



- **21.5% efficiency**

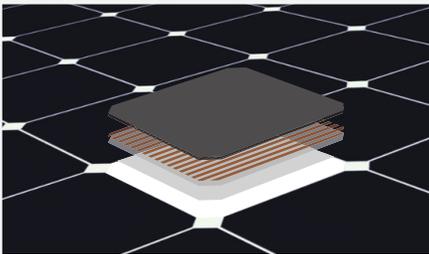
Ideal for roofs where space is at a premium or where future expansion might be needed.

- **Maximum performance**

Designed to deliver the most energy in demanding real world conditions, in partial shade and hot rooftop temperatures.^{1, 2, 3}

- **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.^{4,5}

Designed for durability

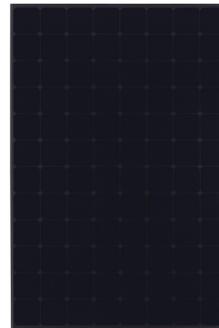
The SunPower Moxeon Solar Cell is the only cell built on a solid copper foundation. Virtually impervious to the corrosion and cracking that degrade Conventional Panels.^{4,5}

Same excellent durability as E-Series panels.

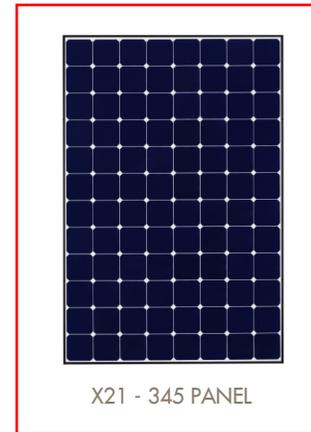
#1 Ranked in Fraunhofer durability test.¹⁰

100% power maintained in Atlas 25+ comprehensive PVDI Durability test.¹¹

UNMATCHED PERFORMANCE, RELIABILITY & AESTHETICS



SIGNATURE™ BLACK
X21 - 335 PANEL



X21 - 345 PANEL



HIGHEST EFFICIENCY⁶

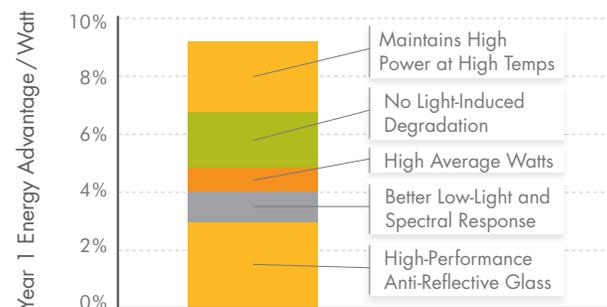
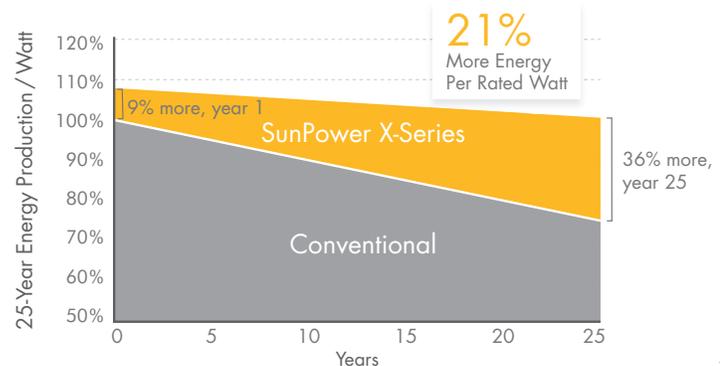
Generate more energy per square foot

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

HIGHEST ENERGY PRODUCTION⁷

Produce more energy per rated watt

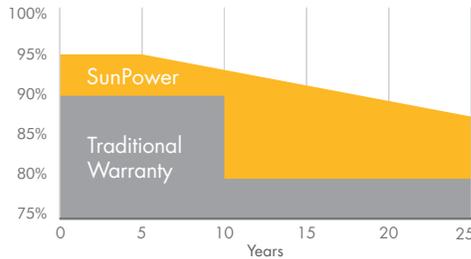
High year one performance delivers 8-10% more energy per rated watt.³ This advantage increases over time, producing 21% more energy over the first 25 years to meet your needs.⁴



Awarded to SunPower E-Series. X-Series delivers even more energy.⁷

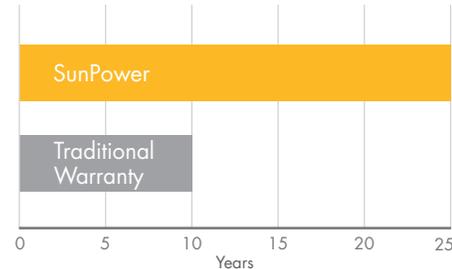
SUNPOWER OFFERS THE BEST COMBINED POWER AND PRODUCT WARRANTY

POWER WARRANTY



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

PRODUCT WARRANTY



Combined Power and Product Defect 25 year coverage that includes panel replacement costs. ⁹

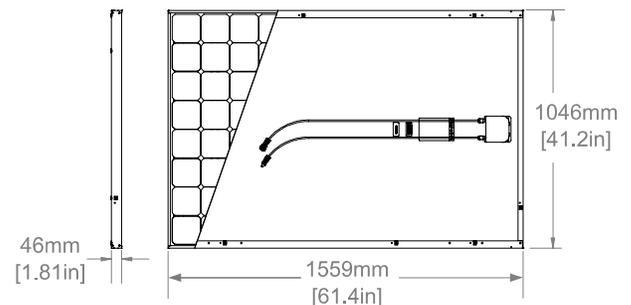
| ELECTRICAL DATA | | |
|-------------------------------------|-----------------------|---------|
| | X21-335-BLK | X21-345 |
| Nominal Power ¹² (Pnom) | 335 W | 345 W |
| Power Tolerance | +5/-0% | +5/-0% |
| Avg. Panel Efficiency ¹³ | 21.1% | 21.5% |
| Rated Voltage (Vmpp) | 57.3 V | 57.3 V |
| Rated Current (Impp) | 5.85 A | 6.02 A |
| Open-Circuit Voltage (Voc) | 67.9 V | 68.2 V |
| Short-Circuit Current (Isc) | 6.23 A | 6.39 A |
| Maximum System Voltage | 600 V UL ; 1000 V IEC | |
| Maximum Series Fuse | 20 A | |
| Power Temp Coef. (Pmpp) | -0.30% / °C | |
| Voltage Temp Coef. (Voc) | -167.4 mV / °C | |
| Current Temp Coef. (Isc) | 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 ² front & back Snow: 112 psf, 5400 Pa, 550kg/m ² 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 ¹⁰ |
| Available listings | CEC, UL, TUV, MCS |

REFERENCES:

- All comparisons are SPR-X21-345 vs. a representative conventional panel: 240W, approx. 1.6 m², 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.
- Higher than E Series which is highest of all 2600 panels listed in Photon Int'l, 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 Int'l, Mar 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/m² 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 Read safety and installation instructions before using this product.