SunPower® P19-320-BLK

SunPower® Performance Panel for Residential Installations

SunPower Performance Panels wrap front contact cells with 30+ years of SunPower materials and manufacturing expertise. The weakest points of Conventional Panel design are eliminated to deliver superior power, reliability, value and savings.¹

**Engineered for Performance**

*Innovative Design*
- Robust and flexible cell connection technology. Outstanding reliability.
- Conductive adhesive, proven in the aerospace industry.
- Redundant cell to cell connections.

*Proven Performance*
- Named as a Top Performer in all DNV/GL reliability tests.
- Reduced panel temperature due to unique electrical bussing.

**High Power**
Enhanced active area and monocrystalline cells increase power and savings while designing out fragile ribbons and solder bonds on the cells.

**High Performance**
Up to 28% more energy in the same space over 25 years.² Outperforms Conventional Panels in partial shade thanks to unique parallel circuitry. Proprietary bussing design limits power loss, maximizing production during morning and evening shading or soiling.

**Premium Aesthetics**
SunPower® Performance Panels with their black frame and black backsheets blend harmoniously into your roof and add elegance to your home.

**High Reliability**
SunPower Performance Panels are the most deployed shingled solar panel in the world.³ Innovative cell shingling mitigates the leading reliability challenges associated with conventional front contact panels by designing out fragile ribbons and solder bonds on the cells. SunPower stands behind its panels with its industry-leading Complete Confidence Warranty.

**25 Year Combined Warranty**

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### Electrical Data

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Nominal Power (Pnom)</td>
<td>335 W</td>
<td>330 W</td>
<td>325 W</td>
<td>320 W</td>
<td>315 W</td>
<td>310 W</td>
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<tr>
<td>Power Tolerance</td>
<td>+5/−0%</td>
<td>+5/−0%</td>
<td>+5/−0%</td>
<td>+5/−0%</td>
<td>+5/−0%</td>
<td>+5/−0%</td>
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<tr>
<td>Efficiency</td>
<td>19.9%</td>
<td>19.6%</td>
<td>19.3%</td>
<td>19.0%</td>
<td>18.7%</td>
<td>18.4%</td>
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<tr>
<td>Rated Voltage (Vmpp)</td>
<td>37.5 V</td>
<td>37.2 V</td>
<td>36.9 V</td>
<td>36.4 V</td>
<td>35.9 V</td>
<td>35.4 V</td>
</tr>
<tr>
<td>Rated Current (Impp)</td>
<td>8.94 A</td>
<td>8.87 A</td>
<td>8.80 A</td>
<td>8.79 A</td>
<td>8.77 A</td>
<td>8.76 A</td>
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<tr>
<td>Open-Circuit Voltage (Voc)</td>
<td>44.8 V</td>
<td>44.6 V</td>
<td>44.4 V</td>
<td>43.9 V</td>
<td>43.7 V</td>
<td>43.2 V</td>
</tr>
<tr>
<td>Short-Circuit Current (Isc)</td>
<td>9.51 A</td>
<td>9.44 A</td>
<td>9.37 A</td>
<td>9.35 A</td>
<td>9.33 A</td>
<td>9.28 A</td>
</tr>
<tr>
<td>Maximum System Voltage</td>
<td>1000 V</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Maximum Series Fuse</td>
<td>18 A</td>
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<tr>
<td>Power Temp. Coef.</td>
<td>−0.37% / °C</td>
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<tr>
<td>Voltage Temp. Coef.</td>
<td>−0.29% / °C</td>
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<tr>
<td>Current Temp. Coef.</td>
<td>0.05% / °C</td>
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</tbody>
</table>

### Tests And Certifications

- **Standard Tests**: IEC 61215, IEC 61730
- **EHS Compliance**: OHSAS 18001:2007, Recycling Scheme
- **Ammonia Test**: IEC 62716
- **Desert Test**: 10.1109/PVSC.2013.6744437
- **Salt Spray Test**: IEC 61701 (maximum severity)
- **PID Test**: Potential-Induced Degradation free: 1000 V
- **Available Listings**: TUV

### Operating Condition And Mechanical Data

- **Temperature**: −40°C to +85°C
- **Impact Resistance**: 25 mm diameter hail at 23 m/s
- **Solar Cells**: Monocrystalline PERC
- **Tempered Glass**: High-transmission tempered anti-reflective
- **Junction Box**: IP-67, Multi-Contact (MC4), 3 bypass diodes
- **Weight**: 18.7 kg
- **Max. Load**: Wind: 2400 Pa, 245 kg/m² front & back
  - Snow: 5400 Pa, 550 kg/m² front
- **Frame**: Class 1 black anodized (highest AAMA rating)

### References:

1. Independent Shade Study by CFV Laboratory. 2016.
2. SunPower 320 W compared to a Conventional Panel on same sized arrays (260 W, 16% efficient, approx. 1.6 m²), 0.6%/yr degradation (Leidos technical review 2017).
4. Measured at Standard Test Conditions (STC): irradiance of 1000 W/m², AM 1.5, and cell temperature 25°C.
5. Class C fire rating per IEC 61730.

See www.sunpowercorp.co.uk/company/about-sunpower for more reference information.

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