

National Institute of Solar Energy

(An Autonomous Institution of MNRE, GOI)  
19 K.m Stone, Gurgaon-Faridabad Road, Gwal Phari, Gurgaon (Haryana)-122003

File No: 359/2016-17 /CSC/NISE /1546

Dated: 22/02/2017

To,  
M/s- NAVITAS GREEN SOLUTIONS PVT LTD  
PLOT No-B20/3, ROAD No-13-14, HOJIWALA INDUSTRIAL  
ESTATE SACHIN- PALSANA HIGHWAY SURAT-394230 (GUJARAT) INDIA

Subject: Issue of Test Report by National Institute of Solar Energy ('NISE')


Dear Sir,

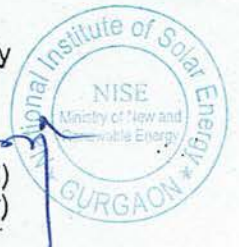
Please refer to your letter No./Order Form No. 01 Dated 15/02/17. In this connection, I am directed to enclose herewith the Test Report No : 230/359/NISE/2016-17/module Dated 21/02/17. In respect of your submitted samples in original, for ready reference and record.

2. Discrepancies, if any observed, in respect of any of the entries contained in the above report should be brought to the notice of this office within 30 days from the date of issue of this letter, falling which it will be presumed that the entries therein are in order and no further correspondence will be entertained thereafter on this particular report.
3. We would like to solicit your views and therefore enclosing a Feedback Form with a request to be filled up by you and then send as soon as possible. Your suggestions are valuable for us to make our further improvements and take corrective action in improving our quality of service.
4. Further, You are also requested to collect your samples at your cost within 30 days, from the date of issue of this letter falling which NISE will dispose of the sample in best possible manner and NISE will not be responsible in any manner for this sample.

Kindly acknowledge the receipt of this letter along with original test report and original Invoice.

Yours faithfully

  
(In-charge, Customer Service Cell)  
(National Institute of Solar Energy)



Encl:

1. Test Report-Total Page 09
2. Feedback Form

Copy forwarded for Information to:

1. PA to Director General-NISE
2. Guard File
3. Office Copy

## NATIONAL INSTITUTE OF SOLAR ENERGY

(FORMERLY KNOWN AS SOLAR ENERGY CENTRE)

(An autonomous institute of Ministry of New & Renewable Energy, Government of India)

Village & Post-Gwalpahari, Dist.-Gurgaon, (Haryana), Pin - 122003.

Ph. 0124-2579251 (CSC), Fax: 0124-2579207

Test Report No. 230/359/NISE/2016-17-Module	Date: 21/02/2017	Page 1 of 3
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### A. SCOPE

1.	Service Request No.	230/1516
2.	Requested By (Name & Address of the organization)	M/S – NAVITAS GREEN SOLUTIONS PVT. LTD PLOT NO. B 20/3, ROAD NO. 13-14 HOJIWALA INDUSTRIAL ESTATE, SACHIN- PALSANA HIGHWAY, SURAT- 394230 (GUJARAT), INDIA.
3.	Details of the test item	
	a. Nomenclature	PV Module
	b. Manufactured By	M/S – NAVITAS GREEN SOLUTIONS PVT. LTD PLOT NO. B 20/3, ROAD NO. 13-14 HOJIWALA INDUSTRIAL ESTATE, SACHIN- PALSANA HIGHWAY, SURAT- 394230 (GUJARAT), INDIA.
	c. Model / Type No.	Ref. page no. 02 to 03
	d. Serial No.	Ref. page no. 02 to 03
4.	Date of Submission of Samples	15/02/2017
5.	Condition of samples on receipt	Good
6.	Date of Completion of Tests	17/02/2017
7.	Applicable test specifications	Customer's
8.	Test category	STC Performance Test as per IEC-60904-1

### B. MAJOR EQUIPMENTS USED

S.N.	NOMENCLATURE	MAKE	MODEL	CAL VALIDITY
1.	SUN SIMULATOR	ENDEAS	QUICKSUN 700A	MAY 2017

#### NOTE:

1. This test report refers only to the particular items submitted for testing as per specifications/requirements stipulated by the customer.
2. The results reported in the Test Report are valid at the time of and under the stipulated conditions of measurements.
3. The test report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, National Institute of Solar Energy.
4. The client is requested to collect the tested sample back within 30 days from the date of issue of the report.

*Raj*  
21/02/2017



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## STC PERFORMANCE AFTER STABILISATION OF PV MODULE (Please ref. Annexure A1 to A6 for module I-V curve details)

1. Serial No. : NSA255011700021  
 Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
 Model No. : Multi Crystalline Si / NSA 255  
 Cell Area : 243.36 Sq.cm.  
 Module Area : 16245.90 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
37.99	8.99	0.757	30.57	8.46	17.7	15.9	258	255±3%	PASS

2. Serial No. : NSA06011700002  
 Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
 Model No. : Multi Crystalline Si / NSA 60  
 Cell Area : 98.28 Sq.cm.  
 Module Area : 4249.08 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
22.77	3.552	0.776	18.85	3.330	17.7	14.8	62.8	60±3%	PASS

3. Serial No. : NSA310011700001  
 Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
 Model No. : Multi Crystalline Si / NSA 310  
 Cell Area : 243.36 Sq.cm.  
 Module Area : 19413.90 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
45.50	9.36	0.749	36.81	8.67	18.2	16.4	319	310±3%	PASS

4. Serial No. : NSA315011700001  
 Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
 Model No. : Multi Crystalline Si / NSA 315  
 Cell Area : 243.36 Sq.cm.  
 Module Area : 19413.90 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
45.76	9.20	0.750	36.67	8.61	18.0	16.3	316	315±3%	PASS

*Rab*  
21/02/2017



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5. Serial No. : NSA305011700001  
Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
Model No. : Multi Crystalline Si / NSA 305  
Cell Area : 243.36 Sq.cm.  
Module Area : 19413.90 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
45.58	9.21	0.745	36.48	8.57	17.9	16.1	313	305±3%	PASS

6. Serial No. : NSA260011700001  
Make : NAVITAS GREEN SOLUTIONS PVT. LTD  
Model No. : Multi Crystalline Si / NSA 260  
Cell Area : 243.36 Sq.cm.  
Module Area : 16236.00 Sq.cm.

V <sub>oc</sub> (V)	I <sub>sc</sub> (A)	F.F	V <sub>mp</sub> (V)	I <sub>mp</sub> (A)	Cell eff.%	M. eff. %	P <sub>max</sub> (W)	Manufacturer's claim	Remarks
38.10	9.09	0.756	30.68	8.54	17.9	16.1	262	260±3%	PASS

**NOTE:** It is required to have the qualification test certificate as per IEC 61215 before deployment of these modules in the field.

Prepared by Rah  
Dr. Rahnuma Siddiqui  
Research Associate

Authorized Signatory Rajesh Kumar  
Dr. Rajesh Kumar  
D.D.G, NISE.

Issued By G  
Date 21/02/2017



Date 21/02/2017

Date.....

Date.....