

Test Report

Saudi Specialized Products Company Wahaj

REPORT NUMBER: 4788822022-OTHERS-S1

PROJECT NUMBER: 4788822022

ULR NUMBER: TC616819000000293P

Reviewed by Signature:



Location (A)

UL India Pvt Limited,
Laboratory building,
Kalyani Platina Campus,
Sy.no.129/4, EPIP Zone,
Phase II, Whitefield,
Bangalore - 560 066 P:91-
80-41384400

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Location (B)

UL India Pvt Limited,
A-12, Sector 34, Infocity
Phase 1, Gurgaon - 122001

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Location (C)

UL India Pvt Limited,
Site: UL Jain Fire
Laboratory, Jain University
Campus, Jakkasandra,
Kanakpura Taluk,
Ramanagara Dist. - 562112

TEST DISCIPLINE: ELECTRONICS

General details

Customer / Applicant	M/s. Saudi Specialized Products Company Wahaj PO Box 1414 Qassim Hail Highway 81431 Hail Industrial City(Modon) Saudi Arabia		
Manufacturer	M/s. Saudi Specialized Products Company Wahaj		
Program	Others		
Test Lab Location	(a) UL Bangalore	Refer to Cover page for the UL address	
Item Under Test	Solar PV Modules + 2 pcs of EVA tape		
Model	ISEN300		
Number of Samples	02 + 02 Pcs EVA Tape		
UL Sample Identification	2001717, 2001718 + 1 & 2	Refer Summary of Test results for multiple samples	
Manufacturer Serial Number (if any)	ICON30036A0412263046 & ICON30036A0412263042 (NA for EVA tapes)		
Condition of IUT on receipt	Good		
Date of Receipt	2 January 2019		
Applicable Standard	IEC 61215:2004, Clause 10.1, 10.2, 10.3, 10.15, 10.10, 10.13		
Date of Testing (Start date)	29 January 2019	End Date	14 March 2019
UL general^ ambient condition	Temperature in °C		23 ±5°C
	Relative humidity in %		<70 %
Date of Reporting	8 April 2019		
Test In-charge	Vishwas S M		

Fill in the rows with information or add hyphen (-)

 Sr. Project Engineer Reviewed by	 Lab Manager Approved by
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General Remarks (If any) NA

Solar PV modules were subjected to Testing along with 2 pcs of EVA tapes (1 ft X 1 ft).

Damp Heat :- 1 Solar Module, UV exposure :- 1 Solar module, 2 Pcs of EVA for UV exposure.

Description of Item under Test (IUT)

Solar Photovoltaic Module + Ethylene Vinyl Acetate tape

Summary of Test Results

Test No.	Test Parameter	Standard & Clause Number	UL Sample Identification	Specification	Result
1	Preconditioning (Initial)	IEC 61215, Cl. No. NA	2001717 & 2001718	NA	P
2	Visual Inspection (Initial)	IEC 61215, Cl. No. 10.1	2001717 & 2001718	NA	P
3	Maximum Power Determination (Initial)	IEC 61215, Cl. No. 10.2	2001717 & 2001718	NA	P
4	Insulation test (Initial)	IEC 61215 Cl. No.10.3	2001717 & 2001718	NA	P
5	Wet Leakage Current test (Initial)	IEC 61215 Cl. No. 10.15	2001717 & 2001718	NA	P
6	UV Preconditioning Test	IEC 61215 Cl. No. 10.10	2001717 & 2001718	NA	P
7	Visual Inspection (After UV Preconditioning test)	IEC 61215 Cl. No. 10.1	2001717 & 2001718	NA	P
8	Maximum Power Determination (After UV Preconditioning test ,	IEC 61215, Cl. No. 10.2	2001717 & 2001718	NA	P
9	Insulation test (After UV Preconditioning test)	IEC 61215 Cl. No.10.3	2001717 & 2001718	NA	P
10	Yellowness Index* after UV Exposure IEC 61215	NA	EVA tape	≤ 4	2.8
11	Damp Heat test for 1000 Hrs	IEC 61215 2nd ED. CLAUSE 10.13	2001717 & 2001718	NA	P

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12	Visual Inspection after Damp Heat test 1000 Hrs	IEC 61215, Cl. No. 10.1	2001717 & 2001718	NA	P
13	Insulation test after damp heat test 1000 Hrs	IEC 61215 Cl. No. 10.3	2001717 & 2001718	NA	P
14	Wet leakage current test after damp heat 1000 test	IEC 61215 Cl. No. 10.15	2001717 & 2001718	NA	P
15	Maximum Power Determination (after damp heat test 1000 Hrs)	IEC 61215, Cl. No. 10.2	2001717 & 2001718	NA	P
16	Yellowness index* of Damp heat test IEC 61215	NA	EVA tape	≤ 2	1.5
17	Dielectric Strength**	ASTM D 149 Short Term In Oil medium	2077571	>18kv/mm	43.74 kV/mm

