

.....  
DOC No. : 25E3533N\_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 14286 (2010)****QR Code/Barcode : 232504CRS****REPORT NO : SC25SPI00947\_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 : 16

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 : 25E3533N

n) Section Report No. : 25E3533N\_1

o) Report Type : New

p) Reference Report No. :

q) Remarks :

**Anjali Kanojia**  
**OIC SAMPLE CELL**  
(Authorized Signatory)  
Authorized on: 12 Jun, 2025 10:52 AM

1.

This is a Computer Generated Report.

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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            |

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**Paras Singh**  
**OIC Electrical**  
(Authorized Signatory)  
Authorized on: 11 Jun, 2025 19:49 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	10.18	Bypass diode thermal' test	-	-	-	-	Satisfactory (Refer to attachment).
2	10.17	Hail test	-	-	-	-	Satisfactory (Refer to attachment).
3	10.16	Mechanical load test	-	-	-	-	Satisfactory (Refer to attachment).
4	10.15	Wet leakage current test	-	-	-	-	Satisfactory (Refer to attachment).
5	10.14	Robustness of termination test	-	-	-	-	Satisfactory (Refer to attachment).
6	10.13	Damp heat test	-	-	-	-	Satisfactory (Refer to attachment).
7	10.12	Humidity freeze test	-	-	-	-	Satisfactory (Refer to attachment).
8	10.11	Thermal cycling test	-	-	-	-	Satisfactory (Refer to attachment).
9	10.10	UV preconditioning	-	-	-	-	Satisfactory (Refer to attachment).
10	10.9	Hot-spot endurance test	-	-	-	-	Satisfactory (Refer to attachment).
11	10.8	Outdoor exposure test	-	-	-	-	Satisfactory (Refer to attachment).
12	10.7	Performance at low irradiance	-	-	-	-	Satisfactory (Refer to attachment).
13	10.6	Performance at STC and NOCT	-	-	-	-	Satisfactory (Refer to attachment).
14	10.5	Measurement of NOCT	-	-	-	-	Satisfactory (Refer to attachment).
15	10.4	Measurement of temperature coefficients	-	-	-	-	Satisfactory (Refer to attachment).
16	10.3	Insulation test	-	-	-	-	Satisfactory (Refer to attachment).
17	10.2	Maximum power determination	-	-	-	-	Satisfactory (Refer to attachment).
18	10.1	Visual inspection	-	-	-	-	Satisfactory (Refer to attachment).
19	4	Marking	-	-	-	-	Satisfactory (Refer to attachment).

**Paras Singh**  
**OIC Electrical**  
(Authorized Signatory)  
Authorized on: 11 Jun, 2025 19:49 PM

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TC-6468

**Section Report No. : 25E3533N\_1**

IS 14286 (2010)

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PART D. REMARKS

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**Paras Singh**  
**OIC Electrical**  
(Authorized Signatory)  
Authorized on: 11 Jun, 2025 19:49 PM

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## URS PRODUCTS AND TESTING PRIVATE LIMITED

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T +91 (120) 4516264-65 F +91 (120) 4750296  
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CIN NO U21014UP1987PTC008956



TC-6468

### SUMMARY OF TEST REPORT

SUMMARY OF TEST REPORT NO:SC25SPI00947\_1

DATED:11/06/2025

(Number of pages in test report: Page no. 01 to 80)

URS Ref. : URS/LAB/02/RID/25-26/4230

### TEST FORMAT AS PER IS 14286: 2010

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	Marking	4.0	P
2	Visual Inspection	10.1	P
3	Maximum Power Determination	10.2	P
4	Insulation Test	10.3	P
5	Measurement of Temperature Coefficients	10.4	P
6	Measurement of NOCT	10.5	P
7	Performance at STC and NOCT	10.6	P
8	Performance at low irradiance	10.7	P
9	Outdoor exposure test	10.8	P
10	Hot-spot endurance test	10.9	P
11	UV preconditioning	10.10	P
12	Thermal cycling test	10.11	P
13	Humidity freeze test	10.12	P
14	Damp heat test	10.13	P
15	Robustness of termination test	10.14	P
16	Wet leakage current test	10.15	P
17	Mechanical load test	10.16	P
18	Hail test	10.17	P
19	Bypass diode thermal test	10.18	P





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TC-6468

### 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 14286: 2010
- 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 14286: 2010.

(Signature of Authorized person with Stamp)



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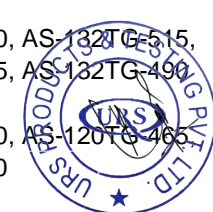
Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 1 of 80

## TEST REPORT IS 14286: 2010 Crystalline Silicon Terrestrial Photovoltaic (PV) Modules Design Qualification and Type Approval

<b>Report Reference No:</b>	SC25SPI00947_1
Date of issue :	11/06/2025
Total number of pages	80
<b>Testing Laboratory</b>	URS PRODUCTS AND TESTING PRIVATE LIMITED
Address	A-29, Sector 5, Noida-201301, India
<b>Applicant's name :</b>	ARMY SOLAR ENERGY PRIVATE LIMITED
<b>Address</b>	NEW BLOCK NO. 119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT, 394110
<b>Test specification:</b>	
Standard	IS 14286: 2010
Test procedure	Compliance Report
Non-standard test method	N/A
<b>Test Report Form No:</b>	IS 14286_V1.0
Test Report Form(s) Originator	Bureau of Indian Standards
Master TRF	Dated: 19.02.2018
<b>Test item description:</b>	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules (Si Wafer Based)
Trade Mark	
Manufacturer	ARMY SOLAR ENERGY PRIVATE LIMITED
Factory	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)
	<b>Series Model:</b>
	<b>156 Cut cell family with 1500V system voltage:</b>
	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,
	<b>144 Cut cell family with 1500V system voltage:</b>
	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
	<b>132 Cut cell family with 1500V system voltage:</b>
	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
	<b>120 Cut cell family with 1500V system voltage:</b>
	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.





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TC-6468




Report No- SC25SPI00947\_1

IS 14286: 2010

Page 2 of 80

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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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 3 of 80

Dated : 11/06/2025

Summary of testing:	
Tests performed (name of test and test clause):	Testing location:
	A-29, Sector 5, Noida-201301, India
10.1 Visual Inspection	
10.2 Maximum Power Determination	
10.3 Insulation Test	
10.4 Measurement of Temperature Coefficients.	
10.5 Measurement of NOCT	
10.6 Performance at STC and NOCT	
10.7 Performance at low irradiance.	
10.8 Outdoor exposure test	
10.9 Hot-spot endurance test	
10.10 UV preconditioning	
10.11 Thermal cycling test	
10.12 Humidity freeze test	
10.13 Damp heat test	
10.14 Robustness of termination test	
10.15 Wet leakage current test	
10.16 Mechanical load test	
10.17 Hail test	
10.18 Bypass diode thermal test	





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 4 of 80

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
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  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

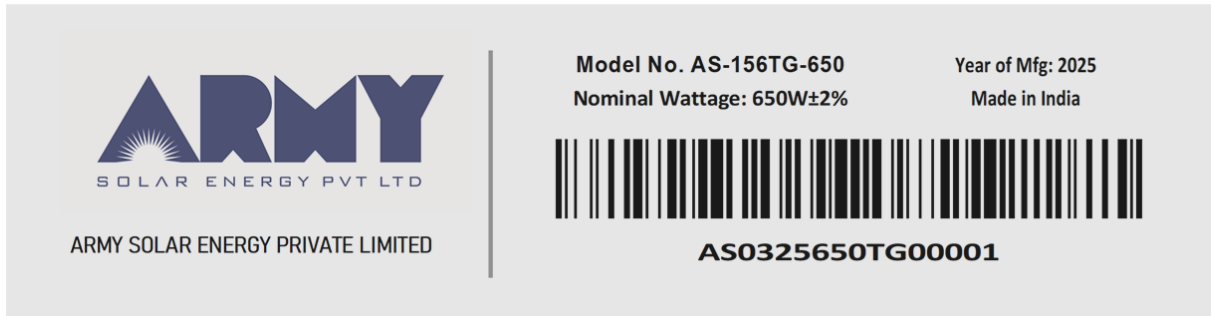
All Values are measured at STC :  
25°C Temp Cell, 1000W/MSQ, AM 1.5

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.



Serial number coding rules for date of manufacturing: AS0325650TG00001

### 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
- **00001:** Last Five digit is Unique serial no Serial Nos. of Manufacturing Module

### Polarity marking on Connectors(BOM 1)



### Polarity marking on Connectors(BOM 1)





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 5 of 80

Dated : 11/06/2025

## Polarity marking on Junction Box(BOM 1)



## Polarity marking on Junction Box(BOM 1)



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

MODULE TYPE: AS-156TG-650

MADE IN INDIA

Rated Power (Pmax)	: 650W
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  
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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-650  
Nominal Wattage: 650W±2%

Year of Mfg: 2025  
Made in India



AS0325650TG00021

## Polarity marking on Connectors(BOM 2)



## Polarity marking on Connectors(BOM 2)





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 6 of 80

## Polarity marking on Junction Box(BOM 2)



## Polarity marking on Junction Box(BOM 2)



(Series Model: AS-156TG-645)

MODULE TYPE: AS-156TG-645

MADE IN INDIA

<p>Rated Power (Pmax) : 645W          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</p>	 <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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-645  
Nominal Wattage: 645W±2%

Year of Mfg: 2025  
Made in India



AS0325645TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 7 of 80

## (Series Model: AS-156TG-640)

MODULE TYPE: AS-156TG-640

MADE IN INDIA

<p>Rated Power (Pmax) : 640W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-640

Nominal Wattage: 640W±2%

Year of Mfg: 2025

Made in India



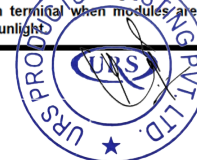
AS0325640TG00001

## (Series Model: AS-156TG-635)

MODULE TYPE: AS-156TG-635

MADE IN INDIA

<p>Rated Power (Pmax) : 635W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 8 of 80



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
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

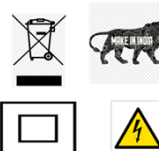


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



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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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 9 of 80

## (Series Model: AS-156TG-625)

MODULE TYPE: AS-156TG-625

MADE IN INDIA

<p>Rated Power (Pmax) : 625W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

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

Year of Mfg: 2025  
Made in India



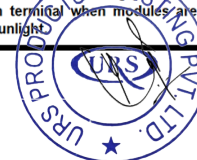
AS0325625TG00001

## (Series Model: AS-156TG-620)

MODULE TYPE: AS-156TG-620

MADE IN INDIA

<p>Rated Power (Pmax) : 620W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 10 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-620

Nominal Wattage: 620W±2%

Year of Mfg: 2025

Made in India



AS0325620TG00001

(Series Model: AS-156TG-615)

MODULE TYPE: AS-156TG-615

MADE IN INDIA

Rated Power (Pmax)	: 615W
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

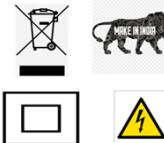


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-615

Nominal Wattage: 615W±2%

Year of Mfg: 2025

Made in India



AS0325615TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 11 of 80

## (Series Model: AS-156TG-610)

MODULE TYPE: AS-156TG-610

MADE IN INDIA

<p>Rated Power (Pmax) : 610W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-156TG-610

Year of Mfg: 2025

Nominal Wattage: 610W±2%

Made in India



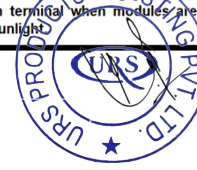
AS0325610TG00001

## (Series Model: AS-156TG-605)

MODULE TYPE: AS-156TG-605

MADE IN INDIA

<p>Rated Power (Pmax) : 605W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 12 of 80

Dated : 11/06/2025



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
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  
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.



