HYPERSOL

HIGH EFFICIENCY N-TOPCon PV MODULES

Mono PERC | **nTOPCon** | HJT

MODEL:
HYPERSOL VSMDH.72.AAA.05

580-605W

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

MAXIMUM EFFICIENCY %	CELL TYPE	PRODUCT WARRANTY	PERFORMANCE WARRANTY
23.42	M10R **HALF CUT**	12 YEARS	30 YEARS

HIGHER VOLTAGE CAPABILITY

- **2000V** junction box supports higher system voltages, allowing more modules in a series string

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

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

COST SAVINGS

- Project Electrical Investment for BOS Reduced by 1.40%, including wiring, string combiner boxes, leading to significant cost savings

PRODUCT CERTIFICATES

R-61000566
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, M10R nTOPCon

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CREATING CLIMATE FOR CHANGE

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TECHNICAL DATA

HYPERSOL 580-605W

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)	43.6	43.8	44	44.2	44.4	44.6
Maximum Current I_{mpp} (A)	13.31	13.37	13.43	13.48	13.54	13.6
Open Circuit Voltage V_{oc} (V)	52	52.2	52.4	52.6	52.8	53
Short Circuit Current I_{sc} (A)	14.2	14.26	14.32	14.38	14.44	14.5
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_{MPP} / I_{SC} / V_{OC}) [%] : 0-3/±10/±10 | ELECTRICAL MEASUREMENT UNCERTAINTY IS WITHIN ± 2%

ELECTRICAL PARAMETERS | NOCT[3]

Peak Power P_{max} (Wp)	437.9	441.8	445.7	449.4	453.6	457.38
Maximum Voltage V_{mpp} (V)	40.4	40.7	40.8	41	41.2	41.39
Maximum Current I_{mpp} (A)	10.83	10.86	10.92	10.97	11.01	11.06
Open Circuit Voltage V_{oc} (V)	49	49.1	49.3	49.5	49.7	49.86
Short Circuit Current I_{sc} (A)	11.46	11.51	11.56	11.6	11.65	11.7

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)	43.6	43.8	44	44.2	44.4	44.6
Maximum Current I_{mpp} (A)	14.75	14.81	14.88	14.94	15	15.07
Open Circuit Voltage V_{oc} (V)	52	52.2	52.4	52.6	52.8	53
Short Circuit Current I_{sc} (A)	15.73	15.8	15.87	15.93	16	16.07

4) BNPI: 1000W/M²+ϕ.135, BIFACILITY COEFF. (ϕ) AT BNPI P_{MAX}, I_{SC} IS 80±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/±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)	-0.30%/°C
Maximum System Voltage	2000V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C

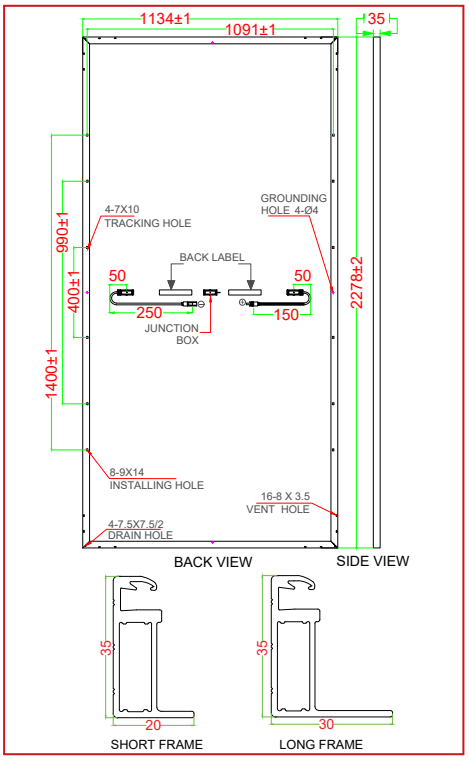
MECHANICAL DATA

Length × Width × Height	2278 X 1134 X 35 mm (89.68 x 44.65 x 1.38 inches)
Weight	34 Kg (74.96 lbs)
Junction Box	IP 68, Split Junction Box with individual bypass diodes
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##	3.2 mm (0.125 inches) high transmission ARC Semi-tempered glass (low iron content)
Cells	72 (144 half-cells) TOPCon 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

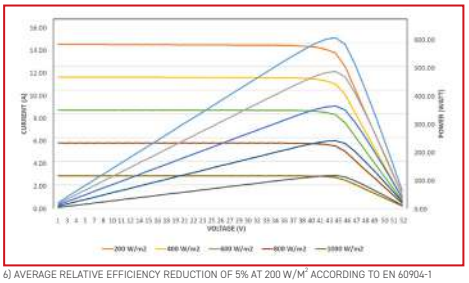
WARRANTY

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

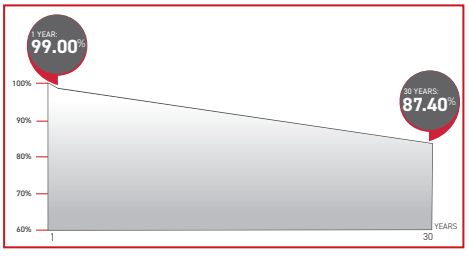


TYPICAL I-V CURVES[6]



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

PERFORMANCE WARRANTY



PACKAGING INFORMATION

Quantity /Pallet	31
Pallets/Container (40'HC)	20
Quantity/Container (40'HC)	620

^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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