*Rating calculated using Blue UV light & CWF lamp ; ** test done at UL Taiwan lab

Test Start Date : 29 January 2019 ; Test End Date 14 March 2019

P: Meets the requirements F: Does not meet the requirement NA: Not applicable

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Master Equipment and Calibration details :

Test Name	Inst SnR	Id Number	Description	Date Equipment Used	Last Cal Date	Expiration Date	Entered By	Entered By Name
PIV Measureme	Instrument	▼ 170515	REFERENCE MO	2019-02-27	2017-AUG-11	2019-AUG-11	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 65675	Datalogger, RH	2019-02-27	2019-FEB-06	2020-FEB-06	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 70683	Thermometer, I	2019-02-27	2019-FEB-11	2020-FEB-11	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 158581	Measuring Tool	2019-02-27	2018-SEP-18	2019-SEP-18	39482	VISHWAS S. M.
Dielectric test	Instrument	▼ 68598	Apparatus, Diel	2019-02-27	2018-APR-05	2019-APR-05	39482	VISHWAS S. M.
Dielectric test	Instrument	▼ 65675	Datalogger, RH	2019-02-27	2019-FEB-06	2020-FEB-06	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 68600	Apparatus, Insu	2019-02-27	2018-MAR-29	2019-MAR-29	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 68612	Datalogger, RH	2019-02-27	2018-SEP-14	2019-SEP-14	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 159551	Timer, Digital or	2019-02-27	2018-SEP-11	2019-SEP-11	39482	VISHWAS S. M.
DS	Instrument	▼ 172038	Chart Recorder,	2019-03-04	2018-DEC-27	2019-DEC-31	50490	KEVIN DENG
DS	Instrument	▼ 172042	Chart Recorder,	2019-03-11	2018-JUL-26	2019-JUL-31	09470	JIM HUANG
DS	Instrument	▼ 127688	Measuring Tool	2019-03-11	2019-FEB-18	2020-FEB-29	09470	JIM HUANG
DS	Instrument	▼ 51695	Electrode	2019-03-11	2017-NOV-28	2022-NOV-30	09470	JIM HUANG
DS	Instrument	▼ 45726	Apparatus, Diel	2019-03-11	2018-MAR-17	2019-MAR-31	09470	JIM HUANG
Damp Heat Test	Instrument	▼ 84828	Datalogger, Te	2019-03-14	2018-JUN-28	2019-JUN-28	39482	VISHWAS S. M.
Damp Heat Test	Instrument	▼ 70573	Chamber, Clima	2019-03-14	2018-JUN-28	2019-JUN-28	39482	VISHWAS S. M.
Damp Heat Test	Instrument	▼ 72943	Datalogger	2019-03-14	2018-OCT-24	2019-OCT-24	39482	VISHWAS S. M.
Visual Inspecti	Instrument	▼ 70750	Light Meters &	2019-03-14	2018-MAY-28	2019-MAY-28	39482	VISHWAS S. M.
Visual Inspecti	Instrument	▼ 160912	Fixture, For Test	2019-03-14			39482	VISHWAS S. M.
Visual Inspecti	Instrument	▼ 68611	Datalogger, RH	2019-03-14	2019-FEB-06	2020-FEB-06	39482	VISHWAS S. M.
Visual Inspecti	Instrument	▼ 76645	Magnifying Len	2019-03-14			39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 70472	FLASH SOLAR SI	2019-03-14			39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 170515	REFERENCE MO	2019-03-14	2017-AUG-11	2019-AUG-11	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 65675	Datalogger, RH	2019-03-14	2019-FEB-06	2020-FEB-06	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 70683	Thermometer, I	2019-03-14	2019-FEB-11	2020-FEB-11	39482	VISHWAS S. M.
PIV Measureme	Instrument	▼ 158581	Measuring Tool	2019-03-14	2018-SEP-18	2019-SEP-18	39482	VISHWAS S. M.
Wet IR	Instrument	▼ 177913	Meter, pH, Digit	2019-03-14	2019-MAR-04	2020-MAR-04	39482	VISHWAS S. M.
Wet IR	Instrument	▼ 167776	Fixture, For Test	2019-03-14			39482	VISHWAS S. M.
Wet IR	Instrument	▼ 159551	Timer, Digital or	2019-03-14	2018-SEP-11	2019-SEP-11	39482	VISHWAS S. M.
Wet IR	Instrument	▼ 67918	Indicator, Temp	2019-03-14	2019-JAN-10	2020-JAN-10	39482	VISHWAS S. M.
Dielectric test	Instrument	▼ 68598	Apparatus, Diel	2019-03-14	2018-APR-05	2019-APR-05	39482	VISHWAS S. M.
Dielectric test	Instrument	▼ 65675	Datalogger, RH	2019-03-14	2019-FEB-06	2020-FEB-06	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 68600	Apparatus, Insu	2019-03-14	2018-MAR-29	2019-MAR-29	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 68612	Datalogger, RH	2019-03-14	2018-SEP-14	2019-SEP-14	39482	VISHWAS S. M.
Insulation resis	Instrument	▼ 159551	Timer, Digital or	2019-03-14	2018-SEP-11	2019-SEP-11	39482	VISHWAS S. M.