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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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 13 of 80

## (Series Model: AS-144TG-595)

MODULE TYPE: AS-144TG-595

MADE IN INDIA

<p>Rated Power (Pmax) : 595W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-144TG-595

Nominal Wattage: 595W±2%

Year of Mfg: 2025

Made in India



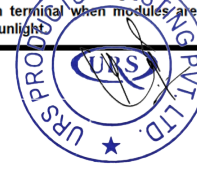
AS0325595TG00001

## (Series Model: AS-144TG-590)

MODULE TYPE: AS-144TG-590

MADE IN INDIA

<p>Rated Power (Pmax) : 590W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 14 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No. AS-144TG-590

Nominal Wattage: 590W±2%

Year of Mfg: 2025

Made in India



AS0325590TG00001

(Series Model: AS-144TG-585)

MODULE TYPE: AS-144TG-585

MADE IN INDIA

Rated Power (Pmax)	: 585W
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

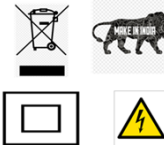


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-585

Nominal Wattage: 585W±2%

Year of Mfg: 2025

Made in India



AS0325585TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 15 of 80

## (Series Model: AS-144TG-580)

MODULE TYPE: AS-144TG-580

MADE IN INDIA

<p>Rated Power (Pmax) : 580W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-580

Year of Mfg: 2025

Nominal Wattage: 580W±2%

Made in India



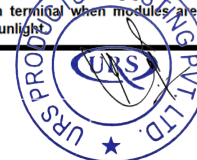
AS0325580TG00001

## (Series Model: AS-144TG-575)

MODULE TYPE: AS-144TG-575

MADE IN INDIA

<p>Rated Power (Pmax) : 575W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 16 of 80



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-575  
Nominal Wattage: 575W±2%

Year of Mfg: 2025  
Made in India



AS0325575TG00001

(Series Model: AS-144TG-570)

MODULE TYPE: AS-144TG-570

MADE IN INDIA

Rated Power (Pmax)	: 570W
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

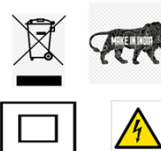


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-570  
Nominal Wattage: 570W±2%

Year of Mfg: 2025  
Made in India



AS0325570TG00001





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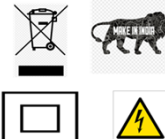
Page 17 of 80

Dated : 11/06/2025

## (Series Model: AS-144TG-565)

MODULE TYPE: AS-144TG-565

MADE IN INDIA

<p>Rated Power (Pmax) : 565W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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> 
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-565

Year of Mfg: 2025

Nominal Wattage: 565W±2%

Made in India


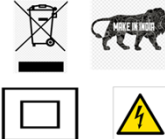


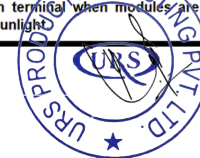
AS0325565TG00001

## (Series Model: AS-144TG-560)

MODULE TYPE: AS-144TG-560

MADE IN INDIA

<p>Rated Power (Pmax) : 560W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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> 
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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 18 of 80



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-560  
Nominal Wattage: 560W±2%

Year of Mfg: 2025  
Made in India



AS0325560TG00001

(Series Model: AS-144TG-555)

MODULE TYPE: AS-144TG-555

MADE IN INDIA

Rated Power (Pmax)	: 555W
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

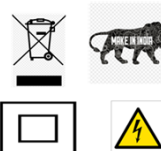


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-555  
Nominal Wattage: 555W±2%

Year of Mfg: 2025  
Made in India



AS0325555TG00001





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 19 of 80

Dated : 11/06/2025

## (Series Model: AS-144TG-550)

MODULE TYPE: AS-144TG-550

MADE IN INDIA

<p>Rated Power (Pmax) : 550W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-550

Year of Mfg: 2025

Nominal Wattage: 550W±2%

Made in India



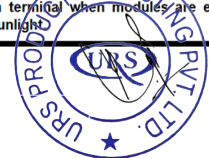
AS0325550TG00001

## (Series Model: AS-144TG-545)

MODULE TYPE: AS-144TG-545

MADE IN INDIA

<p>Rated Power (Pmax) : 545W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<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>
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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 20 of 80



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-545  
Nominal Wattage: 545W±2%

Year of Mfg: 2025  
Made in India



AS0325545TG00001

(Series Model: AS-144TG-540)

MODULE TYPE: AS-144TG-540

MADE IN INDIA

Rated Power (Pmax)	: 540W
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

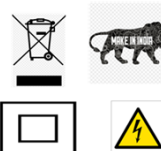


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-144TG-540  
Nominal Wattage: 540W±2%

Year of Mfg: 2025  
Made in India



AS0325540TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 21 of 80

## (Series Model: AS-132TG-535)

MODULE TYPE: AS-132TG-535

MADE IN INDIA

<p>Rated Power (Pmax) : 535W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-535

Year of Mfg: 2025

Nominal Wattage: 535W±2%

Made in India



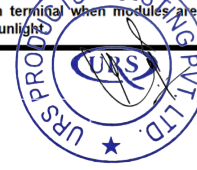
AS0325535TG00001

## (Series Model: AS-132TG-530)

MODULE TYPE: AS-132TG-530

MADE IN INDIA

<p>Rated Power (Pmax) : 530W          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</p>	 ARMY SOLAR ENERGY PVT LTD NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 22 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-530  
Nominal Wattage: 530W±2%

Year of Mfg: 2025  
Made in India



AS0325530TG00001

(Series Model: AS-132TG-525)

MODULE TYPE: AS-132TG-525

MADE IN INDIA

Rated Power (Pmax)	: 525W
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

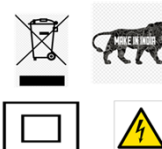


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-525  
Nominal Wattage: 525W±2%

Year of Mfg: 2025  
Made in India



AS0325525TG00001





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 23 of 80

Dated : 11/06/2025

## (Series Model: AS-132TG-520)

MODULE TYPE: AS-132TG-520

MADE IN INDIA

<p>Rated Power (Pmax) : 520W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-520

Year of Mfg: 2025

Nominal Wattage: 520W±2%

Made in India



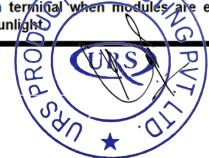
AS0325520TG00001

## (Series Model: AS-132TG-515)

MODULE TYPE: AS-132TG-515

MADE IN INDIA

<p>Rated Power (Pmax) : 515W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT-394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 24 of 80



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-515  
Nominal Wattage: 515W±2%

Year of Mfg: 2025  
Made in India



AS0325515TG00001

(Series Model: AS-132TG-510)

MODULE TYPE: AS-132TG-510

MADE IN INDIA

Rated Power (Pmax)	: 510W
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

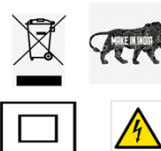


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-510  
Nominal Wattage: 510W±2%

Year of Mfg: 2025  
Made in India



AS0325510TG00001





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 25 of 80

Dated : 11/06/2025

## (Series Model: AS-132TG-505)

MODULE TYPE: AS-132TG-505

MADE IN INDIA

<p>Rated Power (Pmax) : 505W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

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

<p>Rated Power (Pmax) : 500W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<p>All Values are measured at STC :          25°C Temp Cell, 1000W/MSQ, AM 1.5</p> <p>Module Dimensions:          (2092 X 1134 X 30 in mm)</p> <p>Module Weight: 30.3Kgs</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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 26 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-500

Year of Mfg: 2025

Nominal Wattage: 500W±2%

Made in India



AS0325500TG00001

(Series Model: AS-132TG-495)

MODULE TYPE: AS-132TG-495

MADE IN INDIA

Rated Power (Pmax)	: 495W
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

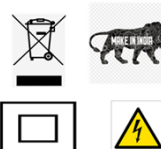


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-495

Year of Mfg: 2025

Nominal Wattage: 495W±2%

Made in India



AS0325495TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 27 of 80

## (Series Model: AS-132TG-490)

MODULE TYPE: AS-132TG-490

MADE IN INDIA

Rated Power (Pmax)	: 490W
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

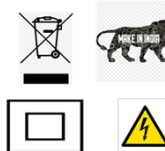


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-132TG-490  
Nominal Wattage: 490W±2%

Year of Mfg: 2025  
Made in India



AS0325490TG00001

## (Series Model: AS-120TG-485)

MODULE TYPE: AS-120TG-485

MADE IN INDIA

Rated Power (Pmax)	: 485W
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

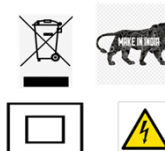


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

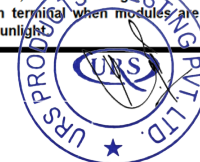
All Values are measured at STC :  
25°C Temp Cell, 1000W/MSQ, AM 1.5

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.





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 28 of 80



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-485  
Nominal Wattage: 485W±2%

Year of Mfg: 2025  
Made in India



AS0325485TG00001

(Series Model: AS-120TG-480)

MODULE TYPE: AS-120TG-480

MADE IN INDIA

<p>Rated Power (Pmax) : 480W  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</p>	 <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:  (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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-480  
Nominal Wattage: 480W±2%

Year of Mfg: 2025  
Made in India



AS0325480TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 29 of 80

## (Series Model: AS-120TG-475)

MODULE TYPE: AS-120TG-475

MADE IN INDIA

<p>Rated Power (Pmax) : 475W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-475

Year of Mfg: 2025

Nominal Wattage: 475W±2%

Made in India



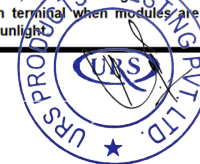
AS0325475TG00001

## (Series Model: AS-120TG-470)

MODULE TYPE: AS-120TG-470

MADE IN INDIA

<p>Rated Power (Pmax) : 470W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 30 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-470

Year of Mfg: 2025

Nominal Wattage: 470W±2%

Made in India



AS0325470TG00001

(Series Model: AS-120TG-465)

MODULE TYPE: AS-120TG-465

MADE IN INDIA

Rated Power (Pmax)	: 465W
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  
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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-465

Year of Mfg: 2025

Nominal Wattage: 465W±2%

Made in India



AS0325465TG00001





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TC-6468

Report No- SC25SPI00947\_1  
Dated : 11/06/2025

IS 14286: 2010

Page 31 of 80

## (Series Model: AS-120TG-460)

MODULE TYPE: AS-120TG-460

MADE IN INDIA

<p>Rated Power (Pmax) : 460W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-460

Year of Mfg: 2025

Nominal Wattage: 460W±2%

Made in India



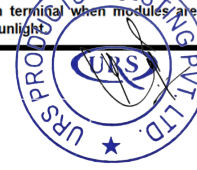
AS0325460TG00001

## (Series Model: AS-120TG-450)

MODULE TYPE: AS-120TG-450

MADE IN INDIA

<p>Rated Power (Pmax) : 450W          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</p>	 ARMY SOLAR ENERGY PVT LTD ARMY SOLAR ENERGY PRIVATE LIMITED NEW BLOCK NO.119, MOLVAN KARANJ, MOLVAN PANETHA ROAD, SURAT, GUJARAT- 394110	<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>
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 32 of 80

Dated : 11/06/2025



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-450  
Nominal Wattage: 450W±2%

Year of Mfg: 2025  
Made in India



AS0325450TG00001

(Series Model: AS-120TG-445)

MODULE TYPE: AS-120TG-445

MADE IN INDIA

Rated Power (Pmax)	: 445W
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

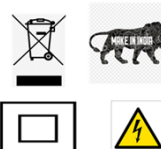


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-445  
Nominal Wattage: 445W±2%

Year of Mfg: 2025  
Made in India



AS0325445TG00001





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 33 of 80

Dated : 11/06/2025

(Series Model: AS-120TG-440)

MODULE TYPE: AS-120TG-440

MADE IN INDIA

Rated Power (Pmax)	: 440W
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
Safety Class Rating	: Class II
Maximum System Voltage	: 1500 V

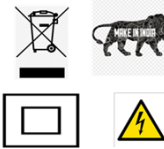


ARMY SOLAR ENERGY PRIVATE LIMITED  
NEW BLOCK NO.119, MOLVAN KARANJ,  
MOLVAN PANETHA ROAD, SURAT, GUJARAT-  
394110

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.



ARMY SOLAR ENERGY PRIVATE LIMITED

Model No.AS-120TG-440

Year of Mfg: 2025

Nominal Wattage: 440W±2%

Made in India



AS0325440TG00001

The marking plate above represents all models covered by this report except for difference in electrical ratings and model designation. See "General product information" for electrical ratings for all models.





