

# HYPERSOL PRO

HIGH EFFICIENCY N-TYPE PV MODULE WITH INTEGRATED BLOCKING DIODE

Mono PERC ● N-TYPE ● HJT

MODEL:  
HYPERSOL VSMDB.72.AAA.05

# 580-605W

SUBSTRATE  
GLASS ●  
MESH GLASS ●

FRAME TYPE  
ALUMINIUM ●

FRAME VARIANT  
SILVER ●  
BLACK ●

MAXIMUM EFFICIENCY %

# 23.42

CELL TYPE

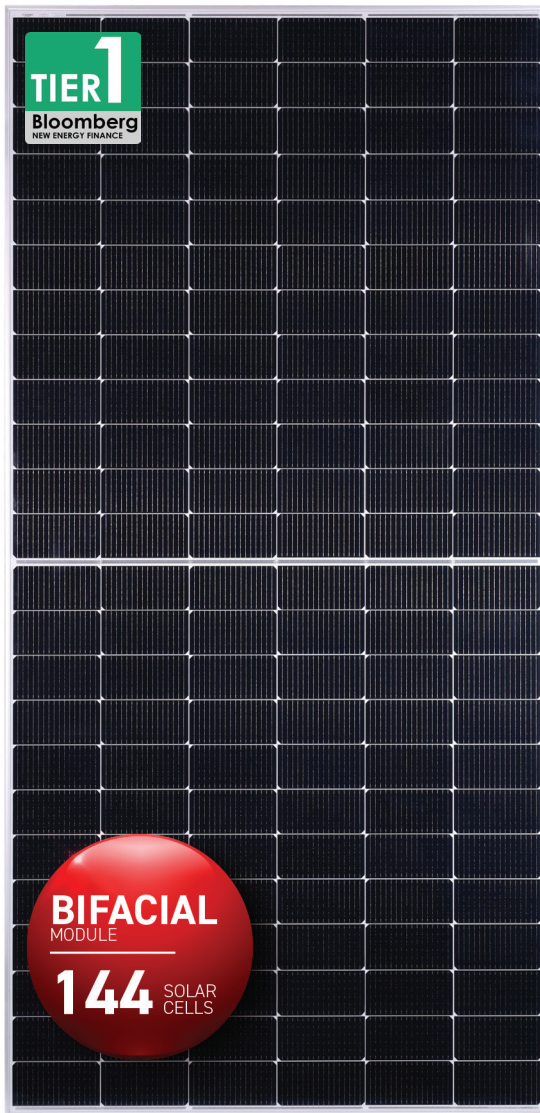
# M10R HALF CUT

PRODUCT WARRANTY

# 12 YEARS

PERFORMANCE WARRANTY

# 30 YEARS



## 0% NEGATIVE POWER TOLERANCE

- Positive power tolerance of upto 0 ~ 4.99Wp
- Module  $I_{mp}$  binning radically reduces string mismatch losses



## IMPROVED LONGEVITY

- Excellent anti-PID performance via optimized process and materials control
- Lower susceptibility to LID & LeTID



## ENHANCED RELIABILITY WITH INTEGRATED BLOCKING DIODE

- Protects the solar module from reverse current, ensuring uninterrupted and safe operation
- Shields the module from electrical stresses, reducing the risk of damage to internal components



## SUPERIOR HAIL TEST PERFORMANCE

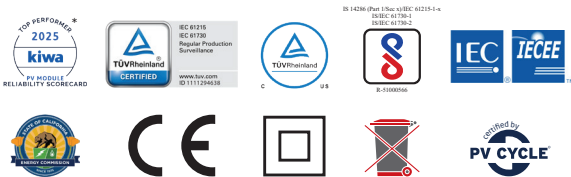
- ø 40mm hail test passed from third party laboratory



## OPTIMIZED PERFORMANCE

- Reduces the occurrence of local overheating and hotspots for consistent energy output
- Lowers maintenance requirements, extending the module's operational life

### PRODUCT CERTIFICATES



### SYSTEM CERTIFICATES

IEC 61215 : 2021, IEC 61730, UL 61215, UL 61730, IS 14286, IS/IEC 61730, IEC 61701, IEC 62716, IEC 60068-2-68, CAN-CSA

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION:

