



ROOFTOP ARRAYS ON  
RESIDENTIAL BUILDINGS



SMALL ROOFTOP ARRAYS  
ON COMMERCIAL /  
INDUSTRIAL BUILDINGS



## MULTICRYSTALLINE SOLAR MODULE

# Q.PRO 225-240

Raising the bar for highly reliable energy output

Q-Cells is now applying the skills perfected over years of solar cell manufacture to solar module production. Q.PRO modules achieve maximum efficiencies and have outstanding performance characteristics, making them ideal for residential rooftop arrays or smaller-scale commercial and industrial applications.

### GERMAN ENGINEERING FOR HIGHLY RELIABLE YIELDS

- Highest product quality through branded components according to German standards
- Maximum efficiency through multicrystalline solar cells, manufactured in-house, with cell efficiencies of up to 17 %
- High output due to excellent performance in low-light conditions – even under the most challenging circumstances
- Further optimization of output due to positive sorting +5/-0 Wp

### STURDY, WEATHER-RESISTANT CONSTRUCTION

- Protection against overheating includes a junction box with integrated bypass diodes and 100 % hotspot-free cells
- Approved for increased snow and wind loads up to 5400 Pa, with tempered glass and a flex-resistant frame

- Long-term weather resistance with integrated drainage holes in the frame

### SIMPLE, COST-EFFECTIVE INSTALLATION

- Compatible with all the latest standard, commercially available inverters and mounting systems
- Minimal wiring effort required, as the module itself has high reverse current resistance (25 A)

### STEADY, GUARANTEED PERFORMANCE

- 10-year product warranty\*
- 25-year performance warranty\*
- Free module recycling through membership in the PV Cycle Association\*\*



\* ACCORDING TO THE RESPECTIVE EFFECTIVE REGIONAL WARRANTY TERMS. PERFORMANCE WARRANTY: 90 % OF THE INITIAL EFFICIENCY UP TO 10 YEARS, 80 % UP TO 25 YEARS  
\*\* IN PV CYCLE MEMBER COUNTRIES ONLY, SEE: WWW.PVCYCLE.COM

MECHANICAL SPECIFICATION		TECHNICAL DRAWING	
<b>Format</b>	1670 x 1000 x 50 mm (including frame)		
<b>Weight</b>	20 kg		
<b>Front Cover</b>	Thermally pre-stressed solar glass		
<b>Back Cover</b>	Composite film		
<b>Frame</b>	Anodized aluminum		
<b>Cell Type</b>	Multicrystalline solar cell with 3 busbars (156 mm x 156 mm)		
<b>Number of cells</b>	6 x 10		
<b>Junction box</b>	Protection class IP 67, with bypass diodes		
<b>Cable length</b>	(+) 1100 mm; (-) 1100 mm		
<b>Cable type</b>	Solar cable 4 mm <sup>2</sup>		
<b>Connector</b>	Yamaichi Y-SOL4 (combinable with MC4)		

### ELECTRICAL CHARACTERISTICS

#### PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m<sup>2</sup>, 25 °C, AM 1.5 SPECTRUM)

POWER CLASS			210	215	220	225	230	235	240	245
<b>Nominal Power (+5/-0 Wp)</b>	<b>P<sub>MAX</sub></b>	<b>[W]</b>	210	215	220	225	230	235	240	245
<b>Short Circuit Current</b>	<b>I<sub>SC</sub></b>	<b>[A]</b>	8.09	8.12	8.20	8.25	8.30	8.38	8.45	8.52
<b>Open Circuit Voltage</b>	<b>V<sub>OC</sub></b>	<b>[V]</b>	35.83	36.00	36.15	36.36	36.61	36.92	37.20	37.48
<b>Current at Maximum Power</b>	<b>I<sub>MPP</sub></b>	<b>[A]</b>	7.57	7.60	7.69	7.77	7.84	7.89	7.96	8.03
<b>Voltage at Maximum Power</b>	<b>V<sub>MPP</sub></b>	<b>[V]</b>	28.35	28.82	29.04	29.29	29.56	29.89	30.20	30.55

