

.....
DOC No. : 25E86E4N_1 A-29, Sector 5, Noida, Gautam Buddha Nagar, Uttar
Telephone : +91 9871062220 Pradesh, India - 201301
FAX : -
E-Mail : [testing.a29@urs-
labs.com](mailto:testing.a29@urs-labs.com)
BO Code : NA

**Test REPORT AS PER : IS/IEC 61730 : PART 2
(2004)****QR Code/Barcode : 232525CRS****REPORT NO : SC25SPI00949_1**

DATE : 12 Jun, 2025

PART A. PARTICULARS OF SAMPLE SUBMITTED

a) Customer Name & Address : ARMY SOLAR ENERGY PRIVATE LIMITED
NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN
PANETHA ROAD, SURAT, NA, GUJARAT, India -
394110

b) Nature of sample : -

c) Grade/Variety/Type/Class Size etc : NA

d) Declare values, if any : -

e) Batch No. & Date of Manufacture : /

f) Quantity : 22

g) Date of Receipt : 03 Apr, 2025

h) BIS Seal : Verified by Sample Cell

i) IO's Signature : Verified by Sample Cell

j) Any other Information / Expiry Date, If any : /

k) Date of Commencement of Testing : 16 Apr, 2025

l) Date of Completion of Testing : 11 Jun, 2025

m) Section Code : 25E86E4N

n) Section Report No. : 25E86E4N_1

o) Report Type : New

p) Reference Report No. :

q) Remarks :

Anjali Kanojia
OIC SAMPLE CELL
(Authorized Signatory)
Authorized on: 12 Jun, 2025 10:54 AM

1.

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PART B. SUPPLEMENTARY INFORMATION

- | | |
|--|----------------|
| 1. Reference to sampling procedure, wherever applicable. | Not Applicable |
| 2. Supporting documents for the measurements taken and results derived like graphs, table sketches and or photographs as appropriate to test report, if any. | Yes |
| 3. Deviation from the test methods as prescribed in relevant ISS/Work instruction, if any. | Not Applicable |
| 3. NABL Report required ? | Yes |

Paras Singh
OIC Electrical
(Authorized Signatory)
Authorized on: 11 Jun, 2025 19:54 PM

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PART C. TEST RESULT

S.No.	Clause No Table No. Sl. No	Parameter - Method of test	Test Description	Min Limit	Max Limit	Unit	Result/ Observation
1	Cl.5, Table 7	Mechanical load test (MST 34)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
2	Cl.5, Table 7	Hot spot test (MST 22)	°C, MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
3	Cl.5, Table 7	Wet leakage current test (MST 17)	MΩ	-	-	-	Satisfactory (Refer to attachment).
4	Cl.5, Table 7	UV resistance (MST 54)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
5	Cl.5, Table 7	Damp heat (DH1000) (MST 53)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
6	Cl.5, Table 7	Humidity freeze (10HF) (MST 52)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
7	Cl.5, Table 7	Thermal cycling (T50) (MST 51)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
8	Cl.5, Table 7	Thermal cycling (T200) (MST 51)	MΩ, Visual inspection	-	-	-	Satisfactory (Refer to attachment).
9	11.3	Terminal box knockout tests (MST 44)	mm, Visual inspection	-	-	-	Test Not Applicable
10	11.2	Conduit Bending test (MST 33)	Visual inspection	-	-	-	Test Not Applicable
11	11.1	Partial discharge-test (MST 15)	kV	-	-	-	Test Not Applicable
12	10.10	Module breakage test (MST 32)	mm, g, sq. cm., Visual inspection	-	-	-	Satisfactory (Refer to attachment).
13	10.9	Reverse Current overload test (MST 26)	Visual inspection, MΩ	-	-	-	Satisfactory (Refer to attachment).
14	10.8	Fire test (MST 23)	Visual inspection, m.	-	-	-	Satisfactory (Refer to attachment).
15	10.7	Temperature test (MST 21)	°C	-	-	-	Satisfactory (Refer to attachment).
16	10.6	Dielectric withstand test (MST 16)	MΩ	-	-	-	Satisfactory (Refer to attachment).
17	10.5	Impulse voltage test (MST 14)	Visual inspection, MΩ	-	-	-	Satisfactory (Refer to attachment).
18	10.4	Ground Continuity Test (MST 13)	Ω	-	-	-	Satisfactory (Refer to attachment).
19	10.3	Cut susceptibility test (MST 12)	Ω, MΩ	-	-	-	Test Not Applicable
20	10.2	Accessibility test (MST 11)	Ω	-	-	-	Satisfactory (Refer to attachment).
21	10.1	Visual Inspection (MST 01)	as per cl.10.1.3	-	-	-	Satisfactory (Refer to attachment).

Paras Singh
OIC Electrical
(Authorized Signatory)
Authorized on: 11 Jun, 2025 19:54 PM

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Section Report No. : 25E86E4N_1

IS/IEC 61730 : PART 2 (2004)

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PART D. REMARKS

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OIC Electrical
(Authorized Signatory)
Authorized on: 11 Jun, 2025 19:54 PM

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URS PRODUCTS AND TESTING PRIVATE LIMITED

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CIN NO U21014UP1987PTC008956



TC-6468

SUMMARY OF TEST REPORT

TEST REPORT NO:
SC25SPI00949_1

DATED:11/06/2025

(Number of pages in test report: Page no. 01 to 65)

URS Ref. : URS/LAB/02/RID/25-26/4234

TEST FORMAT AS PER IS/IEC 61730-2:2004 (First Edition) +A1:2017

- 1. Name of Manufacturer: ARMY SOLAR ENERGY PRIVATE LIMITED
- 2. Product: Crystalline silicon terrestrial photovoltaic (PV) modules (Si wafer based).
- 3. Model(s): **Model Tested: AS-156TG-650 (Representative & retested Model) (156 Cut cell family)**

Series Model:

156 Cut cell family with 1500V system voltage:

AS-156TG-645, AS-156TG-640, AS-156TG-635, AS-156TG-630, AS-156TG-625,
AS-156TG-620, AS-156TG-615, AS-156TG-610, AS-156TG-605,

144 Cut cell family with 1500V system voltage:

AS-144TG-600, AS-144TG-595, AS-144TG-590, AS-144TG-585, AS-144TG-580,
AS-144TG-575, AS-144TG-570, AS-144TG-565, AS-144TG-560, AS-144TG-555,
AS-144TG-550, AS-144TG-545, AS-144TG-540

132 Cut cell family with 1500V system voltage:

AS-132TG-535, AS-132TG-530, AS-132TG-525, AS-132TG-520, AS-132TG-515,
AS-132TG-510, AS-132TG-505, AS-132TG-500, AS-132TG-495, AS-132TG-490

120 Cut cell family with 1500V system voltage:

AS-120TG-485, AS-120TG-480, AS-120TG-475, AS-120TG-470, AS-120TG-465,
AS-120TG-460, AS-120TG-450, AS-120TG-445, AS-120TG-440

- 4. Model differences provided (if applicable): Yes
- 5. Model differences verified as per MNRE Guidelines for series formulation: Yes





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6. Test Results:			
SL. NO	TEST REQUIREMENT	CLAUSE	Verdict
1	MST 01 - Visual inspection	10.1	P
2	MST 11 - Accessibility test	10.2	P
3	MST 12 - Cut susceptibility test	10.3	N/A
4	MST 13 - Ground continuity test	10.4	P
5	MST 14 - Impulse voltage test	10.5	P
6	MST 16 - Dielectric withstand test	10.6	P
7	MST 21 - Temperature test	10.7	P
8	MST 23 - Fire test	10.8	P
9	MST 25 - Bypass diode thermal test	MST 25	P
10	MST 42 - Robustness of terminations test	MST 42	P
11	MST 26 - Reverse current overload Test	10.9	P
12	MST 32 - Module breakage test	10.10	P
13	MST 17 - Wet leakage current test	MST 17	P
14	MST 22 - Hot-spot test	MST 22	P
15	MST 34 - Mechanical load test	MST 34	P
16	MST 51a - Thermal cycling test (TC200)	MST 51a	P
17	MST 51b - Thermal cycling test (TC50)	MST 51b	P
18	MST 52 - Humidity freeze test	MST 52	P
19	MST 53 - Damp heat test	MST 53	P
20	MST 54 - UV preconditioning test	MST 54	P
21	MST 15 - Partial discharge test	11.1	N/A
22	MST 33 - Conduit bending test	11.2	N/A
23	MST 44 -Terminal box knockout test	11.3	N/A





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General Information:

The conformity certificates of components/parts are verified to ensure complete testing of products under test and details regarding harmonized IEC standards (where IS standards are not available) are also provided in the list of components/parts (description of module construction) wherever applicable.

CONCLUSION:

- 1.) Sample meets all relevant requirements of IS/IEC 61730-2:2004 (First Edition) +A1:2017
- 2.) Sample fails to meet the following test requirements: N/A

I, hereby undertake that the verdict stated in the test reports for all the test matches with the test results. The sample meets all relevant requirements stated above of IS/IEC61730-2:2004 (First Edition) + A1:2017.

(Signature of Authorized person with Stamp)



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Report No- SC25SPI00949_1

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Dated : 11/06/2025

TEST REPORT IS/IEC 61730-2:2004 +A1:2017 PV Module Safety Qualification Part 2: Requirements for testing	
Report Reference No. :	SC25SPI00949_1
Date of issue :	11/06/2025
Total number of pages	65
Testing Laboratory	URS PRODUCTS AND TESTING PRIVATE LIMITED
Address	A-29, Sector 5, Noida-201301, India
Applicant's name :	ARMY SOLAR ENERGY PRIVATE LIMITED
Address	NEW BLOCK NO. 119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT, 394110
Test specification:	
Standard	IS/IEC 61730-2:2004 +A1:2017
Test procedure	Compliance Report
Non-standard test method	N/A
Test Report Form No:	IS/IEC61730-2_V1.0
Test Report Form(s) Originator	Bureau of Indian Standards
Master TRF	19/02/2018
Test item description:	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules (Si Wafer Based)
Trade Mark	
Manufacturer	ARMY SOLAR ENERGY PRIVATE LIMITED
Address	NEW BLOCK NO. 119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT, 394110
Model/Type reference	Model Tested: AS-156TG-650 (Representative & retested Model) (156 Cut cell family) Series Model: 156 Cut cell family with 1500V system voltage: AS-156TG-645, AS-156TG-640, AS-156TG-635, AS-156TG-630, AS-156TG-625, AS-156TG-620, AS-156TG-615, AS-156TG-610, AS-156TG-605, 144 Cut cell family with 1500V system voltage: AS-144TG-600, AS-144TG-595, AS-144TG-590, AS-144TG-585, AS-144TG-580, AS-144TG-575, AS-144TG-570, AS-144TG-565, AS-144TG-560, AS-144TG-555, AS-144TG-550, AS-144TG-545, AS-144TG-540 132 Cut cell family with 1500V system voltage: AS-132TG-535, AS-132TG-530, AS-132TG-525, AS-132TG-520, AS-132TG-515, AS-132TG-510, AS-132TG-505, AS-132TG-500, AS-132TG-495, AS-132TG-490 120 Cut cell family with 1500V system voltage: AS-120TG-485, AS-120TG-480, AS-120TG-475, AS-120TG-470, AS-120TG-465, AS-120TG-460, AS-120TG-450, AS-120TG-445, AS-120TG-440
Ratings	See copy of Marking label and General product information.
General Disclaimer	The test results presented in this report relate only to the object tested.





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Report No- SC25SPI00949_1

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Dated : 11/06/2025

Testing procedure and testing location:	
Testing Laboratory	URS PRODUCTS AND TESTING PRIVATE LIMITED
Testing location/ address	A-29, Sector 5, Noida-201301, India
Tested by (name + signature).....	<u>Vikas</u> Vikas , Analyst
	
Approved by (+ signature)	 Paras Singh , Vice President (Technical)
Issued by (+ signature)	 Paras Singh , Vice President (Technical)



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Dated : 11/06/2025

List of Attachments (including a total number of pages in each attachment):60 to 65– Photographs and Specification of PV modules

Summary of testing:

Tests performed (name of test and test clause):		Testing location:
10.1	MST 01 – Visual inspection	A-29, Sector 5, Noida-201301, India
10.2	MST 11 – Accessibility test	
10.3	MST 12 – Cut susceptibility test	
10.4	MST 13 – Ground continuity test	
10.5	MST 14 – Impulse voltage test	
10.6	MST 16 – Dielectric withstand test	
10.7	MST 21 – Temperature test	
10.8	MST 23 – Fire test	
MST 25	MST 25 – Bypass diode thermal test	
MST42	MST 42 – Robustness of terminations test	
10.9	MST 26 – Reverse current overload test	
10.10	MST 32 – Module breakage test	
MST 17	MST 17 – Wet leakage current test	
MST 22	MST 22 – Hot-spot test	
MST 34	MST 34 – Mechanical load test	
MST 51a	MST 51a – Thermal cycling test (TC200)	
MST 51b	MST 51b – Thermal cycling test (TC50)	
MST 52	MST 52 – Humidity freeze test	
MST 53	MST 53 – Damp heat test	
MST 54	MST 54 – UV preconditioning test	

The product fulfils the requirements of IS/IEC 61730-2:2004 (First Edition) +A1:2017





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Dated : 11/06/2025

Copy of marking plate:

(Representative Model: AS-156TG-650)(BOM 1)

