Q.TRON BLK M-G2+ SERIES

415 - 440 Wp | 108 Cells
22.5% Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+

High performance Qcells N-type solar cells
Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.5%.

A reliable investment
Inclusive 25-year product warranty and 25-year linear performance warranty.¹

Enduring high performance
Long-term yield security with Anti LeTID Technology, Anti PID Technology², Hot-Spot Protect.

Extreme weather rating
High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (3600 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.
² APT test conditions according to IEC/TS 62804-1:2015, method A (−1500 V, 96 h)
Q.TRON BLK M-G2+ SERIES

■ Mechanical Specification

Format 67.8 in × 44.6 in × 118 in (including frame)
(1722 mm × 1134 mm × 30 mm)

Weight 46.7 lbs (21.2 kg)

Front Cover 0.13 in (3.2 mm) thermally pre-stressed glass
with anti-reflection technology

Back Cover Composite film

Frame Black anodised aluminium

Cell 6 × 18 monocrystalline Q.ANTUM NEO solar half cells

Junction box 2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in
(53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes

Cable 4 mm² Solar cable; (+) ≥/uni200968.9/uni2009in (1750mm), (−) ≥/uni200968.9/uni2009in (1750mm)

Connector Stäubli MC4; IP68

■ Electrical Characteristics

**Power Class**

<table>
<thead>
<tr>
<th>Power at MPP¹</th>
<th>415</th>
<th>420</th>
<th>425</th>
<th>430</th>
<th>435</th>
<th>440</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pₚₑₑₑₑₑₑ [W]</td>
<td>415</td>
<td>420</td>
<td>425</td>
<td>430</td>
<td>435</td>
<td>440</td>
</tr>
<tr>
<td>Short Circuit Current²</td>
<td>13.49</td>
<td>13.58</td>
<td>13.66</td>
<td>13.74</td>
<td>13.82</td>
<td>13.90</td>
</tr>
<tr>
<td>Open Circuit Voltage²</td>
<td>38.47</td>
<td>38.75</td>
<td>39.03</td>
<td>39.32</td>
<td>39.60</td>
<td>39.88</td>
</tr>
<tr>
<td>Current at MPP ³</td>
<td>12.83</td>
<td>12.91</td>
<td>12.98</td>
<td>13.05</td>
<td>13.13</td>
<td>13.20</td>
</tr>
<tr>
<td>Voltage at MPP ³</td>
<td>32.34</td>
<td>32.54</td>
<td>32.74</td>
<td>32.94</td>
<td>33.14</td>
<td>33.33</td>
</tr>
<tr>
<td>Efficiency⁴</td>
<td>≥/uni200921.3/uni2009</td>
<td>≥/uni200921.5/uni2009</td>
<td>≥/uni200921.8/uni2009</td>
<td>≥/uni200922.0/uni2009</td>
<td>≥/uni200922.3/uni2009</td>
<td>≥/uni200922.5/uni2009</td>
</tr>
</tbody>
</table>

**Minimum Performance at Normal Operating Conditions, NMOT²**

<table>
<thead>
<tr>
<th>Power at MPP ³</th>
<th>415</th>
<th>420</th>
<th>425</th>
<th>430</th>
<th>435</th>
<th>440</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pₚₑₑₑₑₑₑ [W]</td>
<td>313.7</td>
<td>317.5</td>
<td>321.2</td>
<td>325.0</td>
<td>328.8</td>
<td>332.6</td>
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<tr>
<td>Short Circuit Current ²</td>
<td>10.87</td>
<td>10.94</td>
<td>11.00</td>
<td>11.07</td>
<td>11.14</td>
<td>11.20</td>
</tr>
<tr>
<td>Open Circuit Voltage²</td>
<td>36.50</td>
<td>36.77</td>
<td>37.04</td>
<td>37.31</td>
<td>37.58</td>
<td>37.84</td>
</tr>
<tr>
<td>Current at MPP ³</td>
<td>10.10</td>
<td>10.15</td>
<td>10.21</td>
<td>10.27</td>
<td>10.33</td>
<td>10.38</td>
</tr>
<tr>
<td>Voltage at MPP ³</td>
<td>31.07</td>
<td>31.26</td>
<td>31.46</td>
<td>31.65</td>
<td>31.84</td>
<td>32.03</td>
</tr>
</tbody>
</table>

¹Measurement tolerances Pₑₑₑₑₑₑ ± 3%; Iₑₑₑₑₑₑ ± 5% at STC: 1000 W/m², 25 ± 2°C, AM 1.5 according to IEC 60904-3; Vₑₑₑₑₑₑ; OC ±/uni20095/uni2009% at STC: 1000/uni2009 W/m², 25 ± 2/uni2009°C, AM 1.5

**Qcells Performance Warranty**

At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 90.58% 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.

**Performance at Low Irradiance**

<table>
<thead>
<tr>
<th>Irradiance (W/m²)</th>
<th>200</th>
<th>400</th>
<th>600</th>
<th>800</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Efficiency [%]</td>
<td>90.5</td>
<td>88.1</td>
<td>85.7</td>
<td>83.3</td>
<td>80.9</td>
</tr>
</tbody>
</table>

²Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

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

**Temperature Coefficients**

<table>
<thead>
<tr>
<th>Temperature Coefficient of Iₑₑₑₑₑₑ</th>
<th>α [%/K]</th>
<th>+0.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Coefficient of Vₑₑₑₑₑₑ</td>
<td>β [%/K]</td>
<td>-0.24</td>
</tr>
</tbody>
</table>

Nominal Module Operating Temperature

<table>
<thead>
<tr>
<th>NMOT [°F]</th>
<th>1095.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 ± 3°C</td>
<td></td>
</tr>
</tbody>
</table>

**Properties for System Design**

Maximum System Voltage Vₑₑₑₑₑₑ [V] 1000 (IEC/1000 (UL))

Maximum Series Fuse Rating [A DC] 25

Max. Design Load, Push/Pull² [lbs/ft²] 113 (5400 Pa)/50 (2400 Pa)

Max. Test Load, Push/Pull² [lbs/ft²] 169 (8100 Pa)/75 (3600 Pa)

² See Installation Manual

**Qualifications and Certificates**

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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Qcells PV module classification

Class II

Fire Rating based on ANSI/UL 61730

Permitted Module Temperature on Continuous Duty

-40°F up to +185°F

-40°C up to +85°C