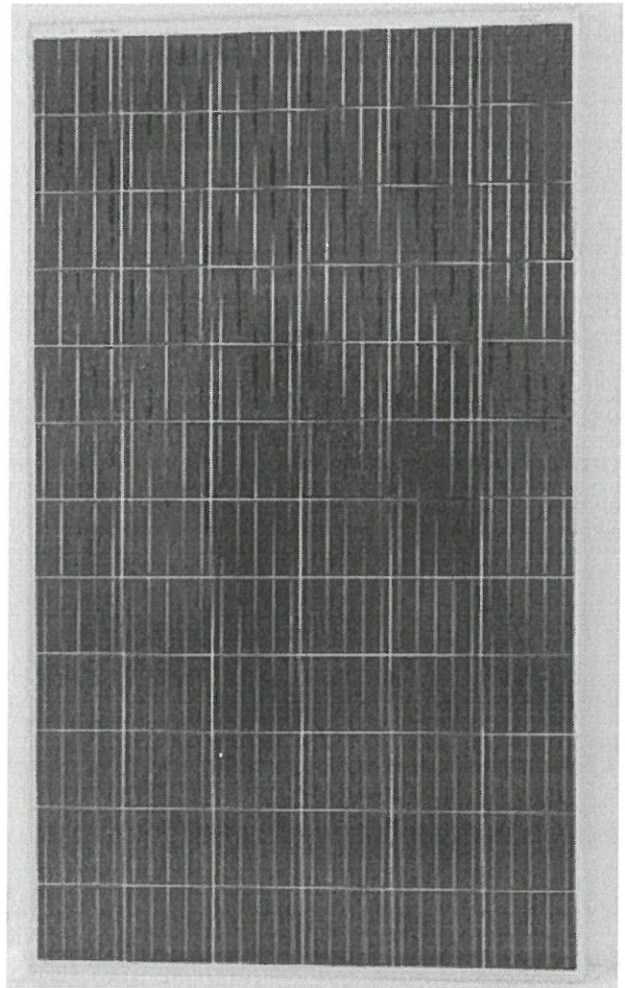
Test Observation

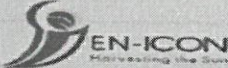
- Upon Completion of UV test for 15 days there is no significant change in color observed in the EVA tape as well as inside Solar Module.
- There is no cracks ,bent and significant color deformation observed in the Module.
- The samples did nor exhibit failure of adhesive bonds .

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Appendix

Photographs :



