PRELIMINARY

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 free[1] 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]: **Prevention of potential-induced degradation ensuring secure yields.**
- 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.**

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 5,400 Pa: **Strong in every weather condition.**
- 10 years product warranty, 25 years performance warranty[2]: **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] Subject to registration and regional warranty terms. Performance warranty: 90 % of the initial efficiency up to 10 years, 80 % up to 25 years

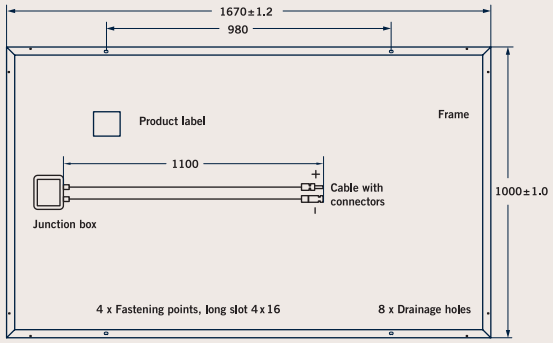
Q.CELLS

PRELIMINARY

MECHANICAL SPECIFICATION

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	Anodised aluminum
Cell	6 x 10 multicrystalline solar cells
Junction box	120 mm$^{\pm 5}$ x 170 mm$^{\pm 17}$ x 24 mm$^{\pm 4}$ Protection class IP 67, with 3 bypass diodes
Cable	4 mm² Solar cable; (+) 1100 mm, (-) 1100 mm
Connector	Yamaichi Y-SOL4 (combinable with MC4), IP 68
Grounding points	ø 4.5 mm

TECHNICAL DRAWING



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]

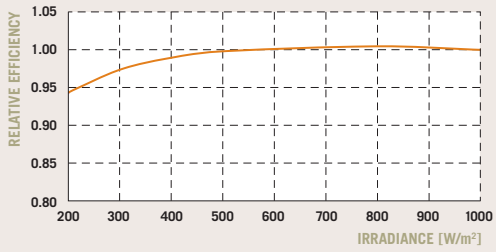
POWER CLASS			215	220	225	230*	235*	240*	245*	250
Nominal Power (+5 / -0 W)	P_{MPP}	[W]	158.6	161.6	164.8	167.7	170.8	173.9	177.0	180.1
Short Circuit Current	I_{SC}	[A]	6.58	6.65	6.69	6.73	6.79	6.85	6.91	6.96
Open Circuit Voltage	V_{OC}	[V]	32.76	32.90	33.09	33.31	33.60	33.88	34.16	34.44
Current at Maximum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

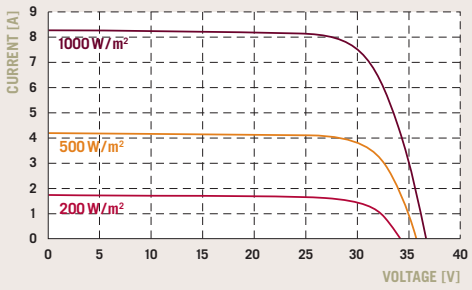
* Core class

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]	25	**Fire Rating**	C
Wind/Snow Load	[Pa]	5400	**Permitted module temperature on continous duty**	-40 °C up to +85 °C

QUALIFICATIONS AND CERTIFICATES

CE-Compliant; 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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