

SOMERA VSMDHT.72.AAA.05 | MONOCRYSTALLINE SOLAR PV MODULES | 144 CELLS | 435-460 WATT

# SOMERA P-DUPLEX HALF-CELL 144 P-TYPE BIFACIAL MODULE

**PRELIMINARY  
DATASHEET**



Excellent anti-staining performance of the backsheet requires significantly **LESSER CLEANING FREQUENCY OF REAR SIDE** of the module, leading to reduction in water usage



**EFFECTIVE GAIN OF 1% OF CELL ACTIVE AREA** by using cylindrical tabbing wire



**HIGHER LIFETIME YIELD** by using transparent Dupont® backsheet



**UP TO 15% POWER GAIN** from ground facing side



Bypass diodes and innovative series-parallel connections enable the module to perform better in **PARTIAL SHADOW CONDITIONS**



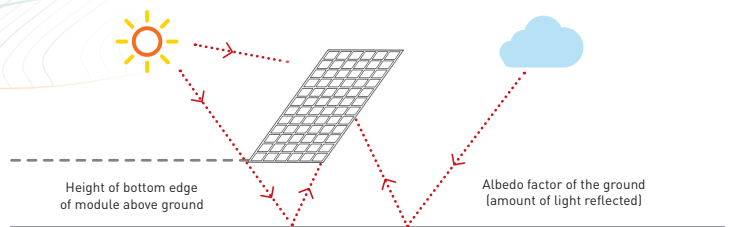
**BETTER TOLERANCE TO MICRO CRACK** Higher number of busbar makes the PV modules less prone to loss in efficiency due to micro-cracks.



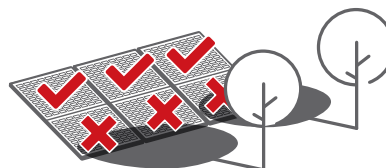
**IMPROVED FIELD RELIABILITY** due to multiple contact points on the cell.



**LIGHT WEIGHT** easy to install bifacial module with increased robustness



## INCREASED SHADE TOLERANCE



### HALF-CELL MODULE

Functions like two parallel modules, enabling the half-cell string to work in partial shading



### QUALITY AND SAFETY

- ♦ 27 years of linear power output warranty \*\*
- ♦ Rigorous quality control meeting the highest international standards
- ♦ 100% EL tested to minimise micro crack
- ♦ Excellent anti-PID performance
- ♦ Positive power tolerance

### APPLICATIONS

- ♦ Utility scale applications
- ♦ Greenhouse applications
- ♦ Agricultural industry applications

# TECHNICAL DATA

## SOMERA P-DUPLEX HALF-CELL 144 P-TYPE BIFACIAL MODULE

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSM DHT.72.AAA.05 (AAA=435-460)

### Electrical Data<sup>1,2</sup> All data refers to STC (AM 1.5, 1000 W/m<sup>2</sup>, 25°C)

Peak Power P <sub>max</sub> (Wp)	435	440	445	450	455	460
Maximum Voltage V <sub>mpp</sub> (V)	41.4	41.5	41.5	41.6	41.6	41.7
Maximum Current I <sub>mpp</sub> (A)	10.51	10.62	10.72	10.82	10.93	11.03
Open Circuit Voltage V <sub>oc</sub> (V)	48.7	48.8	48.9	49	49.1	49.2
Short Circuit Current I <sub>sc</sub> (A)	11.45	11.56	11.67	11.77	11.88	11.99
Module Efficiency η(%)	19.56	19.79	20.01	20.23	20.46	20.68

1) STC:1000 W/m<sup>2</sup> irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3. 2) Power measurement uncertainty is within +/- 3%.

