

somera

MONO CRYSTALLINE SOLAR PV MODULES


vikram solar
CREATING CLIMATE FOR CHANGE

SOMERA VSMBB.60.AAA.03.04 | MONO CRYSTALLINE SOLAR PV MODULES | 60 CELLS | 280-310 WATT

ALL NEW 60 CELLS MONO SOMERA ULTIMA ALL BLACK SERIES



Extremely **NARROW POWER BINNING TOLERANCE** of +2.5 Wp to reduce current mismatch loss in single string



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



EXTREMELY RELIABLE PRODUCT suiting harsh environment conditions withstanding 2400Pa Wind load, 5400Pa Snow load and Dynamic Wind 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 ensure micro crack free modules

- ◆ Certified for PID resistance*
- ◆ 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=280-310)

Electrical Data¹

All data refers to STC (AM 1.5, 1000 W/m², 25°C)

Peak Power P _{max} [Wp]	280	282.5	285	287.5	290	292.5	295	297.5	300	302.5	305	307.5	310
Maximum Voltage V _{mpp} [V]	31.9	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	33.1
Maximum Current I _{mp} [A]	8.78	8.83	8.87	8.93	8.97	9.03	9.08	9.13	9.18	9.23	9.27	9.32	9.37
Open Circuit Voltage V _{oc} [V]	39.5	39.6	39.7	39.8	39.9	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7
Short Circuit Current I _{sc} [A]	9.24	9.30	9.35	9.41	9.46	9.52	9.58	9.64	9.68	9.74	9.80	9.86	9.91
Module Efficiency η[%]	17.21	17.36	17.52	17.67	17.83	17.98	18.13	18.29	18.44	18.59	18.75	18.90	19.05

1) STC: 1000 W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.
Average relative efficiency reduction of 5% at 200 W/m² according to EN 60904-1.

Electrical Parameters at NOCT²

Power (W)	207	209	211	213	215	216	218	220	222	224	226	227	229
V@P _{max} (V)	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2	31.3	31.4	31.5
I@P _{max} (A)	6.88	6.92	6.95	7.00	7.03	7.08	7.12	7.15	7.20	7.23	7.27	7.31	7.35
V _{oc} (V)	38.2	38.3	38.4	38.4	38.6	38.6	38.8	38.8	38.9	39.0	39.1	39.2	39.3
I _{sc} (A)	7.33	7.37	7.42	7.46	7.50	7.55	7.60	7.65	7.68	7.73	7.77	7.82	7.86

2) 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)	- 0.29%/°C
Tc of Short Circuit Current (α)	0.053%/°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, SOLARLOK PV4/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	60 monocrystalline 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
Maximum Series Fuse Rating	15 A

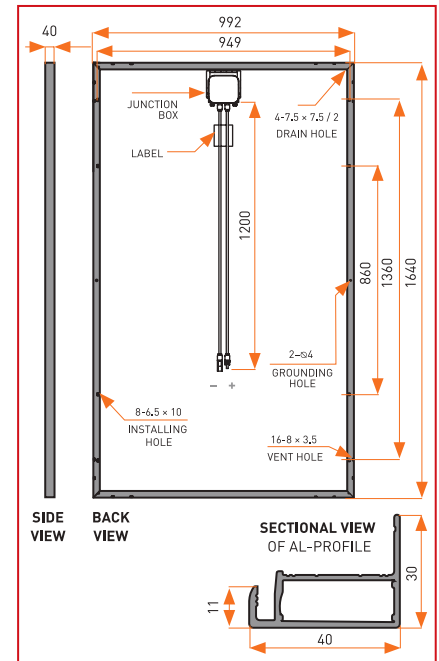
Warranty and Certifications

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*, CEC*, PV Cycle*, CEC (Australia)*, JET*

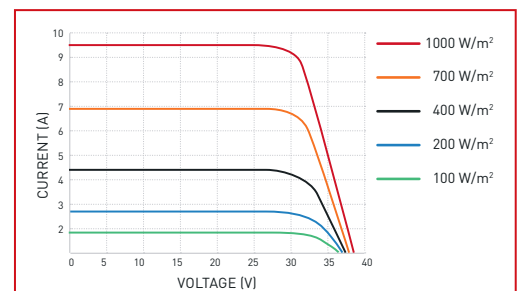
* All (*) certifications under progress. ** Refer to Vikram Solar's warranty document for terms and conditions.

Dimensions

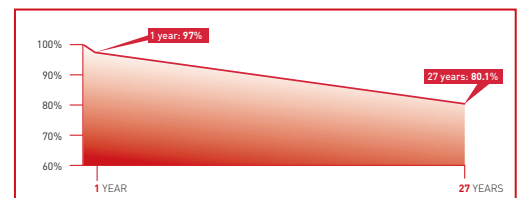
in mm



Typical I-V Curves



Performance Warranty



Packaging Information

Container	40'HC
Pallets/Container	28
Pieces/Container	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.

sales@vikramsolar.com



www.vikramsolar.com