SunPower Maxeon Solar Cell Technology

• Proven technology across 3.5 billion cells shipped
• Most efficient commercialized solar technology\(^1\)
• Only solar cell with a solid-metal foundation, providing patented protection from breakage and corrosion

Part of the record-setting SunPower Maxeon product line, the sleek black SunPower Maxeon 3 solar panel elegantly blends into any roof, while delivering leading efficiency that maximises energy production and savings potential for homeowners.

SunPower Maxeon panels are world-renowned for their energy production and savings advantages that combine unmatched efficiency and reliability with an industry-leading warranty and an estimated 40-year useful life.\(^1,2,3,4\)

**Maximum Lifetime Energy and Savings**

The SunPower Maxeon 3 solar panel is designed to deliver 35% more energy in the same space over 25 years in real-world conditions such as partial shade and high temperatures.\(^1,5,6\)

**A Better Product. A Better Warranty.**

The 25-year SunPower Complete Confidence Panel Warranty is backed by testing and field data from more than 30 million SunPower Maxeon panels deployed—and a demonstrated warranty return rate of 0.005%.\(^7\)

<table>
<thead>
<tr>
<th>25-yr SunPower Complete Confidence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 Minimum Warranted Power Output</td>
<td>98.0%</td>
</tr>
<tr>
<td>Maximum Annual Degradation</td>
<td>0.25%</td>
</tr>
<tr>
<td>Year 25 Warranted Power Output</td>
<td>92.0%</td>
</tr>
</tbody>
</table>

**Leadership in Sustainable Manufacturing**

SunPower Maxeon panels—and the facilities in which they are produced—raise the bar for environmental and social responsibility. Included below are highlights of the certifications and recognition received by some of our products and manufacturing sites.

\(^1\) SunPower Maxeon 3 BLK
\(^2\) Sunpower.maxeon.com
\(^3\) Maximum Lifetime Energy and Savings
\(^5\) Leadership in Sustainable Manufacturing
### Operating Condition And Mechanical Data

- **Temperature**: -40°C to +85°C
- **Impact Resistance**: 25 mm diameter hail at 23 m/s
- **Solar Cells**: 112 Monocrystalline Maxeon Gen III
- **Tempered Glass**: High-transmission tempered anti-reflective
- **Junction Box**: IP-68, Stäubli (MC4), 3 bypass diodes
- **Weight**: 21.2 kg
- **Max. Load**: Wind: 2400 Pa, 244 kg/m² front & back, Snow: 5400 Pa, 550 kg/m² front
- **Frame**: Class 1 black anodized (highest AAMA rating)

### Electrical Data

<table>
<thead>
<tr>
<th>SPR-MAX3-420-BLK</th>
<th>SPR-MAX3-415-BLK</th>
<th>SPR-MAX3-410-BLK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal Power (Pnom)</strong></td>
<td>420 W</td>
<td>415 W</td>
</tr>
<tr>
<td><strong>Power Tolerance</strong></td>
<td>+5%/0%</td>
<td>+5%/0%</td>
</tr>
<tr>
<td><strong>Panel Efficiency</strong></td>
<td>22.2%</td>
<td>21.9%</td>
</tr>
<tr>
<td><strong>Rated Voltage (Vmp)</strong></td>
<td>67.7 V</td>
<td>67.3 V</td>
</tr>
<tr>
<td><strong>Rated Current (Imp)</strong></td>
<td>6.20 A</td>
<td>6.17 A</td>
</tr>
<tr>
<td><strong>Open-Circuit Voltage ( Voc ) (+/-3%)</strong></td>
<td>80.5 V</td>
<td>80.5 V</td>
</tr>
<tr>
<td><strong>Short-Circuit Current ( Isc ) (+/-3%)</strong></td>
<td>6.32 A</td>
<td>6.32 A</td>
</tr>
<tr>
<td><strong>Max. System Voltage</strong></td>
<td>1000 V</td>
<td>IEC</td>
</tr>
<tr>
<td><strong>Maximum Series Fuse</strong></td>
<td>20 A</td>
<td></td>
</tr>
<tr>
<td><strong>Power Temp Coef.</strong></td>
<td>−0.2%/°C</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage Temp Coef.</strong></td>
<td>−0.236%/°C</td>
<td></td>
</tr>
<tr>
<td><strong>Current Temp Coef.</strong></td>
<td>0.058%/°C</td>
<td></td>
</tr>
</tbody>
</table>

### Tests And Certifications

- **Standard Tests**: IEC 61215, IEC 61730
- **Desert Test**: IEC 60068-2-68, MIL-STD-810G
- **Salt Spray Test**: IEC 61701 (maximum severity)
- **PID Test**: 1000 V: IEC 62804
- **Available Listings**: TUV

### Sustainability Tests and Certifications

- **iFLI Declare Label**: First solar panel labeled for ingredient transparency and LBC-compliance.
- **Cradle to Cradle Certified™ Bronze**: First solar panel line certified for material health, water stewardship, material reutilization, renewable energy & carbon management, and social fairness.
- **Green Building Certification Contribution**: Panels can contribute additional points toward LEED and BREEAM certifications.
- **EHS Compliance**: RoHS, OHSAS 18001:2007, lead free, REACH SVHC-163

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1. Based on datasheet review of websites of top 20 manufacturers per IHS, as of Jan, 2021.
4. “SunPower Module 40-Year Useful Life,” Useful Life is defined as 99 out of 100 panels operating at more than 79% of rated power.
5. SunPower 420 W, 22.2% efficient, compared to a Conventional Panel on same-sized arrays (350 W mono PERC, 19% efficient, approx. 1.64 m²).
6. PV Evolution Labs “SunPower Shading Study,” 2013. 30% more energy compared to a conventional front contact panel.
7. SunPower panels are less than 50 dppm, or 0.005%, on over 15 million panels shipped - Source: “A Comparative Study: SunPower DC Solar Module Warranty Claim Rates” 2019.
9. Class C fire rating per IEC 61730.
10. Safety factor 1.5 included.
11. SunPower Maxeon DC panels first received the International Living Future Institute Declare Label in 2016.
12. SunPower Maxeon DC panels are Cradle to Cradle Certified™ Bronze - www.2xcertified.org/products/scorecard/series-x-series_solar_panels_/sunpower_corporation. Cradle to Cradle Certified™ Bronze is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.

### Specifications

- **Frame Profile**
- **A. Cable Length**: 1000 mm +/-10 mm
- **B. LONG SIDE**: 32 mm
- **SHORT SIDE**: 24 mm

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Please read the safety and installation guide.