



# URS PRODUCTS AND TESTING PRIVATE LIMITED


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 CIN NO U21014UP1987PTC008956



## TEST REPORT

TEST REPORT NO:	URS/LAB/02/RID/25-26/7303	DATE OF ISSUE:	28/07/2025
NAME OF LABORATORY:	URS PRODUCTS AND TESTING PRIVATE LIMITED		
ADDRESS OF LABORATORY:	A-29, Sector 5, Noida-201301, India		
TESTING LOCATION:	A-29, Sector 5, Noida-201301, India		

CUSTOMER NAME:	H. R. Solar Solution Pvt. Ltd
CUSTOMER ADDRESS:	1st Floor, Room No. 102 14, Netaji Subhas Road, Kolkata, West Bengal, India - 700001

TEST ITEM DESCRIPTION			
PRODUCT NAME:	Solar PV Module		
DATE OF RECEIPT	01/05/2025	SAMPLE CONDITION:	OK
RECEIPT NUMBER	URS/LAB/PV MODULE PID-62804/25-26/76381254	NO. OF SAMPLE	5
TRADE MARK		SERIAL NUMBER	25065500200015, 25065500200016, 25065500200017, 25065500200018, 25065500200019
MODEL	Model Tested: H550M144		
RATINGS/SPECIFICATION	See the marking label		
NAME OF MANUFACTURER	H. R. Solar Solution Pvt. Ltd		
ADDRESS OF MANUFACTURER	Fortune Industrial Part Raghudebpur, NH — 6, Panchla, Block — Uluberia II, Howrah — 711 322		

TEST SPECIFICATION			
TEST METHOD / STANDARD	IEC TS 62804-1:2015 and as per MNRE guidelines		
TEST START DATE	01/05/2025	TEST END DATE	28/07/2025
ENVIRONMENTAL CONDITIONS	23±5°C, <70%Rh		

CONCLUSION	
TEST RESULT	The test result Conforms to the requirement of the standard/test protocol based on the obtained test values/results mentioned in this test report.
REMARK	Compliance statement in this report has been made considering decision rule as inherent in its test standard and latest version of ILAC G-8.

### AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager

Note:

- This test report is valid only for the sample(s) tested in our laboratory.
- The test report is not permitted to be duplicated/reproduced in part or in extract in any circumstances.
- URS lab is not responsible for authenticity of photocopied or reproduced test report.
- The test results reported in this report are valid at the time of and under the stated conditions of measurements.
- The remnant(Tested Samples)shall be destroyed after 07days from the date of testing unless specified otherwise in writing.
- Any correction/erasure shall invalidate the test report.
- This test report pertains to the test(s) carried out as requested by the customer.
- This test report shall not be utilized for any legal purpose and shall not be produced in the court of law & no responsibility would be attached to URS Lab
- URS reports, in general, are formally released in soft copy through reports@urs-labs.com , client portal, unless client will specifically request with sign & stamped letter with the intent to issue test reports in hard copy form. URS will not acknowledge for the reports said to be released through other means such as whats app. Test Reports for specific schemes such as BIS CRS/LRS schemes, are issued as per specific scheme requirements.

URS/TEE/F/19 Issue No. 05



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TEST REPORT NO.: URS/LAB/02/RID/25-26/7303

DATE OF ISSUE:28/07/2025

CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

<b>TEST REPORT</b> <b>IEC TS 62804 -1: 2015</b> <b>Photovoltaic (PV) modules – Test methods for the detection of potential – induced degradation – Part 1: crystalline silicon</b>	
Report Reference No.....:	URS/LAB/02/RID/25-26/7303
Date of issue.....:	28/07/2025
Total number of pages.....:	26
Testing Laboratory.....:	URS PRODUCTS AND TESTING PRIVATE LIMITED
Address.....:	A-29, Sector 5, Noida-201301, India
Applicant's name.....:	H. R. Solar Solution Pvt. Ltd
Address.....:	H.R. SOLAR SOLUTION PRIVATE LIMITED, 1st Floor, Room No. 102 14, Netaji Subhas Road, Kolkata, West Bengal, India - 700001
Test specification.....:	
Standard.....:	IEC TS 62804 -1: 2015 and as per MNRE guidelines
Test item description.....:	Solar PV Module
Trade Mark/Brand.....:	
Manufacturer.....:	H. R. Solar Solution Pvt. Ltd
Factory.....:	Fortune Industrial Part Raghudebpur, NH — 6, Panchla, Block — Uluberia II, Howrah — 711 322
Model/Type reference.....:	H550M144
Ratings.....:	See the marking label

### AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager



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CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

DATE OF ISSUE:28/07/2025

CUSTOMER CITY:HOWRAH

Summary of testing:	
<b>Tests performed (name of test and test clause):</b>	URS PRODUCTS AND TESTING PRIVATE LIMITED A-29, Sector 5, Noida-201301, India
Preconditioning	
10.1 Visual Inspection (Initial)	
10.2 Maximum Power Determination (Initial)	
10.15 Wet leakage current test (Initial)	
MST Ground Continuity Test (MST 13)	
PID stress test method (a) 3 cycles (1 cycle = 96h) (Clause6.9.2)	
10.2 Maximum Power Determination (Final)	
10.15 Wet leakage current test (Final)	
10.1 Visual Inspection (Final)	

