The new high-performance module Q.PLUS BFR-G4.1 is the ideal solution for all applications thanks to its innovative cell technology Q.ANTUM. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.

**Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY**
Higher yield per surface area and lower BOS costs and higher power classes and an efficiency rate of up to 17.7%.

**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 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).

**MAXIMUM COST REDUCTIONS**
Up to 10% lower logistics costs due to higher module capacity per box.

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

**THE IDEAL SOLUTION FOR:**
- Rooftop arrays on residential buildings
- Rooftop arrays on commercial/industrial buildings
- Ground-mounted solar power plants

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

Format 1670 mm × 1000 mm × 32 mm (including frame)
Weight 18.8 kg
Front Cover 3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover Composite film
Frame Black anodised aluminium
Cell 6 × 10 Q.ANTUM solar cells
Junction box 66-77 mm × 115-90 mm × 15-19 mm
Protection class IP67, with bypass diodes
Cable 4 mm² Solar cable; (+) 1000 mm, (−) 1000 mm
Connector Multi-Contact MC4, IP65 and IP68

QUALIFICATIONS AND CERTIFICATES

Q CELLS PERFORMANCE WARRANTY

PERFORMANCE AT LOW IRRADIANCE

TEMPERATURE COEFFICIENTS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient (K⁻¹)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha$ (I_{SC})</td>
<td>$% / K$</td>
<td>0.04</td>
</tr>
<tr>
<td>$\gamma$ (P_{MP})</td>
<td>$% / K$</td>
<td>-0.40</td>
</tr>
</tbody>
</table>

Normal Operating Cell Temperature NOCT [°C] 45

At least 97% of nominal power during first year. Thereafter max. 0.6% degradation per year.

At least 92% of nominal power up to 10 years.

At least 83% 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.

ELECTRICAL CHARACTERISTICS

POWER CLASS 280 285 290

MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC (POWER TOLERANCE +5W / −0W)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_{MP} [W]</td>
<td>280</td>
</tr>
<tr>
<td>Short Circuit Current [A]</td>
<td>9.41</td>
</tr>
<tr>
<td>Open Circuit Voltage [V]</td>
<td>38.97</td>
</tr>
<tr>
<td>Current at MPP [A]</td>
<td>8.84</td>
</tr>
<tr>
<td>Voltage at MPP [V]</td>
<td>31.67</td>
</tr>
<tr>
<td>Efficiency [%]</td>
<td>≥ 16.8</td>
</tr>
</tbody>
</table>

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>P_{MP} [W]</td>
<td>207.0</td>
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<tr>
<td>Short Circuit Current [A]</td>
<td>7.58</td>
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<tr>
<td>Open Circuit Voltage [V]</td>
<td>36.37</td>
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<tr>
<td>Current at MPP [A]</td>
<td>6.93</td>
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<tr>
<td>Voltage at MPP [V]</td>
<td>29.87</td>
</tr>
</tbody>
</table>

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage $V_{sys}$ [V] 1000
Maximum Reverse Current $I_{R}$ [A] 20
Wind/Snow Load (Test-load in accordance with IEC 61215) [Pa] 4000/5400

QUALIFICATIONS AND CERTIFICATES

VDE Quality Tested, IEC 61215 (Ed. 2), IEC 61730 (Ed. 1), Application class A
This data sheet complies with DIN EN 50380.

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.

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Engineered in Germany