MODULE TYPE: AS-156TG-650		MADE IN INDIA	
Rated Power (Pmax)	: 650W	 <p>ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2466 X 1134 X 30 in mm)</p> <p>Module Weight: 38.5Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 46.09V		
Rated Current (Imp)	: 14.11A		
Open Circuit Voltage (Voc)	: 57.00V		
Short Circuit Current (Isc)	: 14.83A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 23.24%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		

 ARMY SOLAR ENERGY PRIVATE LIMITED	Model No. AS-156TG-650 Nominal Wattage: 650W±2%	Year of Mfg: 2025 Made in India
	 AS0325650TG00009	

Serial number coding rules for date of manufacturing: AS0325650TG00009

Nomenclature:

- **AS:** AS defines Company/Brand Name(Army Solar)
- **0325:** These Four digit define Mfg. Month and year in MMY format (03= March, 25= 2025 year of mfg.)
- **650TG:** This define glass Type e.g. 650TG means 650W Topcon GLASS PV Module
- **00009:** Last Five digit is Unique serial no Serial Nos. of Manufacturing Module

Polarity marking on Connectors(BOM 1)



Polarity marking on Connectors(BOM 1)



Polarity marking on Junction Box(BOM 1)



Polarity marking on Junction Box(BOM 1)





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Dated : 11/06/2025

(Retested Model: AS-156TG-650)(BOM 2)

MODULE TYPE: AS-156TG-650		MADE IN INDIA	
Rated Power (Pmax)	: 650W	 <p>ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2466 X 1134 X 30 in mm)</p> <p>Module Weight: 38.5Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 46.09V		
Rated Current (Imp)	: 14.11A		
Open Circuit Voltage (Voc)	: 57.00V		
Short Circuit Current (Isc)	: 14.83A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 23.24%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		

 ARMY SOLAR ENERGY PRIVATE LIMITED	Model No. AS-156TG-650 Nominal Wattage: 650W±2%	Year of Mfg: 2025 Made in India
	 AS0325650TG00029	

Polarity marking on Connectors(BOM 2)



Polarity marking on Connectors(BOM 2)



Polarity marking on Junction Box(BOM 2)



Polarity marking on Junction Box(BOM 2)





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Dated : 11/06/2025

(Series Model: AS-156TG-645)

MODULE TYPE: AS-156TG-645		MADE IN INDIA	
Rated Power (Pmax)	: 645W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2466 X 1134 X 30 in mm)</p> <p>Module Weight: 38.5Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 45.99V		
Rated Current (Imp)	: 14.03A		
Open Circuit Voltage (Voc)	: 56.85V		
Short Circuit Current (Isc)	: 14.76A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 23.05%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-645

Year of Mfg: 2025


Nominal Wattage: 645W±2%

Made in India



AS0325645TG00001

(Series Model: AS-156TG-640)

MODULE TYPE: AS-156TG-640		MADE IN INDIA	
Rated Power (Pmax)	: 640W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2466 X 1134 X 30 in mm)</p> <p>Module Weight: 38.5Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 45.89V		
Rated Current (Imp)	: 13.95A		
Open Circuit Voltage (Voc)	: 56.70V		
Short Circuit Current (Isc)	: 14.69A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.88%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-640

Year of Mfg: 2025

Nominal Wattage: 640W±2%

Made in India



AS0325640TG00001





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Dated : 11/06/2025

(Series Model: AS-156TG-635)

MODULE TYPE: AS-156TG-635		MADE IN INDIA	
Rated Power (Pmax)	: 635W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.79V		
Rated Current (Imp)	: 13.87A		
Open Circuit Voltage (Voc)	: 56.55V		
Short Circuit Current (Isc)	: 14.62A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.69%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED






Model No. AS-156TG-635
Nominal Wattage: 635W±2%

Year of Mfg: 2025
Made in India



AS0325635TG00001

(Series Model: AS-156TG-630)

MODULE TYPE: AS-156TG-630		MADE IN INDIA	
Rated Power (Pmax)	: 630W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.96V		
Rated Current (Imp)	: 13.71A		
Open Circuit Voltage (Voc)	: 55.71V		
Short Circuit Current (Isc)	: 14.37A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.54%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-630
Nominal Wattage: 630W±2%

Year of Mfg: 2025
Made in India



AS0325630TG00001





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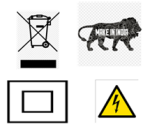
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Dated : 11/06/2025

(Series Model: AS-156TG-625)

MODULE TYPE: AS-156TG-625		MADE IN INDIA	
Rated Power (Pmax)	: 625W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.86V		
Rated Current (Imp)	: 13.63A		
Open Circuit Voltage (Voc)	: 55.56V		
Short Circuit Current (Isc)	: 14.30A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.36%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED


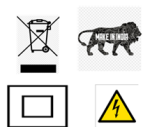
Model No. AS-156TG-625
Nominal Wattage: 625W±2%

Year of Mfg: 2025
Made in India



AS0325625TG00001

(Series Model: AS-156TG-620)

MODULE TYPE: AS-156TG-620		MADE IN INDIA	
Rated Power (Pmax)	: 620W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.76V		
Rated Current (Imp)	: 13.55A		
Open Circuit Voltage (Voc)	: 55.41V		
Short Circuit Current (Isc)	: 14.23A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.18%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-620
Nominal Wattage: 620W±2%

Year of Mfg: 2025
Made in India



AS0325620TG00001





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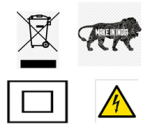
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Dated : 11/06/2025

(Series Model: AS-156TG-615)

MODULE TYPE: AS-156TG-615		MADE IN INDIA	
Rated Power (Pmax)	: 615W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.66V		
Rated Current (Imp)	: 13.47A		
Open Circuit Voltage (Voc)	: 55.26V		
Short Circuit Current (Isc)	: 14.16A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.01%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-615

Year of Mfg: 2025


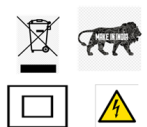
Nominal Wattage: 615W±2%

Made in India



AS0325615TG00001

(Series Model: AS-156TG-610)

MODULE TYPE: AS-156TG-610		MADE IN INDIA	
Rated Power (Pmax)	: 610W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.56V		
Rated Current (Imp)	: 13.39A		
Open Circuit Voltage (Voc)	: 55.11V		
Short Circuit Current (Isc)	: 14.09A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.83%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-610

Year of Mfg: 2025

Nominal Wattage: 610W±2%

Made in India



AS0325610TG00001





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Dated : 11/06/2025

(Series Model: AS-156TG-605)

MODULE TYPE: AS-156TG-605		MADE IN INDIA	
Rated Power (Pmax)	: 605W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2466 X 1134 X 30 in mm) Module Weight: 38.5Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.46V		
Rated Current (Imp)	: 13.31A		
Open Circuit Voltage (Voc)	: 54.96V		
Short Circuit Current (Isc)	: 14.02A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.65%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED






Model No. AS-156TG-605
Nominal Wattage: 605W±2%

Year of Mfg: 2025
Made in India



AS0325605TG00001

(Series Model: AS-144TG-600)

MODULE TYPE: AS-144TG-600		MADE IN INDIA	
Rated Power (Pmax)	: 600W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.36V		
Rated Current (Imp)	: 13.23A		
Open Circuit Voltage (Voc)	: 54.81V		
Short Circuit Current (Isc)	: 13.95A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.47%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-144TG-600
Nominal Wattage: 600W±2%

Year of Mfg: 2025
Made in India



AS0325600TG00001





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Dated : 11/06/2025

(Series Model: AS-144TG-595)

MODULE TYPE: AS-144TG-595		MADE IN INDIA	
Rated Power (Pmax)	: 595W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2278 X 1134 X 30 in mm)</p> <p>Module Weight: 32.0Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 45.26V		
Rated Current (Imp)	: 13.15A		
Open Circuit Voltage (Voc)	: 54.66V		
Short Circuit Current (Isc)	: 13.88A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.29%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-144TG-595

Year of Mfg: 2025


Nominal Wattage: 595W±2%

Made in India



AS0325595TG00001

(Series Model: AS-144TG-590)

MODULE TYPE: AS-144TG-590		MADE IN INDIA	
Rated Power (Pmax)	: 590W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2278 X 1134 X 30 in mm)</p> <p>Module Weight: 32.0Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 45.16V		
Rated Current (Imp)	: 13.07A		
Open Circuit Voltage (Voc)	: 54.51V		
Short Circuit Current (Isc)	: 13.81A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.12%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-144TG-590

Year of Mfg: 2025

Nominal Wattage: 590W±2%

Made in India



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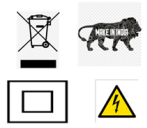
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Dated : 11/06/2025

(Series Model: AS-144TG-585)

MODULE TYPE: AS-144TG-585		MADE IN INDIA	
Rated Power (Pmax)	: 585W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 45.06V		
Rated Current (Imp)	: 12.99A		
Open Circuit Voltage (Voc)	: 54.36V		
Short Circuit Current (Isc)	: 13.74A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 20.94%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-585

Year of Mfg: 2025


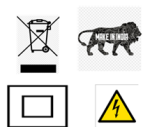
Nominal Wattage: 585W±2%

Made in India



AS0325585TG00001

(Series Model: AS-144TG-580)

MODULE TYPE: AS-144TG-580		MADE IN INDIA	
Rated Power (Pmax)	: 580W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.84V		
Rated Current (Imp)	: 13.55A		
Open Circuit Voltage (Voc)	: 51.48V		
Short Circuit Current (Isc)	: 14.25A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.43%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-580

Year of Mfg: 2025

Nominal Wattage: 580W±2%

Made in India



AS0325580TG00001





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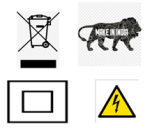
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Dated : 11/06/2025

(Series Model: AS-144TG-575)

MODULE TYPE: AS-144TG-575		MADE IN INDIA	
Rated Power (Pmax)	: 575W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.72V		
Rated Current (Imp)	: 13.47A		
Open Circuit Voltage (Voc)	: 51.31V		
Short Circuit Current (Isc)	: 14.17A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.25%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-575

Year of Mfg: 2025


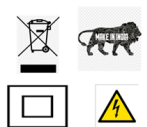
Nominal Wattage: 575W±2%

Made in India



AS0325575TG00001

(Series Model: AS-144TG-570)

MODULE TYPE: AS-144TG-570		MADE IN INDIA	
Rated Power (Pmax)	: 570W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.60V		
Rated Current (Imp)	: 13.39A		
Open Circuit Voltage (Voc)	: 51.14V		
Short Circuit Current (Isc)	: 14.09A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.07%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-570

Year of Mfg: 2025

Nominal Wattage: 570W±2%

Made in India



AS0325570TG00001





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Dated : 11/06/2025

(Series Model: AS-144TG-565)

MODULE TYPE: AS-144TG-565		MADE IN INDIA	
Rated Power (Pmax)	: 565W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2278 X 1134 X 30 in mm)</p> <p>Module Weight: 32.0Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 42.48V		
Rated Current (Imp)	: 13.31A		
Open Circuit Voltage (Voc)	: 50.97V		
Short Circuit Current (Isc)	: 14.01A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.88%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-565

Year of Mfg: 2025


Nominal Wattage: 565W±2%

Made in India



AS0325565TG00001

(Series Model: AS-144TG-560)

MODULE TYPE: AS-144TG-560		MADE IN INDIA	
Rated Power (Pmax)	: 560W	 <p>ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (2278 X 1134 X 30 in mm)</p> <p>Module Weight: 32.0Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 42.36V		
Rated Current (Imp)	: 13.23A		
Open Circuit Voltage (Voc)	: 50.80V		
Short Circuit Current (Isc)	: 13.93A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.70%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-560

Year of Mfg: 2025

Nominal Wattage: 560W±2%

Made in India



AS0325560TG00001





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Dated : 11/06/2025

(Series Model: AS-144TG-555)

MODULE TYPE: AS-144TG-555		MADE IN INDIA	
Rated Power (Pmax)	: 555W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.24V		
Rated Current (Imp)	: 13.15A		
Open Circuit Voltage (Voc)	: 50.63V		
Short Circuit Current (Isc)	: 13.85A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.49%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-555

Year of Mfg: 2025


Nominal Wattage: 555W±2%

Made in India



AS0325555TG00001

(Series Model: AS-144TG-550)

MODULE TYPE: AS-144TG-550		MADE IN INDIA	
Rated Power (Pmax)	: 550W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.12V		
Rated Current (Imp)	: 13.07A		
Open Circuit Voltage (Voc)	: 50.46V		
Short Circuit Current (Isc)	: 13.77A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.31%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-550

Year of Mfg: 2025

Nominal Wattage: 550W±2%

Made in India



AS0325550TG00001





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CIN NO U21014UP1987PTC008956



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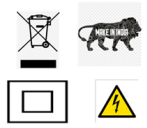
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Dated : 11/06/2025

(Series Model: AS-144TG-545)

MODULE TYPE: AS-144TG-545		MADE IN INDIA	
Rated Power (Pmax)	: 545W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 42.00V		
Rated Current (Imp)	: 12.99A		
Open Circuit Voltage (Voc)	: 50.29V		
Short Circuit Current (Isc)	: 13.69A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.11%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-545

Year of Mfg: 2025


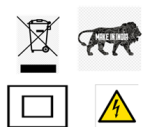
Nominal Wattage: 545W±2%

Made in India



AS0325545TG00001

(Series Model: AS-144TG-540)

MODULE TYPE: AS-144TG-540		MADE IN INDIA	
Rated Power (Pmax)	: 540W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2278 X 1134 X 30 in mm) Module Weight: 32.0Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 41.88V		
Rated Current (Imp)	: 12.91A		
Open Circuit Voltage (Voc)	: 50.12V		
Short Circuit Current (Isc)	: 13.61A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 20.92%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-540