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Vineet Vijay  
Gajendragadkar Sr. Analyst



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CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

DATE OF ISSUE:28/07/2025

CUSTOMER CITY:HOWRAH

**Copy of Marking Plate**  
**(Model No. Tested: H550M144)**  
**(Sr. No.: 25065500200015)**




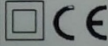
**HR SOLUTION H.R.SOLAR SOLUTION PVT. LTD.**  
An ISO 9001: 2015 & ISO 14001:2015 Certified Company  
Raghudebpur, NH-6, Pachla, Block - Uluberia-II  
Howrah - 711322, West Bengal, India,  
Web :www.hrsolarsolution.com E-mail :hrsspl@yahoo.com

**Module Type: H550M144**

Rated Peak Power (Pmax)	:550.00 W
Voltage at Maximum Power (Vmp)	:42.64 V
Current at Maximum Power (Imp)	:12.90 A
Open Circuit Voltage (Voc)	:49.61 V
Short Circuit Current (Isc)	:13.81 A
By-pass Diode Rating	:50 A
Series Fuse Rating	:30 A
Maximum System Voltage	:1500 V
Application Class	:Class A
Safety Class	:II
Fire Rating Class	:Class C
Size of Module	: 2278X1134X35 mm
Module Weight	:30.0Kg

All technical data at STC (irradiance - 1000W/m<sup>2</sup>, AM 1.5, 25°C temperature)

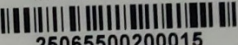
**Warning Electrical Hazard**

 This module produces electricity when exposed to sunlight / light  
Follow all applicable electrical safety precautions. 

ONLY qualified person should instal or perform maintenance work on these PV modules  
**BE CAUTIOUS** of dangerous high DC voltage, when modules are connected in series  
**DO NOT** handle or instal modules when they are wet.  
**DO NOT** damage or scratch the rear surface of the module  
Warranty voids if rear surface is scratched,damaged or Junction Box Terminal are tampered

**MADE IN INDIA** Date-02-06-2025

**Mfd. by:**  
**HR Solar Solution Pvt.Ltd.**

H550M144 NOMINAL WATTAGE-550W(+/-2%)  
  
**25065500200015**  
MADE IN INDIA Mfd. Year: 2025

### AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager



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CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

**Copy of Marking Plate**  
**(Model No. Tested: H550M144)**  
**(Sr. No.: 25065500200016)**

**HR SOLUTION** H.R.SOLAR SOLUTION PVT. LTD.  
An ISO 9001: 2015 & ISO 14001:2015 Certified Company  
Raghudebpur, NH-6, Pachla, Block - Uluberia-II  
Howrah - 711322, West Bengal, India,  
Web :www.hrsolarsolution.com E-mail :hrsspl@yahoo.com

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Series Fuse Rating	:30 A
Maximum System Voltage	:1500 V
Application Class	:Class A
Safety Class	:II
Fire Rating Class	:Class C
Size of Module	: 2278X1134X35 mm
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Junction Box Terminal are tampered

**MADE IN INDIA** Date-02-06-2025

**Mfd. by:**  
**HR Solar Solution Pvt.Ltd.**

H550M144 NOMINAL WATTAGE-550W(+/-2%)  
  
**25065500200016**  
MADE IN INDIA Mfd. Year: 2025

### AUTHORIZED SIGNATURE

TESTED BY



Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

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Lab Manager



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**(Model No. Tested: H550M144)**  
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Howrah - 711322, West Bengal, India,  
Web :www.hrsolarsolution.com E-mail :hrsspl@yahoo.com

**Module Type: H550M144**

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All technical data at STC (irradiance - 1000W/m<sup>2</sup>, AM 1.5, 25°C temperature)

**Warning Electrical Hazard**

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**ONLY** qualified person should instal or perform maintenance work on these PV modules  
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**Warranty voids if rear surface is scratched,damaged or Junction Box Terminal are tampered**

**MADE IN INDIA** Date-02-06-2025

**Mfd. by:**  
**HR Solar Solution Pvt.Ltd.**

H550M144 NOMINAL WATTAGE-550W(+/-2%)  
  
**25065500200017**  
MADE IN INDIA Mfd. Year: 2025

### AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

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Hebin Manuel  
Lab Manager



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**Copy of Marking Plate**  
**(Model No. Tested: H550M144)**  
**(Sr. No.: 25065500200018)**

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Web :www.hrsolarsolution.com E-mail :hrsspl@yahoo.com