- ISO 9001:2015/ Quality Management System
- ISO 14001:2015/ Environmental Management System
- ISO 45001:2018/ Occupational Health and Safety Management System
- SA 8000 :2014/ Social Accountability International

THIS DATASHEET IS APPLICABLE FOR: HYPERSOL VSMDB.72.AAA.05 (AAA=580-605)

### ELECTRICAL PARAMETERS | STC<sup>1,2</sup>

Parameter	580	585	590	595	600	605
Peak Power $P_{max}$ (Wp)	580	585	590	595	600	605
Maximum Voltage $V_{mpp}$ (V)	42.8	43.0	43.2	43.4	43.6	43.8
Maximum Current $I_{mpp}$ (A)	13.56	13.62	13.67	13.72	13.77	13.83
Open Circuit Voltage $V_{oc}$ (V)	50.9	51.1	51.3	51.5	51.7	51.9
Short Circuit Current $I_{sc}$ (A)	14.20	14.26	14.32	14.38	14.44	14.50
Module Efficiency (%)	22.45	22.65	22.84	23.03	23.23	23.42

1) STC: 1000 W/M<sup>2</sup> IRRADIANCE, 25°C CELL TEMPERATURE, AM1.5G SPECTRUM ACCORDING TO EN 60904-3 | 2) TOLERANCE OF RATING AT STC ( $P_{max} / I_{sc} / V_{oc}$ ) [%]: 0-3/+5/+5 | ELECTRICAL MEASUREMENT UNCERTAINTY IS WITHIN ± 2%

### ELECTRICAL PARAMETERS | NOCT<sup>3</sup>

Parameter	437	440.9	445	448.3	451.9	455.8
Peak Power $P_{max}$ (Wp)	437	440.9	445	448.3	451.9	455.8
Maximum Voltage $V_{mpp}$ (V)	40.2	40.4	40.6	40.7	40.9	41.0
Maximum Current $I_{mpp}$ (A)	10.87	10.92	10.96	11.00	11.05	11.10
Open Circuit Voltage $V_{oc}$ (V)	47.9	48.1	48.3	48.5	48.7	48.8
Short Circuit Current $I_{sc}$ (A)	11.45	11.50	11.55	11.60	11.65	11.69

3) NOCT (IRRADIANCE 800 W/M<sup>2</sup>, AMBIENT TEMPERATURE 20°C, WIND SPEED 1 M/SEC)

### ELECTRICAL PARAMETERS | BNPI<sup>4,5</sup>

Parameter	643	648	654	659	665	670
Peak Power $P_{max}$ (Wp)	643	648	654	659	665	670
Maximum Voltage $V_{mpp}$ (V)	42.8	43.0	43.2	43.4	43.6	43.8
Maximum Current $I_{mpp}$ (A)	15.02	15.09	15.15	15.20	15.26	15.32
Open Circuit Voltage $V_{oc}$ (V)	50.9	51.1	51.3	51.5	51.7	51.9
Short Circuit Current $I_{sc}$ (A)	15.73	15.80	15.87	15.93	16.00	16.07

4) BNPI: 1000W/M<sup>2</sup>+q.135, BIFACILITY COEFF. (q) AT BNPI  $P_{max}$ ,  $I_{sc}$  IS 75±5% & FOR  $V_{oc}$  IS 99±10%, AM 1.5, 25°C | 5) TOLERANCE OF RATING AT BNPI ( $P_{max} / I_{sc} / V_{oc}$ ) [%]: 0-3/+5/+5

### TEMPERATURE COEFFICIENTS (Tc) PERMISSIBLE OPERATING CONDITIONS

Tc of Open Circuit Voltage (β)	-0.26%/°C
Tc of Short Circuit Current (α)	0.046%/°C
Tc of Power (γ)	-0.30%/°C
Maximum System Voltage	1500V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

