

SunPower® P-Series: P19-405-COM

SunPower Performance Series Commercial Panel

SunPower® Performance Series 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



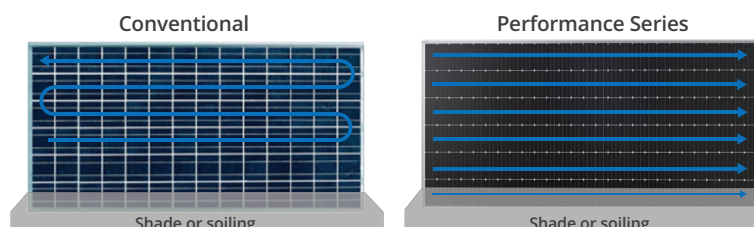
High Power

Enhanced active area increases power and savings while designing out fragile ribbons and solder bonds on the cells.

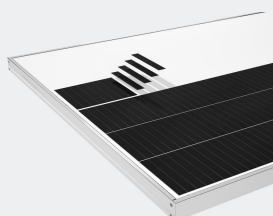


High Performance and Lifetime Savings

Up to 32% more energy in the same space over 25 year.² Outperforms conventional panels in partial shade thanks to unique parallel circuitry. Proprietary bussing design limits power loss, maximizing production during morning and evening row-to-row shading or soiling.



Engineered for Performance



Designed for Reliability

- 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
- 15% more power and reduced panel temperature due to unique electrical bussing

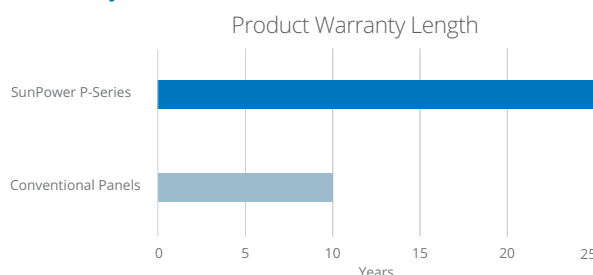


High Reliability, Backed with Confidence

Performance Series is the most deployed shingled solar panel in the world,³ with proven results. Innovative shingled design eliminates many of the reliability challenges of traditional front contact panels. SunPower stands behind its panels with its industry-leading Complete Confidence Warranty.



25 Year Combined Warranty Protects your investment

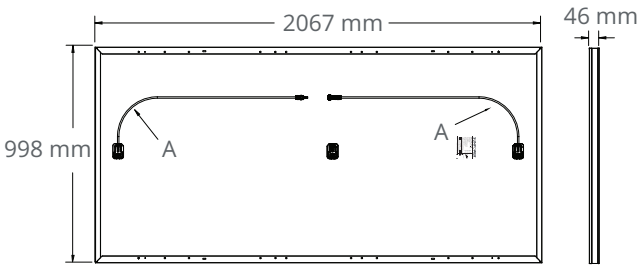


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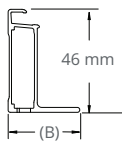
Electrical Data						
Model	SPR-P19-405-COM	SPR-P19-400-COM	SPR-P19-395-COM	SPR-P19-390-COM	SPR-P19-385-COM	SPR-P19-380-COM
Nominal Power (P _{nom}) ³	405 W	400 W	395 W	390 W	385 W	380 W
Power Tolerance	+5/-0%	+5/-0%	+5/-0%	+5/-0%	+5/-0%	+5/-0%
Efficiency	19.6%	19.4%	19.1%	18.9%	18.7%	18.4%
Rated Voltage (V _{mpp})	43.6 V	43.4 V	43.2 V	43.1 V	42.8 V	42.6 V
Rated Current (I _{mpp})	9.28 A	9.22 A	9.14 A	9.05 A	8.99 A	8.92 A
Open-Circuit Voltage (V _{oc})	52.9 V	52.7 V	52.5 V	52.3 V	52.0 V	51.8 V
Short-Circuit Current (I _{sc})	9.87 A	9.80 A	9.72 A	9.63 A	9.58 A	9.49 A
Power Temp. Coef.	-0.36% / ° C					
Voltage Temp. Coef.	-0.29% / ° C					
Current Temp. Coef.	0.05% / ° C					
Maximum System Voltage	1000 V IEC					
Maximum Series Fuse	15 A					

Tests And Certifications	
Standard Tests ⁴	IEC 61215, IEC 61730
Quality Certs	ISO 9001:2008, ISO 14001:2004
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
Appearance	Class A
Solar Cells	Monocrystalline PERC
Tempered Glass	High-transmission tempered anti-reflective
Junction Box	IP-67, (MC4), 3 bypass diodes
Weight	23.1 kg
Max. Load	Wind: 2400 Pa, 245 kg/m² front & back Snow: 5400 Pa, 550 kg/m² front
Frame	Class 2 silver anodized



FRAME PROFILE



- (A) Portrait Cable: 1000 mm +/-15 mm
(B) Long Side: 32 mm
Short Side: 24 mm

REFERENCES:

- 1 Independent Shade Study by CFV Laboratory.
- 2 SunPower 405 W compared to a Conventional Panel on same sized arrays (310 W, 15.8% efficient, approx. 1.6 m²), 0.6%/yr degradation (Leidos technical review 2017).
- 3 Osborne, "SunPower supplying P-Series modules to a 125MW NextEra project." PV-Tech.org. March 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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