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Short Circuit Current (Isc)	:13.81 A
By-pass Diode Rating	:50 A
Series Fuse Rating	:30 A
Maximum System Voltage	:1500 V
Application Class	:Class A
Safety Class	:II
Fire Rating Class	:Class C
Size of Module	: 2278X1134X35 mm
Module Weight	:30.0Kg

All technical data at STC (irradiance - 1000W/m<sup>2</sup>, AM 1.5, 25°C temperature)

**Warning Electrical Hazard**

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Warranty voids if rear surface is scratched,damaged or Junction Box Terminal are tampered

**MADE IN INDIA** Date-02-06-2025

Mfd. by:  
**HR Solar Solution Pvt.Ltd.**

H550M144 NOMINAL WATTAGE-550W(+/-2%)  
  
**25065500200018**  
MADE IN INDIA Mfd. Year: 2025

AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager



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DATE OF ISSUE:28/07/2025

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CUSTOMER CITY:HOWRAH

**Copy of Marking Plate**  
**(Model No. Tested: H550M144)**  
**(Sr. No.: 25065500200019)**

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Howrah - 711322, West Bengal, India,  
Web :www.hrsolarsolution.com E-mail :hrsspl@yahoo.com

**Module Type: H550M144**

Rated Peak Power (Pmax)	:550.00 W
Voltage at Maximum Power (Vmp)	:42.64 V
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Open Circuit Voltage (Voc)	:49.61 V
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By-pass Diode Rating	:50 A
Series Fuse Rating	:30 A
Maximum System Voltage	:1500 V
Application Class	:Class A
Safety Class	:II
Fire Rating Class	:Class C
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Module Weight	:30.0Kg

All technical data at STC (irradiance - 1000W/m<sup>2</sup>, AM 1.5, 25°C temperature)

**Warning Electrical Hazard**

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Warranty voids if rear surface is scratched,damaged or Junction Box Terminal are tampered

MADE IN INDIADate-02-06-2025

Mfd. by:  
**HR Solar Solution Pvt.Ltd.**

H550M144 NOMINAL WATTAGE-550W(+/-2%)  
  
**25065500200019**  
MADE IN INDIA Mfd. Year: 2025

### AUTHORIZED SIGNATURE

TESTED BY



Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager



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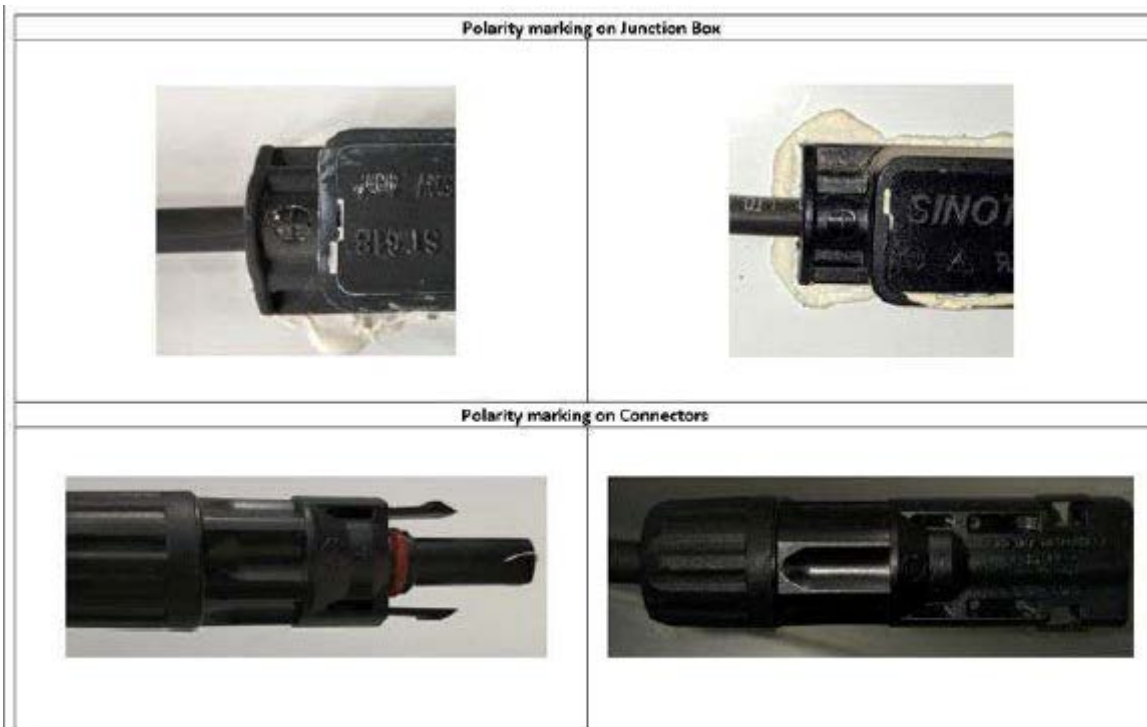


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AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

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Lab Manager



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CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

