

# PARADEA

HIGH EFFICIENCY BI-FACIAL GLASS-GLASS PV MODULES

## 420-450W

MAXIMUM EFFICIENCY %

20.82

POSITIVE POWER TOLERANCE WP

0~+4.99

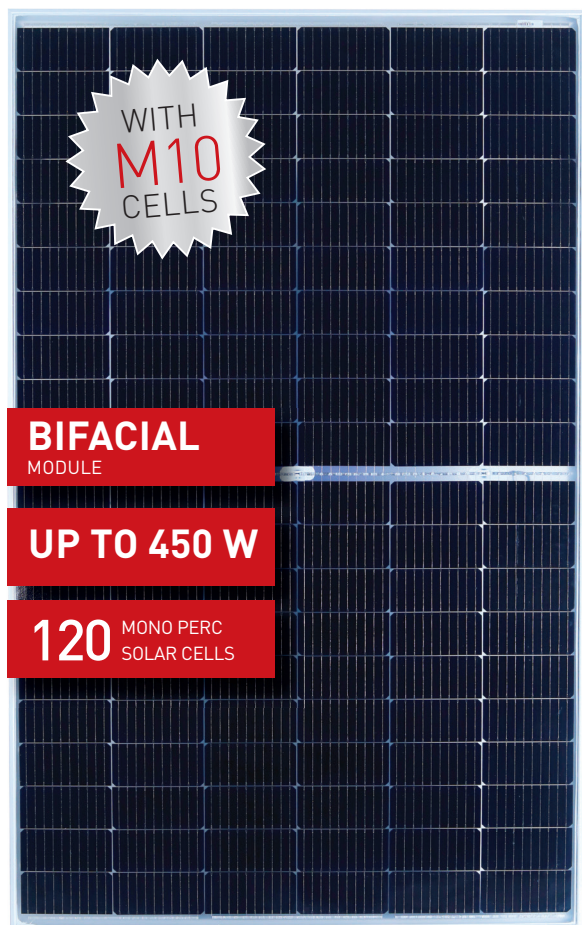
CELLS

M10 120

MODULE TECHNOLOGY

**HALF CUT & MICRO  
GAP DESIGN**

WITH IMPROVED SHADE TOLERANCE



**RELIABILITY IS IMPROVED** with minimum exposure to corrosion from sand & salt mist with low risk of module warping & micro cracking



Bifacial gain of **UP TO 25%** with dual glass module, capable of energy generation with both direct and reflected sunlight



Additional Power yield with **30 YEARS OF PRODUCT LIFETIME** with 0.5% annual power degradation



**LCOE IS CUT BACK** with **LESS BOS COST** which improves value proposition of the product with competitive **ROI**



**TWO PEAK PERFORMANCE TIME**, during sun rise and sun set with optimum utilization of dual facial generation



Hassle-free installation with ability to **INSTALL VERTICALLY IN EAST WEST DIRECTION**, with improved soiling resistant



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



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



FRAME

**SILVER**

SUPERSTRATE

**GLASS**

SUBSTRATE

**GLASS**

### 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: PREXOS VSMDH.60.AAA.05 (AAA=420-450)

### 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)	420	425	430	435	440	445	450
Maximum Voltage V <sub>mpp</sub> (V)	34.3	34.5	34.7	34.8	34.9	35	35.1
Maximum Current I <sub>mp</sub> (A)	12.25	12.32	12.41	12.52	12.62	12.72	12.83
Open Circuit Voltage V <sub>oc</sub> (V)	40.6	40.8	41	41.1	41.2	41.3	41.4
Short Circuit Current I <sub>sc</sub> (A)	12.9	12.99	13.11	13.21	13.31	13.41	13.51
Module Efficiency η(%)	19.43	19.66	19.89	20.13	20.36	20.59	20.82

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)	313.3	317	320	324	327	331	334
V@P <sub>max</sub> (V)	31.7	31.8	31.9	32	32.1	32.2	32.3
I@P <sub>max</sub> (A)	9.88	9.96	10.04	10.11	10.19	10.27	10.35
V <sub>oc</sub> (V)	37.8	38	38.1	38.2	38.3	38.3	38.4
I <sub>sc</sub> (A)	10.42	10.52	10.62	10.7	10.78	10.86	10.94

