

Q.CELLS
YIELD SECURITY

- ✓ ANTI PID TECHNOLOGY (APT)
- ✓ HOT-SPOT PROTECT (HSP)
- ✓ TRACEABLE QUALITY (TRA.Q™)

VDE
Quality Tested

high reliability
optimized durability
low degradation
continuous line monitoring

ID. 40032587

MULTICRYSTALLINE SOLAR MODULE

Q.PRO - G2 230-245

Reliability and safety have a new name

The multicrystalline solar module **Q.PRO-G2** is our classic for residential rooftop installations. **Q.PRO-G2** is the safest and most reliable multicrystalline solar module because thanks to our new Q-Cells technologies, it is the worldwide first PID free¹ and Hot-Spot free solar module on the market. This makes **Q.PRO-G2** your safe choice for secure yields.

THE NEW Q-CELLS GENERATION

- Anti PID Technology (APT)¹: **No power loss caused by potential induced degradation.**
- Traceable Quality (Tra.Q™): **First traceable and forgery proof solar module on the market.**
- New cell concept with reduced serial resistance: **Increased power on module level.**
- VDE Quality Tested with continuous aging tests: **Long-term secure quality.**

THE PROVEN Q-CELLS VALUES

- Hot-Spot Protect (HSP): **Increased fire and performance safety.**
- Positive sorting +5/-0 W: **Extra output.**
- Tested for wind/snow loads up to 5400 Pa: **Strong in every weather condition.**
- 25-year performance warranty, 10-year product warranty²: **Secure investment.**



THE IDEAL
SOLUTION FOR:



ROOFTOP ARRAYS ON
RESIDENTIAL BUILDINGS

¹ APT test conditions: Cells at -600 V against frame, wet module surface, 25 °C, 300 h

² Performance warranty: min. 97% of nominal power in year 1; max. 0.6% degradation per year from year 2; min. 83% of nominal power after 25 years. Full product and performance warranties are subject to registration, and are in accordance with the valid regional warranty terms.

Q.CELLS

MECHANICAL SPECIFICATION		TECHNICAL DRAWING	
Format	1670 mm x 1000 mm x 50 mm (including frame)		
Weight	20 kg		
Front Cover	3.2 mm thermally pre-stressed solar glass		
Back Cover	Composite film		
Frame	Anodized aluminum		
Cell	6 x 10 multicrystalline solar cells		
Junction box	120 mm ^{±5} x 170 mm ^{±17} x 24 mm ^{±4} Protection class IP 67, with 3 bypass diodes		
Cable	4 mm ² Solar cable; (+) 1100 mm, (-) 1100 mm		
Connector	Yamaichi Y-SOL4 (combinable with MC4), IP 68		
Grounding points	∅ 4.5 mm		

ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m², 25 °C, AM 1.5 SPECTRUM)¹

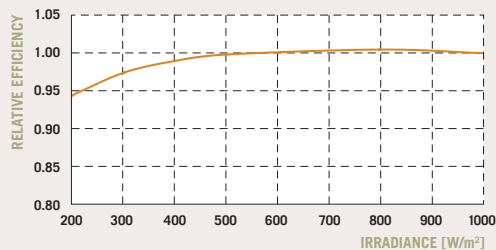
POWER CLASS			215	220	225	230*	235*	240*	245*	250
Nominal Power (+5 / -0 W)	P_{MPP}	[W]	215	220	225	230	235	240	245	250
Short Circuit Current	I_{SC}	[A]	8.39	8.47	8.55	8.63	8.71	8.79	8.87	8.95
Open Circuit Voltage	V_{OC}	[V]	36.08	36.32	36.55	36.79	37.02	37.26	37.50	37.73
Current at Maximum Power	I_{MPP}	[A]	7.79	7.88	7.96	8.04	8.13	8.21	8.29	8.38
Voltage at Maximum Power	V_{MPP}	[V]	28.48	28.68	28.87	29.07	29.26	29.46	29.65	29.85
Efficiency	η	[%]	≥12.9	≥13.2	≥13.5	≥13.8	≥14.1	≥14.4	≥14.7	≥15.0

PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/m², 47 ±3 °C, AM 1.5 SPECTRUM)²

POWER CLASS			215	220	225	230*	235*	240*	245*	250
Nominal Power (+5 / -0 W)	P_{MPP}	[W]	158.6	161.6	164.8	167.7	170.8	173.9	177.0	180.1
Short Circuit Current	I_{SC}	[A]	6.58	6.65	6.69	6.73	6.79	6.85	6.91	6.96
Open Circuit Voltage	V_{OC}	[V]	32.76	32.90	33.09	33.31	33.60	33.88	34.16	34.44
Current at Maximum Power	I_{MPP}	[A]	6.06	6.13	6.19	6.25	6.29	6.34	6.38	6.42
Voltage at Maximum Power	V_{MPP}	[V]	26.22	26.42	26.65	26.89	27.19	27.49	27.80	28.10

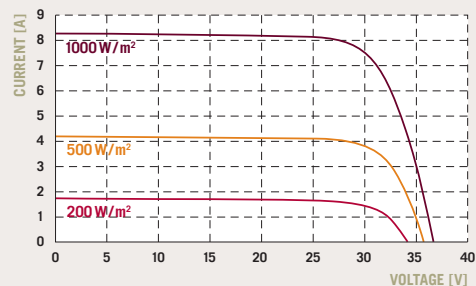
¹ Measurement tolerances STC: ±3 % (P_{MPP}); ±10 % (I_{SC}, V_{OC}, I_{MPP}, V_{MPP}) ² Measurement tolerances NOCT: ±5 % (P_{MPP}); ±10 % (I_{SC}, V_{OC}, I_{MPP}, V_{MPP}) * Core class

PERFORMANCE AT LOW IRRADIANCE



The typical change in module efficiency at an irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than -6 % (relative).

TYPICAL CHARACTERISTICS AT DIFFERENT IRRADIANCES



TEMPERATURE COEFFICIENTS (AT 1000 W/m², 25 °C, AM 1.5 SPECTRUM)

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	-0.32
Temperature Coefficient of P_{MPP}	γ	[%/K]	-0.45				

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	[Pa]	5400	Permitted module temperature on continuous duty	-40 °C up to +85 °C

QUALIFICATIONS AND CERTIFICATES

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 the technical service for further information on approved installation and use of this product.

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