Year of Mfg: 2025

Nominal Wattage: 540W±2%

Made in India



AS0325540TG00001





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

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Dated : 11/06/2025

(Series Model: AS-132TG-535)

MODULE TYPE: AS-132TG-535		MADE IN INDIA	
Rated Power (Pmax)	: 535W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 41.76V		
Rated Current (Imp)	: 12.83A		
Open Circuit Voltage (Voc)	: 49.95V		
Short Circuit Current (Isc)	: 13.53A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 20.73%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-535

Year of Mfg: 2025






Nominal Wattage: 535W±2%

Made in India



AS0325535TG00001

(Series Model: AS-132TG-530)

MODULE TYPE: AS-132TG-530		MADE IN INDIA	
Rated Power (Pmax)	: 530W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs     WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.95V		
Rated Current (Imp)	: 13.27A		
Open Circuit Voltage (Voc)	: 47.07V		
Short Circuit Current (Isc)	: 13.94A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.35%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-530

Year of Mfg: 2025

Nominal Wattage: 530W±2%

Made in India



AS0325530TG00001





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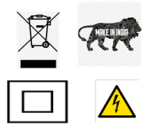
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Dated : 11/06/2025

(Series Model: AS-132TG-525)

MODULE TYPE: AS-132TG-525		MADE IN INDIA	
Rated Power (Pmax)	: 525W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.83V		
Rated Current (Imp)	: 13.19A		
Open Circuit Voltage (Voc)	: 46.90V		
Short Circuit Current (Isc)	: 13.86A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.12%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-525

Year of Mfg: 2025


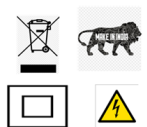
Nominal Wattage: 525W±2%

Made in India



AS0325525TG00001

(Series Model: AS-132TG-520)

MODULE TYPE: AS-132TG-520		MADE IN INDIA	
Rated Power (Pmax)	: 520W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.71V		
Rated Current (Imp)	: 13.11A		
Open Circuit Voltage (Voc)	: 46.73V		
Short Circuit Current (Isc)	: 13.78A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.93%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-520

Year of Mfg: 2025

Nominal Wattage: 520W±2%

Made in India



AS0325520TG00001





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Dated : 11/06/2025

(Series Model: AS-132TG-515)

MODULE TYPE: AS-132TG-515		MADE IN INDIA	
Rated Power (Pmax)	: 515W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.59V		
Rated Current (Imp)	: 13.03A		
Open Circuit Voltage (Voc)	: 46.56V		
Short Circuit Current (Isc)	: 13.70A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.70%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-515

Year of Mfg: 2025


Nominal Wattage: 515W±2%

Made in India



AS0325515TG00001

(Series Model: AS-132TG-510)

MODULE TYPE: AS-132TG-510		MADE IN INDIA	
Rated Power (Pmax)	: 510W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.46V		
Rated Current (Imp)	: 12.95A		
Open Circuit Voltage (Voc)	: 46.39V		
Short Circuit Current (Isc)	: 13.62A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.52%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-510

Year of Mfg: 2025

Nominal Wattage: 510W±2%

Made in India



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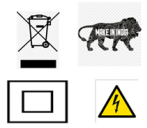
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Dated : 11/06/2025

(Series Model: AS-132TG-505)

MODULE TYPE: AS-132TG-505		MADE IN INDIA	
Rated Power (Pmax)	: 505W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.31V		
Rated Current (Imp)	: 12.87A		
Open Circuit Voltage (Voc)	: 46.22V		
Short Circuit Current (Isc)	: 13.54A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.31%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



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Model No.AS-132TG-505

Year of Mfg: 2025


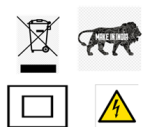
Nominal Wattage: 505W±2%

Made in India



AS0325505TG00001

(Series Model: AS-132TG-500)

MODULE TYPE: AS-132TG-500		MADE IN INDIA	
Rated Power (Pmax)	: 500W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight.cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 39.16V		
Rated Current (Imp)	: 12.79A		
Open Circuit Voltage (Voc)	: 46.05V		
Short Circuit Current (Isc)	: 13.46A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.08%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-500

Year of Mfg: 2025

Nominal Wattage: 500W±2%

Made in India



AS0325500TG00001





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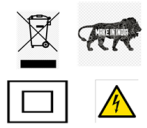
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Dated : 11/06/2025

(Series Model: AS-132TG-495)

MODULE TYPE: AS-132TG-495		MADE IN INDIA	
Rated Power (Pmax)	: 495W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.77V		
Rated Current (Imp)	: 13.47A		
Open Circuit Voltage (Voc)	: 42.77V		
Short Circuit Current (Isc)	: 14.16A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.89%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-495

Year of Mfg: 2025


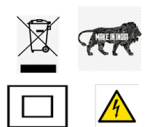
Nominal Wattage: 495W±2%

Made in India



AS0325495TG00001

(Series Model: AS-132TG-490)

MODULE TYPE: AS-132TG-490		MADE IN INDIA	
Rated Power (Pmax)	: 490W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (2092 X 1134 X 30 in mm) Module Weight: 30.3Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.62V		
Rated Current (Imp)	: 13.39A		
Open Circuit Voltage (Voc)	: 42.59V		
Short Circuit Current (Isc)	: 14.08A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.65%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-490

Year of Mfg: 2025

Nominal Wattage: 490W±2%

Made in India



AS0325490TG00001





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Dated : 11/06/2025

(Series Model: AS-120TG-485)

MODULE TYPE: AS-120TG-485		MADE IN INDIA	
Rated Power (Pmax)	: 485W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.47V		
Rated Current (Imp)	: 13.31A		
Open Circuit Voltage (Voc)	: 42.41V		
Short Circuit Current (Isc)	: 13.99A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.43%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-485

Year of Mfg: 2025


Nominal Wattage: 485W±2%

Made in India



AS0325485TG00001

(Series Model: AS-120TG-480)

MODULE TYPE: AS-120TG-480		MADE IN INDIA	
Rated Power (Pmax)	: 480W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.32V		
Rated Current (Imp)	: 13.23A		
Open Circuit Voltage (Voc)	: 42.23V		
Short Circuit Current (Isc)	: 13.91A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.18%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-480

Year of Mfg: 2025

Nominal Wattage: 480W±2%

Made in India



AS0325480TG00001





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Dated : 11/06/2025

(Series Model: AS-120TG-475)

MODULE TYPE: AS-120TG-475		MADE IN INDIA	
Rated Power (Pmax)	: 475W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.17V		
Rated Current (Imp)	: 13.15A		
Open Circuit Voltage (Voc)	: 42.05V		
Short Circuit Current (Isc)	: 13.82A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.98%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-475

Year of Mfg: 2025


Nominal Wattage: 475W±2%

Made in India



AS0325475TG00001

(Series Model: AS-120TG-470)

MODULE TYPE: AS-120TG-470		MADE IN INDIA	
Rated Power (Pmax)	: 470W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 36.02V		
Rated Current (Imp)	: 13.07A		
Open Circuit Voltage (Voc)	: 41.87V		
Short Circuit Current (Isc)	: 13.74A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.72%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-470

Year of Mfg: 2025

Nominal Wattage: 470W±2%

Made in India



AS0325470TG00001





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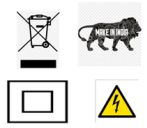
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Dated : 11/06/2025

(Series Model: AS-120TG-465)

MODULE TYPE: AS-120TG-465		MADE IN INDIA	
Rated Power (Pmax)	: 465W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 35.87V		
Rated Current (Imp)	: 12.99A		
Open Circuit Voltage (Voc)	: 41.69V		
Short Circuit Current (Isc)	: 13.65A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.50%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-465

Year of Mfg: 2025


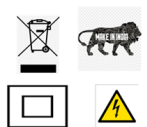
Nominal Wattage: 465W±2%

Made in India



AS0325465TG00001

(Series Model: AS-120TG-460)

MODULE TYPE: AS-120TG-460		MADE IN INDIA	
Rated Power (Pmax)	: 460W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs  WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 35.70V		
Rated Current (Imp)	: 12.91A		
Open Circuit Voltage (Voc)	: 41.51V		
Short Circuit Current (Isc)	: 13.57A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 21.27%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-460

Year of Mfg: 2025

Nominal Wattage: 460W±2%

Made in India



AS0325460TG00001





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Dated : 11/06/2025

(Series Model: AS-120TG-450)

MODULE TYPE: AS-120TG-450		MADE IN INDIA	
Rated Power (Pmax)	: 450W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 33.17V		
Rated Current (Imp)	: 13.57A		
Open Circuit Voltage (Voc)	: 38.51V		
Short Circuit Current (Isc)	: 13.57A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 23.06%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-450

Year of Mfg: 2025


Nominal Wattage: 450W±2%

Made in India



AS0325450TG00001

(Series Model: AS-120TG-445)

MODULE TYPE: AS-120TG-445		MADE IN INDIA	
Rated Power (Pmax)	: 445W	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5 Module Dimensions: (1908 X 1134 X 30 in mm) Module Weight: 27.7Kgs WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.
Rated Voltage (Vmp)	: 33.01V		
Rated Current (Imp)	: 13.49A		
Open Circuit Voltage (Voc)	: 38.33V		
Short Circuit Current (Isc)	: 13.49A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.78%		
Application Class Rating	: Class A		
Safety Class Rating	: Class II		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-445

Year of Mfg: 2025

Nominal Wattage: 445W±2%

Made in India



AS0325445TG00001





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Dated : 11/06/2025

(Series Model: AS-120TG-440)

MODULE TYPE: AS-120TG-440		MADE IN INDIA	
Rated Power (Pmax)	: 440W	 <p>ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110</p>	<p>All Values are measured at STC : 25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions: (1908 X 1134 X 30 in mm)</p> <p>Module Weight: 27.7Kgs</p> <p>WARNING-ELECTRICAL HAZARD: This module produce electricity when exposed to the sunlight,cover the glass side with an opeque material,before opening junction box, do not touch terminal when modules are exposed to the sunlight.</p>
Rated Voltage (Vmp)	: 32.85V		
Rated Current (Imp)	: 13.41A		
Open Circuit Voltage (Voc)	: 38.15V		
Short Circuit Current (Isc)	: 13.41A		
Output Tolerance	: 0 to 2%		
Series Fuse Rating	: 30A		
Module Efficiency	: 22.51%		
Application Class Rating	: Class A		
Maximum System Voltage	: 1500 V		



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-440

Year of Mfg: 2025

Nominal Wattage: 440W±2%

Made in India



AS0325440TG00001





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Similarities & difference between representative model and series/family models:

Sr. No	Series/Family Models	Electrical Specifications						Model difference	Model similarities
		Maximum System Voltage, (Vdc)	Open Circuit Voltage @STC/Voc (Vdc)	Rated Voltage @ STC/ Vmp (V dc)	Short Circuit Current @ STC/Isc (A)	Rated Current @ STC/Imp (A)	Rated Maximum Power at STC, (Watts)		
1	AS-156TG-650 (Representative & retested Model)	1500	57.00	46.09	14.83	14.11	650	<ul style="list-style-type: none"> • Pmp • Voc • Isc • Vmp • Imp • Module size • Cell technology • Encapsulation • Junction box/electrical termination 	<ul style="list-style-type: none"> • Maximum System Voltage • Superstrate • Backsheet/ substrate • Frame and/or mounting structure • Cell interconnect materials or technique • Electrical circuit of an identical package • Power output (by 10%) in the identical package including size and using the identical cell process. • Bypass diode
Series Models:									
2	AS-156TG-645	1500	56.85	45.99	14.76	14.03	645		
3	AS-156TG-640	1500	56.70	45.89	14.69	13.95	640		
4	AS-156TG-635	1500	56.55	45.79	14.62	13.87	635		
5	AS-156TG-630	1500	55.71	45.96	14.37	13.71	630		
6	AS-156TG-625	1500	55.56	45.86	14.30	13.63	625		
7	AS-156TG-620	1500	55.41	45.76	14.23	13.55	620		
8	AS-156TG-615	1500	55.26	45.66	14.16	13.47	615		
9	AS-156TG-610	1500	55.11	45.56	14.09	13.39	610		
10	AS-156TG-605	1500	54.96	45.46	14.02	13.31	605		
11	AS-144TG-600	1500	54.81	45.36	13.95	13.23	600		
12	AS-144TG-595	1500	54.66	45.26	13.88	13.15	595		
13	AS-144TG-590	1500	54.51	45.16	13.81	13.07	590		
14	AS-144TG-585	1500	54.36	45.06	13.74	12.99	585		
15	AS-144TG-580	1500	51.48	42.84	14.25	13.55	580		
16	AS-144TG-575	1500	51.31	42.72	14.17	13.47	575		
17	AS-144TG-570	1500	51.14	42.60	14.09	13.39	570		
18	AS-144TG-565	1500	50.97	42.48	14.01	13.31	565		
19	AS-144TG-560	1500	50.80	42.36	13.93	13.23	560		
20	AS-144TG-555	1500	50.63	42.24	13.85	13.15	555		
21	AS-144TG-550	1500	50.46	42.12	13.77	13.07	550		
22	AS-144TG-545	1500	50.29	42.00	13.69	12.99	545		
23	AS-144TG-540	1500	50.12	41.88	13.61	12.91	540		
24	AS-132TG-535	1500	49.95	41.76	13.53	12.83	535		
25	AS-132TG-530	1500	47.07	39.95	13.94	13.27	530		
26	AS-132TG-525	1500	46.90	39.83	13.86	13.19	525		
27	AS-132TG-520	1500	46.73	39.71	13.78	13.11	520		
28	AS-132TG-515	1500	46.56	39.59	13.70	13.03	515		
29	AS-132TG-510	1500	46.39	39.46	13.62	12.95	510		
30	AS-132TG-505	1500	46.22	39.31	13.54	12.87	505		
31	AS-132TG-500	1500	46.05	39.16	13.46	12.79	500		
32	AS-132TG-495	1500	42.77	36.77	14.16	13.47	495		
33	AS-132TG-490	1500	42.59	36.62	14.08	13.39	490		





