

SOLAR POWER PANELS



SOLAHART SILHOUETTE N-TYPE RESIDENTIAL PANELS

SOLAHART415S5



The new Solahart Silhouette panel is our most advanced PV panel ever, featuring ultra-high performance, superior efficiency, and an impressive 30-year performance warranty. With its signature all-black design and innovative cell technology, it's the ideal solution for Australian homes.

This new model boosts panel efficiency to up to 21.3%, and with positive tolerance of up to 5W, guarantees that each Silhouette panel will have a rated maximum power on or above 415W at Standard Test Conditions.⁽¹⁾

The state-of-the-art n-type, monocrystalline half-cell and multi-busbar design offers excellent performance under Australian conditions, on hot summer days and even in low-light environments.

An exceptionally low panel degradation of 1% in the first year and 0.4% thereafter, combined with a lower temperature coefficient, means higher power generation and higher savings over the life of the system compared to p-type PERC panels in the same power class.

The exceptional 25-Year Solahart Australian Product Warranty and a 30-Year Performance Guarantee provide ultimate confidence and peace of mind.*

How you benefit:



MODERN DESIGN

Premium n-type technology with a contemporary design and striking all-black finish



HIGH SOLAR YIELD

Excellent low-light and temperature behaviour results in more energy production per square metre of panels.



HIGH PERFORMANCE

High efficiency (21.3%) and lower degradation for excellent performance and reliability.



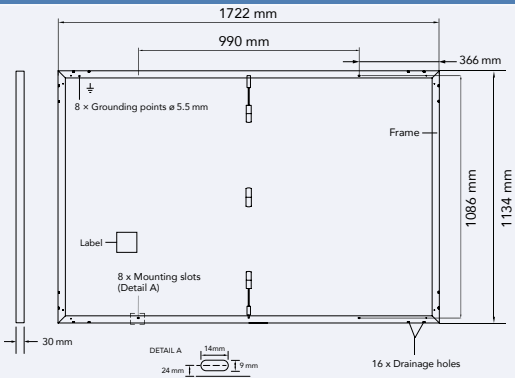
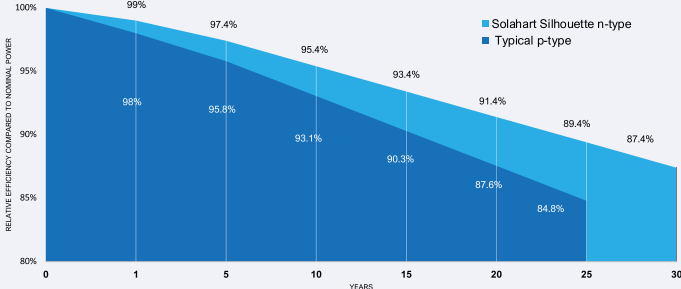
DESIGNED FOR AUSTRALIA

Designed for Australia to perform in all conditions, from low-light environment to high temperatures.



SOLAHART WARRANTY

25-Year Solahart Product Warranty for peace of mind, plus a 30-Year Performance Guarantee for long-term returns.*

Model	SOLAHART415S5	
Mechanical Data		
Dimensions (H x W x D)	1722 x 1134 x 30 mm (including frame)	
Weight	21.3 Kg	
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology	
Back Cover	Composite film	
Frame	Black Anodised Aluminium	
Cell	6 x 18 n-type monocrystalline solar half-cells	
Junction Box	Protection class IP68, with bypass diodes	
Cable	4 mm ² solar cable; (+) 1200 mm, (-) 1200 mm	
Connector	Stäubli MC4 connectors (PV-KST4 & PV-KSB4), IP68	
		
Electrical Data		
Minimum performance at standard test conditions, STC ⁽¹⁾ (Power Tolerance +5 W / -0 W)		
Power at MPP ⁽²⁾ - P _{MPP}	415 Wp	
Short circuit current ⁽²⁾ - I _{sc}	13.76 A	
Open circuit voltage ⁽²⁾ - V _{oc}	37.80 V	
Current at MPP# - I _{MPP}	13.06 A	
Voltage at MPP# - V _{MPP}	31.76 V	
Efficiency ⁽¹⁾ - η	21.3 %	
Minimum performance at normal operating conditions, NMOT ⁽³⁾		
Power at MPP - P _{MPP}	312.1 Wp	
Short circuit current# - I _{sc}	11.11 A	
Open circuit voltage# - V _{oc}	35.91 V	
Current at MPP# - I _{MPP}	10.44 A	
Voltage at MPP# - V _{MPP}	29.90 V	
Other information		
Part Number	SOLAHART415S5	
Solahart Product Warranty*	25 years	
Performance Guarantee*	30 years	
Country of Manufacture	China	
Temperature Coefficients		Performance Guarantee
Normal module operating temperature (NMOT)	41+/-2 °C	
Temperature coefficient of P _{MPP} - γ	-0.30 % / °C	
Temperature coefficient of V _{oc} - β	-0.24 % / °C	
Temperature coefficient of I _{sc} - α	+0.043 % / °C	
Qualifications and Certificates		
IEC 61215: 2016; IEC 61730: 2016, Application class II.		
Properties for System Design		
Permitted module temp on continuous duty	-40°C up to +85°C	
Maximum system voltage - V _{SY}	1500 V	
Maximum reverse current - I _R	25 A	
Maximum design load, Push / Pull	3600 / 1600 Pa	
Maximum test load, Push / Pull	5400 / 2400 Pa	
Safety class	II	
Fire rating based on ANSI / UL 61730	C / TYPE 2	
At least 99% of nominal power during the first year. Thereafter max 0.4% degradation per year.		
At least 95.4% of nominal power up to 10 years.		
At least 89.4% of nominal power up to 25 years.		
At least 87.4% of nominal power up to 30 years.		
All data within measurement tolerances.		

Specifications and designs included in this data sheet are subject to change without notice.

⁽¹⁾1000 W/m², 25±2°C, AM 1.5 G. ⁽²⁾Measurement tolerances PMPP ±3 %; ISC, VOC ±5 % at STC. ⁽³⁾800 W/m², NMOT, spectrum AM 1.5 G. # Typical values, actual values may differ.

* 25-year Solahart Product Warranty covers certain defects with the Solahart Silhouette panels. Please refer to the 'Solahart PV Systems Owner's Guide' for full details, available on Solahart's website www.solahart.com.au. 30-year Performance Guarantee is provided by the manufacturer of the Solahart Silhouette panels and guarantees the maximum reduction in power output performance of the panels over a 30-year period. Neither the Solahart Product Warranty nor the Performance Guarantee are intended to exclude, restrict or modify your rights under the Australian Consumer Law.

*APT test conditions according to IEC/TS 62804-1:2015, method B (-1500 V, 168 h).