GENERAL INFORMATION	
Test item particulars:	Crystalline silicon photovoltaic modules
Accessories and detachable parts included in the evaluation.....:	N/A
Options included.....:	N/A
<u>Abbreviations used in the report:</u>	
Vmp–Maximum power voltage	Imp–Maximum power current
Voc–Open circuit voltage	Isc–Short circuit current
FF–Fill Factor	Pmp –Maximum power
STC –Standard Test Conditions	
<u>Possible test case verdicts:</u>	
-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)
<p>General remarks:</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(See Enclosure #)" refers to additional information appended to the report.</p> <p>"(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a point is used as the decimal separator.</p>	

### AUTHORIZED SIGNATURE

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Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

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Lab Manager



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DATE OF ISSUE:28/07/2025

CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

### General Product Information:

PV module type reference.....: **H550M144**

#### Product Electrical Ratings at STC

Nominal maximum power (Pmax).....: 550 W

Nominal open circuit voltage at (Voc).....: 49.61 V

Nominal short circuit current at (Isc).....: 13.81 A

Nominal maximum power voltage (Vpm).....: 42.64 V

Nominal maximum power current (Ipm).....: 12.90 A

### Product Safety Ratings

Maximum system voltage.....: 1500V

Maximum over-current protection rating.....: 30 A

Safety application class.....: Class A

Safety class in accordance with IS 61140.....: Class II

Fire safety class.....: Class C

Module Dimension [LxWxH](mm) ..... 2278 x 1134 x 35 mm

### Module group assignment:

Model	Sample #	Serial number
H550M144	1	25065500200015
	2	25065500200016
	3	25065500200017
	4	25065500200018
	5	25065500200019

### AUTHORIZED SIGNATURE

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Gajendragadkar Sr. Analyst



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Lab Manager

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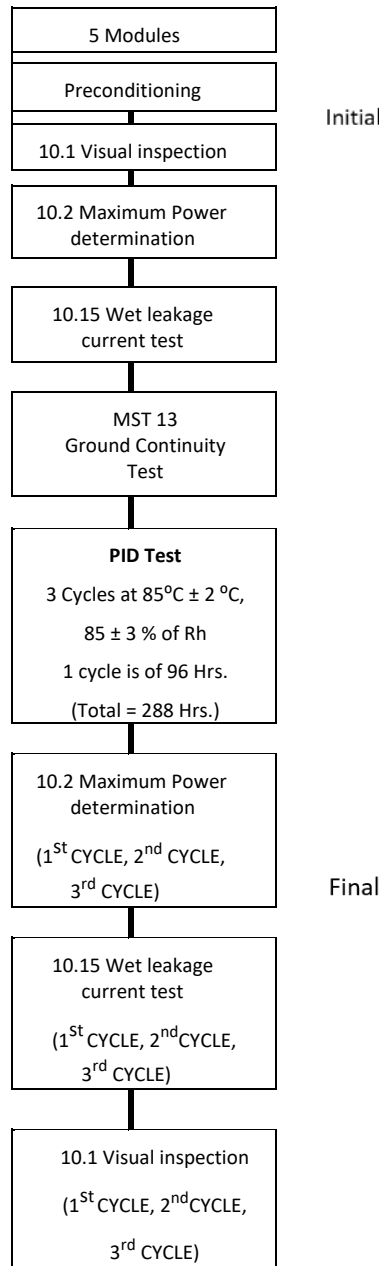
DATE OF ISSUE:28/07/2025

CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

10	TEST PROCEDURES
----	-----------------

### TEST PROCEDURES



AUTHORIZED SIGNATURE

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Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

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Lab Manager



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Clause	Requirement + Test	Result-Remark	Verdict
4	MARKING		P
	Name, monogram or symbol of manufacturer.....:	H. R. Solar Solution Pvt. Ltd	P
	Type or model number.....:	<b>H550M144</b>	P
	Serial number.....:	Marked	P
	Polarity of terminals or leads.....:	Marked	P
	Maximum system voltage.....:	1500V	P
	The date and place of manufacture.....:	Marked	P
	Initial examination	All Modules	-
10	Preconditioning.....:	5.0 kWh/m <sup>2</sup>	P
10.1	Visual inspection.....:	See table 10.1 Initial	P
10.2	Maximum power determination.....:	See table 10.2 Initial	P
10.15	Wet leakage current test.....:	See table 10.15 Initial	P
MST 13	Ground continuity test.....:	See table MST 13 Initial	P
4.3.2	<b>PID Test: 3 Cycles at 85°C ± 2 °C, 85 ± 3 % of Rh</b> 1 cycle is of 96 Hrs. (Total = 288 Hrs.) .....	See table Test Condition: 3 Cycles at 85°C ± 2 °C, 85 ± 3 % of Rh, 1 cycle is of 96 Hrs. (Total = 288 Hrs.)	P
10.2	Maximum power determination.....:	See table 10.2 Final	P
10.15	Wet leakage current test.....:	See table 10.15 Final	P
10.1	Visual inspection.....:	See table 10.1 Final	P

### AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

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Lab Manager



# URS PRODUCTS AND TESTING PRIVATE LIMITED

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TEST REPORT NO.: URS/LAB/02/RID/25-26/7303

DATE OF ISSUE:28/07/2025

CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

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

10.1 Initial	TABLE: Visual inspection (Initial)					P
Test Date [MM/DD/YYYY] .....	05/06/2025					-
Sample #	Nature and position of initial findings – comments or attach photos					-
1	No defect found					P
2	No defect found					P
3	No defect found					P
4	No defect found					P
5	No defect found					P
Supplementary information: Nil						

10.2 Initial	TABLE: Maximum power determination (Initial)						P
Test Date [MM/DD/YYYY] .....	05/06/2025						-
Module temperature [°C] .....	25						-
Irradiance [W/m²] .....	1000						-
Sample#	Voc[V]	Vmp [V]	Isc [A]	Imp [A]	Pmp [W]	FF[%]	
1	49.72	42.70	13.818	12.906	551.09	80.21	
2	49.68	42.68	13.816	12.904	550.74	80.24	
3	49.65	42.66	13.814	12.903	550.44	80.26	
4	49.63	42.64	13.811	12.901	550.10	80.25	
5	49.71	42.73	13.815	12.905	551.43	80.30	
Supplementary information: Nil							

10.15 Initial	TABLE: Wet leakage current test (Initial)				P
Test Date [MM/DD/YYYY] .....	05/06/2025				-
Test Voltage applied [V] .....	1500				-
Solution resistivity [Ω cm] .....	<3500 at 22 ± 3°C		2670		-
Surface tension [Nm <sup>-1</sup> ] .....	<0.03 at 22 ± 3°C		-		-
Solution temperature [°C] .....	23.2				-
Sample#	Measured[MΩ]		Limit[MΩ]		Result
1	>1000		15.50		P
2	>1000		15.50		P
3	>1000		15.50		P
4	>1000		15.50		P
5	>1000		15.50		P
Supplementary information: Area of module 2.58 [m²].					

AUTHORIZED SIGNATURE

TESTED BY

Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

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Clause	Requirement + Test	Result-Remark	Verdict
<b>10.4 Initial</b>	<b>TABLE: Ground Continuity Test - MST 13 (Initial after preconditioning)</b>		P
	Test Date [MM/DD/YYYY] .....	05/06/2025	-
	Maximum system voltage [V <sub>dc</sub> ].....	1500V	-
	Current applied [A].....	75	-
	Location of designated grounding point.....	Ground holes on the sides of the frame	-
	Location of second contacting point.....	Greatest physical displacement from the grounding point.	-
	Sample No.	Voltage [V <sub>dc</sub> ]	Resistance [mΩ]
	1	0.52	6.933
	2	0.49	6.533
	3	0.45	6.000
	4	0.41	5.467
	5	0.37	4.933
Supplementary information: Nil			

<b>4.3.2</b>	<b>TABLE: Potential Induced Degradation Test – Cycle 1</b>		P
	Test Date [MM/DD/YYYY] .....	05/07/2025 to 05/11/2025	-
	Test Condition.....	85°C ± 2 °C, 85 ± 3 % of Rh	-
	Duration.....	85°C ± 2 °C, 85 ± 3 % of Rh for 96 Hrs	-
	Sample#	-	Result
	2	1500(+ve)	P
	3	1500(+ve)	P
	4	1500(-ve)	P
	5	1500(-ve)	P
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].			

<b>10.2</b>	<b>TABLE: Maximum power determination- After Cycle 1</b>							P	
	Test Date [MM/DD/YYYY] .....	05/12/2025						-	
	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 (CONTROL)	49.74	42.71	13.817	12.897	550.83	80.15	-0.05	- 5
	2	49.54	42.46	13.811	12.895	547.52	80.02	-0.53	- 5
	3	49.59	42.53	13.814	12.901	548.68	80.09	-0.37	- 5
	4	49.57	42.41	13.808	12.885	546.45	79.84	-0.66	- 5
	5	49.54	42.38	13.810	12.892	546.36	79.86	-0.92	-5
Supplementary information: Total degradation observed: Initial to cycle 1 (In Table).									

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Clause	Requirement + Test	Result-Remark	Verdict
<b>10.15</b>	<b>TABLE: Wet leakage current test - After Cycle 1</b>		P
Test Date [MM/DD/YYYY] .....	05/12/2025		-
Test Voltage applied [V].....	1500		-
Solution resistivity [ $\Omega$ cm] .....	<3500 at 22 $\pm$ 3°C	2516	-
Surface tension [ $\text{Nm}^{-1}$ ] .....	<0.03 at 22 $\pm$ 3°C	-	-
Solution temperature [°C] .....	23.2		-
Sample#	Measured[M $\Omega$ ]	Limit[M $\Omega$ ]	Result
1 (CONTROL)	>1000	15.50	P
2	>1000	15.50	P
3	>1000	15.50	P
4	>1000	15.50	P
5	>1000	15.50	P
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].			

