

# somera

HIGH EFFICIENCY MONOFACIAL PV MODULES

## 525-550W

MAXIMUM EFFICIENCY %

21.33

POSITIVE POWER TOLERANCE WP

0~+4.99

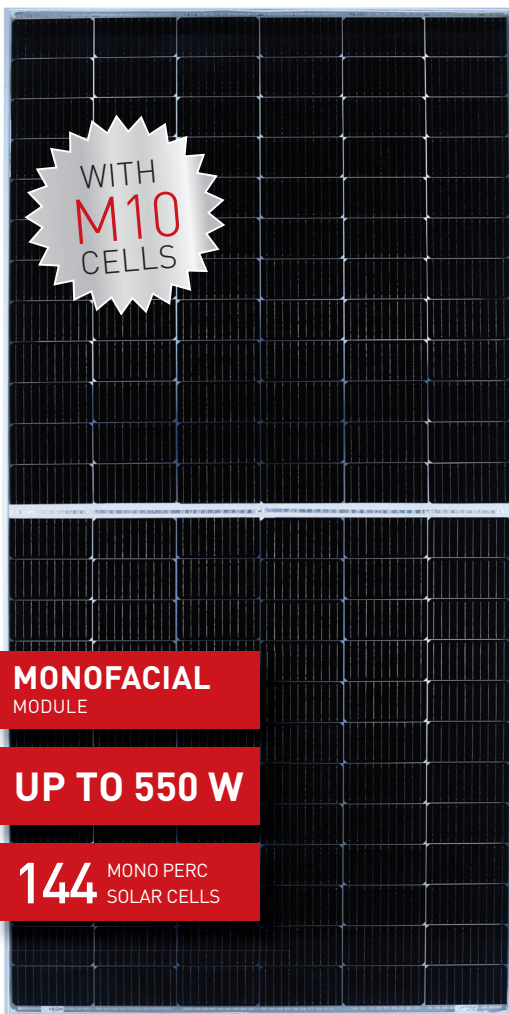
CELLS

M10 144

MODULE TECHNOLOGY

**HALF CUT & MICRO GAP DESIGN**

WITH IMPROVED SHADE TOLERANCE



**CYLINDRICAL TABBING WIRE** increases cell absorption by enhancing scattering effects



Implementation of bypass diodes in split JB series-parallel connections enable the module to perform in **PARTIAL SHADOW CONDITIONS** with respect to full-cell module



**HIGHER NUMBER OF BUSBARS** make the PV modules less prone to loss in efficiency and increases tolerance to micro cracks



**FIELD RELIABILITY** is improved due to multiple contact points on the cell which lowers the cell stress during module fabrication



**LCOE IS CUT BACK** by using M10 size solar cell with adding more power output than lower size cell module



**LOWER INTERNAL RESISTANCE** boosts module power helping to achieve minimal power loss with respect to previous variant modules



FRAME SUPERSTRATE SUBSTRATE

SILVER

GLASS

BACKSHEET  
WHITE

### APPLICATIONS

- ♦ On-grid large scale utility systems
- ♦ On-grid rooftop industrial and commercial systems
- ♦ Rooftop residential systems



**vikramsolar**  
CREATING CLIMATE FOR CHANGE

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMH.72.AAA.05 (AAA=525-550)

### 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)	525	530	535	540	545	550
Maximum Voltage V <sub>mpp</sub> (V)	41.4	41.5	41.6	41.7	41.8	41.9
Maximum Current I <sub>mpp</sub> (A)	12.69	12.78	12.87	12.95	13.04	13.13
Open Circuit Voltage V <sub>oc</sub> (V)	49.2	49.3	49.4	49.5	49.6	49.7
Short Circuit Current I <sub>sc</sub> (A)	13.4	13.48	13.56	13.64	13.73	13.82
Module Efficiency η[%]	20.36	20.55	20.75	20.94	21.13	21.33

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 +/- 2%.