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34	AS-120TG-485	1500	42.41	36.47	13.99	13.31	485
35	AS-120TG-480	1500	42.23	36.32	13.91	13.23	480
36	AS-120TG-475	1500	42.05	36.17	13.82	13.15	475
37	AS-120TG-470	1500	41.87	36.02	13.74	13.07	470
38	AS-120TG-465	1500	41.69	35.87	13.65	12.99	465
39	AS-120TG-460	1500	41.51	35.70	13.57	12.91	460
40	AS-120TG-450	1500	38.51	33.17	13.57	13.57	450
41	AS-120TG-445	1500	38.33	33.01	13.49	13.49	445
42	AS-120TG-440	1500	38.15	32.85	13.41	13.41	440





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Test item particulars:	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules (Si Wafer Based)
Accessories and detachable parts included in the evaluation	N/A
Mounting system used	
Other Options included	N/A
Possible test case verdicts:	
- test case does not apply to the test object	N/A (Not Applicable)
- test object does meet the requirement	Pass (P)
- test object does not meet the requirement	Fail (F)
Abbreviations used in the report:	
Pmax – Maximum power	PD – Partial Discharge
Vpm – Maximum power voltage	RTI/RTE – Relative Thermal Endurance Index
Ipm – Maximum power current	STC – Standard Test Conditions
Isc – Short circuit current	TC – Thermal Cycling
Voc – Open circuit voltage	CTI – Comparative Tracking Index
FF –Fill factor	MST – Module Safety Test
Testing	
Date of receipt of test item	05/04/2025
Date (s) of performance of tests	09/04/2025 to 11/06/2025

General remarks:

"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.

Throughout this report a [] comma/ [X] point is used as the decimal separator.

This Test Report Form is intended for the investigation of PV modules in accordance with IS/IEC 61730-2:2004 +A1:2017. It can only be used together with IS/IEC 61730-1:2004 +A1:2017+A2:2017 Test Report.

Name and Address of Factory	ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO. 119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT, 394110
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General Product Information

General product information:

PV module type reference.....: **AS-156TG-650(Representative & retested Model)**

Product Electrical Ratings at STC

Nominal maximum power (Pmax).....:	650W
Nominal open circuit voltage at (Voc).....:	57.00V
Nominal short circuit current at (Isc).....:	14.83A
Nominal maximum power voltage (Vpm).....:	46.09V
Nominal maximum power current (Ipm).....:	14.11A

Product Safety Ratings

Maximum systems operating voltage.....:	1500V
Maximum over-current protection rating.....:	30A
Safety Application class.....:	Class A
Safety class in accordance with IEC 61140.....:	Class II
Fire safety class.....:	Class C
Recommended maximum series/parallel module configurations.....:	24 Pcs each series

Scope of Module Safety Qualification Testing:

Sample.....:	<input checked="" type="checkbox"/> Initial module safety qualification <input checked="" type="checkbox"/> Extension of module safety qualification
Original test report ref. no	N/A
<input checked="" type="checkbox"/> Change in cell technology	
<input type="checkbox"/> Change in cell interconnect materials/technique	
<input checked="" type="checkbox"/> Modification to encapsulation system	
<input checked="" type="checkbox"/> Modification to junction box/el. Termination	
<input type="checkbox"/> Modification to superstrate	
<input type="checkbox"/> Change in el. circuit of an identical package	
<input type="checkbox"/> Modification to backsheet/substrate	
<input type="checkbox"/> Higher or lower output by 10 %	
<input type="checkbox"/> Modification to frame/mounting structure	
<input type="checkbox"/> Increase in module size	
<input type="checkbox"/> Removal of frame	

Note (1) Use the "General product information" field to give any information on model differences within a product type family covered by the test report. Note (2) Use the "General product information" field to describe the range of electrical and safety ratings, if the TRF covers a type family of modules. Note (3) Use Annex 1 to list the used materials and components of the module (manufacturer/supplier and type reference)





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Clause	Requiremet+Test	Result-Remark	Verdict
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3	Application Classes		P
	The module has been evaluated for the following Application Class (Class A, B, C) :	Class A	P

6	Sampling		P
[X]	The modules tested (modules and laminate) were taken at random from a production batch and subjected to manufacturer's normal quality control and inspection for safety testing.	-	P
[]	The modules tested (modules and laminate) were prototypes of a new design and not taken from a production batch.	-	N/A
[X]	Preconditioning of test samples was performed within IS 14286 (2010) or IS 16077:2013/IEC 61646:2008 performance testing.	-	P
[]	Preconditioning of test samples was performed separately from IS 14286 (2010) or IS 16077:2013/IEC 61646:2008 performance testing.	-	N/A





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Clause	Requiremet+Test	Result-Remark	Verdict
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List of test samples

Sample No.	Type / model	Remark Serial number
Full Testing		
17	AS-156TG-650 (BOM 1)	AS0325650TG00009
18		AS0325650TG00010
19		AS0325650TG00011
20		AS0325650TG00012
21		AS0325650TG00013
22		AS0325650TG00014
23		AS0325650TG00015
24		AS0325650TG00016
25		AS0325650TG00017
26		AS0325650TG00018
27	AS-156TG-650 (BOM 2)	AS0325650TG00029
28		AS0325650TG00030
29		AS0325650TG00031
30		AS0325650TG00032
31		AS0325650TG00033
32		AS0325650TG00034
33		AS0325650TG00035
34		AS0325650TG00036
35		AS0325650TG00037

Supplementary information: NIL





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Clause	Requiremet+Test	Result-Remark	Verdict
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9	Pass Criteria	--	P
	The module under evaluation was judged to have passed all safety qualification test. The test samples met all of the criteria of each individual safety test.	See appended tables	P
Supplementary information: NIL			

10	Test Procedures	--	P
Safety qualification testing includes the following Module Safety Tests (MST) of IS/IEC 61730-2			
10.1	MST 01 Visual inspection	see table 10.1	P
10.2	MST 11 Accessibility test	see table 10.2	P
10.3	MST 12 Cut susceptibility test	see table 10.3	N/A
10.4	MST 13 Ground continuity test	see table 10.4	P
10.5	MST 14 Impulse voltage test	see table 10.5	P
10.6	MST 16 Dielectric withstand test	see table 10.6	P
10.7	MST 21 Temperature test	see table 10.7	P
10.8	MST 23 Fire test	see table 10.8	P
MST 25	MST 25 Bypass diode thermal test	See table A2.9	P
MST 42	MST 42 Robustness of terminations test	See table A2.4	P
10.9	MST 26 Reverse current overload Test	see table 10.9	P
10.10	MST 32 Module breakage test	see table 10.10	P
MST 17	MST 17 Wet leakage current test	see table MST 17	P
MST 22	MST 22 Hot-spot test	see table A 2.10	P
MST 34	MST 34 Mechanical load test	see table A 2.7	P
MST 51a	MST 51a Thermal cycling test (TC200)	see table A 2.8	P
MST 51b	MST 51b Thermal cycling test (TC50)	see table A 2.2	P
MST 52	MST 52 Humidity freeze test	see table A 2.3	P
MST 53	MST 53 Damp heat test	see table A 2.5	P
MST 54	MST 54 UV preconditioning test .	see table A 2.1	P

11	Component tests:	--	--
11.1	MST 15 Partial discharge test	see table 11.1	N/A
11.2	MST 33 Conduit bending test	see table 11.2	N/A
11.3	MST 44 Terminal box knockout test	see table 11.3	N/A
Supplementary information: NIL			





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Clause	Requiremet+Test	Result-Remark	Verdict
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10.1	TABLE: Visual Inspection - MST 01 (Initial)		P
Sample No.	Nature and position of findings		-
17	No visual defect		P
18	No visual defect		P
19	No visual defect		P
20	No visual defect		P
21	No visual defect		P
22	No visual defect		P
23	No visual defect		P
24	No visual defect		P
25	No visual defect		P
26	No visual defect		P
27	No visual defect		P
28	No visual defect		P
29	No visual defect		P
30	No visual defect		P
31	No visual defect		P
32	No visual defect		P
33	No visual defect		P
34	No visual defect		P
35	No visual defect		P

Supplementary information: NIL

10.2	TABLE: Accessibility Test - MST 11 (Initial)		P
	Maximum system voltage [V _{DC}].....:	1500	-
Sample No.	Result [MΩ]		-
18	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
19	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
20	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
21	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
28	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
29	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P
30	Resistance between the test fixture and the electrical circuit of module is > 1MΩ		P

Supplementary information: NIL





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Clause	Requiremet+Test	Result-Remark	Verdict
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10.4	TABLE: Ground Continuity Test - MST 13 (Initial)		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Current applied [A].....:	75	-
	Location of designated grounding point.....:	Ground holes on the sides of the frame	-
	Location of second contacting point.....:	Greatest physical displacement from the grounding point.	-
Sample No.	Voltage [V _{DC}]	Resistance [mΩ]	-
18	0.43	5.733	P
19	0.35	4.667	P
20	0.39	5.200	P
21	0.46	6.133	P
28	0.37	4.933	P
29	0.42	5.600	P
30	0.43	5.733	P

Supplementary information: NIL

10.6	TABLE: Dielectric Withstand Test - MST 16 (Initial)		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Test voltage applied V _{TEST} [V _{DC}].....:	8000 for 1min/1500 for 2min	-
	Module area A [m ²].....:	2.796	-
Sample No.	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance x A [MΩ.m ²] [#]
18	[X]	>1000	40
19	[X]	>1000	40
20	[X]	>1000	40
21	[X]	>1000	40
28	[X]	>1000	40
29	[X]	>1000	40
30	[X]	>1000	40

Supplementary information: [X]: No breakdown occurred. ; # : Limit





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MST 17	TABLE: Wet Leakage Current Test - MST 17 (Initial)		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Test voltage applied V _{TEST} [V _{DC}].....:	1500	-
	Module area A [m ²].....:	2.796	-
	Resistivity of wetting agent [Ω.cm].....:	2586	-
	Average wetting agent temperature [°C].....:	23.8	-
Sample No.	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance x A [MΩ.m ²] [#]	-
18	>1000	40	P
19	>1000	40	P
20	>1000	40	P
21	>1000	40	P
28	>1000	40	P
29	>1000	40	P
30	>1000	40	P

Supplementary information: [#] : Limit





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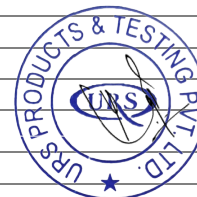
10.3	TABLE: Cut Susceptibility Test - MST 12		N/A
	Applied force [N].....:	-	-
Sample No.			-
-		-	-
-		-	-
Supplementary information: NIL			
10.1	TABLE: Visual Inspection - MST 01 (after Cut Susceptibility Test)		-
Sample No.	Nature and position of findings		-
-			-
-			-
Supplementary information: NIL			

10.6	TABLE: Dielectric Withstand Test - MST 16 (after Cut Susceptibility Test)			-
	Maximum system voltage [V _{DC}].....:			-
	Test voltage applied V _{TEST} [V _{DC}].....:			-
	Module area A [m ²].....:			-
Sample No.	Dielectric breakdown	Insulation resistance at V _{TEST} [GΩ]	Insulation resistance x A [MΩ.m ²] [#]	-
-	-	-	-	-
-	-	-	-	-
Supplementary information: [X]: No breakdown occurred. ; # : Limit.				

MST 17	TABLE: Wet Leakage Current Test - MST 17 (after Cut Susceptibility Test)			-
	Maximum system voltage [V _{DC}].....:			-
	Test voltage applied V _{TEST} [V _{DC}].....:			-
	Module area A [m ²].....:			-
	Resistivity of wetting agent [Ω.cm].....:			-
	Average wetting agent temperature [°C].....:			-
Sample No.	Insulation resistance at V _{TEST} [GΩ]		Insulation resistance x A [MΩ.m ²] [#]	-
-			-	-
-			-	-
Supplementary information: # - Limit.				

10.2	TABLE: Accessibility test - MST 11			-
	Maximum system voltage [V _{DC}].....:	1500		-
Sample No.	Nature and position of findings			-
-				-
-				-
Supplementary information: NIL				

10.4	TABLE: Ground Continuity Test - MST 13			-
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	Maximum system voltage [V _{DC}].....:	-	-
	Current applied [A].....:	-	-
	Location of designated grounding point.....:	-	-
	Location of second contacting point.....:	-	-
Sample No.	Voltage [V _{DC}]	Resistance [mΩ]	-
-	-	-	-
-	-	-	-

Supplementary information: NIL

10.5	TABLE: Impulse Voltage Test - MST 14		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Impulse voltage [V].....:	16000	-
	Thickness of conductive foil [mm].....:	0.05	-
Sample No.			-
21	No dielectric breakdown or surface tracking		P
30	No dielectric breakdown or surface tracking		P

Supplementary information: NIL

10.1	TABLE: Visual Inspection - MST 01 (after Impulse Voltage Test)		P
Sample No.	Nature and position of findings		-
21	No visual defect		P
30	No visual defect		P

Supplementary information: NIL

10.6	TABLE: Dielectric Withstand Test - MST 16 (after Impulse Voltage Test)		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Test voltage applied V _{TEST} [V _{DC}].....:	8000V for 1min/1500 V for 2min	-
	Module area A [m ²].....:	2.796	-
Sample No.	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance x A [MΩ.m ²] [#]
21	[X]	>1000	40
30	[X]	>1000	40

Supplementary information: [X]: No breakdown occurred. ; # - Limit.