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 34 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

GENERAL INFORMATION	
Test item particulars:	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules (Si Wafer Based)
Accessories and detachable parts included in the evaluation	N/A
Options included	N/A
Abbreviations used in the report:	
HF – Humidity Freeze	TC – Temperature Cycling
DH – Damp Heat	Vmp – Maximum power voltage
Imp – Maximum power current	Voc – Open circuit voltage
Isc - Short circuit current	FF – Fill Factor
Pmp – Maximum power	$\alpha$ – Current temperature coefficient
NOCT – Nominal Operating Cell Temperature	$\beta$ – Voltage temperature coefficient
STC – Standard Test Conditions	$\delta$ – power temperature coefficient
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)

### General Remarks

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
 "(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 point is used as the decimal separator.





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 35 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

### General Product Information:

PV module type reference.....:	<b>AS-156TG-650 (Representative &amp; retested Model)</b>
<u>Product Electrical Ratings at STC</u>	
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

<u>Product Safety Ratings</u>	
Maximum system voltage.....:	1500V
Maximum over-current protection rating.....:	30A
Safety application class.....:	Class A
Safety class in accordance with IS 61140.....:	Class II
Fire safety class.....:	Class C
Recommended maximum series/parallel module configurations.....:	24 Pcs each series





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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 36 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
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**Description of module construction:**

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

<b>A1.2</b>	<b>MODULE DESIGN –DIMENSIONS</b>
	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

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

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





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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 37 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

		<p><b>same quality level, only change in manufacturer name as per declared by manufacturer.</b></p>	
Rear cover.....:		<p>High transmission low iron tempered glass,            Thickness: 2.0mm±0.20mm,            Manufactured by XINYI SOLAR (MALAYSIA) SDN BHD.  <b>Alternate manufacturer:</b>            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  <b>Note: Alternate Rear cover having same materials,same production process, and same quality level, only change in manufacturer name as per declared by manufacturer.</b></p>	
Encapsulation material.....:		<p><b>Main:</b>  <b>Front:</b> EP304, Ultra-clear PID free, Thickness: 0.50±0.10mm,  <b>Back:</b> F406PS, Ultra-clear PID free, Thickness: 0.50±0.10mm            Manufactured by HANGZHOU FIRST APPLIED MATERIAL CO., LTD</p>	<b>BOM 1</b>
		<p><b>Alternate:</b>  <b>Front:</b> Vishakha EPE, Thickness: Thickness: 0.50±0.10mm,  <b>Back:</b> Vishakha EPE, Thickness: Thickness: 0.50±0.10mm            Manufactured by VISHAKHA RENEWABLES PRIVATE LIMITED</p>	<b>BOM 2</b>
Frame parts.....:		<p>6005-T6, Anodized Aluminum Alloy, Thickness: 30mm,            Manufactured by Anhui Xinbo Technology Co., Ltd  <b>Alternate manufacturer:</b>            1. JIANGYIN TINZE NEW ENERGY TECHNOLOGY CO., LTD            2. JIANGSU SULV NEW MATERIAL TECHNOLOGY CO., 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. (Lufeng)            11. Fujian Fenan Aluminium Co. LTD            12. Jiangsu Dinghao Aluminium Technology Co., Ltd.</p>	





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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 38 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

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  
 4. Sikasil  
 5. Huitian  
 6. Silande  
**Note: Alternate Adhesive for frame having same technical specification & same material, only manufacturer name change as Declared by manufacturer.**

Cell connector.....:

Sn60%Pb40%, PV Ribbon (Round wire),  $\phi$ 0.26mm, Manufactured by TaiCang JuRen PV Material Co.,Ltd  
**Alternate manufacturer:**  
 1. Valeo Products LLP  
 2. A B INDUSTRIES  
 3. Suzhou YourBest New-type Materials Co., Ltd  
 4. VIDYA WIRES PVT LTD  
 5. RAPID WIRE





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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 39 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

6. Xi'an Telison New Materials Co., Ltd.  
7. Jiangsu Fier New Energy  
8. Jiangsu Fier New energy company  
9. KOS Limited  
10. Gadhpat Energy pvt.ltd  
11. Ferron industries  
12. Shanghai Sunby Solar Technologies Co., Ltd,  
13. TAICANG JUREN PHOTOVOLATAIC MATERIAL CO., LTD  
**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.**

String connector.....:

Sn60%Pb40%, Copper component: ≥99.99%,  
Dimension: 0.40 ±0.010mm\*4±0.10mm,  
Manufactured by TaiCang JuRen PV Material Co.,Ltd  
**Alternate manufacturer:**  
1. Valeo Products LLP  
2. A B INDUSTRIES  
3. Suzhou YourBest New-type Materials Co., Ltd  
4. VIDYA WIRES PVT LTD  
5. RAPID WIRE  
6. Xi'an Telison New Materials Co., Ltd.  
7. Jiangsu Fier New Energy  
8. Jiangsu Fier New energy company  
9. KOS Limited  
10. Gadhpat Energy pvt.ltd  
11. Ferron industries  
12. Shanghai Sunby Solar Technologies Co., Ltd,  
13. TAICANG JUREN PHOTOVOLATAIC MATERIAL CO., LTD  
**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.**

Fluxing agent.....:

952-S, Low-Solids No-Clean Flux,  
Manufactured by Kester  
**Alternate manufacturer:**  
1. superior  
2. asahi  
3. Arbital 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  
**Note: Alternate Fluxing agent having same technical specification & same material,**





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 40 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

		<b>only manufacturer name change as Declared by manufacturer.</b>	
	Junction box.....:	<b>Main:</b> PV-HT021x, Rated Voltage: 1500VDC, Current: 30A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Jianguo Haitian Microelectronics Corp. Tested by TUV SUD, Certificate no.: B 096995 0002  <b>Alternate:</b> 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	<b>BOM 1</b>
	Cable .....	62390 IEC 131, 1x4.0mm <sup>2</sup> , HALOGEN FREE LOW SMOKE, Rated Voltage: 1500VDC, Ambient temperature: -40°C to +90°C, Max. Temperature at Conductor:120°C, Manufactured by Jianguo Haitian Microelectronics Corp. Tested by TUV Rheinland, test report no. 50308660 001  <b>Alternate:</b> 62390 IEC 131, 1x4.0mm <sup>2</sup> , Rated Voltage: 1500VDC, Ambient temperature: -40°C to +90°C, Max. Temperature at Conductor:120°C, Manufactured by Dhash PV Technologies Private Limited Tested by TUV Rheinland, Certificate no.: R 50520444	<b>BOM 2</b>
	Connector.....:	PV-HT03x(x= 0 or 1), Rated Voltage: 1500VDC, Rated current: 45A, IP68, Ambient temperature: -40°C to +85°C, Manufactured by Jianguo Haitian Microelectronics Corp. Tested by TUV SUD, Certificate no.: B 096995 0003  <b>Alternate:</b> 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	<b>BOM 1</b>
	Bypass diode.....:	MK5045, IF(AV)=35A, V <sub>RRM</sub> = 45V, T <sub>j</sub> = -55°C to +200°C, R <sub>θJ-C</sub> : 1°C/W, Manufactured by Jianguo Haitian Microelectronics Corp.	<b>BOM 2</b>
	Potting material.....:	5299W-S, RTV silicone potting compound, White, Manufactured by Shanghai Huitian New Material Co., Ltd.  <b>Alternate manufacturer:</b> 1. TONSAN Adhesive, Inc. 2. Adarsha Specialty Chemicals Pvt Ltd 3. Fasto Advance Materials India Pvt. Limited 4. Sikasil 5. Huitian 6. Silande  <b>Note: Alternate Potting material having same technical specification &amp; same material, only manufacturer name change as Declared by manufacturer.</b>	
	Adhesive for junction box.....:	HT906Z, High-performance RTV sealant, White paste, Manufactured by Shanghai Huitian New Material Co., Ltd.  <b>Alternate manufacturer:</b>	





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Report No- SC25SPI00947_1	IS 14286: 2010	Page 41 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

		1. TONSAN Adhesive, Inc. 2. Adarsha Specialty Chemicals Pvt Ltd 3. Fasto Advance Materials India Pvt. Limited 4. Sikasil 5. Huitian 6. Silande <b>Note: Alternate Adhesive for junction box having same technical specification &amp; same material, only manufacturer name change as Declared by manufacturer.</b>	
	Additional material (e. g. insulation tape)...	<b>Soldering Wire:</b> NO CLEAN FLUX CORED SOLDER WIRE, Manufactured by Kester LLC <b>Alternate manufacturer:</b> 1. HYBRID METALS PVT LTD 2. Stannol 3. superior 4. Persang alloy industries pvt ltd 5. KOTHARI METSOL PVT. LTD. 6. Khanna Traders & Engineers <b>Note: Alternate Soldering wire having same technical specification &amp; same material, only manufacturer name change as Declared by manufacturer.</b>	

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

<b>A1.6</b>	<b>MODULE DESIGN - ELECTRICAL CONFIGURATION</b>	
	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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Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 42 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

### 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	<b>AS-156TG-650 (Representative &amp; retested Model)</b>	1500	57.00	46.09	14.83	14.11	650	<ul style="list-style-type: none"> <li>• Maximum System Voltage</li> <li>• Superstrate</li> <li>• Backsheet/substrate</li> <li>• Frame and/or mounting structure</li> <li>• Cell interconnect materials or technique</li> <li>• Electrical circuit</li> <li>• Pmp</li> <li>• Voc</li> <li>• Isc</li> <li>• Vmp</li> <li>• Imp</li> <li>• Module size</li> <li>• Cell technology</li> <li>• Encapsulation</li> <li>• Junction box/electrical termination</li> <li>• Power output (by 10%) in the identical package including size and using the identical cell process.</li> <li>• Bypass diode</li> </ul>	
<b>Series Models:</b>									
2	<b>AS-156TG-645</b>	1500	56.85	45.99	14.76	14.03	645		
3	<b>AS-156TG-640</b>	1500	56.70	45.89	14.69	13.95	640		
4	<b>AS-156TG-635</b>	1500	56.55	45.79	14.62	13.87	635		
5	<b>AS-156TG-630</b>	1500	55.71	45.96	14.37	13.71	630		
6	<b>AS-156TG-625</b>	1500	55.56	45.86	14.30	13.63	625		
7	<b>AS-156TG-620</b>	1500	55.41	45.76	14.23	13.55	620		
8	<b>AS-156TG-615</b>	1500	55.26	45.66	14.16	13.47	615		
9	<b>AS-156TG-610</b>	1500	55.11	45.56	14.09	13.39	610		
10	<b>AS-156TG-605</b>	1500	54.96	45.46	14.02	13.31	605		
11	<b>AS-144TG-600</b>	1500	54.81	45.36	13.95	13.23	600		
12	<b>AS-144TG-595</b>	1500	54.66	45.26	13.88	13.15	595		
13	<b>AS-144TG-590</b>	1500	54.51	45.16	13.81	13.07	590		
14	<b>AS-144TG-585</b>	1500	54.36	45.06	13.74	12.99	585		
15	<b>AS-144TG-580</b>	1500	51.48	42.84	14.25	13.55	580		
16	<b>AS-144TG-575</b>	1500	51.31	42.72	14.17	13.47	575		
17	<b>AS-144TG-570</b>	1500	51.14	42.60	14.09	13.39	570		
18	<b>AS-144TG-565</b>	1500	50.97	42.48	14.01	13.31	565		
19	<b>AS-144TG-560</b>	1500	50.80	42.36	13.93	13.23	560		
20	<b>AS-144TG-555</b>	1500	50.63	42.24	13.85	13.15	555		
21	<b>AS-144TG-550</b>	1500	50.46	42.12	13.77	13.07	550		
22	<b>AS-144TG-545</b>	1500	50.29	42.00	13.69	12.99	545		
23	<b>AS-144TG-540</b>	1500	50.12	41.88	13.61	12.91	540		
24	<b>AS-132TG-535</b>	1500	49.95	41.76	13.53	12.83	535		
25	<b>AS-132TG-530</b>	1500	47.07	39.95	13.94	13.27	530		
26	<b>AS-132TG-525</b>	1500	46.90	39.83	13.86	13.19	525		
27	<b>AS-132TG-520</b>	1500	46.73	39.71	13.78	13.11	520		
28	<b>AS-132TG-515</b>	1500	46.56	39.59	13.70	13.03	515		
29	<b>AS-132TG-510</b>	1500	46.39	39.46	13.62	12.95	510		
30	<b>AS-132TG-505</b>	1500	46.22	39.31	13.54	12.87	505		
31	<b>AS-132TG-500</b>	1500	46.05	39.16	13.46	12.79	500		
32	<b>AS-132TG-495</b>	1500	42.77	36.77	14.16	13.47	495		
33	<b>AS-132TG-490</b>	1500	42.59	36.62	14.08	13.39	490		
34	<b>AS-120TG-485</b>	1500	42.41	36.47	13.99	13.31	485		





