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

**High Power**
Enhanced active area and mono PERC cells optimize power density, while lowering system costs.

**High Performance**
Up to 27% more energy in the same space over 25 years.² Unique parallel circuitry maximizes energy production during morning and evening row-to-row shading, or when panels become soiled.

**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. SunPower's Performance Line is warranted to produce more than 97.5% power in the first year, then declining by 0.5% per year, ending at 85.5% power after 25 years.

**25 Year Combined Warranty**
![Graph showing product warranty length comparison between SunPower Performance Panels and Conventional Panels.](sunpower.com.au)
### Electrical Data

<table>
<thead>
<tr>
<th>Model</th>
<th>SPR-P3-415-COM</th>
<th>SPR-P3-410-COM</th>
<th>SPR-P3-405-COM</th>
<th>SPR-P3-400-COM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power (Pnom)</td>
<td>415 W</td>
<td>410 W</td>
<td>405 W</td>
<td>400 W</td>
</tr>
<tr>
<td>Power Tolerance</td>
<td>+5/-0%</td>
<td>+5/-0%</td>
<td>+5/-0%</td>
<td>+5/-0%</td>
</tr>
<tr>
<td>Efficiency</td>
<td>20.1%</td>
<td>19.9%</td>
<td>19.6%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Rated Voltage (Vmpp)</td>
<td>45.0 V</td>
<td>44.5 V</td>
<td>44.0 V</td>
<td>43.7 V</td>
</tr>
<tr>
<td>Rated Current (Impp)</td>
<td>9.22 A</td>
<td>9.21 A</td>
<td>9.20 A</td>
<td>9.16 A</td>
</tr>
<tr>
<td>Open-Circuit Voltage (Voc)</td>
<td>54.1 V</td>
<td>53.9 V</td>
<td>53.3 V</td>
<td>52.6 V</td>
</tr>
<tr>
<td>Short-Circuit Current (Iscc)</td>
<td>9.90 A</td>
<td>9.89 A</td>
<td>9.88 A</td>
<td>9.83 A</td>
</tr>
<tr>
<td>Maximum System Voltage</td>
<td>1000 V IEC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Series Fuse</td>
<td>18 A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Temp. Coef.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Temp. Coef.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Temp. Coef.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tests And Certifications (Pending)

- **Standard Tests**
  - IEC 61215, IEC 61730
- **Quality Certs**
- **EHS Compliance**
  - OHSAS 18001:2007, Recycling Scheme
- **Ammonia Test**
  - IEC 62716
- **Desert Test**
  - MIL-STD-810G
- **Salt Spray Test**
  - IEC 61701 (maximum severity)
- **LeTID Test**
  - IEC 61215 (MQT 23.1 LeTID detection) draft standard
- **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, Stäubli (MC4), 3 bypass diodes
- **Weight**
  - 22.3 kg
- **Max. Load**
  - Wind: 2400 Pa, 245 kg/m² front & back
  - Snow: 5400 Pa, 550 kg/m² front
- **Frame**
  - Class 2 silver anodized

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1. Independent Shade Study by CFV Laboratory. 2016.
2. SunPower 415 W, 20.1% efficient, compared to a Conventional Panel on same-sized arrays (330 W p-multi, 17% efficient, approx. 1.94 m²), 3% more energy per watt (based on PVSim runs for avg US climate), 0.25%/yr slower degradation rate (Jordan, et. al. Robust PV Degradation Methodology and Application. PVSC 2018).
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.
6. Fraunhofer CSP LID Sensitivity according to IEC 61215 (MQT 23.1 LeTID detection), <1% power loss.

Designed in USA, assembled in China.


Specifications included in this datasheet are subject to change without notice.

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