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10.7				TABLE: Temperature Test - MST 21				P
Sample No.:		23						-
Reference solar irradiance [W/m ²].....:		1000						-
Reference ambient temperature [°C].....:		40						-
Measuring location	Component temperature T _{OBS} [°C]	Normalised temperature T _{CON} [°C]	Component temperature limit [°C]					
Module open-circuited								
Module superstrate above the centre cell	68.46	78.86	Not specified					-
Module substrate below the centre cell	64.36	74.76	Not specified					-
Terminal enclosure interior surface	61.46	71.86	85					P
Terminal enclosure interior air space	61.62	72.02	85					P
Field wiring terminals	65.48	75.88	90					P
Insulation of the field wiring leads	60.68	71.08	90					P
External connector bodies	59.62	70.02	85					P
Diode D1	55.87	66.27	200					P
Diode D2	58.54	68.94	200					P
Diode D3	58.14	68.54	200					P
Module short-circuit								
Module superstrate above the centre cell	71.72	82.12	Not specified					-
Module substrate below the centre cell	70.05	80.45	Not specified					-
Terminal enclosure interior surface	62.85	73.25	85					P
Terminal enclosure interior air space	63.12	73.52	85					P
Field wiring terminals	63.37	73.77	90					P
Insulation of the field wiring leads	59.22	69.62	90					P
External connector bodies	59.78	70.18	85					P
Diode D1	71.31	81.71	200					P
Diode D2	70.94	81.34	200					P
Diode D3	71.05	81.45	200					P
Supplementary information: T _{CON} = T _{OBS} + (40 °C - T _{AMB}), temperature limits are given in Table 9 of IS/IEC 61730-2.								





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10.7	TABLE: Temperature Test - MST 21			P
	Sample No.:	32		-
	Reference solar irradiance [W/m ²].....:	1000		-
	Reference ambient temperature [°C].....:	40		-
Measuring location	Component temperature T _{OBS} [°C]	Normalised temperature T _{CON} [°C]	Component temperature limit [°C]	-
Module open-circuited				
Module superstrate above the centre cell	66.56	77.66	Not specified	-
Module substrate below the centre cell	65.65	76.75	Not specified	-
Terminal enclosure interior surface	62.45	73.55	85	P
Terminal enclosure interior air space	61.23	72.33	85	P
Field wiring terminals	60.75	71.85	90	P
Insulation of the field wiring leads	59.76	70.86	90	P
External connector bodies	58.98	70.08	85	P
Diode D1	59.45	70.55	200	P
Diode D2	58.45	69.55	200	P
Diode D3	58.12	69.22	200	P
Module short-circuit				
Module superstrate above the centre cell	74.54	86.24	Not specified	-
Module substrate below the centre cell	73.65	85.35	Not specified	-
Terminal enclosure interior surface	61.67	73.37	85	P
Terminal enclosure interior air space	62.74	74.44	85	P
Field wiring terminals	64.45	76.15	90	P
Insulation of the field wiring leads	60.75	72.45	90	P
External connector bodies	59.76	71.46	85	P
Diode D1	72.45	84.15	200	P
Diode D2	71.54	83.24	200	P
Diode D3	71.34	83.04	200	P

Supplementary information: T_{CON} = T_{OBS} + (40 °C - T_{AMB}), temperature limits are given in Table 9 of IS/IEC 61730-2.





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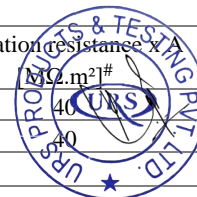
10.8	TABLE: Fire Test - MST 23		P
	Module fire resistance class (A, B, C).....:	Class C	-
	No. of modules provided to create the test assembly.....:	3	-
	Sample No.		-
	24#	[X] Modules comply with the requirements for the fire resistance class	P
	25#		P
	26*		P
Supplementary information: # - Spread of flame, * - Brand			

10.8	TABLE: Fire Test - MST 23		P
	Module fire resistance class (A, B, C).....:	Class C	-
	No. of modules provided to create the test assembly.....:	3	-
	Sample No.		-
	33#	[X] Modules comply with the requirements for the fire resistance class	P
	34#		P
	35*		P
Supplementary information: # - Spread of flame, * - Brand			

10.9	TABLE: Reverse Current Overload Test - MST 26		P
	Module over-current protection rating [A].....:	30	-
	Test current [A].....:	40.5 for both	-
	Range of applied voltage [V].....:	45.93—56.39 for sample 23 44.57—55.63 for sample 32	-
	Test duration.....:	2 hours for each	-
	Sample No.		-
	23	[X] No flaming of the module [X] No flaming or charring of the cheesecloth [X] No flaming of the tissue paper	P
	32	[X] No flaming of the module [X] No flaming or charring of the cheesecloth [X] No flaming of the tissue paper	P
Supplementary information: Nil			

MST 17	TABLE: Wet Leakage Current Test - MST 17 (after Reverse Current Overload Test)		P
	Maximum system voltage [V _{DC}].....:	1500	-
	Test voltage applied V _{TEST} [V _{DC}].....:	1500	-
	Module area A [m ²].....:	2.796	-
	Resistivity of wetting agent [Ω.cm].....:	2519	-
	Average wetting agent temperature [°C].....:	23.1	-
	Sample No.	Insulation resistance at V _{TEST} [MΩ]	-
	23	>1000	P
	32	>1000	P

Supplementary information: # : Limit





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TABLE: Module Breakage Test - MST 32		P
Weight of impactor [kg].....:	45.5	-
Thickness of sample [mm].....:	5.4	-
Mounting technique used.....:	As instructed in manual	-
Module breakage.....:	<input type="checkbox"/> No breakage <input type="checkbox"/> Breakage at 300 mm <input type="checkbox"/> Breakage at 450 mm <input checked="" type="checkbox"/> Breakage at 1220 mm	-
Weight of particles in case of breakage [g].....:	No particle ejected from the sample	-
Sample No.		-
22	<input type="checkbox"/> Breakage occurred, but no shear or opening large enough for a 76 mm diameter sphere to pass freely has developed.	N/A
	<input type="checkbox"/> Disintegration occurred, but the ten largest crack-free particles selected 5 min subsequent to the test did not weigh more in grams than 16 times the thickness of the sample in millimetres.	N/A
	<input checked="" type="checkbox"/> Breakage occurred, but no particles larger than 6.5 cm ² have been ejected from the sample.	P
31	<input type="checkbox"/> Breakage occurred, but no shear or opening large enough for a 76 mm diameter sphere to pass freely has developed.	N/A
	<input type="checkbox"/> Disintegration occurred, but the ten largest crack-free particles selected 5 min subsequent to the test did not weigh more in grams than 16 times the thickness of the sample in millimetres.	N/A
	<input checked="" type="checkbox"/> Breakage occurred, but no particles larger than 6.5 cm ² have been ejected from the sample.	P

Supplementary information: NIL





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11.1	TABLE: Partial Discharge Test - MST 15		N/A
	Manufacturer.....:	-	-
	Type reference.....:	-	-
	Materials and thicknesses.....:	-	-
	Ambient temperature [°C].....:	-	-
	Relative humidity [%].....:	-	-
	Test medium (air/oil).....:	-	-
Sample No.	PD inception voltage, U _i [V]	PD extinction voltage, U _e [V]	
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
Mean value of PD extinction voltage, \bar{U}_e , avg [V]		-	-
Standard deviation of PD extinction voltage, σ [V]..... :		-	-
Mean value minus standard deviation of PD extinction voltage [V]		-	-
Resulting maximum system voltage, U _{SYS} [V].....		-	-

Supplementary information: No such construction	
Calculation of maximum system voltage:	
Safety factor	$F_1 = 1.2$ (Basic safety factor)
$F_2 = 1$	(Hysteresis factor)
$F_3 = 1.25$	(Additional safety factor: reinforced insulation)
Allowable maximum system voltage: $U_{SYS} = 2 \times (U_{e,avg} - \sigma) / (F_1 \times F_2 \times F_3) V_{DC}$	





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11.2	TABLE: Bending Test - MST 33		N/A
	Manufacturer and type reference of conduit.....		-
	Trade size of conduit [mm].....		-
	Distance between the ends of the conduit in the box		-
	Distance between supports.....		-
	Force load in accordance with Table 10 of IS/IEC 61730-2 [N].....		-
Sample No.			-
	<input type="checkbox"/> No rupture of the attachment walls of the junction box		
	<input type="checkbox"/> No separation of junction box from the conduit		
Supplementary information: No such construction			
Distance between supports = 760 mm + Distance between the ends of the conduit in the box			

11.3	TABLE: Terminal Box Knockout Test - MST 44		N/A
	Manufacturer of terminal box.....		-
	Type reference.....		-
	Number of knockouts in the junction box.....		-
	Force applied to knockout [N].....	44.5	-
Knockout No.			-
	<input type="checkbox"/> The knockout remains in place		
	<input type="checkbox"/> The clearance between knockout and opening is < 0.75 mm		
	<input type="checkbox"/> The knockout remains in place		
	<input type="checkbox"/> The clearance between knockout and opening is < 0.75 mm		
	<input type="checkbox"/> The knockout remains in place		
	<input type="checkbox"/> The clearance between knockout and opening is < 0.75 mm		
	<input type="checkbox"/> The knockout remains in place		
	<input type="checkbox"/> The clearance between knockout and opening is < 0.75 mm		
Supplementary information: No such construction			





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Annex 1: PRODUCT DESCRIPTION SHEET (MANUFACTURERS AND TYPE REFERENCES)

A1.1	MODULE TYPE/S
	Model Tested: AS-156TG-650(Representative & retested Model)

A1.2	MODULE DESIGN –DIMENSIONS
	Module dimensions (L x W x H) [mm].....: 2466*1134*30 for 156 Half cut cell family 2278*1134*30 for 144 Half cut cell family 2092*1134*30 for 132 Half cut cell family 1908*1134*30 for 120 Half cut cell family

A1.3	SOLAR CELL
	Cell type reference.....: Main: CZJT-182M-16D1(F172R174), N-type TOPCon Manufactured by: JTPV BOM 1 Alternate: M18316BTP50, Monocrystalline Bifacial TOPCon Solar Cell Manufactured by: SolarSpace Technology Co., Ltd BOM 2
	Cell dimensions L x W x T (± %) [mm].....: Main: 91.1mm *183.75mm (±0.5 mm) BOM 1 Alternate: 91.1mm *183.75mm (±0.25 mm) BOM 2
	Cell thickness [µm].....: Main: 130 ± 13 µm BOM 1 Alternate: 130 ± 13 µm BOM 2
	Cell area [cm²].....: Main: 167.39 BOM 1 Alternate: 167.39 BOM 2

A1.4	IDENTIFICATION OF MATERIALS
	Front cover.....: High transmission low iron tampered AR Coated glass, Thickness: 2.0mm±0.20mm, Manufactured by XINYI SOLAR (MALAYSIA) SDN BHD. Alternate manufacturer: <ol style="list-style-type: none"> VISHAKHA GLASS PRIVATE LIMITED BOROSIL RENEWABLES LIMITED FLAT GLASS GROUP CO., LTD CSG HOLDING CO., LTD HENAN ANCAI HI-TECH CO. LTD Shenzhen topray solar Zhejiang Ninghai KIBING SS GROW TECHNOCRATS Gold Plus Float Glass Private Limited WUJIANG CSG FLAT VIETNAM CO. LTD SBH KIBING SOLAR NEW MATERIALS M SDN BHD XINYI SOLAR MALAYSIA SDN BHD HENAN ANCAI HI TECH CO LTD XINYI SOLAR HONGKONG LTD





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		<p>Note: Alternate Front cover having same materials,same production process, and same quality level, only change in manufacturer name as per declared by manufacturer.</p>	
	Rear cover.....:	<p>High transmission low iron tampered glass, Thickness: 2.0mm±0.20mm, Manufactured by XINYI SOLAR (MALAYSIA) SDN BHD. Alternate manufacturer:</p> <ol style="list-style-type: none"> 1. VISHAKHA GLASS PRIVATE LIMITED 2. BOROSIL RENEWABLES LIMITED 3. FLAT GLASS GROUP CO., LTD 4. CSG HOLDING CO., LTD 5. HENAN ANCAI HI-TECH CO. LTD 6. Shenzhen topray solar 7. Zhejiang Ninghai KIBING 8. SS GROW TECHNOCRATS 9. Gold Plus Float Glass Private Limited 10. WUJIANG CSG 11. FLAT VIETNAM CO. LTD 12. SBH KIBING SOLAR NEW MATERIALS M SDN BHD 13. XINYI SOLAR MALAYSIA SDN BHD 14. HENAN ANCAI HI TECH CO LTD 15. XINYI SOLAR HONGKONG LTD <p>Note: Alternate Rear cover having same materials,same production process, and same quality level, only change in manufacturer name as per declared by manufacturer.</p>	
	Encapsulation material.....:	<p>Main: Front: EP304, Ultra-clear PID free, Thickness: 0.50±0.10mm, Back: F406PS, Ultra-clear PID free, Thickness: 0.50±0.10mm Manufactured by HANGZHOU FIRST APPLIED MATERIAL CO., LTD</p>	BOM 1
		<p>Alternate: Front: Vishakha EPE, Thickness: Thickness: 0.50±0.10mm, Back: Vishakha EPE, Thickness: Thickness: 0.50±0.10mm Manufactured by VISHAKHA RENEWABLES PRIVATE LIMITED</p>	BOM 2
	Frame parts.....:	<p>6005-T6, Anodized Aluminum Alloy, Thickness: 30mm, Manufactured by Anhui Xinbo Technology Co., Ltd. Alternate manufacturer:</p> <ol style="list-style-type: none"> 1. JIANGYIN TINZE NEW ENERGY TECHNOLOGY CO., LTD 2. JIANGSU SULV NEW MATERIAL TECHNOLOGY CO., 	





