

Features

- Breaking the 21 % efficiency barrier
PERC Technology with zero gap cell layout boosts module efficiency up to 21.7 %.
- Low electricity generation costs
Higher yield per surface area, lower BOS costs and up to 175 watts more module power than standard 144 half-cell modules.
- Enduring high performance
Long-term yield security thanks to regular PID and Hot-Spot tests according to IEC requirements.
- Extreme weather rating
High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).
- A reliable investment
Inclusive 12-year product warranty and 25-year linear performance warranty.

Q CELLS



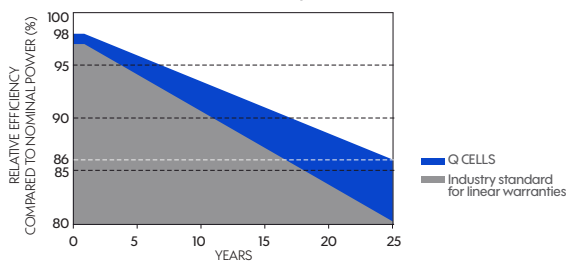
Applications

- Educational Centers
- Industry
- Pig farm
- Residence
- Office
- Restaurant
- Gymnasium



Q CELLS 460 W Specs

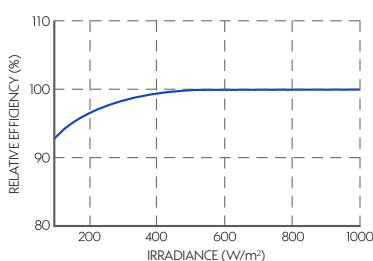
Q CELLS Performance Warranty



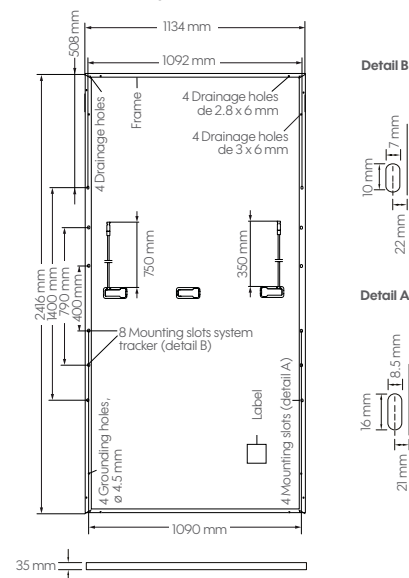
All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

* Standard terms of guarantee for the 10 PV companies with the highest production capacity in 2014 (as at: September 2014)

Performance at low Irradiance



575 W Solar panel dimensions



Packaging Information

Number of Modules per Pallet	31
Number of Pallets per 40' HC-Container (26 t)	16
Pallet Dimensions (L × W × H) (mm)	1270 x 1134 x 245.8
Pallet Weight (kg)	1000

Model

460 W Solar Panel

Mechanical Specifications

Format (mm)	2416 × 1134 × 35 (including frame)
Weight (kg)	30.70
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm, Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 1450 mm, (-) ≥ 1450 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68

Power Class

MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC1 (POWER TOLERANCE +5 W / -0 W)

Power at MPP ¹	P _{MPP}	(W)	575
Short Circuit Current ¹			13.51
Open Circuit Voltage ¹	V _{OC}	(V)	53.62
Current at MPP	I _{MPP}	(A)	12.87
Voltage at MPP	V _{MPP}	(V)	44.68
Efficiency ¹	η	(%)	≥ 21.0

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²

Power at MPP	P _{MPP}	(W)	431.4
Short Circuit Current			10.89
Open Circuit Voltage	V _{OC}	(V)	50.56
Current at MPP	I _{MPP}	(A)	10.13
Voltage at MPP	V _{MPP}	(V)	42.58

Temperature Coefficients

Temperature Coefficient of I _{sc}	α	(%/K)	+ 0.04
Temperature Coefficient of P _{MPP}	γ	(%/K)	- 0.34
Temperature Coefficient of V _{OC}	β	(%/K)	- 0.27
Nominal Module Operating Temperature	NMOT	(°C)	43 ± 3

Propiedades para el diseño del sistema

Maximum System Voltage	V _{sys}	(V)	1500 (IEC) / 1500 (UL)
Maximum Reverse Current		(A DC)	20
Max. Design Load, Push / Pull		(lbs/ft²)	75 (3600 Pa) / 33 (1600 Pa)
Max. Test Load, Push / Pull		(lbs/ft²)	113 (5400 Pa) / 50 (2400 Pa)
PV module classification			II
Fire Rating based on ANSI / UL 1703			C / TIPO I
Permitted Module Temperature on continuous duty			-40 - +85 °C

Qualifications and Certificates

Certificates	Complies with CE, IEC 61215:2016, IEC 61730:2016
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¹ Measurement 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 • 2 800 W/m², NMOT, spectrum AM 1.5

The specifications are subject to changes and modifications without prior notice, due to our commitment of continuous improvement of reliability, design and functionality of our products