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

Power (W)	391.4	393	397	399	402	407
V@P <sub>max</sub> (V)	38.2	38.3	38.4	38.5	38.6	38.7
I@P <sub>max</sub> (A)	10.25	10.29	10.34	10.37	10.43	10.52
V <sub>oc</sub> (V)	45.8	45.9	46	46.1	46.2	46.3
I <sub>sc</sub> (A)	10.83	10.89	10.96	11.03	11.09	11.15

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

### Temperature Coefficients (Tc) permissible operating conditions

Tc of Open Circuit Voltage (β)	-0.27%/°C
Tc of Short Circuit Current (α)	0.050%/°C
Tc of Power (γ)	-0.35%/°C
Maximum System Voltage	1500V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

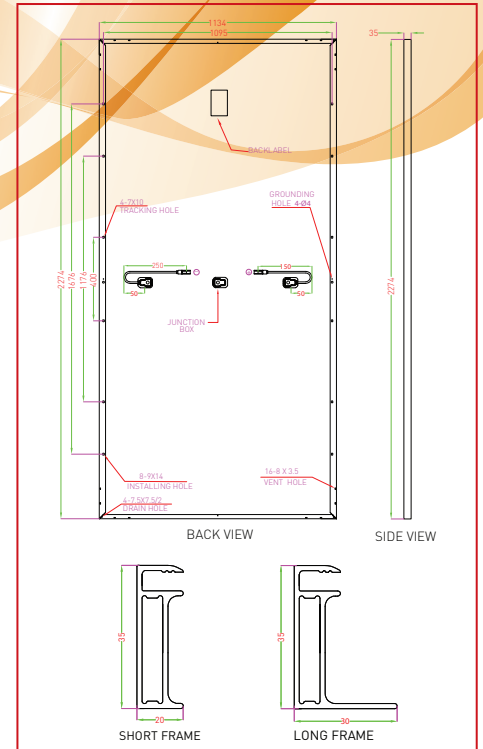
### Mechanical Data

Length × Width × Height	2274 × 1134 × 35mm (89.53 × 44.65 × 1.38 inches)
Weight	28.2 Kg (62.17 lbs)
Junction Box	IP68, Split Junction Box with individual bypass diodes
Cable & Connectors <sup>#</sup>	200 mm (+ve terminal) and 300 mm (-ve terminal) length cables, MC4 Compatible/MC4 Connectors
Application Class	Class A (Safety class II)
Superstrate <sup>##</sup>	3.2 mm (0.125 inches) high transmission low iron tempered glass, AR coated
Cells	72 Mono PERC (144 half-cells) P-Type solar cells
Back Sheet	Composite film
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	25A

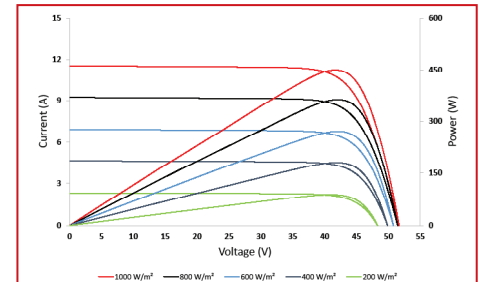
### Warranty and Certifications

Product Warranty <sup>**</sup>	12 years
Performance Warranty <sup>**</sup>	Linear Power Warranty for 27 years with 2% for 1st year degradation and 0.55% 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 61215, UL 61730, CAN-CSA

### Dimensions in mm

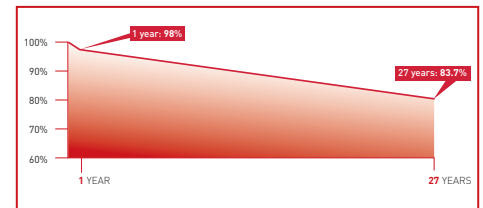


### Typical I-V Curves<sup>4</sup>



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	31
Pallets/Container (40'HC)	20
Quantity/Container (40'HC)	620

<sup>^</sup> All (\*) certifications under progress. | <sup>\*\*</sup> Refer to Vikram Solar's warranty document for terms and conditions. | <sup>#</sup> 400mm(15.75 inches), 1000mm(39.37 inches), 1200mm (47.24 inches) cable lengths are also available | <sup>\*\*</sup> Anti-glare Glass is also available

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

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