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- LTD
3. FUZHOU ANTONG NEW MATERIAL TECHNOLOGY CO.,LTD
 4. Sudarshan Alluminium India Limited
 5. Regal Allufin Industries
 6. Regal Aluminum company
 7. Vishakha Metals Pvt. Ltd.
 8. J.M. Industries
 9. WUXI U PLUS TECHNOLOGY CO., LTD.
 10. Jiangyin Enor New Material Technology Co.,Ltd. (Lutong)
 11. Fujian Fenan Aluminium Co. LTD
 12. Jiangsu Dinghao Aluminium Technology Co., Ltd.
 13. Jiangyin Tianmu Green Energy Technology Co.,Ltd
 14. jiangyin PV Tech Chaoyang
 15. Yonz Technology Co., Ltd
 16. Mr Industries
 17. Zhejiang Jianxing Taihe New Energy Technology Co., Ltd.
 18. Shandong Tianqu Aluminum Co. Ltd
 19. Galco Extrusions Pvt. Ltd
 20. Changzhou Lifeng Energy Technology Co; Ltd.
 21. Vinitech Metal Private Limited
 22. Dharmik Industries
 23. Jia Yue Group Co Ltd
 24. Jiangyin Optimal Metal Technology Co.,Ltd
 25. Jiangyin New Sulv Technology Co Ltd
 26. Vima Engineering Company
 27. Chizhou Anan Aluminum Co., Ltd.
 28. Suzhou Sentong Photovoltaic Co., Ltd.
 29. PanAsia enterprises(Nanyang)company limited
 30. Jiangyin Renyu Metal products co.Ltd
 31. Hebei Xindongrui alloy material Tech. Co. Ltd
 32. Orin Metals Private Limited
 33. Angel extrusion pvt ltd
 34. Y S metal
 35. SS GROW TECHNOCRATS

Note: Alternate Frame having same Cross section, same framing material, same mounting technique, only change in manufacturer name as per declared by manufacturer.

Mounting parts.....:

As per installation manual

Adhesive for frame.....:

HT906Z, High-performance RTV sealant, White paste, Manufactured by Shanghai Huitian New Material Co., Ltd.

Alternate manufacturer:

1. TONSAN Adhesive, Inc.
2. Adarsha Specialty Chemicals Pvt Ltd
3. Fasto Advance Materials India Pvt. Limited





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		<p>4. Sikasil 5. Huitian 6. Silande</p> <p>Note: Alternate Adhesive for frame having same technical specification & same material, only manufacturer name change as Declared by manufacturer.</p>	
	Cell connector.....:	<p>Sn60%Pb40%, PV Ribbon (Round wire), ϕ0.26mm, Manufactured by TaiCang JuRen PV Material Co.,Ltd Alternate manufacturer:</p> <ol style="list-style-type: none"> Valeo Products LLP A B INDUSTRIES Suzhou YourBest New-type Materials Co., Ltd VIDYA WIRES PVT LTD RAPID WIRE Xi'an Telison New Materials Co., Ltd. Jiangsu Fier New Energy Jiangsu Fier New energy company KOS Limited Gadhat Energy pvt.ltd Ferron industries Shanghai Sunby Solar Technologies Co., Ltd, TAICANG JUREN PHOTOVOLATAIC MATERIAL CO., LTD <p>Note: Alternate Cell connector having same interconnect material, same bonding technique, same number of interconnects, same number of solder bonds per cell, and flux, only change in thickness (tolerance) as per declared by manufacturer.</p>	
	String connector.....:	<p>Sn60%Pb40%, Copper component: \geq99.99%, Dimension: $0.40 \pm 0.010\text{mm} \times 4 \pm 0.10\text{mm}$, Manufactured by TaiCang JuRen PV Material Co.,Ltd Alternate manufacturer:</p> <ol style="list-style-type: none"> Valeo Products LLP A B INDUSTRIES Suzhou YourBest New-type Materials Co., Ltd VIDYA WIRES PVT LTD RAPID WIRE Xi'an Telison New Materials Co., Ltd. Jiangsu Fier New Energy Jiangsu Fier New energy company KOS Limited Gadhat Energy pvt.ltd Ferron industries Shanghai Sunby Solar Technologies Co., Ltd, TAICANG JUREN PHOTOVOLATAIC MATERIAL CO., LTD 	





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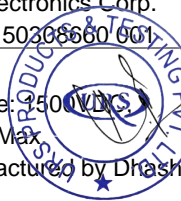
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		<p>Note: Alternate String connector having same interconnect material, same bonding technique, same number of interconnects, same number of solder bonds per cell, and flux, only change in thickness(tolerance) as per declared by manufacturer.</p>	
	Fluxing agent.....:	<p>952-S, Low-Solids No-Clean Flux, Manufactured by Kester Alternate manufacturer:</p> <ol style="list-style-type: none"> 1. superior 2. asahi 3. Arbiatal Solutions Private Limited 4. Henkel Corporation 5. METAL CHEM 6. ALPHA Telecore 7. Reality chemicals 8. HuaiHui 9. KHANNA BOND SOLDER MANUFACTURERS PVT LTD 10. Fasto 11. cooksun india pvt ltd 12. National Products <p>Note: Alternate Fluxing agent having same technical specification & same material, only manufacturer name change as Declared by manufacturer.</p>	
	Junction box.....:	<p>Main: PV-HT021x, Rated Voltage: 1500VDC, Current: 30A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Jiangsu Haitian Microelectronics Corp. Tested by TUV SUD, Certificate no.: B 096995 0002</p> <p>Alternate: DSJB12y (y=c), Rated Voltage: 1500VDC, Current: 30A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Dhash PV Technologies Private Limited Tested by TUV Rheinland, Certificate no.: R 50535496</p>	<p>BOM 1</p> <p>BOM 2</p>
	C a b l e	<p>62390 IEC 131, 1x4.0mm², HALOGEN FREE LOW SMOKE, Rated Voltage: 1500VDC, Ambient temperature: -40°C to +90°C, Max. Temperature at Conductor:120°C, Manufactured by Jiangsu Haitian Microelectronics Corp. Tested by TUV Rheinland, test report no. 50308680 001</p> <p>Alternate: 62390 IEC 131, 1x4.0mm², Rated Voltage: 1500VDC, Ambient temperature: -40°C to +90°C, Max. Temperature at Conductor:120°C, Manufactured by Dhash</p>	<p>BOM 1</p> <p>BOM 2</p>





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		PV Technologies Private Limited Tested by TUV Rheinland, Certificate no.: R 50520444	
	Connector.....:	PV-HT03x(x= 0 or 1), Rated Voltage: 1500VDC, Rated current: 45A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Jiangsu Haitian Microelectronics Corp. Tested by TUV SUD, Certificate no.: B 096995 0003	BOM 1
		Alternate: DS01, Rated Voltage: 1500VDC, Rated current: 35A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Dhash PV Technologies Private Limited Tested by TUV Rheinland, Certificate no.: R 60152493	BOM 2
	Bypass diode.....:	MK5045, IF(AV)=35A, V _{RRM} = 45V, T _j = -55°C to +200°C, R _θ J-C: 1°C/W, Manufactured by Jiangsu Haitian Microelectronics Corp.	
	Potting material.....:	5299W-S, RTV silicone potting compound, White, Manufactured by Shanghai Huitian New Material Co., Ltd. Alternate manufacturer: 1. TONSAN Adhesive, Inc. 2. Adarsha Specialty Chemicals Pvt Ltd 3. Fasto Advance Materials India Pvt. Limited 4. Sikasil 5. Huitian 6. Silande Note: Alternate Potting material having same technical specification & same material, only manufacturer name change as Declared by manufacturer.	
	Adhesive for junction box.....:	HT906Z, High-performance RTV sealant, White paste, Manufactured by Shanghai Huitian New Material Co., Ltd. Alternate manufacturer: 1. TONSAN Adhesive, Inc. 2. Adarsha Specialty Chemicals Pvt Ltd 3. Fasto Advance Materials India Pvt. Limited 4. Sikasil 5. Huitian 6. Silande Note: Alternate Adhesive for junction box having same technical specification & same material, only manufacturer name change as Declared by manufacturer.	
	Additional material (e. g. insulation tape)....:	Soldering Wire: NO CLEAN FLUX CORED SOLDER WIRE, Manufactured by Kester LLC Alternate manufacturer: 1. HYBRID METALS PVT LTD 2. Stannol	



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3. superior
4. Persang alloy industries pvt ltd
5. KOTHARI METSOL PVT. LTD.
6. Khanna Traders & Engineers

Note: Alternate Soldering wire having same technical specification & same material, only manufacturer name change as Declared by manufacturer.

A1.5	MODULE DESIGN - MINIMUM DISTANCES	
	Between cells.....:	1.5mm
	Between cell and edge of laminate.....:	15mm
	Between any current carrying part and edge of laminate...:	26.5mm

A1.6	MODULE DESIGN - ELECTRICAL CONFIGURATION	
	Total number of cells.....:	156 for 156 Half cut cell family 144 for 144 Half cut cell family 132 for 132 Half cut cell family 120 for 120 Half cut cell family
	Serial-parallel connection of cells.....:	Series-parallel
	Cells per bypass diode.....:	52 for 156 Half cut cell family 48 for 144 Half cut cell family 44 for 132 Half cut cell family 40 for 120 Half cut cell family
	No. of bypass diodes.....:	3

Note: Bill of material are same for all series family models.





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Annex 2:

Preconditioning Tests			P
MST 51 - Thermal cycling (TC50 MST 51b).....	See table A2.2		P
MST 51 - Thermal cycling (TC200 MST 51a).....	See table A2.8		P
MST 52 - Humidity freeze (HF10 MST 52).....	See table A2.3		P
MST 53 - Damp heat (DH 1000 MST 53).....	See table A2.5		P
MST 54 - UV preconditioning test (MST 54).....	See table A2.1		P
Electrical shock hazard tests			P
MST 17 - Wet leakage test (MST 17).....	See table A2.6		P
MST 42 - Robustness of terminal test (MST 42).....	See table A2.4		P
Fire hazard tests			P
MST 22 - Hot - spot test (MST 17).....	See table A2.10		P
MST 25 - Bypass diode thermal test (MST 25).....	See table A2.9		P
Mechanical stress tests			P
MST 34 - Mechanical load test (MST 34).....	See table A2.7		P

A2.1	TABLE: UV preconditioning test MST 54			P
Test Date [MM/DD/YYYY] start/end.....	04/19/2025 to 04/27/2025			-
Module temperature [°C].....	60 ± 5			-
Irradiation 280 - 400 nm [kWh/m2] UV - A	15.0			-
Irradiation 280 - 320 nm [kWh/m2] UV - B	5.0			-
Sample No.:	Open circuits (yes/no)			-
18	No open circuit found			P
Supplementary information: NIL				
A2.1	TABLE: Visual Inspection MST 01 (after UV preconditioning test MST 54)			P
Sample No.:	Nature and position of findings			-
18	No visual defect			P
Supplementary information: NIL				
A2.1	TABLE: Dielectric withstand test - MST 16 (after UV preconditioning test MST 54)			P
Maximum system voltage [V _{DC}].....	1500			-
Test voltage applied V _{TEST} [V _{DC}].....	8000V for 1min/1500 V for 2min			-
Module area A [m ²].....	2.796			-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
18	[X]	>1000	40	P
Supplementary information: [X]: No breakdown occurred. ; # : Limit				





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A2.2	TABLE: Thermal cycling 50 test MST 51b			P
Test Date [MM/DD/YYYY] start/end.....:	04/28/2025 to 05/10/2025			-
Total cycles (50).....:	50			-
Sample No.:	Open circuits (yes/no)			-
18	No			P
28	No			P
Supplementary information: NIL				
A2.2	TABLE: Visual Inspection MST 01 (after Thermal cycling 50 test MST 51b)			P
Sample No.:	Nature and position of findings			-
18	No visual defect			P
28	No visual defect			P
Supplementary information: NIL				
A2.2	TABLE: Dielectric withstand test - MST 16 (after Thermal cycling 50 test MST 51b)			P
Maximum system voltage [V _{DC}].....:	1500			-
Test voltage applied V _{TEST} [V _{DC}].....:	8000 V for 1min/1500 V for 2min			-
Module area A [m ²].....:	2.796			-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
18	[X]	>1000	40	P
28	[X]	>1000	40	P
Supplementary information: [X]: No breakdown occurred.; #: Limit				

A2.3	TABLE: Humidity freeze test MST 52			P
Test Date [MM/DD/YYYY] start/end.....:	05/12/2025 to 05/23/2025			-
Total cycles (10).....:	10			-
Sample No.:	Open circuits (yes/no)			-
18	No			P
28	No			P
Supplementary information: NIL				
A2.3	TABLE: Visual Inspection MST 01 (after Humidity freeze test MST 52)			P
Sample No.:	Nature and position of findings			-
18	No visual defect			P
28	No visual defect			P
Supplementary information: NIL				
A2.3	TABLE: Dielectric withstand test - MST 16 (after Humidity freeze test MST 52)			P
Maximum system voltage [V _{DC}].....:	1500			-
Test voltage applied V _{TEST} [V _{DC}].....:	8000V for 1min/1500 V for 2min			-
Module area A [m ²].....:	2.796			-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
18	[X]	>1000		P
28	[X]	>1000		P
Supplementary information: [X]: No breakdown occurred.; #: Limit				





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Table with 4 columns: Clause, Requirement+Test, Result-Remark, Verdict

Table A2.4: TABLE: Robustness of terminations test MST 42. Includes test date, types of terminations, applied force, and sample no. 18.

