

**Q CELLS**  
YIELD SECURITY

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



## POLYCRYSTALLINE SOLAR MODULE DATA SHEET

# Q.PRO L 290-310

Power and cost efficiency

The polycrystalline solar module **Q.PRO L** solar module with power classes up to 310 W is the strongest module of its type on the market globally. Powered by 72 Q CELLS solar cells and with a size of 2 m<sup>2</sup> **Q.PRO L** was specially designed for large solar power plants to reduce BOS costs. But there is even more to our polycrystalline modules. Only Q CELLS offers German engineering quality with our unique triple Yield Security.

### YOUR EXCLUSIVE TRIPLE YIELD SECURITY

- **Anti PID Technology (APT)** reliably prevents power loss resulting from unwanted leakage currents (potential-induced degradation)<sup>1</sup>.
- **Hot-Spot Protect (HSP)** prevents yield losses and reliably protects against module fire.
- **Traceable Quality (Tra.Q™)** is the 'Finger Print' of a solar cell. Tra.Q™ ensures continuous quality control throughout the entire production process from cells to modules while making Q CELLS solar modules forgery proof.

### ONE MORE ADVANTAGE FOR YOU

- **Reduced BOS costs:** Optimised design to reduce costs per Wp.
- **Improved energy yield:** The actual output of all Q CELLS solar modules is up to 5 Wp higher than the nominal power thanks to positive sorting.
- **Guaranteed performance:** Q CELLS offers the best warranties on the market. A 12-year product warranty plus a 25-year linear performance warranty<sup>2</sup>.

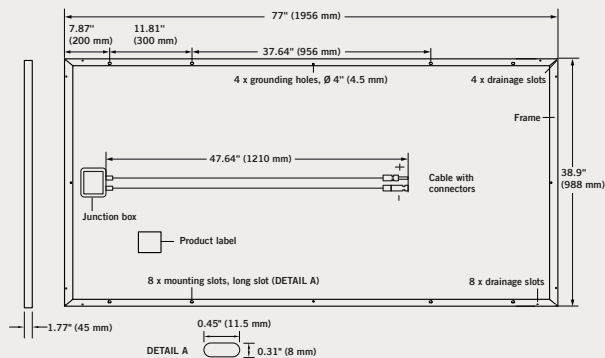


<sup>1</sup> APT test conditions: Cells at -1000 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h (TÜV test conditions)

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

## MECHANICAL SPECIFICATION

<b>Format</b>	77 in x 38.9 in x 1.77 in (including frame) (1956 mm x 988 mm x 45 mm)
<b>Weight</b>	59.52 lb (27.0 kg)
<b>Front Cover</b>	0.16 in (4.0 mm) thermally pre-stressed glass with anti-reflection technology
<b>Back Cover</b>	Composite film
<b>Frame</b>	Anodized aluminum
<b>Cell</b>	6 x 12 polycrystalline solar cells
<b>Junction box</b>	Protection class IP67, with bypass diodes
<b>Cable</b>	4 mm <sup>2</sup> Solar cable; (+) 47.64 in (1210 mm), (-) 47.64 in (1210 mm)
<b>Connector</b>	SOLARLOK PV4, IP68



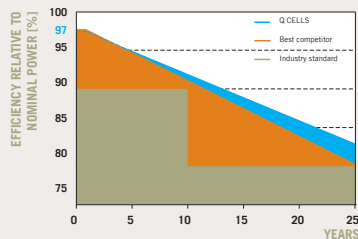
## ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/M<sup>2</sup>, 25 °C, AM 1.5 G SPECTRUM)<sup>1</sup>

NOMINAL POWER (+5/-0 W)		[W]	290	295	300	305	310
<b>Average Power</b>	<b>P<sub>MPP</sub></b>	[W]	292.5	297.5	302.5	307.5	312.5
<b>Efficiency (Nominal Efficiency)</b>	<b>η</b>	[%]	≥ 14.8	≥ 15.0	≥ 15.3	≥ 15.5	≥ 15.8
<b>Short Circuit Current</b>	<b>I<sub>SC</sub></b>	[A]	8.79	8.86	8.93	9.01	9.08
<b>Open Circuit Voltage</b>	<b>V<sub>OC</sub></b>	[V]	44.89	45.10	45.32	45.53	45.75
<b>Current at P<sub>MPP</sub></b>	<b>I<sub>MPP</sub></b>	[A]	8.23	8.33	8.44	8.54	8.65
<b>Voltage at P<sub>MPP</sub></b>	<b>V<sub>MPP</sub></b>	[V]	35.54	35.69	35.85	36.00	36.15

<sup>1</sup> Measurement tolerances STC: ±3% (P<sub>MPP</sub>); ±10% (I<sub>SC</sub>, V<sub>OC</sub>, I<sub>MPP</sub>, V<sub>MPP</sub>)

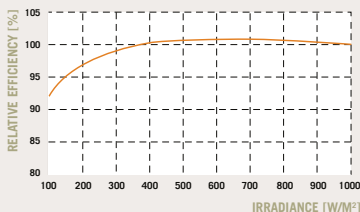
### Q CELLS PERFORMANCE WARRANTY



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

All data within measurement tolerances.  
Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

### PERFORMANCE AT LOW IRRADIANCE



The typical 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 G spectrum) is -3% (relative).

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

<b>Temperature Coefficient of I<sub>SC</sub></b>	<b>α</b>	[%/K]	+0.04	<b>Temperature Coefficient of V<sub>OC</sub></b>	<b>β</b>	[%/K]	-0.33
<b>Temperature Coefficient of P<sub>MPP</sub></b>	<b>γ</b>	[%/K]	-0.43	<b>NOCT</b>		[°F]	116 ± 5.4 (47 ± 3 °C)

### PROPERTIES FOR SYSTEM DESIGN

<b>Maximum System Voltage V<sub>sys</sub></b>	[V]	1000 (IEC) / 600 (UL)	<b>Safety Class</b>	II	
<b>Maximum Series Fuse Rating</b>	[A DC]	20	<b>Fire Rating</b>	C	
<b>Wind/Snow load (IEC)<sup>2</sup></b>	[lbs/ft <sup>2</sup> ]	112 (5400 Pa)	<b>Permitted module temperature on continuous duty</b>	[°F]	-40 up to 185 (-40 °C up to 85 °C)
<b>Max. Load (UL)<sup>2</sup></b>	[lbs/ft <sup>2</sup> ]	75 (3600 Pa)			
<b>Load Rating (UL)<sup>2</sup></b>	[lbs/ft <sup>2</sup> ]	75 (3600 Pa)	<sup>2</sup> see installation manual		

### QUALIFICATIONS AND CERTIFICATES

UL 1703; VDE Quality Tested; CE-compliant;  
IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A



### PARTNER



NOTES: Metric units are definitive. Installation instructions must be followed. See the installation and operating manual or contact technical service for further information on approved installation and use of this product.