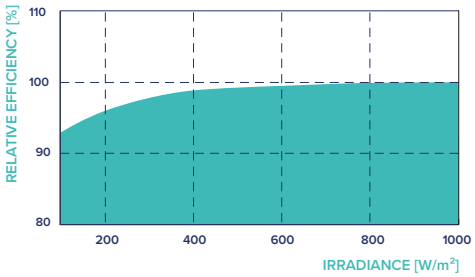


At least 98.5 % of nominal power during first year. Thereafter max. 0.33 % degradation per year. At least 95.53 % of nominal power up to 10 years. At least 88.93 % of nominal power up to 30 years.

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]	−0.24
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.28	**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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