### MECHANICAL DATA

Length × Width × Height	2278 X 1134 X 30 mm (89.68 x 44.65 x 1.18 inches)
Weight	31.6 ± 5% Kg (69.67 lbs)
Junction Box	IP 68, Split Junction Box with three bypass diode and one blocking diode
Cable & Connectors <sup>#</sup>	400 mm (+ve terminal) and 400 mm (-ve terminal) length cables, MC4 Compatible/Staubli EVO connectors
Application Class	Class A (Safety class II)
Superstrate <sup>**</sup>	2.0 mm (0.08 inches) high transmission ARC Semi-tempered glass (low iron content)
Cells	72 (144 half-cells) N-TYPE bifacial solar cells
Substrate	2.0 mm (0.08 inches) high transmission heat strengthened glass/ mesh glass <sup>**</sup> (low iron content)
Frame	Anodized aluminium
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Cell Encapsulant	EPE/ EVA or EPE/EPE
Maximum Series Fuse Rating	30A
Hail Test <sup>^</sup>	Ø 40mm

### WARRANTY

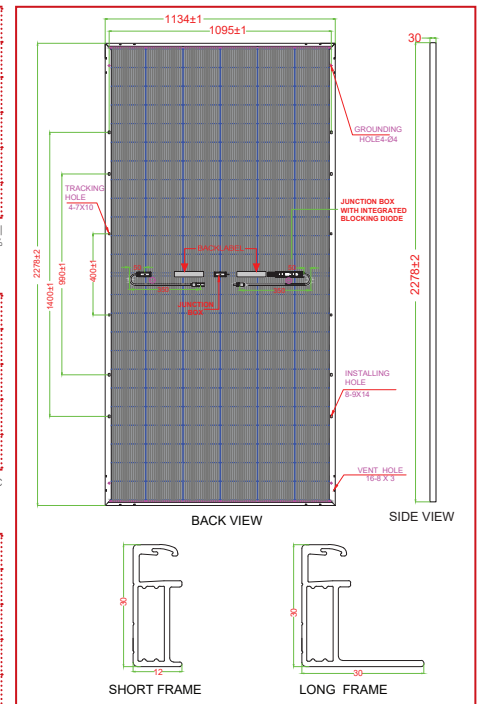
Product Warranty <sup>**</sup>	12 years
Performance Warranty <sup>**</sup>	Linear Power Warranty for 30 years with 1% for 1 <sup>st</sup> year degradation and 0.4% from year 2 to year 30

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

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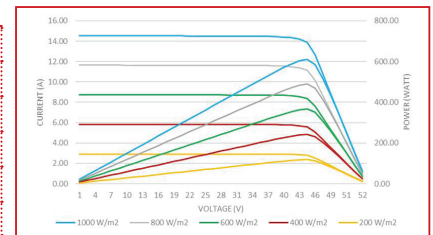
### DIMENSIONS IN MM

FIG. 1



### TYPICAL I-V CURVES<sup>6</sup>

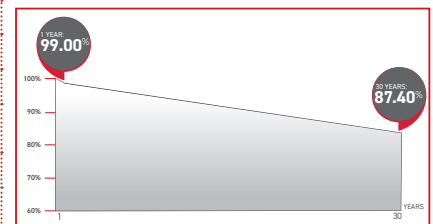
FIG. 2



6) AVERAGE RELATIVE EFFICIENCY REDUCTION OF 5% AT 200 W/M<sup>2</sup> ACCORDING TO EN 60904-1

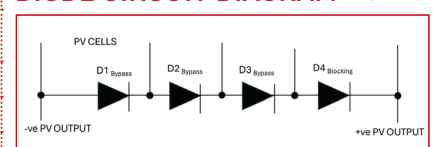
### PERFORMANCE WARRANTY

FIG. 3



### DIODE CIRCUIT DIAGRAM

FIG. 4



### PACKAGING INFORMATION

Quantity /Pallet	37
Pallets/Container (40'HC)	20
Quantity/Container (40'HC)	740

\*All (\*) certifications under progress. \*\*Refer to Vikram Solar's warranty document for terms and conditions. | # 1200mm (47.24 inches), 1480mm (62.99 inches) cable lengths are also available | ##Anti-glare Glass is also available | ^As per applicable product | STC: Standard Testing Condition | BNPI: Bifacial Nameplate Irradiance | NOCT: Nominal Operating Cell Temperature