### Electrical Parameters at NOCT<sup>3</sup>

Power (W)	325	328	332	336	339	343
V@P <sub>max</sub> (V)	38.1	38.2	38.2	38.3	38.3	38.4
I@P <sub>max</sub> (A)	8.51	8.6	8.68	8.76	8.85	8.93
V <sub>oc</sub> (V)	45.8	45.9	46	46.1	46.2	46.2
I <sub>sc</sub> (A)	9.16	9.25	9.33	9.42	9.5	9.59

3) NOCT irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C, wind speed 1 m/sec

### Equivalent Bifacial Output

Bifacial Gain	Overall Power output (W)					
5%	457	462	467	473	478	483
10%	479	484	490	495	501	506
15%	500	506	512	518	523	529

### Temperature Coefficients (Tc) permissible operating conditions

Tc of Open Circuit Voltage (β)	-0.27%/°C
Tc of Short Circuit Current (α)	0.065%/°C
Tc of Power (γ)	-0.35%/°C
Maximum System Voltage	1500V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

### Mechanical Data

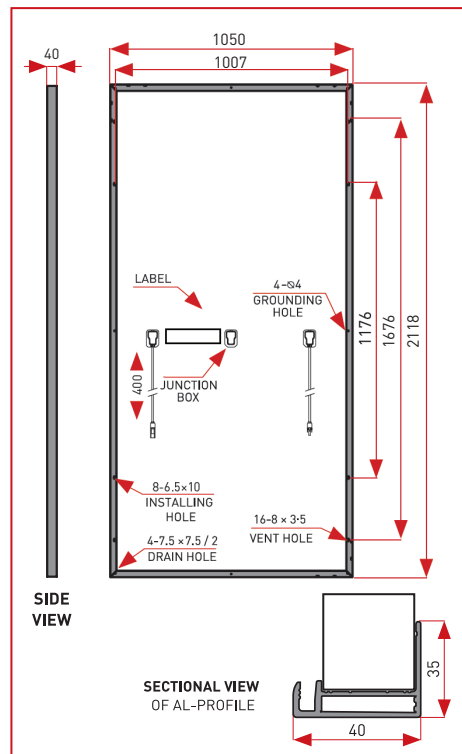
Length × Width × Height	2118 × 1050 × 40mm (83.38 × 41.33 × 1.57 inches)
Weight	25.3 Kg (55.7 lbs)
Junction Box	IP68/IP67, Split Junction Box with individual bypass diodes
Cable & Connectors <sup>#</sup>	400 mm length cables, MC4 Compatible/MC4 Connectors
Application Class	Class A (Safety class II)
Superstrate	3.2 mm (0.125 inches) high transmission low iron tempered glass, AR coated
Cells	72 Mono PERC (144 half-cells) P-Type Bifacial solar cells
Back Sheet	High Transmittance Composite film with Clear Tedlar® from Dupont®
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	20 A

### Warranty and Certifications

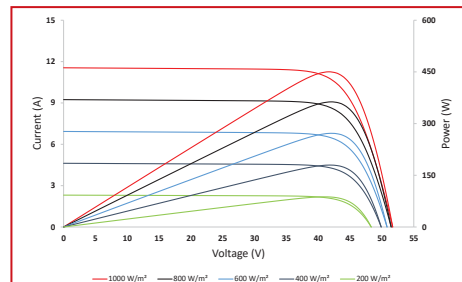
Product Warranty**	10 years
Performance Warranty**	Linear Power Warranty for 27 years with 3% for 1st year degradation and 0.65% from year 2 to year 27
Approvals and Certificates <sup>^</sup>	IEC 61215 : 2016, IEC 61730 : 2016, IEC 61701, IEC 62716, IEC 60068-2-68, IEC 62804, CE, CEC (California), UL 1703

<sup>^</sup> All (\*) certifications under progress. <sup>\*\*</sup> Refer to Vikram Solar's warranty document for terms and conditions. <sup>1</sup> \* 1200mm (47.24 inches) cable length is also available

### Dimensions in mm

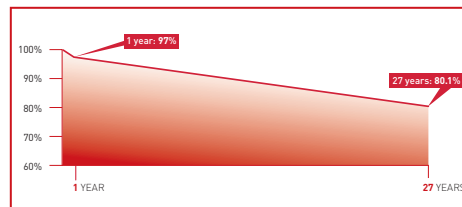


### Typical I-V Curves<sup>4</sup>



4) Average relative efficiency reduction of 5% at 200 W/m<sup>2</sup> according to EN 60904-1.

### Performance Warranty



### Packaging Information

Quantity /Pallet	27
Pallets/Container (40' HC)	20
Quantity/Container (40' HC)	540

**CAUTION:** READ SAFETY AND INSTALLATION MANUAL BEFORE USING THE PRODUCT.

Specifications included in this datasheet are subject to change without notice. Electrical data without guarantee. Please confirm your exact requirement with the company representative while placing your order.

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