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 43 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

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





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CIN NO U21014UP1987PTC008956



TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 44 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

## Testing procedure

- New module type
- Modifications (if yes, please choose the applicable modification according to the Retesting Guideline)
- Change in cell technology
- Modification to encapsulation system
- Modification to superstrate
- Increase in module size
- Modification to back sheet/ substrate
- Modification to frame and/ or mounting structure
- Modification to junction box/ electrical termination
- Change in cell interconnect materials or technique
- Change in electrical circuit of an identical package
- Higher or lower power output (by 10%) in the identical package including size and using the identical cell process
- Qualification of a frameless module after the design has received certification as a framed module
- Change in bypass diode or number of diodes
- Modification to cut cell retest (Limited testing)





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 CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947_1	IS 14286: 2010	Page 45 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

Module group assignment:		
Sample #	Sample Group ID	Sample No. & Serial number
<b>AS-156TG-650 (BOM 1)</b>	Full Testing (BOM 1)	
	A	1 & AS0325650TG00001
	B	2 & AS0325650TG00002
	C1	3 & AS0325650TG00003
	C2	4 & AS0325650TG00004
	D1	5 & AS0325650TG00005
	D2	6 & AS0325650TG00006
	E1	7 & AS0325650TG00007
	E2	8 & AS0325650TG00008
Modification due to change in cell technology, encapsulation system & junction box (BOM 2)		
<b>AS-156TG-650 (BOM 2)</b>	A	9 & AS0325650TG00021
	B	10 & AS0325650TG00022
	C1	11 & AS0325650TG00023
	C2	12 & AS0325650TG00024
	D1	13 & AS0325650TG00025
	D2	14 & AS0325650TG00026
	E1	15 & AS0325650TG00027
	E2	16 & AS0325650TG00028





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CIN NO U21014UP1987PTC008956



TC-6468

Report No- SC25SPI00947\_1

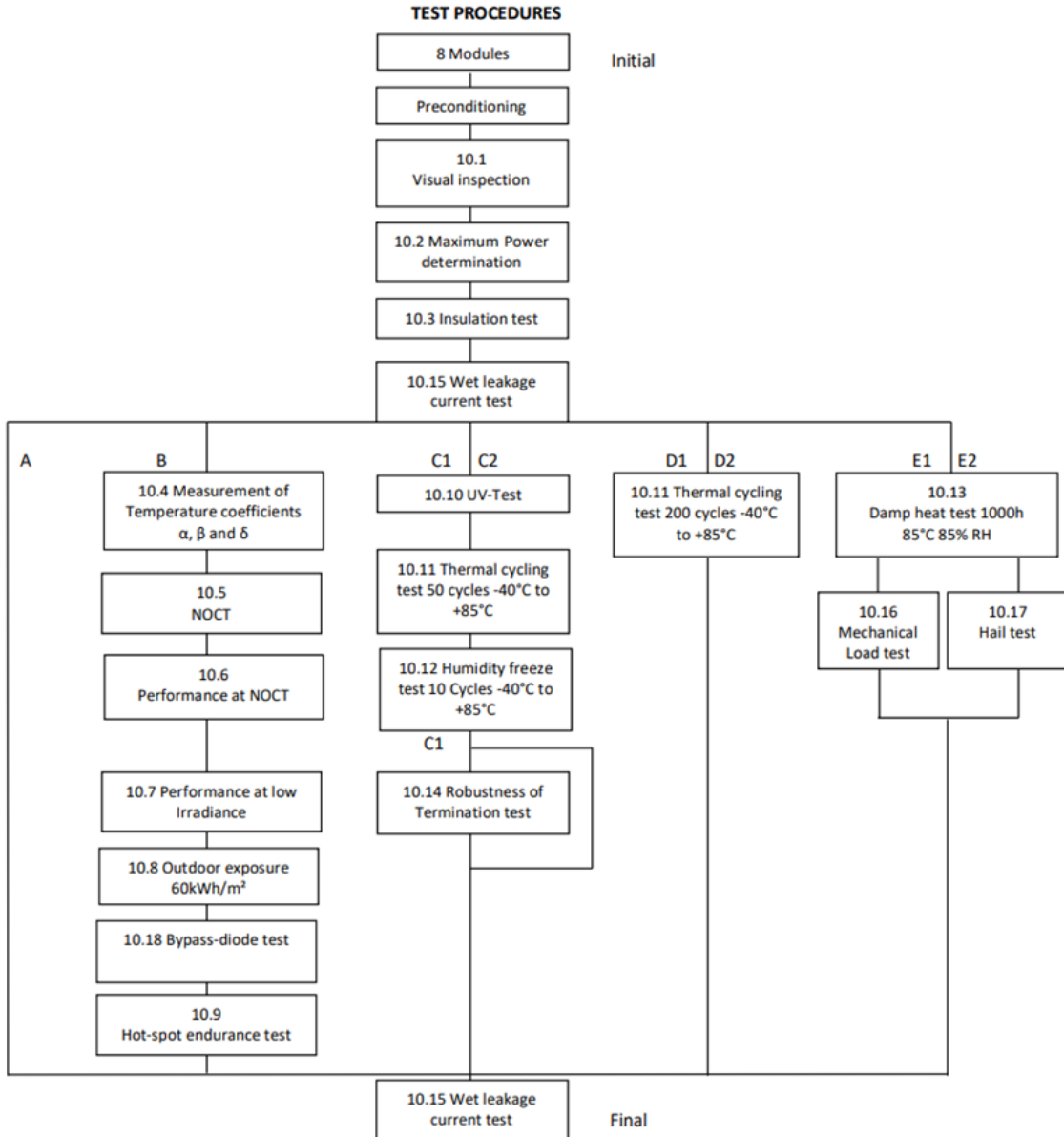
IS 14286: 2010

Page 46 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

10	TEST PROCEDURES (if it is not a full test, strikethrough non-performed test) Note: Deviations from test sequence are possible but must be documented.
----	--






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 CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947_1	IS 14286: 2010	Page 47 of 80
Dated : 11/06/2025		

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

Cl.No.	Requirement + Test	Result - Remark	Verdict
4	MARKING	--	P
	Name, monogram or symbol of manufacturer ..... :	ARMY SOLAR ENERGY PRIVATE LIMITED 	P
	Type or model number	AS-156TG-650	P
	Serial number	Marked	P
	Polarity of terminals or leads	Marked	P
	Maximum system voltage	1500V	P
	The date and place of manufacture	Place Marked Date (traceable from serial number)	P

Cl.No.	Requirement + Test	Result - Remark	Verdict
	Initial examination	All Modules	--
10	Preconditioning	5.0 kWh/m2	P
10.1	Visual inspection	See table 10.1 Int	P
10.2	Maximum power determination	See table 10.2 Int	P
10.3	Insulation test	See table 10.3 Int	P
10.15	Wet leakage current test	See table 10.15 Int	P

Cl.No.	Requirement + Test	Result - Remark	Verdict
Group A	Control Module	Sample Group ID A	--





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 CIN NO U21014UP1987PTC008956



TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 48 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

Cl.No.	Requirement + Test	Result - Remark	Verdict
Group B	1 Module	Sample Group ID B	P
10.4	Measurement of temperature coefficients	See table 10.4 B	P
10.5	Measurement of Nominal Operating Cell Temperature [NOCT, °C]	See table 10.5 B	P
10.6	Performance at STC and NOCT	See table 10.6 B	P
10.7	Performance at low irradiance	See table 10.7 B	P
10.8	Outdoor exposure test	See table 10.8 B	P
10.18	Bypass diode thermal test	See table 10.18 B	P
	Maximum allowed junction temperature	200°C	P
	Measured junction temperature	See table 10.18 B	P
10.9	Hot spot endurance test	See table 10.9 B	P

Cl.No.	Requirement + Test	Result - Remark	Verdict
Group C	2 Modules	Sample Group ID C1, C2	P
10.10	UV test	15 kWh/m2	P
	Final measurements	See table 10.10 C	P
10.11	Thermal cycling test (50 cycles)	50	P
	Final measurements	See appended table 10.11 C	P
10.12	Humidity freeze (10 cycles)	10	P
	Final measurements	See table 10.12 C	P

Cl.No.	Requirement + Test	Result - Remark	Verdict
Group C1	1 Module	Sample Group ID C1	P
10.14	Robustness of terminations test	Type A	P
	Final measurements	See table 10.14 C1	P





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 49 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

CI.No.	Requirement + Test	Result - Remark	Verdict
Group D	2 Modules	Sample Group ID D1, D2	P
10.11.	Thermal cycling test (200 cycles)	200	P
	Final measurements	See table 10.11 D	P

CI.No.	Requirement + Test	Result - Remark	Verdict
Group E	2 Modules	Sample Group ID E1, E2	P
10.13	Damp heat test	1000h	P
	Final measurements	See table 10.13 E	P

CI.No.	Requirement + Test	Result - Remark	Verdict
Group E1	1 Module	Sample Group ID E1	P
10.16	Mechanical load test	2400Pa & 5400Pa	P
10.16.4	-No open-circuits or ground faults detected	--	P
	Final measurements	See table 10.16 E1	P

CI.No.	Requirement + Test	Result - Remark	Verdict
Group E2	1 Module	Sample Group ID E2	P
10.17	Hail test	25 mm	P
	Number of points impacted	11	P
	Final measurements	See table 10.17 E2	P

CI.No.	Requirement + Test	Result - Remark	Verdict
Final measurement	Final measurement	All modules	P
10.15.	Wet leakage current test	See table 10.15 F	P





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 CIN NO U21014UP1987PTC008956



TC-6468

Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 50 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

10.1 Initial	TABLE: Visual inspection (Initial)	P
Test Date [MM/DD/YYYY].....	04/16/2025	-
Sample #	Nature and position of initial findings – comments or attach photos	-
1	No visual defect	P
2	No visual defect	P
3	No visual defect	P
4	No visual defect	P
5	No visual defect	P
6	No visual defect	P
7	No visual defect	P
8	No visual defect	P
9	No visual defect	P
10	No visual defect	P
11	No visual defect	P
12	No visual defect	P
13	No visual defect	P
14	No visual defect	P
15	No visual defect	P
16	No visual defect	P
Supplementary information: Nil		

10.2 Initial	TABLE: Maximum power determination (Initial)	P				
Test Date [MM/DD/YYYY].....	04/16/2025	-				
Module temperature [°C].....	25	-				
Irradiance [W/m <sup>2</sup> ].....	1000	-				
Sample#	Voc[V]	Vmp [V]	Isc [A]	Imp [A]	Pmp [W]	FF[%]
1	56.91	46.05	14.793	14.105	649.54	77.15
2	57.09	46.10	14.872	14.104	650.19	76.58
3	56.85	46.12	14.771	14.102	650.38	77.45
4	57.15	46.14	14.893	14.107	650.90	76.47
5	56.94	46.05	14.852	14.106	649.58	76.81
6	57.06	46.14	14.862	14.101	650.62	76.72
7	56.88	46.11	14.780	14.109	650.57	77.39
8	57.12	46.13	14.882	14.108	650.80	76.56
9	56.92	46.04	14.792	14.104	649.35	77.12
10	57.04	46.11	14.871	14.105	650.38	76.67
11	56.86	46.10	14.772	14.101	650.06	77.39
12	57.14	46.13	14.894	14.106	650.71	76.46
13	56.95	46.06	14.853	14.104	649.63	76.80
14	57.04	46.13	14.864	14.102	650.53	76.73
15	56.84	46.12	14.781	14.108	650.66	77.45
16	57.15	46.11	14.883	14.107	650.47	76.48
Supplementary information: Nil						





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Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 51 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

10.3 Initial		Table: Insulation test (initial)		P
Test Date [MM/DD/YYYY].....:			04/16/2025	-
Test Voltage applied [V].....:			4000V for 1min & 1500V for 2min	-
Sample#	Measured MΩ	Required MΩ	Dielectric break down Yes(description)/No	Result
1	>1000	14.30	No	P
2	>1000	14.30	No	P
3	>1000	14.30	No	P
4	>1000	14.30	No	P
5	>1000	14.30	No	P
6	>1000	14.30	No	P
7	>1000	14.30	No	P
8	>1000	14.30	No	P
9	>1000	14.30	No	P
10	>1000	14.30	No	P
11	>1000	14.30	No	P
12	>1000	14.30	No	P
13	>1000	14.30	No	P
14	>1000	14.30	No	P
15	>1000	14.30	No	P
16	>1000	14.30	No	P

Supplementary information: Area of module 2.796[m<sup>2</sup>].

