somera

HIGH EFFICIENCY MONO-Si PV MODULES

vikramsolar

CREATING CLIMATE FOR CHANGE

SOMERA VSMH.75.AAA.05 | MONOCRYSTALLINE SOLAR PV MODULES | 150 CELLS | 405-425 WATT

SOMERA GRAND ULTIMA MAX

PRELIMINARY DATASHEET
Product Available from April 2020

up to **20.56**% EFFICIENCY

405-425 W RANGE

150 MONO PERC SOLAR CELLS

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

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

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

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

Þ Applicable in USA | µ 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 minimise micro crack
- Certified for salt mist corrosion resistance – severity VI^
- Excellent anti-PID performance
- Positive power tolerance

APPLICATIONS

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

TECHNICAL DATA

SOMERA GRAND ULTIMA MAX

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THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMH.75.AAA.05 (AAA=405-425)

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)	405	410	415	420	425
Maximum Voltage V_{mpp} (V)	42.4	42.4	42.6	42.7	42.7
Maximum Current I_{mpp} (A)	9.56	9.67	9.74	9.84	9.96
Open Circuit Voltage V_{oc} (V)	51.6	52.1	52.6	52.7	52.8
Short Circuit Current I_{sc} (A)	9.94	9.96	9.97	9.99	10.17
Module Efficiency η(%)	19.59	19.83	20.08	20.32	20.56

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 NOCT[3]

Power (W)	284.5	288.0	291.5	295.0	298.5
V@P_{max} (V)	37.8	37.9	38.1	38.1	38.1
I@P_{max} (A)	7.52	7.60	7.66	7.74	7.83
V_{oc} (V)	46.3	46.8	47.2	47.4	47.4
I_{sc} (A)	7.78	7.80	7.81	7.82	7.97

3) NOCT irradiance 800 W/m², 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)	0.057%/°C
Tc of Power (γ)	-0.39%/°C
Maximum System Voltage	1500 V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

Mechanical Data

Length × Width × Height	2065 × 1001 × 40 mm (81.29 × 39.40 × 1.57 inches)
Weight	22.6 kg (49.82 lbs)
Junction Box	IP68/IP67, Split Junction Box with individual bypass diodes
Cable & Connectors	1200 mm (47.24 inches) length cables, MC4 compatible/MC4 connectors
Application Class	Class A (Safety class II)
Superstrate	3.2 mm (0.13 inches) high transmission low iron tempered glass, AR coated
Cells	75 Mono PERC (150 half-cells), 5BB solar cells
Cell Encapsulant	EVA (Ethylene Vinyl Acetate)
Back Sheet	Composite film
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	2400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	20 A

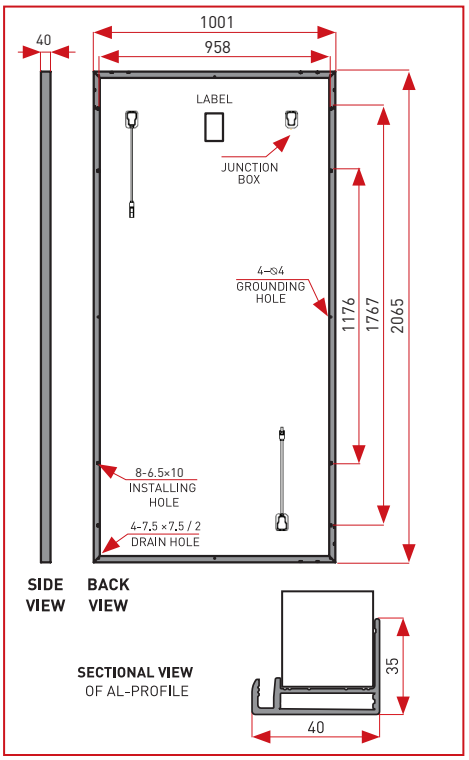
Warranty and Certifications

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^	UL1703, IEC 61215:2016, IEC 61730:2016, IEC 61701, IEC 62716, IEC 60068-2-68^, IEC 62804, CE, IS14286, CEC(California), IS/IEC 61730

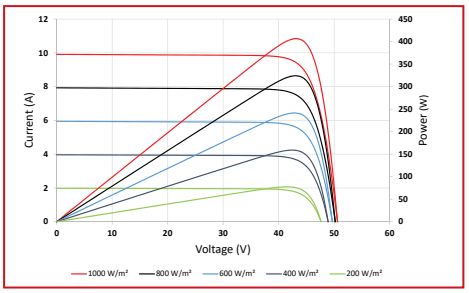
Packaging Information

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

Dimensions in mm

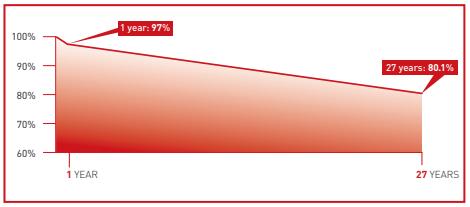


Typical Electrical Curves[4]



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

Performance Warranty



^ All (^) certifications under progress.
** Refer to Vikram Solar's warranty document for terms and conditions.