<b>10.1</b>	<b>TABLE: Visual inspection - After Cycle 1</b>		P
Test Date [MM/DD/YYYY] .....	05/12/2025		-
Sample #	Nature and position of initial findings – comments or attach photos		-
1 (CONTROL)	No visual defect		P
2	No visual defect		P
3	No visual defect		P
4	No visual defect		P
5	No visual defect		P
Supplementary information: Nil			

<b>4.3.2</b>	<b>TABLE: Potential Induced Degradation Test – Cycle 2</b>		P
Test Date [MM/DD/YYYY] .....	05/13/2025 to 05/18/2025		-
Test Condition.....	85°C $\pm$ 2 °C, 85 $\pm$ 3 % of Rh		-
Duration.....	85°C $\pm$ 2 °C, 85 $\pm$ 3 % of Rh for 96 Hrs		-
Sample#	-	-	Result
2	1500(+ve)	-	P
3	1500(+ve)	-	P
4	1500(-ve)	-	P
5	1500(-ve)	-	P
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].			

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CUSTOMER CITY:HOWRAH

Clause	Requirement + Test	Result-Remark	Verdict
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10.2 TABLE: Maximum power determination- After Cycle 2								P
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[%]	Degradation [%]	Limit[%]
1 (CONTROL)	49.71	42.65	13.812	12.893	549.89	80.09	-0.17	- 5
2	49.49	42.22	13.802	12.888	544.13	79.67	-0.83	- 5
3	49.47	42.18	13.804	12.891	543.74	79.62	-0.69	- 5
4	49.43	42.03	13.798	12.882	541.43	79.38	-0.92	- 5
5	49.38	41.91	13.792	12.874	539.55	79.22	-1.25	-5
Supplementary information: Total degradation observed: Cycle 1 to Cycle 2 (In Table) Initial to Cycle 2: 1: (-0.22), 2: (-1.20), 3: (-1.22), 4: (-1.58), 5: (-2.15)								

10.15 TABLE: Wet leakage current test - After Cycle 2								P
Test Date [MM/DD/YYYY] .....		05/19/2025						-
Test Voltage applied [V].....		1500						-
Solution resistivity [Ω cm] .....		<3500 at 22 ± 3°C				2516		-
Surface tension [Nm <sup>-1</sup> ] .....		<0.03 at 22 ± 3°C				-		-
Solution temperature [°C] .....		23.4						-
Sample#	Measured[MΩ]		Limit[MΩ]				Result	
1 (CONTROL)	>1000		15.50				P	
2	>1000		15.50				P	
3	>1000		15.50				P	
4	>1000		15.50				P	
5	>1000		15.50				P	
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].								

10.1 TABLE: Visual inspection - After Cycle 2								P
Test Date [MM/DD/YYYY] .....		05/19/2025						-
Sample #	Nature and position of initial findings – comments or attach photos							
1 (CONTROL)	No visual defect							P
2	No visual defect							P
3	No visual defect							P
4	No visual defect							P
5	No visual defect							P
Supplementary information: Nil								

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4.3.2		TABLE: Potential Induced Degradation Test – Cycle 3	P
Test Date [MM/DD/YYYY] .....	05/20/2025 to 05/25/2025		-
Test Condition.....	85°C ± 2 °C, 85 ± 3 % of Rh		-
Duration.....	85°C ± 2 °C, 85 ± 3 % of Rh for 96 Hrs		-
Sample#	-		Result
2	1500(+ve)		P
3	1500(+ve)		P
4	1500(-ve)		P
5	1500(-ve)		P
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].			

10.2 Final		TABLE: Maximum power determination- After Cycle 3						P
Test Date [MM/DD/YYYY] .....	05/26/2025						-	
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 (CONTROL)	49.66	42.57	13.808	12.885	548.51	79.99	-0.25	- 5
2	49.40	41.94	13.789	12.859	539.31	79.17	-0.89	- 5
3	49.36	41.88	13.783	12.854	538.33	79.13	-1.00	- 5
4	49.31	41.76	13.779	12.833	535.91	78.87	-1.02	- 5
5	49.25	41.71	13.770	12.830	535.14	78.91	-0.82	-5
Supplementary information: Total degradation observed: Cycle 2 to Cycle 3 (In Table) Initial to Cycle 3: 1: (-0.47), 2: (-2.08), 3: (-2.20), 4: (-2.58), 5: (-2.95)								

10.15		TABLE: Wet leakage current test - After Cycle 3			P
Test Date [MM/DD/YYYY] .....	05/26/2025			-	
Test Voltage applied [V].....	1500			-	
Solution resistivity [Ω cm] .....	<3500 at 22 ± 3°C		2528	-	
Surface tension [Nm <sup>-1</sup> ] .....	<0.03 at 22 ± 3°C		-	-	
Solution temperature [°C] .....	23.1			-	
Sample#	Measured[MΩ]		Limit[MΩ]	Result	
1 (CONTROL)	>1000		15.50	P	
2	>1000		15.50	P	
3	>1000		15.50	P	
4	>1000		15.50	P	
5	>1000		15.50	P	
Supplementary information: Area of module 2.58 [m <sup>2</sup> ].					

