LOW ELECTRICITY GENERATION COSTS
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 18.7%.

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

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

EXTREME WEATHER RATING
High-tech aluminum 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 guarantee².

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 and industrial buildings
### MECHANICAL SPECIFICATION

- **Format**: 66.3 in × 39.4 in × 1.26 in (including frame)
- **Weight**: 41.2 lbs (18.7 kg)
- **Front Cover**: 0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
- **Back Cover**: Composite film
- **Frame**: Black Anodized aluminum
- **Cell**: 6 × 20 multicrystalline Q.ANTUM solar half cells
- **Connector**: Stäubli MC4, Amphenol UTX, Renhe 05-6, Tongling TL-Cable01S, JMTHY JM601, IP68 or Friends PV2e; IP67

### ELECTRICAL CHARACTERISTICS

#### POWER CLASS

<table>
<thead>
<tr>
<th>Minimum Performance at Standard Test Conditions, STC[^1] (Power Tolerance: +5 W/-0 W)</th>
<th>290</th>
<th>295</th>
<th>300</th>
<th>305</th>
<th>310</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power at MPP[^1]</td>
<td>P_{MPP} [W]</td>
<td>290</td>
<td>295</td>
<td>300</td>
<td>305</td>
</tr>
<tr>
<td>Open Circuit Voltage[^1]</td>
<td>V_{OC} [V]</td>
<td>38.54</td>
<td>38.77</td>
<td>39.00</td>
<td>39.23</td>
</tr>
<tr>
<td>Voltage at MPP</td>
<td>V_{MPP} [V]</td>
<td>31.54</td>
<td>31.82</td>
<td>32.10</td>
<td>32.37</td>
</tr>
<tr>
<td>Efficiency[^1]</td>
<td>η [%]</td>
<td>≥17.2</td>
<td>≥175</td>
<td>≥17.8</td>
<td>≥18.1</td>
</tr>
</tbody>
</table>

#### Minimum Performance at Normal Operating Conditions, NMOT[^2]

<table>
<thead>
<tr>
<th>Minimum Performance at Normal Operating Conditions, NMOT[^2]</th>
<th>290</th>
<th>295</th>
<th>300</th>
<th>305</th>
<th>310</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power at MPP</td>
<td>P_{MPP} [W]</td>
<td>216.8</td>
<td>220.5</td>
<td>224.3</td>
<td>228.0</td>
</tr>
<tr>
<td>Short Circuit Current</td>
<td>I_{SC} [A]</td>
<td>7.86</td>
<td>7.91</td>
<td>7.95</td>
<td>8.00</td>
</tr>
<tr>
<td>Open Circuit Voltage</td>
<td>V_{OC} [V]</td>
<td>36.26</td>
<td>36.47</td>
<td>36.69</td>
<td>36.91</td>
</tr>
<tr>
<td>Current at MPP</td>
<td>I_{MPP} [A]</td>
<td>7.22</td>
<td>7.28</td>
<td>7.35</td>
<td>7.42</td>
</tr>
<tr>
<td>Voltage at MPP</td>
<td>V_{MPP} [V]</td>
<td>30.05</td>
<td>30.29</td>
<td>30.53</td>
<td>30.77</td>
</tr>
</tbody>
</table>

[^1]: Measurement tolerances: P_{MPP} ±3%; I_{SC}, V_{OC} ±5% at STC: 1000 W/m², 25 ±2°C, AM 1.5 according to IEC 60904-3 • 25 ±2 °C, AM 1.5 according to IEC 60904-3 • 25 ±2 °C, AM 1.5 according to IEC 60904-3

### Q CELLS PERFORMANCE WARRANTY

At least 97% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 92.0% of nominal power up to 10 years. At least 84% of nominal power up to 25 years.

### Q CELLS PERFORMANCE WARRANTY

All data within measurement tolerances: Minimum Performance at Normal Operating Conditions, NMOT.

At least 97% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 92.0% of nominal power up to 10 years. At least 84% of nominal power up to 25 years.

### 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

### PERFORMANCE AT LOW IRRADIANCE

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

### TEMPERATURE COEFFICIENTS

- **Maximum System Voltage**: V_{SYS} [V] = 1000 (IEC)/1000 (UL)
- **Safety Class**: II
- **Maximum Series Fuse Rating**: [A / DC] = 20 (IEC) / TYPE 2 (UL)
- **Max. Design Load, Push / Pull[^2]**: [lbs / ft²] = 75 (3600 Pa)/55 (2667 Pa)
- **Max. Test Load, Push / Pull[^2]**: [lbs / ft²] = 113 (5400 Pa)/84 (4000 Pa)

[^1]: See Installation Manual

### QUALIFICATIONS AND CERTIFICATES

- UL 1703, VDE Quality Tested, CE-compliant, IEC 61215:2016, IEC 61730:2016, Application Class II

### PACKAGING INFORMATION

- **UL 1703, VDE Quality Tested, CE-compliant, IEC 61215:2016, IEC 61730:2016, Application Class II**

### CONDITIONS

- **Number of Modules per Pallet**: 32
- **Number of Pallets per 53' Trailer**: 30
- **Number of Pallets per 40' HC-Container**: 26
- **Pallet Dimensions (L × W × H)**: 69.3 × 45.3 × 46.9 in (1760 × 1150 × 1190 mm)
- **Pallet Weight**: 1415 lbs (642 kg)

**Note:** 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.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us