HYPERSOL

HIGH EFFICIENCY N-TYPE PV MODULE WITH INTEGRATED BLOCKING DIODE

Mono PERC | **N-TYPE** | HJT

MODEL:
HYPERSOL VSMDH.72.AAA.05

570-595W

SUBSTRATE	FRAME TYPE	FRAME VARIANT
GLASS	**ALUMINIUM**	**SILVER**
MESH GLASS	STEEL	BLACK

MAXIMUM EFFICIENCY %	CELL TYPE	PRODUCT WARRANTY	PERFORMANCE WARRANTY
23.03	M10 HALF CUT	12 YEARS	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 system from electrical surges, reducing the risk of damage to components

SUPERIOR HAIL TEST PERFORMANCE

- ⌀ 45mm hail test passed from third party laboratory with impact velocity up to 27m/s

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

R-51000566
R-61002070

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, M10 N-TYPE

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CREATING CLIMATE FOR CHANGE

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TECHNICAL DATA

HYPERSOL 570-595W

THIS DATASHEET IS APPLICABLE FOR: **HYPERSOL VSMDH.72.AAA.05 (AAA=570-595)**

ELECTRICAL PARAMETERS | STC[1,2]

Peak Power P_{max} (Wp)	570	575	580	585	590	595
Maximum Voltage V_{mpp} (V)	42.4	42.6	42.8	43	43.2	43.4
Maximum Current I_{mpp} (A)	13.46	13.51	13.56	13.62	13.67	13.72
Open Circuit Voltage V_{oc} (V)	50.5	50.7	50.9	51.1	51.3	51.5
Short Circuit Current I_{sc} (A)	14.09	14.14	14.2	14.26	14.32	14.37
Module Efficiency (%)	22.07	22.26	22.45	22.65	22.84	23.03

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

ELECTRICAL PARAMETERS | NOCT[3]

Peak Power P_{max} (Wp)	430	433	437	443	447	452
Maximum Voltage V_{mpp} (V)	39.8	40	40.2	40.6	40.9	41.1
Maximum Current I_{mpp} (A)	10.78	10.82	10.88	10.91	10.94	10.99
Open Circuit Voltage V_{oc} (V)	47.5	47.7	47.9	48.2	48.5	48.7
Short Circuit Current I_{sc} (A)	11.38	11.42	11.47	11.51	11.55	11.59

3) NOCT IRRADIANCE 800 W/M^2, AMBIENT TEMPERATURE 20°C, WIND SPEED 1 M/SEC

ELECTRICAL PARAMETERS | BNPI[4,5]

Peak Power P_{max} (Wp)	632	637	643	648	654	659
Maximum Voltage V_{mpp} (V)	42.4	42.6	42.8	43	43.2	43.4
Maximum Current I_{mpp} (A)	14.91	14.97	15.02	15.09	15.15	15.2
Open Circuit Voltage V_{oc} (V)	50.5	50.7	50.9	51.1	51.3	51.5
Short Circuit Current I_{sc} (A)	15.61	15.67	15.73	15.8	15.86	15.92

4) BNPI: 1000W/M^2+ϕ.135, BIFACILITY COEFF. (ϕ) 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_{MPP}/ 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

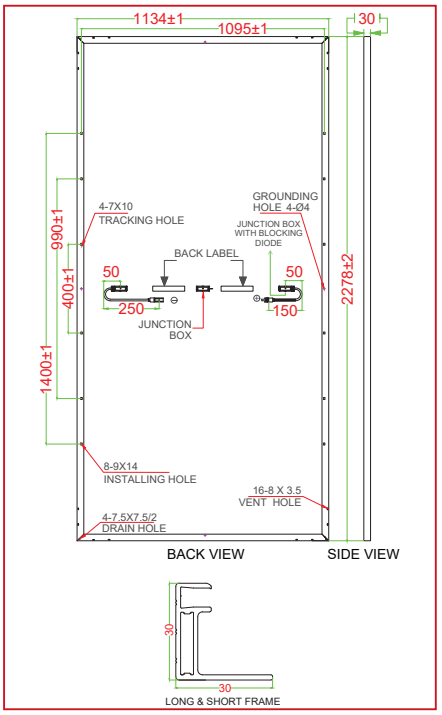
MECHANICAL DATA

Length × Width × Height	2278 X 1134 X 30 mm (89.68 x 44.65 x 1.18 inches)
Weight	32.5 ± 2% Kg (71.65 lbs)
Junction Box	IP 68, Split Junction Box with three bypass diodes and one blocking diode[1]*
Cable & Connectors[#]	200 mm (+ve terminal) and 300 mm (-ve terminal) length cables, MC4 Compatible/MC4 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/ Alloy steel frame[#*]
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Cell Encapsulant	EPE/ EVA
Maximum Series Fuse Rating	30A
Hail Test^	Ø 45mm | Impact Velocity up to 27m/s

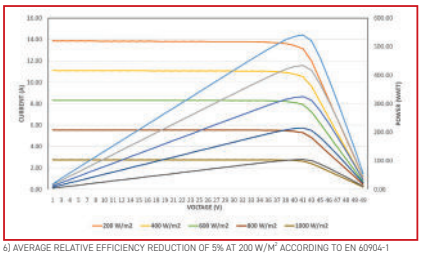
WARRANTY

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

DIMENSIONS IN MM FIG.1

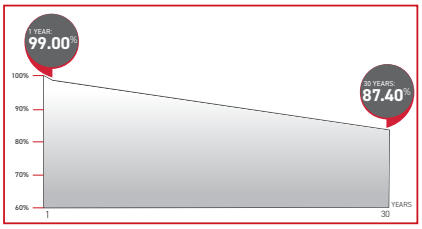


TYPICAL I-V CURVES[6] FIG. 2

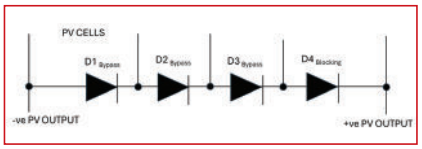


6) AVERAGE RELATIVE EFFICIENCY REDUCTION OF 5% AT 200 W/M^2 ACCORDING TO EN 60904-1

PERFORMANCE WARRANTY FIG. 3



DIODE CIRCUIT DIAGRAM FIG. 4



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 | !*refer diode circuit diagram (Fig. 4)

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.
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