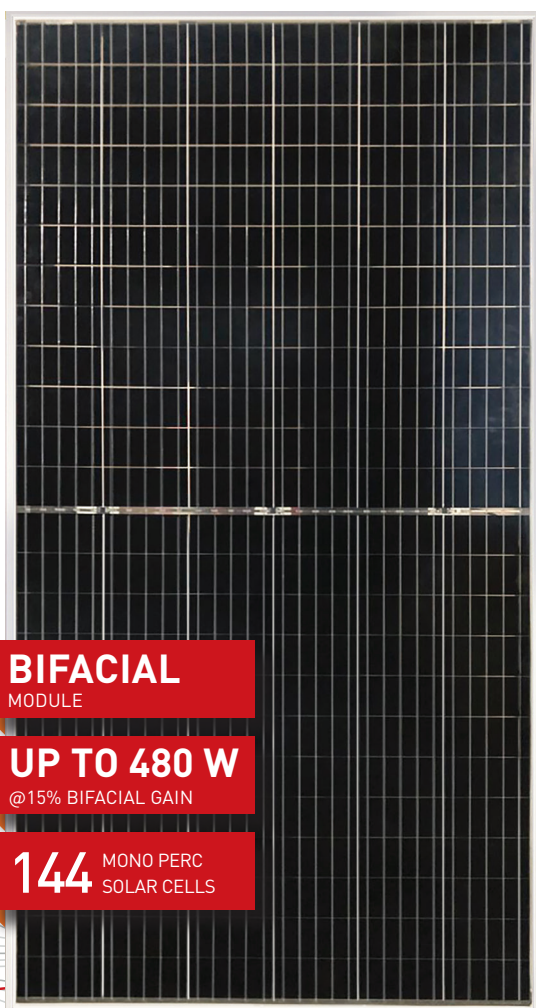


SOMERA P-DUPLEX HALF-CELL 144 P-TYPE BIFACIAL MODULE

PRELIMINARY
DATASHEET

Product
Available from
April 2020



BIFACIAL
MODULE

UP TO 480 W
@ 15% BIFACIAL GAIN

144 MONO PERC
SOLAR CELLS



UP TO 27 YEARS linear power warranty



HIGHER LIFETIME YIELD by using transparent Dupont® backsheet



UP TO 15% POWER GAIN from ground facing side



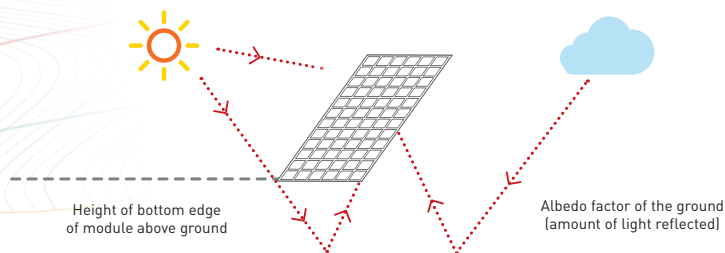
Bypass diodes and innovative series-parallel connections enable the module to perform better in **PARTIAL SHADOW CONDITIONS**



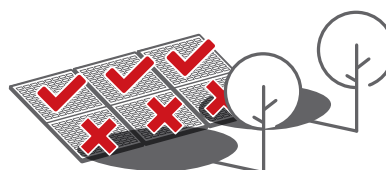
Half-cell generates only half the current, lowering heat production and **LESS HOT SPOT**, increasing module reliability



LIGHT WEIGHT easy to install bifacial module



INCREASED SHADE TOLERANCE



HALF-CELL MODULE

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



Ⓐ Applicable in USA | Ⓜ Applicable in Europe, Indian Subcontinent and ROW (excluding USA) | ⚡ Applicable in India

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
- Certified for salt mist corrosion resistance – severity VI
- 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=380-420)

Electrical Data^{1,2} All data refers to STC (AM 1.5, 1000 W/m², 25°C)

Peak Power P _{max} (Wp) [0~ +4.99Wp]	380	385	390	395	400	405	410	415	420
Maximum Voltage V _{mpp} (V)	40.3	40.4	40.5	40.6	40.7	40.8	41.1	41.3	41.4
Maximum Current I _{mpp} (A)	9.43	9.53	9.62	9.73	9.83	9.92	9.97	10.06	10.14
Open Circuit Voltage V _{oc} (V)	47.2	47.3	47.4	47.5	47.6	47.7	48.0	48.2	48.2
Short Circuit Current I _{sc} (A)	10.05	10.17	10.28	10.39	10.51	10.61	10.67	10.77	10.88
Module Efficiency η(%)	18.63	18.88	19.13	19.37	19.62	19.86	20.11	20.35	20.60

1) STC:1000 W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3. 2) Power measurement uncertainty is within +/- 3%.