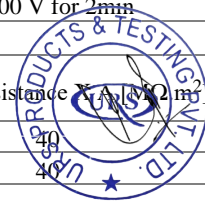
Table A2.4: TABLE: Visual Inspection MST 01 (after Robustness of terminations test MST 42). Includes sample no. 18 and nature of findings.

Table A2.4: TABLE: Dielectric withstand test - MST 16 (after Robustness of terminations test MST 42). Includes maximum system voltage, test voltage, and insulation resistance.

Table A2.5: TABLE: Damp heat test MST 53. Includes test date, total hours, and open circuits for samples 19 and 29.

Table A2.5: TABLE: Visual Inspection MST 01 (after Damp heat test MST 53). Includes sample nos. 19 and 29 and nature of findings.

Table A2.5: TABLE: Dielectric withstand test - MST 16 (after Damp heat test MST 53). Includes maximum system voltage, test voltage, and insulation resistance for samples 19 and 29.





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Supplementary information: [X]: No breakdown occurred. ; # : Limit

A2.6		TABLE: Wet leakage current test MST 17		P
Test Date [MM/DD/YYYY] start/end.....:		05/31/2025		-
Test voltage applied [V].....:		1500		-
Solution resistivity [Ω cm].....:		< 3500 Ω cm at 22 \pm 3°C	2492	-
Surface tension [Nm^{-1}].....:		< 0.03 Nm^{-1} at 22 \pm 3°C	-	-
Solution temperature [$^{\circ}$ C].....:		22.5		-
Sample No.:	Measured [$\text{M}\Omega$]	Insulation resistance X A [$\text{M}\Omega.\text{m}^2$] #		-
19	>1000	40		P
29	>1000	40		P

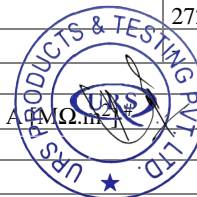
Supplementary information: Size of module 2.796 [m^2]. ; # : Limit

A2.7		TABLE: Mechanical load test MST 34		P
Sample No.:		29		-
Test Date [MM/DD/YYYY].....:		06/07/2025		-
Mounting method.....:		As per manual	As per manual	-
Load applied to.....:		Front side	Back side	-
Mechanical load [Pa].....:		2400	2400	-
First cycle time (start/end).....:		09:15 to 10:15	10:30 to 11:30	-
Intermittent open - circuit (yes/no).....:		No	No	-
Mechanical load [Pa].....:		2400	2400	-
Second cycle time (start/end).....:		11:45 to 12:45	13:00 to 14:00	-
Intermittent open - circuit (yes/no).....:		No	No	-
Mechanical load [Pa].....:		5400	2400	-
Third cycle time (start/end).....:		14:15 to 15:15	15:30 to 16:30	-
Intermittent open - circuit (yes/no).....:		No	No	-
Supplementary information: NIL				-

A2.7		TABLE: Visual Inspection MST 01 (after Mechanical load test MST 34)		P
Sample No.:		Nature and position of findings		-
29		No visual defect		P

A2.7		TABLE: Wet leakage current test MST 17 (after Mechanical load test MST 34)		P
Test Date [MM/DD/YYYY] start/end.....:		06/07/2025		-
Test voltage applied [V].....:		1500		-
Solution resistivity [Ω .cm].....:		< 3500 Ω cm at 22 \pm 3°C	2728	-
Surface tension [Nm^{-1}].....:		< 0.03 Nm^{-1} at 22 \pm 3°C	-	-
Solution temperature [$^{\circ}$ C].....:		23.2		-
Sample No.:	Measured [$\text{M}\Omega$]	Insulation resistance X A [$\text{M}\Omega.\text{m}^2$] #		-
29	>1000	40		P

Supplementary information: Size of module 2.796 [m^2]. ; # : Limit





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A2.8	TABLE: Thermal cycling test MST 51a			P
Test Date [MM/DD/YYYY] start/end.....:	04/19/2025 to 06/03/2025			-
Total hours (200).....:	200			-
Applied current [A].....:	14.11			-
Sample No.:	Open circuits (yes/no)			-
20	No			P
Supplementary information: NIL				
A2.8	TABLE: Visual Inspection MST 01 (after Thermal cycling test MST 51a)			P
Sample No.:	Nature and position of findings			-
20	No visual defect			P
Supplementary information: NIL				

A2.8	TABLE: Dielectric withstand test - MST 16 (after Thermal cycling test MST 51a)			P
Maximum system voltage [V _{DC}].....:	1500			-
Test voltage applied V _{TEST} [V _{DC}].....:	8000V for 1min/1500 V for 2min			-
Module area A [m ²].....:	2.796			-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
20	[X]	>1000	40	P
Supplementary information: [X]: No breakdown occurred. ; #: Limit				

A2.9	TABLE: Dielectric withstand test - MST 16 (Before Bypass diode thermal test MST 25)			P
Maximum system voltage [V _{DC}].....:	1500			-
Test voltage applied V _{TEST} [V _{DC}].....:	8000V for 1min/1500V for 2min			-
Module area A [m ²].....:	2.796			-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
20	[X]	>1000	40	P
Supplementary information: [X]: No breakdown occurred. ; #: Limit				

A2.9	TABLE: Bypass diode thermal test MST 25			P
Sample No.:	23			-
Test Date [MM/DD/YYYY] start/end.....:	04/18/2025			-
Module temperature [°C].....:	75±5			-
Number of diodes in junction box.....:	3			-
Diode manufacturer.....:	Jiangsu Haitian Microelectronics Corp.			-
Diode type designation.....:	MK5045			-





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Max. permissible junction temperature T_{jmax} [°C] (According to diode datasheet).....:	200			-
	Diode 1	Diode 2	Diode 3	-
Current flow applied [A].....:	14.83	14.83	14.83	-
Max. diode surface temperature [°C] a or b	144.1	143.7	143.8	-
Voltage drop [V]	0.36	0.40	0.39	-
Power dissipation [W]	5.34	5.93	5.78	-
Thermal resistance junction to leads (RTHJL)/to case (RTHJC) [K/W] (according to datasheet)	1	1	1	-
Calculated max. junction temperature T_{jcalc} [°C] a or b.....	149.44	149.63	149.58	-
$T_{jcalc} < T_{jmax}$ (test passed)? yes/no.....	Yes	Yes	Yes	P
Current flow (1.25*Isc) [A]	18.54	18.54	18.54	-
Max. diode surface temperature [°C] a or b.....	153.45	154.32	153.28	P

Supplementary information: NIL

A2.9	TABLE: Visual Inspection MST 01 (after Bypass diode thermal test MST 25)			P
Sample No.:	Nature and position of findings			-
23	No visual defect			P

Supplementary information: NIL

A2.9	TABLE: Dielectric withstand test - MST 16 (after Bypass diode thermal test MST 25)			P
	Maximum system voltage V_{DC}:	1500		-
	Test voltage applied V_{TEST} [V_{DC}].....:	8000V for 1min/1500V for 2min		-
	Module area A [m^2].....:	2.796		-
Sample No.:	Dielectric breakdown	Insulation resistance at V_{TEST} [$M\Omega$]	Insulation resistance X A [$M\Omega.m^2$] #	-
23	[X]	>1000	40	P

Supplementary information: [X]: No breakdown occurred. ; # : Limit

A2.9	TABLE: Wet leakage current test MST 17 (after Bypass diode thermal test MST 25)			P
Test Date [MM/DD/YYYY] start/end.....:	04/18/2025			-
Test voltage applied [V].....:	1500			-
Solution resistivity [Ωcm].....:	< 3500 Ωcm at $22 \pm 3^\circ C$	2529		-
Surface tension [Nm^{-1}].....:	< 0.03 Nm^{-1} at $22 \pm 3^\circ C$	-		-
Solution temperature [°C].....:	23.2			-
Sample No.:	Measured [$M\Omega$]	Insulation resistance X A [$M\Omega.m^2$] #		-
23	>1000	40		P

Supplementary information: Size of module 2.796 [m^2]. ; # : Limit

A2.10	TABLE: Hot-spot endurance test MST 22			P
Sample No.:	23			-
Test Date [MM/DD/YYYY] start/end.....:	04/21/2025			-
Cell interconnection circuit.....:	[] S	[X] SP		-
Module temperature at thermal equilibrium [°C].....:	53.1			-
Determination of worse case cell				-
Maximum measured cell temperature in 5 hours [°C]	80.5			-
Shading rate [%]	100			-
Supplementary information: NIL				-





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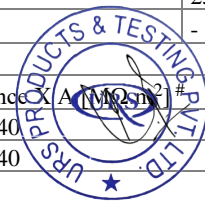
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A2.10		TABLE: Hot-spot endurance test MST 22		P
Sample No.:	32			-
Test Date [MM/DD/YYYY] start/end.....:	04/22/2025			-
Cell interconnection circuit.....:	<input type="checkbox"/> S <input checked="" type="checkbox"/> SP <input type="checkbox"/> SPS			-
Module temperature at thermal equilibrium [°C].....:	52.5			-
Determination of worse case cell				-
Maximum measured cell temperature in 5 hours [°C]	81.3			-
Shading rate [%]	100			-
Supplementary information: NIL				

A2.10		TABLE: Visual Inspection MST 01 (after Hot-spot endurance test MST 22)		P
Sample No.:		Nature and position of findings		-
23		No visual defect		P
32		No visual defect		P
Supplementary information: NIL				

A2.10		TABLE: Dielectric withstand test - MST 16 (after Hot-spot endurance test MST 22)		P
	Maximum system voltage [V _{DC}].....:		1500	-
	Test voltage applied V _{TEST} [V _{DC}].....:		8000 for 1min/1500V for 2min	-
	Module area A [m ²].....:		2.796	-
Sample No.:	Dielectric breakdown	Insulation resistance at V _{TEST} [MΩ]	Insulation resistance X A [MΩ.m ²] #	-
23	<input checked="" type="checkbox"/>	>1000	40	P
32	<input checked="" type="checkbox"/>	>1000	40	P
Supplementary information: [X]: No breakdown occurred. ; # : Limit				

A2.10		TABLE: Wet leakage current test MST 17 (after Hot-spot endurance test MST 22)		P
	Test Date [MM/DD/YYYY] start/end.....:		04/22/2025	-
	Test voltage applied [V].....:		1500	-
	Solution resistivity [Ω cm].....:	< 3500 Ωcm at 22 ± 3°C	2581	-
	Surface tension [Nm ⁻¹].....:	< 0.03 Nm ⁻¹ at 22 ± 3°C		-
	Solution temperature [°C].....:	23.1		-
Sample No.:	Measured [MΩ]	Insulation resistance X A [MΩ.m ²] #		-
23	>1000	40		P
32	>1000	40		P
Supplementary information: Size of module 2.796 [m ²]. ; # : Limit				





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A2.10	TABLE: Visual Inspection MST 01	P
Sample No.:	Nature and position of findings	-
17	No visual defect	P
18	No visual defect	P
19	No visual defect	P
20	No visual defect	P
21	No visual defect	P
23	No visual defect	P
27	No visual defect	P
28	No visual defect	P
29	No visual defect	P
30	No visual defect	P
32	No visual defect	P

Supplementary information: NIL





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ANNEX 3: PHOTOGRAPHS OF EUT



Rear view (BOM 1)





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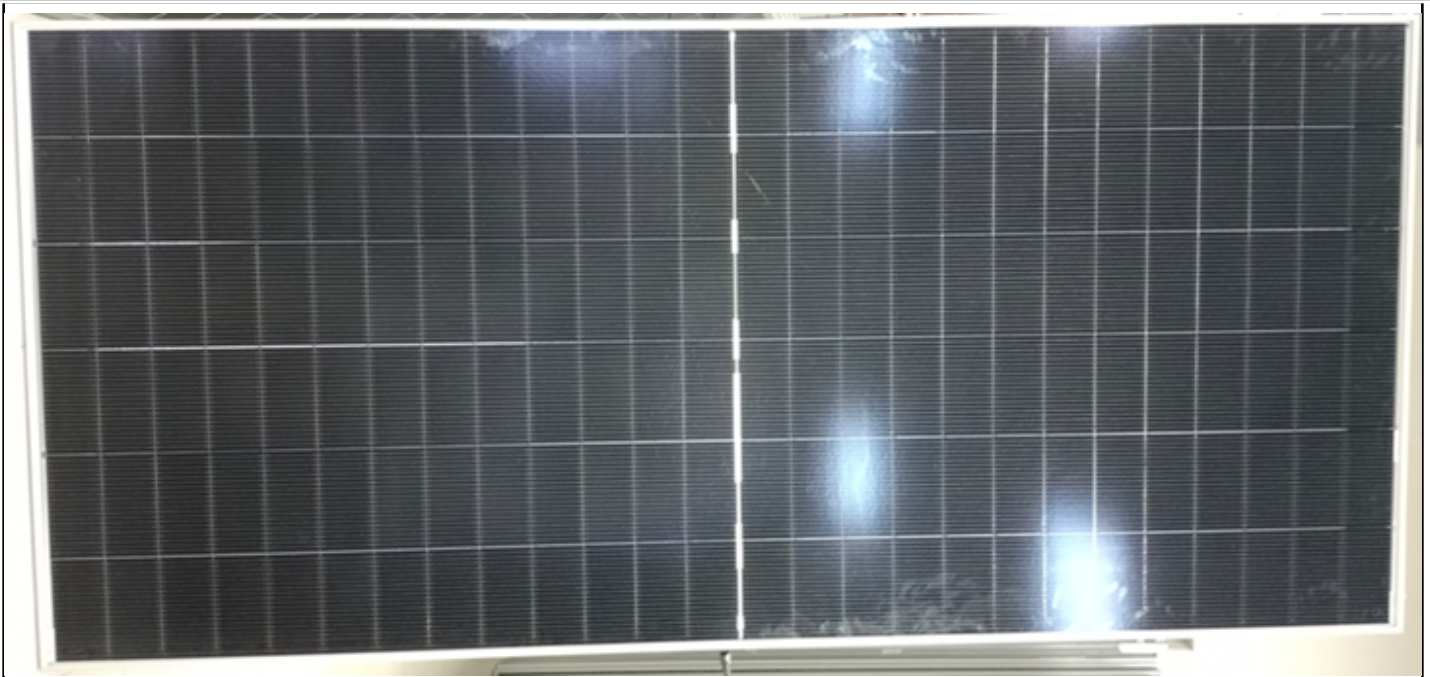
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Front view (BOM 1)