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10.1	TABLE: Visual inspection - After Cycle 3		P
Test Date [MM/DD/YYYY] .....	05/26/2025		-
Sample #	Nature and position of initial findings – comments or attach photos		-
1 (CONTROL)	No visual defect		P
2	No visual defect		P
3	No visual defect		P
4	No visual defect		P
5	No visual defect		P
Supplementary information: Nil			

### List of Annexes

- Annex 1: Statement of the estimated uncertainty of the test results
- Annex 2: Photographs of EUT
- Annex3: BOM Details

### Annex 1: Statement of the estimated uncertainty of the test results

For Pmp – Measurement uncertainty is  $\pm 2.062\%$   
 For Isc – Measurement uncertainty is  $\pm 1.583\%$   
 For Voc – Measurement uncertainty is  $\pm 1.832\%$

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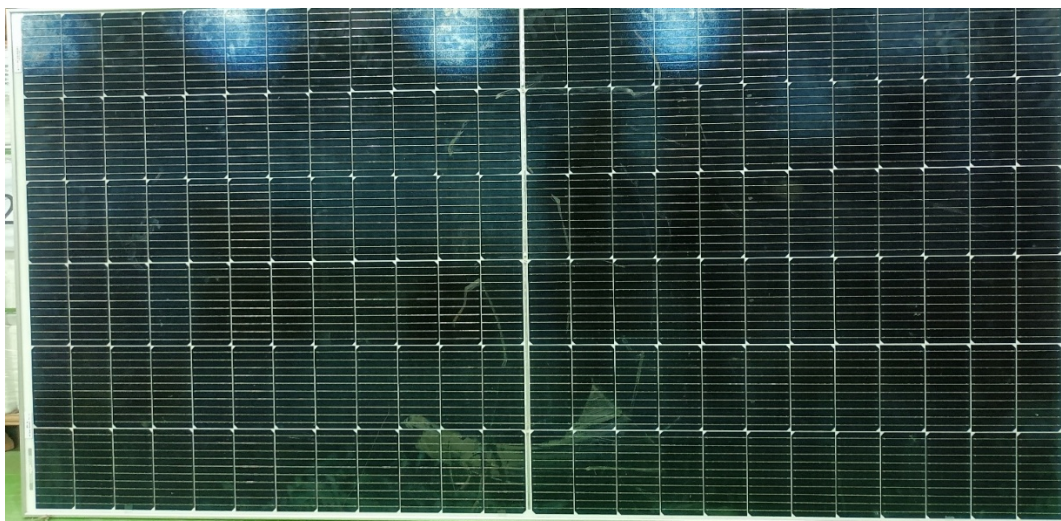
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## Annex 2: Photographs of EUT



Rear view



Front view

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### Annex3: BOM Details:

MODULE TYPE/S
<b>Model Tested: H550M144</b>
<b>Series Models (144 Half Cut Cells Family):</b> H545M144, H540M144, H535M144, H530M144, H525M144, H520M144, H515M144, H510M144, H505M144, H500M144, H495M144
<b>Series Models (132 Half Cut Cells Family):</b> H500M132, H495M132, H490M132, H485M132, H480M132, H475M132, H470M132, H465M132, H460M132, H455M132, H450M132
<b>Series Models (120 Half Cut Cells Family):</b> H450M120, H445M120, H440M120, H435M120, H430M120, H425M120, H420M120, H415M120, H410M120
<b>Series Models (108 Half Cut Cells Family):</b> H405M108, H400M108, H395M108, H390M108, H385M108, H380M108, H375M108, H370M108
<b>Series Models (96 Half Cut Cells Family):</b> H365M96, H360M96, H355M96, H350M96, H345M96, H340M96, H335M96, H330M96
<b>Series Models (84 Half Cut Cells Family):</b> H320M84, H315M84, H310M84, H305M84, H300M84, H295M84, H290M84
<b>Series Models (72 Half Cut Cells Family):</b> H270M72, H265M72, H260M72, H255M72, H250M72
<b>Series Models (64 Half Cut Cells Family):</b> H240M64, H235M64, H230M64, H225M64, H220M64
<b>Series Models (36 Half Cut Cells Family):</b> H200M36, H195M36, H190M36, H185M36, H180M36, H175M36, H170M36, H165M36, H160M36, H155M36, H150M36, H145M36, H140M36, H135M36, H130M36, H125M36, H120M36, H115M36, H110M36, H105M36, H100M36, H95M36, H90M36, H85M36, H80M36, H75M36, H70M36, H65M36, H60M36

