

somera

HIGH EFFICIENCY MONO-Si PV MODULES

vikramsolar

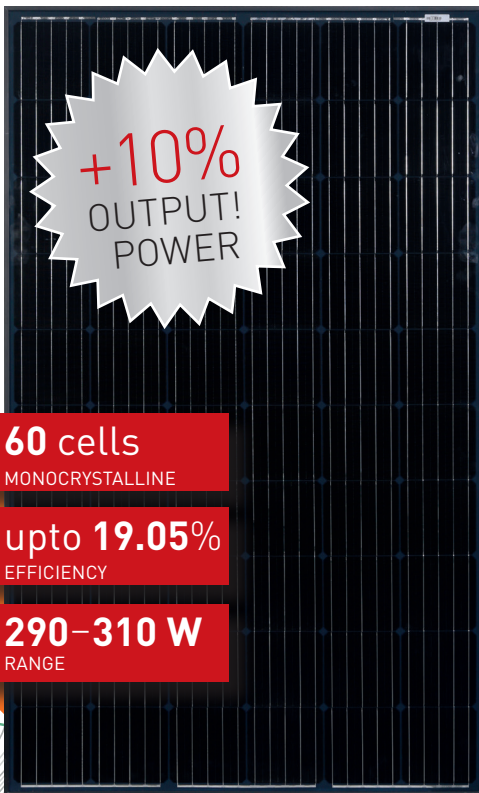
CREATING CLIMATE FOR CHANGE

SOMERA VSMBB.60.AAA.03.04 | MONOCRYSTALLINE SOLAR PV MODULES | 60 CELLS | 290-310 WATT

ALL NEW 60 CELLS MONO

SOMERA ULTIMA

ALL BLACK SERIES



Engineered to provide **EXCELLENT LOW LIGHT** and **LONGER WAVELENGTH RESPONSE**



EXTREMELY RELIABLE PRODUCT suiting harsh environment conditions withstanding 2400Pa Wind load, 5400Pa Snow load



Using highly efficient **PASSIVATED EMITTER REAR CONTACT TECHNOLOGY (PERC)** cells



10% HIGHER POWER OUTPUT compared to industry average poly crystalline module



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
- ♦ Certified for salt mist corrosion resistance – severity VI
- ♦ Certified for ammonia resistance

APPLICATIONS

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

TECHNICAL DATA

SOMERA ULTIMA ALL BLACK SERIES

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMBB.60.AAA.03.04 (AAA=290-310)

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

Peak Power P _{max} (0 - +2.5Wp)	290	295	300	305	310
Maximum Voltage V _{mpp} (V)	32.3	32.5	32.7	32.9	33.1
Maximum Current I _{mpp} (A)	8.97	9.08	9.18	9.27	9.37
Open Circuit Voltage V _{oc} (V)	39.9	40.1	40.3	40.5	40.7
Short Circuit Current I _{sc} (A)	9.46	9.58	9.68	9.8	9.91
Module Efficiency η(%)	17.83	18.13	18.44	18.75	19.05

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

Electrical Parameters at NOCT³

Power (W)	214.7	218.4	222.1	225.8	229.5
V@P _{max} (V)	29.8	30.0	30.2	30.4	30.6
I@P _{max} (A)	7.18	7.27	7.35	7.42	7.50
V _{oc} (V)	36.9	37.1	37.3	37.5	37.6
I _{sc} (A)	7.65	7.75	7.83	7.93	8.02

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	1000 V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

Mechanical Data

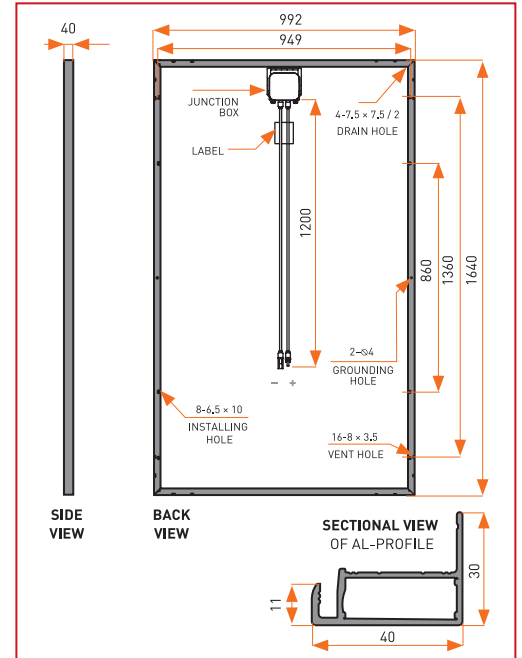
Length × Width × Height	1640 × 992 × 40 mm (64.57 × 39.05 × 1.57 inches)
Weight	18.50 kg (40.79 lbs)
Junction Box	IP67/IP68, 3 Bypass diodes
Cable & Connectors	1200 mm (47.24 inches) length cables, MC4 Compatible/MC4 Connectors/Amplenol
Application Class	Class A (Safety class II)
Superstrate	3.2 mm (0.13 inches) high transmission low iron tempered glass, AR coated
Cells	60 Mono PERC, 5BB solar cells
Cell Encapsulant	EVA (Ethylene Vinyl Acetate)
Back Sheet	Composite film
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	Snow load 5400 Pa, Wind load 2400 Pa
Maximum Series Fuse Rating	15A (IEC)/ 20A (UL)

Warranty and Certifications

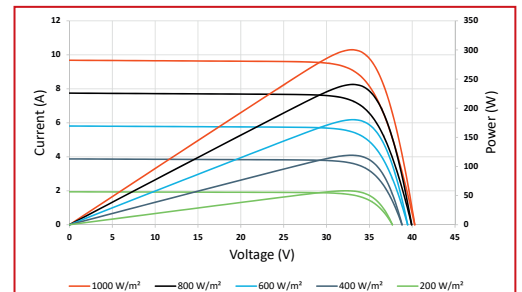
Product Warranty**	12 years
Performance Warranty**	Linear Power Warranty for 27 years with 3% for 1st year degradation and 0.65% from year 2 to year 27
Approvals and Certificates	IEC 61215 Ed2, IEC 61730, IEC 61701, IEC 62716, MCS, PV Cycle [^] , CEC(California) [^] , JET [^] , CE, IEC 62804

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

Dimensions in mm

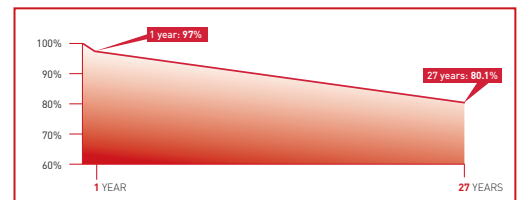


Typical Electrical Curves⁴



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

Performance Warranty



Packaging Information

Quantity/Pallet	25
Pallets/Container (40'HC)	28
Quantity/Container (40'HC)	700

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 and Somera are Trademarks of Vikram Solar Limited registered in India