

# Q.PLUS-G4.3 280-290

## Q.ANTUM SOLAR MODULE

The new high-performance module **Q.PLUS-G4.3** is the ideal solution for all applications thanks to its innovative cell technology **Q.ANTUM**. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.



### Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY

Higher yield per surface area and lower BOS costs and higher power classes and an efficiency rate of up to 17.7 %.



### INNOVATIVE ALL-WEATHER TECHNOLOGY

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



### ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology<sup>1</sup>, Hot-Spot Protect and Traceable Quality Tra.Q™.



### EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



### MAXIMUM COST REDUCTIONS

Up to 10 % lower logistics costs due to higher module capacity per box.



### A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty<sup>2</sup>.



<sup>1</sup> APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)

<sup>2</sup> See data sheet on rear for further information.

### THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings



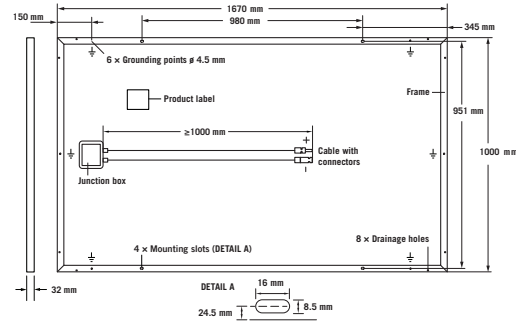
Rooftop arrays on commercial/industrial buildings



Ground-mounted solar power plants

## MECHANICAL SPECIFICATION

<b>Format</b>	1670 mm × 1000 mm × 32 mm (including frame)
<b>Weight</b>	18.8 kg
<b>Front Cover</b>	3.2 mm thermally pre-stressed glass with anti-reflection technology
<b>Back Cover</b>	Composite film
<b>Frame</b>	Anodised aluminium
<b>Cell</b>	6 × 10 Q.ANTUM solar cells
<b>Junction box</b>	66-77 mm × 115-90 mm × 15-19 mm Protection class IP67, with bypass diodes
<b>Cable</b>	4 mm <sup>2</sup> Solar cable; (+) 1000 mm, (–) 1000 mm
<b>Connector</b>	IP67 or IP68



## ELECTRICAL CHARACTERISTICS

POWER CLASS			280	285	290
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5 W / –0 W)					
Minimum	Power at MPP <sup>2</sup>	P <sub>MPP</sub>	280	285	290
	Short Circuit Current*	I <sub>SC</sub>	9.41	9.46	9.52
	Open Circuit Voltage*	V <sub>OC</sub>	38.97	39.22	39.48
	Current at MPP*	I <sub>MPP</sub>	8.84	8.91	8.98
	Voltage at MPP*	V <sub>MPP</sub>	31.67	31.99	32.29
	Efficiency <sup>2</sup>	η	≥ 16.8	≥ 17.1	≥ 17.4
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC <sup>3</sup>					
Minimum	Power at MPP <sup>2</sup>	P <sub>MPP</sub>	207.0	210.7	214.4
	Short Circuit Current*	I <sub>SC</sub>	7.58	7.63	7.68
	Open Circuit Voltage*	V <sub>OC</sub>	36.37	36.61	36.84
	Current at MPP*	I <sub>MPP</sub>	6.93	6.99	7.05
	Voltage at MPP*	V <sub>MPP</sub>	29.87	30.15	30.42

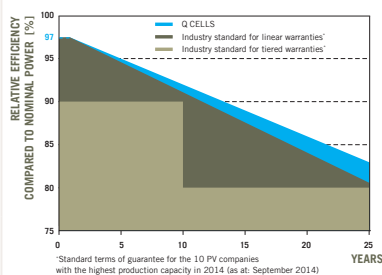
<sup>1</sup>1000 W/m<sup>2</sup>, 25 °C, spectrum AM 1.5 G

<sup>2</sup>Measurement tolerances STC ± 3 %; NOC ± 5 %

<sup>3</sup>800 W/m<sup>2</sup>, NOCT, spectrum AM 1.5 G

\* typical values, actual values may differ

## Q CELLS PERFORMANCE WARRANTY

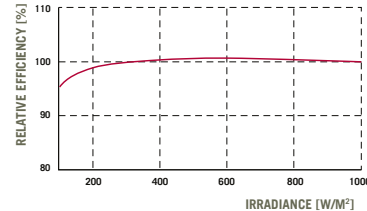


At least 97 % of nominal power during first year. Thereafter max. 0.6 % degradation per year.  
At least 92 % of nominal power up to 10 years.  
At least 83 % of nominal power up to 25 years.

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



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>).

## TEMPERATURE COEFFICIENTS

Temperature Coefficient of I <sub>SC</sub>	α	[%/K]	+0.04	Temperature Coefficient of V <sub>OC</sub>	β	[%/K]	–0.29
Temperature Coefficient of P <sub>MPP</sub>	γ	[%/K]	–0.40	Normal Operating Cell Temperature	NOCT	[°C]	45

## PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V <sub>SYS</sub>	[V]	1000	Safety Class	II
Maximum Reverse Current	I <sub>R</sub>	[A]	20	Fire Rating	C
Wind/Snow Load (Test-load in accordance with IEC 61215)	[Pa]	4000/5400		Permitted Module Temperature On Continuous Duty	–40 °C up to +85 °C

## QUALIFICATIONS AND CERTIFICATES

VDE Quality Tested, IEC 61215 (Ed.2); IEC 61730 (Ed.1), Application class A  
This data sheet complies with DIN EN 50380.



## PARTNER

**NOTE:** Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS GmbH

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Engineered in **Germany**