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Material	Manufacturer/ trademark	Type/mo del	Technical data	Standard	Mark(s) of conformity
By Pass Diode	SINOTECH	30PV045	30PV045, VRRM: 45V, IF(AV):30A, Max.TJ: 200°C, RθJ- C:0.8°C/W, Manufactured by SINOTECHs		
Front Cover	Borosil Limited	Low Iron Solar Textured Tempered Glass, Thickness: 3.2mm	Low Iron Solar Textured Tempered Glass, Thickness: 3.2mm, Manufactured by Gujrat Borosil Limited		
Rear Cover	RENEWSYS INDIA PRIVATE LIMITED	PRESERV A 275 WN	PRESERV A 275 WN, Thickness: 395µm, Max. system voltage:1500V, TI Electrical:140°C and TI Mechanical 150°C, Flame spread index:10, Manufactured by RENEWSYS INDIA PRIVATE LIMITED PD & FSI Tested by UL (Reference Project No. 4788556277:2.1)		
Encapsulation Material	Renewsys india pvt Ltd	Conserv P 360-14 FC	Conserv P 360-14 FC, Thickness:0.60mm± 5%, Manufactured By Renewsys india pvt Ltd		

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Frame	ALOM EXTRUSIONS LIMITED	6063-T6	6063-T6, Anodized Aluminum, 35mm Manufactured by ALOM EXTRUSIONS LIMITED		
Cell Connector	Neocab-PV (AB Industries)	SnPb 60/40	SnPb 60/40, $\phi$ : 0.35mm, Manufactured by Neocab-PV (AB Industries)		
String Connector	Neocab-PV (AB Industries)	SnPb 60/40	SnPb 60/40, Dimensions: 6mmx0.4mm, Manufactured by Neocab - PV (AB Industries)		
Junction Box	Cixi Sinwo Solar Technology Co., Ltd.	ST618 , ST606, ST608, ST609, ST616, ST619, ST618	(3 number's used) ST618, Rated voltage: 1500VDC, Rated current: 30A, IP68, - 40°C to - 85°C, Manufactured by Cixi Sinwo Solar Technology Co., Ltd Certified by TUV SUD (Certificate No.: B 092685 0003 Rev. 04)	B 0926850005	

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Cable	Cixi Sinwo Solar Technology Co., Ltd.	62930 IEC 131	62930 IEC 131, 1x4 mm <sup>2</sup> , Rated voltage: DC 1500V, Ambient Temperature:-40°C to +90°C. Max. Temperature at conductor: 120°C, Manufactured by Cixi Sinwo Solar Technology Co., Ltd. Certified by TUV SUD (Certificate No.: B 092685 0005 Rev. 01	B092685000 5	
Connector	Cixi Sinwo Solar Technology Co., Ltd.	ST4 , ST5 , ST6	ST4, Rated voltage: 1500VDC, Rated current:30A, IP68, Ambient Temperature: - 40°C~85°C, Manufactured by Cixi Sinwo Solar Technology Co., Ltd., Certified by TUV SUD (Certificate No.: B 092685 0004 Rev. 03)	B092685000 4	

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Fluxing Agent	Kester	952-S	952-S, Low-Solids No-Clean Liquid Flux, Manufactured by Kester		
Soldering Material	Sn60 Pb40				
Potting Material	Tonson Adhesive Inc	1527	1527, Colour: White, Silicone, Manufactured by Tonson Adhesive Inc		
Adhesive for Junction Box	Tonson Adhesive Inc	1527	1527, Colour: White, Silicone, Manufactured by Tonson Adhesive Inc		
Adhesive for Frame	Tonson Adhesive Inc	1527	1527 Colour: White, Silicone, Manufactured by Tonson Adhesive Inc		

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Lab Manager



# URS PRODUCTS AND TESTING PRIVATE LIMITED

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TEST REPORT NO.: URS/LAB/02/RID/25-26/7303

DATE OF ISSUE:28/07/2025

CUSTOMER NAME: HR SOLAR SOLUTION PRIVATE LIMITED

CUSTOMER CITY:HOWRAH

Solar Cell	Solarspace (Jiangsu Longheng New Energy co., Ltd.)	182 Monocrystalline Bifacial PERC Solar Cell	S18210BB023, 182 Monocrystalline Bifacial PERC Solar Cell, Manufactured by Solarspace (Jiangsu Longheng New Energy co., Ltd.		
	<b>Alternate:</b> Websol Energy System Limited	182 Monocrystalline Bifacial PERC Solar Cell	WS182MP10 , 182 Monocrystalline Bifacial PERC Solar Cell, Manufactured by Websol Energy System Limited		

MODULE DESIGN - MINIMUM DISTANCES	
Between cells .....	1.8 mm
Between cell and edge of laminate .....	13.5 mm
Between any current carrying part and edge of laminate :	17.5 mm & 21 mm

**Note:** Bill of material as per manufacturer declaration.

**--END OF TEST REPORT--**

AUTHORIZED SIGNATURE

TESTED BY



Vineet Vijay  
Gajendragadkar Sr. Analyst



Hebin Manuel  
Lab Manager

ISSUED BY

Hebin Manuel  
Lab Manager