



- **21.5% efficiency**

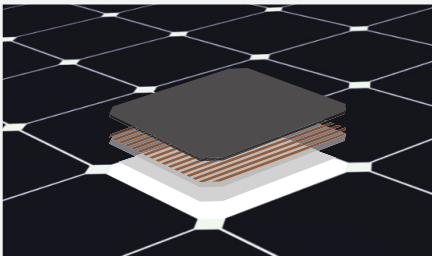
Ideal for roofs where space is at a premium or where future expansion might be needed.

- **Maximum performance**

Designed to deliver the most energy in demanding real world conditions, in partial shade and hot rooftop temperatures.<sup>1, 2, 3</sup>

- **Premium aesthetics**

SunPower® Signature™ Black X-Series panels blend harmoniously into your roof. The most elegant choice for your home.



**Moxeon® Solar Cells: Fundamentally better.**

Engineered for performance, designed for durability.

**Engineered for peace of mind**

Designed to deliver consistent, trouble-free energy over a very long lifetime.<sup>4, 5</sup>

**Designed for durability**

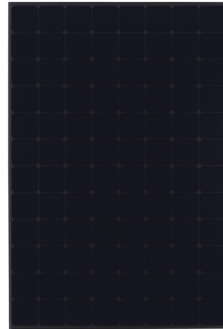
The SunPower Moxeon Solar Cell is the only cell built on a solid copper foundation. Virtually impervious to the corrosion and cracking that degrade Conventional Panels.<sup>4, 5</sup>

Same excellent durability as E-Series panels.

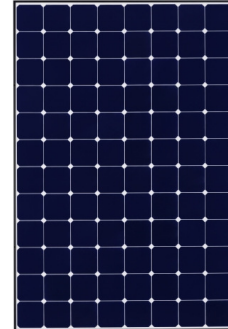
**#1 Ranked** in Fraunhofer durability test.<sup>10</sup>

**100% power** maintained in Atlas 25+ comprehensive PVDI Durability test.<sup>11</sup>

### UNMATCHED PERFORMANCE, RELIABILITY & AESTHETICS



SIGNATURE™ BLACK  
X21 - 335 PANEL



X21 - 345 PANEL



### HIGHEST EFFICIENCY<sup>6</sup>

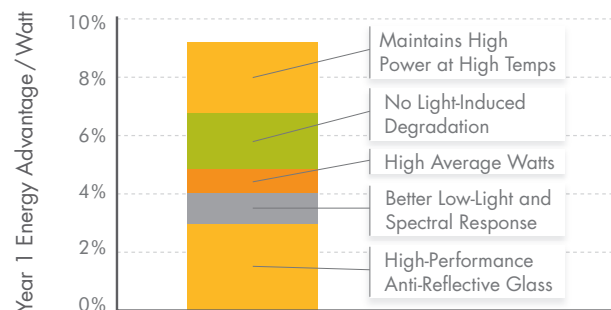
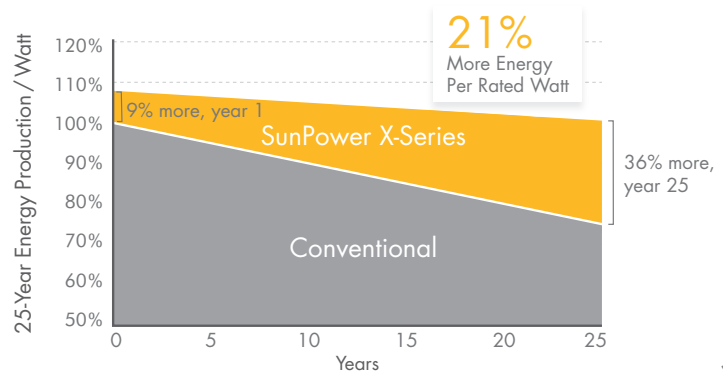
**Generate more energy per square foot**

X-Series residential panels convert more sunlight to electricity producing 44% more power per panel,<sup>1</sup> and 75% more energy per square foot over 25 years.<sup>3, 4</sup>

### HIGHEST ENERGY PRODUCTION<sup>7</sup>

**Produce more energy per rated watt**

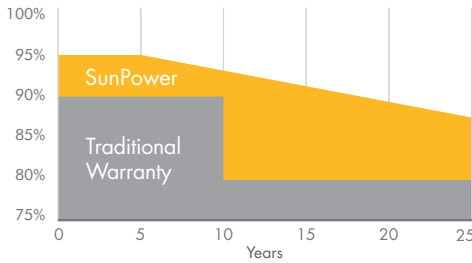
High year one performance delivers 8-10% more energy per rated watt.<sup>3</sup> This advantage increases over time, producing 21% more energy over the first 25 years to meet your needs.<sup>4</sup>



Awarded to SunPower E-Series. X-Series delivers even more energy.<sup>7</sup>

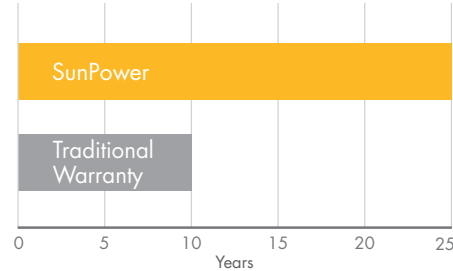
SUNPOWER OFFERS THE BEST COMBINED POWER AND PRODUCT WARRANTY

### POWER WARRANTY



More guaranteed power: 95% for first 5 years, -0.4%/yr. to year 25. <sup>8</sup>

### PRODUCT WARRANTY



Combined Power and Product Defect 25 year coverage that includes panel replacement costs. <sup>9</sup>