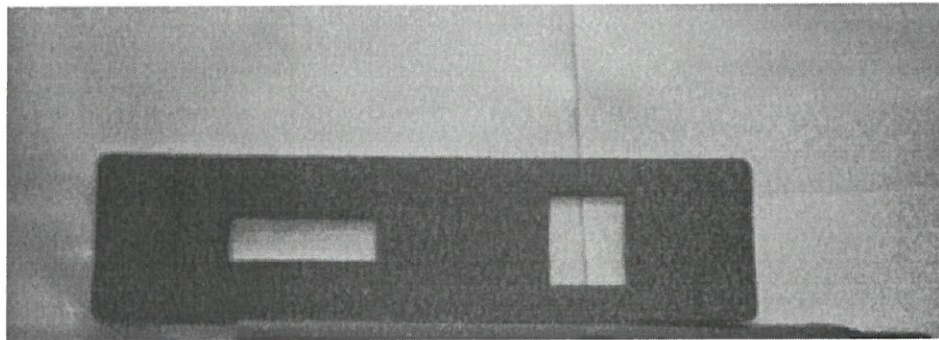
 EN-ICON Moving the Sun		Icon Solar-EnPower Technologies Pvt. Ltd. Office Address : 319-320, Office, 3rd Floor, Magnet Mall, G.E. Road, Raipur (C.G.) Pin : 492001 INDIA Tel : +91 771-4065755 www.iconsolar-en.com	
MODEL NO		ISEN300	
PRODUCT TYPE		ATHARVA	
MAXIMUM POWER (P _{max})		300 Wp	
OPEN CIRCUIT VOLTAGE (V _{oc})		44.45 V	
SHORT CIRCUIT CURRENT (I _{sc})		8.75 A	
VOLTAGE AT MAXIMUM POWER (V _{mp})		36.18 V	
CURRENT AT MAXIMUM POWER (I _{mp})		8.30 A	
MAXIMUM SYSTEM VOLTAGE		1000 V	
SERIES FUSE RATING		15 A	
MAXIMUM DESIGN LOAD		2400 Pa	
APPLICATION CLASS		CLASS A	
SAFETY CLASS		CLASS II	
MODULE SERIAL NO : INSIDE OF THE MODULE IN FRONT			
		WARNING ELECTRICAL HAZARD THIS UNIT PRODUCES ELECTRICITY WHEN EXPOSED TO LIGHT. COVER GLASS BEFORE CONNECTING TO THE LOAD.	
POWER SPECIFICATION MEASURED AT STANDARD TEST CONDITIONS. (Cell Temperature 25°C, Irradiance 1000W/m ² & AM 1.5)			
Tested According to IEC 61215, IEC 61730, IEC 61701 & IEC 62804			

2001717	
Description	2001717
Solar PV Module: 300 W	

Customer: Saudi Specialized Products Com	
Received Date:	Aurora Project No.: 1000614303
2019-JAN-02 10:36:02 AM	Order No.: 12667569
	Oracle Project No.: 4788822022
2 of 2	

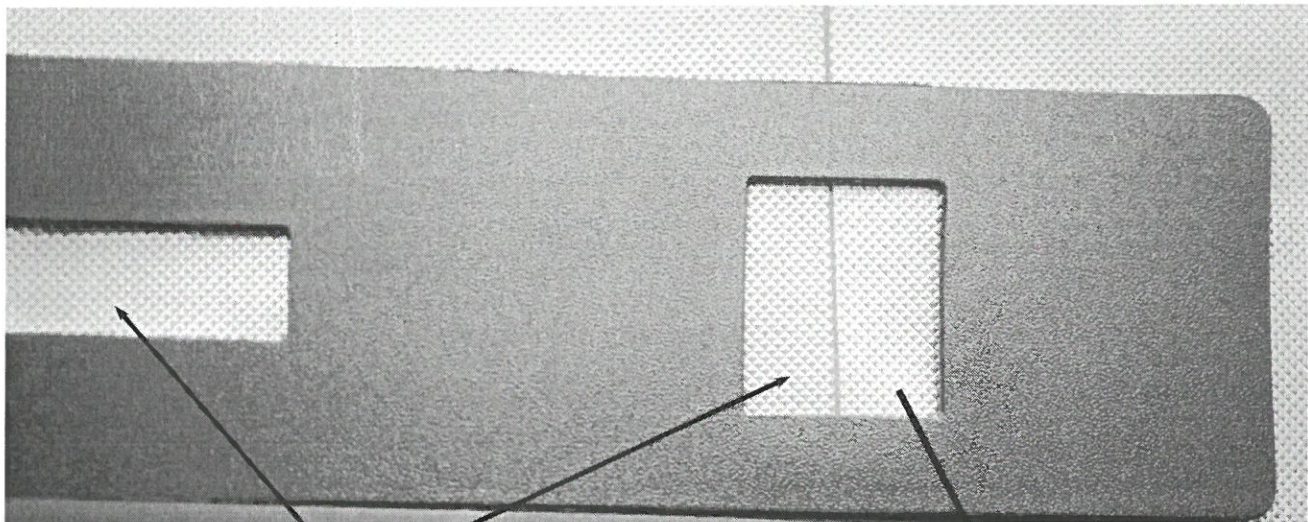
Pic 1: Solar Module

Pic -2 EVA Color Difference after UV Exposure under Blue Ultraviolet Light



After UV Exposure

Before UV Exposure



After UV Exposure

Before UV Exposure

Pic 3 : EVA Color Difference after UV Exposure under CWF lamp

*****End of Report*****

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