10.15 Initial		TABLE: Wet leakage current test (Initial)		P
Test Date [MM/DD/YYYY].....:			04/16/2025	-
Test Voltage applied [V].....:			1500V	-
Solution resistivity [Ω cm].....:			<3500 at 22 ± 3°C	2657
Solution temperature [°C].....:			23.5	-
Sample#	Measured[MΩ]	Limit[MΩ]	Result	
1	>1000	14.30	P	
2	>1000	14.30	P	
3	>1000	14.30	P	
4	>1000	14.30	P	
5	>1000	14.30	P	
6	>1000	14.30	P	
7	>1000	14.30	P	
8	>1000	14.30	P	
9	>1000	14.30	P	
10	>1000	14.30	P	
11	>1000	14.30	P	





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TC-6468

Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 52 of 80

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

12	>1000	14.30	P
13	>1000	14.30	P
14	>1000	14.30	P
15	>1000	14.30	P
16	>1000	14.30	P

Supplementary information: Area of module 2.796[m<sup>2</sup>].

10.4 B	TABLE: Measurement of temperature coefficients		P
Test Date [MM/DD/YYYY].....		04/19/2025	-
Ambient air temperature [°C].....		25	-
Irradiance [W/m <sup>2</sup> ].....		1000	-
Module temperature [°C] high/low.....		65 /25	-
Sample#	Parameter	Calculated Value	-
2	Short circuit current $\alpha$ [%/°C].....	0.0426	-
	Open circuit voltage $\beta$ [%/°C].....	-0.2937	-
	Peak power $\delta$ [%/°C].....	-0.3423	-

Supplementary information: Nil

10.5 B	TABLE: Measurement of Nominal Operating Cell Temperature [NOCT, °C]			P
Test Date [MM/DD/YYYY].....	04/21/2025	04/22/2025	04/23/2025	-
Wind velocity [m/s] high/low.....	1.04/0.63	1.02/0.77	1.09/0.64	-
Ambient temperature [°C] high/low.....	38.37/24.26	36.71/24.38	37.47/23.47	-
Irradiance [W/m <sup>2</sup> ] high/low.....	794.2/417.5	837.5/465.8	821.2/458.8	-
Module temperature [°C] high/low.....	46.29/28.84	45.84/26.36	47.43/29.47	-
Wind velocity [m/s] (average).....	0.97	0.95	0.98	-
Ambient temperature [°C] (average).....	33.74	32.84	34.28	-
NOCT correction factor [°C].....	1	1	1	-
Calculated NOCT [°C].....	46.83	45.98	46.65	-

Sample#	Average NOCT[°C]
2	46.48

Supplementary information: Nil





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TC-6468

Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 53 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

10.6 B TABLE: Performance at STC and NOCT							P
Sample No						2	
Test Date [MM/DD/YYYY]						04/28/2025	-
Wind velocity [m/s] high/low						N/A	-
Test method			[X]	Indoor	[ ]	Outdoor	-
Ambient air temperature [°C]						25	-
Irradiance [W/m <sup>2</sup> ] High/Low						1000	-
Module temperature [°C] high/low						25°C for STC / 46.48°C for NOCT	-
Condition	Voc [V]	Vmp [V]	Isc [A]	Imp [A]	Pmp [W]	FF[%]	
STC	56.87	46.01	14.801	14.109	649.16	77.12	
NOCT	53.60	43.60	11.980	11.240	490.10	76.31	
Supplementary information: Nil							

10.6 B TABLE: Performance at STC and NOCT							P
Sample No						10	
Test Date [MM/DD/YYYY]						04/28/2025	-
Wind velocity [m/s] high/low						N/A	-
Test method			[X]	Indoor	[ ]	Outdoor	-
Ambient air temperature [°C]						25	-
Irradiance [W/m <sup>2</sup> ] High/Low						1000	-
Module temperature [°C] high/low						25°C for STC	-
Condition	Voc [V]	Vmp [V]	Isc [A]	Imp [A]	Pmp [W]	FF[%]	
STC	56.85	46.00	14.798	14.107	648.92	77.14	
Supplementary information: Nil							

10.7 B TABLE: Performance at low irradiance							P
Test Date [MM/DD/YYYY]						04/28/2025	-
Ambient air temperature [°C]						N/A	-
Irradiance [W/m <sup>2</sup> ]						200	-
Module temperature [°C]						25	-
Test method						[X] Data corrected to a 25°C cell temperature and 200W/m <sup>2</sup> irradiance [ ] Directly measured	-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
2	53.30	45.50	2.970	2.810	127.90	80.76	
Supplementary information: Nil							





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TC-6468

Report No- SC25SPI00947_1	IS 14286: 2010	Page 54 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
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<b>10.8 B</b>	<b>TABLE: Outdoor exposure test</b>					P
Sample No	2				-	
Test Date [MM/DD/YYYY] start/end	04/29/2025 to 05/09/2025				-	
Total irradiation dosage [kWh/m <sup>2</sup> ]	60				-	
Supplementary information: Nil						
<b>(10.1 Visual inspection after outdoor exposure test)</b>					P	
Test Date [MM/DD/YYYY]	05/09/2025				-	
Sample#	Nature and position of initial findings – comments or attach photos				-	
2	No visual defect				P	
Supplementary information: Nil						
<b>(10.2 Maximum power determination after outdoor exposure test)</b>					P	
Test Date [MM/DD/YYYY]	05/09/2025				-	
Module temperature [°C]	25				-	
Irradiance [W/m <sup>2</sup> ]	1000				-	
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
2	56.82	45.96	14.792	14.045	645.50	76.80
1(control)	56.89	46.02	14.823	14.115	649.57	77.03
Pmp degradation after this test [%] ≤ 5%.....:					-0.56 for Sample 2	
<b>(10.3 Insulation test after outdoor exposure test)</b>					P	
Test Date [MM/DD/YYYY]	05/09/2025				-	
Test Voltage applied [V]	4000V for 1min & 1500V for 2min				-	
Sample#	Measured	Required	Dielectric breakdown		Result	
	MΩ	MΩ	Yes(description)	No		
2	>1000	14.30	No	-	P	
Supplementary information: Area of module 2.796[m <sup>2</sup> ], Minimum requirement according to the standard is 40MΩm <sup>2</sup>						





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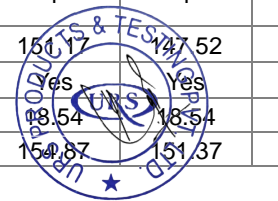


Report No- SC25SPI00947_1	IS 14286: 2010	Page 55 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
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<b>10.18B</b>	<b>TABLE: Bypass diode thermal test</b>			<b>P</b>
Sample No .....	2			-
Test Date [MM/DD/YYYY] start/end.....:	05/12/2025			-
Module temperature [°C].....:	75±5			-
Number of diodes in junction box.....:	3			-
Diode manufacturer.....:	Jiangsu Haitian Microelectronics Corp.			-
Diode type designation.....:	MK5045			-
Max. permissible junction temperature $T_{jmax}$ [°C] (according to diode datasheet).....:	200			-
	Diode1	Diode2	Diode3	Result
Current flow applied [A].....:	14.83	14.83	14.83	-
Max. diode surface temperature [°C] a or b:	138.40	139.80	143.50	-
Voltage drop [V].....:	0.42	0.45	0.41	-
Power dissipation [W].....:	6.23	6.67	6.08	-
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..... :	144.63	146.47	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 :	149.54	151.84	153.73	-
Remarks: After completion of the test, diode is still functional. (a: measured at diode case or ambient near diode case, b: measured at diode leads)				

<b>10.18B</b>	<b>TABLE: Bypass diode thermal test</b>			<b>P</b>
Sample No .....	10			-
Test Date [MM/DD/YYYY] start/end.....:	05/14/2025			-
Module temperature [°C].....:	75±5			-
Number of diodes in junction box.....:	3			-
Diode manufacturer.....:	Jiangsu Haitian Microelectronics Corp.			-
Diode type designation.....:	MK5045			-
Max. permissible junction temperature $T_{jmax}$ [°C] (according to diode datasheet).....:	200			-
	Diode1	Diode2	Diode3	Result
Current flow applied [A].....:	14.83	14.83	14.83	-
Max. diode surface temperature [°C] a or b:	142.90	144.20	140.70	-
Voltage drop [V].....:	0.39	0.47	0.46	-
Power dissipation [W].....:	5.78	6.97	6.82	-
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..... :	148.68	151.17	147.52	-
$T_{jcalc} < T_{jmax}$ (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 :	152.78	154.87	151.37	-





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TC-6468

Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 56 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

Remarks: After completion of the test, diode is still functional.  
 (a: measured at diode case or ambient near diode case, b: measured at diode leads)

<b>(10.1 Visual inspection after bypass diode thermal test)</b>			P
Test Date [MM/DD/YYYY].....:		05/14/2025	-
Sample#	Nature and position of initial findings – comments or attach photos		
2	No visual defect		P
10	No visual defect		P

Supplementary information: Nil

<b>(10.2 Maximum power determination after bypass diode thermal test)</b>			P			
Test Date [MM/DD/YYYY].....:		05/14/2025	-			
Module temperature [°C].....:		25	-			
Irradiance [W/m <sup>2</sup> ].....:		1000	-			
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
2	56.49	45.78	14.659	13.992	640.55	77.35
1 (control)	56.83	46.03	14.816	14.102	649.12	77.09
10	56.59	45.89	14.653	13.998	642.36	77.47
9 (control)	56.84	46.02	14.814	14.104	649.07	77.08
Pmp degradation after this test [%] ≤5%.....:			-0.77 & -1.01 for Sample 2 &10 respectively			-

Supplementary information: Nil

<b>(10.3 Insulation test after bypass diode thermal test)</b>			P		
Test Date [MM/DD/YYYY].....:		05/14/2025	-		
Test Voltage applied [V].....:		4000V for 1min & 1500V for 2min	-		
Sample#	Measured	Required	Dielectric breakdown		Result
	MΩ	MΩ	Yes(description)	No	
2	>1000	14.30	No	-	P
10	>1000	14.30	No	-	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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Report No- SC25SPI00947_1	IS 14286: 2010	Page 57 of 80
Dated : 11/06/2025		

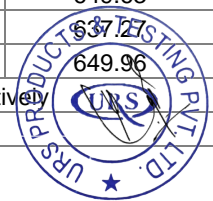
Clause	Requiremet+Test	Result-Remark	Verdict
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<b>10.9 B</b>	<b>TABLE: Hot-spot endurance test</b>	<b>P</b>
Sample No. ....:	2	-
Test Date [MM/DD/YYYY] start/end.....:	05/13/2025	-
Cell interconnection circuit.....:	[ ] S [X] SP [ ] SPS	-
Module temperature at thermal equilibrium [°C].....:	54.2	-
Determination of worst case cell		-
Maximum measured cell temperature in 5hours [°C]:	80.4	-
Shading rate [%].....:	100	-
Supplementary information: Nil		

<b>10.9 B</b>	<b>TABLE: Hot-spot endurance test</b>	<b>P</b>
Sample No. ....:	10	-
Test Date [MM/DD/YYYY] start/end.....:	05/19/2025	-
Cell interconnection circuit.....:	[ ] S [X] SP [ ] SPS	-
Module temperature at thermal equilibrium [°C].....:	53.7	-
Determination of worst case cell		-
Maximum measured cell temperature in 5hours [°C]:	79.5	-
Shading rate [%].....:	100	-
Supplementary information: Nil		

<b>(10.1 Visual inspection after hot-spot endurance test)</b>	<b>P</b>
Test Date [MM/DD/YYYY].....:	05/19/2025
Sample#	Nature and position of initial findings
2	No visual defect
10	No visual defect
Supplementary information: Nil	