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

### Equivalent Bifacial Output

Bifacial Gain	Overall Power output (W)						
5%	441	446	452	457	462	467	473
10%	462	468	473	479	484	490	495
15%	483	489	495	500	506	512	518
20%	504	510	516	522	528	534	540
25%	525	531	538	544	550	556	563

### 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	1906 × 1134 × 35mm (75.04 × 44.65 × 1.38 inches)
Weight	28.33 Kg (62.46 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>	2.0 mm (0.098 inches) high transmission low iron content, tempered glass, AR coated
Cells	60 Mono PERC (120 half-cells) P-Type Bifacial solar cells
Substrate	2.0 mm (0.098 inches) high transmission low iron content, heat strengthened glass
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Cell Encapsulant	Polyolefin (POE)
Maximum Series Fuse Rating	25 A

### Warranty and Certifications

Product Warranty <sup>**</sup>	12 years
Performance	Linear Power Warranty for 30 years with 2% for 1st year degradation and 0.5% from year 2 to year 30
Approvals and Certificates <sup>*</sup>	IEC 61215 : 2016, IEC 61730 : 2016, IEC 61701, IEC 62716, IEC 60068-2-68, IS/IEC 61730, IS 14286, IEC 62804, CE, CEC (California), UL 61215, UL 61730, CAN-CSA

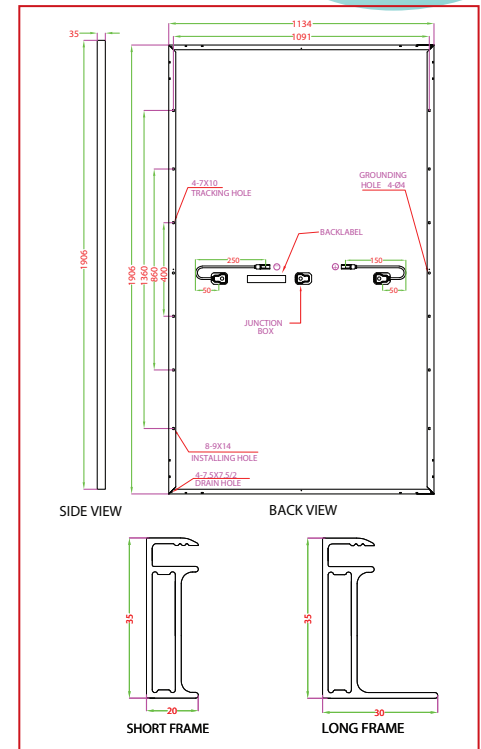
<sup>\*</sup> All (\*) certifications under progress. <sup>\*\*</sup> Refer to Vikram Solar's warranty document for terms and conditions. <sup>#</sup> 400mm (15.75 inches), 1000mm (39.37 inches), 1200mm (47.24 inches) cable lengths are also available <sup>##</sup> Anti-glare Glass is also available

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

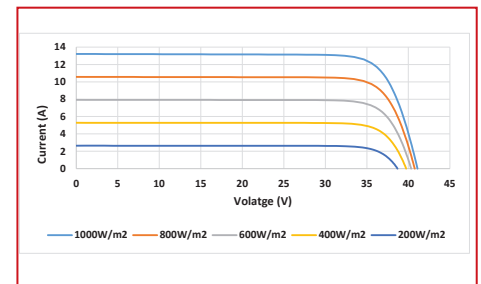
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### Dimensions in mm

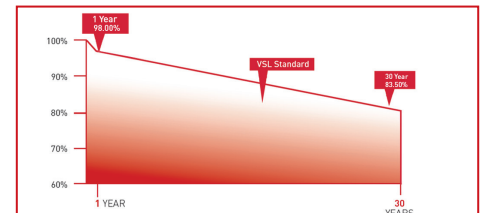


### Typical I-V Curves<sup>4</sup>



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)	24
Quantity/Container (40'HC)	744