

# SOMERA GRAND PLUS



**144** Mono PERC Solar Cells

**up to 20.32%**  
EFFICIENCY

**380-400 W**  
RANGE



## SUPERIOR PRICE PERFORMANCE

of half-cell improves module output without adding much to the cost



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 longevity

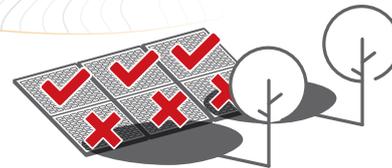


Low resistance between the cells **REDUCES POWER LOSS**, increases overall power output



Three separate junction boxes reduce internal resistance and **IMPROVE HEAT DISSIPATION**

## 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 | £ Applicable in Europe

## QUALITY AND SAFETY

- ♦ 27 years of linear power output warranty \*\*
- ♦ Rigorous quality control meeting the highest standards
- ♦ 100% EL tested to ensure micro crack free modules

- ♦ Certified for salt mist corrosion resistance – severity VI
- ♦ Certified for ammonia resistance^
- ♦ Certified for sand and dust test^
- ♦ Positive power tolerance

## APPLICATIONS

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

# TECHNICAL DATA

## SOMERA GRAND PLUS

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMH.72.AAA.05 (AAA=380-400)

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

	380	385	390	395	400
Peak Power P <sub>max</sub> (Wp) (0 ~ +4.99Wp)	380	385	390	395	400
Maximum Voltage V <sub>mpp</sub> (V)	40.7	40.9	41.0	41.2	41.3
Maximum Current I <sub>mpp</sub> (A)	9.34	9.44	9.52	9.60	9.69
Open Circuit Voltage V <sub>oc</sub> (V)	48.6	48.7	48.8	48.9	49.0
Short Circuit Current I <sub>sc</sub> (A)	9.85	9.95	10.05	10.15	10.25
Module Efficiency η[%]	19.31	19.56	19.82	20.07	20.32

1) STC:1000 W/m<sup>2</sup> irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3. 1.2) Power measurement uncertainty is within +/- 3%.

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

	281	285	289	292	296
Power (W)	281	285	289	292	296
V@P <sub>max</sub> (V)	37.6	37.7	37.8	37.9	38.0
I@P <sub>max</sub> (A)	7.48	7.56	7.62	7.69	7.76
V <sub>oc</sub> (V)	45.0	45.2	45.3	45.4	45.5
I <sub>sc</sub> (A)	7.97	8.05	8.13	8.21	8.29

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)	- 0.28%/°C
Tc of Short Circuit Current (α)	0.06%/°C
Tc of Power (γ)	-0.34%/°C
Maximum System Voltage	1500 V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

### Mechanical Data

Length × Width × Height	1986 × 991 × 36 mm (78.18 × 39.01 × 1.42 inches)
Weight	22 kg (48.50 lbs)
Junction Box	IP68/IP67, Split Junction Box with individual bypass diodes
Cable & Connectors	400/1200 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) solar cells
Cell Encapsulant	EVA (Ethylene Vinyl Acetate)
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	20 A

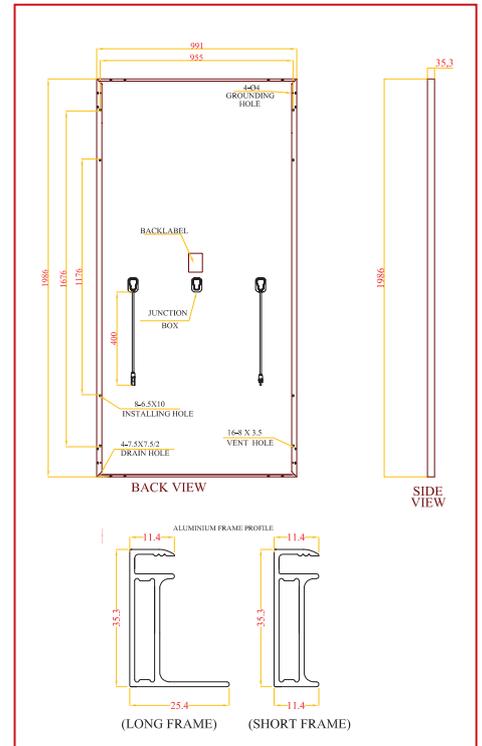
### Warranty and Certifications

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 Ed2:2016 <sup>^</sup> , IEC 61730:2016 <sup>^</sup> , IEC 61701, IEC 62716 <sup>^</sup> , IEC 60068-2-68 <sup>^</sup> , IEC 62804, CE, CEC (California), UL 1703, IS/IEC 61730, IS 14286

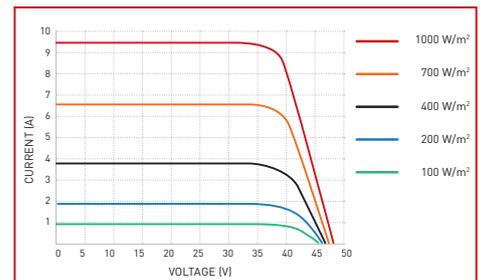
### Packaging Information

Quantity /Pallet: 30	Pallets/Container (40'HC): 22	Quantity/Container (40'HC): 660
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### Dimensions in mm

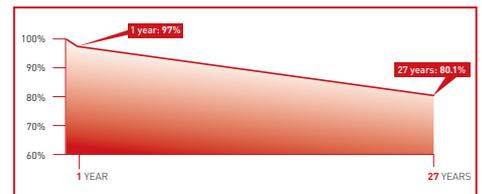


### Typical I-V Curves<sup>4</sup>



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

### Performance Warranty



<sup>^</sup> All (\*) certifications under progress.

\*\* Refer to Vikram Solar's warranty document for terms and conditions.

**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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