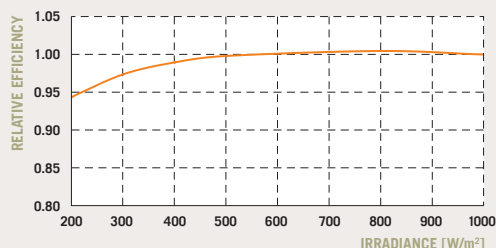
The measuring tolerance is ± 3 % referred to the measured performance.

#### PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/m<sup>2</sup>, 47 ± 3 °C, AM 1.5 SPECTRUM)

POWER CLASS			210	215	220	225	230	235	240	245
<b>Nominal Power (+5/-0 Wp)</b>	<b>P<sub>MAX</sub></b>	<b>[W]</b>	155.4	158.6	161.6	164.8	167.7	170.8	173.9	177.0
<b>Short Circuit Current</b>	<b>I<sub>SC</sub></b>	<b>[A]</b>	6.56	6.58	6.65	6.69	6.73	6.79	6.85	6.91
<b>Open Circuit Voltage</b>	<b>V<sub>OC</sub></b>	<b>[V]</b>	32.61	32.76	32.90	33.09	33.31	33.60	33.88	34.16
<b>Current at Maximum Power</b>	<b>I<sub>MPP</sub></b>	<b>[A]</b>	6.03	6.06	6.13	6.19	6.25	6.29	6.34	6.38
<b>Voltage at Maximum Power</b>	<b>V<sub>MPP</sub></b>	<b>[V]</b>	25.80	26.22	26.42	26.65	26.89	27.19	27.49	27.80

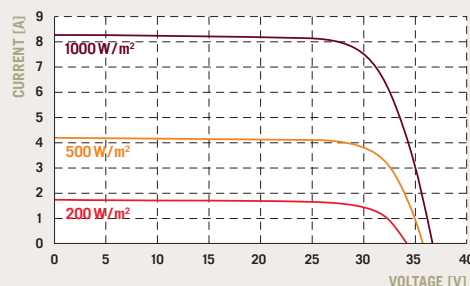
The measuring tolerance is ± 5 % referred to the measured performance.

#### PERFORMANCE AT LOW IRRADIANCE



The typical relative change in module efficiency at an irradiance of 200 W/m<sup>2</sup> in relation to 1000 W/m<sup>2</sup> (both at 25 °C and AM 1.5 spectrum) is less than 6 %.

#### TYPICAL CHARACTERISTICS AT DIFFERENT IRRADIANCES



#### TEMPERATURE COEFFICIENTS (AT 1000 W/m<sup>2</sup>, 25 °C, AM 1.5 SPECTRUM)

<b>Temperature Coefficient of I<sub>SC</sub></b>	<b>α</b>	<b>[%/K]</b>	+0.04	<b>Temperature Coefficient of V<sub>OC</sub></b>	<b>β</b>	<b>[%/K]</b>	-0.30
<b>Temperature Coefficient of P<sub>MAX</sub></b>	<b>γ</b>	<b>[%/K]</b>	-0.41				

#### PROPERTIES FOR SYSTEM DESIGN

<b>Maximum System Voltage V<sub>sys</sub></b>	<b>[V]</b>	1000	<b>Safety Class</b>	II
<b>Maximum Reverse Current I<sub>r</sub></b>	<b>[A]</b>	25	<b>Fire Rating</b>	C
<b>Wind/Snow Load</b>	<b>[Pa]</b>	5400	<b>Permitted module temperature on continuous duty</b>	-40 °C up to +85 °C

#### QUALIFICATIONS AND CERTIFICATES

CE-Compliant; IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A



#### 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.