

# SOLAR POWER PANELS



## SOLAHART SILHOUETTE® N-TYPE BIFACIAL RESIDENTIAL PANELS

SOLAHART450BRB2



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

This new model boosts panel efficiency to up to 22.5%, and with positive tolerance of up to 5W, guarantees that each Silhouette panel will have a rated maximum power on or above 450W at Standard Test Conditions.<sup>(1)</sup>

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

Dual-glass design enhances the safety with Class A Fire rating and is more resilient to micro-cracks. Overall, it makes the panels more reliable and long lasting.

The exceptional 30 year Performance Guarantee assures at least 89.4% of nominal power at 25 years and at least 87.4% at 30 years.

Every Solahart system is backed by a trusted Solahart Australia Warranty that offers the advantage of local on-the-ground support to deliver true peace of mind. With more than 70 years of solar experience and over 60 Dealerships across Australia, we're here for the long haul.

### How you benefit:



#### MODERN DESIGN

Premium n-type bifacial dual-glass 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 (22%) 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

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

Model		SOLAHART450BRB2						
<b>Mechanical Data</b>			<b>Performance Guarantee</b>					
Dimensions (H x W x D)	1762 x 1134 x 30 mm (including frame)							
Weight	21.5 Kg							
Front / Back Glass	1.6 mm front and 1.6 mm back, thermally pre-stressed glass with anti-reflection technology							
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 <sup>2</sup> solar cable; (+) 1200 mm, (-) 1200 mm							
Connector	Stäubli MC4 EVO2A connectors (PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy)							
<b>Electrical Data</b>						Minimum performance at standard test conditions, STC <sup>(1)</sup> (Power Sorting 0 - +3%, Power Tolerance: +/-3.5%)		
						Minimum performance at normal operating conditions, NMOT <sup>(3)</sup>		
Power at MPP <sup>(2)</sup> - P <sub>MPP</sub>	450 Wp		338.4 Wp					
Short circuit current <sup>(2)</sup> - I <sub>sc</sub>	14.28 A		11.53 A					
Open circuit voltage <sup>(2)</sup> - V <sub>oc</sub>	39.40 V		37.42 V					
Current at MPP# - I <sub>MPP</sub>	13.48 A		10.77 A					
Voltage at MPP# - V <sub>MPP</sub>	33.39 V		31.43 V					
Efficiency <sup>(1)</sup> - η	22.50%							
<b>Electrical Specifications (Integrated power)</b>								
P <sub>MPP</sub> Gain	P <sub>MPP</sub>	V <sub>MPP</sub>	I <sub>MPP</sub>	V <sub>oc</sub>	I <sub>sc</sub>			
5%	462	33.05	13.98	39.00	14.81			
10%	484	33.05	14.64	39.00	15.51			
15%	506	33.05	15.31	39.00	16.22			
20%	528	33.05	15.98	39.00	16.92			
25%	550	33.05	16.64	39.00	17.63			
Electrical characteristics with different rear power gain (reference to 440W). Refer to the installation manual for BNPI electrical ratings and bifaciality coefficients for Voc, Isc, and Pmax.								
<b>Other information</b>								
Part Number	SOLAHART450BRB2							
Solahart Product Warranty*	30 years							
Performance Guarantee*	30 years							
Country of Manufacture	China							
<b>Temperature Coefficients</b>			<b>Dimensions - Measurements in mm</b>					
Normal module operating temperature (NMOT)	41+/-2 °C							
Temperature coefficient of P <sub>MPP</sub> - γ	-0.29 % / °C							
Temperature coefficient of V <sub>oc</sub> - β	-0.25 % / °C							
Temperature coefficient of I <sub>sc</sub> - α	+0.043 % / °C							
<b>Qualifications and Certificates</b>								
IEC 61215: 2021; IEC 61730: 2016, Application class II.								
<b>Properties for System Design</b>								
Permitted module temp on continuous duty	-40°C up to +85°C							
Maximum system voltage - V <sub>sys</sub>	1500 V							
Maximum reverse current - IR	30 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	Class A							

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

<sup>(1)</sup>1000 W/m<sup>2</sup>, 25±2°C, AM 1.5 G. <sup>(2)</sup>Measurement tolerances P<sub>MPP</sub> ±3.5 %; I<sub>sc</sub> ±5 %, V<sub>oc</sub> ±3.5 % at STC. <sup>(3)</sup>800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5 G. # Typical values, actual values may differ.

\* 30-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](http://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.