Junction Box closed view(BOM 1)



Junction Box opened view(BOM 1)



Negative Connector(BOM 1)



Positive Connector(BOM 1)





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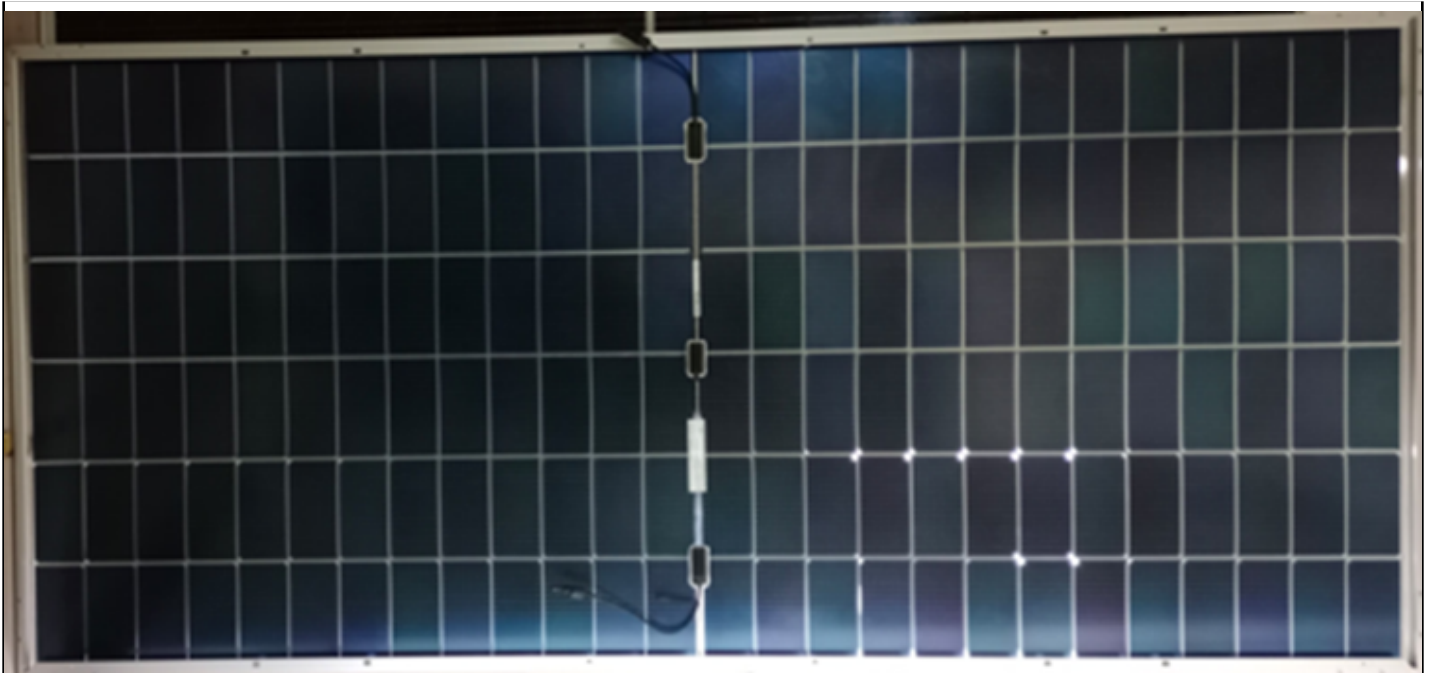
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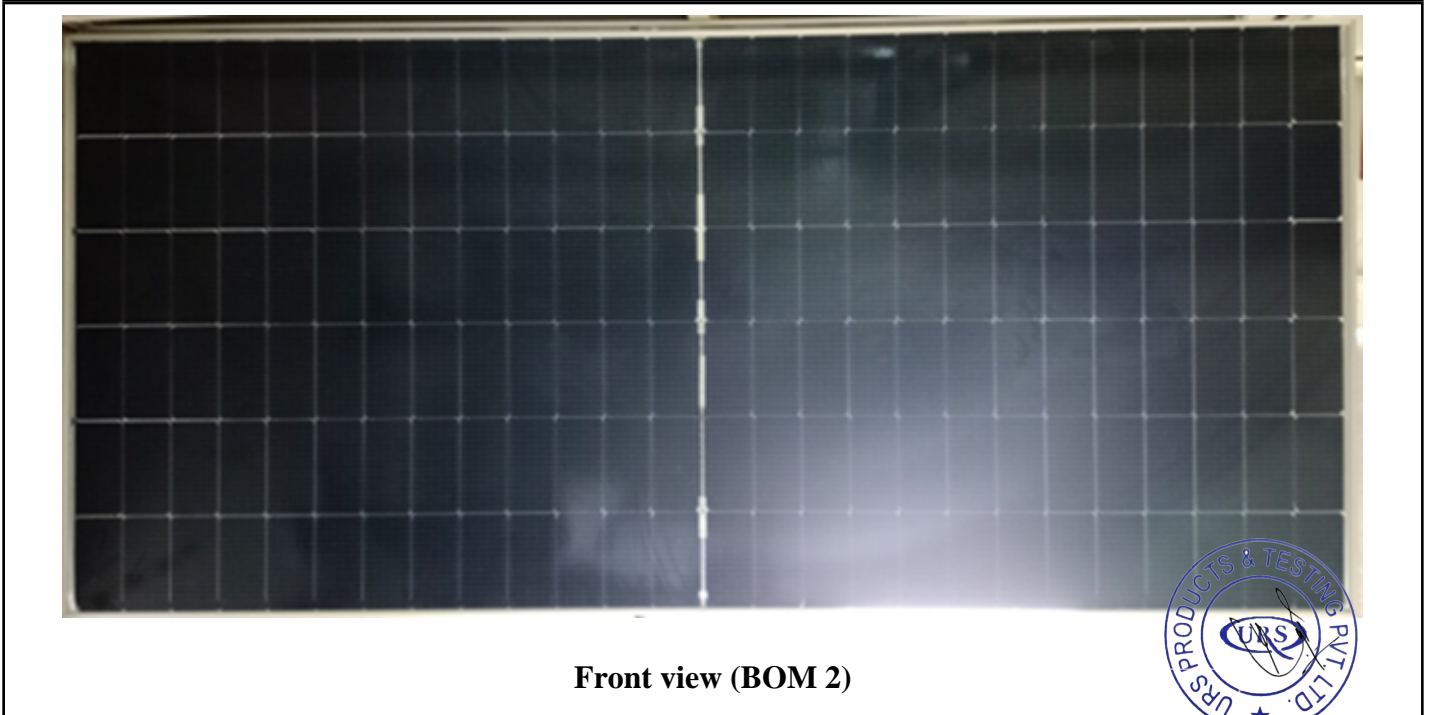
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Rear view (BOM 2)



Front view (BOM 2)





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Junction Box closed view(BOM 2)



Junction Box opened view(BOM 2)



Negative Connector(BOM 2)



Positive Connector(BOM 2)





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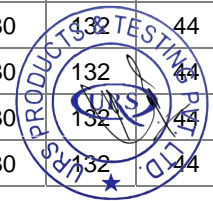
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ANNEX 4: SPECIFICATION OF PV MODULES

Model	System Voltage (V)	Electrical Rating					Fuse Rating (A)	Dimension			Total no. of cells (Cut cells) (no.)	No of cells per by bypass diode (no.)
		Voc (V)	Vm (V)	Isc (A)	Im (A)	Pm (W)		L (mm)	W (mm)	H (mm)		
AS-156TG-650 (Representative & retested Model)	1500	57.00	46.09	14.83	14.11	650	30	2466	1134	30	156	52
AS-156TG-645	1500	56.85	45.99	14.76	14.03	645	30	2466	1134	30	156	52
AS-156TG-640	1500	56.70	45.89	14.69	13.95	640	30	2466	1134	30	156	52
AS-156TG-635	1500	56.55	45.79	14.62	13.87	635	30	2466	1134	30	156	52
AS-156TG-630	1500	55.71	45.96	14.37	13.71	630	30	2466	1134	30	156	52
AS-156TG-625	1500	55.56	45.86	14.30	13.63	625	30	2466	1134	30	156	52
AS-156TG-620	1500	55.41	45.76	14.23	13.55	620	30	2466	1134	30	156	52
AS-156TG-615	1500	55.26	45.66	14.16	13.47	615	30	2466	1134	30	156	52
AS-156TG-610	1500	55.11	45.56	14.09	13.39	610	30	2466	1134	30	156	52
AS-156TG-605	1500	54.96	45.46	14.02	13.31	605	30	2466	1134	30	156	52
AS-144TG-600	1500	54.81	45.36	13.95	13.23	600	30	2278	1134	30	144	48
AS-144TG-595	1500	54.66	45.26	13.88	13.15	595	30	2278	1134	30	144	48
AS-144TG-590	1500	54.51	45.16	13.81	13.07	590	30	2278	1134	30	144	48
AS-144TG-585	1500	54.36	45.06	13.74	12.99	585	30	2278	1134	30	144	48
AS-144TG-580	1500	51.48	42.84	14.25	13.55	580	30	2278	1134	30	144	48
AS-144TG-575	1500	51.31	42.72	14.17	13.47	575	30	2278	1134	30	144	48
AS-144TG-570	1500	51.14	42.60	14.09	13.39	570	30	2278	1134	30	144	48
AS-144TG-565	1500	50.97	42.48	14.01	13.31	565	30	2278	1134	30	144	48
AS-144TG-560	1500	50.80	42.36	13.93	13.23	560	30	2278	1134	30	144	48
AS-144TG-555	1500	50.63	42.24	13.85	13.15	555	30	2278	1134	30	144	48
AS-144TG-550	1500	50.46	42.12	13.77	13.07	550	30	2278	1134	30	144	48
AS-144TG-545	1500	50.29	42.00	13.69	12.99	545	30	2278	1134	30	144	48
AS-144TG-540	1500	50.12	41.88	13.61	12.91	540	30	2278	1134	30	144	48
AS-132TG-535	1500	49.95	41.76	13.53	12.83	535	30	2092	1134	30	132	44
AS-132TG-530	1500	47.07	39.95	13.94	13.27	530	30	2092	1134	30	132	44
AS-132TG-525	1500	46.90	39.83	13.86	13.19	525	30	2092	1134	30	132	44
AS-132TG-520	1500	46.73	39.71	13.78	13.11	520	30	2092	1134	30	132	44





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AS-132TG-515	1500	46.56	39.59	13.70	13.03	515	30	2092	1134	30	132	44
AS-132TG-510	1500	46.39	39.46	13.62	12.95	510	30	2092	1134	30	132	44
AS-132TG-505	1500	46.22	39.31	13.54	12.87	505	30	2092	1134	30	132	44
AS-132TG-500	1500	46.05	39.16	13.46	12.79	500	30	2092	1134	30	132	44
AS-132TG-495	1500	42.77	36.77	14.16	13.47	495	30	2092	1134	30	132	44
AS-132TG-490	1500	42.59	36.62	14.08	13.39	490	30	2092	1134	30	132	44
AS-120TG-485	1500	42.41	36.47	13.99	13.31	485	30	1908	1134	30	120	40
AS-120TG-480	1500	42.23	36.32	13.91	13.23	480	30	1908	1134	30	120	40
AS-120TG-475	1500	42.05	36.17	13.82	13.15	475	30	1908	1134	30	120	40
AS-120TG-470	1500	41.87	36.02	13.74	13.07	470	30	1908	1134	30	120	40
AS-120TG-465	1500	41.69	35.87	13.65	12.99	465	30	1908	1134	30	120	40
AS-120TG-460	1500	41.51	35.70	13.57	12.91	460	30	1908	1134	30	120	40
AS-120TG-450	1500	38.51	33.17	13.57	13.57	450	30	1908	1134	30	120	40
AS-120TG-445	1500	38.33	33.01	13.49	13.49	445	30	1908	1134	30	120	40
AS-120TG-440	1500	38.15	32.85	13.41	13.41	440	30	1908	1134	30	120	40



-----End of test Report-----