



Q.PLUS BFR-G4.1 280-290

Q.ANTUM SOLAR MODULE

The new high-performance module **Q.PLUS BFR-G4.1** 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 Technology¹, 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 warranty².



www.VDEinfo.com
ID: 40032587

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

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings



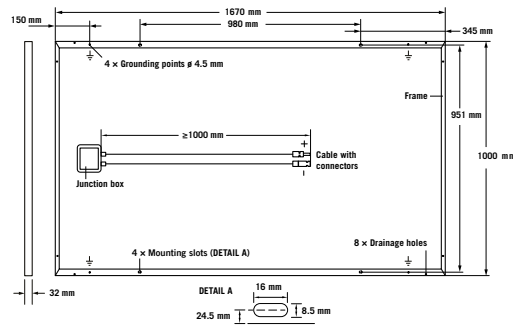
Rooftop arrays on commercial/industrial buildings



Ground-mounted solar power plants

MECHANICAL SPECIFICATION

Format	1670 mm × 1000 mm × 32 mm (including frame)
Weight	18.5 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 10 Q.ANTUM solar cells
Junction box	66-77 mm × 115-90 mm × 15-19 mm Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) 1000 mm, (-) 1000 mm
Connector	Multi-Contact MC4, IP65 and IP68

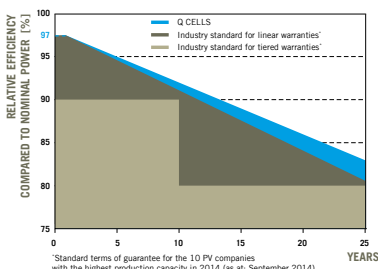


ELECTRICAL CHARACTERISTICS

POWER CLASS			280	285	290
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5 W / -0 W)					
Minimum	Power at MPP²	P_{MPP} [W]	280	285	290
	Short Circuit Current*	I_{SC} [A]	9.41	9.46	9.52
	Open Circuit Voltage*	V_{OC} [V]	38.97	39.22	39.48
	Current at MPP*	I_{MPP} [A]	8.84	8.91	8.98
	Voltage at MPP*	V_{MPP} [V]	31.67	31.99	32.29
	Efficiency²	η [%]	≥ 16.8	≥ 17.1	≥ 17.4
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC³					
Minimum	Power at MPP²	P_{MPP} [W]	207.0	210.7	214.4
	Short Circuit Current*	I_{SC} [A]	7.58	7.63	7.68
	Open Circuit Voltage*	V_{OC} [V]	36.37	36.61	36.84
	Current at MPP*	I_{MPP} [A]	6.93	6.99	7.05
	Voltage at MPP*	V_{MPP} [V]	29.87	30.15	30.42

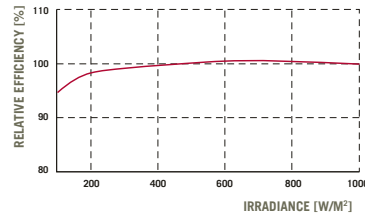
¹1000 W/m², 25 °C, spectrum AM 1,5G ²Measurement tolerances STC ±3%; NOC ±5% ³800 W/m², NOCT, spectrum AM 1,5G * typical values, actual values may differ

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.

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]	-0.29
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.40	Normal Operating Cell Temperature	NOCT [°C]	45

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{sys} [V]	1000	Safety Class	II
Maximum Reverse Current	I_r [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.

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Engineered in Germany