#### ELECTRICAL DATA

|   | X21-335-BLK           | X21-345 |
|---|-----------------------|---------|
| Nominal Power <sup>12</sup> (P <sub>nom</sub> ) | 335 W                 | 345 W   |
| Power Tolerance                                 | +5/-0%                | +5/-0%  |
| Avg. Panel Efficiency <sup>13</sup>             | 21.1%                 | 21.5%   |
| Rated Voltage (V <sub>mpp</sub> )               | 57.3 V                | 57.3 V  |
| Rated Current (I <sub>mpp</sub> )               | 5.85 A                | 6.02 A  |
| Open-Circuit Voltage (V <sub>oc</sub> )         | 67.9 V                | 68.2 V  |
| Short-Circuit Current (I <sub>sc</sub> )        | 6.23 A                | 6.39 A  |
| Maximum System Voltage                          | 600 V UL ; 1000 V IEC |         |
| Maximum Series Fuse                             | 20 A                  |         |
| Power Temp Coef. (P <sub>mpp</sub> )            | -0.30% / °C           |         |
| Voltage Temp Coef. (V <sub>oc</sub> )           | -167.4 mV / °C        |         |
| Current Temp Coef. (I <sub>sc</sub> )           | 3.5 mA / °C           |         |

#### OPERATING CONDITION AND MECHANICAL DATA

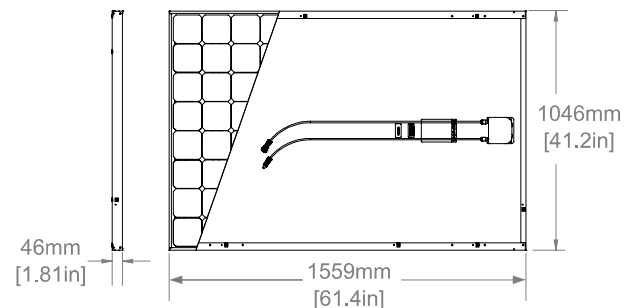
|                   |   |
|-------------------|---|
| Temperature       | - 40°F to +185°F (- 40°C to +85°C)  |
| Max load          | Wind: 50 psf, 2400 Pa, 245 kg/m <sup>2</sup> front & back<br>Snow: 112 psf, 5400 Pa, 550kg/m <sup>2</sup> front |
| Impact resistance | 1 inch (25 mm) diameter hail at 52 mph (23 m/s)   |
| Appearance        | Class A+  |
| Solar Cells       | 96 Monocrystalline Maxeon Gen III Cells   |
| Tempered Glass    | High Transmission Tempered Anti-Reflective  |
| Junction Box      | IP-65 Rated   |
| Connectors        | MC4 Compatible  |
| Frame             | Class 1 black anodized, highest AAMA Rating   |
| Weight            | 41 lbs (18.6 kg)  |

#### TESTS AND CERTIFICATIONS

|                    |   |
|--------------------|---|
| Standard tests     | UL 1703, IEC 61215, IEC 61730                           |
| Quality tests      | ISO 9001:2008, ISO 14001:2004                           |
| EHS Compliance     | RoHS, OHSAS 18001:2007, lead-free                       |
| Ammonia test       | IEC 62716   |
| Salt Spray test    | IEC 61701 (passed maximum severity)                     |
| PID test           | Potential-Induced Degradation free: 1000V <sup>10</sup> |
| Available listings | CEC, UL, TUV, MCS                                       |

#### REFERENCES:

- All comparisons are SPR-X21-345 vs. a representative conventional panel: 240W, approx. 1.6 m<sup>2</sup>, 15% efficiency.
- PVEvolution Labs "SunPower Shading Study," Feb 2013.
- Typically 8-10% more energy per watt, BEW/DNV Engineering "SunPower Yield Report," Jan 2013, with CFV Solar Test Lab Report #12063, Jan 2013 temp. coef. calculation.
- SunPower 0.25%/yr degradation vs. 1.0%/yr conv. panel. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, Feb 2013; Jordan, Dirk "SunPower Test Report," NREL, Oct 2012.
- "SunPower Module 40-Year Useful Life" SunPower white paper, Feb 2013. Useful life is 99 out of 100 panels operating at more than 70% of rated power.
- Out of all 2600 panels listed in Photon International, Feb 2012.
- 1% more energy than E-Series panels, 8% more energy than the average of the top 10 panel companies tested in 2012 (151 panels, 102 companies), Photon International, March 2013.
- Compared with the top 15 manufacturers. SunPower Warranty Review, Feb 2013.
- Some exclusions apply. See warranty for details.
- X-Series same as E-Series, 5 of top 8 panel manufacturers were tested by Fraunhofer ISE, "PV Module Durability Initiative Public Report," Feb 2013.
- Compared with the non-stress-tested control panel. X-Series same as E-Series, tested in Atlas 25+ Durability test report, Feb 2013.
- Standard Test Conditions (1000 W/m<sup>2</sup> irradiance, AM 1.5, 25° C).
- Based on average of measured power values during production.



See <http://www.sunpowercorp.com/facts> for more reference information.

For further details, see extended datasheet: [www.sunpowercorp.com/datasheets](http://www.sunpowercorp.com/datasheets) Read safety and installation instructions before using this product.

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