<b>(10.2 Maximum power determination after hot-spot endurance test)</b>	<b>P</b>					
Test Date [MM/DD/YYYY].....:	05/19/2025					
Module temperature [°C].....:	25					
Irradiance [W/m <sup>2</sup> ].....:	1000					
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
2	56.23	45.72	14.645	13.902	635.60	77.18
1(control)	56.99	46.07	14.768	14.101	649.63	77.19
10	56.34	45.84	14.642	13.902	637.27	77.25
9(control)	56.97	46.09	14.769	14.102	649.96	77.25
Pmp degradation after this test [%] ≤5%.....:		-0.77 & -0.79 for Sample 2 &10 respectively				
Supplementary information: Nil						





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 CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947_1	IS 14286: 2010	Page 58 of 80
Dated : 11/06/2025		

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

**(10.3 Insulation test after hot-spot endurance test)**

Test Date [MM/DD/YYYY].....:					05/19/2025	P
Test Voltage applied [V].....:					4000V for 1min & 1500V for 2min	-
Sample#	Measured	Required	Dielectric breakdown		Result	
	MΩ	MΩ	Yes(description)	No		
2	>1000	14.30	No	-	P	
10	>1000	14.30	No	-	P	

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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 CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 59 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

<b>10.10C</b>	<b>TABLE: UV preconditioning test</b>	P
Test Date [MM/DD/YYYY] start/end.....:	04/19/2025 to 04/27/2025	-
Module temperature [°C].....:	60 ± 5	-
Total UV Irradiation 280-400nm [kWh/m <sup>2</sup> ].....:	15.0	-
Irradiation 280-320nm [kWh/m <sup>2</sup> ].....:	5.0	-
Sample#	Open circuits (Yes/No)	-
3	No open circuit found	P
4	No open circuit found	P
11	No open circuit found	P
12	No open circuit found	P

Supplementary information: Nil

<b>(10.1 Visual inspection after UV preconditioning test)</b>		P
Test Date [MM/DD/YYYY].....:	04/27/2025	-
Sample#	Nature and position of initial findings	-
3	No visual defect	P
4	No visual defect	P
11	No visual defect	P
12	No visual defect	P

Supplementary information: Nil

<b>(10.2 Maximum power determination after UV preconditioning test)</b>		P				
Test Date [MM/DD/YYYY].....:	04/27/2025	-				
Module temperature [°C].....:	25	-				
Irradiance [W/m <sup>2</sup> ].....:	1000	-				
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
3	56.85	45.93	14.727	14.066	646.05	77.17
4	56.84	45.97	14.736	14.052	645.97	77.12
1 (Control)	56.91	46.01	14.822	14.118	649.57	77.01
11	56.81	45.91	14.723	14.064	645.68	77.20
12	56.83	45.92	14.729	14.053	645.31	77.09
9 (Control)	56.94	46.02	14.826	14.114	649.53	76.94
Pmp degradation after this test [%] ≤5%.....:	-0.67, -0.76, -0.67 & -0.83 for Sample 3, 4, 11 & 12 respectively					-

Supplementary information: Nil

<b>(10.3 Insulation test after UV preconditioning test)</b>		P			
Test Date [MM/DD/YYYY].....:	04/27/2025	-			
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min	-			
Sample#	Measured	Required	Dielectric breakdown		Result
	MΩ	MΩ	Yes(description)	No	
3	>1000	14.30	No	-	P
4	>1000	14.30	No	-	P
11	>1000	14.30	No	-	P
12	>1000	14.30	No	-	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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Report No- SC25SPI00947\_1 Page 60 of 80  
 Dated : 11/06/2025 IS 14286: 2010

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

<b>10.11C</b>	<b>TABLE: Thermal cycling 50 test</b>	P
Test Date [MM/DD/YYYY] start/end.....:	04/28/2025 to 05/10/2025	-
Total cycles (50).....:	50	-
Sample#	Open circuits (Yes/No)	-
3	No open circuit found	P
4	No open circuit found	P
11	No open circuit found	P
12	No open circuit found	P

Supplementary information: Nil

<b>(10.1 Visual inspection after thermal cycling 50 test)</b>		P
Test Date [MM/DD/YYYY].....:	05/10/2025	-
Sample#	Nature and position of initial findings	-
3	No visual defect	P
4	No visual defect	P
11	No visual defect	P
12	No visual defect	P

Supplementary information: Nil

<b>(10.2 Maximum power determination after thermal cycling 50 test)</b>							P
Test Date [MM/DD/YYYY].....:	05/10/2025						-
Module temperature [°C].....:	25						-
Irradiance [W/m <sup>2</sup> ].....:	1000						-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
3	56.38	45.78	14.669	14.014	641.56	77.57	
4	56.31	45.67	14.614	13.998	639.29	77.69	
1 (Control)	56.82	46.03	14.802	14.091	648.61	77.12	
11	56.39	45.77	14.668	14.013	641.38	77.54	
12	56.33	45.66	14.612	13.995	639.01	77.64	
9 (Control)	56.78	46.01	14.798	14.089	648.23	77.15	
Pmp degradation after this test [%] ≤5%.....:	-0.70, -1.03, -0.67 & -0.98 for Sample 3, 4, 11 & 12 respectively						-

Supplementary information: Nil

<b>(10.3 Insulation test after thermal cycling 50 test)</b>						P
Test Date [MM/DD/YYYY].....:	05/10/2025					-
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min					-
Sample#	Measured	Required	Dielectric breakdown			Result
	MΩ	MΩ	Yes (description)	No		
3	>1000	14.30	No	-	P	
4	>1000	14.30	No	-	P	
11	>1000	14.30	No	-	P	
12	>1000	14.30	No	-	P	

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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TC-6468

Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 61 of 80

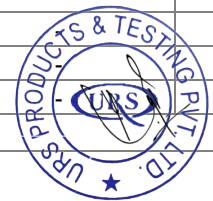
Clause	Requiremet+Test	Result-Remark	Verdict
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<b>10.12C</b>		<b>TABLE: Humidity freeze 10 test</b>	<b>P</b>
Test Date [MM/DD/YYYY] start/end.....:	05/12/2025 to 05/23/2025		-
Total cycles (10).....:	10		-
Sample#	Open circuits(Yes/No)		-
3	No open circuit found		P
4	No open circuit found		P
11	No open circuit found		P
12	No open circuit found		P
Supplementary information: Nil			

<b>(10.1 Visual inspection after humidity freeze 10 test)</b>			<b>P</b>
Test Date [MM/DD/YYYY].....:	05/23/2025		-
Sample#	Nature and position of initial findings		-
3	No visual defect		P
4	No visual defect		P
11	No visual defect		P
12	No visual defect		P
Supplementary information: Nil			

<b>(10.2 Maximum power determination after humidity freeze 10 test)</b>							<b>P</b>
Test Date [MM/DD/YYYY].....:	05/23/2025						-
Module temperature [°C].....:	25						-
Irradiance [W/m <sup>2</sup> ].....:	1000						-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
3	56.16	45.56	14.516	13.972	636.56	78.09	
4	56.11	45.48	14.510	13.968	635.26	78.03	
1(Control)	56.79	45.98	14.799	14.098	648.23	77.13	
11	56.13	45.53	14.511	13.969	636.01	78.09	
12	56.02	45.46	14.505	13.967	634.94	78.14	
9(Control)	56.78	45.99	14.794	14.097	648.32	77.18	
Pmp degradation after this test [%] ≤5%.....:	-0.78, -0.63, -0.84 & -0.64 for Sample 3, 4, 11 & 12 respectively						-

<b>(10.3 Insulation test after humidity freeze 10 test)</b>						<b>P</b>
Test Date [MM/DD/YYYY].....:	05/23/2025					-
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min					-
Sample#	Measured	Required	Dielectric breakdown		Result	
	MΩ	MΩ	Yes(description)	No		
3	>1000	14.30	No	-	P	
4	>1000	14.30	No	-	P	
11	>1000	14.30	No	-	P	
12	>1000	14.30	No	-	P	
Supplementary information: Area of module 2.796[m <sup>2</sup> ], Minimum requirement according to the standard is 40MΩm <sup>2</sup>						





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A-29, Sector-5, Noida-201301  
 T +91 (120) 4516264-65 F +91 (120) 4750296  
 E info@urs-labs.com W www.urs-labs.com  
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TC-6468

Report No- SC25SPI00947_1	IS 14286: 2010	Page 62 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
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<b>10.14C1</b>	<b>TABLE: Robustness of terminations test</b>	P
Test Date [MM/DD/YYYY] start/end...:	05/28/2025	-
Types of terminations	Type A	-
Applied force in all directions [N]..... :	40 for tensile test, 20 for bending test	-
Sample#	Open circuits(Yes/No)	-
4	No open circuit found	P
12	No open circuit found	P

Supplementary information: Nil

<b>(10.1 Visual inspection after robustness of terminations test)</b>		P
Test Date [MM/DD/YYYY].....:	05/28/2025	-
Sample#	Nature and position of initial findings	-
4	No visual defect	P
12	No visual defect	P

Supplementary information: Nil

<b>(10.2 Maximum power determination after robustness of terminations test)</b>						P
Test Date [MM/DD/YYYY].....:	05/28/2025					-
Module temperature [°C].....:	25					-
Irradiance [W/m <sup>2</sup> ].....:	1000					-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
4	56.04	45.41	14.50	13.961	633.97	78.01
1 (Control)	56.77	45.99	14.797	14.103	648.60	77.21
12	56.04	45.47	14.506	13.958	634.67	78.07
9 (Control)	56.72	45.94	14.795	14.105	647.98	77.22
Pmp degradation after this test [%] ≤5%.....:	-0.20 & -0.04 for Sample 4 & 12 respectively					-

Supplementary information: Nil

<b>(10.3 Insulation test after robustness of terminations test)</b>					P
Test Date [MM/DD/YYYY].....:	05/28/2025				-
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min				-
Sample#	Measured	Required	Dielectric breakdown		-
	MΩ	MΩ	Yes(description)	No	
4	>1000	14.30	No	-	P
12	>1000	14.30	No	-	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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 T +91 (120) 4516264-65 F +91 (120) 4750296  
 E info@urs-labs.com W www.urs-labs.com  
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Report No- SC25SPI00947_1	IS 14286: 2010	Page 63 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

<b>10.11D</b>	<b>TABLE: Thermal cycling 200 test</b>	P
Test Date [MM/DD/YYYY] start/end.....:	04/19/2025 to 06/03/2025	-
Total cycles (200).....:	200	-
Applied current [A].....:	14.11	-
Sample#	Open circuits(Yes/No)	-
5	No open circuit found	P
6	No open circuit found	P
13	No open circuit found	P
14	No open circuit found	P

Supplementary information: Nil

<b>(10.1 Visual inspection after thermal cycling 200 test)</b>			P
Test Date [MM/DD/YYYY].....:	06/03/2025		-
Sample#	Nature and position of initial findings		-
5	No visual defect		P
6	No visual defect		P
13	No visual defect		P
14	No visual defect		P

Supplementary information: Nil

<b>(10.2 Maximum power determination after thermal cycling 200 test)</b>							P
Test Date [MM/DD/YYYY].....:	06/03/2025						-
Module temperature [°C].....:	25						-
Irradiance [W/m <sup>2</sup> ].....:	1000						-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
5	56.34	45.72	14.664	14.011	640.58	77.54	
6	56.28	45.78	14.661	13.993	640.60	77.64	
1 (Control)	56.79	46.04	14.796	14.101	649.21	77.26	
13	56.35	45.77	14.668	14.019	641.65	77.63	
14	56.26	45.74	14.666	13.998	640.27	77.60	
9 (Control)	56.74	46.07	14.798	14.103	649.73	77.38	
Pmp degradation after this test [%] ≤5%.....:	-1.39, -1.54, -1.23 & -1.58 for Sample 5, 6, 13 & 14 respectively						-

Supplementary information: Nil

<b>(10.3 Insulation test after thermal cycling 200 test)</b>						P
Test Date [MM/DD/YYYY].....:	06/03/2025					-
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min					-
Sample#	Measured	Required	Dielectric breakdown		Result	
	MΩ	MΩ	Yes(description)	No		
5	>1000	14.30	No		P	
6	>1000	14.30	No		P	
13	>1000	14.30	No		P	
14	>1000	14.30	No		P	

