Q.PEAK DUO ML-G10+
SERIES

405 - 415 Wp  |  132 Cells
21.1% Maximum Module Efficiency

Breaking the 21% efficiency barrier
Q.ANTUM DUO Z technology with zero gap cell layout boosts module efficiency up to 21.1%.

A reliable investment

Enduring high performance
Long-term yield security with Anti LeTID Technology and Hot-Spot Protect.

Extreme weather rating
High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

Innovative all-weather technology
Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry
Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new “Quality Controlled PV” of the independent certification institute TÜV Rheinland.

1 See data sheet on rear for further information.
Q.PEAK DUO ML-G10+ SERIES

**Mechanical Specification**

- **Format**: 1879 mm × 1045 mm × 32 mm (including frame)
- **Weight**: 22.0 kg
- **Front Cover**: 3.2 mm thermally pre-stressed glass with anti-reflection technology
- **Back Cover**: Composite film
- **Frame**: Black anodised aluminium
- **Cell**: 6 × 22 monocrystalline Q.ANTUM solar half cells
- **Junction box**: Protection class IP67, with bypass diodes
- **Cable**: 4 mm² Solar cable; (+) ≥ 1250 mm, (−) ≥ 1250 mm
- **Connector**: Stäubli MC4; IP68

**Electrical Characteristics**

**POWER CLASS**

<table>
<thead>
<tr>
<th>Power at MPP</th>
<th>405 W</th>
<th>415 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_{MPP}</td>
<td>[W]</td>
<td>[W]</td>
</tr>
<tr>
<td>Short Circuit Current</td>
<td>I_{SC}</td>
<td>11.19</td>
</tr>
<tr>
<td>Open Circuit Voltage</td>
<td>V_{OC}</td>
<td>45.09</td>
</tr>
<tr>
<td>Current at MPP</td>
<td>I_{PM}</td>
<td>10.70</td>
</tr>
<tr>
<td>Voltage at MPP</td>
<td>V_{PM}</td>
<td>37.85</td>
</tr>
<tr>
<td>Efficiency</td>
<td>η [%]</td>
<td>≥ 20.6</td>
</tr>
</tbody>
</table>

**MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC**

- Power at MPP: 405 W, 415 W
- Short Circuit Current: I_{SC} = 11.19 A, 11.26 A
- Open Circuit Voltage: V_{OC} = 45.09 V, 45.16 V
- Current at MPP: I_{PM} = 10.70 A, 10.82 A
- Voltage at MPP: V_{PM} = 37.85 V, 38.37 V
- Efficiency: η [%] ≥ 20.6, ≥ 211

**MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT**

- Power at MPP: 303.9 W, 311.4 W
- Short Circuit Current: I_{SC} = 9.02 A, 9.07 A
- Open Circuit Voltage: V_{OC} = 42.52 V, 42.59 V
- Current at MPP: I_{PM} = 8.43 A, 8.53 A
- Voltage at MPP: V_{PM} = 36.04 V, 36.49 V

**Qcells PERFORMANCE WARRANTY**

- At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86.00% of nominal power up to 25 years.
- All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

**TEMPERATURE COEFFICIENTS**

<table>
<thead>
<tr>
<th>Temperature Coefficient of I_{sc}</th>
<th>α [%/K]</th>
<th>+0.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Coefficient of P_{MPP}</td>
<td>γ [%/K]</td>
<td>-0.34</td>
</tr>
<tr>
<td>Nominal Module Operating Temperature</td>
<td>NMOT</td>
<td>[%]</td>
</tr>
</tbody>
</table>

**Properties for System Design**

- **Maximum System Voltage**: 1000 V
- **Maximum Reverse Current**: 20 A
- **Max. Design Load, Push/Pull**: 3600/2660 W
- **Max. Test Load, Push/Pull**: 5400/4000 W
- **Permitted Module Temperature on Continuous Duty**: -40°C - +85°C

**Quality Controlled PV - TÜV Rheinland**

- IEC 61215:2016
- IEC 61730:2016
- This data sheet complies with DIN EN 50380
- Made in Malaysia

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

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Q.PEAK DUO ML-G10+ SERIES 405 415

<table>
<thead>
<tr>
<th>RELATIVE EFFICIENCY COMPARED TO NOMINAL POWER [%]</th>
<th>RELATIVE EFFICIENCY COMPARED TO NOMINAL POWER [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEARS</td>
<td>Irradiance [W/m²]</td>
</tr>
<tr>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>1</td>
<td>98</td>
</tr>
<tr>
<td>10</td>
<td>93.5</td>
</tr>
<tr>
<td>25</td>
<td>86.0</td>
</tr>
</tbody>
</table>

Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m²).

**Packaging Information**

- **Packaging**: 24 pallets, 24 pallets, 33 modules
- **Dimensions**: 1950 mm × 1130 mm × 1211 mm, 810 kg
- **26 pallets, 24 pallets, 33 modules**