Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.0%.

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT
Inclusive 12-year product warranty and 25-year linear performance warranty².

STATE OF THE ART MODULE TECHNOLOGY
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500 V, 168 h)
² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:
- Rooftop arrays on residential buildings
- Rooftop arrays on commercial/industrial buildings

Engineered in Germany
### MECHANICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Format</th>
<th>1685 mm × 1000 mm × 32 mm (including frame)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>18.7 kg</td>
</tr>
<tr>
<td>Front Cover</td>
<td>3.2 mm thermally pre-stressed glass with anti-reflection technology</td>
</tr>
<tr>
<td>Back Cover</td>
<td>Composite film</td>
</tr>
<tr>
<td>Frame</td>
<td>Black anodised aluminium</td>
</tr>
<tr>
<td>Cell</td>
<td>6 × 20 polycrystalline Q.ANTUM solar half cells</td>
</tr>
<tr>
<td>Junction box</td>
<td>53-101 mm × 32-60 mm × 15-18 mm</td>
</tr>
<tr>
<td>Protection class IP67</td>
<td>with bypass diodes</td>
</tr>
<tr>
<td>Cable</td>
<td>4 mm² Solar cable; (+) ≥ 1100 mm, (−) ≥ 1100 mm</td>
</tr>
<tr>
<td>Connector</td>
<td>Staubli MC4, Amphenol UTX, Renhe 05-6, Tonglin TL-CableQ1S, JMTHY JM601, IP68 or Friends PV2e, IP67</td>
</tr>
</tbody>
</table>

### ELECTRICAL CHARACTERISTICS

#### POWER CLASS

<table>
<thead>
<tr>
<th>300</th>
<th>305</th>
<th>310</th>
<th>315</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_{mpp} [W]</td>
<td>224.0</td>
<td>227.7</td>
<td>231.5</td>
</tr>
<tr>
<td>I_{sc} [A]</td>
<td>7.95</td>
<td>8.00</td>
<td>8.04</td>
</tr>
<tr>
<td>V_{oc} [V]</td>
<td>36.69</td>
<td>36.91</td>
<td>37.12</td>
</tr>
<tr>
<td>I_{mp} [A]</td>
<td>7.35</td>
<td>741</td>
<td>7.48</td>
</tr>
<tr>
<td>V_{mp} [V]</td>
<td>30.49</td>
<td>30.73</td>
<td>30.96</td>
</tr>
</tbody>
</table>

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

| Minimum Performance at MPP
<table>
<thead>
<tr>
<th>P_{mpp} [W]</th>
<th>224.0</th>
<th>227.7</th>
<th>231.5</th>
<th>235.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>I_{sc} [A]</td>
<td>7.95</td>
<td>8.00</td>
<td>8.04</td>
<td>8.09</td>
</tr>
<tr>
<td>V_{oc} [V]</td>
<td>36.69</td>
<td>36.91</td>
<td>37.12</td>
<td>37.34</td>
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<td>30.49</td>
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</tr>
</tbody>
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#### MECHANICAL SPECIFICATION

- **Format**: 1685 mm × 1000 mm × 32 mm (including frame)
- **Weight**: 18.7 kg
- **Front Cover**: 3.2 mm thermally pre-stressed glass with anti-reflection technology
- **Back Cover**: Composite film
- **Frame**: Black anodised aluminium
- **Cell**: 6 × 20 polycrystalline Q.ANTUM solar half cells
- **Junction box**: 53-101 mm × 32-60 mm × 15-18 mm, protection class IP67, with bypass diodes
- **Cable**: 4 mm² Solar cable; (+) ≥ 1100 mm, (−) ≥ 1100 mm
- **Connector**: Staubli MC4, Amphenol UTX, Renhe 05-6, Tonglin TL-CableQ1S, JMTHY JM601, IP68 or Friends PV2e, IP67

#### PROPERTY FOR SYSTEM DESIGN

- **Maximum System Voltage**: 1000 V
- **Maximum Reverse Current**: 20 A
- **Max. Design Load, Push / Pull**: 3600/2667 Pa
- **Max. Test Load, Push / Pull**: 5400/4000 Pa

#### QUALIFICATIONS AND CERTIFICATES

- **VDE Quality Tested**: IEC 61215:2016; IEC 61730:2016, Application Class II
- **This data sheet complies with DIN EN 50380**

#### PACKAGING INFORMATION

- **Number of Modules per Pallet**: 32
- **Number of Pallets per Trailer (24t)**: 30
- **Number of Pallets per 40′ HC-Container (26t)**: 26
- **Pallet Dimensions (L × W × H)**: 1760 × 1150 × 1190 mm
- **Pallet Weight**: 642 kg

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**Q CELLS PERFORMANCE WARRANTY**

**PERFORMANCE AT LOW IRRADIANCE**

At least 97% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 92% of nominal power up to 15 years. At least 84% of nominal power up to 25 years.

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

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**TEMPERATURE COEFFICIENTS**

- **Temperature Coefficient of I_{sc}**: α [%/K] = +0.04
- **Temperature Coefficient of V_{oc}**: β [%/K] = −0.28
- **Temperature Coefficient of P_{mpp}**: γ [%/K] = −0.37

**NORMAL MODULE OPERATING TEMPERATURE**

- NMOT [°C]: 43 ± 3

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**NOTES**

- Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

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Engineered in Germany