

# SOLAR POWER PANELS



## SOLAHART SILHOUETTE® N-TYPE BIFACIAL RESIDENTIAL PANELS

SOLAHART440BRB1



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%, and with positive tolerance of up to 5W, guarantees that each Silhouette panel will have a rated maximum power on or above 440W 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		SOLAHART440BRB1						
<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 EVO 2A & PV-KBT4 EVO 2A)							
<b>Electrical Data</b>						Minimum performance at standard test conditions, STC <sup>(1)</sup> (Power Sorting O - +5W)		
						Minimum performance at normal operating conditions, NMOT <sup>(3)</sup>		
Power at MPP <sup>(2)</sup> - P <sub>MPP</sub>	440 Wp		330.9 Wp					
Short circuit current <sup>(2)</sup> - I <sub>sc</sub>	14.10 A		11.38 A					
Open circuit voltage <sup>(2)</sup> - V <sub>oc</sub>	39.00 V		37.04 V					
Current at MPP <sup>#</sup> - I <sub>MPP</sub>	13.31 A		10.64 A					
Voltage at MPP <sup>#</sup> - V <sub>MPP</sub>	33.05 V		31.11 V					
Efficiency <sup>(1)</sup> - η	22.00%							
<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)								
<b>Other information</b>								
Part Number	SOLAHART440BRB1							
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: 2016; 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.