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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A-29, Sector-5, Noida-201301  
 T +91 (120) 4516264-65 F +91 (120) 4750296  
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TC-6468

Report No- SC25SPI00947_1	IS 14286: 2010	Page 64 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

<b>10.13E</b>	<b>TABLE: Damp heat 1000 test</b>		P
Test Date [MM/DD/YYYY] start/end:		04/19/2025 to 05/31/2025	-
Total hours (1000).....:		1000	-
Sample#	Open circuits(Yes/No)		-
7	No open circuit found		P
8	No open circuit found		P
15	No open circuit found		P
16	No open circuit found		P

Supplementary information: Nil

<b>(10.1 Visual inspection after damp heat 1000 test)</b>			P
Test Date [MM/DD/YYYY].....:		05/31/2025	-
Sample#	Nature and position of initial findings		-
7	No visual defect		P
8	No visual defect		P
15	No visual defect		P
16	No visual defect		P

Supplementary information: Nil

<b>(10.3 Insulation test after damp heat 1000 test)</b>			P		
Test Date [MM/DD/YYYY].....:		05/31/2025	-		
Test Voltage applied [V].....:		4000V for 1min & 1500V for 2min	-		
Sample#	Measured	Required	Dielectric breakdown		Result
	MΩ	MΩ	Yes(description)	No	
7	>1000	14.30	No	-	P
8	>1000	14.30	No	-	P
15	>1000	14.30	No	-	P
16	>1000	14.30	No	-	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>

<b>(10.15 Wet leakage current test after damp heat 1000 test)</b>			P
Test Date [MM/DD/YYYY].....:		05/31/2025	-
Test Voltage applied [V].....:		1500V	-
Solution resistivity [Ωcm].....:		< 3500 Ω cm at 22 ± 3°C	2554
Solution temperature [°C].....:		22.3	-
Sample#	Measured[MΩ]	Limit[MΩ]	Result
7	>1000	14.30	P
8	>1000	14.30	P
15	>1000	14.30	P
16	>1000	14.30	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 65 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

<b>(10.2 Maximum power determination after damp heat 1000 test)</b>							P
Test Date [MM/DD/YYYY].....:		05/31/2025				-	
Module temperature [°C].....:		25				-	
Irradiance [W/m <sup>2</sup> ].....:		1000				-	
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
7	56.28	45.69	14.528	13.993	639.34	78.19	
8	56.23	45.65	14.531	13.986	638.46	78.14	
1 (Control)	56.78	46.06	14.794	14.107	649.77	77.35	
15	56.27	45.63	14.525	13.997	638.68	78.14	
16	56.26	45.68	14.536	13.988	638.97	78.13	
9 (Control)	56.76	46.08	14.796	14.108	650.10	77.41	
Pmp degradation after this test [%]≤5%.....:		-1.73, -1.90, -1.84 & -1.77 for Sample 7, 8, 15 & 16 respectively				-	
Supplementary information: Nil							





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Report No- SC25SPI00947_1	IS 14286: 2010	Page 66 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

<b>10.16E1</b>	<b>TABLE: Mechanical load test</b>		<b>P</b>
Sample#.....:	7		-
Test Date [MM/DD/YYYY].....:	06/03/2025		-
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			

<b>10.16E1</b>	<b>TABLE: Mechanical load test</b>		<b>P</b>
Sample#.....:	15		-
Test Date [MM/DD/YYYY].....:	06/05/2025		-
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			





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TC-6468

Report No- SC25SPI00947_1	IS 14286: 2010	Page 67 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
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<b>(10.1 Visual inspection after mechanical load test)</b>			P
Test Date [MM/DD/YYYY].....:	06/05/2025		-
Sample#	Nature and position of initial findings		-
7	No visual defect		P
15	No visual defect		P

Supplementary information: Nil

<b>(10.2 Maximum power determination after mechanical load test)</b>			P
Test Date [MM/DD/YYYY].....:	06/05/2025		-
Module temperature [°C].....:	25		-
Irradiance [W/m <sup>2</sup> ].....:	1000		-

Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]
7	56.16	45.47	14.517	13.984	635.85	77.99
1 (Control)	56.83	46.03	14.738	14.108	649.39	77.53
15	56.18	45.49	14.518	13.986	636.22	78.00
9 (Control)	56.84	46.08	14.734	14.105	649.96	77.61

Pmp degradation after this test [%] ≤5%.....:	-0.55 & -0.39 for Sample 7 & 15 respectively	-
---	--	---

Supplementary information: Nil

<b>(10.3 Insulation test after mechanical load test)</b>			P		
Test Date [MM/DD/YYYY].....:	06/05/2025		-		
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min		-		
Sample#	Measured	Required	Dielectric breakdown		Result
	MΩ	MΩ	Yes(description)	No	
7	>1000	14.30	No	-	P
15	>1000	14.30	No	-	P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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Report No- SC25SPI00947_1	IS 14286: 2010	Page 68 of 80
Dated : 11/06/2025		

Clause	Requirement+Test	Result-Remark	Verdict
--------	------------------	---------------	---------

<b>10.17E2</b>	<b>TABLE: Hail impact test</b>	P
Test Date [MM/DD/YYYY].....:	06/04/2025	-
Ice ball size [mm].....:	25	-
Ice ball weight [g].....:	7.54	-
Ice ball velocity [m/s].....:	23.05	-
Number of impact locations.....:	11	-
Sample#	Open circuits (Yes/No)	-
8	No open circuit found	P
16	No open circuit found	P

Supplementary information: Nil

<b>(10.1 Visual inspection after hail impact test)</b>			P
Test Date [MM/DD/YYYY].....:	06/04/2025		-
Sample#	Nature and position of initial findings		-
8	No visual defect		P
16	No visual defect		P

Supplementary information: Nil

<b>(10.2 Maximum power determination after hail impact test)</b>							P
Test Date [MM/DD/YYYY].....:	06/04/2025						-
Module temperature [°C].....:	25						-
Irradiance [W/m <sup>2</sup> ].....:	1000						-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	
8	56.21	45.54	14.528	13.992	637.20	78.03	
1 (Control)	56.82	46.04	14.739	14.108	649.53	77.56	
16	56.23	45.58	14.523	13.991	637.71	78.09	
9 (Control)	56.83	46.06	14.737	14.109	649.86	77.59	
Pmp degradation after this test [%] ≤5%.....:	-0.20 & -0.20 for Sample 8 & 16 respectively						-

Supplementary information: Nil

<b>(10.3 Insulation test after hail impact test)</b>						P	
Test Date [MM/DD/YYYY].....:	06/04/2025						-
Test Voltage applied [V].....:	4000V for 1min & 1500V for 2min						-
Sample#	Measured	Required	Dielectric breakdown			Result	
	MΩ	MΩ	Yes(description)	No			
8	>1000	14.30	No	-		P	
16	>1000	14.30	No	-		P	

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

IS 14286: 2010

Page 69 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

10.2 F TABLE: Maximum power determination (Final)								P
Test Date [MM/DD/YYYY].....:			05/19/2025 to 06/05/2025					-
Module temperature [°C].....:			25					-
Irradiance [W/m <sup>2</sup> ].....:			1000					-
Sample#	Voc[V]	Vmp[V]	Isc[A]	Imp[A]	Pmp [W]	FF[%]	Degradation [%]	Limit[%]
1	56.82	46.04	14.739	14.108	649.53	77.56	-0.10	- 8
2	56.23	45.72	14.645	13.902	635.60	77.18	-2.15	- 8
3	56.16	45.56	14.516	13.972	636.56	78.09	-2.12	- 8
4	56.04	45.41	14.500	13.961	633.97	78.01	-2.60	- 8
5	56.34	45.72	14.664	14.011	640.58	77.54	-1.39	- 8
6	56.28	45.78	14.661	13.993	640.60	77.64	-1.54	- 8
7	56.16	45.47	14.517	13.984	635.85	77.99	-2.26	- 8
8	56.21	45.54	14.528	13.992	637.20	78.03	-2.09	- 8
9	56.83	46.06	14.737	14.109	649.86	77.59	-0.08	- 8
10	56.34	45.84	14.642	13.902	637.27	77.25	-1.86	- 8
11	56.13	45.53	14.511	13.969	636.01	78.09	-2.16	- 8
12	56.04	45.47	14.506	13.958	634.67	78.07	-2.46	- 8
13	56.35	45.77	14.668	14.019	641.65	77.63	-1.23	- 8
14	56.26	45.74	14.666	13.998	640.27	77.60	-1.58	- 8
15	56.18	45.49	14.518	13.986	636.22	78.00	-2.22	- 8
16	56.23	45.58	14.523	13.991	637.71	78.09	-1.96	- 8

Supplementary information: Nil

10.15F TABLE: Wet leakage current test (Final)				P		
Test Date [MM/DD/YYYY].....:			06/05/2025		-	
Test Voltage applied [V].....:			1500V		-	
Solution resistivity [Ωcm].....:			< 3500 Ω cm at 22 ± 3°C		2682	-
Solution temperature [°C].....:			23.7		-	
Sample#	Measured[MΩ]	Limit[MΩ]	Result			
1	>1000	14.30	P			
2	>1000	14.30	P			
3	>1000	14.30	P			
4	>1000	14.30	P			
5	>1000	14.30	P			
6	>1000	14.30	P			
7	>1000	14.30	P			
8	>1000	14.30	P			
9	>1000	14.30	P			
10	>1000	14.30	P			
11	>1000	14.30	P			
12	>1000	14.30	P			
13	>1000	14.30	P			
14	>1000	14.30	P			





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T +91 (120) 4516264-65 F +91 (120) 4750296  
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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 70 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

15

>1000

14.30

P

16

>1000

14.30

P

Supplementary information: Area of module 2.796[m<sup>2</sup>], Minimum requirement according to the standard is 40MΩm<sup>2</sup>





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T +91 (120) 4516264-65 F +91 (120) 4750296  
E info@urs-labs.com W www.urs-labs.com  
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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 71 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
--------	-----------------	---------------	---------

### List of Annexes

- Annex 1: List of measurement equipment
- Annex 2: Spectrum of the lamp used for the UV pre-screening test (Optional)
- Annex 3: Statement of the estimated uncertainty of the test results
- Annex 4: Enclosures (Photograph)
- Annex 5: Electrical rating of series models





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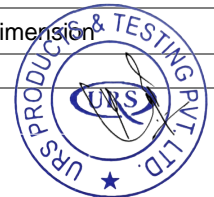


Report No- SC25SPI00947\_1 IS 14286: 2010 Page 72 of 80  
 Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
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Annex 1: List of measurement equipment

Description	Identification#	Application
Visual inspection test setup	URS/LAB/Lab/1323	Visual inspection test
Sun simulator	URS/LAB/Lab/841	Maximum power determination, Performance at STC, Performance at low irradiance, Measurement of temperature coefficient
IV Curve tracer	URS/LAB/Lab/1046	Performance at low irradiance, Hot spot endurance test, Bypass diode functionality test,
DC Power supply	URS/LAB/Lab/847	Insulation test, Wet leakage test
Hipot tester	URS/LAB/Lab/874	Insulation test, Wet leakage test
Thermal imager	URS/LAB/Lab/640	Hot spot endurance test
Bypass diode tester	URS/LAB/Lab/856	Bypass diode test
NMOT/NOCT	URS/LAB/Lab/846	NOCT test, Temperature test, Outdoor exposure test
UV chamber	URS/LAB/Lab/859	UV preconditioning
Damp heat chamber	URS/LAB/Lab/860	Damp heat test
Humidity freeze chamber	URS/LAB/Lab/861	Temperature cycling test
Damp heat chamber	URS/LAB/Lab/1381	Temperature cycling test, Bypass diode test
DC Power supply	URS/LAB/Lab/926	Temperature cycling test,
Temperature data logger	URS/LAB/Lab/925	Temperature cycling test, Bypass diode test
Continuity tester	URS/LAB/Lab/852	Continuity test
Robustness of termination	URS/LAB/Lab/842	Robustness of termination test
Wet leakage tester	URS/LAB/Lab/855	Wet leakage test
Glass Thermometer	URS/LAB/Lab/979	Wet leakage test
Mechanical load	URS/LAB/Lab/853	Mechanical load test
Hail tester	URS/LAB/Lab/849	Hail tester test
Vernier caliper	URS/LAB/Lab/898	For dimension
Measuring tape	URS/LAB/Lab/937.1	For dimension





