

HYPERSOL

HIGH EFFICIENCY N-TYPE PV MODULE

Mono PERC
 N-TYPE
 HJT

MODEL: **HYPERSOL VSM DH.72.AAA.05**

580-605W

SUBSTRATE
 GLASS ●
MESH GLASS ●

FRAME TYPE
ALUMINIUM ●

FRAME VARIANT
SILVER ●
 BLACK ●

MAXIMUM EFFICIENCY %

23.42

CELL TYPE

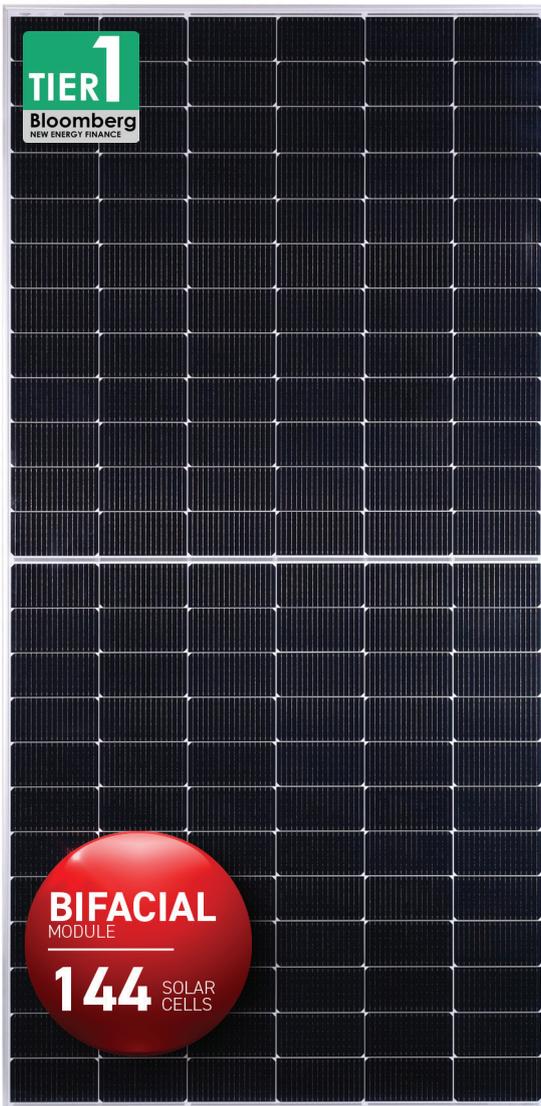
M10R HALF CUT

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



LOWER LCOE

- Lower balance of systems cost
- Improves value proposition of the product with competitive ROI



HIGHLY AUTOMATED PRODUCTION LINE

- Multi stage EL and digitalised visual inspection results lower defect rates
- Implemented engineering excellence ensures top notch quality



SUPERIOR HAIL TEST PERFORMANCE

- ø 40mm hail test passed from third party laboratory

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

Monocrystalline Solar PV Modules, Bifacial, GG, M10R N-TYPE



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

ELECTRICAL PARAMETERS | STC^{1,2}

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/M² 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 | NOCT³

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/M², AMBIENT TEMPERATURE 20°C, WIND SPEED 1 M/SEC

ELECTRICAL PARAMETERS | BNPI^{4,5}

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/M²+p.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/+10/±10

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)	-0.28%/°C
Maximum System Voltage	1500V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

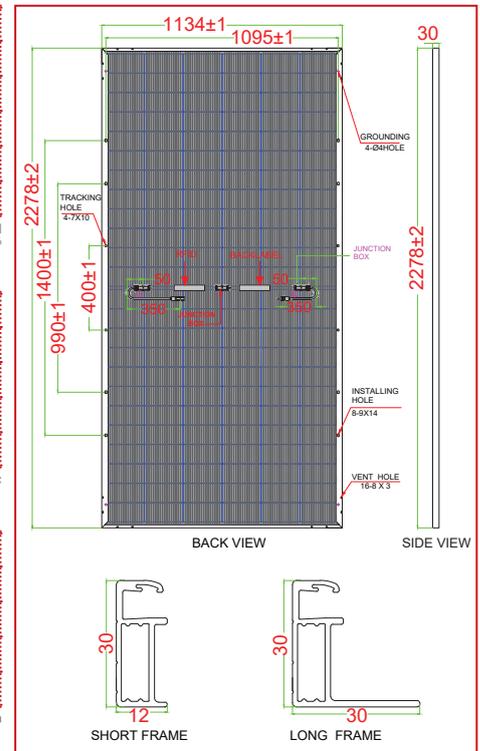
MECHANICAL DATA

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 individual bypass diodes
Cable & Connectors [#]	400 mm (+ve terminal) and 400 mm (-ve terminal) length cables, MC4 Compatible/Staubli EVD connectors
Application Class	Class A (Safety class II)
Superstrate ^{##}	2.0 mm (0.098 inches) high transmission ARC Semi-tempered glass (low iron content)
Cells	72 (144 half-cells) N-TYPE bifacial solar cells
Substrate	2.0 mm (0.098 inches) high transmission heat strengthened glass/ mesh glass ^{##} (low iron content)
Frame	Anodized aluminium
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Cell Encapsulant	EPE/ EVA
Maximum Series Fuse Rating	30A
Hail Test [*]	Ø 40mm

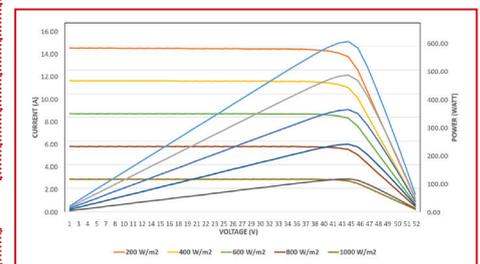
WARRANTY

Product Warranty ^{**}	12 years
Performance Warranty ^{**}	Linear Power Warranty for 30 years with 1% for 1 st year degradation and 0.4% from year 2 to year 30

DIMENSIONS IN MM

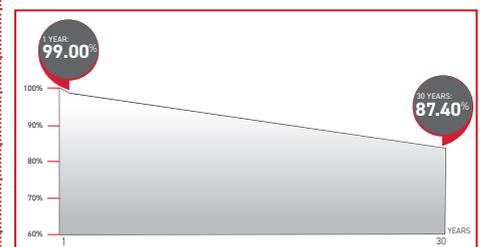


TYPICAL I-V CURVES⁶



⁶) AVERAGE RELATIVE EFFICIENCY REDUCTION OF 5% AT 200 W/M² ACCORDING TO EN 60904-1

PERFORMANCE WARRANTY



PACKAGING INFORMATION

Quantity /Pallet	36
Pallets/Container (40'HC)	20
Quantity/Container (40'HC)	720

^{*}All (°) certifications under progress. | ^{**}Refer to Vikram Solar's warranty document for terms and conditions. | ^{##}400mm(15.75 inches), 1000mm(39.37 inches), 1200mm (47.24 inches) cable lengths are also available | ^{##}Anti-glare Glass is also available | ^{*}As per applicable product | ^{**}With additional Cost & Lead Time subject to availability | STC : Standard Testing Condition | BNPI : Bifacial Nameplate Irradiance | NOCT : Nominal Operating Cell Temperature

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

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