Electrical Parameters at NOCT³

Power (W)	281.2	284.9	288.6	292.3	296.0	299.7	303.4	307.1	310.8
V@P _{max} (V)	37.1	37.2	37.3	37.4	37.4	37.6	37.8	38.0	38.1
I@P _{max} (A)	7.56	7.64	7.72	7.81	7.89	7.96	8.00	8.07	8.14
V _{oc} (V)	43.6	43.7	43.8	44.0	44.0	44.2	44.4	44.6	44.6
I _{sc} (A)	8.05	8.14	8.23	8.31	8.40	8.48	8.54	8.62	8.71

3) NOCT irradiance 800 W/m², ambient temperature 20°C, wind speed 1 m/sec

Equivalent Bifacial Output

Bifacial Gain	Overall Power output (W)								
5%	410	415	420	425	431	436	441		
10%	429	435	440	446	451	457	462		
15%	449	454	460	466	472	477	483		

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	2025 × 1007 × 40 mm [79.72 × 39.64 × 1.57 inches]
Weight	22.8 kg (50.26 lbs)
Junction Box	IP68/IP67, Split Junction Box with individual bypass diodes
Cable & Connectors [#]	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^	IEC 61215 : 2016, IEC 61730 : 2016, IEC 61701, IEC 62716, IEC 60068-2-68, IEC 62804, CE, CEC (California), UL 1703

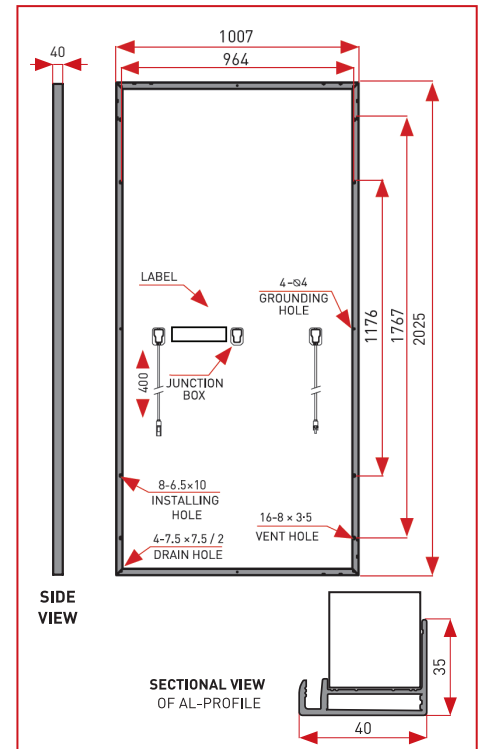
* All (*) certifications under progress. ** Refer to Vikram Solar's warranty document for terms and conditions. † 1200mm (47.24 inches) cable length is also available

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

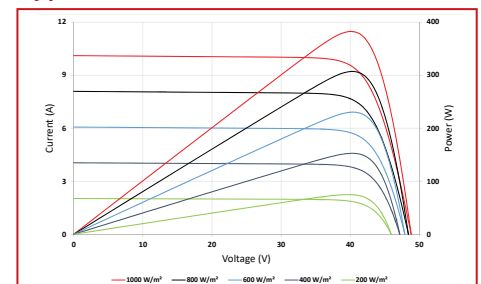
Specifications included in this datasheet are subject to change without notice. Electrical data without guarantee. Please confirm your exact requirement with the company representative while placing your order.

*Vikram Solar & Somera are Trademarks of Vikram Solar Limited registered in India.

Dimensions in mm

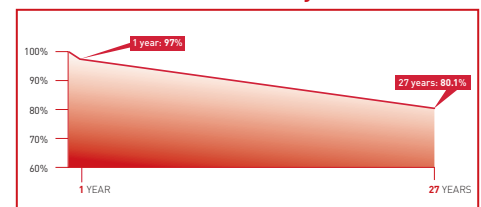


Typical I-V Curves⁴



4) Average relative efficiency reduction of 5% at 200 W/m² according to EN 60904-1.

Performance Warranty



Packaging Information

Quantity /Pallet	27
Pallets/Container (40' HC)	22
Quantity/Container (40' HC)	594