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Report No- SC25SPI00947\_1

IS 14286: 2010

Page 73 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
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Annex 2: Spectrum of the lamp used for the UV pre-screening test (Optional)

Annex 3: Statement of the estimated uncertainty of the test results

For Pmp – Measurement uncertainty is  $\pm 2.4\%$

For Isc – Measurement uncertainty is  $\pm 2.1\%$

For Voc – Measurement uncertainty is  $\pm 1.8\%$





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 74 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
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## Annex 4: Enclosures (Photograph)



Rear view (BOM 1)





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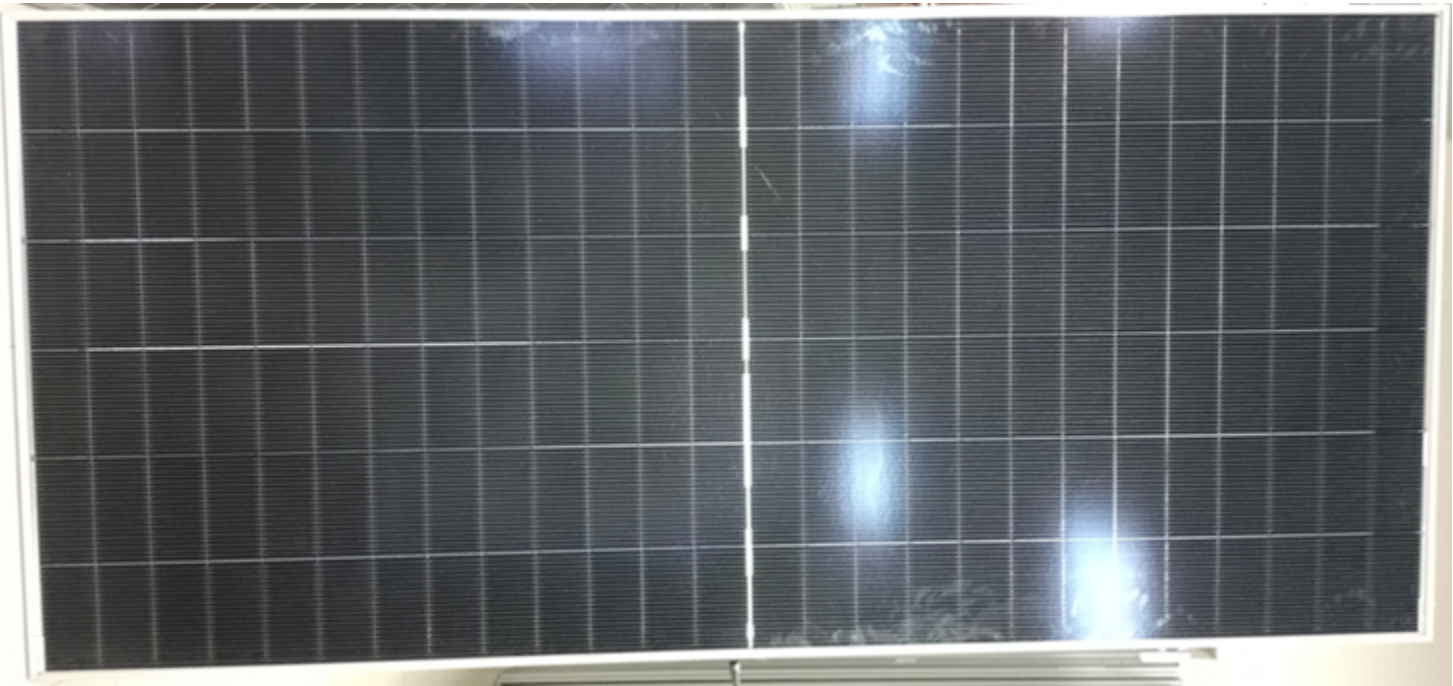
Report No- SC25SPI00947\_1

IS 14286: 2010

Page 75 of 80

Dated : 11/06/2025

Clause	Requiremet+Test	Result-Remark	Verdict
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Front view (BOM 1)



Junction Box closed view(BOM 1)



Junction Box opened view(BOM 1)





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CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947\_1

IS 14286: 2010

Page 76 of 80

Dated : 11/06/2025

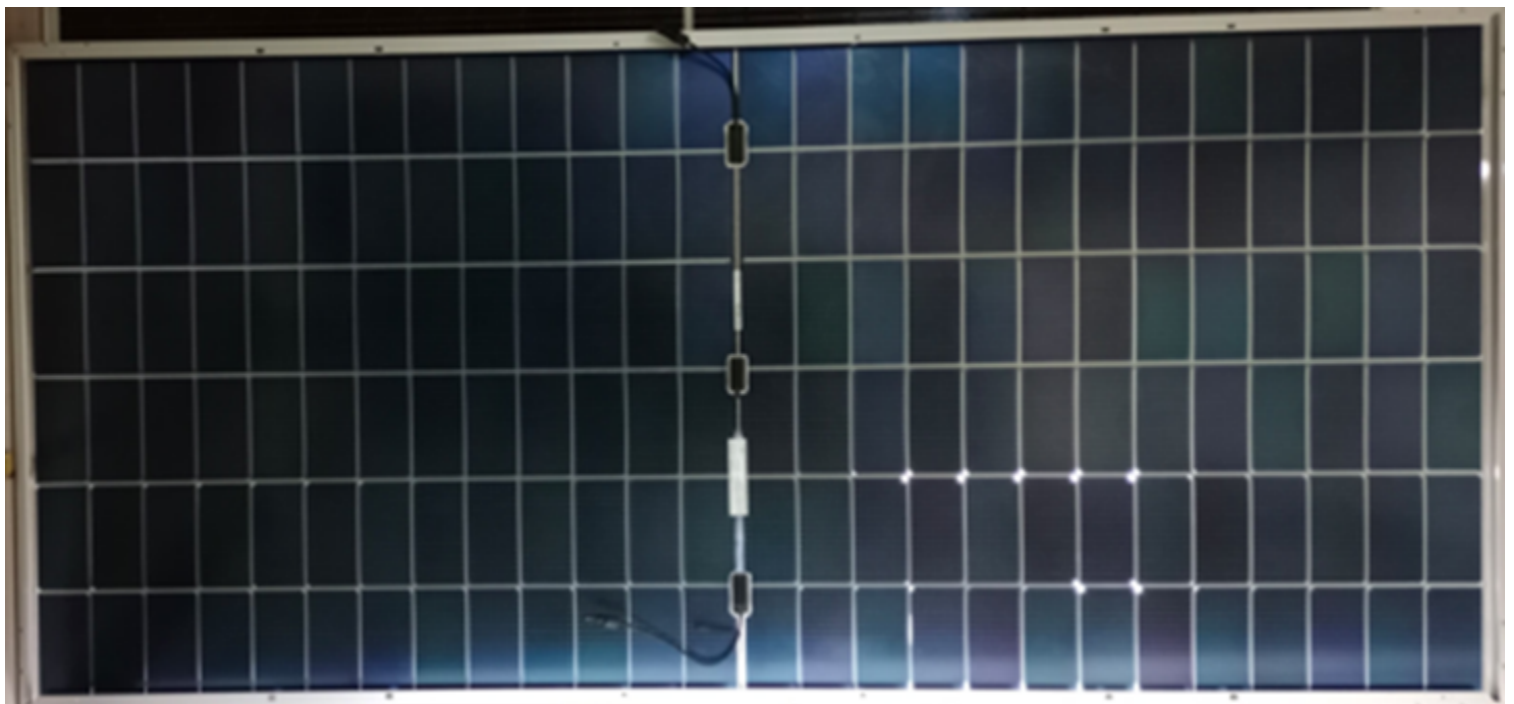
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**Negative Connector(BOM 1)**



**Positive Connector(BOM 1)**



**Rear view (BOM 2)**





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TC-6468

Report No- SC25SPI00947\_1

IS 14286: 2010

Page 77 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
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Front view (BOM 2)



Junction Box closed view(BOM 2)



Junction Box opened view(BOM 2)





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CIN NO U21014UP1987PTC008956



Report No- SC25SPI00947\_1

IS 14286: 2010

Page 78 of 80

Dated : 11/06/2025

Clause	Requirement+Test	Result-Remark	Verdict
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**Negative Connector(BOM 2)**



**Positive Connector(BOM 2)**





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Report No- SC25SPI00947\_1  
 Dated : 11/06/2025

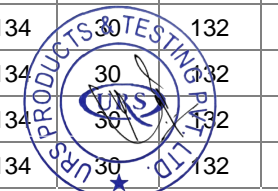
IS 14286: 2010

Page 79 of 80

Clause	Requiremet+Test	Result-Remark	Verdict
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## Annex 5: Electrical rating of series models

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)		
<b>AS-156TG-650 (Representative &amp; retested Model)</b>	1500	57.00	46.09	14.83	14.11	650	30	2466	1134	30	156	52
<b>AS-156TG-645</b>	1500	56.85	45.99	14.76	14.03	645	30	2466	1134	30	156	52
<b>AS-156TG-640</b>	1500	56.70	45.89	14.69	13.95	640	30	2466	1134	30	156	52
<b>AS-156TG-635</b>	1500	56.55	45.79	14.62	13.87	635	30	2466	1134	30	156	52
<b>AS-156TG-630</b>	1500	55.71	45.96	14.37	13.71	630	30	2466	1134	30	156	52
<b>AS-156TG-625</b>	1500	55.56	45.86	14.30	13.63	625	30	2466	1134	30	156	52
<b>AS-156TG-620</b>	1500	55.41	45.76	14.23	13.55	620	30	2466	1134	30	156	52
<b>AS-156TG-615</b>	1500	55.26	45.66	14.16	13.47	615	30	2466	1134	30	156	52
<b>AS-156TG-610</b>	1500	55.11	45.56	14.09	13.39	610	30	2466	1134	30	156	52
<b>AS-156TG-605</b>	1500	54.96	45.46	14.02	13.31	605	30	2466	1134	30	156	52
<b>AS-144TG-600</b>	1500	54.81	45.36	13.95	13.23	600	30	2278	1134	30	144	48
<b>AS-144TG-595</b>	1500	54.66	45.26	13.88	13.15	595	30	2278	1134	30	144	48
<b>AS-144TG-590</b>	1500	54.51	45.16	13.81	13.07	590	30	2278	1134	30	144	48
<b>AS-144TG-585</b>	1500	54.36	45.06	13.74	12.99	585	30	2278	1134	30	144	48
<b>AS-144TG-580</b>	1500	51.48	42.84	14.25	13.55	580	30	2278	1134	30	144	48
<b>AS-144TG-575</b>	1500	51.31	42.72	14.17	13.47	575	30	2278	1134	30	144	48
<b>AS-144TG-570</b>	1500	51.14	42.60	14.09	13.39	570	30	2278	1134	30	144	48
<b>AS-144TG-565</b>	1500	50.97	42.48	14.01	13.31	565	30	2278	1134	30	144	48
<b>AS-144TG-560</b>	1500	50.80	42.36	13.93	13.23	560	30	2278	1134	30	144	48
<b>AS-144TG-555</b>	1500	50.63	42.24	13.85	13.15	555	30	2278	1134	30	144	48
<b>AS-144TG-550</b>	1500	50.46	42.12	13.77	13.07	550	30	2278	1134	30	144	48
<b>AS-144TG-545</b>	1500	50.29	42.00	13.69	12.99	545	30	2278	1134	30	144	48
<b>AS-144TG-540</b>	1500	50.12	41.88	13.61	12.91	540	30	2278	1134	30	144	48
<b>AS-132TG-535</b>	1500	49.95	41.76	13.53	12.83	535	30	2092	1134	30	132	44
<b>AS-132TG-530</b>	1500	47.07	39.95	13.94	13.27	530	30	2092	1134	30	132	44
<b>AS-132TG-525</b>	1500	46.90	39.83	13.86	13.19	525	30	2092	1134	30	132	44
<b>AS-132TG-520</b>	1500	46.73	39.71	13.78	13.11	520	30	2092	1134	30	132	44





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Report No- SC25SPI00947_1	IS 14286: 2010	Page 80 of 80
Dated : 11/06/2025		

Clause	Requiremet+Test	Result-Remark	Verdict
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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-----